

BUSINESS INTELLIGENCE – JUGGERNAUT IN AN ORGANISATION

¹Sejal Rana, ²Simran Kaur

^{1,2} Department of Computer Science and Engineering,
Maharaja Surajmal Institute of Technology, GGSIPU,
New Delhi, India.

Abstract : The field of business analytics has enhanced significantly over the past years, providing business users more reliable insights, particularly from operational data stored in transactional systems. In this paper, we present the technology and enterprise-adoption trends associated with business analytics.

The principal user is the business user, whose work, possibly in merchandising, marketing, or sales, is not directly related to analytics per se, but who typically uses analytical tools to enhance the outcomes of some business process along 1 or more dimensions (such as profit and time to market). Luckily, data mining, analytic applications, and business intelligence methods are now better combined with transactional systems than they once were, creating a closed-loop between operations and analysis that permits data to be analyzed and the outcomes shown instantly in business actions. Mined learning today is deployed to a more widespread business patrons taking advantage of business analytics in its everyday activities. Analytics are forthwith routinely used in sales, marketing, supply chain optimization, and fraud detection [2, 3].

Keywords - business analytics, business intelligence, data analytics, data mining, analytics, data visualization.

I. INTRODUCTION

Even with advances, business users, while specialists in their appropriate areas are still not likely to be proficient in data/business analysis and statistics. Decision making based on the collected data by and about their companies, they must either believe on data analysts to obtain info from the data or use analytic app/tools that combine data analysis technologies with task-specific knowledge. In the former, business users present the knowledge, raw data to the analyst, then the analyst organizes and analyzes the data and communicate the outcomes back. These outcomes raises additional questions, hence various repetitions are essential before business users can actually act on the analysis. In the latter, analytic applications/tools incorporate not only a diversity of data mining techniques (Data cleaning and preparation, Tracking patterns, Classification, Association, Outlier detection, Clustering, Regression, Prediction) but present suggestions to business users as to how to perfectly analyze the data and give the obtained information. Business users are expected to make use of analytics to enhance performance along various metrics.[1]

II. BUSINESS INTELLIGENCE

Business intelligence and analytics are data management solutions widely used in organisations and enterprises to fetch past and present data, while using statistics and software to analyze raw information, and present findings for making better future decisions.

How Business intelligence applies to business?

Business intelligence (BI) combines business analytics, data mining, data visualization, data tools and infrastructure, and best practices to assist businesses to make more data-driven conclusions.

Practically speaking, you realize you have present day business insight when you have a far reaching perspective on your organisation's data and utilize that information to drive change, wipe out wasteful aspects, and rapidly adjust to market or gracefully changes.

Business intelligence is a term that covers the processes and methods of gathering, saving, and analyzing data from business transactions or projects to optimize performance. All of these elements collectively form a complete view of a business to help people make better, actionable decisions.

Over the past few years, business intelligence has evolved to include more processes and activities to help enhance performance. These methods include:

- **Data mining** : Using databases, statistics and machine learning to reveal trends in a massive datasets.

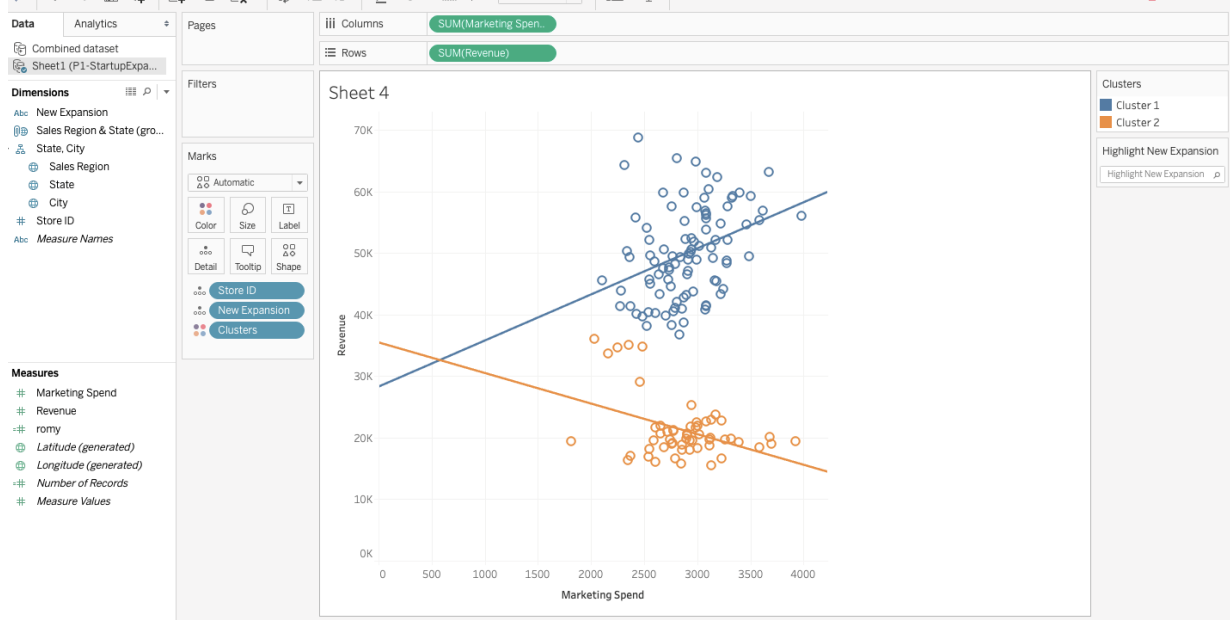


Fig 1 : Revenue vs Marketing spent of various cities of USA

The above figure shows 'Clusterisation'; The cities are clustered into two regions depending upon the behaviour of revenue and marketing spend.

In Orange cluster we see that no matter how much we spend on marketing, the revenue doesn't increase much.

But in Blue Cluster, increase on marketing results in increase in revenue. So, its better to invest into these cities because return on investment is better.

- **Reporting:** Sharing data analysis to stakeholders so they can form results and make decisions.
- **Performance metrics and benchmarking:** Comparing current performance data to past data to trace performance against goals, typically using customized dashboards.
- **Descriptive analytics:** Using preliminary data analysis to find out what occurred.
- **Querying:** Examining the data particular issues, BI pulls the results from the datasets.
- **Statistical analysis:** Using the outcomes from descriptive analytics and additionally examining the data using statistics like how that trend occurred and why.
- **Data visualization :** Converting data analysis into visual representations such as charts, graphs, and histograms to more efficiently utilize data.

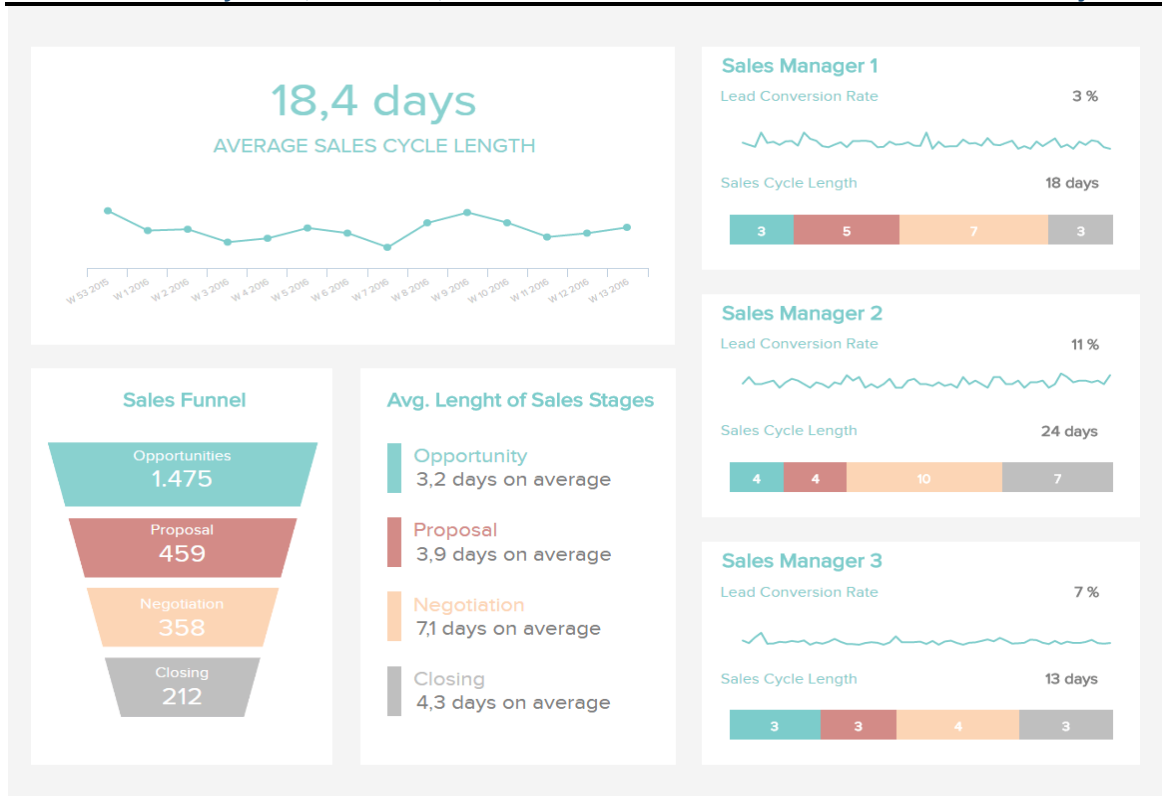


Fig 2 : Sales Dashboard

- **Visual analysis:** Examining data through visual storytelling to deliver insights on the fly and stay in the flow of analysis.
- **Data preparation:** Compiling various data sources, recognizing the dimensions and measurements, preparing it for data analysis.

Several methods that business intelligence can assist companies make smarter, data-driven decisions:

- Identify ways to increase profit
- Analyze customer behaviour
- Compare data with competitors (Competitor Analysis)
- Track performance
- Optimize operations
- Predict success
- Spot market trends
- Discover issues or problems

THE MODERN ANALYTICS WORKFLOW



Fig 3 : The Modern Analytics workflow

How BI, data analytics, and business analytics work together ?

Business intelligence incorporates data analytics and business analytics, but applies them simply as elements of the total process. BI supports users to conclude data analysis. Data scientists delve into the specifics of data, using advanced statistics and predictive analytics to identify patterns and forecast - future patterns. Data analysts asks Why did this happen and what can happen next? Business intelligence takes those models and algorithms and splits the decisions down into actionable language.

Organizations carry business analytics as portion of their larger business intelligence strategy.

Business analytics shouldn't be a linear process because acknowledging 1 question will likely direct to follow-up inquiries and iteration. Rather, think of the method as a cycle of data access, discovery, exploration, and information sharing. This is called the cycle of analytics, a recent term revealing how businesses make use analytics to respond to evolving questions and expectations.

The future purpose of business intelligence :

Business intelligence is continually evolving according to business requirements and technology, so every year, modern trends are recognized . Artificial intelligence and machine learning will proceed to rise, and businesses can blend the insights from AI into a more comprehensive BI strategy. As organizations attempt to be more data-driven, efforts to share data, and collaborate will increase. Data visualization will be even more fundamental to work collectively across teams and departments.

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