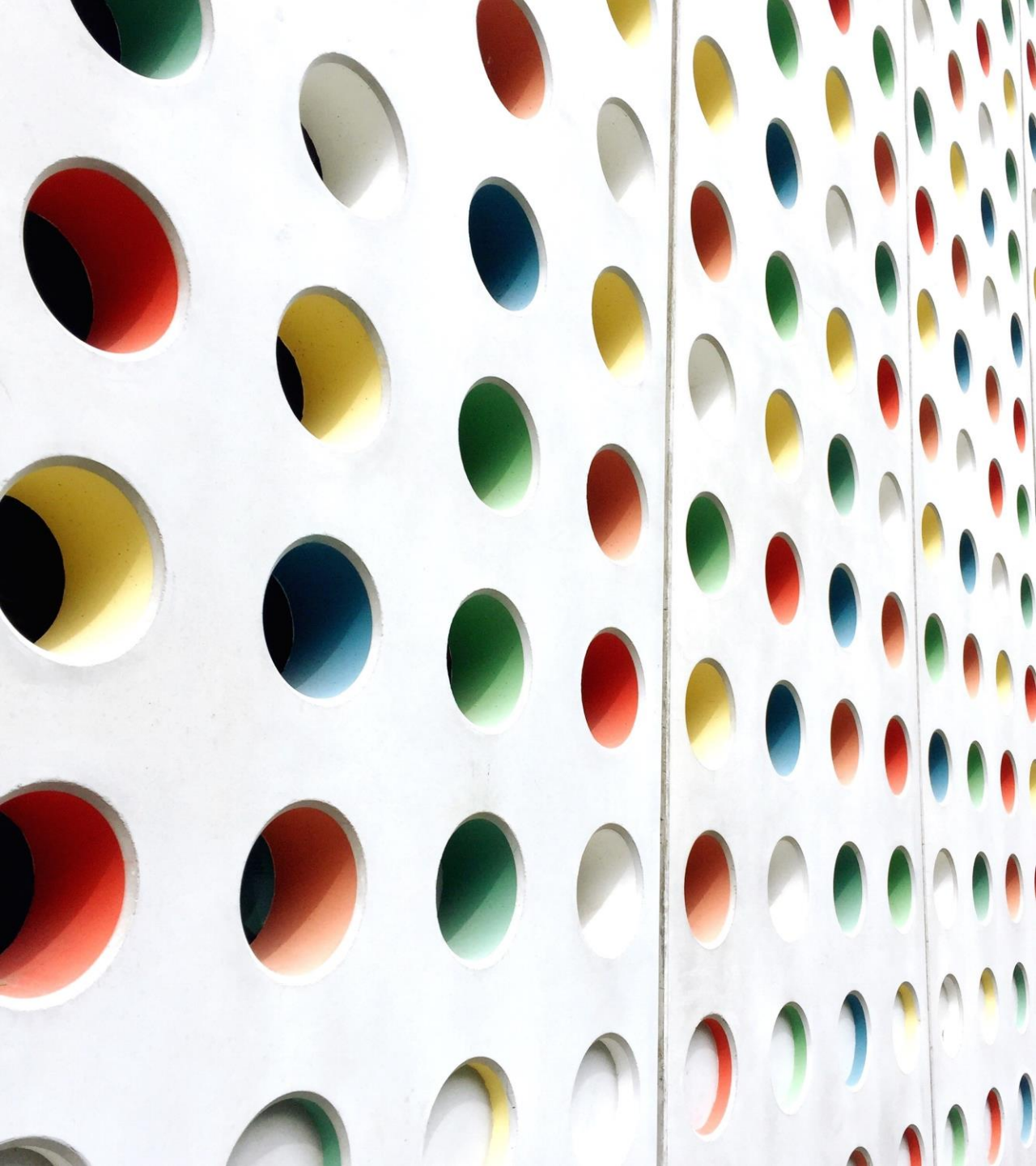




Introduction to Business Analytics

BM 4419

BUSINESS ANALYTICS



Introduction to Business Analytics

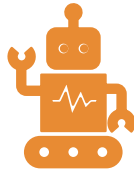
By the end of the course, you will:

- ☐ Be familiar with all the key steps in the data analysis process
- ☐ Understand, and be able to apply, some fundamental analysis techniques
- ☐ Have a first-hand glimpse of what it's like to work as a data analyst
- ☐ Learn how AI is impacting the data industry and explore some AI tools and technologies that can help data analysts

Overview of Topics to Be Covered



What is business analytics?



What does a business analyst do?



Are business analysts in demand, and what's the average business analyst salary?



Getting ready:
What tools do you need for this course?

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A blue pen with a silver tip is resting diagonally across a bar chart. The chart has several blue bars of varying heights on a light blue grid. The background is a soft, out-of-focus blue.

What is Business Analytics?

PROCESS OF ANALYZING RAW DATA IN
ORDER TO DRAW OUT
MEANINGFUL, ACTIONABLE INSIGHTS

Let's bring it to life with an example.

The Importance

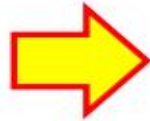
Business analytics replaces guesswork with data-driven insights.

It helps you make sense of the past and predict future trends and behaviors, leaving you much better equipped to make smart decisions.

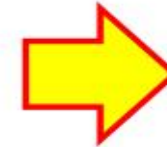
What do people think Business **Analysts** can do?



Lots of
data

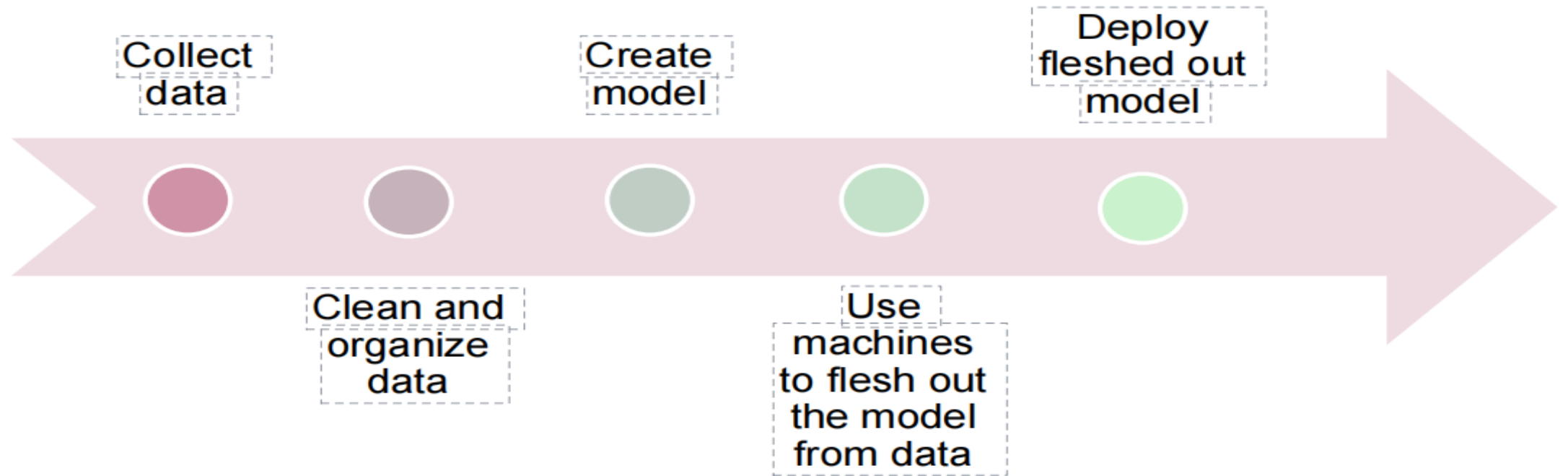


Complex
mathematics in
multidimensional

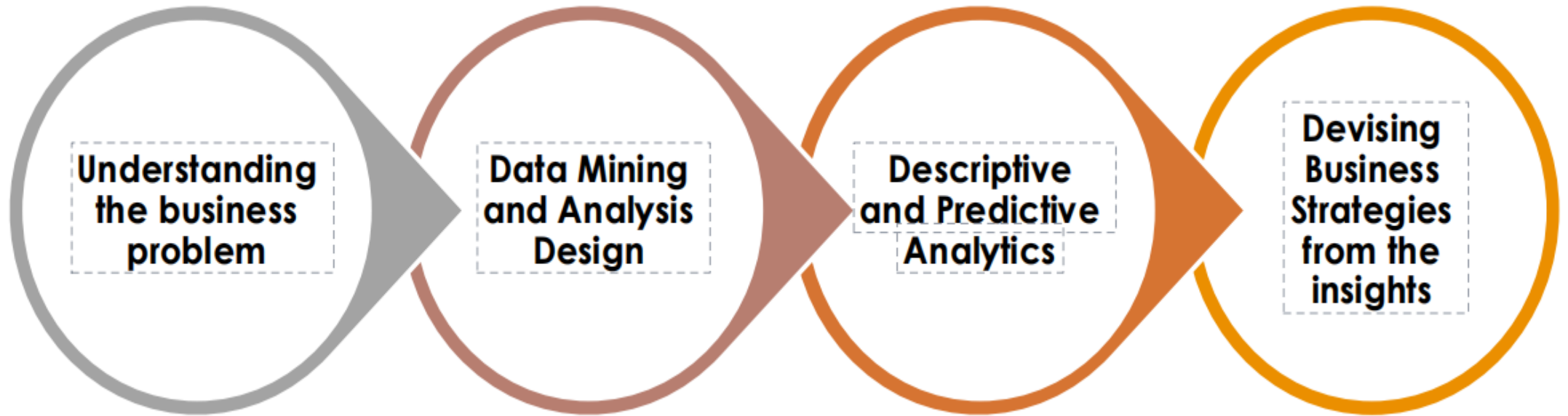


Magical
results

In Reality.....



Key Functions of Business Analyst



Business Analyst Skills



- Common sense
- Curious mind
- Clear and simplify thought

- Love to solve puzzles



- Good listening, writing and communication skills (visualizations)

- Maths & Stats



- Business sense



Tools and Techniques Use

Data analytics techniques

Regression Analysis, Factor Analysis, Cohort Analysis, Cluster Analysis, Time Series Analysis

Business analytics tools

Microsoft Excel, Power BI, SAS, SPSS, PLS-SEM, etc.

- Analysis refers to the process of **separating** a whole problem into its parts so that the parts can be **critically examined** at the granular level.

Analytics is a **variety** of methods, technologies, and associated tools for creating **new** knowledge/insight to solve complex problems and make **better and faster decisions**. *Delen(2015)*

ANALYTICS VS ANALYSIS

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What Can Be Learned From Business Data?

- Ø Business data analytics is an emerging technique that dives into a data set without a prior set of hypotheses.
- Ø The data derive meaningful trends or intriguing findings that were not previously seen or empirically validated (Leventhal, 2010).
- Ø Business data analytics enables quick decisions or help change policies due to trends observed

Business Analytics

∅ Accumulation of raw data captured from various sources (i.e. discussion boards, emails, exam logs, chat logs in e-learning systems) can be used to identify fruitful patterns and relationships. (Bose, 2009)

Exploratory Visualization

**relationships that are perhaps unknown or at least less formally formulated

Confirmatory Visualization

**theory-driven



Types of Business Analytics

The four main types of **Business Analytics**

What do I need to do?-Applying advanced analytical techniques, prescriptive analytics advises on the actions and decisions that should be taken.

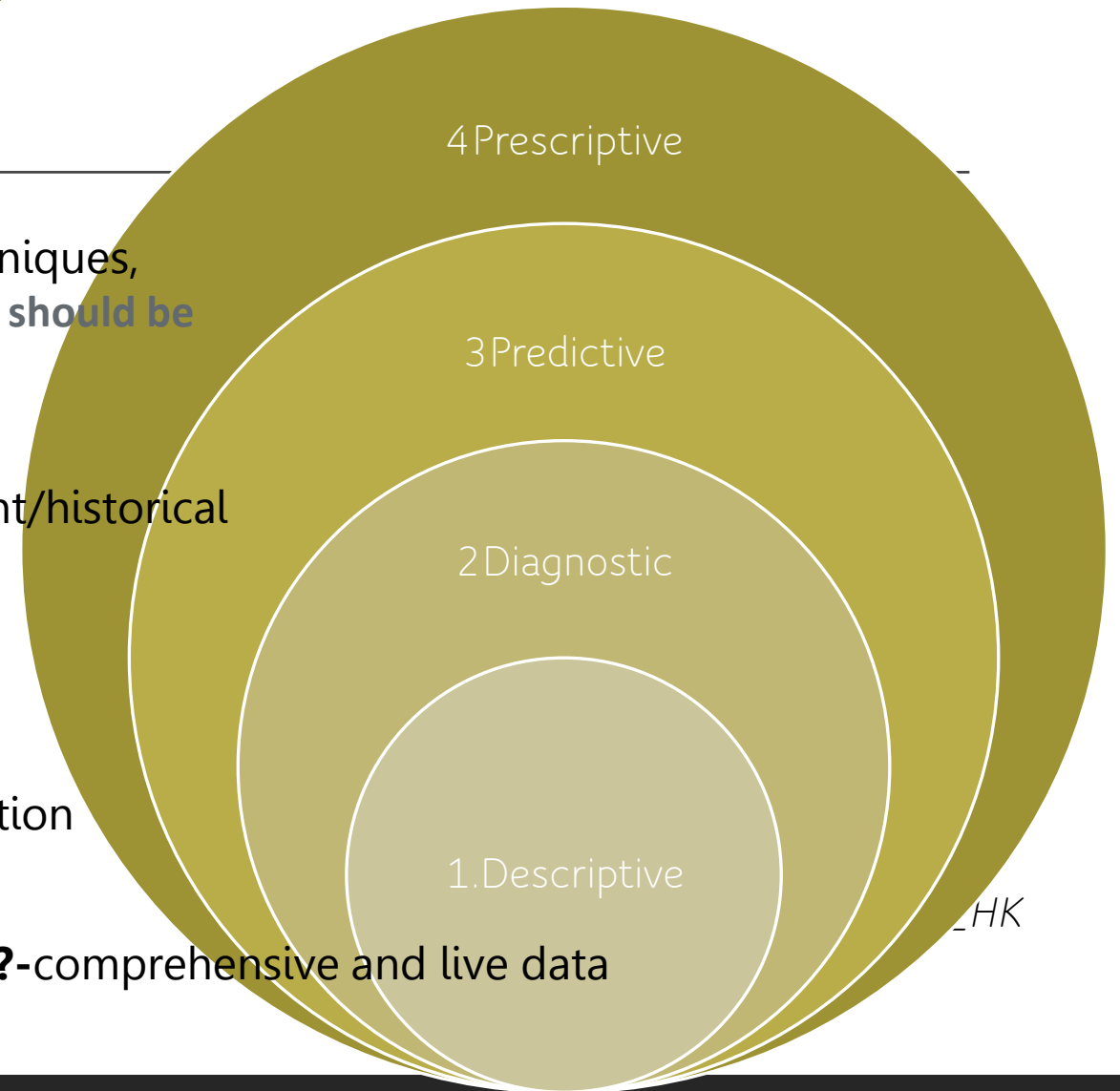
What's likely to happen?

- business strategies consistent over-time -current/historical pattern predict the future
- Decision Automated

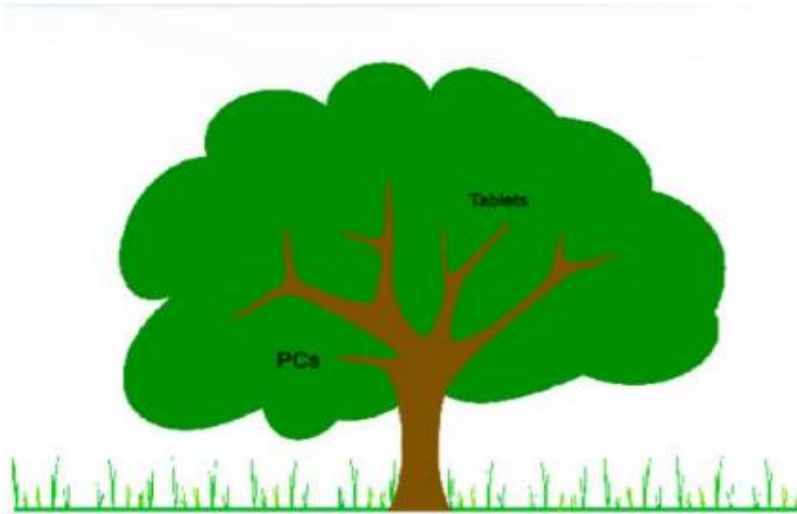
Why is it happening?

- root-cause
- isolate confounding information

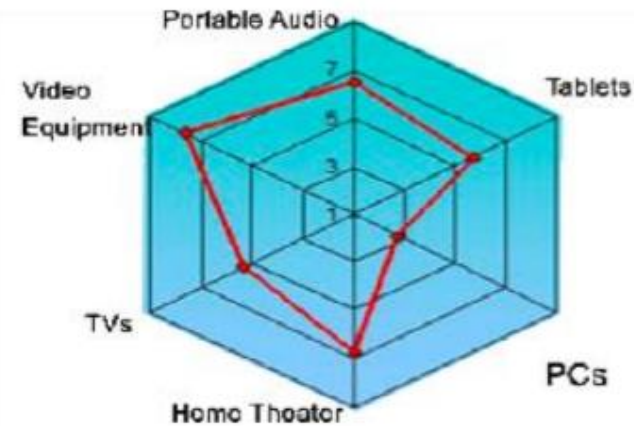
What's happening?-comprehensive and live data



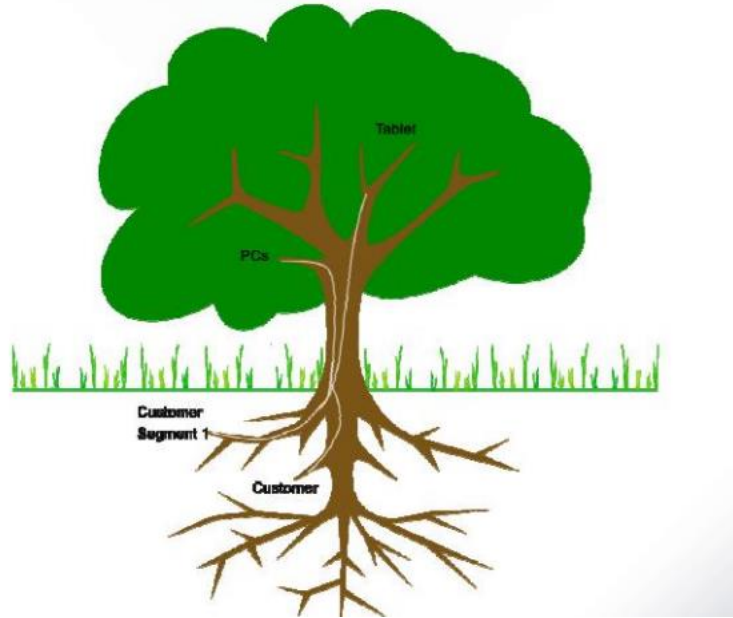
Descriptive Analytics- **What's happening?**



Total Sales:	\$5,087
Operating Cost:	\$5,590
Issues:	7
Processes Affected:	521



Diagnostics Analytics- Why is it happening?



Predictive Analytics - **What's likely to happen?**

Madame Zaza
Fortune Teller



Madame Zaza
PREDICTIVE ANALYTICS



*"Why the change? Well, I could see
where the future was going..."*

Prescriptive Analytics-What do I need to do?

enforces consistent methodology

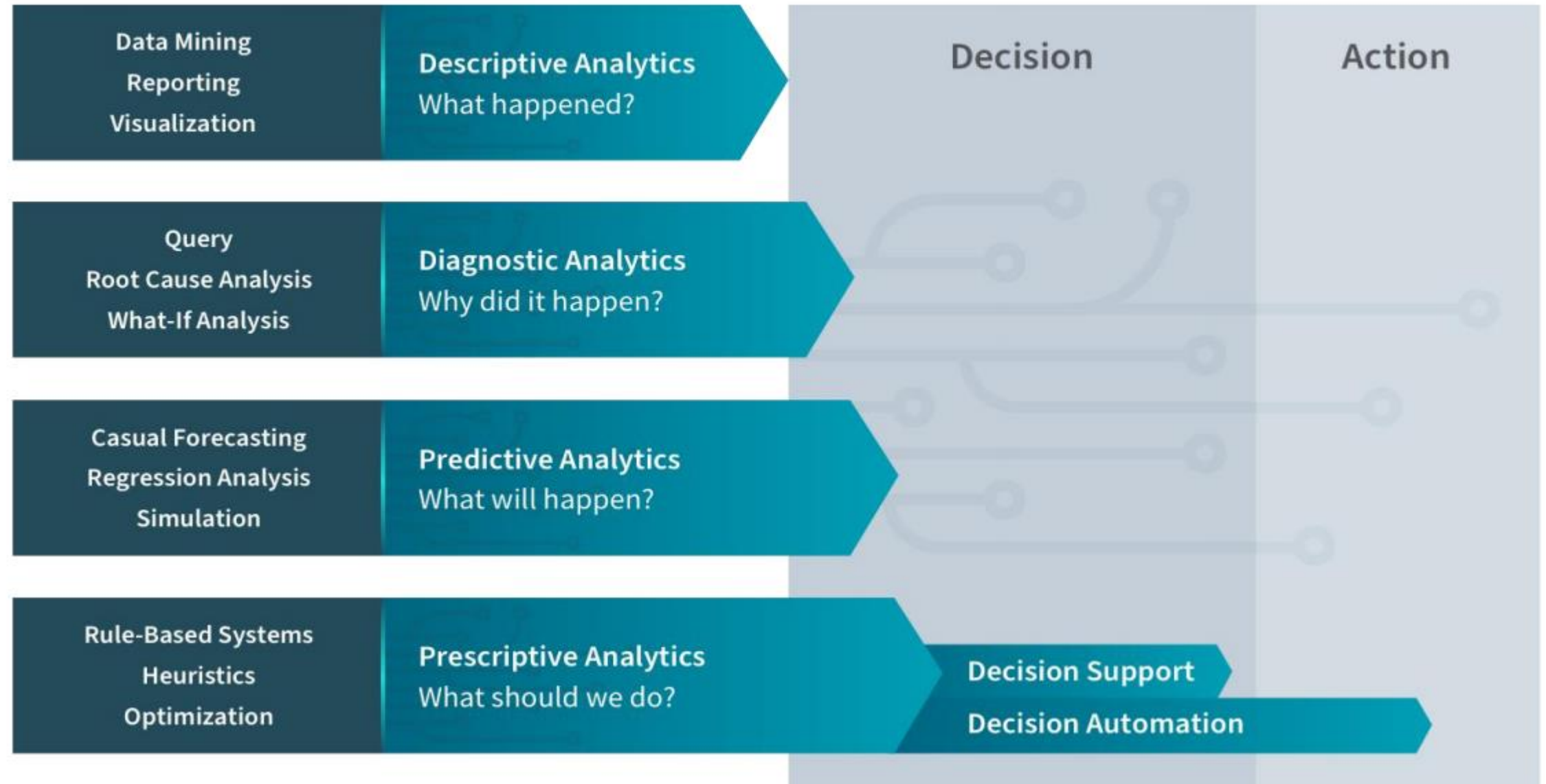
provides expert guidance to those who need it



PROCESSES

TYPES OF ANALYTICS

HUMAN INPUT



The process of business analytics

Step 1:

Define the question

Step 2:

Collect the data

Step 3:

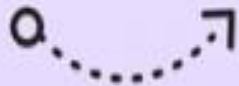
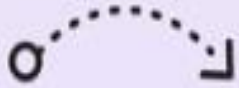
Clean the data

Step 4:

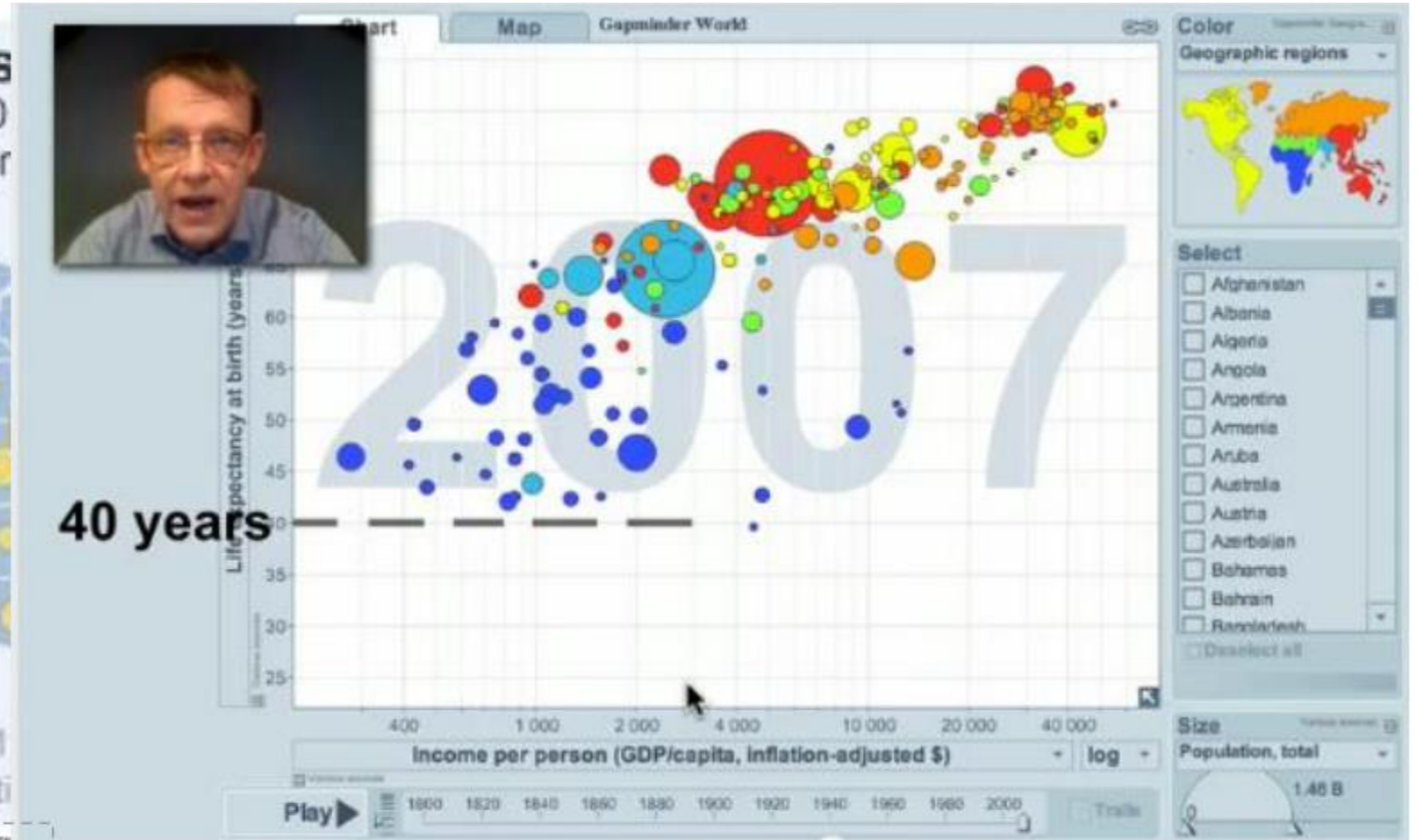
Analyze the data

Step 5:

Visualize and share your findings



Business Analytics Application



ELECTION2012

FOLLOW WSJ ELECTION COVERAGE: [f](#) [t](#) [e](#)

 LATEST NEWS

 RACES

 POLLS

 VIDEO

 CAMPAIGN FINANCE



Romney



Total: 112 delegates



Santorum



Total: 72 delegates



Gingrich



Total: 32 delegates



Paul



Total: 9 delegates



Huntsman



Total: 2 delegates

[See all candidates...](#)



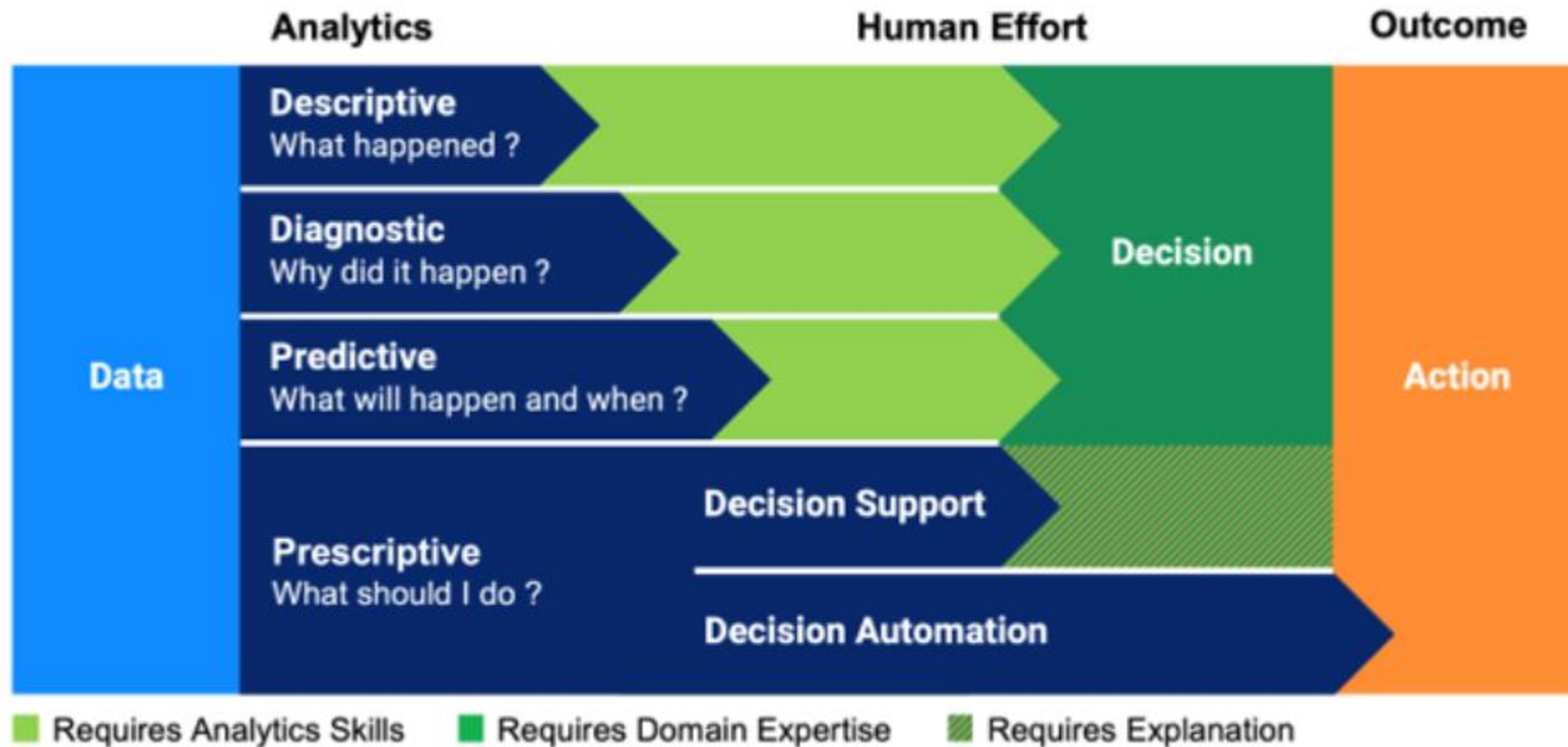
Source: The Wall Street Journal

Maine | Feb 11 Caucus - 24 Delegates | [See note](#)

[See All Races](#)

State	ME	TOTAL
Delegates	24	24





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Examples of Data Utilization in Business Operations

- Advertisers and marketers
- Educational institutions
- Healthcare providers
- Transport and logistics
- Banking and finance
- Agriculture

Test your knowledge

Which of the following best describes the overall data analytics process?

- ☐ The process of conducting competitor analysis to inform business decisions
- ☐ The process of analyzing raw data to draw out actionable insights
- ☐ The process of collating data from multiple sources into a single database

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Which of these steps typically comes first when conducting data analysis?

- ☐ Creating visualizations
- ☐ Cleaning the data
- ☐ Defining a question or problem statement

Where can data analysts work?

- ☐ Big tech companies
- ☐ In the healthcare sector
- ☐ Everywhere!

According to some estimates, the big data market will be worth how much by 2025?

☐ \$229.4 million

☐ \$229.4 billion

☐ \$229.4 trillion

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Which of the following best describes the role of the business analyst?

- ☐ Someone who can empower stakeholders to make smart, data-driven decisions
- ☐ Someone who can keep a company's processes running smoothly
- ☐ Someone who can mediate between the company goals and the customer needs

Q&A

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