Past, Present and Future of Business Analytics – A Review

Author Detail: (1) Imran Ahmad Rana, Ph. D Scholar, Superior University, Lahore (2) Ch. Abdul Rehman CEO-Superior University, Lahore- Pakistan.

Abstract:
The competitive corporate environment is forcing entities to adopt new methods of work control and mechanization that ensure effectiveness. These methods of business mechanization through computer applications are known today as business analytics. Analytics portfolios help organizations to better identify and meet customers’ needs while mitigating risks of managing business for better. These techniques lower the cost incurred on producing products/delivering services as well as maximize output. This study elaborates on techniques being used, their advantages and gaps therein in order to make businesses even better. The information collected is processed through Business Analytics (BA) tools to better depict results. This analysis helps in managing and anticipating the results of different problems including business outcomes. BA tools provide a better way to manage the whole business which leads to higher outcomes in terms of business growth. Purpose of the study is firstly to thoroughly understand the very concept of Business Analytics (BA) and then propose a theory based on my research and understanding of the term as to how Business Analytics (BA) lead to greater competitive advantage of the organizations.

Keywords: business analytics, decision making, performance measure, decision support, system

1. Introduction;
In the past few decades, with the growth in information and technology the business arena has experienced some remarkable developments in the field of Information System (IS) research in business organization. The review shows that the gains of information systems are moving from developed world to developing countries due to ever-growing competition in the market place, organizations have been trying to obtain competitive advantage against their competitors so that not only they could survive in the market place but also enhance productivity of their businesses (Dedrick Jason et.al 2013). World Bank Survey report 2005 reveals that firms in low-middle income countries using IT systems have faster sales and more productivity than their counterparts without it. Another World Bank study conducted in India found that IT endeavors have been helpful in visibly minimizing the corruption in government sectors through e-governments projects. Organizations in developing markets have been found investing resources in Information System to come up with innovative concepts, business strategies that facilitate on lowering risks while ensuring competitive advantage over their competitors (Otim Samual et.al 2012, Elsadig Musa Ahmed et.al 2013). One such innovative concept developed in the field of Information System (IS) is Business Analytics (BA) which generally uses the readily available business information and data and provide profitable decision making, hence leading to greater competitive advantage in the market place. However, in order to understand better how Business Analytics (BA) has led organizations to create a competitive advantage, it is important first to understand very concept of Business Analytics (BA). In this regard, Harjot Singh & Rajeev Sharma (2010) presents a comprehensive overview of the concept of Business Analytics (BA) and how did it evolve in the business arena.

Business Analytics (BA) research is still in progress, Harjot Singh & Rajeev Sharma (2010) has defined Business Analytics (BA) as a process through which readily available business information and data is analyzed and scrutinized to develop effective business strategies that could be used in making healthy decisions. In this regard, the data to be analyzed comes from a mix of both internal as well as external factors where internal data often involve information retrieved from the integrated databases and data warehouses whereas external
data comprises of the data and information from the web and outside environment. They further argued that Business Analytics (BA) enables organizations to analyze large amount of internal and external data on a regular basis through sophisticated analytical frameworks like data mining and online analytical processes, to come up with value adding decisions.

Devlin (2013) has defined business analytics as “the process of developing optimal or realistic recommendations for real-time, operational decisions based on insights derived through the application of statistical models and analysis against existing and/or simulated future data, and applying these recommendations in real-time interactions”. Devlin has summed up necessary components that were required to increase the business outcome for the advantage of corporate wellbeing stating that “operational analytics applies to organizations of all sizes in all industries along the entire length of supply chain. Understanding customers’ behavior and optimizing their experiences and related profitability are important regardless customer base. This also facilitate on improvements to suppliers and partners interaction.”

Analytics the new shape of information systems are gradually becoming the culture of every organization with their simplicity, easy use and larger outcome. IBM study (2011) reveals with business analytics organization “lead their peers with 33 percent higher revenue growth, 12 times more profit growth, and 32 percent higher return on invested capital. Organizations that have well-established analytics capabilities are more likely to be outperforming and sense customers opportunities uniquely than their peers do. (Roberts Nicholas et.al 2012)

For better decisions professionals have been found relying on accessible information portfolios, Singh and Sharma argue that with the ever-growing competition in the market place, it became pertinent for business entities to acquire related information from data warehouses, integrate, information to make better decisions. Organizations were doing this through Enterprise Resource Planning (ERP) systems which helped them not only to collect important information from data warehouses but also on information integration. The major weakness found in this way was not having an active load testing environment this has resulted in limited the scope of ERP in business organizations. Thus, organizations started searching for alternative decision support systems which could provide an extensive and reliable decision support. The advancement in analytical processing tools such as data mining, analyzing integrated information have become easier likewise information and reporting have become efficient. Now, data from other information resources like web, industry/compliance reports, research papers have also been effectively utilized by the organizations. (Sharma and Singh, 2010)

Business analytics contribute in making the business better from the start of collecting and marinating of data to provide possible outcomes of taking any decision. Through these analytics organizations are moving from descriptive to prescriptive phase which is offering bulk of opportunities just a click apart. Dittmar, Park, Rydell et al (2010) seems right that new invented technology has taken the analytics to a new level where it is easier now to maintain and record the possible solutions for even a globally spread company’s operation. These analytics are being adopted in every type of business and are quite helpful for making and maintain huge profits but here the daunting challenge is talent development.

2. Background of Study:

Entrepreneurs and professionals across the developed and developing world are facing challenges on how they can access the information hidden under piles of datasets, report and feedback from several stakeholders. Researcher argued business users also face challenges like reduction in time required for data collection and analysis as well as there is also a growing concern on trust on a third party for data management tasks. (Kohavi, Rothleder & Simoudis, 2002)
The study will be suggesting that in order to effectively use business analytics in corporate arena realistic goals needs to be set. The authors argue that the utility of business analytics can be achieved by having definite goals which are required to be gotten with the help of the entire phenomena of analytics. The authors further argue that business analytics can be effectively used if the wider implications of the business processes are considered for the purposes of analytics. In other words it can be argued that the article is emphasizing on the importance of quantitative analysis. Such approach will enhance the efficiency of business analytics in order to yield the desired results. (Kohavi, Rothleder & Simoudis, 2002)

The use of business analytics should be spread to all functions and users of a business background. Devlin and Kohavi et. al propose that there is a dire need to increase the use of business analytics in various ways. One such ways proposed is that the base language of the business analytics needs to be made flexible which is a valid and useful point in terms of business analytics as it will increase the applicability and will make it easy for the business users.

The study will be also discussing integration of data so that an effective analytics could be carried out. The authors argue that the most important point in the field of business analytics is that the requirements of the business users must be considered like methods of using the analytics tools, accessibility and understanding to a business user. The authors claim in the conclusion the changing parts of business analytics will not cause any problem in terms of efficiency and results as long as it is done to make it more user friendly to the businessman. (Kohavi, Rothleder, and Simoudis, 2002)

As the Business Analytics field is yet in its infancy so users and professionals should first know the past developments, current states and arising needs of future. The papers analyzed in the secondary research provide implications on leading benefits accrued and help verify the claims of several vendors in a more effective way. The part is mandatory before going into the practical field. The study will help formulating questions that may arise in the arena of business analytics. Formulating these questions is the main part for conducting a primary research and these review articles are necessary to mention. The primary research in any novice field may lead to diminishing, inaccurate results which may lead to developing wrong theories and supporting inadequately set hypothesis. This type of secondary research will help new and experienced researchers to formulate their research objectives on the factual past work grounds rather than first wasting time in working on what should be researched.

3. Research Methodology and Literature Analysis:

For the purpose of literature review, we mainly focused on Google scholar papers, online libraries including of Lahore University of Management (LUMS). The other sources which were deployed Ethos Open Library, LexisNexis Academic and Information technology journals. For the purpose, abstracts of approximately 250 articles, papers and research reports were reviewed. At Initial screening stage 160 articles were dropped because these were not supporting research objectives of this study. Then the research was further narrowed to around 45 articles with the good academic standing which provides a clear glimpse of research background. These articles have covered and analyzed the relevant fields of business analytics and they have deeply covered maximum aspect of this field. These articles start from explanation of the concept of business analytics to its historical development to current implementation state offering possible solutions for making better businesses. Then categorization of these papers was carried out according to the relevancy of the specific field of study in business analytics.

It has been further noted that for the purpose of this research a set of 37 publications, discussing the concept of decision processes either explicitly or implicitly, was extracted from a total of described databases which was then finally analyzed and scrutinized with regard to the research framework.
Furthermore, it has been mentioned that the results from the literature review clearly revealed that the decision support technologies like business intelligence and analytics have a positive impact on the decision making processes of the organizations which not only encourages organizations to integrate business intelligence systems with the decision processes systems but also pave a way for future research on the matter for achieving greater effectiveness. (Kowalczyk, Buxmann and Besier, 2013)

3.1 Past Research Classification:

For the purpose of literature analysis, the articles used in this research have been categorized in two groups.

Table 01: Research Classification

<table>
<thead>
<tr>
<th>Part 1</th>
<th>Part 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>- BA field description, how it is being approached</td>
<td>- BA usage</td>
</tr>
<tr>
<td>- BA Techniques to enhance productivity</td>
<td>- Decision process and benefits of BA</td>
</tr>
<tr>
<td>- Steps for implementing BA</td>
<td>- Problems in BA project implementation</td>
</tr>
<tr>
<td></td>
<td>- why implement BA tools / techniques in businesses</td>
</tr>
</tbody>
</table>

Majority of articles found fitting in both of above groups because they have covered areas from both sections. Moreover, both groups of articles are extremely important for the study and good understanding of the concept business analytics.

**Part 1 - Business Analytics Concepts and Techniques:**

Kowalczyk, Buxmann et. all reflect on the importance of decision support systems research on the effectiveness of Business Intelligence and Analytics (BI&A) technologies. It has been argued that in the past few years Business Intelligence has transformed into Analytics gaining notable consideration in the businesses as well as among the researchers due to value-creating cases which have reportedly led organizations to much improved decision making. The current state is owing to the field of business intelligence which have contributed a lot to the field. So, it has been argued that in order to achieve proper utilization of the Business Intelligence and Analytics (BI&A) technologies it is highly pertinent that need to be integrated with organizational decision support or risk aversion processes. Kowalczyk, Buxmann and Besier have used a good approach by explaining about the businesses which do not use business analytics operations. Business analytics have developed statistical tools for forecasting about the events which may occur. This forecasting is done through data that has been collected. These techniques provide solutions to everyday business problems irrespective of problem magnitude in any industry. The techniques help to improve performance of any business and make the growth of business sustainable. Planning, innovation and lowering the risks are also some added advantages of business analytics which creates innovations in business world and helps to improve and modify deciding powers through statistical simulations. (Hardoon, 2013)

Data is collected through different modes from customer transactions, documents and emails etc. The data at this stage is merely raw data and it needs to be processed. To achieve objectives data is processed, simulated which is transformed into information to facilitate users. The techniques help to create intelligence in a running process or system which is then used for prediction. (Hardoon, 2013)
Kohavi, Rothleder et. al (2002) discuss that techniques has helped in finding the specific similarities and patterns exist in the data. Here authors emphasize on the need for better and efficient integration of transactional systems with the analytics tools in order to achieve the desired results and in order to improve the business using the data collected by the analytics tools.

White Paper ‘Business Analytics and Path to Better Decisions’ discusses emerging trend associated with Business Analytics which was the adoption of pre-built business analytical applications by the organizations.

Devlin extensively talked about business analytics starting from business value to technological advancements in the business world in order to create the value chain. However he pointed out these advancements are only for businesses that are aware of and know their usage. One of the vendors claim about its technology as to give accurate estimations of demand of goods manufactured while resolving issues in the whole system from placing order onto suppliers to manufacturing to selling products.

Chae and Olson (2013) elaborated on the framework to know business analytics usage for supply chain processes. They informed these technologies make businesses capable on the process optimization with prescriptive tools. They further discuss that such applications analytics can be improve planning processes in supply chain while adding value to business performance management (BPM). This function ensures monitoring, reporting and correctional functions in the companies. The authors are of the view that the supply chain analytics are not defined properly in the literature and focus needs to be shifted towards it as very less work has been done in the field of supply chain analytics.

Profits of any organizations depend on the ability to adequately optimize key events using statistical tools. In business this now has become easy by the introduction of Business Analytics. Other studies focusing on the application of business analytics in banking sector on, how analytics are helping banks to manage customer chain while providing security to the information contained. Analytics are helping banks in better understanding customer preferences while minimizing banking system risks. Today’s banking business is dependent on the investment speculations, loan default rate and withdrawals of cash. Business analytics techniques & technologies here are highly effective for the management of banking systems. (IBM Corporations 2010, Disha Budale, Dashrath Mane 2013 )

Customer care is an important component for generating more benefits and progressing of any business. According to above works businesses which have potential to increase the revenues need to have the system to better know their customers’ needs at right time. The process of transformation will not be as simple as it sounds like. To design the strategy for the purpose is the most difficult task. The strategies relying on management of data and information for customers which is really a hard task to gather and maintain.

Moreover, organizations also need to maintain data about their employees in order to have right decisions. The better and informed decisions help to maintain sustainability and gives more opportunity to control any issue that may arise. Dittmar, Park, Rydell & Wong (2010) have provided a comprehensive list of operations in which business analytics prove to be beneficial. These analytics helps to distinguish between the decisions of any organization that whether they are attaining their purpose or not.

Studies by Chae & Olson (2013), P. Trkman, et al.(2010) focus on the importance of supply chain analytics (SCA) for the success of any company. These elaborates that owing to the effect of globalization concept of supply chain management has gained much importance which has led to reallocation at a great level in order to get advantages related to plan, source, make and deliver. P. Trkman, et al.(2010) have proposed a supply chain business analytics model in order to enhance supply chain performance in an entity. They argued that it will entrust the responsibility on
professionals to watch out which processes to integrate as well as how the computation, acquisition and communication costs be reduced. Chae & Olson (2013) mention three capabilities in terms of supply chain analytics usage for company. These capabilities include; capability of supply chain analytics to monitor the entire process and analyze it for the benefit of the company. The second capability is managing the data of the various processes and functions of supply chain in an organization. The third capability is that of managing the entire performance of the supply chain at various stages of the supply chain. This work mentions that companies use this data in devising better strategies and in operating the company in an efficient manner. Authors argue that the demand and importance of developed and advanced techniques and tools in the supply chain management and operation is continuously increasing. The article mentions the results of a recent research study which has suggested that a very positive and productive link is present between the supply chain performance and the business analytics. Chae & Olson contend that no framework has been ever devised to understand the practical application and use of supply chain analytics in the academic research despite the fact that the awareness and urge regarding the use of supply chain analytics has been constantly increasing among the corporations. The authors claim that in order to deal with this problem they have devised a framework so that the executives and other relevant persons could understand the usefulness of business analytics for the supply chain companies and organizations. (Chae & Olson, 2013)

The work has shown the opportunities in order to implement and apply the application of supply chain analytics in an integrated manner. Moreover, the authors in the previous article contended that these improvements have helped the companies and the businessman in getting hold of the data which has been collected from the operations of the business which has been kept in the systems of transactions.

While highlighting benefits of technology it will be wise to discuss about skill gap in the profession and resultant failure rate of companies with such projects. Waller, Matthew et.al. (2013) discuss on the domain knowledge and set of skills required by professionals to deal with data. They further discussed the causes of Analytics, its potential applications and future research topics for predictive analytics. They elaborated that to build capability of professionals in business analytics skills, will be re requiring investment of time and complete understanding of company processes and their matrices.

New tools in the business analytics have offered the businesses with creative solutions for revenue generation. Through business analytics, the business world is moving from the manual system of work towards the automatic system of technologies. The study by IBM has mentioned some of the technologies which are helping businesses to grow while focusing on the relevant and small problems within systems. New advancements as business analytics does not only focus on identifying the problems but they also provide the users with efficient multiple solutions by using statistical tools. These statistical tools have a system to find the correlation of variables which helps in finding the solutions for the existing problems in a more effective way. However, this study has not focused much on the satisfaction of the business users which is also an essential component in business analytics. (IBM Corporation, 2011)

Real-time decision optimization process comes after applying statistical tools through business analytics on the gathered and processed information. This analysis helps in developing an efficient model to resolve and identify problems within a system while using the historic results. These analytics keeps the old information and speculate about the real-time scenario for their solutions. The basic purpose of this forecasting is to be aware of the possible occurrences of events which may be proved to be harmful for the course of success. Many efficient and new models can be created by using these analytics to produce required results. These models provide much simpler and faster way to decide on
the issues. Timely made right decisions contribute towards success of business and this is only possible with the help of business analytics. (IBM Corporation, 2011)

Moreover, in order to investigate how Business Intelligence and Analytics (BI&A) affects the decision making processes of the organizations; a systematically structured literature review was conducted. The literature review particularly focused on specialized researchers in Business Intelligence and Analytics (BI&A) as its intended audience. Morris discusses the role of Business Intelligence and Analytics (BI&A) in enhancing the quality of decisions made by the organizations in their routine businesses. Morris acknowledges the fact that with the growing competition in the market place, it has become extremely necessary for the organizations to deploy new business intelligence technologies and systems in order to support decision making. However, besides it, study also briefly touches upon the decision processes by discussing the kinds of decisions that generally take place in the organizations and at the same time also highlights the way in which such decisions and decision making processes can be improved through the introduction of Business Intelligence and Analytics. (Morris, 2010)

StatSlice Corporation tries to create a roadmap through which organizations can effectively utilize the Business Intelligence and Analytics (BI&A) technologies with success. It has been emphasized that in order to achieve maximum results from Business Analytics projects, it is pertinent for organizations to first construct a well thought out strategy as to how they are going to approach it. In this regard, it is argued that without prior planning in business analytics, organizations have run into huge troubles ranging from financial losses to failures in decision making. Thus, the report deal with this issue by suggesting and recommending organizations a roadmap for Business Analytics. (StatSlice Corporation, 2013)

Besides it, StatSlice Corporation has briefly discussed the benefits of using Business Analytics and spell out some of the major categories of Business Analytics. It has been argued that Business Analytics helps organizations to continuously review their business performance in various areas including long-term planning, productivity, and profitability, hence, enabling them not only to identify the problems halting the business progress but also to rectify them as well. Business Analytics can lead organizations to a data/information analysis culture where accurate decisions could be taken instantly, thus, optimizing the business activities. Furthermore, this report also explains some of the major categories which generally describe the field of Business Analytics. The first major category of Business Analytics is the strategic analytics which enables organizations to build long-term strategies and plans for the profitable running of the business activities and help them to discover new business insights. The second major category is the operational analytics which helps organizations to transform business strategies and provide suggestions for further actions. Finally, the last major category include tactical analytics which helps organizations in handling their routine decision making processes and speed up the overall business actions. (StatSlice Corporation, 2013)

The study conducted by Mohammad Reza et. al (2010) describes that there are no major differences in critical success factors for implementation of decision support applications in developed and developing countries but they pointed out that there are some key differences like national culture, dependence on vendors, technology constraints and skills & knowledge gap in developing countries found to be some main reasons for failure.

4. Business Analytics Framework:

Mentioned studies present understanding, evolution and implementation modes of Business Analytics (BA) from the existing literature. Now, for the future research and theory building process purpose a framework for Business Analytics (BA) will be required to propel the field especially for small and medium enterprises along with large scale companies.
The role of business analytics tools development and implementation is of utmost importance so, third party/companies designing/implementing BA projects are the essence of competitive advantage (Rina Fitriana et al. 2011, Elsadig Musa et al. 2013, Dedrick Jason et al. 2013) is of utmost importance. Along with literature review, authors also conducted pilot interviews of experts in few organizations to explore relation between BA entrepreneurs capability and their competitive advantage. On above two bases, a framework was developed (Fig.01) which will serve both purpose facilitate IS entrepreneurs to mature their application/implementation process as well as organization using such services to improve their applications to make operations competitive. Most of these organizations in Asia are small scale entrepreneurial who either offering their own application or have licensing agreement with BA. So, first organization first ensure worth of agents providing these services. The below BRP framework will this objective too.

Figure:1 Business Analytics Framework

Business Management, Technical Skills: entrepreneurs offering services as well as organizations implementing the systems should have technical & business management skills. Dedrick Jason et. al (2013) are of the view that IT systems are exclusively skilled based. Technical skills play a pivotal role in successfully implanting and taking benefits from decision support systems.

National /Regional Environment: Use of information systems has grown to a large extent across the globe but the use has not taken place at the same pace. Some region have been found grow quickly and are at advance level, some at satisfactory level and many are just starting it. Kallol Bagchi et. al (2004) observed through an extensive study of 31 nations over ten years period that regional and national culture significantly impact adoption of IT products. So, regional infrastructure have been found impacting IT growth.

Corporate /Social Networking: Networking with peers and industry experts have its profound benefits in all sects of business and management. This is also true for information systems. This is on how can firms and professionals take advantage of social networking to keep updated at business analytics front for competitive advantage.

Research and Development: In order to gain the competitive advantage and analytics entrepreneurial material a focus on analytics R&D activities is the need of day. This will be including constantly focusing looking over market trends, needs and adjusting product/services packages accordingly.
**Pride in Profession/Job:** organization must get employee buy in at important projects so they feel ownership. If employees are providing suggestions to improve their work and job description, this is an indicator they are feeling pride in their work. So, organizations and management should try to make jobs interesting.

**Technology /Analytics Entrepreneurial Growth:** Entrepreneurial technology maturity could be attained working on above mentioned elements.

**Competitive Advantage:** The competitive advantage will result from above discussed business analytics activities.

5. Discussion:

Above given framework is based on both the resource-based view (RBV) and social exchange theory (SET). It is just the conceptual framework which needs to be evaluated along with described constructs with empirical research. The empirical study will help improve the framework build on literature review. Apart from this the mediating effect of Analytics Entrepreneurial growth based on competitive advantage in relation to five constructs needs to be tested with reliable tests. The study may follow the mixed methods approach under pragmatism paradigm which best suits to explore hidden factors as well as elaborate of exiting practices.

In order to proceed on the business analytics research in the light of given framework, researchers need to deploy a mixed method approach to explore the pattern and make improvement to the framework and transform this into a model. It may start as discussion with industry experts to evaluate face validity of each of five business analytics entrepreneurial capabilities as well as their interaction with growth and competitive advantage. The professionals from variety of corporate arenas with vast experience should be interviewed. Moreover, the study should be conducted to know the mediating effect of technology/analytics entrepreneurial growth on competitive advantage of firms in a region.

The study will help distinguish unique behavior of each variable as well as its direct effect on competitive advantage and through entrepreneurial growth. Case studies of small medium and large enterprises in India, Malaysia, Korea, Thailand and Pakistan may be of importance to reveal business analytics entrepreneurial growth.

The above framework can be refined through mixed method research which will help explore it further as well as test the developed model using frameworks like of Marten Scalfke, Ricardo Silvi, Klaus 2013 multilayer one on discussing capture, couple, control and communicate elements.

**Future research:**

Presently the business analytics field has been engulfed with many challenges like lack of skilled staff, low awareness on knowing the quality of data being generated and above all is very low understanding on integrating BA across organizational business initiatives to avail competitive advantage. The review of past research has identified key elements which needs to be addressed by researchers in future. Firstly, consideration should be paid to the industry-academia partnership in order to nourish analytic talent while facilitating professionals & organizations on designing the analytics career depth. Second it is pertinent required that what skill and behavioral set is required on which organizations in a specific sector /region can invest in their employees to develop un-imitable value systems. Researching the best way where analytics entrepreneurs & professionals can share problems and better improve their processes on a routine basis. Future research should concentrate on what to cover, why there is need, how it should be done and time span when research will be conducted. (Marten Sclafke, Ricardo Silvi, Klaus 2013). Moreover it will be worthwhile if research focuses on relation of business analytics with various...
performance management activities in corporate arena as well as exploring to know the extent of relation between analytics system and quality of information to reach at informed business decisions.

**Conclusion:**

With all these benefits of business analytics described above, it is considered to be the best solution if someone wants to extend the business. Business analytics keeps in sight the demand of the product as well as risk of availability with the best strategy that can make it possible. These concepts help businesses to grow even more and therefore, business analytics is highly recommended for generating high profits while keeping the end users more satisfied. (IBM Corporation, 2011)

With regard to a prospective study on Business Analytics (BA), these articles highlight specific areas, like decision process systems, which need to be considered when conducting any analysis of the impact of Business Analytics (BA). As mentioned above, decision process systems play a pivotal role in the efficient usage of Business Intelligence technologies and form an important component of the overall Business Analytics (BA) systems. Hence, in order to create a reliable and replicable theory on Business Analytics and its impact on achieving a competitive advantage for organizations, authors suggest the study must focus on an integrative research of both Business Intelligence and Analytics (BI&A) systems and the decision process systems. (Kowalczyk, Buxmann and Besier, 2013)

These papers also point out some of the challenges that the organizations have to face during the application of Business Analytics (BA) and its technologies. It has been argued that one of the major challenges in analytics is the gathering and integration of the relevant information which, as IDC research shows, is the biggest reason for the failure of Business Analytics (BA) projects in the organizations. Moreover, another important challenge that halts organizations progress with Business Analytics (BA) is the issue of skills and expertise which are required across various components of the business analytics projects such as data integration, modeling and forecasting future actions. It has been noted that such expertise is very limited in organizations or just is confined to a few units of organizations, thus, there is a need for spreading this expertise to all units of an organization so as to achieve maximum benefits out of the Business Analytics (BA) projects. (Morris, 2010)

Any business can have excellent and efficient decision making powers if it uses the right tools. Innovations in business analytics have proved to be efficient in forecasting events by using the historical data of organizations. Even with all these benefits, business analytics is dependent upon two things which are “technology and imagination”. According to this paper, imagination of any person helps to think about ideas and goals which can be brought to life by using the technology for reducing the risk as well as generating higher outcomes. The use of technology in business analytics can illuminate the path for the better growth of any business. (Hardoon, 2013)

With the ever-growing success of the Business Intelligence and Analytics (BI&A) technologies, several other business analytics apps have been developed amongst which supply chain management and customer relationship management software are the most prominent. It has been argued that utilizing supply chains software organizations are able to keep themselves updated regarding their suppliers and partners and get reliable results for their sales forecasts and production plans. Moreover, the customer relationship management software has been increasingly used to analyze demand and supply of the products that is identifying the demand for particular products and then providing the supply accordingly. Thus, it has been argued that with the passage of time the field of Business Analytics has become the benchmark for the organizations and without it they cannot survive in the market place. (Kohavi, Rothleder, and Simoudis, 2002)

Business analytics has given a chance to organizations to develop strategies for increasing
the revenues and satisfaction of customers in this competitive environment. It has helped to overcome the space between decision making and actions for meeting the business essentials. These analytics are helping in maintaining records and their analysis for satisfying operational needs. Moreover, business analytics provides user friendly environment for the use of more advanced and developed tools for determining the needs. It has made business management more effective and easy to create higher revenues with fewer risks. (Devlin, 2013)

References:

- Dedrick, Jason, Kraemer, Kenneth L. Shih, Eric (2013), Information Technology and Productivity in Developed and Developing Countries Journal of Management Information Systems ; Vol. 30 No. 1, pp. 97 – 122


