Implementing bigdata analytics for small scale business

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***Abstract- Small businesses provide opportunities for entrepreneurs, jobs for neighbors and gathering places for communities. They're rooted in the landscape where they grow, and they give back vitality and sustenance. Although running a small business involves taking greater risks than working for a large, established company, the rewards are both quantitative and qualitative, including broad-based prosperity and a web of symbiotic relationships. That’s where bigdata will be helpful, as a new solution in policy and practice in all sorts of applications context and domains. Many small businesses believe they are too small for big data. This is far from the truth as small businesses need big data to succeed, just as much as larger corporations. Data provides businesses with actionable insights needed to become more efficient and profitable. This paper will assess the options and the extent to which big data can be harnessed for small business growth.***

I. INTRODUCTION

No business is too big for big data. The fact is that its significance is higher to a small-scale business in order to reveal hidden patterns, customer preferences and market trends. Small scale industries can use big data to make smart decisions to get and stay ahead of the competitors. This in turn leads to higher profits. Leading companies have leveraged Big Data and has proven to be crucial in outperforming their competitors. In many industries, new entrants and established competitors use data-driven strategies to compete, capture and innovate.

In fact, Big Data can be found in every sector starting from IT to healthcare. Customers expect to be treated special these days, they are well-aware of their priorities and take a well-informed decision on what they want and what they are going to buy. A survey has shown that customers expects/wants to be thanked by the company for buying their product.

Big Data allows a business organization to profile such customers in a far-reaching manner. What this does is that it basically bridges the gap bet ween customer and the organization in real-time. In today’s competitive time, this isn’t a luxury. You must treat customers how they like to be treated. A good example would be a customer entering a shop, the clerk can use Big Data to check his or her profile in real-time. The clerk can learn about the customer’s preferences and desires. This allows him to advise relevant products and services to the customer.

Big Data also leverages the big user base on social media and integrate physical and digital shopping spheres. An online retailer can easily suggest an offer on a particular product knowing the customer had looked for it. This can be done based on consumer inclining towards increased social media usage.

II. LITERATURE REVIEW

Blessing Ogechi Ogbuokiri, Collins Udanor and Monica Agu published a paper titled Implementing bigdata analytics for small and medium enterprise regional growth under the University of Nigeria.This was published in the year of 2015 November.

Zdzislaw polkowski published a paper titled Bigdata implementation in small and medium enterprises in India and Poland under the university of Jon wyzykowsky.This was published in the year of 2017 November.

Doruk Sena, Melike Ozturkb, Ozalp Vayvayc published a paper titled An Overview of Big Data for Growth in SMEs under the university of MarmaraThis was published in the year of October 2016.

These papers explain how bigdata analytics implementation can be done in small scale business and the advantages of implementing bigdata for example reduction of costs, helps in making efficient decision and jobs sector. This paper also describes about the tools to implement big data like Kissmetrics, SAS, Clearstory data.

III. IMPLEMENTATION OF BIG DATA

*A. Report on a small survey:*

Questions asked:

1. Do you think bigdata analytics has an effect on small scale business?

2. Do bigdata analytics provides flexibility and choice?

3. Do you think implementing bigdata analytics on small scale business decreases maintenance?

4. If you are starting a new business will you choose to implement bigdata analytics?

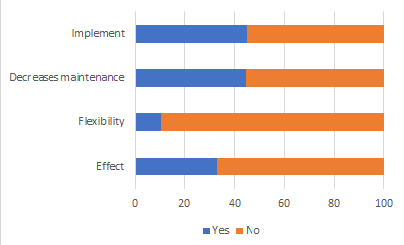
FIGURE 1.

Fig. 1. Report on a survey conducted.

The take away from this short survey is that, majority of the people think Big Data is only for large scale business. And how unaware they are of the benefits it offers to small scale businesses. Let’s see why Big Data is helpful for small scale business and how to implement them.

*B. Importance of big data for small businesses:*

The importance and value of big data should not be overlooked, and this is some major points that businesses can use to gain edge over their competitors:

1. Reduction in overall costs
2. Growth in sales and revenue
3. Enhanced pricing decisions
4. Offers a competitive advantage
5. Helps in making efficient decision

*1) Reduction in overall costs:*

Efficiency is the key here. With big data, small scale businesses will have the data or information leading to pinpoint the inefficiencies in their operations and provide insights to how to mitigate those issues.

A good example would be the data collected may reveal that customers are not interested in chocolates placed on the checkout. So, the executives may replace it with some other item resulting in operational cost reduction and potential increase in revenue.

*2) Growth in sales and revenue:*

Big data analysis sheds light on small businesses on beliefs and shopping preferences of their customers. Acquiring this information, businesses can take an informed decision and tailor their products and services to customer’s expectation – pointing into the direction of increasing revenue.

*3) Enhanced pricing decisions:*

The success of the products of a small business is greatly affected by the way they are priced. Here’s where data tools come to play, they compare the pricing to their competitors and their results. Using data, small businesses can determine if they should raise or lower their product’s price also making sure that their prices are right in line with competitors.

*4) Offers a competitive advantage:*

Big data opens the door for small businesses to focus on the local customer’s preferences. Data tools zooms into the local market and provides insights on buying habits. This allows the business to add a personal touch based on their likes and dislikes, ensuring a competitive advantage.

*5) Helps in making efficient decision:*

Big data can take advantage of the huge user base at social medias to their advantage and use techniques like data mining, in this case: social media mining but confined to platforms which has public APIs. Gathering and mining information from these platforms helps draw conclusions on buying behavior, patterns, interests, reaction to deals, offers, promotion. With those collected data business can market their product individually or targeted marketing. This can be achieved thru some tools eliminating the necessity of hiring a dedicated data specialist reducing expenses.

IV. BIG DATA ANALYTICS FOR SMALL BUSINESS

It is the process of drawing results from examining large data sets or big data to enclose valuable information that could ultimately help small scale businesses take informed decisions. Using Big data analytics, small scale businesses can evaluate their customer’s loyalty and retention. Information on these will lead to discovery of certain buying behaviors which will help maintain current clientele and increasing the overall purchases.

Also, big data analytics will uncover customer value and acquisition costs. This is very important because not all the customers are made equally, and some may be worth putting time and money into. A vital data point for small scale businesses with smaller salesforce and limited budget.

*A. Big data tools for small business*

No two big data tools are created equal. Therefore, before settling in onto a tool, small business executives must spend time and effort into choosing one. Best practice would be to narrowing the tools down to 3 or 4 tools which best fits the requirements and trying them out. Luckily, most of the offerings include a free demo or trials. So, choose a tool, schedule a demo, download and use the tools and evaluate them. This way you get to experience the tool in first-hand and determine whether or not will it align with your particular need.

In-order to compete in today’s marketplace and emerge victorious, small scale business would need the same tools a larger company uses. But of-course small scale business would not have the manpower or the revenue to hire specialists like data scientists, data analyst and researchers. However, there are tools that can do their tasks to a certain degree. Here are 5 most popular tools listed:

*SAS:*

Developed by SAS institute, this software suite is capable of mining, managing, retrieving and altering data from different sources – such as social media, web, and marketing analytics – depending on the needs of business. SAS specifically is designed to assist mid-sized business. Once the data is acquired, it provides the customer with intelligence thru performing statistical analysis on the same.

*ClearStory Data:*

ClearStory Data works by combining the business’s inside data and comparing it with publicly available local/overseas business’s and providing insight to the executives or the leaders of the organization. Organizations can also gain specific insight if they desire like on sales, marketing and customer analytics.

*Kissmetrics:*

Kissmetrics is a tool that is specifically designed to help small scale business increase their region of interest on their marketing efforts. Kissmetrics tracks and identifies customer’s behaviors so one can understand, cluster and effectively engage one’s customer.

*InsightSquared:*

InsightSquared works by connecting and collecting data from the business software you are already using and automatically generate actionable insights. Some of the supported data collection softwares are Salesforce, Google Analytics, QuickBooks, Zendesk etc.

*Watson Analytics:*

Watson Analytics is created by IBM and generated advanced, predictive business analytics which are both understandable and accessible to small scale business owners. The tool is designed in such a way that the generated insights can be read by someone who has no data science background or knowledge. The platform identifies patterns and potential problems from a vast data set of multiple departments including human resources, finance, marketing and sales.

V. CONCLUSION

You need to ask the right questions to get the most out of your data analysis. Keeping track of information such as gross revenue, sales, customer retention is nice – however, these are vanity metrics. In other words, these are outside of goal setting, all they do is feed your ego. So, one must ask insightful questions in addition to tracking these metrics.

Majority of people have not performed any data analysis before and worry that they don’t have enough information to analyze. The thing to focus on is that you have the data and how are you going to handle it. The amount of data that’s being generated by the business and people is only going to increase day by day. As it expands the relevance of big data systems grow in parallel.

Most of the business owners today simply cannot hope to achieve or acquire meaningful insight by reviewing their data manually. However, one must start information analysis by manually integrating the data sets into their systems. After which its essential for a small-scale business to find a data tool that best fits their needs and is advantageous.

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