

# Class 8. CI and Anticipatory systems

Competitive Intelligence

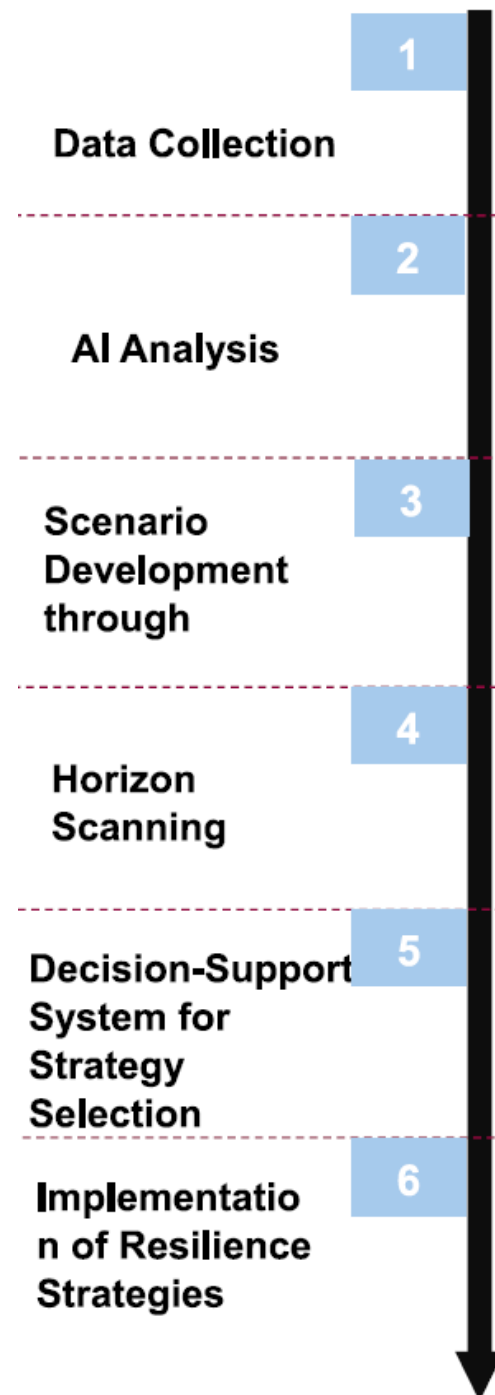
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# How can firms become more resilient through anticipatory systems?

- ▶ And how AI can help
  - ▶ Data-Driven Scenario Development
  - ▶ Automated Horizon Scanning
- ▶ Machine Learning
  - ▶ Anomaly Detection
  - ▶ Customer Segmentation
- ▶ Predictive analytics
  - ▶ Demand Forecasting
  - ▶ Risk Assessment
- ▶ NLP
  - ▶ Sentiment Analysis
  - ▶ Automated Customer Support

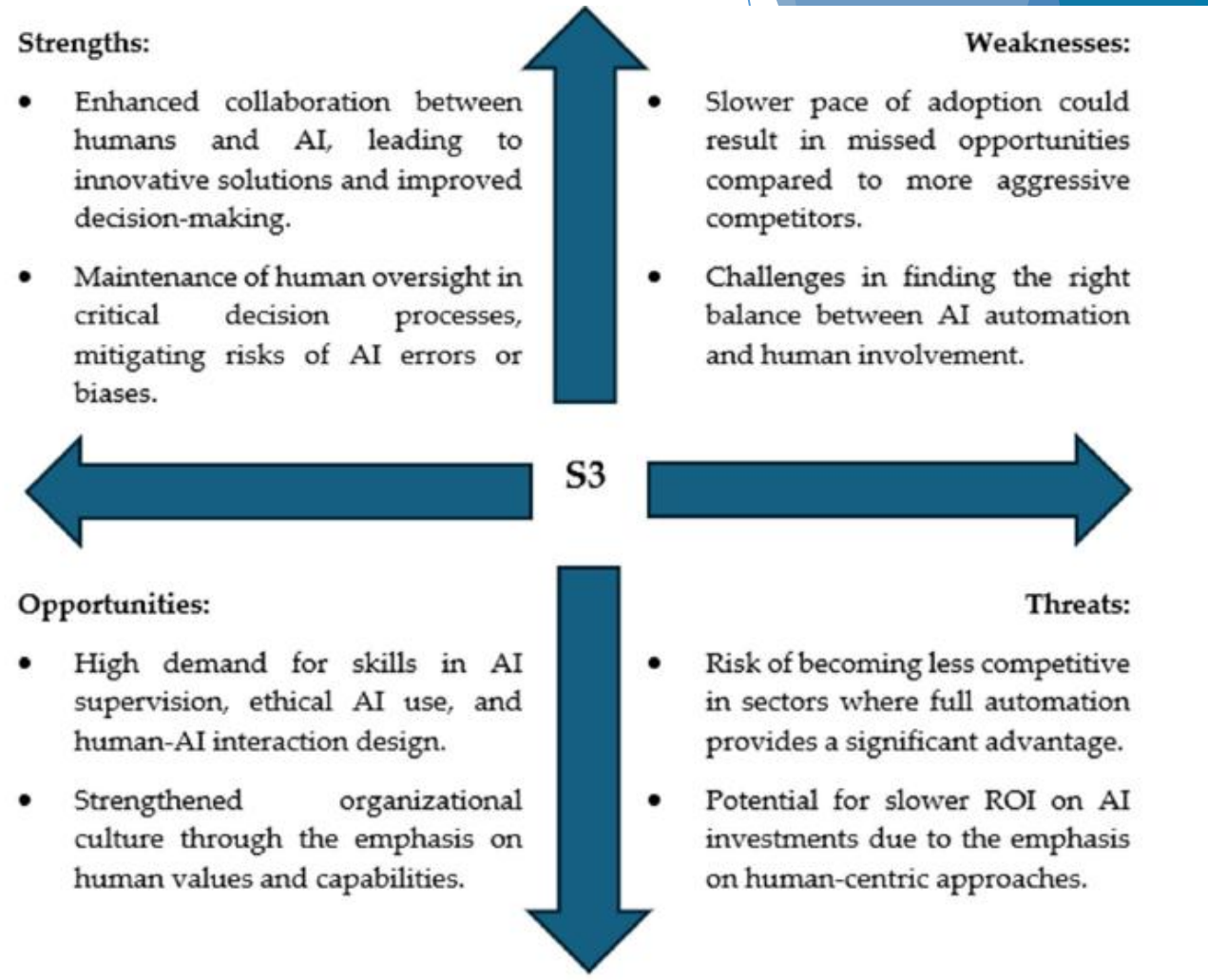
Source: Carayannis et al, 2025



# AI and CI - complex interplay between machine and human

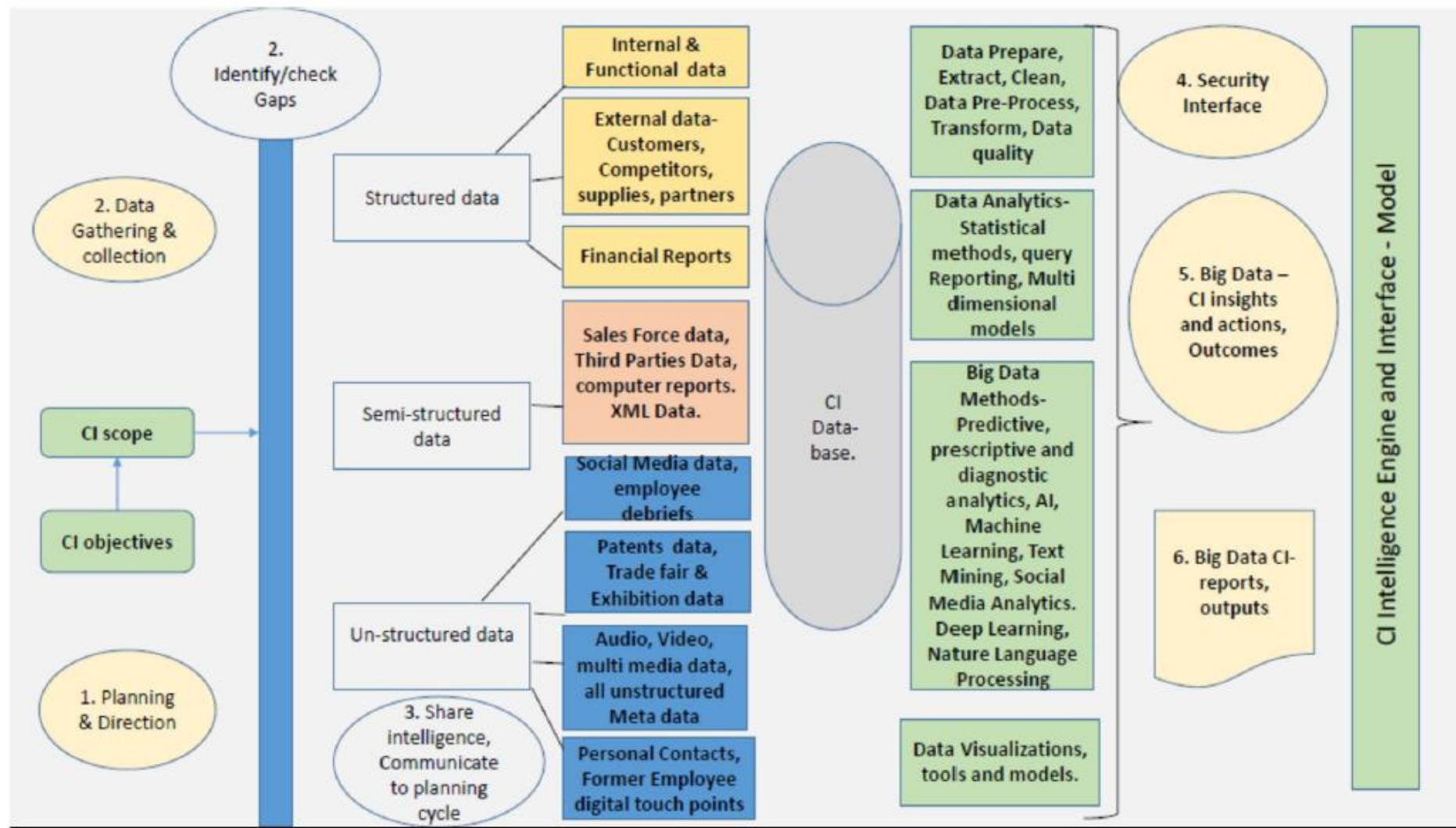
- ▶ Increased data volume on competitive information
- ▶ Time and expertise to ensure it is aligned with long-term goals
- ▶ Managing and prioritizing information - makes decision process quicker, improves predictability
- ▶ Risk of unverified data - need to distinguish between reliable and unreliable data
- ▶ Need to decide when human intervention is required

Source: Cekuls, 2024



Source: Bobitan, 2024

# Big data in CI - conceptual framework



### **CI WITHOUT BIG DATA APPROACH.**

#### **1. Map data**

1. Engage the mapped data/online communities
2. Gather data and analyze.
3. Collect publicly available data sources, analyze.
4. Data curation process: use dashboards, flip boards
5. Use assembled collected info. for customer insights – focus groups, shadowing, segmentation, surveys, and triangulation of market sizes.



### **CI WITH BIG DATA APPROACH**

1. Analyze through network intelligence, real time online social data across industry players, and go beyond Porter 5 forces. Use Dashboard for responses to changes.
2. Use real-time CI through Big Data: track, use real-time games, and psychological profiles of competitive landscapes. Use crowd intelligence, tap all online threads/clickstreams for new insights, and identify emerging trends by analyzing real-time weak signals, tracks from all social media data, and live feedback from users on new products/ideas.
3. Synthesize and structure complex data, use Big Data methods to estimate the sentiments, product buzz, service, build intelligence on influences. Generate value and insights.

### **APPLICATION OF BIG DATA METHODS IN THE COMPETITIVE INTELLIGENCE PROCESS**

How can a framework help? What kinds of data to collect? What are the methods for collecting real-time internal and external data? How can data be transformed into meaningful patterns and knowledge? What type of insights can be predicted, interpreted, and analyzed for better CI? How to handle high-volume data from diverse sources in real time?



Higher analytical capabilities and minimum CI needs.

- Employ high Big Data methods.
- e-Retailers versus brick and mortar stores fall within this matrix.
- Big Data methods related to visualization and real-time dashboards are used here.

Higher analytical capabilities and higher CI needs.

- Characterized by major market rivalry as markets constitute multiple leaders and similar offerings, thus leading to rivalry.
  - Firms related to FMCG, IT, and telecoms fall within this matrix.
- Big Data methods such as predictive analytical methods, data mining, BI, forecasting, social media analytics, simulations, and heuristic algorithms are used here.

Lower analytical capabilities and higher CI needs.

- Firms here tend to win market not by direct encounter but by creating niche competitive landscapes for themselves.
- Do not possess analytical capabilities to engage in open competitive conflict.
- Most disadvantaged: urgent need to invest in analytics.
- Basic query tools and fundamental statistics are used.

Lower analytical capabilities and minimum CI needs.

- Firms may soon enter a state of complacency.
- Monopolies/some public sector companies can be examples.

# Skills for CI in the context of digitalization

