

Title

Business Intelligence: A Discussion on Platforms, Technologies, and solutions

Overview

The main thrust of the tutorial is to compare and contrast Business Intelligence (BI) Platforms to develop business analytics applications. Whilst classifying platforms into three categories; desktop, enterprise, and cloud, we examine self-service versus corporate BI. We will then use three well known BI technologies such as IBM Cognos, Tableau software, and Microsoft PowerPivot to illustrate the role of technology as enabler to generate insight and provide business solutions in a proper context. The proposal offers a significant coverage of topics listed on the tutorial announcement and since it addresses both the theoretical and practical aspects of knowledge discovery from data, it is of value to academics and industry alike. The coverage expands over following topics: (1) Knowledge Discovery from Data, (2) Information Search and Discovery, (3) Business Applications, (4) Decision Information Systems and (5) User Centered Approaches.

Presenters:

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Abstract:

Business intelligence (BI) refers to the organizational ability to integrate data from across the enterprise and transform them into knowledge. The assimilated knowledge is then used to develop new opportunities towards achieving competitive advantage. BI platforms are used to integrate a full range of analytics capabilities, including statistics, predictive analytics, data and text mining, forecasting, and optimization for faster, more confident decision making. According to Gartnerⁱ “Business intelligence (BI) platforms enable enterprises to build BI applications by providing capabilities in three categories: analysis, such as online analytical processing (OLAP); information delivery, such as reports and dashboards; and platform integration, such as BI metadata management and a development environment.” Creating Business intelligence solutions to generate insights to empower decision makers in many facets of business is facilitated by deploying appropriate platforms and related technologies.

This tutorial covers the basics of Business Intelligence and explores BI platforms to launch BI environments that advance critical success factors such as agility and fact-based decision making throughout organizations. We will distinguish between BI technologies developed by BI vendors and BI solutions deployed within organizations. We argue that BI solutions utilize BI technologies to draw upon vast amount of data from internal and external sources to provide knowledge for better decision making. We compare and contrast Self- service versus corporate BI and discuss the type of platforms suitable to each. Self-service BI applications promote users self-reliant, which in turn lessens the burden on IT. Platforms that are specifically designed for multitenant hosting in public or private clouds allow elasticity and less reliance on internal IT resources, but are less flexible and more difficult to customizeⁱⁱ. Technologies and tools provided by Microsoft, Tableau software, and IBM are some examples of self-service BI.

Corporate BI, on the other hand, involves integrated enterprise-wide computing technologies and services for complex high-performance computing environments. Corporate BI applications are developed using enterprise data centers or private, public and hybrid clouds. Some built upon open standards that securely deliver a complete range of business intelligence that embraces cloud efficiencies and cost savings to achieve marketplace advantage. One example of Corporate BI platform is IBM Cognos that delivers the capabilities on a single service-oriented architecture (SOA) and produces reports, analysis, dashboards and scorecards to monitor business performance, analyze trends and measure results.

The tutorial will guide participants through implementation of BI using three different widely used Business intelligence solutions such as Cognos by IBM, Powerpivot by Microsoft, and Tableau software. These tools vary in their level of sophistication, ease of use, capabilities, and price and each is appropriate for particular business needs. For example Microsoft Powerpivot is useful in scenarios where users want to build their own models. For the vast majority of users, who are not interested in or capable of doing this, there is tableau software with pre-framed models that give users the ability to run ad hoc queries and build their own reports without needing to know how to model the data they use. Corporate BI, on the other hand, depends upon running scheduled, web-based or printed reports and sending them out to a large user base that

don't have the time or know-how to query via a PivotTable, let alone build a PowerPivot modelⁱⁱⁱ.

We will discuss an overview of what can be accomplished with BI and how users can interactively create and share custom applications, dashboards and visualizations to help solve individual and workgroup challenges. We will show how these BI tools enable self-sufficient construction of digital dashboards to display metrics in tables, charts, graphs, maps, colors, and speedometers in a customized interface and a navigable layout. The goal of the tutorial is to empower users to independently explore, analyze, visualize and share data without relying on IT for assistance, in minutes, information workers can generate insights while experiencing greater freedom and flexibility.

Our tutorial will benefit academics who are interested in the methods of knowledge discovery of data from various sources and formats and educators who are interested in incorporating some or all of these tools in their BI courses. Since “turning that data into meaningful information to impact performance” is the goal of any organization, this tutorial has clear applicability to industry where training employees to enable self-sufficiency with the new technology is a top priority.

Scope

The tutorial provides important background information about business intelligence and focuses on platforms for building business intelligence applications and touches upon. Topics included are:

- What is Business Intelligence
- Business Intelligence Platforms; types, capabilities, Pros and Cons
- Self-service versus corporate business intelligence applications.
- Business Intelligence Solutions for types of platforms
- Demonstration of platforms, technology, and solutions

In particular the tutorial is designed to guide users to discover knowledge from data via creating:

- **Reports** that equip users with the information they need to make fact-based decisions.
- **Dashboards** that help users access, interact and personalize content in a way that supports how they make decisions.
- **Analysis** capabilities that provide access to information from multiple angles and perspectives to facilitate analyzing and making informed decisions.
- **Collaboration** capabilities that fuel the exchange of ideas during the decision-making process.
- **Scorecarding** capabilities that automate the capture, management and monitoring of business metrics to help compare them with strategic and operational objectives.

The materials covered in this tutorial have applicability to a number of topics of interest to participants of Conference on Research Challenges in Information Science such as

Knowledge Discovery of Data, Decision Information Systems, Information Search and Discovery, and Business Applications

Background of the attendees

The requirements for attendees are minimal. Anybody with interest in learning Business Intelligence tools and platforms will benefit from the tutorial. Individuals who are familiar with excel will have an easier time to follow MS powerpivot. Tableau and Cognos will be taught assuming that the attendees have no experience with these technologies.

Which material will be provided to attendees;

We will provide PowerPoint slides, printed hand-outs and links to training videos, access to the BI software applications, real world examples, and data sets.

Timetable. 90 minutes

- Table of content and Introduction (5 minutes)
- BI concepts and product landscape(5 minutes)
- Corporate versus Self-service business Intelligence (10 minutes)
- BI platforms to develop business applications (15 minutes)
 - Desktop - Microsoft Powerpivot (15 minutes)
 - Desktop or Cloud –Tableau Software (15 minutes)
 - Desktop, Enterprise, or Cloud- IBM Cognos (15 minutes)
- Future of BI and conclusion: 10 minutes.

Demonstration of BI technologies are short and given the time constraint are not complete, but we will provide the audience with enough materials that they can continue to practice and learn as much as they wish on their own time and leisure. The training materials used in the tutorial are already tested in graduate classrooms and proven to be very useful.

A short bio of the presenters;

1. Noushin Ashrafi is a Professor of Management Information Systems at the University of Massachusetts-Boston. Her areas of expertise are in Business Intelligence, Object-Oriented System Analysis and Design, Strategic Organizational Agility. She has numerous journal publications and is the author of “*Object Oriented System Analysis and Design*”, 2009. She has conducted seminars in organizational agility/business intelligence in the U.S.A and abroad. She was Fulbright Scholar in 2010-2011 and the recipient of IBM Healthcare Industry Skills Innovation award in 2010 and IBM Watson solution in 2012. Dr. Ashrafi has developed graduate curriculum in Business intelligence and has taught BI courses, which include deployment of platforms for developing business analytics. She received her Ph.D. and M.B.A. Degrees from the University of Texas and her B.A. from SUNY.
2. Jean-Pierre Kuilboer is an Associate Professor in the Management Science and Information Systems Department at the University of Massachusetts Boston. Dr. Kuilboer’s current research interests are in the area of database management, data mining and data warehousing, and network security and privacy. Dr. Kuilboer is the author of “*E-Business & E-Commerce Infrastructure: Technologies Supporting the E-Business Initiative*” and has a vast industrial experience in Europe and the United States. He is also involved in a number of initiatives such as strategic planning, academic computing advisory, and the Massachusetts advanced cyber security center. Dr. Kuilboer received his Ph.D. from the University of Texas and his B.A. from University of Louisiana.

ⁱ Gartner, 2012

ⁱⁱ Boris Evelson, The Forrester Wave™: Self-Service, Business Intelligence Platforms, Q2, June 12, 2012

ⁱⁱⁱ www.activereportsserver.com, Dec. 2012