**BIS 305**

**Surprise Quiz on 9/12/2022**

**What are Business Analytics?**

**Business analytics** is the use of data, information technology, statistical analysis, quantitative methods, and mathematical or computer-based models to help managers gain improved insight about their business operations and make better, fact-based decisions.

Models in Business Analytics

Models are developed from theory/observation and establish relationships between actions that decision makers might take and results that they might expect, thereby allowing the decision makers to evaluate scenarios or to predict what might happen.

1. A simple verbal description of sales might be
2. A sketch of sales as an S-shaped curve over time, is a visual model that conveys this phenomenon.
3. Analysts identify a mathematical model that characterizes this curve.

**Descriptive Analytics**

Most of the models we will be using include decision options. As an example, suppose that a manufacturer has the option of producing a part in house or outsourcing it from a supplier (the decision options). Should the firm produce the part or outsource it?

**Predictive Analytics**

Predictive models focus on what will happen in the future. Many predictive models are developed by analyzing historical data and assuming that the past is representative of the future.

**Prescriptive Analytics**

A prescriptive decision model helps decision makers to identify the best solution to a decision problem. **Optimization** is the process that minimize/maximizes things (profit revenue, etc) Any set of decision options that optimizes the objective function is an **optimal solution**.

**Problem Solving and Decision Making**

consists of several phases:

1. Recognizing a problem
2. Defining the problem
3. Structuring the problem
4. Analyzing the problem
5. Interpreting results and making a decision
6. Implementing the solution

**Big Data**

**big data** to refer to massive amounts of business data from a wide variety of sources, much of which is available in real time. IBM calls these characteristics *volume*, *variety*, and *velocity*. Big data revolves around customer behavior & experiences. Big data provide an opportunity for organizations to gain competitive advantage

**Data for Business Analytics**

* Annual reports summarize data about companies’ profitability and market share
* accountants conduct audits to determine whether figures reported on a firm’s balance sheet fairly represent the actual data by examining account receivable.
* Financial analysts collect and analyze a variety of data to understand the contribution that a business provides to its shareholders.
* Economists use data to help companies understand and predict population trends, interest rates, industry performance, consumer spending, and international trade.