Literature review of Applications of Business Intelligence, Business Analytics and Competitive Intelligence

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Abstract- *Indian Organisations are undergoing evolution in terms of Customer requirements, New Technologies, Government Policies & Regulatory Changes at par with developed countries, surmounting competition and cost consciousness of Indian customer. Organisations needs to realign strategies to sustain and grow in business, needs to come up with future Products & Services. In a nut shell, future Organisations needs to be wiser. This paper covers research paper study on recent techniques such as Business Intelligence (BI), Business Analytics (BA) and Competitive Intelligence (CI). Study discovers that, though BI and BA works on data differs in its use, BI is analysing past and BA is exploring future. CI essentially means understanding and learning what's happening in the world outside within your business, so you can be as competitive as possible.*

Study provides conceptual view to formulate framework for future Strategic Decision Support System (DSS) integrating with Organisational Processes, encompassing CI to provide Competitor information, BI provides past data analysis, and BA to support future prediction.

Index Terms- Business Intelligence (BI), Business Analytics (BA), Competitive Intelligence (CI), Decision Support System (DSS), Strategy.

I. INTRODUCTION

Indian Industry is ever evolving and rate of evolution is quicker than making decisions of future sustainable organisation. To illustrate, few examples from Automotive Industry like-

1) Dynamic Customer requirements –advance features like telematics and connected cars.

2) New Technologies - Alloys and Composites for vehicle light weighting, autonomous vehicles.

3) Regulatory requirements – Global Vision of e-mobility by 2030, Emission norms, Fuel millage.

4) Competition and consciousness of Indian customer for Price.

All these needs are at par with developed countries, and Indian Industry is compelled to make huge investments on continual basis. To sustain in business, Organisations needs to come up with future Products & services and hence Organisations need to make not only more wiser decisions but with speed and objectivity in decision making. Knowing this purpose, Study was conducted for various applications of Business Intelligence and Business Analytics and Competitive Intelligence in Automotive Industry.

1. Business Intelligence (BI) refers to application of technologies and practices for the collecting, integrating, analyzing, and presentation of business information. Transformation of data into knowledge in Business Intelligence supports better decision making. BI systems are data-driven Decision Support Systems (DSS) and hence support gaining business advantage with strong BI tool instead of making decisions with more just a gut feeling. Creating a data or fact-based"decisioning" framework via a strong computer system provides confidence in any decisions made.

BI leverages software and services to transform data into actionable intelligence which prompts to organization's strategic and tactical business decisions. BI tools access and analyse data sets and present findings in reports, summaries, dashboards, graphs, charts and maps which provides users with detailed intelligence about the state of the business.

There are five major components of BI –

- OLAP (On-line analytical processing): It refers to the way in which business users can slice and dice data using sophisticated tools that allow for the navigation of dimensions such as time or hierarchies. Online Analytical Processing or OLAP provides multidimensional, summarized views of business data and is used for reporting, analysis, modelling and planning for optimizing the business. OLAP techniques and tools can be used to work with data warehouses or data marts designed for sophisticated enterprise intelligence systems. These systems process queries required to discover trends and analyse critical factors. Reporting software generates aggregated views of data to keep the management informed about the state of their business. Other BI tools are used to store and analyse data, such as data mining and data warehouses; decision support systems and forecasting; document warehouses and document management; knowledge management; mapping, information visualization, and dash boarding; management information systems, geographic information systems; Trend Analysis; Software as a Service (SaaS).

- Advanced Analytics: This is referred as data mining, forecasting or predictive analytics. It takes advantage of statistical analysis techniques to predict or provide certainty measures on facts.

- Corporate Performance Management (Portals, Scorecards, Dashboards): It usually provides a container for several pieces to plug into so that the aggregate tells a story. For example, a balanced scorecard that displays portlets for financial metrics combined with say organizational learning and growth metrics.

- Real time BI: It allows the real-time distribution of metrics through email, messaging systems and/or interactive displays.

- Data Warehouse and data marts: The data warehouse is the important component of business intelligence. Data warehouse helps the physical transmission of data to various enterprise records for integration, cleansing, aggregation and query tasks. Data warehouse also contains the operations data used for which is used for tactical decision-making of a subject area. Though it contains live data, not snapshots but retains minimal history.

     Data marts contains historical operational data for trends and experiences which helps business experts to formulate strategies. The need for data mart can be predicated based on a specific organizational requirement which calls for a certain grouping and configuration of select data. Organisation can have multiple data marts inside an enterprise. A data mart supports a business function, business process or business unit in maintaining historical operational data.

- Data Sources: Data sources can contain various types of data such as operational, historical, external data for example data from market research regarding customer and competition or web-based information from the already existing data warehouse environment. Data from data sources can be relational databases or any other data structure that supports the line of business applications. They also can reside on many different platforms and can contain structured information, such as tables or spreadsheets, or unstructured information, such as plaintext files or pictures and other multimedia information.

2.   Analytics – It involves studying past historical data to identify potential trends, analyses of the effects of certain decisions or events, or to evaluate the performance. Application of analytics mainly comprises to improve the business by gaining knowledge which can be used to make improvements or changes.

- Business Analytics (BA) relates to the exploration of historical data from many sources through statistical & quantitative analysis, data mining, predictive modelling and other techniques to identify trends and understand information that can drive business change, support sustained business practices.

     Business Analytics is the use of statistical tools & technologies to:
- Find patterns in data for analysis e.g. change in customer requirement
- Find out variability from the huge data points e.g. New Government Regulation
- Identify relationships within the data variables for further prediction e.g. drastic Loan Interest rate changes will change purchase decision of Customer
- Provide insights as to what will happen next e.g. which of the Customers are leaving us

There are 6 major components in analytics -

- Data Mining: Create models by discovering previously unknown trends and patterns in vast data e.g. detect insurance claims frauds, Retail Market basket analysis. There are various statistical techniques through which data mining is achieved. Classification is-
  - Regression
  - Clustering
  - Associations & Sequencing Models

- Text Mining: Discover and extract meaningful patterns and relationships from text collections e.g. understand sentiments of Customers on social media sites like Twitter, Face book, Blogs which are used to improve the Product or Customer service or understand how competitors are doing.

- Forecasting: Analyze & forecast processes that takes place over the time e.g. predict seasonal energy demand

- Predictive Analytics: Create, manage and deploy predictive scoring models e.g. Customer churn & retention, Credit Scoring, predicting failure in shop floor machinery

- Optimization: Use of simulations techniques to identify scenarios which will produce best results e.g. Sale price optimization, identifying optimal Inventory for maximum fulfilment & avoid stock outs

- Visualization: Enhanced exploratory data analysis & output of modelling results with highly interactive statistical graphics.

3. Competitive Intelligence (CI)– Competitor intelligence is process that transforms disaggregated competitor information into relevant, accurate and useable strategic knowledge about competitor positions, performance, capabilities and intentions. The purpose should not be to obtain business or strategic plans but rather to gather continuously, in a systematic manner, a wide range of information that, when collated and analysed, provides a fuller understanding of a competitor's structure, culture, behaviour, capabilities and weaknesses, and possible future plans.

Competitor Intelligence is the purposeful and coordinated monitoring of your competitor(s), wherever and whoever they may be, within a specific marketplace. Competitors are those firms which are considered as rivals in business, and with whom you compete for market share. It also has to do with determining what business rivals will do before they do it.' This is to gain early warning of their plan in order to devise counter actions. It is the process of collecting and analyzing information about competitors' strengths and weaknesses in a legal and ethical manner to enhance business decision-making. Competitive intelligence is different from corporate or industrial espionage, which use illegal and unethical methods to gain an unfair competitive advantage.

Though BI, BA, CI looks similar, but they are different –

Table 1. Comparison of BI vs BA

Business Intelligence	Business Analytics
It reports on what happened in the past or what is happening in now, in current time.	It investigates why it happened & predict what may happen in future.
• Basic querying and reporting. • OLAP cubes, slice and dice, drill-down • Interactive display options – dashboards, Scorecards, Charts, graphs, alerts.	• Identifying relationships between key data variables • Applying statistical and mathematical techniques. • Reveal hidden patterns in data
It Provides – • Dashboards with "how are we doing" information • Standard reports and preset KPIs • Alert mechanisms when something goes wrong	It provides- • Response to "what do we do next?" • Proactive and planned solutions for unknown circumstances • The ability to adapt and respond to changes and challenges

Table 2. Comparison of BI vs CI

Business Intelligence (BI)	Competitive Intelligence (CI)
Business Intelligence is management of a company's internal data. This will help business to make better decisions based on its own historic information and can therefore project possible future trends.	Competitive Intelligence is gathering and analyzing of intelligence about the behavior of the competitors you deal in, to make certain decisions based on market trends.
BI technologies provide historical, current, and predictive views of business operations	CI enables business to monitor competitor behavior to pinpoint their weak/strong points.
Focus is internal business environment.	Focus external business environment.
A BI professional needs intensive database and database design skills as well as technical IT skills	CI professional need skills in strategic thinking, should have extensive analytical abilities and should be

in BI and ETL tools.	familiar with various scientific analytical methodologies.

II. LITERATURE REVIEW

The Literature review was conducted with relevance to study and application areas of BI, BA and CI in Automotive Industry and understand specificity.

Around 600 research papers were studied and for content and relevance, 50 published journal papers selected for research paper study.

Table 3. Paper Search

Research Search	Literature review		
More than 600	BI	CI	BA
	17	17	16

Table 4. BI Literature review

S.N	Title	Results / Findings	Industry
1	An Intelligent Decision-Support System, IEEE, Zbignie M, et.al (2005)	Distributing used cars to various automobile- problem with multiple variables - Marketing Head reviews the solution and possible changes required (less than1%)	Transportation & Logistics
2	Progress in BI System research: A literature Review, IJBAS-IJENS - Rina Fitriana (2011)	The topic that integrated research are- SCM, CRM, Data Mining, Data Warehouse, DSS, Performance Scorecard, KM, Business Process Management, Artificial Intelligence, ERP, Extract Transformation Loading, OLAP, Strategic Management.	Agro Industry
3	Integrating KM with BI Processes for Enhanced Learning, Software Engineering and Its Applications - Rizwan Shehzad, et.al (2013)	Integrated KM model with BI Model, can check how interaction of BI with a KM model can support organizations to better manage their resources. The adopted model examines organizational efficiency improvement through enhanced learning.	IT
4	BI: concepts, components, techniques, JATIT - Jayanthi Ranjan (2009).	The paper explores the concepts of BI, its components, benefits, factors influencing, technology requirements, designing and implementing BI.	Management Studies
5	A Knowledge-Based Approach for BI in Strategic Technologies: Bio-Mems, AIS, Francisco J. Cantu, et.al (2005)	IT uses Biological-Micro-Electrical-and-Mechanical-Systems industry (Bio-MEMS). The model identifies the main actors, defines their roles and specifies the issues to be addressed. It handles information about main products, market trends, companies, research centers, products, standardization.	Management Studies
6	An Analysis on BI Maturity in Malaysian Organizations, IJISE -In Lih Ong (2013)	Maturity model comprises of factors: organizational process, technology, and outcome, spanning across 5 levels of maturity. Study result indicate most of Malaysian Organizations are at low level of maturity.	Management Studies
7	Business Intelligence, CAIS - Solomon Negash (2004)	Provides framework, importance of unstructured data & need to develop BI tools for acquisition, integration, cleanup, search, analysis and delivery.	Management Studies
8	A BI Technique for forecasting Automobile Sales using Adaptive Intelligent Systems, International Journal of Computer Applications - Alekh Dwivedi, et al. (2013)	The forecasting of sales data in automobile industry at Maruti, based on monthly sales for past 5 years. Methods used Moving Average and Exponential smoothing to forecast values as a input for ANFIS (Adaptive Neuro Fuzzy Inference System). Empirical results demonstrate that the ANFIS gives better results than ANN and Linear Regression models.	Automotive
9	Critical Success Factors for BI, CIS - William Yeoh, et al. (2009)	Findings reveal that organizations which address the CSFs from a business orientation approach will be more likely to achieve better results.	IT
10	The effect of BI Tools on Raising	The main role of management accounting is to use available	Manageme

			nt Studies
	the Efficiency of Accounting, IRMBR, Ziad Al-Zubi, et al. (2014)	information in the best possible way to make decisions. The study concludes that the decision process can be more effective, and Management can save time and money by using BI.	

Table 4. BI Literature review (Contd.)

S.N	Title	Results / Findings	Industry
11	BI and CRM, Conference on IT Interfaces, Aida Habul, et al. (2010)	Study concludes use of CRM systems and BI, provides a approach in customers profiling, simpler detection of customers, measuring the success in satisfying its customers and create a comprehensive CRM. BI can detect incentives to increase sales, like faster conversion of clients, less number of outgoing customers, increase sales to existing customers.	Social Media
12	A Classification for BI Agility Indicators, AIS Electronic Library - Henning Baars, et al. (2013)	A review of related work and the analysis of multiple case studies lead to a differentiated and multi-level agility classification for content, functional, and scale related BI agility concepts differentiated w.r.t architectural layer and reach.	IT
13	Business Intelligence Tools for Big Data, Journal of Basic and AER- Labhansh A, et al. (2016)	BI allows easy interpretation of large volumes of data; identifying new insights & implementing effective strategies, helping organizations in long-term decision making and competitive market.	Manageme nt Studies
14	Factors influencing BI Systems implementation success, AISEL, PACIS -Shin-Yuan Hung, et al. (2016)	IT focuses CSF for BI implementation. Results suggested that technical characteristic (i.e., relative advantage), organizational size, Top management support, and environment characteristic (consultant ability and training) were significant in affecting	Manageme nt Studies
15	BI in Nutshell, IJIRCCE - Navita Kumari (2013)	Paper explores the concepts of BI, data quality and issues, types of BI tools and delivery mechanisms and the key features of BI architecture.	Manageme nt Studies
16	Application of BI-Agriculture "2020 "System to Improve Efficiency, Journal of Global Communication - Gupta Anuraj (2016)	This paper contains the approach to make Modern Agricultural more effective by using BI. It contains fact and dimensional approach to support the decision-making capability of the farmer by making simple reports.	Agro Industry

Table 5. CI Literature review

S.N	Title	Results / Findings	Industry
1	Planning and Strategy in Reforming Romania's SRI, Counter Intelligence Niculae Iancu, et al. (2012)	Capacity development to anticipate, prevent and counter security threats	Govt. Intelligen ce, Security
2	U.S Intelligence Community Reform Post-9/11: Strengthen U.S.'s Ability to Fight Terrorism?, IR- Bernardyova, Alzbeta, et al. (2010)	Reform of the U.S. intelligence community to counter terror attacks.	Govt. Intelligen ce, Security
3	Assessing Uncertainty in Intelligence, Harvard School - Jeffrey Friedman, et al. (2012)	Provides a analytic framework for thinking about estimative intelligence in general	Managem ent Studies
4	Measuring CI effectiveness: Insights from the, Wiley Online Library - Leigh Davison, et al. (Nov 2001) advertising industry	Develop CI Measurement Model (CIMM), provides concrete measures for determining CI effectiveness. Additionally, the model aids in the calculation of the return on CI investment. CIMM classifies CI output into two categories: short-term and long-term strategic.	Advertisi ng
5	CI: A Key Business Success Factor, Management and Sustainability - Cynthia A. Bulley, et al. (2013)	Though Companies are aware of importance of CI yet to fully utilize its potential. It is found that no coherent CI process is established but rather a series of 'ad-hoc' measures are used. It implies the need to develop procedures for generating CI data.	Managem ent Studies
6	CI Adds Value: Five Intelligence Attitudes, Elsevier - Daniel Rouach,	The authors report on the growing importance of competitive intelligence as a management practice in the majority of leading	Managem ent

	et al. (2001)	companies	Studies

Table 5. CI Literature review (Contd.)

S.N	Title	Results / Findings	Industry
7	Social media competitive analysis and text mining, Elsevier, Wu He, et al. (2013)	The results reveal the value of social media competitive analysis and the power of text mining as an effective technique to extract business value from social media data. Recommendations are also provided to help companies develop their social media competitive analysis strategy.	Foods Industry
8	Assessing the impact of using the Internet for CI	The findings indicate that research and use of Internet is significantly related to quality of CI information. However, the relationship between internal use and quality of CI information is not significant.	Management Studies
9	CI : concept, context and a case of its application, Elsevier, Tsokanas Nikolaos, et al. (2012)	The paper analyzes the uniqueness of the Pharmaceutical Industry as opposed to other industries and reviews the presence of CI in this industry	Pharmaceutical Industry
10	CI collection and use by sales & service representatives, Springer Link, Adam Rapp, et al. (2014)	Using social identity theory as a conceptual background, this paper reports two studies which investigate how organizational identification and role conflict impact the collection and use of individual competitive intelligence & how this impacts performance.	Management Studies
11	Generating CI Organizations, Springer Link, Bernard J, et al. (2002)	It describes three interdependent phases of CI-organizing for CI, searching for information, and sense-making. It also identifies core components of CI generation process, highlighting its iterative nature, and identifying for its success.	Management Studies
12	Self-Organizing Maps for Competitive Technical Intelligence Analysis, CIS, Lu An, et al. (2012)	Self-Organizing Map (SOM) technique used to identify key competitors and determine key technical attributes of electronic products. The cell phone SOM display was projected into space constructed by key technical attributes and SWOT of competitors were explored.	Cell Phone Industry
13	Connecting strategy and CI to produce strategy inputs, Strategy Leadership Journal - Liam Fahey (2007)	Generating intelligence of value to strategy makers.	Management Studies
14	A Process-Oriented View of CI and its Impact on Organizational Performance, CI and Management - Kersi D. Antia, et al. (2007)	Competitive strategy and the CI administration - influences the subsequent analysis and extent to which information is disseminated. When CI is located in the marketing area, there is greater dissemination within marketing, relative to other functional areas in the firm.	Management Studies
15	The effect of infrastructure, culture, organizational, structure and CI in Organization, Journal on Academic of OB and HRM - Maryam Sadat Hashemi (2016)	It shows effects of corporate culture, organizational structure and impact of information technology on CI in Organizations.	Management Studies
16	The Usefulness of CI & Relationship to the Strategy of the Firm, AMS Conf.-Donna Cartwright, et al. (2014)	CI framework design suitable to meet the needs of the key strategic marketing decision makers.	Management Studies
17	CI in social media Twitter: iPhone 6 vs. Galaxy S5, Emerald, Yoosin Kim, et al. (2016)	The analysis showed that social media data contain CI. The volume of tweets revealed a significant gap between the market leader and follower; the purchase intention data also reflected this gap, but to a less extent.	Social Media
18	Planning and Strategy in Reforming Romania's SRI, Journal of CI Niculae Iancu, (2012)	Capacity development to anticipate, prevent and counter security threats	Govt.

Table 6. BA Literature review

S.N	Title	Results / Findings	Industry
1	Integrating BA into strategic planning for better performance, Business Strategy-Tobias Klatt, et al. (2011)	This paper combines insights on the best usage of business analytics from the perspective of strategic planning experts, with recommendations for the integration of business analytics into the performance management.	Management Studies
2	The impact of big data and BA on SCM, Transport & SCM Journal - Hans W. Ittmann (2015)	Extracting value from the huge amounts of data available in the SCM area	Automotive
3	Big data analytics in logistics &SCM , Elsevier, IJPE - Gang Wang, et al. (2016)	Paper proposes framework for Logistics Analytics within SCM naming as SCA, based on four capability levels- functional, process-based, collaborative agile SCA, and sustainable SCA.	Automotive
4	Innovations in Business Forecasting: Predictive Analytics, Business Forecasting - Charles W Chase (2014)	Proactively predicts demand instead of replenishing requirements - access data, analyses & provide insights to make decisions to put you ahead of demand curve. Using DSR information for demand sensing to identify major market signals and using them to shape future demand.	Management Studies
5	Barriers to the Adoption of Big Data Analytics in the Automotive Sector, AISEL, AMCIS - Christian Dremel (2017)	Paper identifies barriers for Automotive Industry – (1) sufficient and skilled resources, (2) the collaboration of different business departments, supported by (3) appropriate organizational structures, (4) data-driven culture, (5) defined business value, (6) access to relevant data pools.	Automotive
6	Performance Management Analytics For Automotive Industry: Study, University of Porto - Joao Carlos Dias Correia Pinto (2016)	Study compares several algorithms: Random Forest, Partial Least Squares, M5, Artificial Neural Network, Support Vector Machines and K Nearest Neighbors were tested. Thirteen different sets of predictive variables were tested.	Automotive
7	BA in SCM, Lodz University- Anna Walaszczyk, et al. (2017)	SCM and BI solutions with their capacity to integrate with other systems to perform product segmentation and presents results.	Foods Industry
8	Integrating BA with performance management, IJSER - Sultan Gashgari (2016)	BA is associated with affective decision making and better performance management. Proper integration of performance management with business analytics provides basis for affective and rational decision making for the management.	Management Studies
9	IOP Conference - Taufik Djatna (2017)	Paper reveals the feature selection gain ratio & k-NN outperforms forecasting models, implying the proposed approach is a promising alternative to stock market tendency of warehouse receipt document exploration with accuracy level rate - 95.03%.	Agro Industry
10	Role of BA in Management Education, Eureka - Surabhi S (2017)	Inclusion of Business Analytics in Management Studies	Management Studies
11	Customer Attrition Analytics in Banking, BA and Intelligence - Mihir Dash, et al. (2017)	The company realized that its trust accounts were getting closed after a period of seven to twelve years. Model was built in analytics to predict customer churn and come up with strategies to retain customers.	Banking
12	Management challenges in creating value from BA, Elsevier, Richard Vidgen, et al. (2017)	Presents a Delphi study on the challenges of big data analytics. Provides insight into analytics as a complex socio-technical entanglement and need for data driven management.	Management Studies
13	How do top & bottom performing company differ using BA? Emerald, Guangming Cao, et al. (2017)	It recommends BA, data-driven environment. Also provides management insights into the effective use of BA for improving organizational performance.	Management Studies
14	eMobility market platforms – Applications of BA, Springer, Christoph Willing, et al. (2017)	The number of urban travel modes has increased significantly and now includes services such as car sharing, ridesharing and bike sharing. This paper, describes the business model of MMPs.	e-Commerce
15	Applications of BA in healthcare, Elsevier, Business Horizons - Michael J. Ward, et al. (2014)	This article explores Healthcare applications, barriers and ways to goals of the modern healthcare system: high-quality, responsive, affordable, and efficient care.	Healthcare

Table 6. BA Literature review (Contd.)

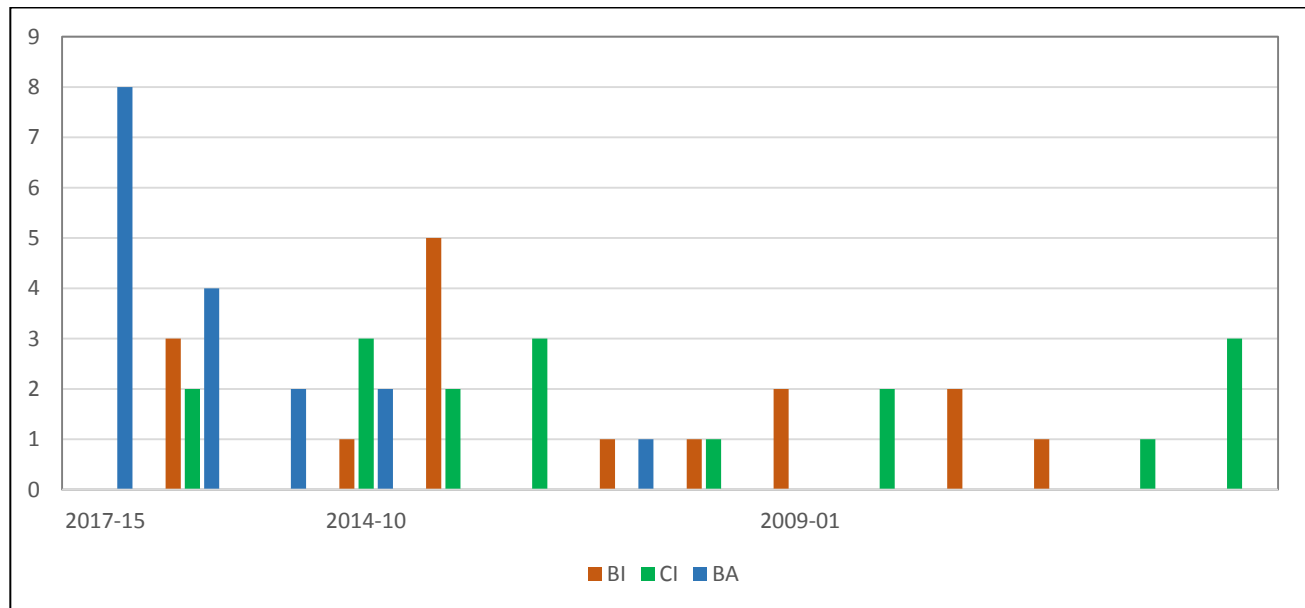| S.N	Title	Results / Findings	Industry
16	Perception, reality, adoption of BA: Evidence from North American professional sport Orgs, Elsevier, Omega -Michael Troilo, et al. (2016)	Professional sports teams have made extensive use of analytics to improve their on-field performance. However, it is not as apparent that these same organizations use analytics to improve performance on the "business" side.	Sports
17	Gaining Business Value through BDA: A Case Study of the Energy Sector, AISEL, Decision Analytics - AMCIS - Mariya Sodenkamp, et al. (2015)	Using datasets containing annual electricity consumption of private households, we apply and test in field experiments a Support Vector Machines algorithm that predicts probabilities of individual costumers to sign up on an energy efficiency portal.	Energy Sector

III.   FINDINGS

The Literature review conducted with 50 papers provides valuable information such as-
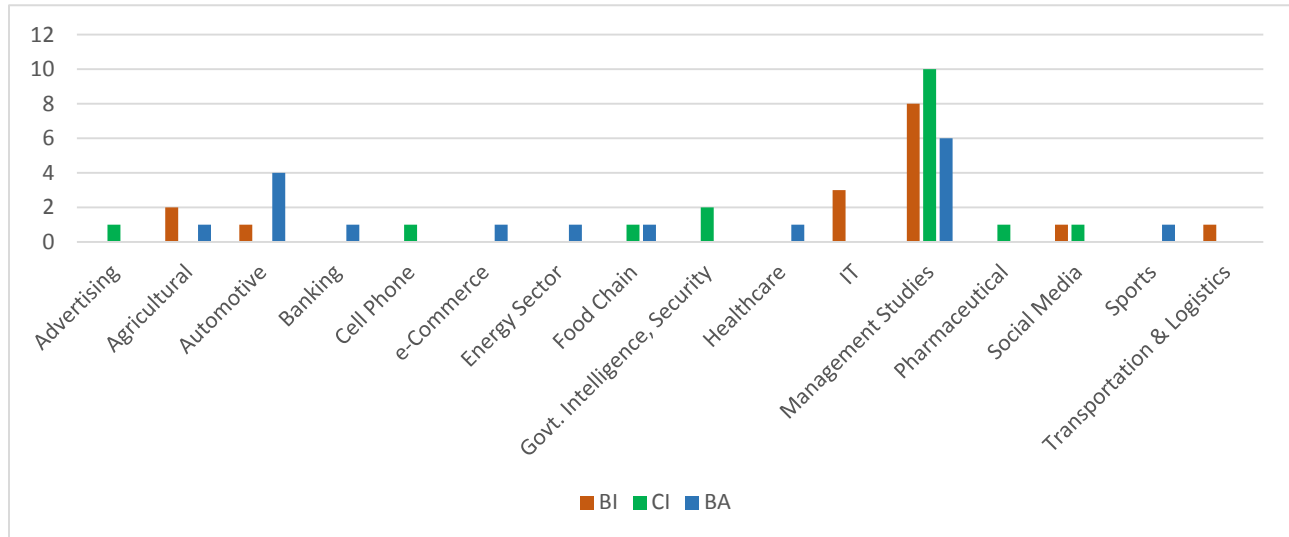
   1.   BI Concept, framework, influencing factors, issue for implementation, and applications areas of BI such as KM, DSS, Forecasting, Management Accounting, CRM.

   2.   CI concept, importance, framework, Organisational factors effecting CI, measure for CI effectiveness and application areas like Security Intelligence, Food Chain Industry and usage of internet, social media for CI.

   3.   BA Concept, role of BA in Management, barriers, and application areas – SCM, Strategic Planning, Business forecasting, Performance Management, buying and selling transaction of Stock Market, Customer management in Banking, e-Mobility market, Healthcare, Energy sector.

   BI and BA are trending terminologies applied to business data and BI is needed to run the business while BA is needed to change the business over the years. BA is getting more attention for studies.

Graph 1. Journal Papers Spread

Graph 2. Research Paper Industry Spread

IV.   CONCLUSION AND WAYFORWARD

This paper covers basic concepts, definitions, process and framework for integrating BI, BA and CI into Organisation processes. Points to summarise -

- Business Intelligence is needed to run the business while Business Analytics are needed to change the business.

- BI is about analysing past historic data to gain knowledge and BA is about exploring future. BI is important to improve your decision-making based on past results, while business analytics will help you move forward and understand what might be going to happen.

- CI essentially means understanding and learning what's happening in the world outside your business, so you can be as competitive as possible. It means learning as much as possible--as soon as possible--about your industry. Businesses now operate in a world in which information is more readily and publicly available than ever before.

  Today's businesses have access to more data than ever before. Companies produce, collect and store vast amounts of data, from internal and external customer feedback surveys to manufacturing and delivery statistics. To summarise, future sustainable organisations need to be more data driven and this will make saying more propounding that "Numbers do not lie, people do, fortunately we can use analytics to understand data in new and meaningful ways that can make business for us". IOT (Internet of Things) every information is available at the click of a mouse.

  So, while Organisations are discussing of Integrated framework for future Strategic DSS, CI technique provides competitor intelligence, BI provides past data analysis, and analytics will support future prediction.

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