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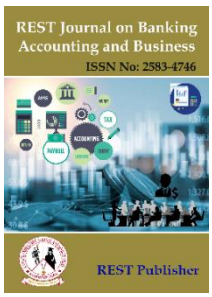

Business Intelligence in E-Commerce

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Abstract: *Now a days online shopping has become popular and E-commerce are a usual concept. However, companies still have little knowledge about their customers. It is important to merge e-commerce with business intelligence, because this would enable to obtain knowledge about e-commerce platforms, customers, discovering purchasing patterns, better financial performance and so on. Now a days it became more important to know the need and preference of customers and provide the required products to them. This paper provides a review on how business intelligence helps in the development of E-commerce and helps the businessmen to take decisions about their products.*
Keywords: *Business intelligence system, consumer satisfaction, Decision making.*

1. INTRODUCTION

In the previous years, there has been a massive increase in the use of the Internet by users around the world. Today, it became a necessity to assign value to the big amount of data present in the world and to create information from the data to help in decision making. With the presence of tough competition, it became crucial for the companies to come up with new ideas and better decision making to make them unique from others. Business Intelligence helps to gather information from these large amounts of data and analyze it to provide knowledge to the organization. Due to the increased use of the Internet, there has been an increase in electronic commerce, opening their distribution channels to direct online sales. Although e commerce technologies may be available hypothetically in all industries and organizations, an efficient usage of e commerce is closely related to online procurement and better customer relationship management. Due to this growth, it has become vital for organizations to respond to user requirements and to improve their understanding on their customers' profiles. The combination of these two technologies (Business Intelligence and ecommerce) helps companies to know their customer's behavior, patterns of buying and market trends, consumer preference and greater control over stock management. The combination of these concepts solves the problem of several organizations that have electronic commerce, which enable them to become more competitive and increase their market share. This paper presents a literature review which merges business intelligence with e-commerce.

2. LITERATURE REVIEW

Research conducted by Lestari (2018) shows that there is a significant effect of web e-commerce, product quality and service quality on customer satisfaction 22 . E-commerce also causes business globalization at a relatively low cost and can increase effectiveness and efficiency in the internal and external environment, and can increase competitiveness (Ferreira et al., 2017;Mahajan and Agarwal, 2015).

Business Intelligence and E-commerce:

Business Intelligence (BI) is defined as a set of techniques and tools which transforms raw data into meaningful information in order to analyze the business. Business intelligence helps in better decision making.
BI tools have three key capabilities:

1. relevant access to information
2. analytics
3. reporting capability.

It is, therefore, necessary to define the vision, strategy, the goals and targets for the success of the BI system and to explain the key performance indicators in order to allow real-time performance management.
The following activities are associated with BI systems:

- Prepare forecasts based on historical and current organization information
- Create alternative scenarios
- Respond to issues that are not pre-defined through ad-hoc query to data
- Knowledge of the organization in detail.

Business intelligence has been expanding very quickly in recent years and is expected to continue to expand at a significant increase in growth. There are several types of e-commerce, the most important of which are the following: Business to Business (B2B), Business to Consumer (B2C), Consumer to Consumer (C2C) and mobile-Commerce (m-Commerce).

Business to Business (B2B) describes business transactions between companies. Business to Consumer (B2C) describes the business activities carried out between the producing company, the seller or service provider and the final consumer. Consumer to Consumer (C2C) consists of trading between two individuals, usually established through an intermediary such as the popular 'eBay' e-commerce website. M-Commerce is to establish a business transaction with the use of a mobile device.

Objectives:

- E-commerce and Business Intelligence help owners to know how to predict consumer behavior, identify market trends, find consumption patterns, define consumer targeted marketing campaigns, among others.
- The combination of these two technologies presents challenges such as high costs of implementation, support and maintenance.
- In order to address problems related to poorly defined focus on e-commerce implementation, performance indicators should be created to assist in solving organizational problems and improve their processes, such as total number of visits, pages visited and time on the site per user, top selling products; quantity in stock; percentage of deliveries on time.
- Business Intelligence for e-commerce at the level of the company-client relationship has great advantages because it leads to a better management of the relationship with customers.

Benefits of Business Intelligence in eCommerce:

1.**Accurate Decision-Making:** Business intelligence provides you with accurate and real-time information to make better decisions. The data presented to users is accurate, but it's also obtained through different sources.

2.Streamlined Business Operations: When you use eCommerce business intelligence tools, you will improve your company's efficiency, supply chain, and productivity. Business intelligence software helps organizations streamline their operations and become more efficient by providing real-time data.

3.Improved Business Processes: Business intelligence offers a variety of tools that help companies streamline their processes from start to finish. These include dashboards, operational reports, and alerts – each tool contributes to improved business processes that lead to better results. For example, having operational reports can help managers monitor their daily tasks to ensure things are being done the right way every time.

4. Reduced Risk of Fraud: Business intelligence also helps businesses reduce the risk of fraud because it provides accurate data that's important for reporting and tracking purposes. BI software can integrate various information streams to give you a complete picture of your business' performance instead of just getting isolated bits of information from each database in your system. With this kind of visibility, fraudulent activities are easily detected. As a result, organizations can make better decisions when dealing with suspicious activity in their company by knowing which account or transaction is affected before allowing further actions regarding business operations.

5. Improved Productivity: It's possible to use business intelligence and data analytics to improve your company's productivity. For example, with BI software, you can monitor all daily activities in real-time so that managers can make the best decisions when it comes to improving their company's sales performance. On the other hand, business analytics is used for predictive analytics .

6.Better Customer Experience: Business intelligence also contributes to positive user experiences because it allows organizations to stay competitive by sharing information with customers like online retailers through social media channels or eCommerce websites.

7. Better Management: Most importantly, business intelligence gives companies better management because it helps them monitor daily operations in real-time. This way, managers can make faster decisions using accurate data from various sources inside their organization instead of relying on outdated reports or regular assumptions.

8.Gaining Competitive Advantages: Business intelligence in eCommerce is a huge plus for businesses looking into different marketing strategies to gain competitive advantages.

The Future of business Intelligence:

BI is already helping e-commerce businesses make strategic business decisions faster. However, as technology continues to evolve, what can businesses expect Machine Learning and AI will allow BI software to become increasingly self-sufficient in the coming years. Other trends e-commerce companies should be on the lookout for include increased collaboration, integration, data usage, and the ability to store far more data than ever before using cloud-based storage solutions.

Functions of BI in E-commerce:

1. Reporting: The process of gathering data and using tools to extract relevant insights and business trends.

2. OLAP: Online Analytics Processing is a powerful technology used for complex calculations and predictive forecasting.

3. Analytics: The process of collecting and sorting both current and historical raw data to deliver insights about the business and future opportunities.

4. Data mining: The collection and processing of data (often from multiple sources) to find and analyze patterns in data from several databases.

5. Benchmarking: The process of comparing data metrics to industry standards. It is often used to compare costs, time, and quality between different companies and departments within the same industry.

4. CONCLUSION

In the modern-day business environment, when the sustainability of the competitive advantage is a moving target, the need for rational decision-making is increasing leaving lesser room for intuition [8]. In the era of big data, there is a need of employing high-performance and highly scalable systems to deal with the enormous datasets. Business intelligence systems are completely necessary for any organization to remain ahead of their rivals. By not implementing BI systems, the company remains handicapped and will lose out on huge business opportunities and future investments. This paper gives the current scope of business intelligence in organizations and tries to shed light on the importance of BI systems in the business operations of an organization

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