

Why do We Visualize? Securing the *Wow!* Effect in Business Innovation through AI-Powered Digital Transformation

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Land Acknowledgment

The University of Windsor sits on the traditional territory of the Three Fires Confederacy of First Nations, which includes the Ojibwa, the Odawa, and the Potawatomi.

We respect the longstanding relationships with First Nations people in this place in the 100-mile Windsor-Essex peninsula and the straits – *les détroits* – of Detroit.



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He/Him

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500+ connections

University of Windsor

National Technical University of Athens

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Academic Interests

- New Teaching Approaches and Methodologies:
  - Nothing is more important that passing on knowledge to eager young people
- Data
  - Databases
  - Big Data
  - Data Visualization
- Visual Analytics
- Artificial Intelligence
  - The technology (Machine Learning, Deep Learning, LLMs, etc.)
  - AI as a force of Disruption
- Software Process Improvement – Software Lifecycle Management
- Entrepreneurship, Innovation and Management


Innovation is the ability to see change as an opportunity – not a threat.
Steve Jobs
quotefancy

Agenda



Innovative Entrepreneurship and the Systemics Leader



Systemics in a Digitally Transforming World



In search for Outliers: The power of AI-Powered Visual Analytics

Outcomes

Why do We **Visualize**?
Securing the ***Wow!* Effect** in **Business Innovation** through **AI-Powered Digital Transformation**

By the end of this presentation, you will be able to:

- Understand what Innovation is
- Understand what AI-Powered Digital Transformation is
- Realize that you, as leaders, are expected to support innovation through digital transformation
- Become familiar with a Leadership Innovation Management Methodology, backed by AI-Powered Digital Transformation
- Be persuaded that a “Wow!” Effect in every aspect of your life is a trigger to delve deeper into things

…

- Have FUN!

Part I
Innovative Entrepreneurship and the Systemics Leader

About Innovation

Creativity vs Innovation

- Innovation ≠ Creativity

- Creativity:
  - Using creativity in business is important because it fosters unique ideas.
  - This novelty is a key component of innovation.

- Innovative idea → It must be Useful!

Reference: HBR: https://online.hbs.edu/blog/post/importance-of-innovation-in-business

Innovation: A Definition

- Innovation is:
  - A Product,
  - A Service,
  - A Business model, or
  - A Strategy

  that's both novel and useful.

- Innovations don't have to be major breakthroughs in technology or new business models; they can be as simple as upgrades to a company's customer service or features added to an existing product.

Reference: HBR: https://online.hbs.edu/blog/post/importance-of-innovation-in-business

Types of Innovation

- **Sustaining** innovation:
  - Enhances an organization's processes and technologies to improve its product line for an existing customer base. It's typically pursued by incumbent businesses that want to stay atop their market.
- **Disruptive** innovation:
  - Disruptive innovation occurs when smaller companies challenge larger businesses. It can be classified into groups depending on the markets those businesses compete in:
    - **Low-end disruption** refers to companies entering and claiming a segment at the bottom of an existing market,
    - **New-market disruption** denotes companies creating an additional market segment to serve a customer base the existing market doesn't reach.

- The most successful companies incorporate both types of innovation into their business strategies.
- While maintaining an existing position in the market is important, pursuing growth is essential to being competitive.
- It also helps protect a business against other companies affecting its standing.

Reference: HBR: https://online.hbs.edu/blog/post/importance-of-innovation-in-business

Why is Innovation important?

- It allows adaptability
- It fosters growth
- It separates businesses from their competition

Reference: HBR: https://online.hbs.edu/blog/post/importance-of-innovation-in-business

Human-centered Design

- Innovation requires considering user needs
- It fosters growth
- It separates businesses from their competition
- The three characteristics of human-centered design:
  - Desirability
  - Feasibility
  - Viability

Reference: HBR: https://online.hbs.edu/blog/post/importance-of-innovation-in-business

Operational vs Innovative Worlds

- The **Operational World**:
  - Reflects the Organization's routine process and procedures
  - Metrics and results are prioritized
  - Creativity isn't encouraged to the extend required for Innovation
  - Endeavors that disrupt routine (i.e., risk-taking) are not encouraged
- The **Innovative World**:
  - Encourages creativity and experimentation
  - Allows for open-endedly exploring ideas
  - Tends to neglect the functional side

- Both worlds are necessary for innovation. Innovation must be grounded by reality
- Design thinking strikes this balance by guiding you between the concrete and abstract

Reference: HBR: https://online.hbs.edu/blog/post/importance-of-innovation-in-business

Innovation and the Systemics Leader

Increased need for Innovation

- Innovation Performance Gap

84%	94%
of global executives say innovation is extremely important	of global executives are dissatisfied with their innovation performance

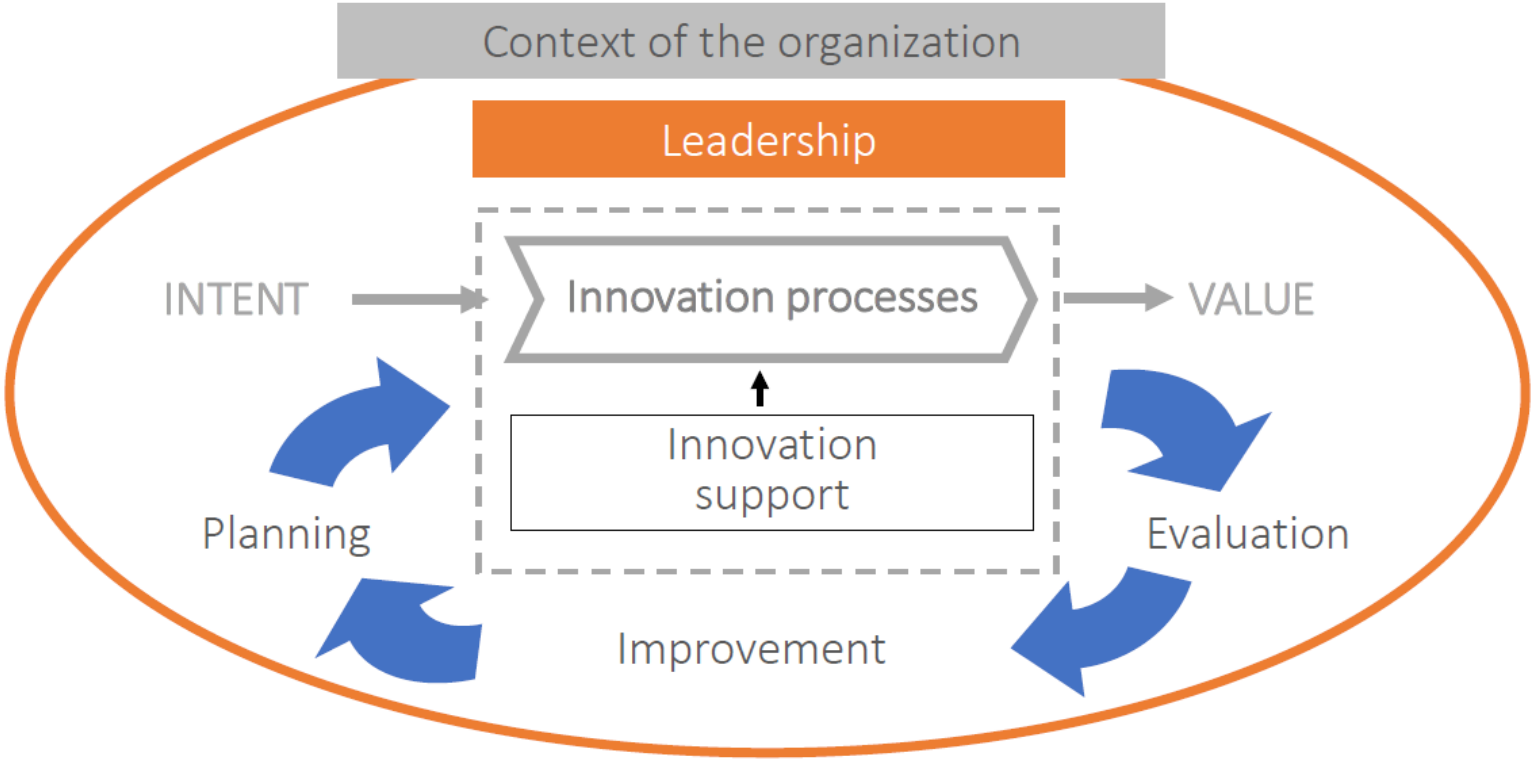
Reference: LinkedIn: https://www.linkedin.com/pulse/systems-approach-innovation-management-magnus-karlsson/

Need for Guidance on Innovation

- “Many firms are confused about innovation — what it is, what it can do and whether it can or should be formally managed”.

Reference: Gartner

Innovation Management System



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ISO 56002:2019
Innovation Management System Guidance



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Part II
Systemics in a Digitally Transforming World

Digital Transformation

What is Digital Transformation?

Digital Transformation *is the process of using digital technologies to create new — or modify existing — business processes, culture, and customer experiences to meet changing business and market requirements. This reimagining of business in the digital age is digital transformation.*

~ Salesforce

Digital Transformation *is the rewiring of an organization, with the goal of creating value by continuously deploying tech at scale.*

Digital transformation is a dual-faced coin:

- It refers to the integration of digital technology into all areas of a business, fundamentally changing how you operate and deliver value to customers.
- It's also a cultural change that requires organizations to continually challenge the status quo, experiment, and get comfortable with failure.

Sources: https://www.salesforce.com/ca/products/platform/what-is-digital-transformation/
https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-digital-transformation
https://enterprisersproject.com/what-is-digital-transformation

How to plan and execute Digital Transformation

- Digitization vs Digitalization
  - **Digitization**: Apply technology on existing business processes and models, without changing them
  - **Digitalization**: Apply technologies and re-wire the existing business processes and models

- To deliver financial outcomes from digitalization, define your digital ambitions and use a rigorous framework to plan and execute strategy:
  - Digitalization Strategy
  - Digital Optimization
  - Digital Transformation
  - Digital Business Models
  - Digital Execution

Source: Gartner (https://www.gartner.com/en/information-technology/topics/digital-transformation)

The ICT Roadmap to Digital Transformation

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Scope, Scale and Lead Digital Business Transformation

What is the best way to scope, scale and lead digital business transformation and deliver financial results?

Across industries, organizations are accelerating digital business transformation for long-term growth and profitability. From Gartner's perspective, "the transformation journey is taking large enterprises especially at least twice as long and costing twice as much as they originally anticipated." In large part this is due to cultural readiness — "53% of the organizations surveyed remain untested in the face of digital challenge and their digital transformation readiness therefore uncertain."

From our expert research and interactions with thousands of companies in a wide range of industries, we've compiled digital business transformation best practices into a customizable roadmap. Your organization can use this roadmap to understand the key stages, resources and people required to plan and execute an effective digital business transformation initiative.

Some of the top questions of the digital business transformation initiative are:

1. Is your digital ambition to optimize or transform?
2. What are the key stages and activities?
3. Which leaders and teams need to be involved?

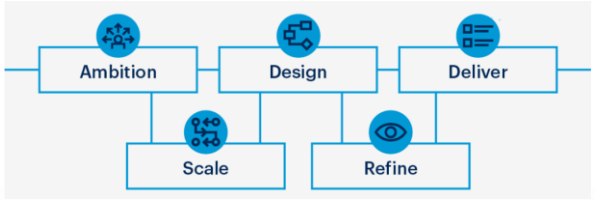
Source: https://www.gartner.com/en/information-technology/topics/digital-transformation

What are the Key Stages?

What are the key stages?

This best-practice insight is distilled from interactions with clients who have successfully implemented digital business transformation initiatives. This map shows the sequence of objectives and desired outcomes and is useful for aligning all stakeholders.

A few key milestones and a sample of associated Gartner resources are highlighted below, but the full roadmap will include complete details of all milestones and resources for each stage.



https://www.gartner.com/en/information-technology/topics/digital-transformation

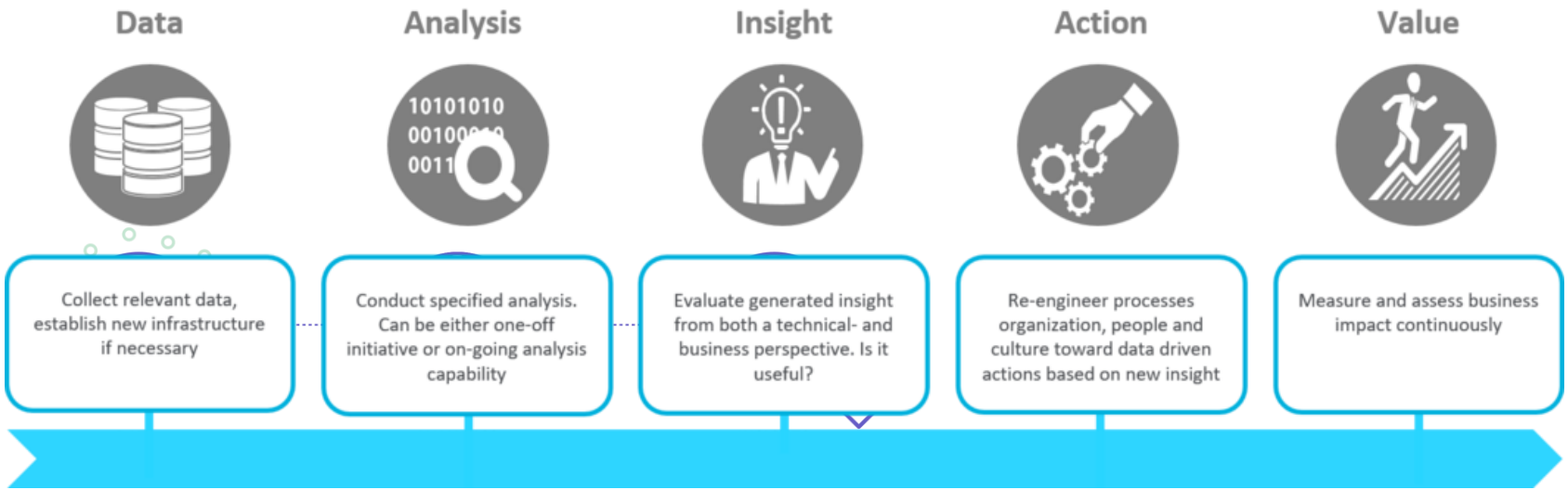
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Part III
Data-based Decision Making for Digital Transformation

From Data to Decision Making

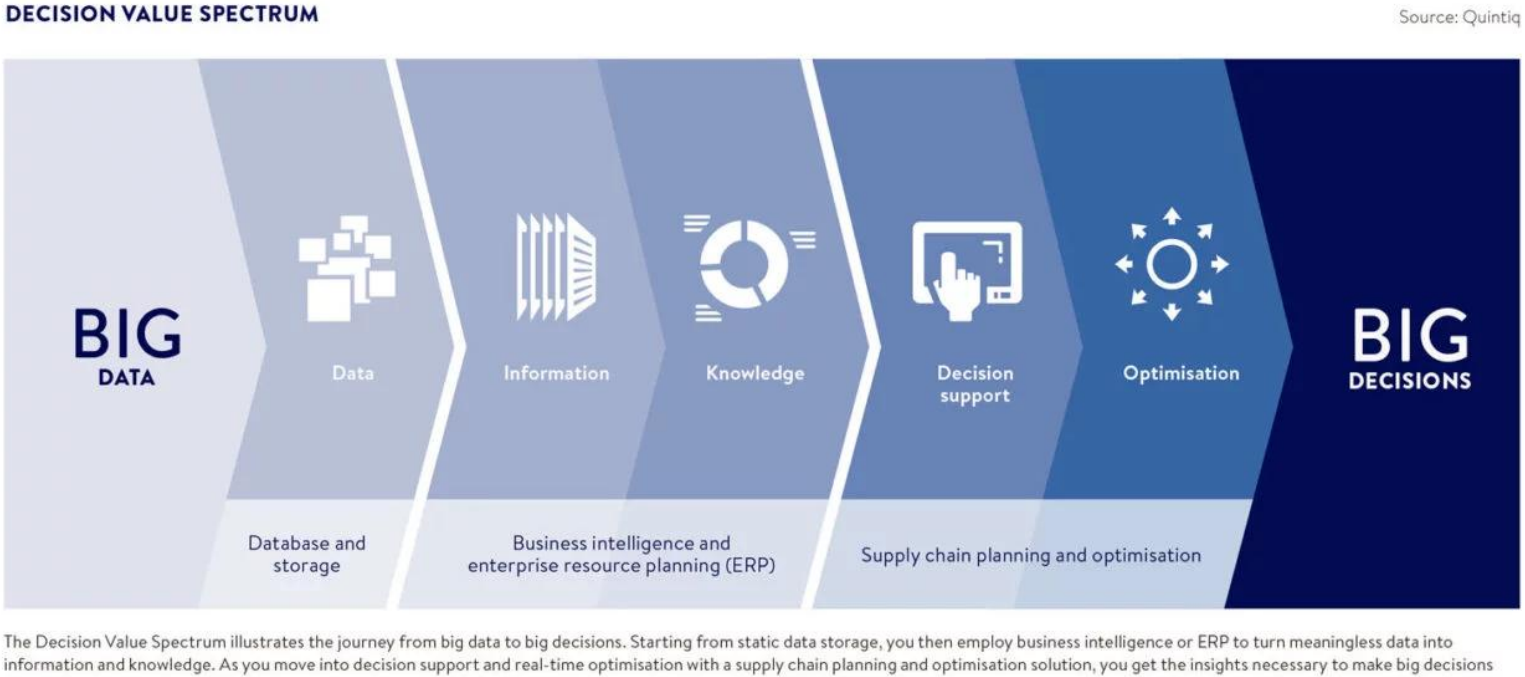
Introducing Data as a Key Factor in Decision Making



Data Driven Decision Making is the path To Business Success

"Data driven decision making (DDDM) is the process of using data to make informed and verified decisions to drive business growth. By using the right KPIs and tools, companies can overcome biases and make the best managerial rulings that are aligned with their strategies."

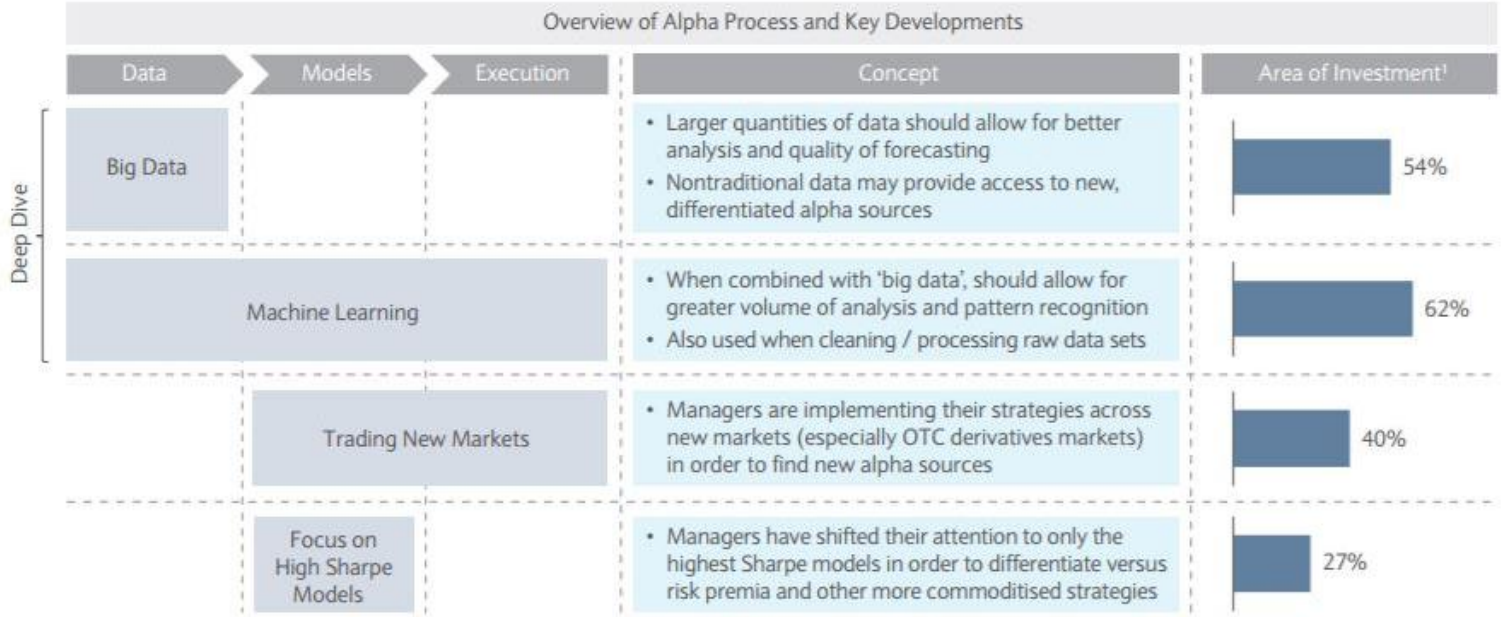
Systemics and Data Converge for Decision Making



The Decision Value Spectrum illustrates the journey from big data to big decisions. Starting from static data storage, you then employ business intelligence or ERP to turn meaningless data into information and knowledge. As you move into decision support and real-time optimisation with a supply chain planning and optimisation solution, you get the insights necessary to make big decisions

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The Systemics Manager view

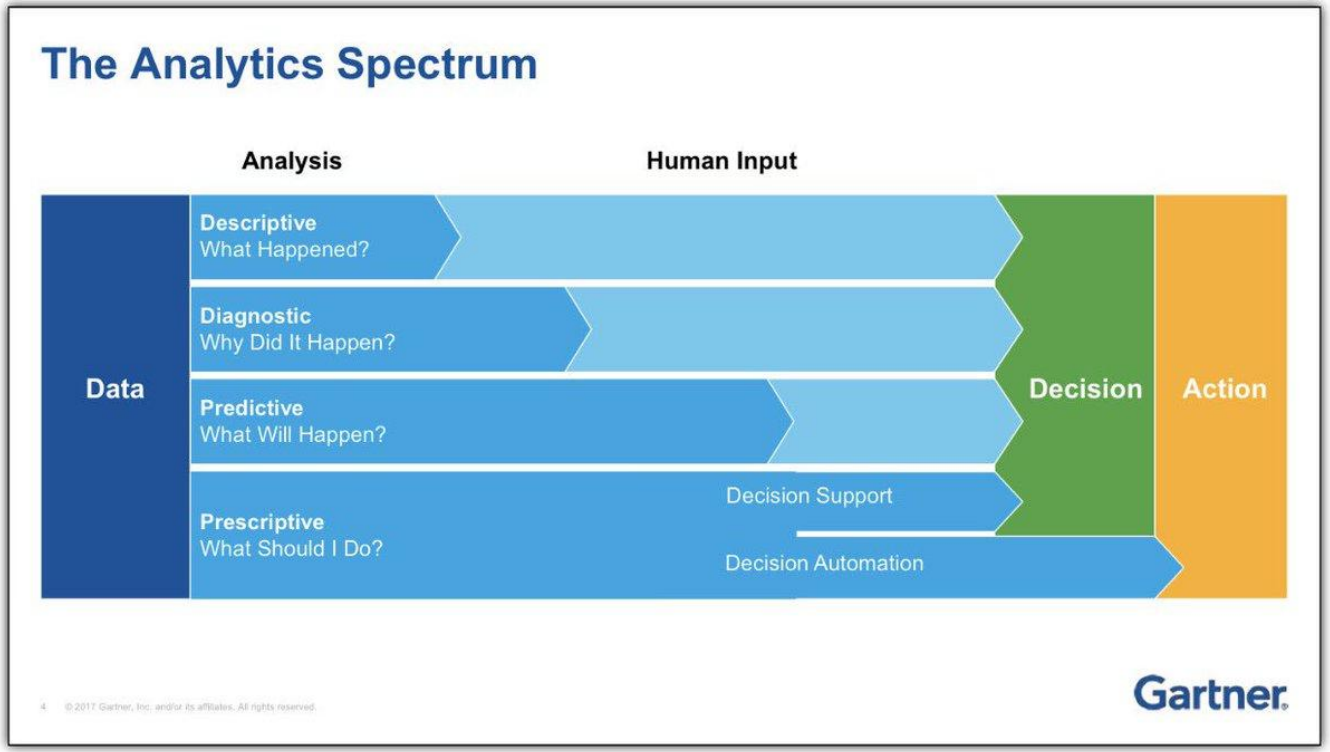


Source: Strategic Consulting survey results and analysis

1. Percentage of managers within sample that are active or investing in these areas

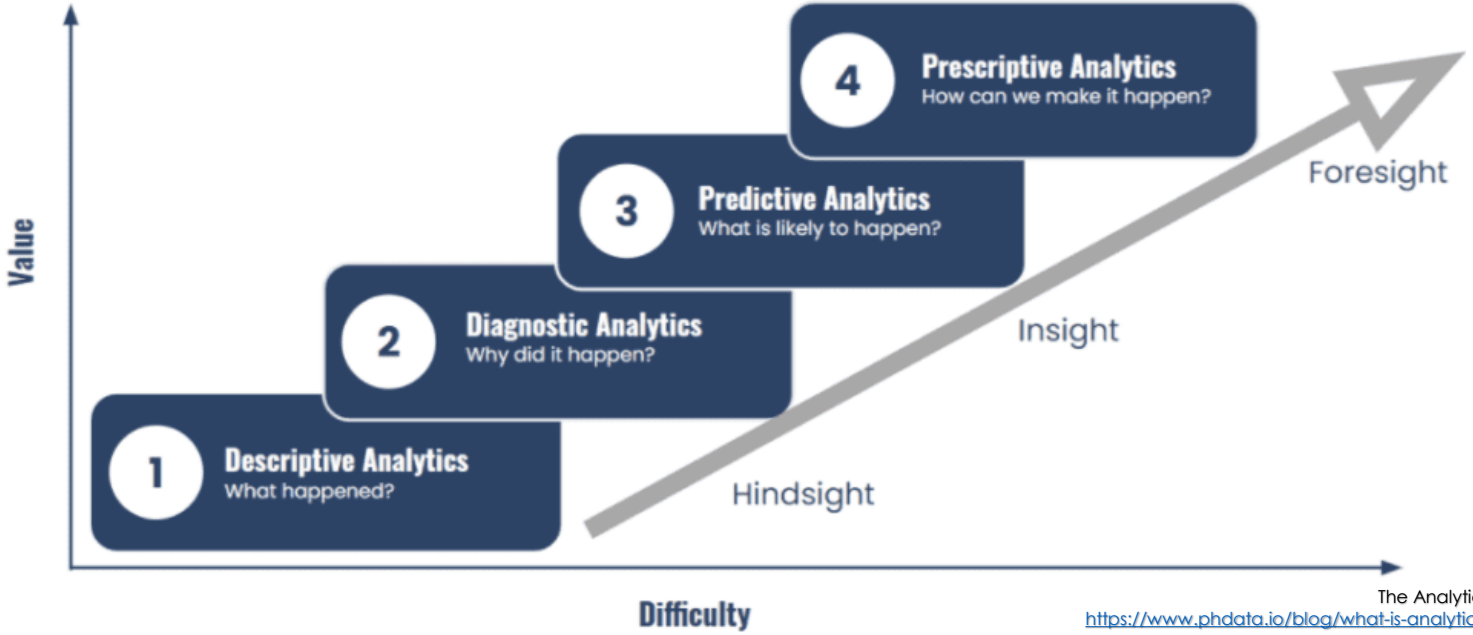
From Data Analytics to AI

from the Analytics Spectrum …



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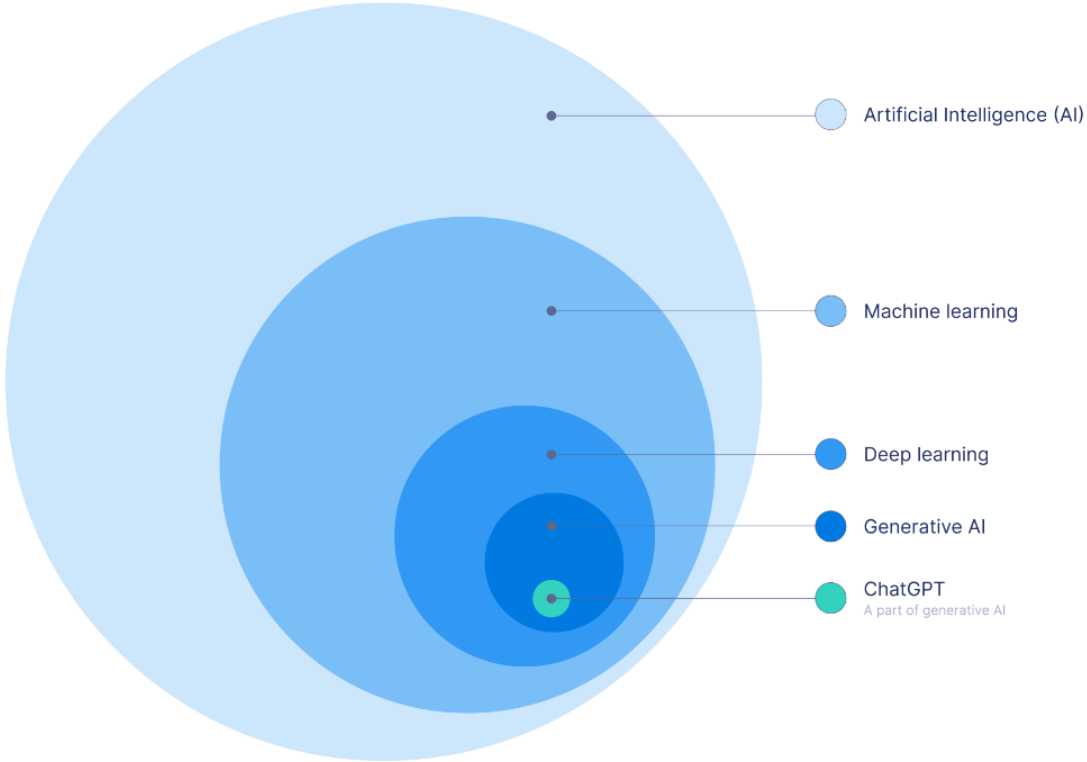
… and the Analytics Maturity Framework



The Analytics Maturity Framework
https://www.phdata.io/blog/what-is-analytics-maturity-framework/

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… to the AI Spectrum



The AI Spectrum
https://insurance.nttdata.com/post/the-role-of-ai-in-assessing-cyber-risks-a-modern-tale-of-defense/

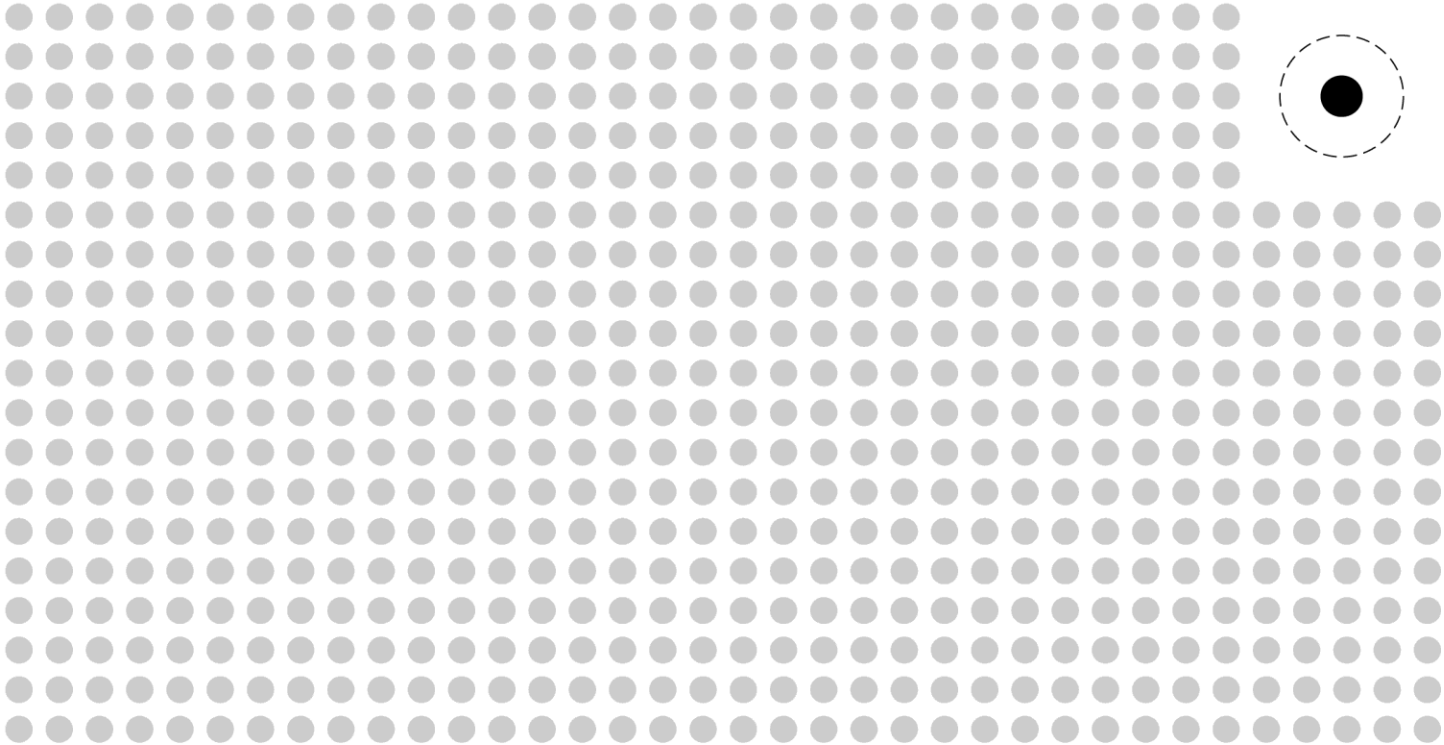
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Part III
Visual Analytics: In Search for Outliers

Outliers

Outliers: Looking for the unexpected



The Power of Visual Analytics

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The “Wow!” Effect

The Wow! Signal

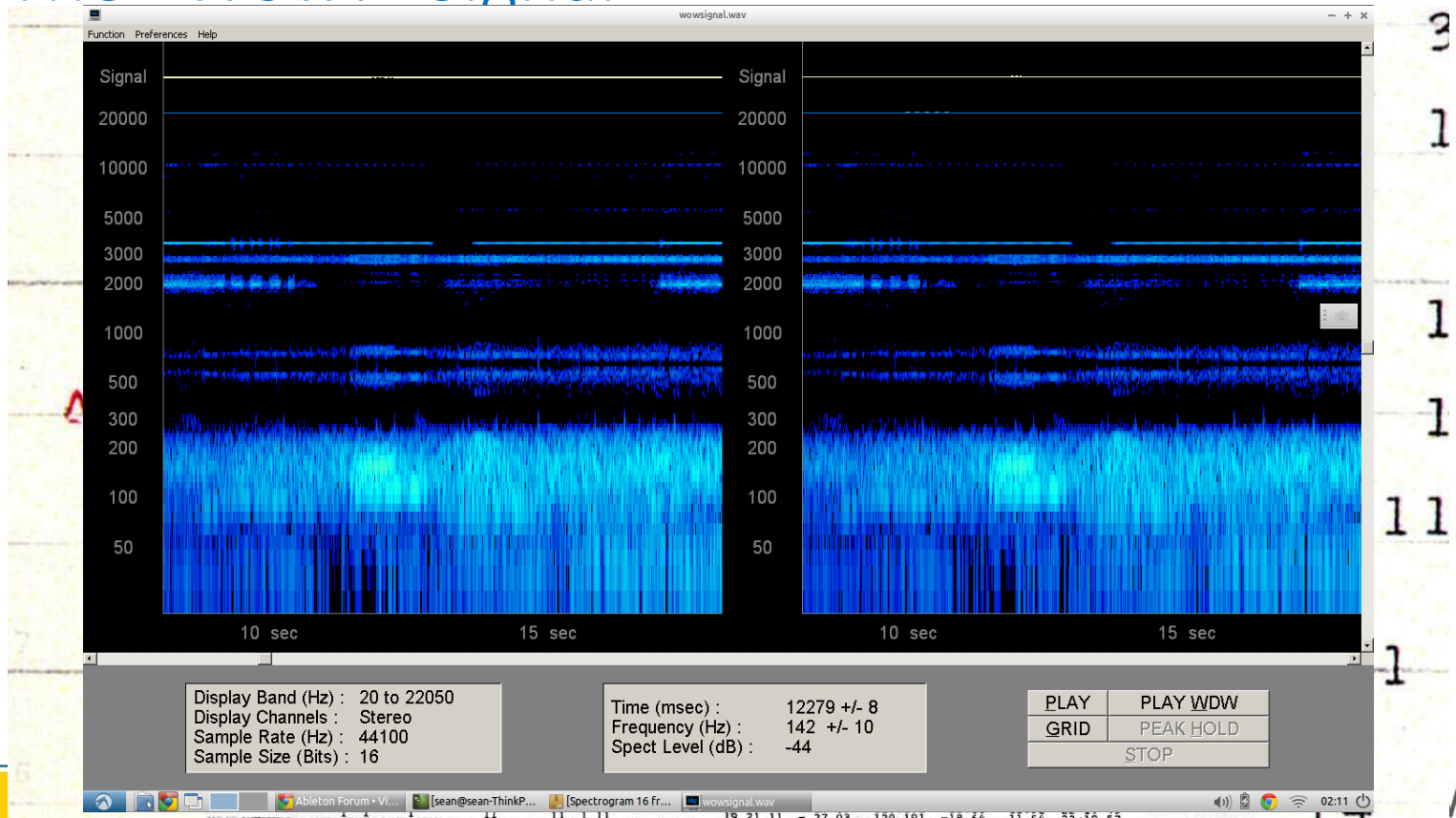




1977: Big Ear radio observatory picks up an

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The “Wow!” Signal



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The phase of Disillusionment

- The Wow! Signal was not sent by aliens
- It is most probably a natural phenomenon:
  - Earth signal reflected by space debris
  - A rare occurrence in space: The sudden brightening of a cold hydrogen cloud.

Reference: Smithsonian Magazine: https://www.smithsonianmag.com/smart-news/mysterious-wow-radio-signal-might-finally-have-an-explanation-and-no-its-not-aliens-180984956/



Thank you!

Questions?

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