

# REVIEW ON BUSINESS ANALYTICS & BUSINESS INTELLIGENCE

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**Abstract—Business Analytics is a set of techniques and processes which will be accustomed to analyze data to enhance business performance through fact-based decision-making. Business Analytics is that the set of Business Intelligence, that creates capabilities for corporations to contend within the market effectively and is probably going to become one amongst the most functional areas in most companies. Analytics corporations develop the power to support decisions through analytic reasoning.**

**Business analytics begins with *data set* (a straight forward assortment of data or data file) or normally with a *database* (an assortment of data files that contain information on people, locations, and so on). As databases grow, they have to be kept somewhere. Technologies like *computer clouds* (hardware and software used for data remote storage, retrieval, and computational functions) and *data warehousing* (an assortment of database used for reporting and data analysis) store data. Big data describes the collection of data sets that are so large and complicated that software systems are hardly able to process them**

**Key words—Business Intelligence, Business Analytics, Database, analytics.**

## I. INTRODUCTION

Business intelligence is expected to own the very best impact on organizations over next few years as they progressively incorporate the technology in ERP and CRM software, a recent study shows.

Business intelligence (BI) is commonly described as "the set of techniques and tools for the transformation of raw data into purposeful and helpful information for business analysis purposes". The term "data surfacing" is also more often associated with BI functionality. BI technologies are capable of handling large amounts of unstructured data to help identify, develop and

otherwise creates new strategic business opportunities. The goal of BI is to permit for the easy interpretation of those large volumes of data. Identifying new opportunities and implementing a good strategy based on insights can provide businesses with a competitive market advantage and long-term stability.

BI technologies give historical, current and prognostic views of business operations. Common functions of business intelligence technologies are reporting, online analytical processing, analytics, data mining, process mining, complicated event processing, business performance management, benchmarking, text mining, predictive analytics and prescriptive analytics.

BI can be used to support a wide range of business decisions ranging from operational to strategic. Basic operating decisions include product positioning or evaluation. Strategic business decisions embrace priorities, goals and directions at the broadest level. In all cases, BI is most effective when it combines data derived from the market within which an organization operates (external data) with data from company sources internal to the business like financial and operations data (internal data). When combined, external and internal data will give an additional complete image that, in effect, creates an "intelligence" that can't be derived by any singular set of data.

## II. BUSINESS INTELLIGENCE OVERVIEW

"If a BI solution can't assist you to make sound decision regarding your company's future quickly, easily and confidently – it's neither sensible business nor intelligent".

The ultimate goal of effective BI is to promote better decisions faster. This is facilitated by providing software tools and best practices to gather, validate, analyze and report timely information to key decision makers – whether the decision maker is a frontline employee or the governor.

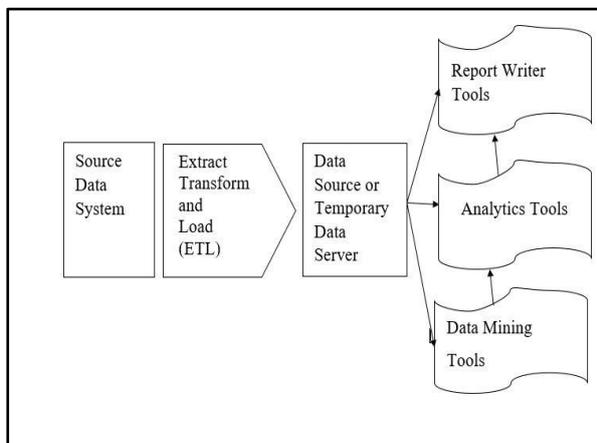
A comprehensive Enterprise BI solution provides a foundation for addressing these five key queries.

1. What happened? (Reporting)
2. Why did it happen? (Analyzing)
3. Why will it happen? (Predicting)
4. What is happening? (Monitoring)
5. Making it happen. [Event- driven call support]

BI resolution technology consists of 3 primary components:

- a. Data integration technology (Extract, transform, load-ETL) represents software that is used to analyze sources data, clean-up any data quality problem and transfer data in real time.
- b. Data warehouse Repositories (strategic & operational) represents the computer's hardware wherever extracted data is stored.
- c. BI tools – represents software tools that are used to model and analyze data to support better decisions.

The relationship of those 3 BI Components is seen within the exhibited diagram



### III. BUSINESS INTELLIGENCE INFRASTRUCTURE

The functions and roles generally related to the development of BI applications embrace the following:

- **Target selections:** Identify the key business decisions for which BI is required.

- **Target information sources:** Identify data sources that can provide the source data needed
- **Extract, transform and load source data:** Analyze the source data to determine requirements for extracting, transforming and transferring data for subsequent analytics in real time.
- **Decision support modelling:** Develop the logic, models and show formats by which the source data can be analyzed, mined, correlated, mapped, displayed and reported.
- **Analysis and reporting:** Develop the particular reports, queries, graphs, dashboards, or scoreboards to be used analyze and display or report the data in the data warehouse.

### IV. METHODOLOGY AND FINDINGS

Based on the review of the prevailing publications and interview, following key findings were known

- **Multiple Bi software products in use:** Presently enterprises have large amount of various BI software products in use in various agencies Viz, COGNOS, SAS, ORACLE, Microsoft etc.

- **Multiple Data integration (ETL) software products in use or planned:** Enterprises have multiple vendors that represent the multiple data integration software products (ETL) viz, IBM, Informatica and data mirror.

- **Limited in-house BI expertise and skills:** Current BI application users have restricted BI experience as several of the applications are developed through consulting engagements that embody restricted BI coaching and knowledge transfer.

- **No formal Bi methodologies:** There are many formal BI methodologies in use within the development or operation BI applications.

- **No formal Bi needs for brand new application development projects:** There are many BI needs connected to the development of new application systems or to the acquisition of recent application software.

- **The existence of an oversized quantity of Legacy data:** This BI tools aren't adequate for accessing and using legacy data for future BI applications.

· **Bi is underutilized:** There are significant opportunities to extend the utilization of BI technology to support critical decision making but these opportunities are underutilized.

## V. SUMMARY OF DISCUSSION

Companies these days perceive the important role BI plays in their organization. Inflated potency, higher productivity, some smarter, quicker and more agile environment grasp wherever to start out and easy to induce lost during a tangle of buzzwords. Throwing cash at new solutions isn't continually the solution.

· For organizations of all sizes, analytics considered a primary tool in their BI solutions small organization actually also consider Excel a part of the wherever as large organizations cite dash boards / scoreboards, adhoc/query, and three-dimensional analysis.

· In all organizations, BI desires a determined within division/ departments that establish their own method.

· A crucial reason for firms of all sizes to line up BI is to drive the utilization of Bi to totally different levels of the organization.

· Bi tends to be price Centre in large organizations.

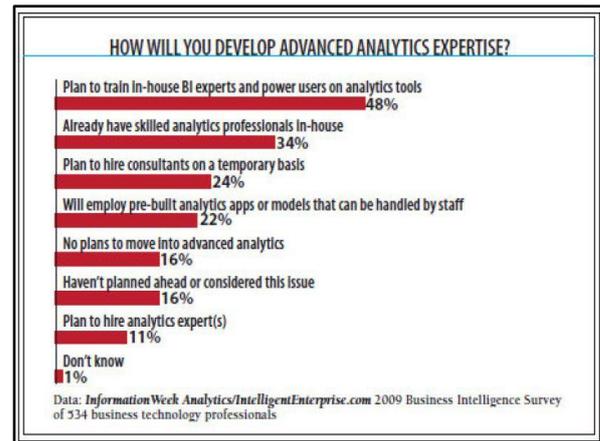
· Bi influences point to several advantages and anticipated the advantages of implementing BI, as well as inflated business user satisfaction and inflated decision making speed.

## VI. CURRENT CHANGES IN BI

Many experts have found that the past performance is not any guarantee of the long run results. The matter is that BI typically has fallen short of ideal, delivering insight into the past however not into up-to-the moment performance or future prospects. That's about to change BI for future has arrived with 3 major driving factors, viz...

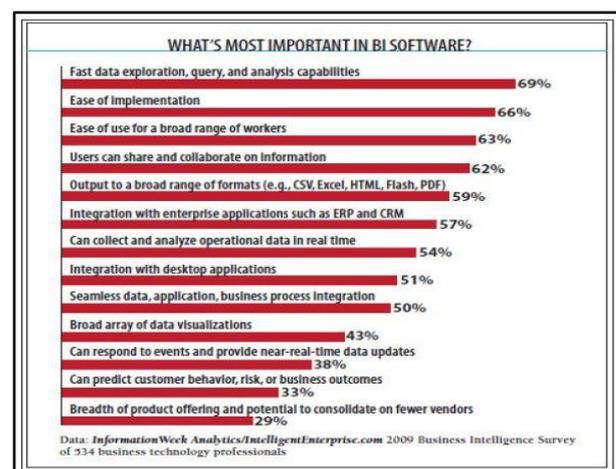
### 1. Predictive analytics:

Predictive analytics could be a white hot growth phase that got hotter with / BM' S \$ 1.2 billion deal to shop for SPSS, an organization that uses algorithms and combination of calculations to identify trends, risks and opportunities in ways not possible with historical reporting.



### 2. More real time performance monitoring:

Between the extremes of rear-view-minor reporting and advanced predictive analytics lies real time observation. Frontline managers and executives more and more wish to understand what is happening right now-as during this second, not yesterday or perhaps ten minutes past This is where stream processing technologies are moving beyond niche industry uses. Real time observation detects events or patterns of events as data streams through transactional systems, networks or communications buses verified on Wall Street and in alternative data-soaked industries, streams processing technologies deliver sub second insight that convectional BI cannot touch.

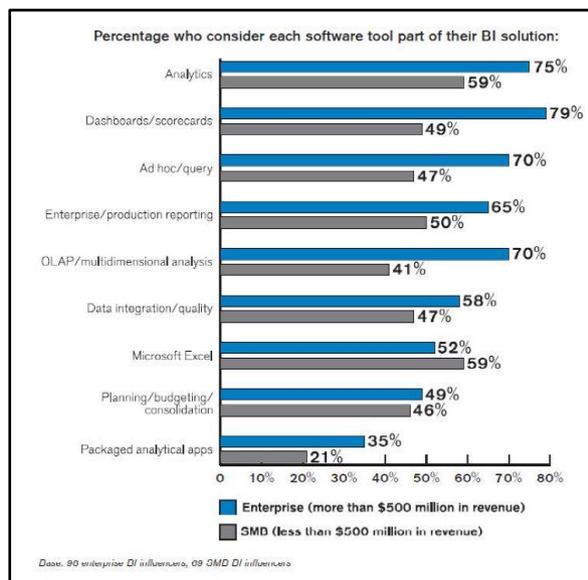


### 3. In-memory BI:

The third component poised to vary BI is the much faster analysis that's possible using in memory calculations. In memory tools will quickly slice and dice massive data sets while not restoring to summarized data, pre-built cubes, or IT-intensive database turning products like spot fire (acquired

by Tibco), Applix TM1 (acquired by IBM, currently / BM Cognos TM1), and Qlictech were pioneers in category, and in recent months' additional vendors have joined the in-memory ranks, or laid out plans to do so. Microsoft, as an example, plans to feature in-memory analysis to next year releases of SQL servers.

The traditional focus on tools has restricted the BI industry's impact most non-technical users notice them laborious to be told. They need the correct data at the purpose of decision-making, which implies wide deployed BI applications-integrated into their day to day responsibilities-must increase in importance relative to slice and dice consolidation. Typical applications include querying, modeling, designing / budgeting / forecasting, reporting financial consolidation, activity based cost accounting / management, score cards, dash boards, portals, analysis, tax designing, treasury designing and risk management.



## VII. RECOMMENDATIONS

Based on the key findings conferred, major recommendations created are:

- Adopting an enterprise BI software standard: an enterprise can adopt Cognos BI suite as the primary enterprise wide BI.
- Adopting enterprise Data Integration (ETL) software standards: each SAS and information provide top rated data integration / ETL product that can be well integrated with enterprise's database.

- Adopting enterprise data warehouse platform standard: just in case wherever a data appliance might not be sensible, the use of Oracle / OG database is recommended as the data warehouse repository standard.

- Eventually replacing the current nonstandard BI related software with standard software.

- Establishing a central business intelligence competency Centre: A central BI competence Centre helps to attenuate prices and maximize quality within the preparation and support of BI applications (Cognos and SAS).

- Considering using the Cognos BI solution for the individuals soft BI applications.

- Considering the sharing of BI costs with alternative organizations.

- Establishing BI applications advisory councils at states.

- Utilizing outside consultants on and as needed basis.

- Establishing a budget of BI that embody prices of BI software, data warehouse platform, training and consulting, server hardware employee costs.

## VIII. CONCLUSION:

Organizations that have developed BI with success aren't solely serving the worsening however thriving. It has helped them to manage inventories, cut costs, higher target promotions, increase in equipment utilizations and determine their most loyal customers and their preferences. BI eliminates unknowns and is playing a vital role in restoring confidence by illuminating the broader economic landscape. Traditionally BI has been employed by massive firms, however it should be democratized to create it appropriate for mid-sized organizations. Every organization should attempt to navigate its own resolution of the slump, however effective use of BI chart the way keeping in mind that "Decision-making should be supported collaboration and a wider range of data sources".

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