

# Additional Student Resources

**Career Services** - <https://www.tamuc.edu/college-of-business/career-services/>

**Counseling Center** - <https://www.tamuc.edu/counseling-center/>

**TAO app** - <https://www.tamuc.edu/counseling-center/self-help/>

**Writing center** -  
<https://inside.tamuc.edu/academics/colleges/humanitiessocialsciencesarts/departments/literatureLanguages/writingCenter/default.aspx>

**Library** - <https://www.tamuc.edu/library/>



# Agenda

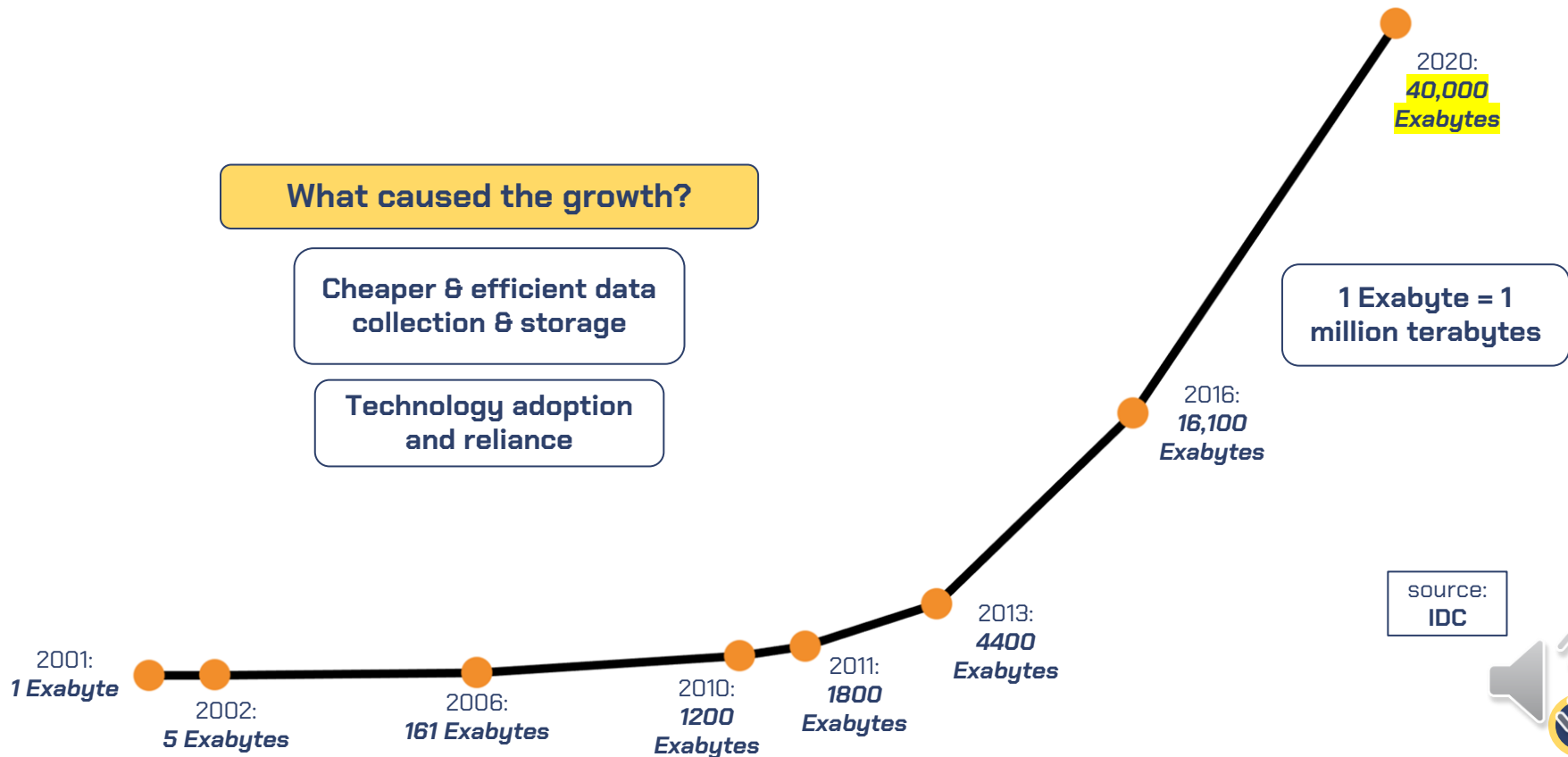
**Growth of Business Analytics**

**Defining Analytics**

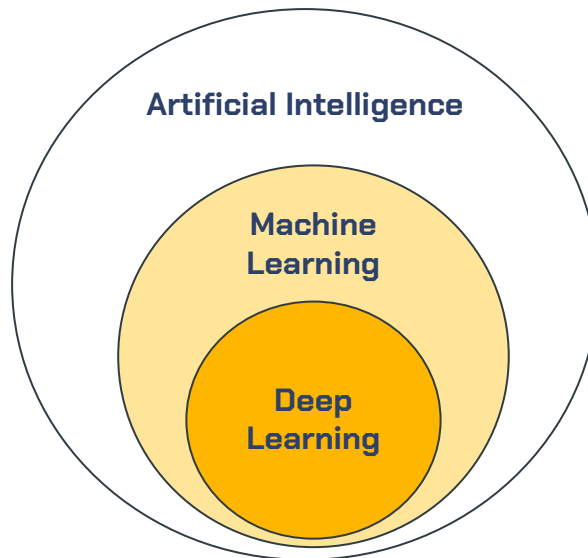
**Business Analytics in practice**



# Reason 1 - Technological advances



## Reason 2 - Growth of analytics



## Reason 3 - Analytics adoption in business

Early use in manufacturing industry

T-test, six sigma

**better analytics = better decisions**

**Proceed with caution... *IBM Watson***

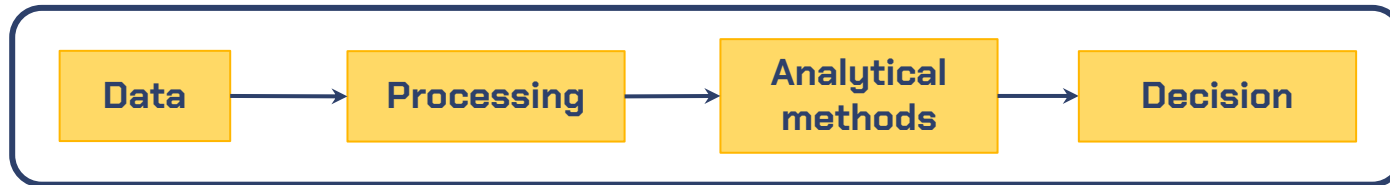


# Business Analytics

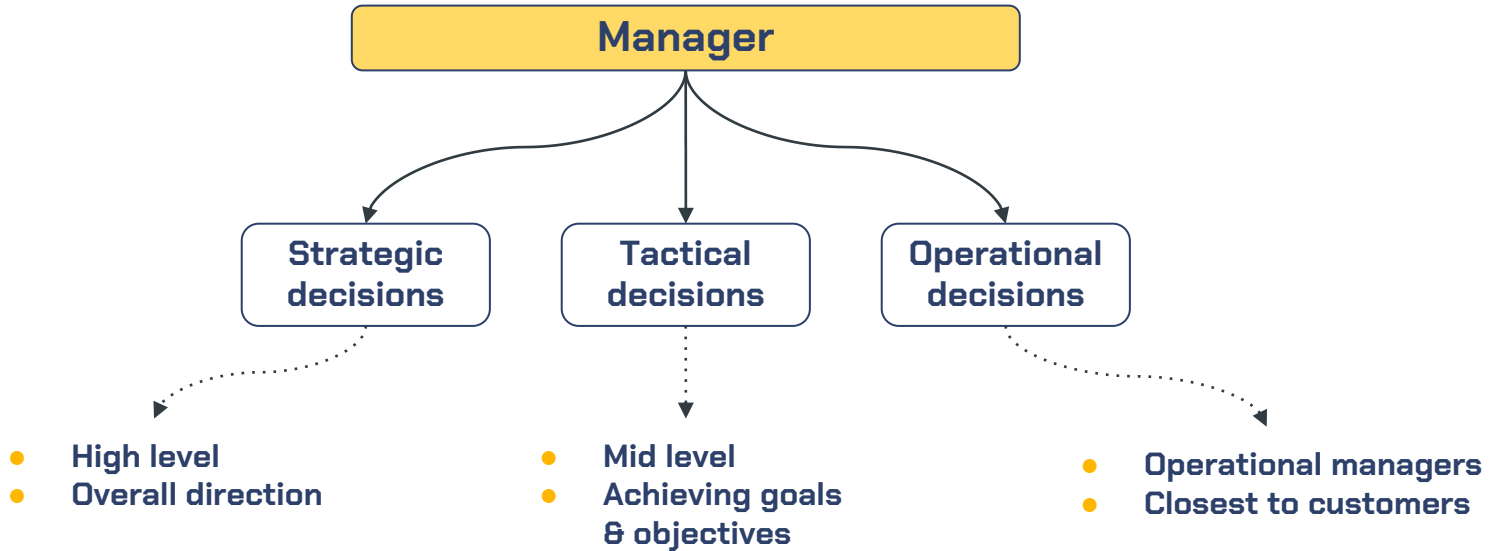
**Analytics**, is the use of

- Data
- Information technology
- Statistical Analysis
- Mathematical *or* Computer models

**Business  
decisions**



# Decision making



# Decision making process

**Identify and define the problem**

**Determine the criteria for evaluating alternative solutions**

**Develop the alternatives**

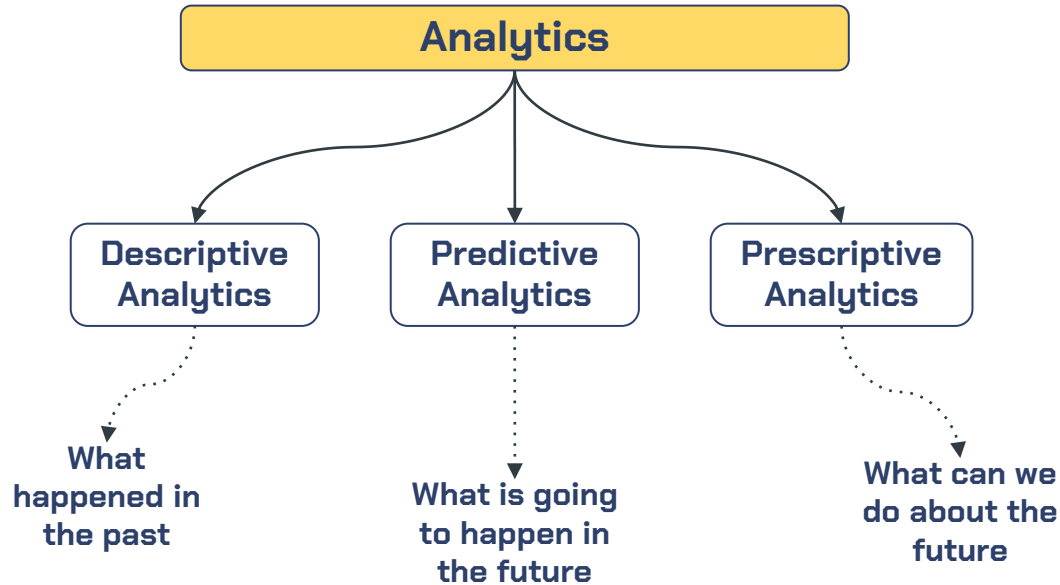
**Evaluate the alternatives**

**Choose the solution**





# Categories of Analytical methods



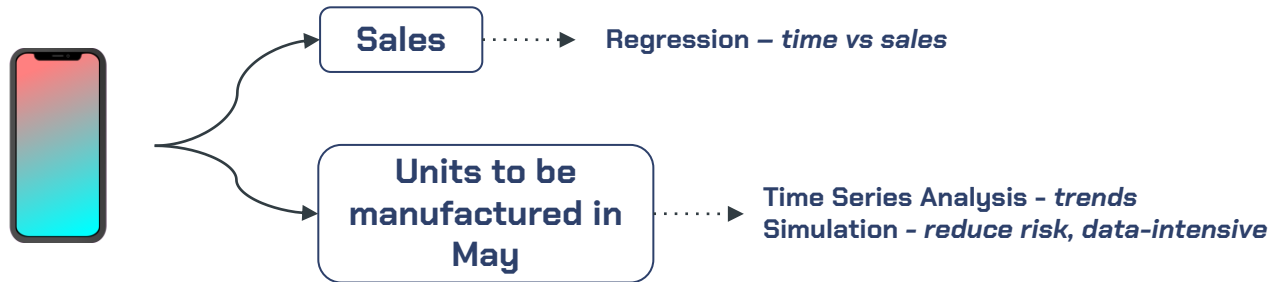
# Descriptive Analytics

- **Statistical methods**
  - Summarize the information - *mean, median, variance, ...*
- **Data Queries**
  - Requesting specific information from a database
- **Reports/dashboards**
  - Collection of charts, tables and statistics
- **Data Mining**
  - Identifying patterns and relationships - *clustering, sentiment analysis, ...*



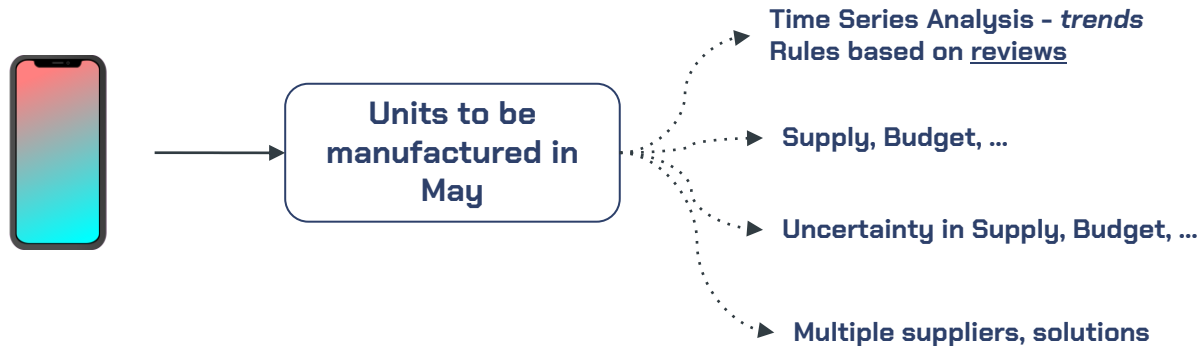
# Predictive Analytics

- **Regression** - *linear, polynomial, multi-variate, ...*
- **Time Series Analysis**
- **Simulations** - *uncertainty*



# Prescriptive Analytics

- **Rule-based methods** - *Prediction + rule*
- **Optimization** - *Best solution given a set of criteria*
- **Simulation Optimization** - *Uncertainty + optimization*
- **Decision Analysis** - *Several alternatives & uncertain variables*



# Data

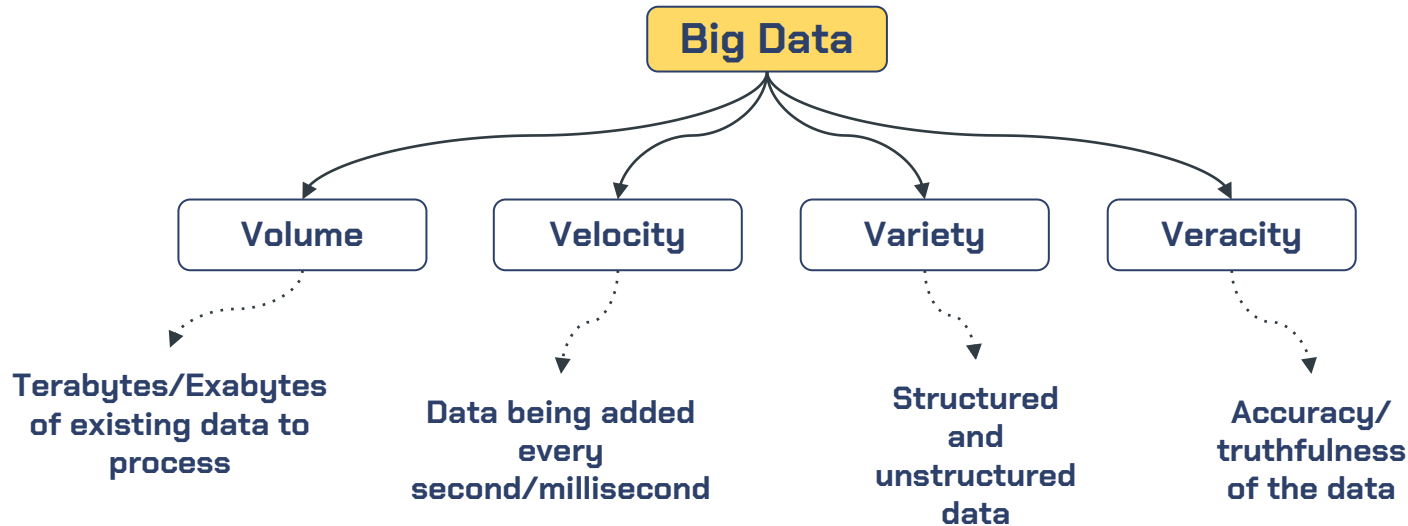
**Data = *Information***

Text, Images, Videos,  
Signals, etc..

- It is everywhere
- No meaning
- Data collection can be challenging depending on the problem

# Big Data

Data that is **too large** or **too complex** to be handled by **standard data-processing techniques** and typical desktop software.



# Big data - opportunities & challenges

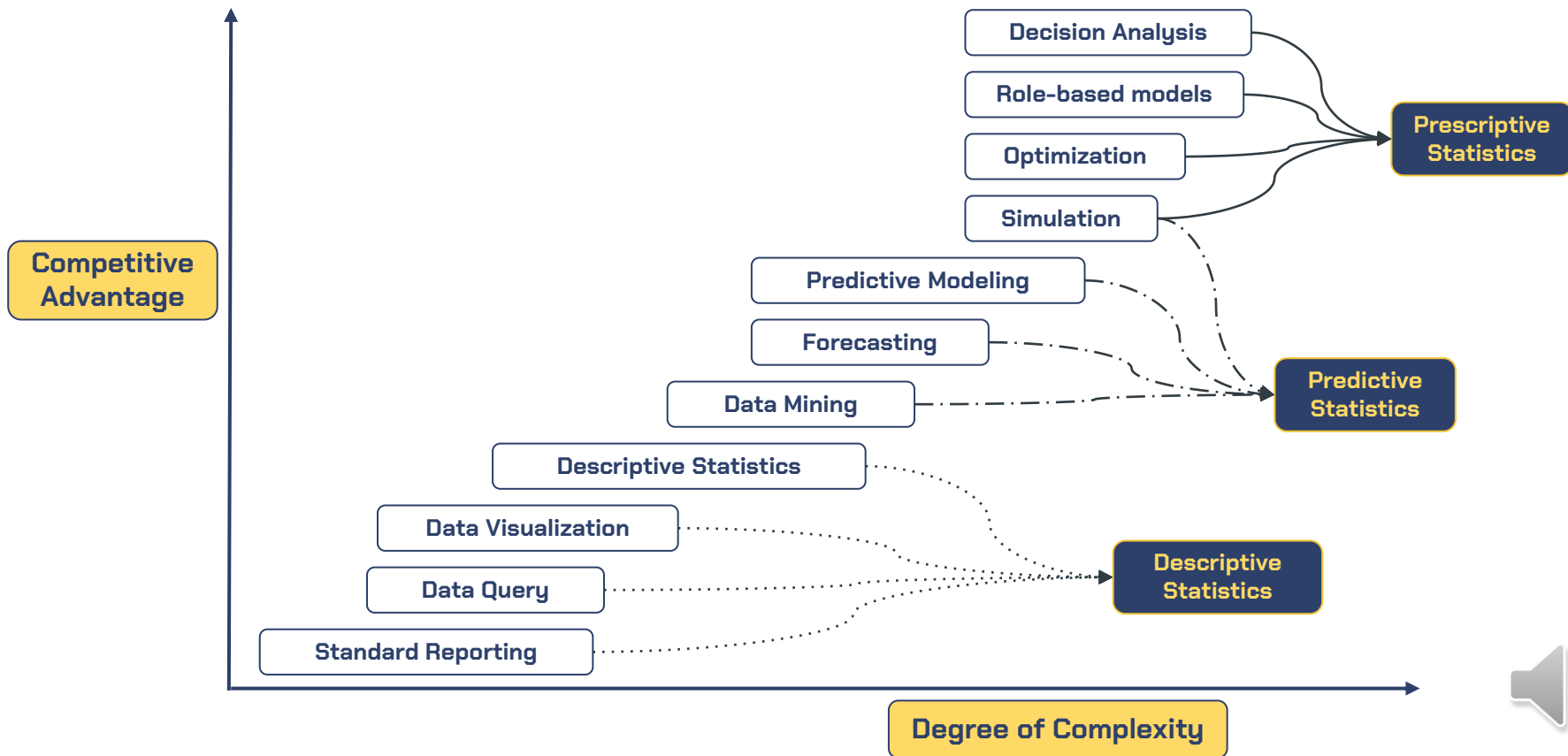
**Solution to 4 V's:** Distributed storage and multi-processing

**Opportunities:** Data Analyst/ Data Engineer/ Data Scientists

**Future:** Internet of things (IoT)



# Complexity vs Competitive Advantage





# Analytics in Practice

## Finance

Forecast, Risk assessment, assets, investments and budgeting

## Human Resource

Hiring and working environment

## Marketing

Social Media analytics and consumer behavior

## Healthcare

Scheduling and diagnosis

## Supply-chain

Transportation and Inventory control

## Sports

On-field decisions and potential demand



# Summary

**Growth of Business Analytics**

**Defining Analytics**

**Analytics – Categories & Methods**

**Business Analytics in practice**

