# CBD2204 Week 5

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# 1. Big Data, Business Strategy, Solutions

## 1.1 the meaning of Big Data

- *volume*, *variety* and *velocity*
  - volume: large amounts of data
  - variety: diverse data types & structures
  - velocity: speed of new data creation
- structured, semi-structured, quasi-structured and unstructured data
- the need for *data science*
  - goes beyond “business intelligence”
  - in-depth statistical analysis, forecasting
  - “what if …?” , “what will happen next?”
  - analytics + exploration

# 1. Big Data, Business Strategy, Solutions

## 1.2 big data strategies

- working within the Big Data Ecosystem
- using data science principles:
  - visualization
  - modeling
  - **not just data analytics, but exploration**!
- creating business strategy from data-science insights
  - examples:
    - determining target market segments or demographics
    - optimizing profits through timing of sales events or inventory build-up
    - incentive programs

# 1. Big Data, Business Strategy, Solutions

1.3 how to create big data strategies

- utilize data scientists
  - recall the characteristics of the data scientist:
    - quantitative skill, technical aptitude, critical thinking, curious and creative, communicative and collaborative
    - reframe business challenges as analytics challenges
    - design, implement, and deploy statistical models and data mining techniques on Big Data
    - develop insights that lead to actionable recommendations
- provide data scientists with the necessary infrastructure:
  - recall the “analytics sandbox”:
    - workspaces that are purpose-built for experimenting with data
    - flexible and agile data warehouses
- invoke the *Data Analytics Lifecycle*

the various phases of the *Data Analytics Lifecycle*

please read Section 2.1.2 in the text, *Data Science and Big Data Analytics: Discovering, Analyzing, Visualizing and Presenting Data*

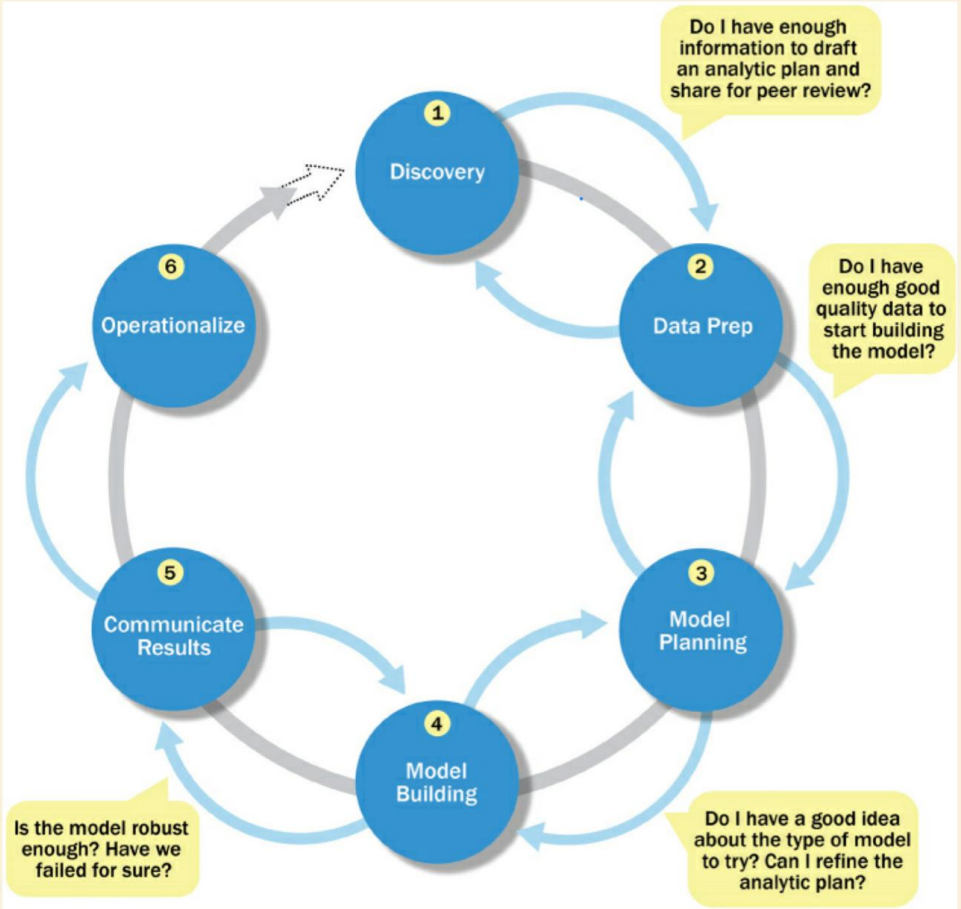


**Figure 2.2** Overview of Data Analytics Lifecycle

# 2. Evaluate Big Data's Role in Business Strategies

2.1 Evaluate current methods of real-time analytics

- we have looked at a variety of data visualization and analysis techniques using *R* and *R Studio*
- one version of *R Studio* can run on servers to provide real-time analytics (later)

2.2 Discuss the Big Data value proposition and monetization

- we have looked at case studies, and have examined various data sets (tidyverse, course materials)
- does visualization work? (graphs, plots, etc.)
- does analysis work? (correlation, regression, modeling)
- can analytics provide business insights that improve business performance?

# 2. Evaluate Big Data's Role in Business Strategies

2.3 Discuss how Big Data can be utilized in a *collaborative economy*:

- a collaborative economy is a "peer-to-peer" or "sharing" economy that has empowered individuals and has been disruptive to traditional large businesses (examples include Uber, AirBnB, Craiglist)
- further reading:
    - https://hbr.org/2015/01/the-sharing-economy-isnt-about-sharing-at-all
    - https://www.investopedia.com/terms/c/collaborative-economy.asp
    - https://datafloq.com/read/how-big-data-makes-the-sharing-economy-possible/2710

# 2. Evaluate Big Data's Role in Business Strategies

"Nearly all of the platforms used to connect people in the sharing economy are hosted online. Using the data they receive from their users (such as name, location data, and preferences), a giant database is accessed to filter results that will be relevant to the user. **The team at the corporate offices can monitor a massive "team" of service providers using data they collect from users (ratings, reviews, and more), and provide customer service for both customers and those providing the services.** By remotely managing everything, they keep the overhead low and take a cut of whatever profits their service rakes in. Automation and big data takes care of the heavy lifting, and the company's employees can focus on troubleshooting and other tasks that require the human touch."

- recall that data science still requires human beings to perform, it is not automated (and likely will not be for many, many years!)
- Big Data can allow service providers to focus on providing the actual service, knowing that they are getting optimized opportunities for building their businesses

# 2. Evaluate Big Data's Role in Business Strategies

2.4 Discuss issues of privacy where it concerns Big Data

- recall the Target case study, in which the company had information about the pregnancy status of its customers (even before certain family members were aware!)
- having more columns (random variables) can provide more insights into a problem, but having this information can be a security issue for both the company and the consumer
- how do you feel about your information and spending habits being recorded and passed around within the Big Data ecosystem?