THE IMPACT OF BIG DATA ANALYTIC ON EFFECTIVE MARKETING STRATEGIES IN EDUCATION BUSINESS – A PRELIMINARY STUDY

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ABSTRACT

The study aims to investigate the impact of big data analytic on the marketing strategies involving promoting education business. The study also aims to prevail the emotions involve in devising marketing strategies using big data analytic. The study adopts qualitative approach as to investigate in depth on the how the impact on planning the market strategies as perceived by the management team of the education industry. In this study sampling will be drawn using non-probability sampling which adopts case study on one company that runs eleven colleges and one University College. The study will focus only on undergraduate students. The study also examines the effect of competitive intelligence as the mediating variable in this study. The study expect a positive impact of big data analytic on the marketing strategies adopted by the colleges and university and how the manipulation of the big data benefited the colleges and university in devising their marketing strategies aiming at more students recruitments which then can be translated into sales volumes and firms performance.

Keywords: Big Data, Big Data analytic, Marketing Strategies, Competitive Intelligence, Firm Performance.

INTRODUCTION

This study investigates the impact of big data analytic on marketing education business. The explosion of information and data has expedited the speed of information in the existing information and technology era that benefited the industries. The education industry is not left behind as the competitiveness and their sustainability in business is much depended on how fast they can retrieve data. Retrieving relevance data and information would enable them to develop marketing strategy that exploit the big data available either via cloud or organizations that have big database such as data from ministry of education and colleges that considered being the feeder of potential customer Manju, Shazia and Sadia, (2017).

According to Katal, Wazid and Goudar (2013), Big Data can be defined as a massive volume of structured and unstructured data. As the data are huge, processing them manually would be almost impossible. Therefore, Cloud Computing can be used to perform a desired computation on big data using a remote server. The remote server has been configured and control by a subscriber. The use of subscriber's local desktop PC or tablet is no longer suitable. Thus education business operator has to subscribe the leading commercial cloud computing provider's which includes : Amazon EC2, Microsoft Azure, and Google Compute Engine (still in beta) AWS (2012) with a service charge as low as $0.10 per CPU-hour as a rental for MIPS (Million Instructions Per Second), memory, disk space and other services.

According to Demchenko (2013), big data technologies process high variety, volume and velocity in extracting data value as well as ensuring high-veracity of AA original data. Data increased by day, for example Google manages 2 million searching queries, 277,000 tweets, 100 million emails and some 350 GB data processing on Facebook per minute Manju (2017). The advancement in data increments leads to a big data availability and the advancement in big data sensing which enable end user to retrieve them for beneficial purposes. Computer technology revolutions change the way remote data being collected, processed, analyzed and managed. These processes can be managed effectively .

Normally, Big Data are generated via online transaction, email, how many clicks, posts, logs, social network data, video/audio, scientific data, remote access sensory data, mobile phones, and their applications Manju (2017).

Cloud service providers such as Cloud-Watch, Azure-Watch, Nimsoft, and Nimbus delivered cloud monitoring services as part of the Infrastructure as in a Service (IaaS) model by Kiran (2018). These services can be launched within an integrated cloud management console. However, to some extent, these services devour some limitation to handle analysis on workload forecast and pattern matching which is beyond the simple built-in aggregation.
NESSI White Paper (2012) revealed that a remarkable result could be seen by using big data analytics in field of education systems. Data available on student's online behavior will offer educators an important insight, such as student needs on institution attention, class understanding and the needs to enhance course module. Big data also offer the opportunity to track potential students to be target for enrolment, which will secure the numbers needed for break event and profit.

A mediator, competitive intelligence (CI) is adopted to study to what extent competitive intelligence enhance the marketing strategies in education business that geared to enhancing marketing strategies to track the potential clients to enroll to the education providers as student. The independent variable in this study is the use of big data analytic and the dependent variable is the marketing strategies adopted by the company.

LITERATURE REVIEW

BIG DATA

According to Muhammad Iqbal (2018), big data describes the huge volumes of high velocity, complex and variable data, which need sophisticated methods and technologies for data management and analytics. The core features of big data can be characterized by volume, velocity, low veracity and high value by Muhammad Iqbal (2018). Today large volumes of data are generated from multiple sources. The size of data is expanding in an exponential trend and the growth comes with new challenges and opportunities to businesses. Big Data refers to a massive volume of both structured and unstructured data Muhammad Iqbal (2018)

Muhammad Iqbal (2018) characterized the core features of big data by 3V; Volume, Velocity and Variety. Volume means the fast growing amount of data available is fast growing form megabyte to petabyte and as Kune . Konugurthi, Agarwal, Chillarige and Buyya (2016). Quoting the IDC report, the growth is expected to reach zettabyte by the year 2020 resulting in a huge number of large companies with petabytes of data in their storage, which is very much helpful in revolutionizing and enhancing decision-making process. It also expedites the decision making process as data are easily available and attainable.

Large volumes of data are being generated persistently from multiple sources, such as Smart phones, Social Network Sites (SNS), Product codes, logs, sensors etc. McAfee (2012) reported that approximately 2.5 Exabyte were generated each day in year 2012.

The term velocity refers to the speed with which data are being created, and in order to extract useful information, it should be processed quickly. For example, Walmart generates more than 2.5 PB of incoming transaction data every hour from its customers. YouTube, Google and Facebook are other good examples that accept large incoming flow of data and at the same time process it fast. Beaver (2010) reported that Facebook processes up to one million photographs per second.

Big Data are being produced from humans or by machines and in multiple formats (e.g., text, videos, audio, comments, logs). Big data consist of structured and unstructured data, public or private, local or distant, shared or confidential, complete or incomplete, etc. Simply, variety is all about the ability of system to classify the incoming data into various categories Ahmed (2017).

At present, Big Data technologies are helping companies to boost their production efficiency by mining useful information from large dataset. To be more explicit, big data applications can be seen in different domains.

COMPETITIVE INTELLIGENCE

Competitive intelligence (CI) can be defined as the gathering of publicly available information regarding competitors, which can be used to gain competitive advantage in business. The objectives of competitive intelligence are to discern potential business risks and opportunities as well as to enable faster reaction about competitors' actions and events.

Publicly-available information means information which can be legally obtained and the sources include company directories, legal filings and documentation from government agencies and regulatory bodies.

Liebowitz (2006) stated that organization's intelligence refers to collective value added advantages obtained from knowledge from the employees, management, stakeholders, and customers. In developing intelligence, knowledge and experience must be together. Thus, competitive intelligence as a product is when intelligence assists decision makers to formulate business strategies and make choices Adidam (2012).

Fleisher (2005) define competitive intelligence as an evolving process which involves discovering, analysing and using intelligence regarding the competitor's business environment from every source of information available which translates into usable knowledge on a continuous basis.

Staruss & Du Toit (2010) defined competitive intelligence as an ongoing, systematic evaluation of the external environment for opportunities, threats and developments that could have an impact on the organization and influence reactive decision-making.

Strategic and Competitive Intelligence Professionals (2012) defined competitive intelligence as an ethical business discipline for decision making based on understanding the competitive environment.

From the above definitions of competitive intelligence, it can be summarized that competitive intelligence is the process and also product which can be applied by an organization to gather information about business stakeholders and competitors and the competitive environment which can be utilized in the planning and decision-making practices to improve organization's performance. Competitive intelligence links signals, events, perceptions and data into noticeable patterns and trends on competitive environments. Intelligence such as artificial intelligence, business intelligence, competitor intelligence, technology intelligence and strategic intelligence can be related to each other and sometimes overlapping in definitions Ainul (2015).

Ainul (2015) found the importance of competitive intelligence in sustaining awareness of own industry and competitors Adidam (2012) , identifying competitors' area of weaknesses Calof & Wright (2008) , evaluating organization's own actions on competitive feedback and vice versa Wadie (2011) enhance competitive activities such as merger and acquisition Fuld (2010), enhance marketing plan activities such as developing new product Adidam (2012), to be alert and responsive on regulatory issues Fleisher & Wright (2009) and improve innovative performance

METHODOLOGY

This study adopts qualitative method, which involves interviews, observation and analysis of documents in data collection procedures. The reasons to choose qualitative design is to collect data that can only be retrieved through in-depth interview as survey, especially a cross sectional survey, will not be able to address certain aspects.

Therefore, the researcher choose qualitative interviews to obtain data that cannot be obtained through survey. Data that involve emotional prevailing will need an in-depth analysis through personal interviews. Thus, those reasons justified the choice of qualitative design.

CONCLUSION

Big data analytics involves the process of using software to uncover trends, patterns, correlations, or other useful insights the data. Currently in Malaysia digital scenario, big data has become essentials in Multi National Companies (MNC) in strategic and comprehensive decision making. Malaysian Education business owner needs to explore and gives serious consideration to start big data information pool so that they could design the strategies effectively with the help of Competitive Intelligent (CI) which process the data efficiently.

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