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SOFIA UNIVERSITY
"ST. KLIMENT OHRIDSKI"
EST. 1888



ICT-TEX course on Digital skills

Topic 10: Business Analytics

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ICT IN TEXTILE AND CLOTHING HIGHER EDUCATION AND BUSINESS

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10.2. Business Analytics

These slides are part of the topic on
“Topic 10: Business Analytics” of the course on
Digital skills in Textile and clothing industry.

Check also the other themes in this topic:

- 10.1. Analytics and Classification of Analytics
- 10.3. Big Data and Analytics
- 10.4. Data Visualizations and Analytics
- 10.5. Popular Analytics Software tools



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Business Analytics Definition

“Business Analytics can be defined as a process beginning with business-related data collection and consisting of sequential application of descriptive, predictive, and prescriptive major analytic components, the outcome of which supports and demonstrates business decision-making and organizational performance”

- Schniederjans, M., Schniederjans, D. and Starkey, C.: *Business Analytics Principles, Concepts and Applications: What, Why, and How*. Pearson FT Press, USA 2014, ISBN: 978-0-13-355218-8 (2014)



Business Analytics vs Analytics

- Analytics has many different areas of application. Business Analytics are **applied to business**.
- Business Analytics tools use primarily business data. Analytics tools use a variety of non-business data to generate insightful information.
- Business Analytics helps business organizations to increase their performance by creating measurable business results and increased value. Business Intelligence is not focused on that.



Business Analytics vs Analytics

- Analytics tools can often represent one type of analytics tool, classified as Descriptive, Predictive, Prescriptive analytics, and so on.
- Business Analytics tools often include all three categories of analytics instruments into their structure (and they can be applied sequentially – descriptive, predictive, and prescriptive analytics) for generating valuable and new information supporting the decision-making processes of the organization.



Business Analytics vs Business Intelligence

- Business Intelligence *“can be defined as a set of processes and technologies that convert data into meaningful and useful information for business purposes.”*

– Schniederjans, M., Schniederjans, D. and Starkey, C.: *Business Analytics Principles, Concepts and Applications: What, Why, and How*. Pearson FT Press, USA 2014, ISBN: 978-0-13-355218-8 (2014)

- Business Intelligence is focused on historical business data and the data report, storage, and maintenance of that data.
- Business Analytics is not focused on data storage.



Business Analytics vs Business Intelligence

Business Intelligence uses mainly the analytics capabilities of descriptive analytics to analyze the organization data from the past.

Business Intelligence tries to answer the questions:

- What has happened?
- What is happening?
- What to do (take action) based on the historical data?



Business Analytics vs Business Intelligence

Business Analytics can combine different types of analytics.

- Business Analytics tools can present models for analyzing past business data to predict the future (Predictive analytics capabilities) and provide some explanation for the occurrence of an event in a business.
- Can answer the business questions:
 - What is happening? What has happened?
 - What can happen? Why will it happen?



Business Analytics vs Business Intelligence

Business Analytics can combine different types of analytics.

- Business Analytics can determine what to do next as a result of a business event and provide evidence of the most optimal level of key variables to achieve a particular desired and expected business outcome (Prescriptive analytics capabilities), resulting in increased business value and performance.
- Can answer the business questions:
 - What should happen? What must be done?
 - Why should I do it?



Business Analytics vs Business Intelligence

- Often Business Intelligence cannot use the combination of different types of analytics and their functionalities, such as the capabilities of predictive analytics and prescriptive analytics.
- Business Analytics can use unstructured and structured business data. Business Intelligence is focused on using only structured business data.



Business Analytics Application

Manufacturing

Finance

Marketing

Human Resources

Customer
Relationship
Management
(CRM)

Medical
Methodology

Many others



Importance of Business Analytics

Business Analytics tools contribute to:

- Extracting useful insights over the processed data
- Gaining valuable business information and knowledge
- Decision-making process of the management
- Improving business performance, value and profit
- Improving business competitiveness



Business Analytics Data

- Structured, semi-structured, or unstructured data from different data sources, representing collected business data
- This data must be stored in a database to make it usable by Business Analytics.
- Database management systems (DBMS) collect, process, store, and retrieve data from various sources.
- Business Analytics tools analyze the data and provide valuable business information.



Business Analytics Data

- Database management systems (DBMS)
- Databases
- Data warehouses
- Data marts
- Online analytical processing (OLAP)
- ETL (Extract, Transform, Load)
- Data mining and so on.



Business Analytics Data Examples

Any data that contains information regarding business such as:

- Accounting and personnel information
- Different business reports and research such as the market, competition, customer satisfaction, customer behavior, demographics, market size, etc.
- Revenues, profit, statistics, etc.
- Different business analysis and trends
- Any other information related to the business.



Business Analytics Data

- Different metrics on data are applied on data to measure the defined indicators (performance, added business value, and so on)
- *“A metric is a unit of measurement that provides a way to objectively quantify performance. Measurement is the act of obtaining data associated with a metric. Measures are numerical values associated with a metric.”*

– Evans, J.: *Business Analytics: Methods, Models, and Decisions*, (2nd ed.), Pearson Education, USA 2017, ISBN: 9781292095448 (2017)



Business Analytics Data

- Business Data can be measured by:
 - **Quantity (quantitative metrics)**
 - **Quality (qualitative metrics)**
- Metrics are:
 - **Discrete metrics** refers to counting on a measurement scale
 - **Continuous metrics** refers to the continuous measurement scale



Business Analytics Data

- Business Data according to measurement scale:
 - **Categorical (nominal) data**
 - **Ordinal data**
 - **Interval data**
 - **Ratio data**
- This classification provides a basis for classifying different business data into the relevant database available for Business Analytics tools.



Problem Solving with Business Analytics

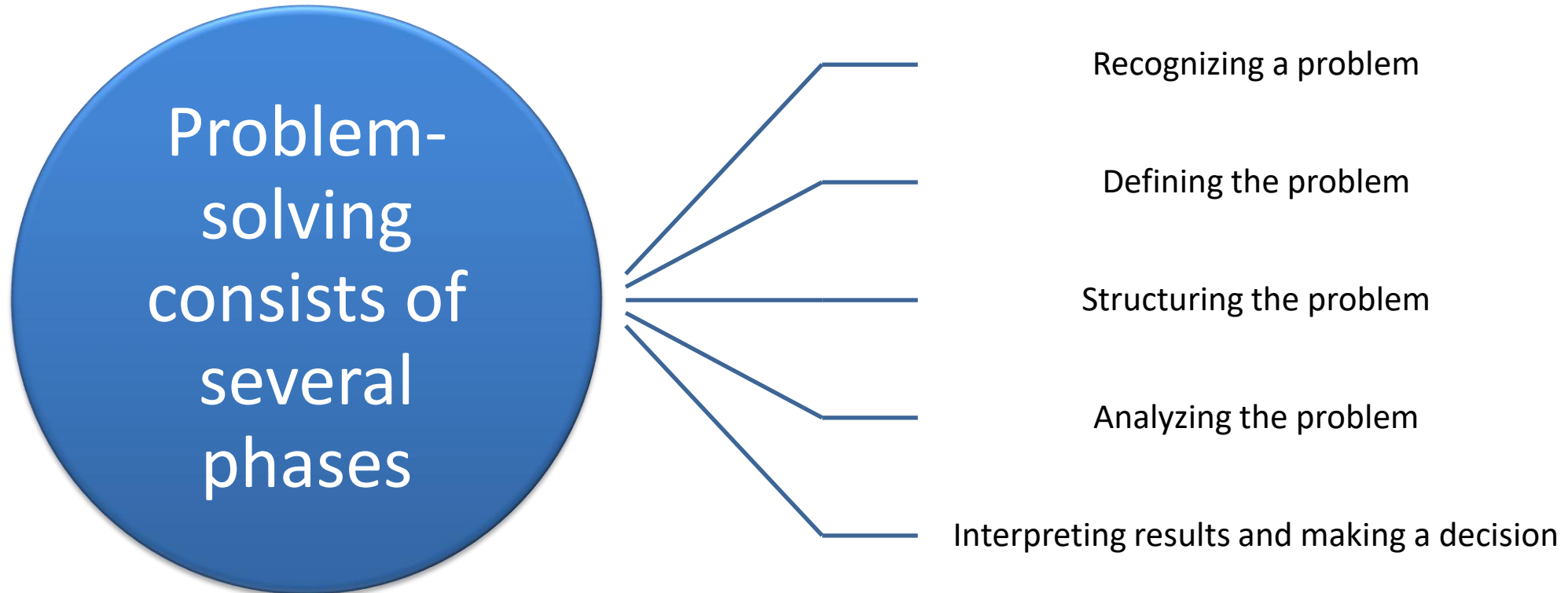
- “Problem-solving is the activity associated with defining, analyzing, and solving a problem and selecting an appropriate solution that solves a problem.”

– *Evans, J.: Business Analytics: Methods, Models, and Decisions, (2nd ed.), Pearson Education, USA 2017, ISBN: 9781292095448 (2017)*

- Business Analytics tools support problem-solving and decision-making processes.



Problem Solving with Business Analytics



Based on: Evans, J.: Business Analytics: Methods, Models, and Decisions, (2nd ed.), Pearson Education, USA 2017, ISBN: 9781292095448 (2017)



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