

STUDY ON CHALLENGES AND BEST PRACTICES OF BIG DATA FOR SMES

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ABSTRACT

The term, 'Big Data' has been begat to allude to the tremendous main part of information that can't be managed by conventional information dealing with methods. Huge Data is as yet another idea, and in the accompanying writing we expect to expound it in a tangible methodology. Information is an exceptionally esteemed resource in the present associated world and is developing in volume more than ever. Undertakings over the range, from multinationals too little and medium endeavours (SMEs), are investigating roads to outfit and adventure information. The present examination has been embraced to depict the difficulties and best practices of huge information for SMEs (Small and Medium Enterprises).

I. INTRODUCTION

Big data and business analytics is one of the hottest topics in data analytics and enterprise information systems these days. Data is easier to capture and access through third parties such as Facebook, D&B, and others. There are different types of data which can get from different sources like, geo location data, user-generated content, user's biographic information, machine logging data, and sensor-generated data. Nowadays IT companies find increasing value in leveraging these data to enhance existing applications and create new once made from it. The use of the data is rapidly changing the nature of communication, shopping, advertising, entertainment, and relationship management.

The estimation of information detonates when it tends to be connected with other information, in this way information reconciliation is a noteworthy maker of significant worth. Since most information is legitimately produced in advanced organization today, we have the chance and the test both to impact the creation to encourage later linkage and to naturally interface recently made information. Information investigation, association, recovery, and demonstrating are other essential difficulties. Information examination is an unmistakable bottleneck in numerous applications, both because of absence of adaptability of the basic calculations and because of the intricacy of the information that should be broke down. At long last, introduction of the outcomes and its understanding by non-specialized space specialists is essential to separating significant learning.

The utilization of enormous information innovations is adjusting the path organizations crosswise over businesses work. To address their voluminous information challenges, there is a critical requirement for SMEs to truly consider huge information appropriation.

The above explanation is approved by a report distributed by Research and Markets, which figures that huge information arrangement by SMEs will observe a CAGR of 43% before the year 2018. It further calls attention to that SMEs will proceed with the force of putting resources into huge information and business examination.

II. OBJECTIVES

- To understand the benefits of big data for SMEs
- To study the challenges of big data for SMEs
- To study the best practices of big data for SMEs

III. RESEARCH DESIGN

The researcher has used only secondary data that has been collected from various articles, journals, books, websites etc. It has been used to study the evaluation, conceptual framework, definition, present trends, future prospectus, opportunities & challenges of big data. The researcher also used quantitative research that is the systematic empirical investigation of variables phenomena via statistical & mathematical, theories pertaining to phenomena all the data included is the secondary base & proper references have been given wherever necessary.

IV. DEFINITION

Huge information is a term that portrays the huge volume of information – both organized and unstructured – that immerses a business on an everyday premise. Huge information is a gathering of information from customary and computerized sources inside and outside that speaks to a hotspot for progressing revelation and examination. Information is simpler to catch and access through web sources, information houses, media or other outsiders, for example, Facebook, D&B, etc.

A huge measure of information is made worldwide consistently. A lot of this information is legitimately or in a roundabout way important for strategy and basic leadership in the different stages. Enormous information is huge resources for huge organizations just as little and medium organizations in all segments as they are making critical advances in their client relations, item choice and improvement and subsequent gainfulness through utilizing this important product. An investigation has demonstrated that Small and medium endeavors (SMEs) have demonstrated themselves to be moderate adopters of the new innovation of enormous information examination and there might be a risk of being deserted. In India, SMEs are an essential piece of the economy, and the difficulties they experience should be tended to as an issue of desperation. This examination paper distinguishes obstructions to SME in the appropriation of huge information investigation and perceives their mind-boggling challenge to all partners, including national and universal approach creators, IT, business the executives and information science networks. This paper likewise underscores the prescribed procedures and advantages of huge information in little and medium ventures. "Enormous information" is actually only a great deal of information. While it's all the

more a promoting term than anything, the suggestion is typically that you have so much information that you can't break down the majority of the information on the double on the grounds that the measure of memory (RAM) it would take to hold the information in memory to process and examine it is more prominent than the measure of accessible memory. This implies examinations more often than not need to be done on arbitrary fragments of information, which enables models to be worked to look at against different pieces of the information. To separate that in straightforward words, suppose that Facebook needs to know which promotions work best for individuals with advanced educations. Suppose there are 200,000,000 Facebook clients with higher educations, and they have been each served 100 advertisements. Now the ads which posted to these people contain more than 1000s of features such as colour, design, picture, presence of male or female, presence of any area, size of ad, purpose of ad etc. and so on. There are different segment people for each feature. Big data helps you to analyse each feature with their specific segment and the pattern of the users. Like through big data analysis we can know most prominent colour that college people like the most or say presence of male or female picture which attract the most in the ads. We can also select another subset by getting people who likes the most ads which shows family picture and get more clicks. Thus, with the help of big data we can get the clear picture of the pattern of consumer taste and preference and accordingly can plan the business. The utilization of huge information innovations is adjusting the route organizations crosswise over enterprises work. To address their voluminous information challenges, there is a desperate requirement for SMEs to genuinely consider enormous information reception. The above proclamation is approved by a report distributed by Research and Markets, which gauges that enormous information organization by SMEs will observe a CAGR of 43% before the year 2018. It further calls attention to that SMEs will proceed with the force of putting resources into huge information and business examination.

V. CATEGORIES OF BIG DATA

Big data' has four dimensions, often addressed by the acronym VVVC1:

high-volume (V) data,

created with high velocity (V)

in great variety (V) and

of high complexity (C).

With respect to, there are loads of information are made overall every day and it is normal that the creation volume is multiplying at regular intervals. In any case, the thing is the capacity of the information and examination of the pertinent information done by Big information. Parcels information doesn't mean bunches of advantage rather significant information or state pleasantly broke down information is the benefit of the association. as to, present-day data innovation (IT) foundations empower information to be submitted for examination in almost continuous. Concerning, the different information sources achieve information of various organizations, similar to traditional database positions, printed information, picture information, sensor information,

organized, semi-organized and absolutely unstructured information. As to, significant parts of information multifaceted nature are multivariate, various at, multirate and multiresolution. Numerous covariate information for one target substance, for instance, a business procedure, emerge from various sources in various arrangements at various paces of securing and granularity. An assortment of information incorporates the following configurations of information:

A. Structured

B. Unstructured

C. Semi-structured

A. Structured

Any data that can be taken care of, got to and took care of as predefined association is named as a 'sorted out' data. Over, as far as possible in programming building have gained progressively essential ground in making techniques for working with such kind of data (where the association is outstanding early) and deciding an impetus out of it. Examples of Structured Data A 'Delegate' table in a database is an instance of Structured Data.

Examples of Structured Data an 'Employee' table in a database is an example of Structured Data

Emp_ID	Employee_Name	Gender	Department	Age	Salary_In_lacs (Rs.) P.A.
MIPL0101	Ved Padaria	Male	Finance	30	650000
MIPL0201	Pari Patel	Female	Admin	25	650000
MIPL0202	Shaurya Gandhi	Male	Human Resource	28	500000

B. Unstructured

Any data with cloud structure or the structure is named unstructured data. Despite the size being huge, unstructured data speaks to different troubles the extent that its getting ready for deciding a motivating force out of it. Regular instance of unstructured data is, a heterogeneous data source containing a mix of clear substance archives, pictures, accounts, etc. Directly a day affiliation has bounty of data available with them yet unfortunately, they haven't the foggiest how to decide an impetus out of it since this data is in its rough structure or unstructured association.

C. Semi-structured

Semi-sorted out data can contain both the kinds of data. We can see semi-composed data as a sorted out in structure yet it is truly not portrayed with for instance a table definition in social DBMS. Instance of semi-sorted out data is a data addressed in XML record. Occasions of Semi-Structured Data Personal data set away in a XML record

```
<rec><name>Ved
```

```
Padaria</name><sex>Male</sex><age>30</age></rec>
```

```
<rec><name>Pari
```

```
Patel</name><sex>Female</sex><age>25</age></rec>
```

```
<rec><name>Shaurya
```

```
Gandhi</name><sex>Male</sex><age>28</age></rec>
```

VI. WHAT IS UNIQUE ABOUT BIG DATA?

Organizations have looked for quite a long time to utilize data to improve their business abilities. Nonetheless, it's the structure and size of Big Data that makes it so exceptional. Huge Data is additionally uncommon in light of the fact that it speaks to both noteworthy data - which can open new entryways - and the manner in which this data is investigated to help open those entryways. The examination goes inseparably with the data, so in this sense "Enormous Data" speaks to a thing - "the information" - and an action word - "brushing the information to discover esteem."

VII. BENEFITS OF BIG DATA FOR SMES

Associations can use outside learning while at the same time taking decisions Access to social data from web crawlers and goals like Facebook, twitter is enabling relationship to change their business techniques. Improved customer help Traditional customer analysis systems are getting superseded by new structures arranged with 'Colossal Data' progressions. In these new systems, Big Data and trademark language dealing with advancements are being used to examine and evaluate purchaser responses. Better operational viability 'Tremendous Data' progressions can be used for making arranging zone or landing zone for new data before perceiving what data should be moved to the data dispersion focus. Likewise, such mix of 'Tremendous Data' advances and data dispersion focus makes affiliation offload seldom got to data. Early ID of danger to the thing/organizations, if any Because of having plans through enormous data, SME's can acknowledge chance early and prepare to take helpful measures for the proportionate.

VIII. CHALLENGES OF BIG DATA FOR SMES

A. Storage cost is high Tones of data is generated in Big Data and the SMEs can only maintain and manage the storage cost of handling this Big Date if they have sufficient knowledge about it. They

can select to pick a crossover distributed computing model for information security reasons and legitimize the costs with this learning as it were.

B. Insufficient data expertise

SMEs lack knowledge about the useful data mining tools which are practical and are based on affordable technology. With this knowledge, they can benefit themselves in processing Big Data and apply it pragmatically.

C. Data collection sources are ambiguous A lot of data is generated by social media, emails CRM applications etc. SMEs can start with focus on smaller data sets for these data sources and try to understand the behaviour patterns of the customer. The company's data serves the purpose to a great extent, but when engaged with channel partners, the data can be aggregated and managed for best results. This data mining is difficult for the company to manage on own and this way the expertise of channel partners plays a vital role in understanding and using the Big Data.

D. Understanding and prioritizing the data from garbage that is coming into the enterprise F. Retention of the existing data which is sometimes relevant for smaller duration and sometimes relevant after a longer duration and in addition the new Data gets added very rapidly making it an expensive affair to store.

E. Getting skills of Big Data solutions is challenging with the advent of new technologies and tools.

F. Promptness in analysing a larger data which takes longer time is required as in most of the situations the results of the analysis are required for immediate use.

G. Incomplete data hinders the process of data analysis and completing and correcting this is a challenge. Managing this probabilistic data is the need of the time.

H. Big Data has huge privacy concerns attached to it.

IX. BEST PRACTICES OF BIG DATA FOR SMES

A. Big Data to be aligned to get specific Business Goals Finding valuable data from the extensive data, which can be used for attaining the business goal, must be smart work. For this smart work need new investments in skills, organization, and infrastructure with the common goal to excel in all stages of business. Example – Understanding the purchasing patterns of the buyers by analysing the data related to their search online for product or service and aligning it with the production to meet the demands at the specific time of the year. In short, making the business plans as per the needs of the buyers to facilitate best of the services for attaining the business goal of profitability. If not done properly, the data will drive the business haywire.

C. Sharing of knowledge culture should be promoted Bid Data being a new and expanding investment, it is advisable for the SMEs to share solution knowledge related topic with others across the enterprise. SMEs can post their questions and queries and share information on common groups like in LinkedIn so that people are benefited on a continuous basis and time is not wasted on finding

same solutions again and again by different organizations. This approach can help getting faster results from the findings of Big Data.

D. Prioritize to convert Unstructured to structure data in analysing Big Data, for business clarity is better by connecting and integrating low density Big Data with the structured data. If any organization is analysing Data for any sentiment, it will furnish with better clarity and conclusions if all variety of customers from varied criteria are analysed rather than analysing a small group of best customer's nature. Data related to customer, product, equipment and environmental will add more value if they are added to more relevant data points to core master and analytical summaries.

H. Analyse data within budgetary constraints It is advised to use existing tools and techniques to analyse data. Try this with a smaller data and evaluate the finding if they match your expectation or not. In case they don't match, the approach needs to be redefined. If they match with expectation, same approach can be used for bigger scale and bigger data. These initial tests will ensure that the organization is not deviating for the goals and no resources are waited. If all the results and findings are of use, then only SMEs should invest in big storage serves to get assured ROI.

I. Subscribe to cloud storage services Ones the SME is sure about resorting to Big Data to achieve the business goals, they can decide for the storage services. It is advised to opt for cloud storage service which can be scaled up or down as per the business needs. Cloud services has the facility to create own analytic sandbox and keep expensed in control by safeguarding the capital investment.

X. CONCLUSION

It is the perfect time for SMEs to outfit the intensity of Big Data Analytics. Their center ought to be to locate the correct arrangement. This will empower them to build up an extraordinary picture in the market and increase an aggressive edge. Moderateness is a noteworthy worry for SMEs while diving into Big Data Analytics. Be that as it may, with appropriate control of costs, execution, and assets; SMEs can surmount their feelings of trepidation. They should concentrate on key issues and characterize quantitative techniques to get issues. In like manner, they can make a great deal of significant worth for their clients. SMEs can employ outside firms or assistants to lead huge information investigation. Be that as it may, it is essential to have an obviously characterized inquiry before you push ahead. In light of the lucidity of objective, employing the ideal individual turns into significantly simpler. They should concentrate on key issues and characterize quantitative techniques to get issues. Moreover, they can make a great deal of significant worth for their clients. SMEs can procure outer firms or understudies to lead enormous information examination. In any case, With the clearness of objective at the top of the priority list, contracting the perfect individual turns into much simpler.