Business Intelligence

Business Intelligence

The insights to transform your business make better decisions, find opportunities and provide better services.

Contents

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.

This paper also aims at describing processes of building Business Intelligence (BI) systems.

Problem Statement

- **IT Infrastructure**
  - Lack of **IT Infrastructure** to support timely reporting to various key business leaders & information seekers
- **Data Visibility**
  - Lack of ability to quickly provide visibility into near time data
- **Sales Planning/Forecasting**
  - Ineffective Sales planning and forecasting
  - Undefined Sales territory responsibilities due to poor information retrieved time and process
- **Stock/Warehouse/Logistics**
  - Poor stocking prediction by the production departments, lead to high manufacturing cost
- **Calculation of Customer and Product Profitability**

Solution

How it Works

Business Intelligence requires a three-pronged approach comprised of people, process and technology. Woven into the process and technology is the concept of integrated data.

Our business intelligence services empower organizations to

✓ Break down data barriers and gain centralized data repositories

✓ Take advantage of data mining for business intelligence solutions for collating data from many sources and transforming data into BI

✓ Implement robust reporting platform facilitating enterprise-wide reporting and analytics

✓ Leverage real-time business intelligence

✓ Build dashboards for a holistic view of business metrics and key performance indicators

Characteristics

Measurements

Many business intelligence tools are used in measurement applications. They can take input data from sensors, CRM systems, web traffic, and more to measure KPIs. For example, solutions for a facilities team at a large manufacturing company might include sensors to measure the temperature of key equipment to optimize maintenance schedules.

Analytics

Analytics is the study of data to find meaningful trends and insights. This is a very popular application of business intelligence tools since it allows businesses to deeply understand their data and drive value with data-driven decisions. For example, a marketing organization could use analytics to determine the customer segments most likely to convert to a new customer.

Reporting

Report generation is a standard application of business intelligence software. BI products can now seamlessly generate regular reports for internal stakeholders, automate critical tasks for analysts, and replace the need for spreadsheets and word-processing programs.

Collaboration

Collaboration features allow users to work across the same data and same files together in real-time and are now very common in modern business intelligence platforms. Cross-device collaboration will continue to drive development of new and improved business intelligence tools. Collaboration in BI platforms can be important when creating new reports or dashboards.

Architecture of the Business Intelligence Process
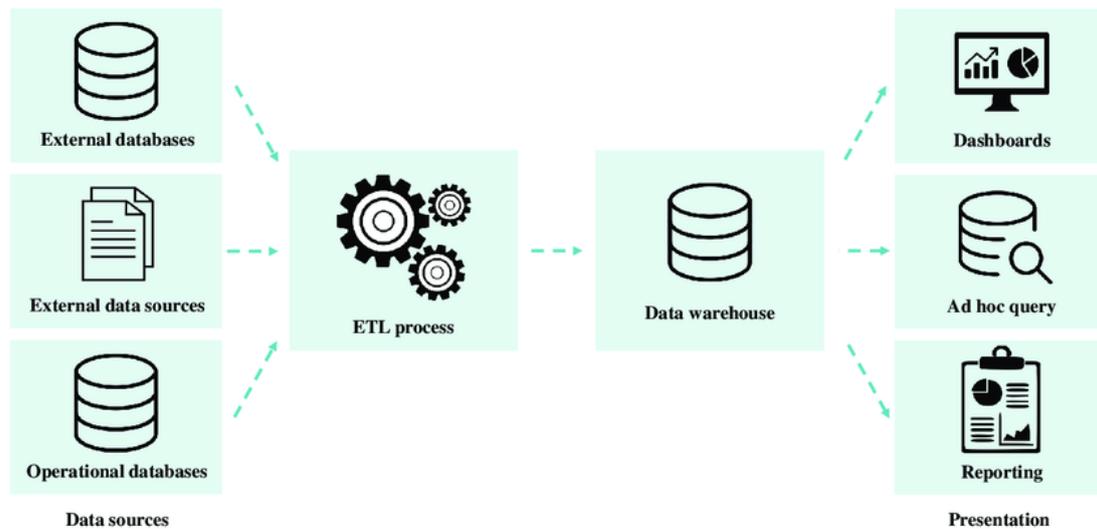
In order to complete a business intelligence project the below steps need to be done

- **Data Warehouse:** A relational database designed specifically for data analysis instead of standard transactional processing. It acts as the conduit between operational data stores and the gaining of insight based on composite data. Slices of data from the warehouse—usually summary data for a single department like sales or finance—are stored in a "data mart" for quicker access.

- **Extract, Transform, Load (ETL):** The first important task is to extract the data from the various data sources and load it into a data warehouse where it is normalized (organized into tables while cleaning the data and removing redundancy and inconstancies). Once it has been appropriately structured it is available for querying and analysis.

- **OLAP or ad-hoc query tools:** OLAP (Online Analytical Processing), and its close cousin ROLAP—(relational) online analytical processing, is a technology that allows users to query data across multiple dimensions, for building standard reports or for enabling users to ask a specific business question.

- **Presentation Layer:** Dashboards, scorecards and reports presenting the data to users in a visually appealing way that is easy to understand. In response to the great success of data discovery and visualization tools like Tableau, MS Power BI and QlikView, many full-stack vendors have also built their own data discovery and visualization tools which are sometimes, but not always, integrated with the rest of the platform.

Data Sources

The data companies analyze through business intelligence comes from a diverse type of data sources. The most common of these are:

- Databases
- Flat files
- Web services
- Other sources such as RSS feeds

Databases

Databases are the most traditional kind of data source in BI. There are many different kinds of databases, and many vendors providing databases with different architectures and different features. Common databases used today include MS Access, Oracle, DB2, Informix, SQL, MySQL, Amazon SimpleDB and a host of others.

Traditionally, transactional databases—namely the ones that record the company's daily transactions, such as CRM, HRM and ERP—are not considered optimal for business intelligence. This is for a variety of reasons, including the fact that a) data is not optimized for reporting and analysis and b) querying directly against these databases may slow down the system and prevent the databases from recording transactions in real time.

In some cases, companies use an ETL tool to collect data from their transactional databases, transform them to be optimized for BI and load them into a data warehouse or other data mart. The main downside of this approach is that a data warehouse is a complex and expensive architecture, which is why many other companies opt to report directly against their transactional databases.

Flat Files

Few companies today have not used Microsoft Excel spreadsheets. Their ease of use and widespread employ makes them as popular as ever.

Microsoft Power BI or IBM Congo's

Currently NousPratIT has strong collaborations with two of the biggest companies in the Business Intelligence Analytics field, Microsoft and IBM.

IBM: IBM Cognos is well suited when you are implementing with compatible software like Costpoint and other Deltek products, this will lead to great integration and result in the wonderful presentation of data for your reporting requirement. However, IBM Cognos is not well suited when being implemented with non-Deltek software as this will lead to challenges in integration and will not produce ideal reporting.

Microsoft: Power BI is great for reporting of any type. The dashboards I create for my executive team are crisp and easy to understand. I often get complements on it, and suggestions on what other reports or data could benefit from Power BI. Power BI is still dependent on data sources, so if my data source connections break, then the report is no

good. This isn't something that you can create and forget. It needs eyes on it to ensure the data is correct

A Business Intelligence Dashboard

The Customer Service Analytics dashboard that's created in Power BI provides information about the historical operational metrics and key performance indicators (KPIs) to effectively manage contact centers.

The following is an example of the Customer Service Analytics overview dashboard:
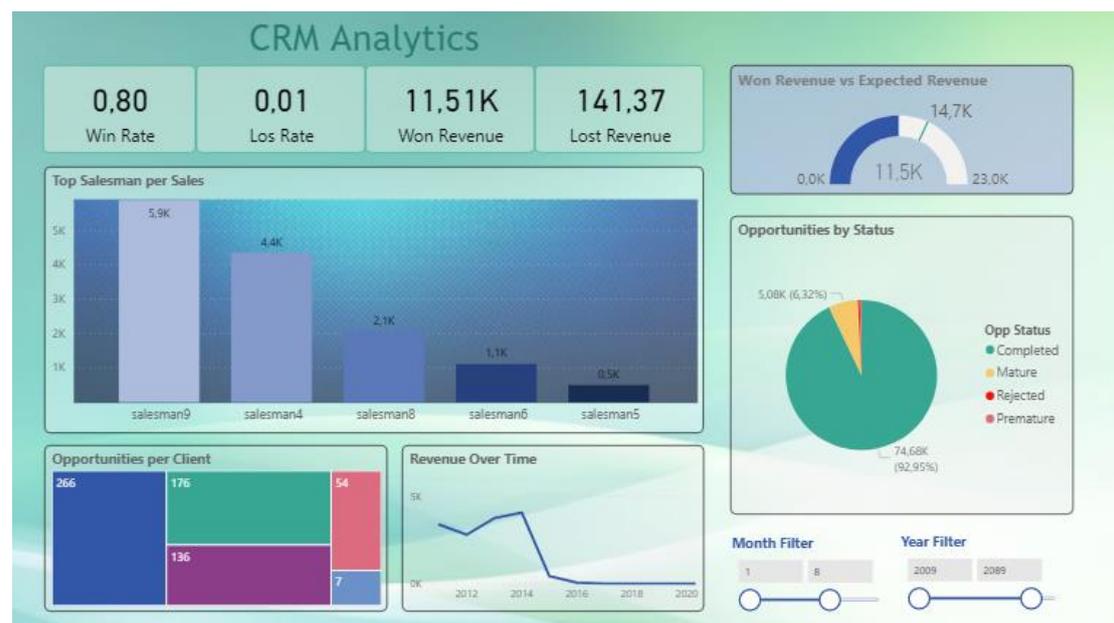
Conclusion

Business Intelligence has revolutionized how companies are able to make future decisions. Business Intelligence solutions offer business-focused analysis at a scale, complexity and speed that is not achievable with basic operational systems reporting or spreadsheet analysis, thereby delivering significant value. The insights gained from business data help to increase profits, lower costs and provide better decision making therefore organization achieve their goals.

Why NousPratIT?

NousPratIT, a software technology vendor that adds value to customers using the Mind (Nous in Greek) to make (Prato in GR) intelligent IT solutions. With individuals that have many years of experience in Software Development, Sales, Business Analysis and Project Management we provide Machine Learning and AI services.

For more information

To learn more about NousPratIT Business Intelligence Solutions, please contact your NousPratIT representative or NousPratIT Business Partner, or
visit: www.nouspratit.gr/en/

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