Abstract:

Business Intelligence delivers a rich set of benefits that drive significant and tangible return on investment. It removes the complexity of converting raw data into meaningful business intelligence by giving organizations the power to transform data from multiple sources into accurate, consumable information that can be shared securely throughout the enterprise. It enables users to make informed business decisions quickly and confidently by providing the query and reporting tools they need to find, share, manage, publish and analyze information. The goal of Business Intelligence is to enable management to make more intelligent decisions on the basis of knowledge extracted from data. Does this mean that having data is always good, that having more data and extracting more Knowledge from it is better, and that knowledge can be derived only from data?

The paper also aims at describing processes of building Business Intelligence (BI) systems. Taking the BI systems specifics into consideration, the author presents a suggested methodology for the systems creation and implementation in organizations. The considerations are focused on the objectives and functional areas of the BI in organizations. Hence, in this context the approach to be used while building and implementing the BI involves two major stages that are of interactive nature, i.e. BI creation and BI “consumption”. A large part of the article is devoted to presenting Objectives and tasks that are realized while building and implementing BI.

Key words: Business Intelligence, business decision-making, analytics, memory, monitoring
Introduction:

Business intelligence is excepted to have the highest impact on organizations over next few years as they increasingly incorporate the technology in ERP and CRM software, a recent study shows.

In surveying more than 1600 executives in 36 countries, the Aberdeen Group found that one in four identified BI and analytics as the software technology with the most pronounced effect in 2009. “Companies are finding that BI has many uses within the organization, but the barriers to success lie in the ability to make access and use pervasive”. David Hatch the executives identified several business initiatives as driving BI use within their organizations. They include sustainability and green tracking, field Marketing and Promotions-tracking and customer service and relations. BI is providing decision makers with such accurate information and with the appropriate tools for data analysis.

BI is an umbrella term that combines architectures, tools, database, applications, practices and methodologies. Garter Group (1996) (the first company used BI in market in the mid-1990) defined BI, “information and applications available broadly to employees, consultants, customers, suppliers and the public. The key to thriving in a competitive marketplace is staying ahead of competition. Making sound business decisions based on accurate and current information takes more than intuition. Data analysis, reporting, and query tools can help business users dig in the mine of data to extract and / or synthesize valuable information from it –today these tools collectively fall into category called Business Intelligence”. Many organizations who developed successful BI solutions, such as continental Airlines, have seen investment in BI generate increase in revenue and cost saving equivalent to 1000% return on investment [ROI]

Business intelligence overview

“If a BI solution can’t help you make sound decision about your company’s future quickly, easily and with confidence – it’s neither good business nor intelligent”.

The ultimate goal of effective BI is to promote better decision faster. This is facilitated by providing software tools and best practices to collect, validate, analyse and report timely information to key decision makers – whether the decision makes is a frontline employee or the governor.
A comprehensive Enterprise BI solution provides a foundation for addressing these five key questions.

- What happened? (reporting)
- Why did it happen? (analysing)
- Why will it happen? (predicting)
- What is happening? (monitoring)
- Making it happen. [Event-driven decision support]

BI solution technology consists of three primary components:

- *Data integration technology* (Extract, transform, load-ETL) represents software that is used to analyse sources data, cleanup any data quality problem and transfer data in real time.
- *Data warehouse Repositories* (strategic & operational) represents the computers hardware where extracted data is stored.
- *BI tools* – represents software tools that are used to model and analyse data to support better decisions.

The relationship of these three BI components can be seen in the exhibited diagram.

**Business Intelligence Infrastructure**
The functions and roles typically associated with the development of BI applications include the following:

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

- **Target data sources**: Identify data sources that can provide the source data needed.

- **Extract, transform and load source data**: Analyse the source data to determine requirements for extracting, transforming and transferring data for subsequent analytics in real time.

- **Decision support modeling**: Develop the logic, models and display formats by which the source data can be analysed, mined, correlated, mapped, displayed and reported.

- **Analysis and reporting**: Develop the actual reports, queries, graphs, dashboards, or scoreboards to be used analyse and display or report the data in the data warehouse.

**Methodology and findings.**

A primary interview was conducted considering the faculty teaching BI and corporate respondents. More data is collected conceptually considering the response in interviews and observations.

**Findings**

Based on the review of the existing publications and interview, following key findings were identified

- **Multiple BI software products in use**: currently enterprises have large number of different 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 limited BI expertise as many of the applications are developed through consulting engagements that include limited BI training and knowledge transfer.

• **No formal BI methodologies:** there are no formal BI methodologies in use in the development or operation BI applications.

• **No formal BI requirements for new application development projects:** there are no BI requirements linked to the development of new application systems or to the purchase of new application software.

• **The existence of a large amount of legacy data:** The current BI tools are not adequate for accessing and using legacy data for future BI applications.

• **BI is underutilized:** There are significant opportunities to increase the use of BI technology to support critical decision making but these opportunities are underutilized.

**Summary of discussion:**

Companies today understand the vital role BI plays in their organization. Increased efficiency, better productivity, a smarter, faster and more agile environment but its difficult to know where to start and easy to get lost in a tangle of buzzwords. Throwing money at new solutions is not always the answer.

• For organizations of all sizes, analytics is considered a primary tool in their BI solutions small organization actually also consider Excel a part of the solution where as large organizations cite dash boards / scoreboards, adhoc/query, and multidimensional analysis.

• In all organizations, BI needs are determined within division/departments that establish their own process.

• An important reason for companies of all sizes to set up BI is to drive the use of BI to different levels of the organization.

• BI tends to be cost centre in large organizations.
BI influences point to many benefits and anticipated the benefits of implementing BI, including increased business user satisfaction and increased decision making speed.

**Current changes in BI:**

Many experts have found that the past performance is no guarantee of the future results. The problem is that BI often has fallen short of ideal, delivering insight into the past but not into up-to-the moment performance or future prospects. That’s about to change BI for future has arrived with three major driving factors, viz...

**Predictive analytics:**

Predictive analytics is a white hot growth segment that got hotter with BM’S $1.2 billion deal to buy SPSS, a company that uses algorithms and combinations of calculations to spot trends, risks and opportunities in ways not possible with historical reporting.
More real time performance monitoring:

Between the extremes of rearview-minor reporting and advanced predictive analytics lies real time monitoring. Frontline managers and executives increasingly want to know what's happening right now—as in this second, not yesterday or even 10 minutes ago. This is where stream processing technologies are moving beyond niche industry uses. Real-time monitoring detects events or patterns of events as data streams through transactional systems, networks or communications buses proven on wall street and in other data-soaked industries, streams processing technologies deliver sub second insight that convectional BI can't touch.
In-memory BI:

The third element poised to change BI is the much faster analysis that's possible using in-memory calculations. In memory tools can quickly slice and dice large data sets without restoring to summarized data, pre-built cubes, or IT-intensive database tuning products such as spot fire (acquired by Tibco), Applix TM1 (acquired by IBM, now / BM Cognos TM1), and Qlictech were pioneers in category, and in recent months more vendors have joined the in-memory ranks, or laid out plans to do so. Microsoft, for example, plans to add in-memory analysis to next year releases of SQL servers.

The traditional focus on tools has limited the BI industry's impact most non-technical users find them hard to learn. They need the right information at the point of decision-making, which means widely deployed BI applications-integrated into their day to day responsibilities-must increase in importance relative to slice and dice tooling. Typical applications include querying, modeling, planning / budgeting / forecasting, reporting financial consolidation, activity based costing / management, score cards, dash boards, portals, analysis, tax planning, treasury planning and risk management.

![Percentage who consider each software tool part of their BI solution chart](chart.png)

*Base: 95 enterprise BI influencers, 69 SMB BI influencers*
Recommendations:

Based on the key findings presented, major recommendations made are:

- Adopting an enterprise BI software standard: an enterprise can adopt Cognos BI suite as the primary enterprise wide BI software.
- Adopting enterprise Data Integration (ETL) software standards: Both SAS and information offer top rated data integration / ETL products that can well integrated with enterprise's database.
- Adopting an enterprise data warehouse platform standard: In case where a data appliance may not be practical, the use of Oracle / OG database is recommended as the data warehouse repository standard.
- Eventually replacing the current non standard BI related software with standard BI software.
- Establishing a central business intelligence competency centre: A central BI competency centre helps to minimize costs and maximize quality in the deployment and support of BI applications (Cognos and SAS).
- Considering using the Cognos BI solution for the people soft BI applications.
- Considering the sharing of BI costs with other organizations.
- Establishing BI applications advisory councils at states.
- Utilizing outside consultants on and as needed basis.
- Establishing a budget of BI that include costs of BI software, data warehouse platform, training and consulting, server hardware employee costs.

Conclusion:

Organizations that have developed BI successfully are not only serving the downturn but thriving. It has helped them to manage inventories, cut costs, better target promotions, increases equipment utilizations and identify their most loyal customers and their preferences. BI eliminates unknowns and is playing a pivotal role in restoring confidence by illuminating the broader economic landscape. Traditionally BI has been used by large corporations, but it must be democratized to make it suitable for mid-sized organizations. Each organization must try to navigate its own way out of the slump, but effective use of BI chart the way keeping in mind that “Decision-making must be based on collaboration and a wider range of data sources”.
Reference

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