CLOUD BUSINESS INTELLIGENCE AS A SOLUTION FOR EMPOWERING SMEs

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ABSTRACT

The concept of Business Intelligence has garnered popularity due to its immense predictive and analytical capabilities. It is being used by organisations worldwide to extract information from piles of data to take critical business decisions. However, such systems are difficult to maintain and costly to establish and are mostly catered towards large scale organisations. To expand the reach of this tool to organisations belonging to the SME sector which is quite significant in every economy and to allow them to contribute even more towards a nation's growth and development, steps have been taken recently to provide Business intelligence solutions as a service over the internet using the cloud computing platform. This paper seeks to explore the factors responsible for choosing cloud business intelligence solutions from an SMEs perspective, the expected benefits and the associated challenges.

INTRODUCTION

Small and medium enterprises (SMEs) make up the backbone of any economy, supporting its growth and development by providing services, providing employment to the masses, rural development, and contributing to the government's foreign exchange revenue through exports.

Businesses generate massive amounts of data about the environment in which they operate. Data generated by organisations is frequently disorganised and may not yield meaningful results. To convey meaning, data must be converted into information. Manually sorting data in a complex modern organisation and then transforming it into information is a time-consuming and laborious task.

This is where Business Intelligence (hereafter BI) emerges. BI entails sifting through massive amounts of data and compiling it to deliver relevant information to the organisation so that critical business decisions can be made, all through the use of information technology. BI includes broad categories of systems and solutions for collecting, integrating, analyzing, and granting access to data to enable better decision making by businesses.

Given the competitive advantage that business intelligence provides, there are some factors that discourage organisations from investing in it, particularly Small and Medium Enterprises (SMEs). As a result, in order to empower SMEs in their economic growth journey and to enable them to reap the benefits of BI, the concept of offering cloud-based BI solutions has emerged, which frees an organisation from installing any equipment on-site, provides the scalability during the peak periods and is economic to the user as it a pay as you use model.

LITERATURE REVIEW

Patil and Chavan (2020), conducted a study on Cloud BI, its advantages and challenges. They found that cloud BI solutions offer significant benefits to a business such as lower implementation costs and impacts organizations positively. Organisations can leverage cloud BI solutions to compete in the global market.

Raj et al. (2016), investigated the challenges when implementing a BI solution within an SME in the UK. It was discovered that SMEs lack the expertise required to select the correct combination BI tools, also limitations of financial resources prevent an SME in investing in large scale BI solutions.

Gurjar and Rathore (2013), focused on the factors driving cloud BI evolution, various models for deploying BI components on the cloud, the impact of its implementation, and the challenges It was discovered that with the help of these solutions, organisations of any size can capitalise on market opportunities. Cloud BI has the potential to increase BI adoption, improve end-user experience, provide opportunities for improved analytics, and reduce reliance on IT infrastructure.

Menon et al. (2012), studied the factors and challenges relating to Cloud BI. They found that cloud is the future of BI and offers several benefits to its users. Also, they found that cloud technologies were initially meant for small size organisations with lack of IT infrastructure and spending capacity, it is now being used even by the large companies to add new business solutions and make additions to the already present data center capacity.

Rostek et al. (2012), examined the opportunities and threats posed by Cloud Business Intelligence system when used in the SME sector. They concluded that BI system in the cloud opens up new possibilities for SMEs, other organisations, who

need effective support when taking management decisions, and are not able to implement and maintain BI system.

Thompson and Walt (2010), investigated how could cloud computing be used to provide BI solution to businesses over the internet. They found that data mining tools in the cloud could help businesses make more accurate and timely decisions. Moving huge data sets to the cloud can be expensive, and security is an issue while using cloud solutions.

OBJECTIVES

To understand the motives behind selecting cloud based BI solutions from the viewpoint of SMEs and the benefits and challenges associated with it.

DISCUSSIONS

Business Intelligence

Business intelligence (BI) software collects and presents business data in user-friendly formats such as reports, dashboards, figures, etc. Business users can use BI to access various types of data, including historical and current data, third-party and internal data, semi-structured and unstructured data. Users can use this data for gaining insight into company performance, identifying issues , discern market trends, and discover new revenue or business opportunities.

With the help of BI, the data relevant to the organization which is scattered at different locations within an enterprise and outside it and which may impact an organisations decision making capabilities are brought at one common place.

The ultimate goal of BI initiatives is to make better business decisions that enable companies to increase revenue, improve operational efficiencies, and gain competitive advantage over competitors. To achieve this goal, BI involves combining analytical, data management, and reporting tools, as well as various methods for managing and analyzing data.

Business Intelligence and SME

The SME sector contributes towards a sizeable portion towards the GDP of any country. It is also a major contributor in the socio-economic development of any country. In India, an organization is labelled as a small or medium depending on the level of turnover which is Rs. 50 crores to be considered as small and Rs. 250 crores to be tagged as medium.

The benefits of business intelligence (BI) should also be made available to SMEs so that they are better equipped in making important business decisions, but lack of financial resources to invest in BI solutions and human resources trained in handling such state-of-the-art equipment prohibit SMEs to exploit BI solutions. Another reason could be the lack of BI solutions which are compatible with the level of operations in an SME. Most BI solutions are designed keeping in mind large organisations and it may incompatible with the existing IT resources in an SME.

For addressing this problem large software giants have begun developing specialized BI solutions catered towards the SMEs. These do not require heavy investment in hardware, software, data warehouse, various assets and are compatible

with their level of operations. Among these the most suitable option from an SMEs perspective is cloud based BI solutions.

Business Intelligence on the Cloud

The basic concept behind Cloud BI or BI on the cloud is to provide BI solutions to enterprises by leveraging cloud computing infrastructure. Cloud computing is a platform that provides computing resources primarily related to data storage, networking, software, analytics, and intelligence as a service over the internet without requiring users to maintain much physical infrastructure on their premises. In this model, users pay the cloud service provider based on their usage; in other words, cloud computing is a pay as you use model.

By combining the power of BI with the flexibility of cloud computing, a revolutionary concept cloud BI has emerged, which involves delivering BI solutions as a service over cloud architecture at a much lower cost and with greater flexibility than traditional onsite BI solutions.

As this system is cost-effective for SMEs and does not require trained personnel, cloud BI solutions are becoming more popular among SMEs. The advantages and challenges of using cloud BI solutions by a SME are discussed below.

Advantages of Cloud BI

Lower Cost- Users only pay for what you need in BI on the cloud, which lowers the total cost of your BI system by reducing overhead resources. The cloud also lowers the cost of maintenance and administration.

Flexibility-Employees can access data and services from anywhere using their devices in cloud computing. Businesses can use the public cloud with a hybrid cloud solution as and when demand spikes.

Easy to implement - The cloud business intelligence model is faster to implement than traditional BI tools because it does not require additional hardware or software installations. It is also convenient for users to set up, operate, and navigate. This also means additional cost savings as a result of fewer resources or less involvement from the in-house IT team.

Agility -Many SMEs are now benefiting from the cloud BI's agility and accessibility in providing relevant information. Because cloud BI applications are accessible from any web browser or mobile device, end users can gain easier access to the system. The cloud infrastructure's scalability also allows multiple users to access the system at the same time without affecting the system's speed or performance.

Challenges in implementing Cloud BI solutions

Problem of transferring data to cloud - Moving a large amount of data over the internet in a reasonable amount of time will be difficult for an organisation. Moving data will take a long time if the network is slow. Because the organisation may be concerned about the confidentiality of its data, the process of moving data must be more secure.

Data Security - Concerns about data security, including confidentiality, integrity, and availability, is primary to the cloud. Concerns about security may be a factor in some

organisations. Nonetheless, as it is expected that as more organisations migrate to the Cloud, the worries will fade. In quite a instances, cloud providers provide a more secure atmosphere than what is currently available on the client's premises.

Vendor Maturity - Because there are numerous cloud BI providers with varied offerings, it can be difficult to select the appropriate vendor based on desired user requirements and vendor capabilities.

Integration with on premise data – Integrating data on the premises with cloud components is difficult because it still exists in silos and requires access to data behind the firewall.

CONCLUSION

BI is a futuristic tool that gathers all relevant data in one place, allowing a clear indication of the trend of organisational performance to be visualised. This enables a company to make critical business decisions while staying one step ahead of its competitors. Despite all its positive aspects, BI is not widely used by SMEs due to its implementation cost and lack of skilled personnel to manage such systems. To address this issue and increase BI adoption among SMEs, BI solution developers are now focusing on providing the same solution via a cloud-based platform. Cloud BI solutions have been designed with scalability, ease of implementation, and affordability in mind. Keeping aside the challenges in its implementation, this will indeed prove to be a boon for SMEs and support them in their endeavour for economic and development.

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