Data Analysis for Decision Making
Data Analytics for Today's Issues

Abstract

The Data Analysis Advantage

Decisions are at the heart of the day to day operation of any organization. Some are easy to make and require little formal analysis. However, some decisions require an insightful analytic approach to identify and understand the options that are part of the decision process.

Analytics form the decision support foundation of returning value to organization management. The achievement of results based on those decisions is one of the significant tasks of managers today.

The basis for many business decisions revolves around interpreting the data involved. Better use of analytics means better decisions.

The Data Analysis Need

There are many decisions managers make about performance, impact of change and execution that require good analytics. So, what do we need to know about these analytics?

1. What are they?
2. How do they work?
3. How are they used?

Key Data Analysis and Analytics

From strategy to operations, performance decisions are at the core of management focus today. There are many analytic techniques and tools that are critical to success today. The analytic tools for decision making require an analysis of the decision, the options involved and the data and analytical techniques that provide insight into what options are important.

Developing business analytic skills for decision making today requires a grasp of core analytical concepts. Exposure to more current analytical concepts and tools plus how they are applied to managing the organization is a critical learning point.

Who should attend? Managers, business planners, strategic planning specialists, business performance analysts, and business analysts.

Data Analysis for Decision Making
Data Analytics for Today's Issues

Day One

Theme: What are the techniques

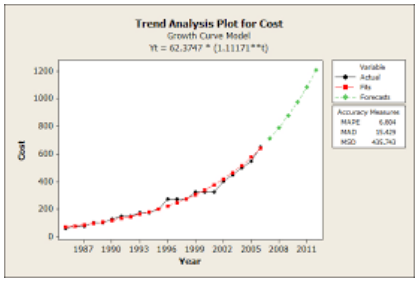
The typical day for managers and professionals includes making decisions. Some large and many small. The decisions require some data and interpretation of data as input to the decision making. The data presented usually consists of statistics such as averages, distributions, and trends. Presentation becomes important so that communicating the result makes sense to those people that need to know what the issues are. So, we start with the types of statistical tools used and available in products like Excel and then move to indicators and then on to more informative analytics for decisions.

Session 1 – Start with Statistical Analytics

Section 1.1: Typical Business Statistics

- Statistical thinking
- Data presentation
- Means and averages

Video Discussion – Presentation Approaches



Section 1.2: The Transformation Path

- Standard distributions
- Trend analysis
- Drawing conclusions from statistics – the limits of insight

Demo Analytics Example – Process Trends

Session 2 – Performance Indicators

Section 2.1: Organization Performance Indicators

- The 5 key types of indicators
- Critical Success factors
- Indicator Analysis

Topic Discussion – Typical Indicators

Section2.2: Process Indicators

- Core process measures
- Selecting the most informative indicator
- Relating indicators together

Video Discussion – Process Improvement analytics

Data Analysis for Decision Making
Data Analytics for Today's Issues

Day Two

Theme: Performance Analytics

The task of understanding how well the organization is doing is part of performance reporting on performance goals. The reporting is common to most organizations. It could be analyzing key performance indicators set by the parent organization or using indicators that are specific to a type of process or outcome unique to the execution of work in the organization. The approach to analyzing and applying analytics is the same.

Session 3 – Drivers of Performance

Section 3.1: Analyzing Measures of Interest

- Defining the objective
- Identifying the drivers
- Sourcing the data for analysis

Topic Discussion – What Measures are Important?

Section 3.2: Transforming the Drivers into a Data Set

- Gathering the data
- Organizing the data in an analytical format
- Applying some statistics and presenting

Video Discussion – Analyzing Measures

Session 4 –Ranking for Priority

Section 4.1: Using Property/Attribute Ranking?

- What are the properties of what you need to rank?
- Ranking Based on one property
- Ranking based on mutiple properties

Demo Discussion – Ranking Indicators

Section 4.2: Presenting and Interpreting Ranking Data

- Focusing investment - The 4 – box approach
- Using alternative sets of data
- Examples of Presentation

Demo Discussion – Which 4 – Box is Most Informative?

Data Analysis for Decision Making
Data Analytics for Today's Issues

Day Three

Theme: Analytics for Insight

Beyond performance analytics there are analytics for discovery and analytics that are alternatives to using pure statistical methods. Two of those analytic sets are methods of determining buyer behavior and applying neural nets to ranking factors to determine which factor has the greatest impact. The buyer behavior method can also be used for ranking based on correlations of performance factors.

Session 5 – What factors Track Together?

Section 5.1: Correlation and Regression

- Correlating two factors
- Correlation and prediction
- Adding the regression line

Demo Discussion – Process Mining

Section 5.2: Correlation matrices

- Predicting buyer behavior
- Finding related process performance factors
- Drawing conclusions from the matrix

Demo Discussion – Using a Neural Net for Ranking Analysis

Session 6 – Using Neural Net Analytics

Section 6.1: What are Neural Nets?

- The idea of the neural net
- How do you use them?
- What is the Outcome You Get?

Video Discussion – How does a Neural Net Work?

Section 6.2: Using A Neural Net to Identify Significant Factors

- Collecting the data for the neural net
- Running the net
- Assessing the result

Demo Discussion – Using a Neural Net for Ranking Analysis

Final Q and A

Data Analysis for Decision Making
Data Analytics for Today's Issues

Learning Objectives

Expected Learning Outcomes:

- Apply analytics to tease out improvement opportunities
- Understand the role and use of analytics and performance factors in successful management
- Describe the need for applying analytics as a means of assessing improvement success
- Explain the difference between alternate analytic approaches for change and improvement insight
- Efficiently apply analytic methods for performance improvement
- Explain why analytics are important to assessing where to apply investment for improvement
- Demonstrate how to identify performance improvement opportunities