Business analytics a tool to business experimentation- Issues and challenges

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Abstract

Business analytics is a repetitive practice and methodical exploration of an organization's data with emphasis on statistical analysis. Business analytics is used by companies committed to data driven decision making. This paper tries to establish a relationship between business analytical tools and business experiments. It tries to explore whether firms or organizations which use data for decision-making innovate successful business operations. Using detailed survey data available on various online search engines I have concluded that yes, business analytics and its analytical tools lead to a successful business experiments. Also there is a relationship between data based decision making and other performance measures of a firm.

Key words: Business analytical tools, Business experiments, Data – based decision making, Business operations, Performance measures.

1. Introduction

Business analytics (**BA**) refers to the skills, technologies, practices for continuous iterative exploration and investigation of past business performance to gain insight and drive business planning (Beller, Michael J.; Alan Barnet, 2009).

1.1 What is business analytics?

Today's era can be called as a dynamic era where trends change every now and then. It could be possible that methods and procedures we are adopting today for our work may not fit the business environment tomorrow therefore arises the need for business analytics in any organization whether working For profit motive or for not-for profit motive. Enterprises and corporations whether national or multinational, are flooded with huge information on every aspect of their business yet lack the proper tools and technique, process and methods, and brain for using it or in other words you can say talent is lacking in them which can aptly utilize those information for better performance. In any organization or you can say in every organization information is collected about their important aspects such as – process, employees, customers, competitors, supply chain, prevalent law relating to their particular area and many more. It is after this process that the problem starts - information is collected but is not properly analyzed, well-reported but not well-understood. What organizations do is that they make assumptions on their own rather than taking an action or without acting on them they make guesses. Consequently, a state of confusion prevails therein and opportunities for improving the performance and efficiency often remain unnoticed. The term analytical performance management/ business analytics describes the systematic use of

analytical tools to identify, use and prove Quantitative relationships among the factors, inputs, process and the results to support business worth creation in the long time period. As a result of which, analytical performance management/ business analytics deals with the use of these analytical tools and delivers crucial information to arrive at decisions and actions within the framework (Davenport and Harris. 2007).

Obviously, there are exceptions. Smart organizations or you can say updated organizations always try to make the most of the information in hand. But recent technological changes or in other words dynamic environment and its tie up with the latest technology has opened up new doors to the organizations and provided them the ability to manage the huge amount of data and to take the relevant data out of them and later taking or making the best use of it to suit our needs. And in this whole process of collecting the data, mining the data, drawing meaningful conclusions from that data they have redefined the term SMART organization. Dynamic competitors recognize the new opportunities and align them with their capabilities and put them to work. They simply do not collect the information and report it rather they leverage it using Business Analytics. Example of potential use of analytics in various fields include the following.

In plan- Analyzing the data to forecast the market trends of products and services; now, these are often being practiced in the form of monthly and yearly reports by marketing and finance departments (Azvine B., Nauck D. and cui Z. 2005). In making- Estimating correct production of each inventory item not in terms of time only but also in terms of each production belt and time (Ranjan J. 2008).
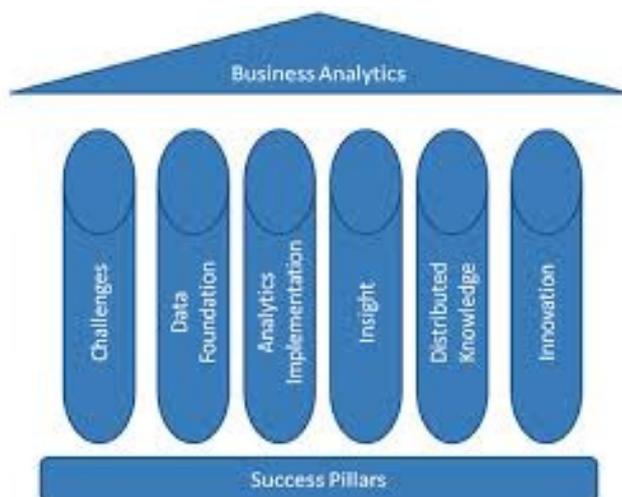

Figure 1: Mechanism of business analytics (www.realityweb.com).

1.**2 Origin of business analytics**

Analytics in business came into existence when Fredrick Winslow Taylor presented the management exercises in the late 19th century. Henry ford calculated the time for each activity in his newly formed assembly line. But analytics came into limelight in the 1960s when computers were used in the organizations for decision-making, other purposes. Since then launched various programs on analytics such as- enterprise resource planning, data warehouse etc (Davenport, Thomas H.; Harris, Jeanne G.2007).

1.3 How it works

Business analytics uses various statistical analytical tools. It depends on huge volume of high quality data. Great care is to be taken while choosing the correct data. Data should be integrated and rechecked through various systems before selecting them for the purpose (Davenport, Thomas H.; Harris, Jeanne G.2007).

1.4 Advantages of using business analytics within the organization

1. Errors within the organization can be known quickly.
2. New strategies of one's competition are noticed immediately.
3. Services improve dramatically which could lead to higher conversion rate and extra revenue for the organization.
4. Fraud can be detected at the moment it takes place and proper actions could be undertaken to limit the damage.
5. Last but not the least it is cost saving in the long run.

1.5 Disadvantages of using business analytics

➢ Main drawback of business analytics is the use of special computer knowledge this is the reason why most of organization hesitate to implement it.
➢ Using business analytics insights need a different way of working within the organization, which poses problem to the organization.

2. Objectives of the study

1. Finding an answer to the question that do analytics support business experiments?
2. In case business analytics supports business experiments then in what way.

2.1 Scope of the study

This study covers those organizations and firms which employ business analytics in their decision making process. (Sample is deemed as representation of the whole population).

3. Methodology of the study

The proposed study is descriptive in nature. Secondary data has been used during the study. Data has been collected from the available literatures such as journals, published materials and research articles.

3.1 Finding and analysis

According to one estimate, businesses collected more information in 2010 than in all previous years combined. This enormous flood of data provides companies with huge opportunities to enhance their market share and profit- if they know how to utilize it properly. Analytics involves investigating past data which is a complicated task, not everybody's cup of tea. Few firms have the expertise, technology and resources to implement such analytics program successfully. But in reality most of such firms are unable to interpret the results accurately whatever the reason. To that respect, managers could use old age technique of test and learn which is easy to implement and to interpret also it provides much reliable results. Test and

learn approach states take one action with one group of customers and take a different action with another and then compare the results- outcome would be simple to analyze, data could be easily interpreted and probability is usually clear. Business analytics and experimentation is all about testing the customer response. If response is favorable then it is adopted otherwise rejected and reason for the failure of an experiment is analyzed so that further modifications could be done. Running a business experiment requires two things- control group and a feedback mechanism. Experiments should be simple and short term focusing on an individual starting with a proof-of-concept test and when results come in, stratify the data and measure everything of relevance and interpret the results and go on keeping the fact in mind that the goal of any experiment is not to conduct a successful experiment rather to make a better and improved decision. Today many organizations are recognizing the fact that to maximize the worth of information stored in their ERP system, it is necessary to elaborate the ERP framework to include more advanced reporting, analytical anddecision support capability (Fotache D., Hurbean L., 2004).

3.2 How do firms/ organizations decide to launch their new products or services?

Earlier firms/ organizations rely on a leader's innovation or managerial decision for such work but now-a-days due to a revolution in the business world, many news processes and tool and techniques have emerged which facilitate a more scientific and logical decision making. Firms are adopting modern concepts like data- based decision making, business analytical tools, business intelligence techniques to enhance their efficiency, maximize their productivity and the profitability. Data is collected covering all the crucial aspects of the organization which could have a significant impact on the performance of the enterprise in any way. For instance data is collected on aspects like- employees, customers, suppliers, customers, partners, competitors etc. this has become a vibrant trend now-a-days, due to opening-up of new enterprise information technology such as enterprise resource planning (ERP), customer relationship management (CRM) and supply chain management (SCM) systems (ARAL et al 2006; MC AFEE 2002) which gather and process a huge quantity of data as a part of their day-to-day working. These systems make use of their analytical capabilities to arrive at a decision, often it is supported by the business intelligence systems that broadens the scope of data analytical tools to be applied to the operational data.
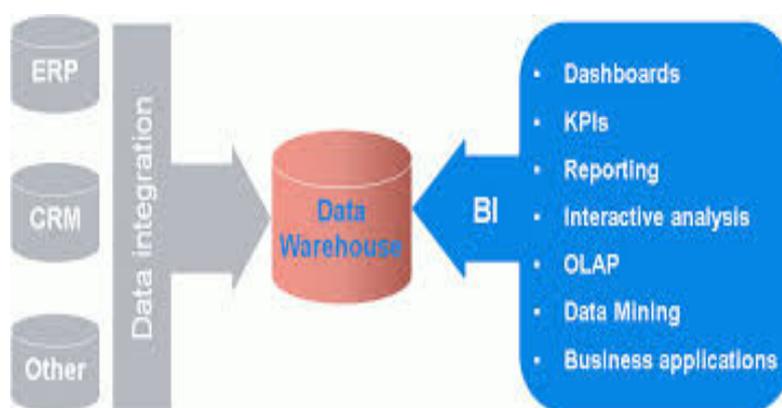

Figure 2: Tools of business analytics (www.ibagroupit.com).

Now-a-days, smart organizations/ leading organizations are resorting to conducting customer experiments, process experiments and other business experiments to test the viability and feasibility of their proposed projects, processes and to develop and test new products rather

than just passively collecting the data and statistics easily available. For instance-Capital one financial launched a strategy of "test and learn" in the credit card industry where large number of potential card offers were field tested on randomized trial basis to find the customer acceptance and customer profitability (Clemons and Thatcher 1998). Some leading online organizations such as e-bay, Google and Amazon firmly believe on field experiments as an integral part of their system for innovation, making use of the high visibility and high volume of online customer interaction to innovate or to improve the product or the pricing policy. This trend of experimentation has diffused to other info-oriented industries also such as retail financial services (Toronto-dominion bank, PNC), retail (food lion, famous footwear) and services (subway).

4. Conclusion

By analyzing the data collected I've concluded that analytics do support business experiments if carried out in proper and systematic way .they support business in many crucial areas such as a firm could decide whether to launch a new product or to innovate the existing one, whether to make a change in the pricing policy or to change the packaging to generate more and more profits ,it would also help in capturing a large market share, will be ahead of competitors and updated about the recent market trends which will reap us many fruits. But running a successful business experiment is not an easy task it requires a sound control system or group and feedback mechanism. As analysts estimate, business intelligence will continue to grow especially into the mid-market (Cojocaru S. 2005).

Figure 3: How it is implemented/how business analytics works
(www.paradeymemanagement.com).

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