

# CLASSIFICATION OF ANALYTICS

Group 9



# WHAT IS ANALYTICS ?



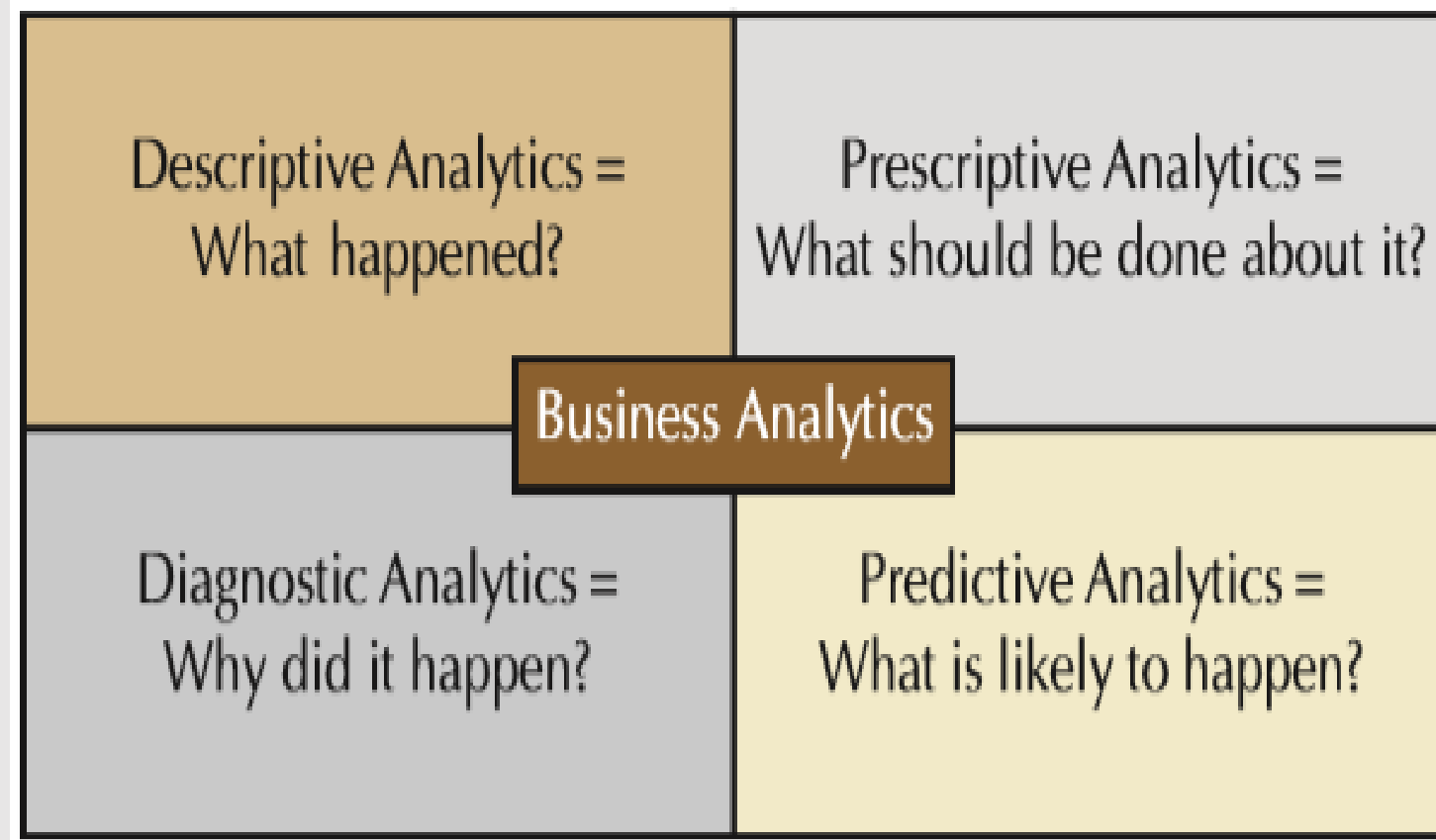
- Fact based approach for planning future action in an organisational setup.
- Includes data validation, root cause diagnosis, strategic prediction.

## ANALYTICS IN BUSINESS

- Continuous iterative process integrating skills, technologies practices and application for investigating past business performance to obtain a better insight to drive business planning



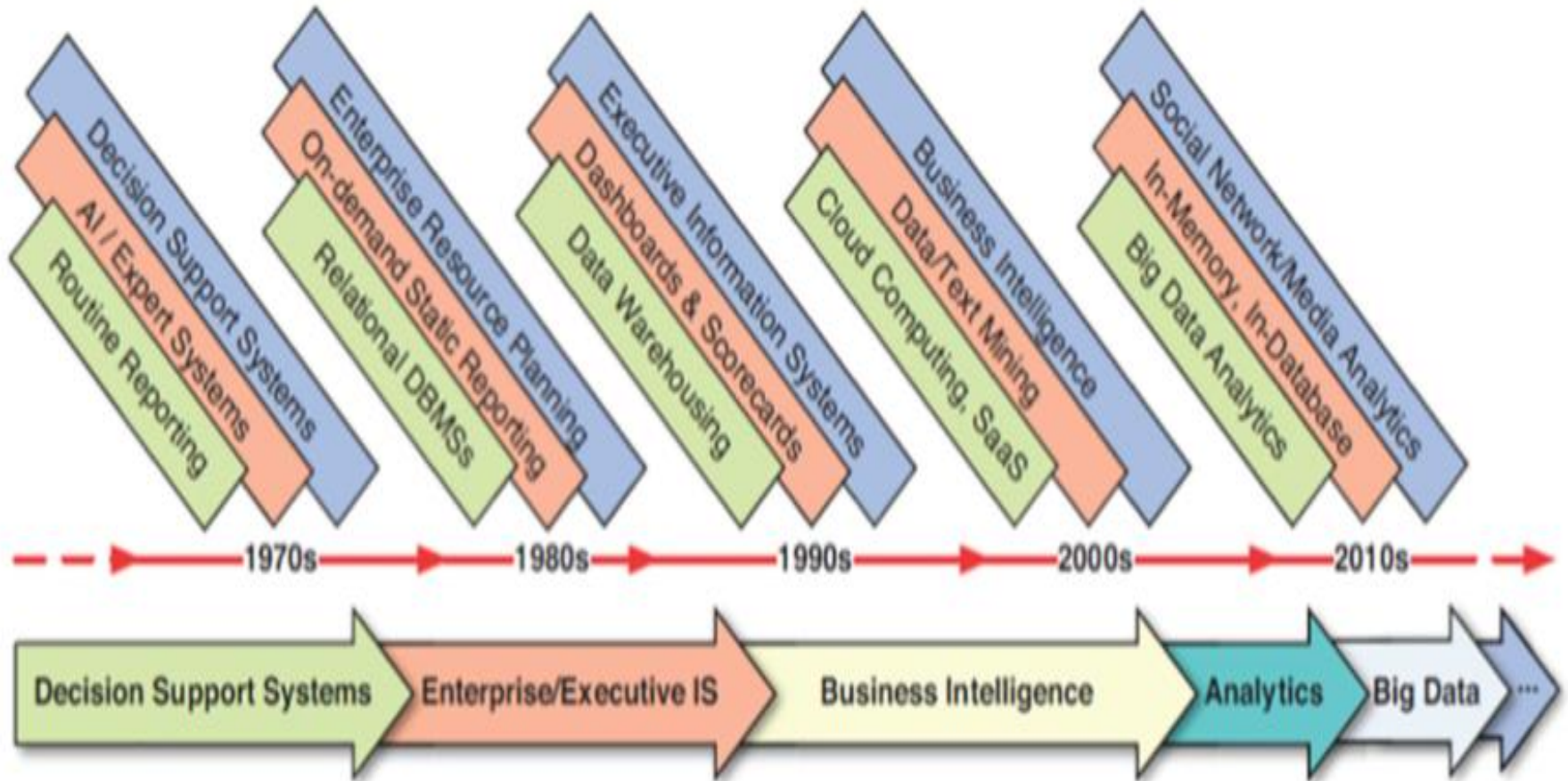
# DIMENSIONS OF ANALYTICS



D. Delen, H.M. Zolbanin „Journal of Business Research 90 (2018) 186–195



# EVOLUTION OF ANALYTICS



# UNSEEN SIDE



- Scepticism in the scope
- Ambiguity in the ability to integrate and interpret the information
- Uncertainty in finding a significant pattern in the data collected



# TYPES OF ANALYTICS

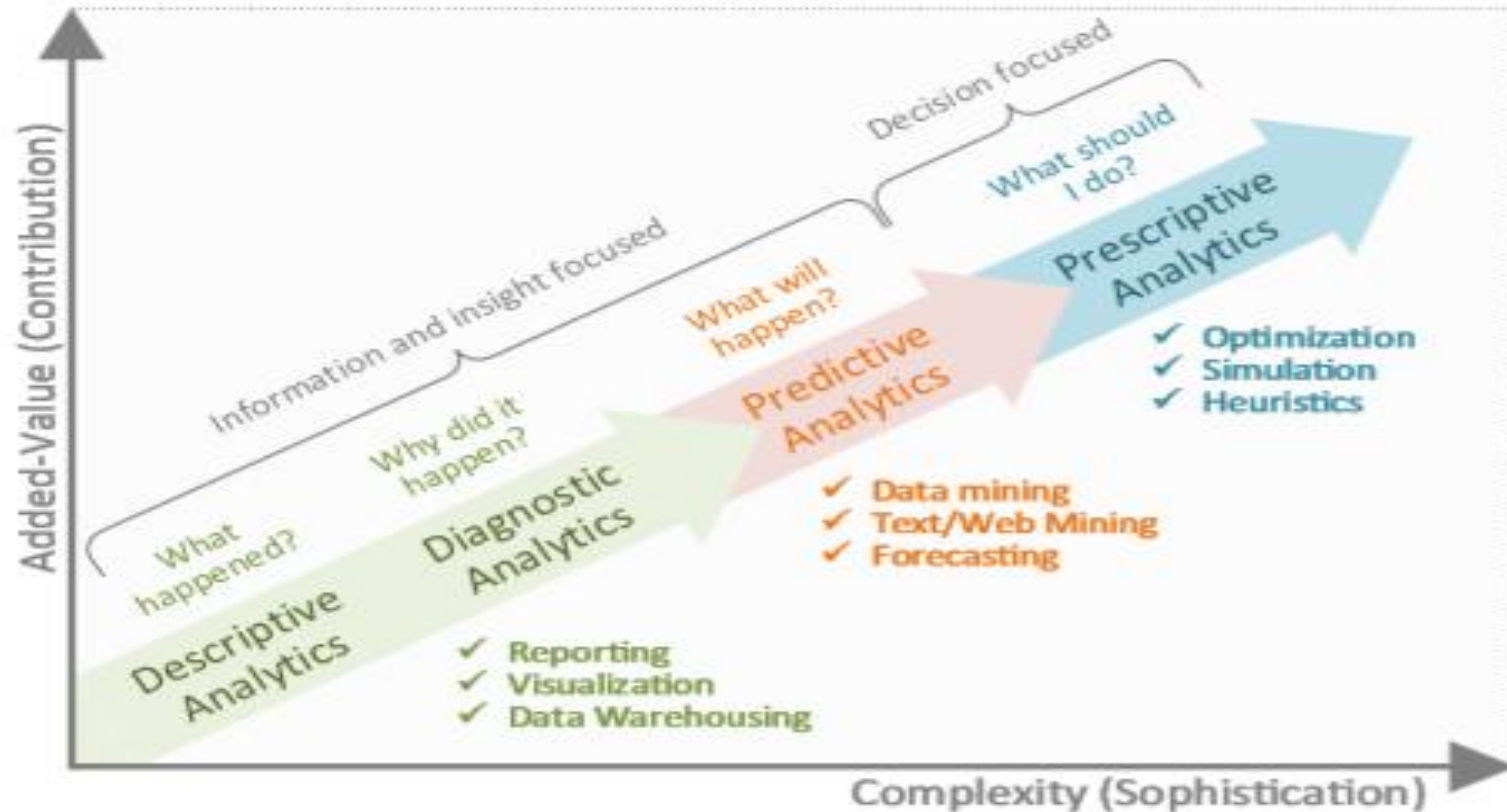


Fig. 2. Different types (sophistication levels) of business analytics.

D. Delen, H.M. Zolbanin ,Journal of Business Research 90 (2018) 186–195



# DESCRIPTIVE METHODS



**Association Analysis**



**Sequence Analysis**



**Clustering**



**Link Analysis**



# PREDICTIVE ANALYTICS ROLES



Generating new theory

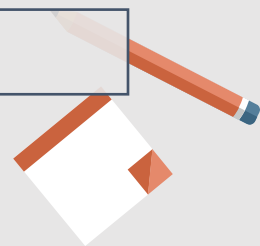
Developing new measures

Competitive theories

Improving existing models

Assessing relevance

Assessing predictability





# PREDICTIVE METHODS



01

Decision Tree



02

Artificial Neural Networks



03

Partial Least Squares  
(PLS) Regression



04

Least angle regression  
(LARS)



# PREDICTIVE METHODS (contd..)



05

Random Forest



06

Gradient Boosting Trees



07

Support Vector Machine  
(SVM)



# **RAPID GROWTH OF ANALYTICS INDUSTRY**



- Standalone business
- Data-as-service
- Volume, velocity, variety
- Advantageous position



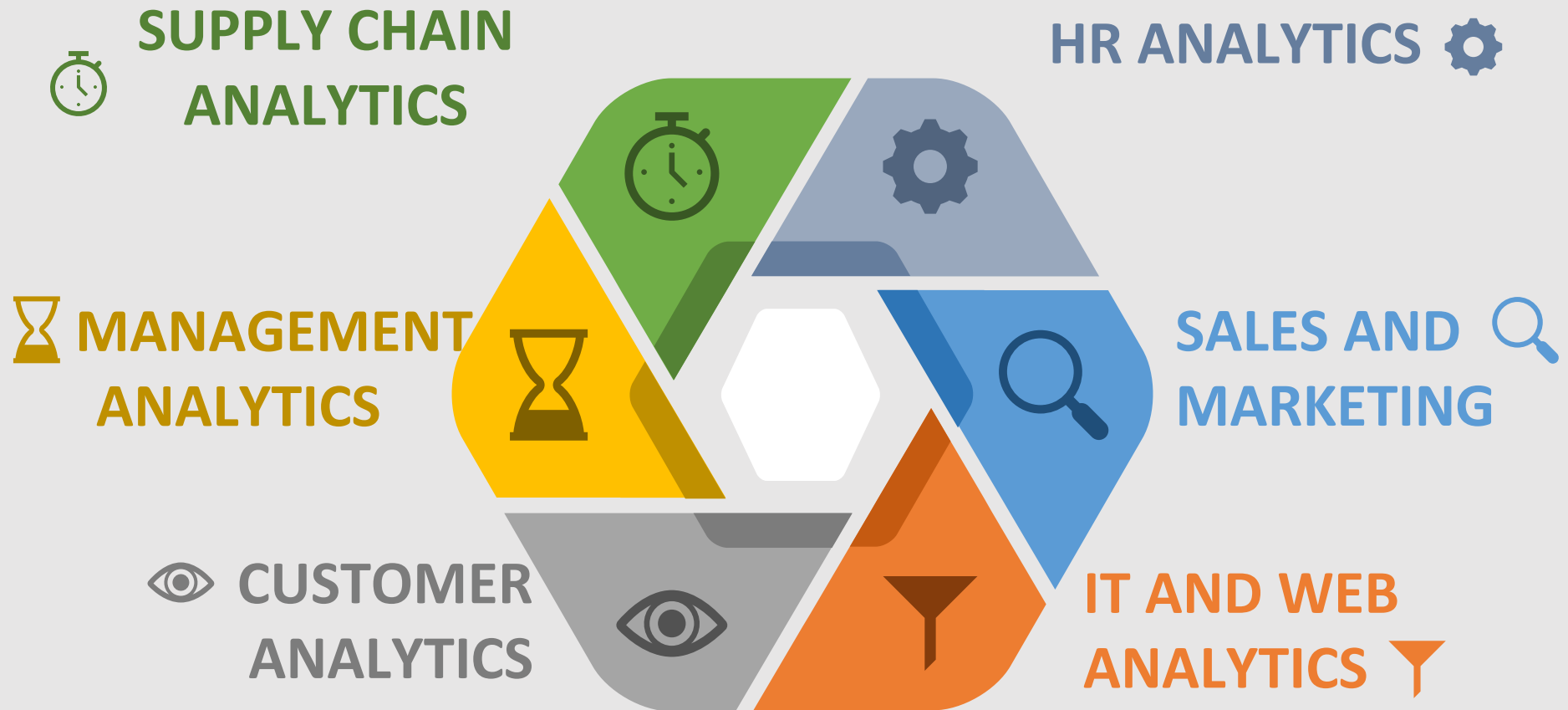
# **RAPID GROWTH OF ANALYTICS INDUSTRY(contd..)**



- Industry size: 10 billion to 26.9 billion(expected growth 22.4 %)
- Advantage: Avoidance of subjectivity.
- Indian analytics service providers delivered \$375 million ( total global data analytics outsourcing market of \$500 million) in 2012.
- Usage domains: BFSI, FMCG, retail, sales & marketing and customer service.



# MAJOR DOMAINS



Source: Arindam Banerjee, Tathagata Bandyopadhyay, and Prachi Acharya, Vikalpa: SAGE Journals, 2014

# ADOPTATION PROCESS



Skill sets required:

- ☐ Concoction of data management skills, statistical/data processing prowess, and business acumen
- ☐ Right mix has high demand



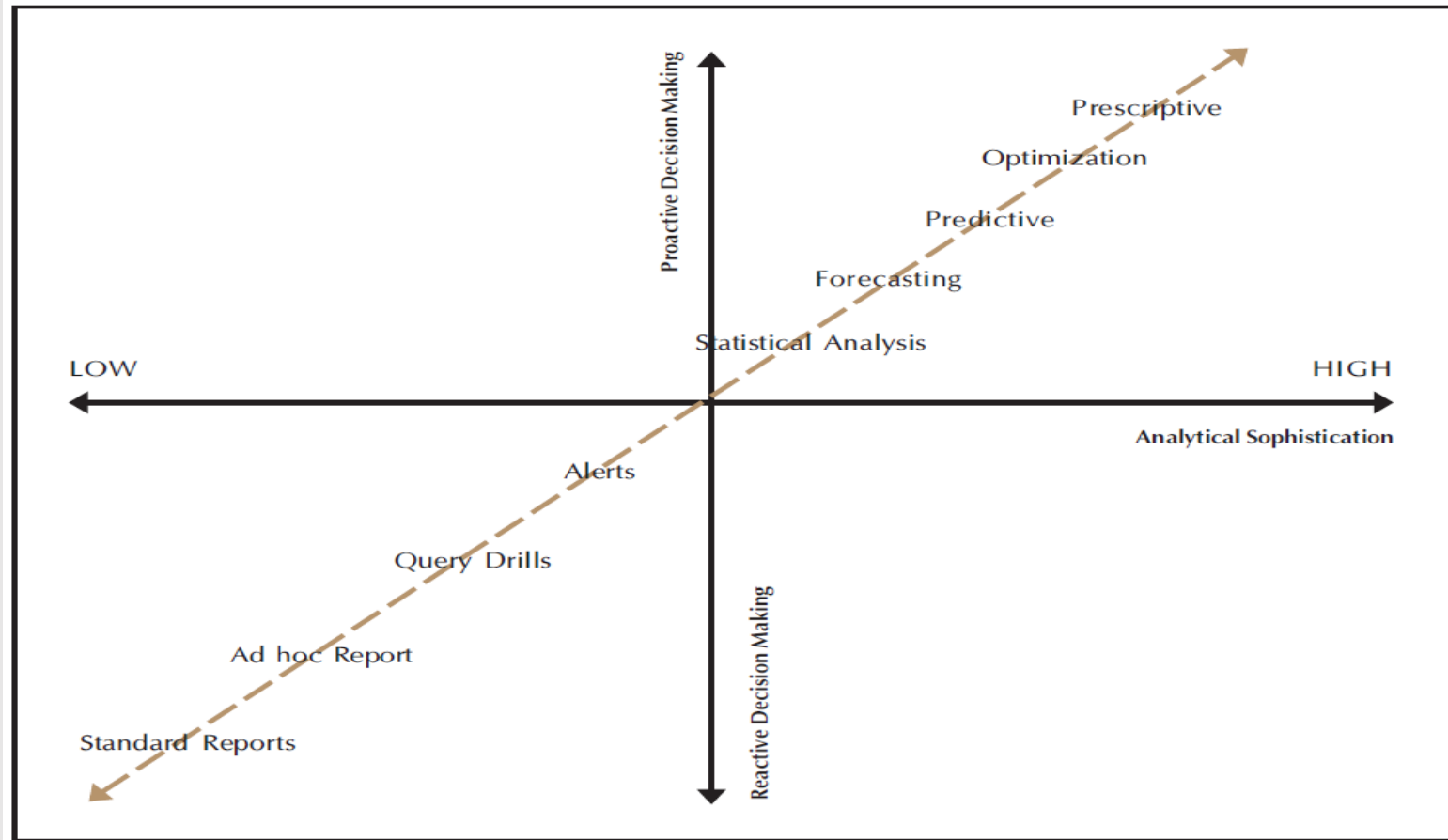
# FACILITATORS



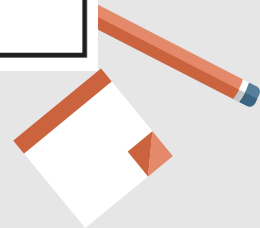
## INFORMATION RESOURCES



# USE OF ANALYTICS IN DECISION MAKING



Arindam Banerjee, Tathagata Bandyopadhyay, and Prachi Acharya, Vikalpa: SAGE Journals, 2014





# CULTURE: THE TOUGHEST CHANGE



- Complex and dynamic.
- Adopted analytics to maintain a proper balance.
- (a) Managing information, (b) Processing the information (c) Developing implications out of the processing results.
- Outsourced operations is not in line with the requirements on site.



# COUNTER VIEWS ON THE IMPACT OF ANALYTICS



- New initiatives.
- ‘Black swan’ problems/risks.
- Kills creativity.
- ‘Snob’ value.
- Additional problems and increased frustration of policy makers.
- Misuse.



# THE NEW KID ON THE BLOCK: BIG DATA & ITS APPEAL



- The newest opportunity.
- It has potential to bring revolutionary changes.
- The challenge is to extract meaningful pattern or correlations from unstructured data.
- It may have the advantage of predicting actual performance better



# Differences between **ANALYTICS** **Vs.** **SCIENTIFIC**

Precede theory or a model

Development of new theories based on the relationships and patterns in the data

Even predict future opportunities yet to happen

Formulated on a theory

New theories by hypothesizing

Understand phenomenon that cannot be changed

# DECISIONS BEYOND SCIENCE



“Correlation is not causation, no conclusions should be drawn simply in the basis of correlation “

“Analytics do not link unrelated concept”



# SOLUTION



- Devise narratives about possible futures
- Apply metaphor, logic, and emotion (Aristotle)
- Hypothesize what would have to be true for those narratives to happen
- Validate their hypotheses
- By prototyping



# THANK YOU

