

SESSION 8

Business Analytics and Trends in Big Data

Objectives

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- ❑ Describe business analytics and its types
- ❑ Explain the BI analytics tools and infrastructure
- ❑ Describe the advantages of Big Data analytics and challenges faced
- ❑ List the software trends in BI analytics



Business Analytics

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- Business Analytics (BA) is a methodical exploration of an organization's data
- BA focuses on statistical analysis and is used by companies dedicated for making decisions
- BA provides insights about business decisions that are used to automate and modify business processes
- BA is successful depending on the quality of data and analysts



Examples of BA (1-2)

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□ Two main techniques of BA:

Basic Business Intelligence (BI)

- BI consists of historical data of performance of a staff member, a team, or a business department over a specific time period

Deeper Statistical Analysis

- This involves executing predictive analytics by applying statistical algorithms to historical data



Examples of BA (2-2)

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□ Some types of business analytics:

Descriptive Analytics

Predictive Analytics

Prescriptive Analytics



Advanced Analytics Versus BI

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Function	Description	Advanced Analytics
Answers the questions	What happened?	Why did it happen?
	When?	Will it happen again?
	Who?	What else does the data illustrate that we never thought?
	How many?	What happens if we change?
Includes	Reporting (Key Performance Indicators, Metrics)	Quantitative and Statistical Analytics
	Automated Monitoring and alerting	Predictive Modeling
	Scorecards	Data Mining
	Dashboards	Multivariate Testing
	OLAB (Cube, Slice and Dice, Drilling)	Big Data Analytics
	Adhoc query	Text Analytics
	Operational and Real-Time	



BA Applications

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- Types of BA tools are:

BI reporting
software

Statistical
analysis
tools

Big Data
platforms

Data
visualization
tools

Self-service
analytics
platforms

- Most common BA tool is Self-service analytics platform
- Business Analysts create charts, Web portals, and reports that track explicit metrics in data sets
- Data acquisition includes data cleansing, removal from business systems, and incorporation into a repository
- BA supports tactical decision-making to support real-time responses



Big Data Analytics Tools

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BI analytics tools consist of three categories:

Reporting Tools

- It creates report-type data in an electronic format to support performance management processes, finance-associated organizational planning, and budgeting

Querying Tools

- It runs queries to deliver the analysis of data to a certain level, such as SAP Business Objects or IBM Cognos.

Sophisticated Analytics Tools

- It takes 'deeper-dive' into data analysis using approaches, such as predictive analytics (for example, IBM, SPSS, and SAS)



BI Analytics Infrastructure

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- BI analytics infrastructure:
 - Supports and surrounds Big Data analytics tools
 - Designed to provide access to a wide range of data in public clouds and on the Web
- BI architectures include infrastructure build-out capabilities, rapid-query-generation development tools, and integration tools
- Large enterprises require a data warehouse or corresponding data marts to offers great control on the data



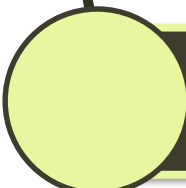
Benefits of Big Data Analytics

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Some advantages of Big Data Analytics are:



BI and analytics processes to optimize data to reduce operational risks and costs, attain competitive advantages, and identify and fine-tune business strategies.



BI analytics systems provide C-suite executives with a 360-degree vision of the organization with near-real-time updates and alerts



Big Data analytics can be used to incorporate feedback from external customers and internal users



Challenges of Big Data Analytics (1-3)

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**Uncertainty of Data
Management
Landscape**

Big Talent Gap

**Getting Data into the
Big Data Platform**

**Need for
Synchronization
across Data Sources**

**Getting Important
Insights through Big
Data Analytics**



Challenges of Big Data Analytics (2-3)

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Uncertainty of Data Management Landscape

- It means understanding the technology which works better for them without inducing new risks and problems
- In Big Data, there are various disruptive technologies and difficult to select the right technology

Big Talent Gap

- There is lack of users who own the essential technical skill
- Not many data tool professionals have the essential information

Getting Data into the Big Data Platform

- Variety and scale of data available to any data practitioner gets uncontrollable
- Organizations will be skeptical about executing Big Data and business analytics



Challenges of Big Data Analytics (3-3)

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Need for Synchronization across Data Sources

- Many conventional data warehouses and data marts, sequences of data migrations, transformations, and extractions would result in unsynchronized data
- Consistency of data is affected and result in disastrous due to inconsistent data

Getting Important Insights through Big Data Analytics

- Organizations receive proper insights from Big Data analytics and the right department has access to the data
- Big Data analytics needs to be insightful and comprehensive



Users of BI

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□ The main users of BI are:

- Upper management (Chief Marketing Officers and CFOs)
- Reporting is a tool which keeps the business running for any CFO
- CMOs have reached the position of CEO as a result of analytics insights



BI Analytics and Software Trends

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Some of the latest BI analytics and software trends are:

Data governance is now an established discipline used to improve the data quality

BI which is self-service, is not just desired but expected by end users

Agile marketing is spreading across organizational setting

Experimental groups are set up by large organizations to access social-media, public-cloud and other data for BI



Trends in Big Data (1-3)

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Big Data turns approachable and fast and choices increase to speed up Hadoop

Big Data is no longer just Hadoop

Organizations influence data lakes (Data lake is a man-made reservoir)

Architectures established to discard one-size-fits all agendas



Trends in Big Data (2-3)

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Variety not velocity or volume drives investments in Big Data

Machine learning and Spark brighten up Big Data

Convergence of Big Data, IoT, and cloud build different opportunities for self-service analytics



Trends in Big Data (3-3)

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Self-service data prep becomes conventional making Hadoop data accessibility to business the biggest challenge

Big Data is growing and Hadoop is becoming a main part of the enterprise IT landscape

Metadata catalogs help users to find Big Data which needs analysis



Summary (1-2)

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- ❑ Business Analytics (BA) is the practice of methodical, iterative examination of an organization's data, with focus on statistical analysis. Business analytics is used by organizations which are dedicated to data-driven decision-making.
- ❑ BA techniques consists of two areas:
 - ❑ The first area is basic business intelligence.
 - ❑ The second area of business analytics involves deeper statistical analysis.
- ❑ BI analytics software trends include experimental groups, self-service BI, data governance, and agile marketing.



Summary (2-2)

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- Some advantages of Big Data analytics are:
 - Companies gain competitive advantages.
 - It reduces operational costs and risks.
 - It identifies and fine-tunes business strategies.
 - It provides a 360-degree view of the organization.
 - It can be used to integrate feedback from external customers and internal end users.
- Agile self-service data prep tools enable Hadoop data to be prepared at the source and also enable data to be available as snapshots for easier and faster examination.
- Metadata catalogs help users understand and discover data which is worth analyzing using self-service tools.

