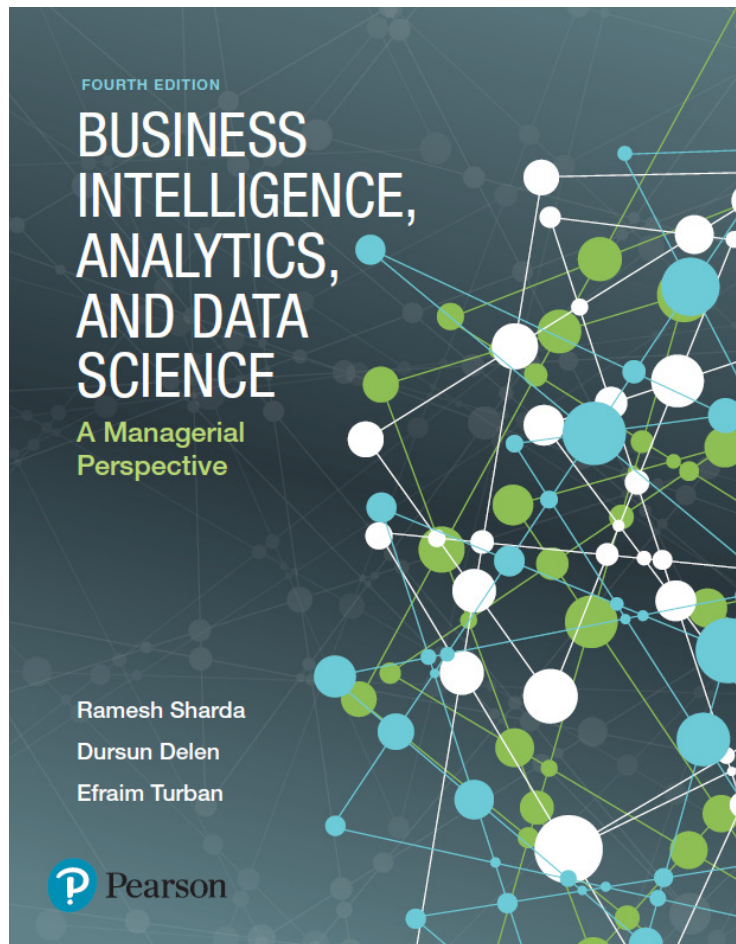


# Business Intelligence, Analytics, and Data Science: A Managerial Perspective

Fourth Edition



## Chapter 1 – Part B

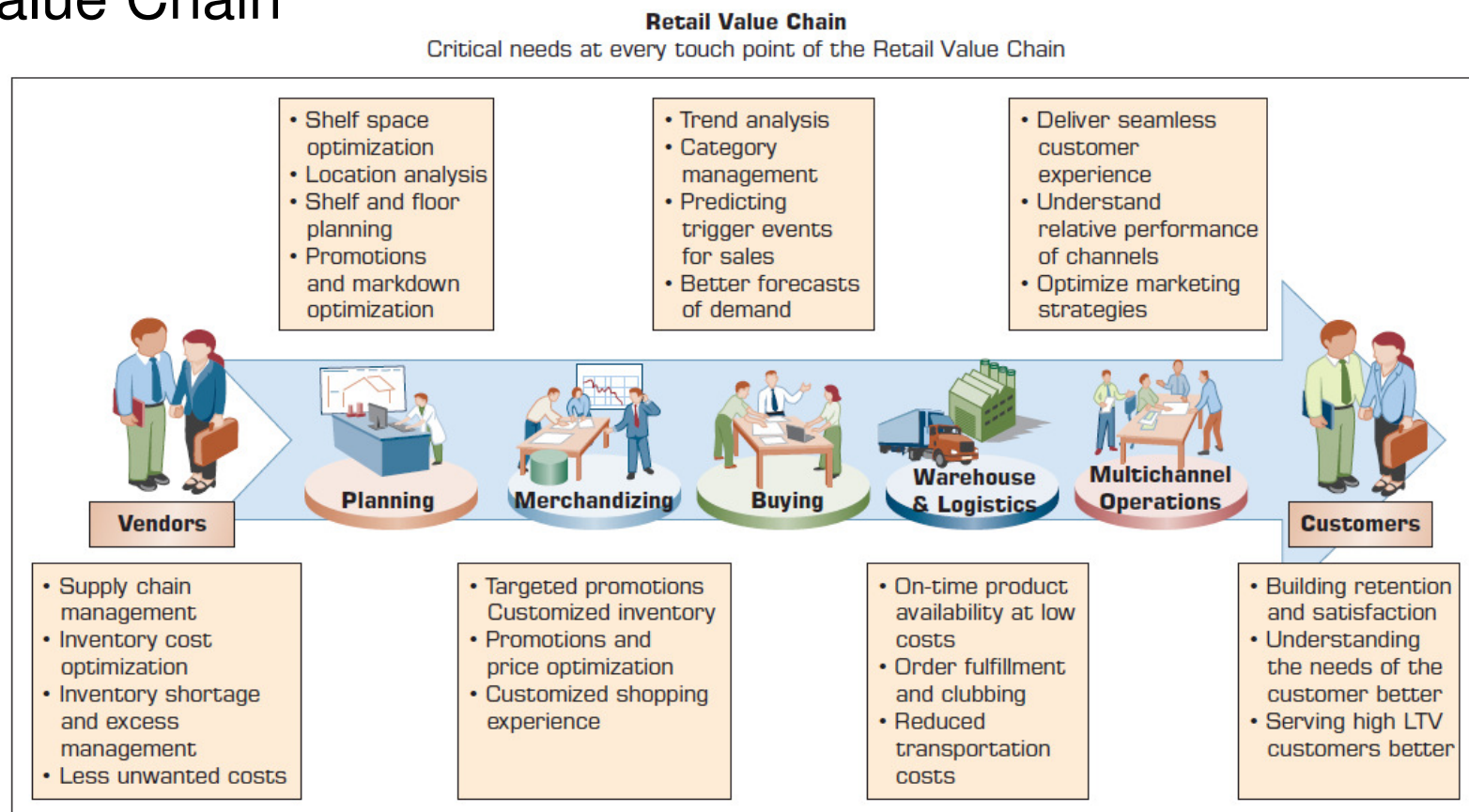
An Overview of Business Intelligence, Analytics, and Data Science

# Analytics Examples in Selected Domains

- Analytics Application in HealthCare—Humana Examples
  - **Example 1:** Preventing Falls in a Senior Population—An Analytic Approach
  - **Example 2 :** Humana's Bold Goal—Application of Analytics to Define the Right Metrics
  - **Example 3:** Predictive Models to Identify the Highest Risk Membership in a Health Insurer

# Analytics Examples in Selected Domains

- Analytics in Retail Value Chain
- FIGURE 1.12 Example of Analytics Applications in a Retail Value Chain



# Analytics Examples in Retail Value Chain

**TABLE 1.1 Examples of Analytics Applications in the Retail Value Chain**

Analytic Application	Business Question	Business Value
Inventory Optimization	<ol style="list-style-type: none"> <li>1. Which products have high demand?</li> <li>2. Which products are slow moving or becoming obsolete?</li> </ol>	<ol style="list-style-type: none"> <li>1. Forecast the consumption of fast-moving products and order them with sufficient inventory to avoid stock out scenario.</li> <li>2. Perform fast inventory turnover of slow-moving products by combining them with one in high demand.</li> </ol>
Price Elasticity	<ol style="list-style-type: none"> <li>1. How much net margin do I have on the product?</li> <li>2. How much discount can I give on this product?</li> </ol>	<ol style="list-style-type: none"> <li>1. Markdown prices for each product can be optimized to reduce the margin dollar loss.</li> <li>2. Optimized price for the bundle of products is identified to save the margin dollar.</li> </ol>
Market Basket Analysis	<ol style="list-style-type: none"> <li>1. What products should I combine to create a bundle offer?</li> <li>2. Should I combine product based on slow-moving and fast-moving characteristic?</li> <li>3. Should I create bundle from the same category or different category line?</li> </ol>	<ol style="list-style-type: none"> <li>1. The affinity analysis identifies the hidden correlations between the products, which can help in following values:               <ol style="list-style-type: none"> <li>a) Strategize the product bundle offering based on focus on Inventory or Margin.</li> <li>b) Increase cross sell or up-sell by creating bundle from different categories or the same categories, respectively.</li> </ol> </li> </ol>

- For the complete table, refer to your textbook

# A Brief Introduction to Big Data Analytics

- What Is Big Data? (Is it just “big”?)
  - Big Data is data that cannot be stored or processed easily using traditional tools/means
  - Big Data typically refers to data that comes in many different forms: large, structured, unstructured, continuous
    - 3Vs – Volume, Variety, Velocity
  - Data (Big Data or otherwise) is worthless if it does not provide business value (and for it to provide business value, it has to be analyzed)
- More on Big Data Analytics is in Chapter 7

# Application Case 1.6

## CenterPoint Energy Uses Real-Time Big Data Analytics to Improve Customer Service

### Questions for Discussion

1. How can electric companies predict possible outage at a location?
2. What is customer sentiment analysis?
3. How does customer sentiment analysis help provide a personalized service to their customers?

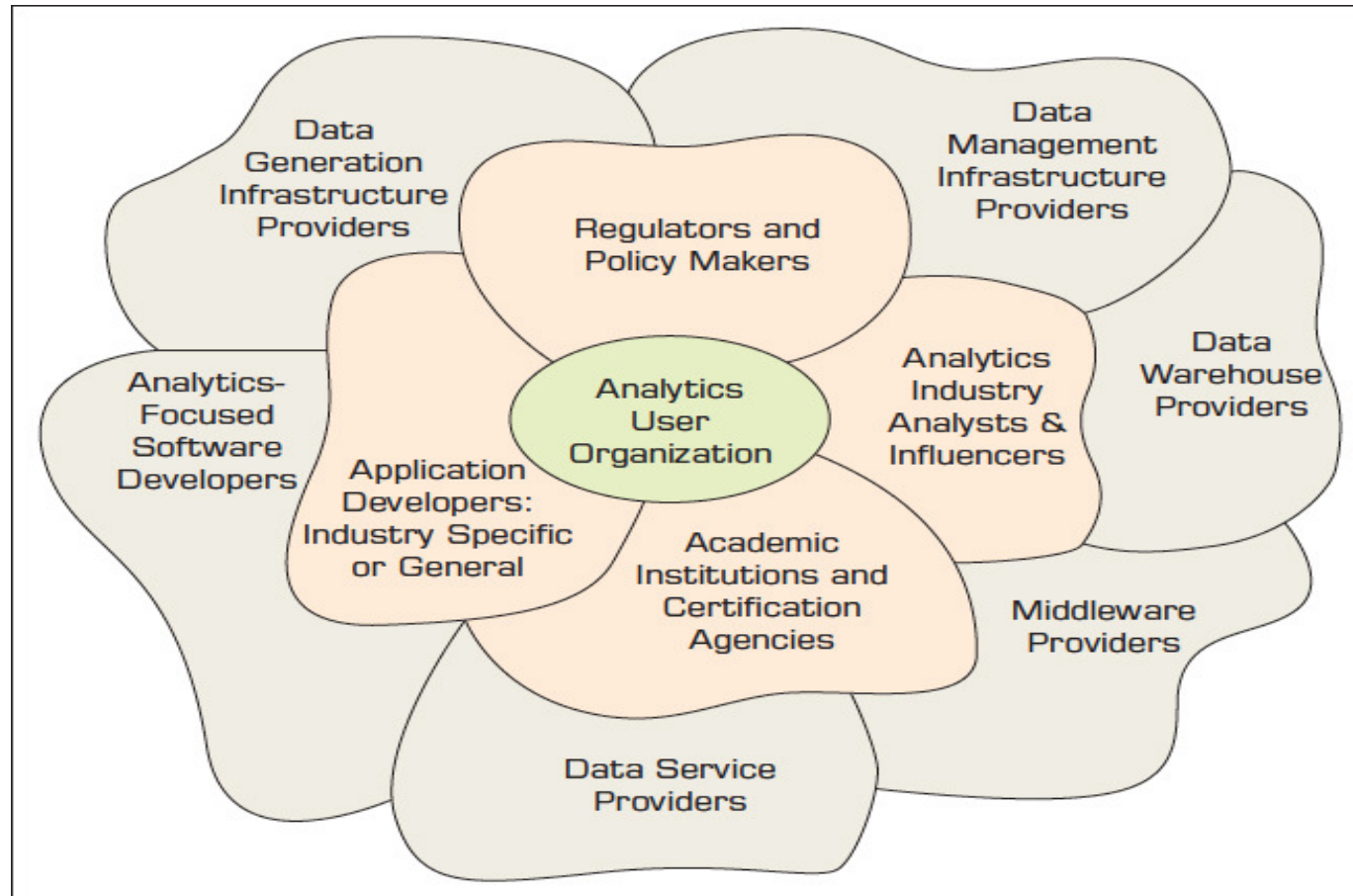
# An Overview of the Analytics Ecosystem

- What are the key players in analytics industry?
- What do they do?
- Is there a place for you to be a part of it?
- There is a need to classify different industry participants in the broader view of analytics to
  - Identify providers (as an analytics consumer)
  - Identify roles to play (as a potential provider)
  - Identify job opportunities
  - Identify investment/entrepreneurial opportunities
  - Understand the landscape and the future of computerized decision support systems



# An Overview of the Analytics Ecosystem

- FIGURE 1.13 Analytics Ecosystem



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# An Overview of the Analytics Ecosystem

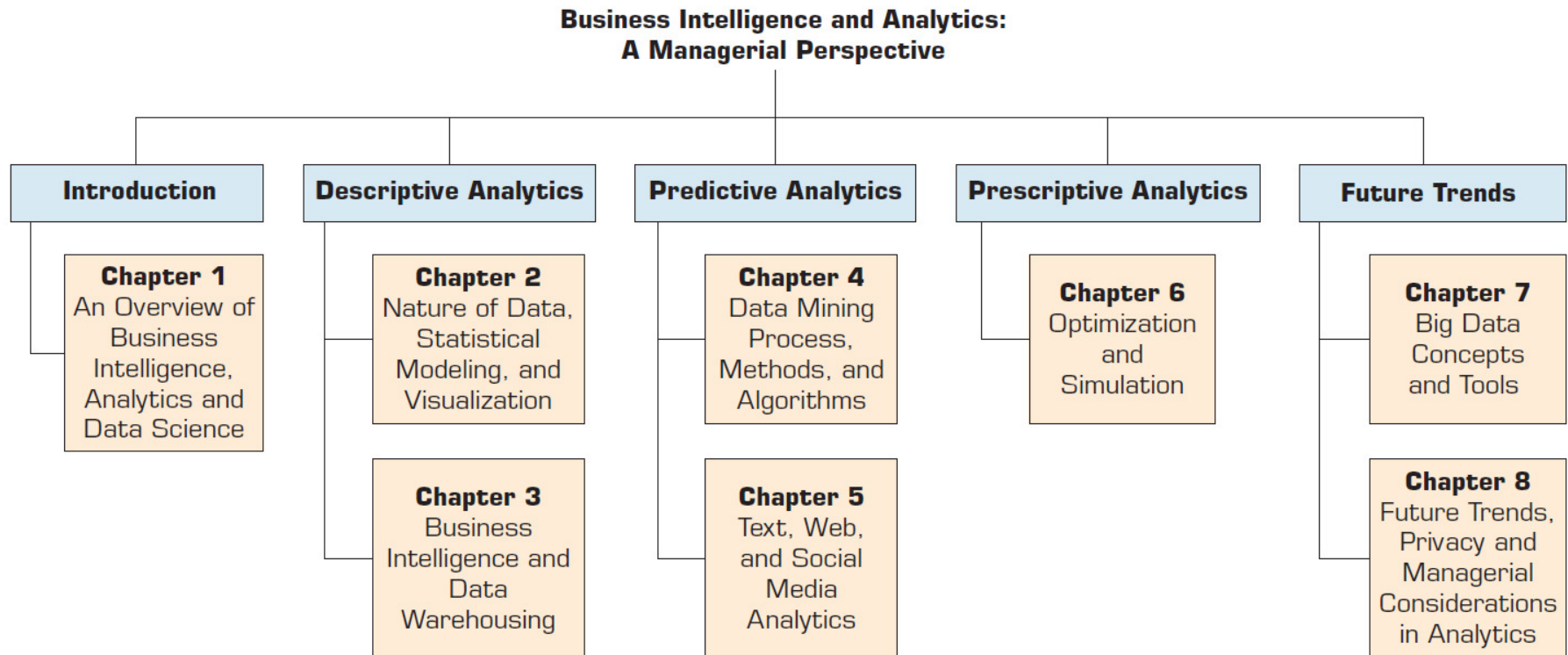
- Data Generation Infrastructure Providers
- Data Management Infrastructure Providers
- Data Warehouse Providers
- Middleware Providers
- Data Service Providers
- Analytics Focused Software Developers
  - Descriptive, Predictive, Prescriptive
- Application Developers: Industry Specific or General
- Analytics Industry Analysts and Influencers

# An Overview of the Analytics Ecosystem

- Academic Institutions and Certification Agencies
  - Certificates
  - Masters programs
  - Undergraduate programs
  - Offered by
    - MIS, Engineering
    - Marketing, Statistics
    - Computer Science
    - ...
- Regulators and Policy Makers
- Analytics User Organizations



# Plan of the Book



• FIGURE 1.15 Plan of the Book

# Resources

- Teradata University Network (TUN)

