Analytics and AI at CGI

Dr. Diane Gutiw, Vice President of
Analytics, AI and Machine Learning, CGI

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Vice President, CGI

Analytics, AI and Machine Learning

Diane Gutiw has over 25 years of experience in the design, development and delivery of big data solutions and analytics for both public and private sector organizations. Most recently Diane has been working with FortisBC and Manitoba Hydro supporting the development of an analytics data platform and use case design as well as Provincial and Regional initiatives related to health sector data collaboration, COVID-19 pandemic modeling, AI use cases for cross health sector collaboration and intelligent automation engagements.

Diane has been engaged in the design and strategy for AI solutions across the Health, Finance and Energy Sectors. Diane is a visiting lecturer at Simon Fraser University, UBC Medical School and has recently been a key presenter at the eHealth, International Fintech Forum, IEEE and eHealth Conferences as well as at the federal government FDW50 conference.

Areas of Expertise

- Utilities and IoT
- Healthcare and Life Sciences
- Public Sector
- Transportation and Logistics
- Finance

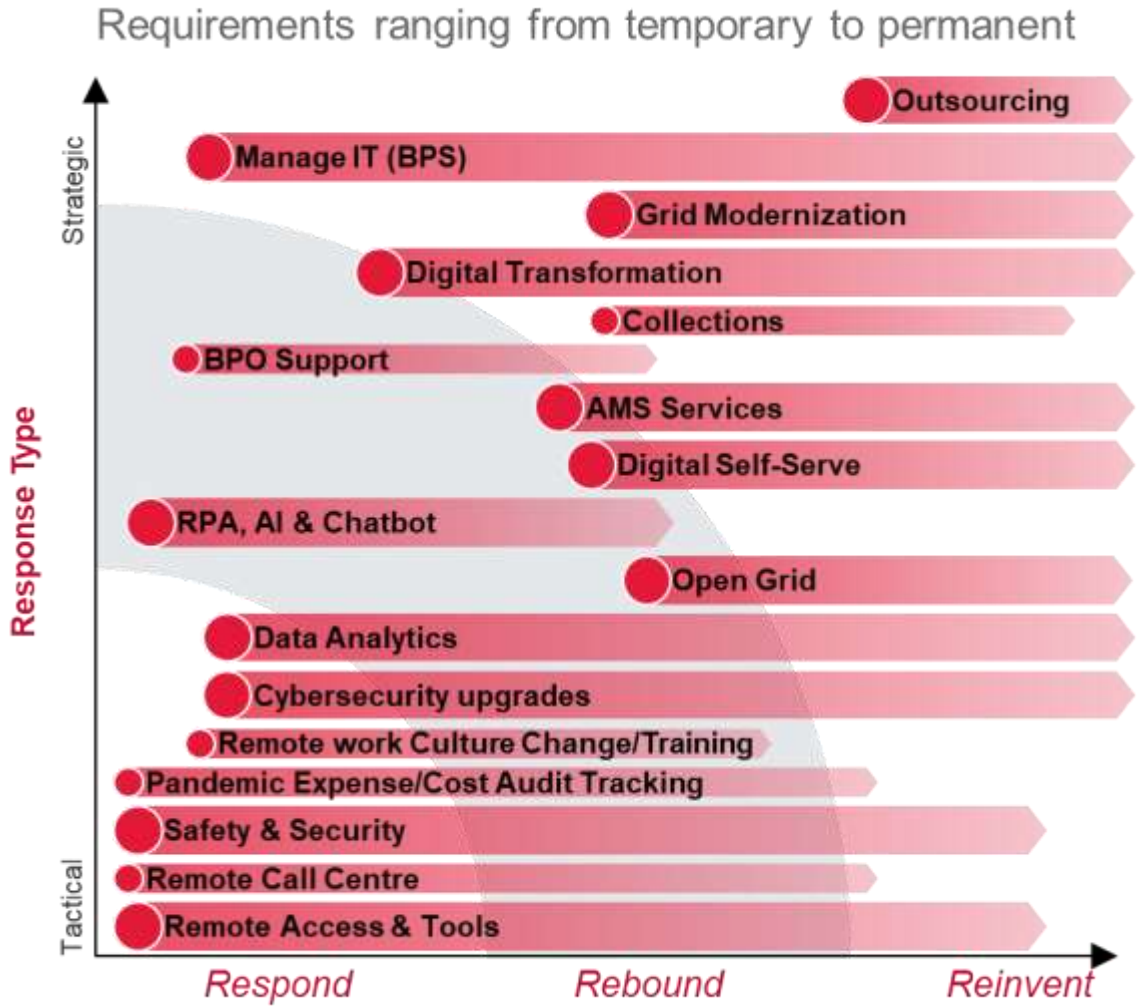
Specializations

- Advanced Analytics
- Artificial Intelligence
- Machine Learning
- Big Data Analysis and Solutions
- Intelligent Automation
- Natural Language Processing
- Cloud Data Management Platform design

The changing ecosystem of Analytics and AI

COVID-19 pandemic impacts on the Energy Industry

The pandemic has fundamentally changed the way we live, interact and work. In the coming months and years, technology will be core to how you reinvent your business to create value for your customers and citizens.



CGI is helping our clients with short-term and long-term to permanent services and solutions. These services range from answering phones to the restructuring of businesses and workforces.

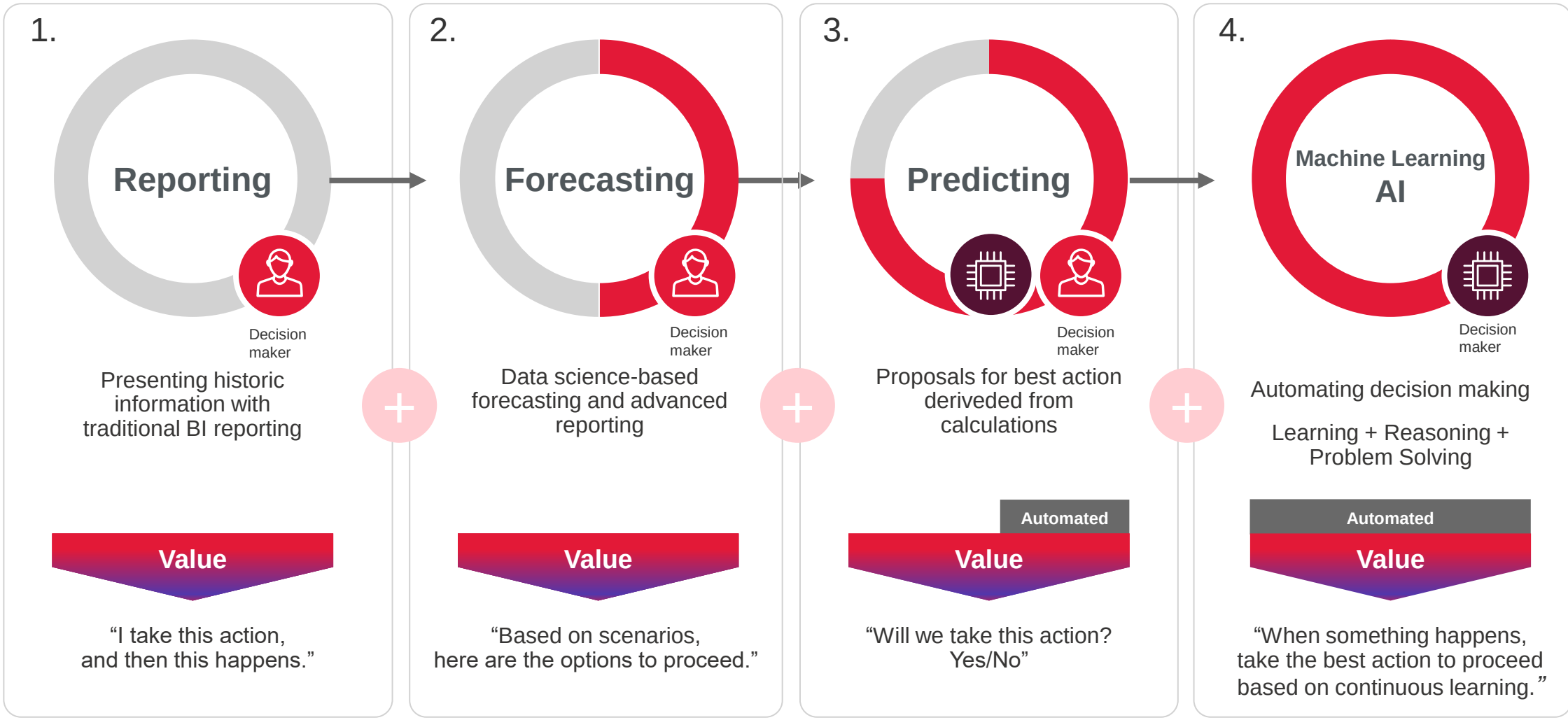
Our teams are working together to provide a catalog of relevant capabilities for this, and other, industries across our wide reaching operational geographies, to support our client conversations.

Short-duration (weeks to months)

Long-duration (months to years)

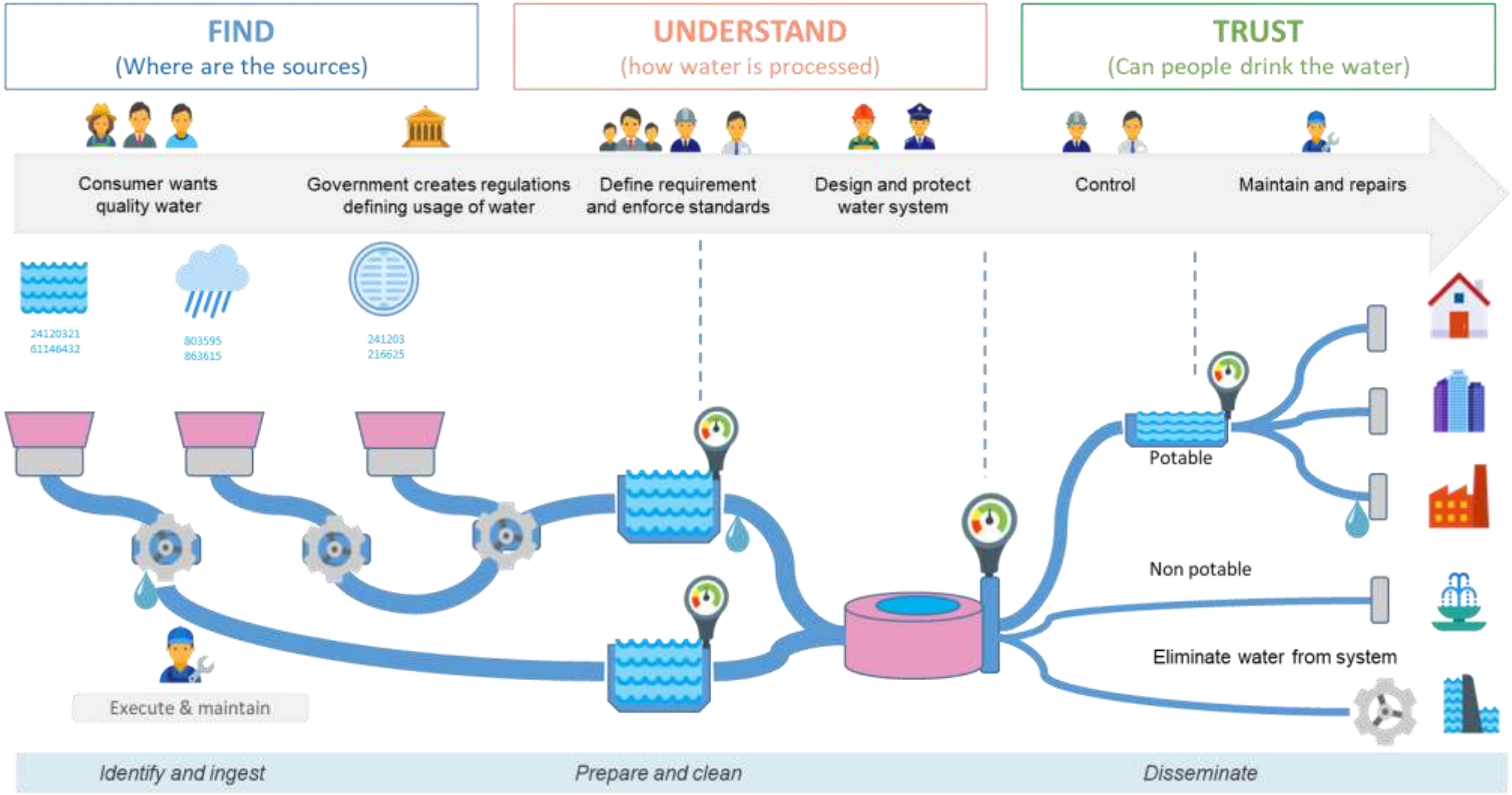
Evolving Use of Data Analytics

Organizations are adopting more advanced analytics that are focused on business outcomes



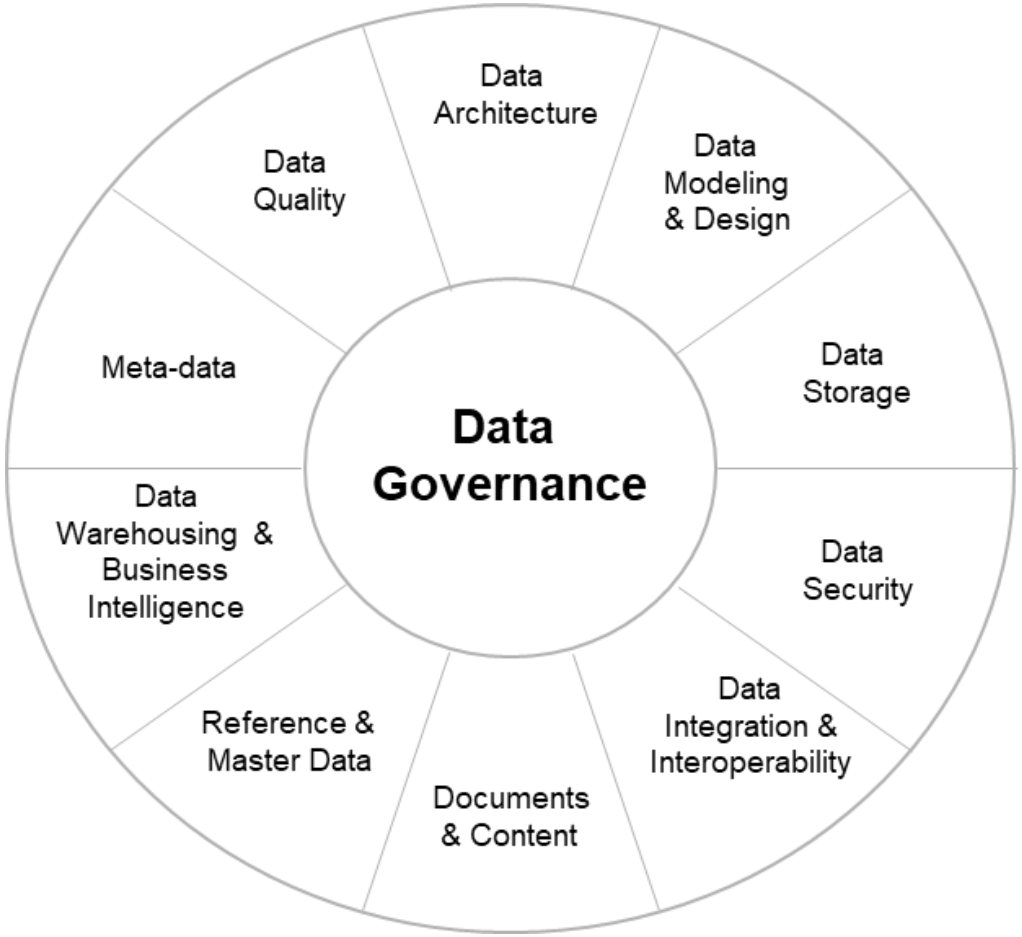
If Data Was Water

Water and data without standards and without controls become unusable, they can no longer be consumed.



Data Governance

Protect sensitive health data to support privacy and effective security end-to-end



Meta Data
The Business and technical context for how data is created

Quality
Tracking, monitoring and correction of data issues

Master Data
Harmonizing definition and use of similar data across systems

Architecture
Integrity and interoperability of data

Privacy and Security
Protecting data access and use

Retention and Archiving
Compliance with records retention and expiry laws and regulations

Governance
Data Governance enhances trust by minimizing risk and enhancing data flow

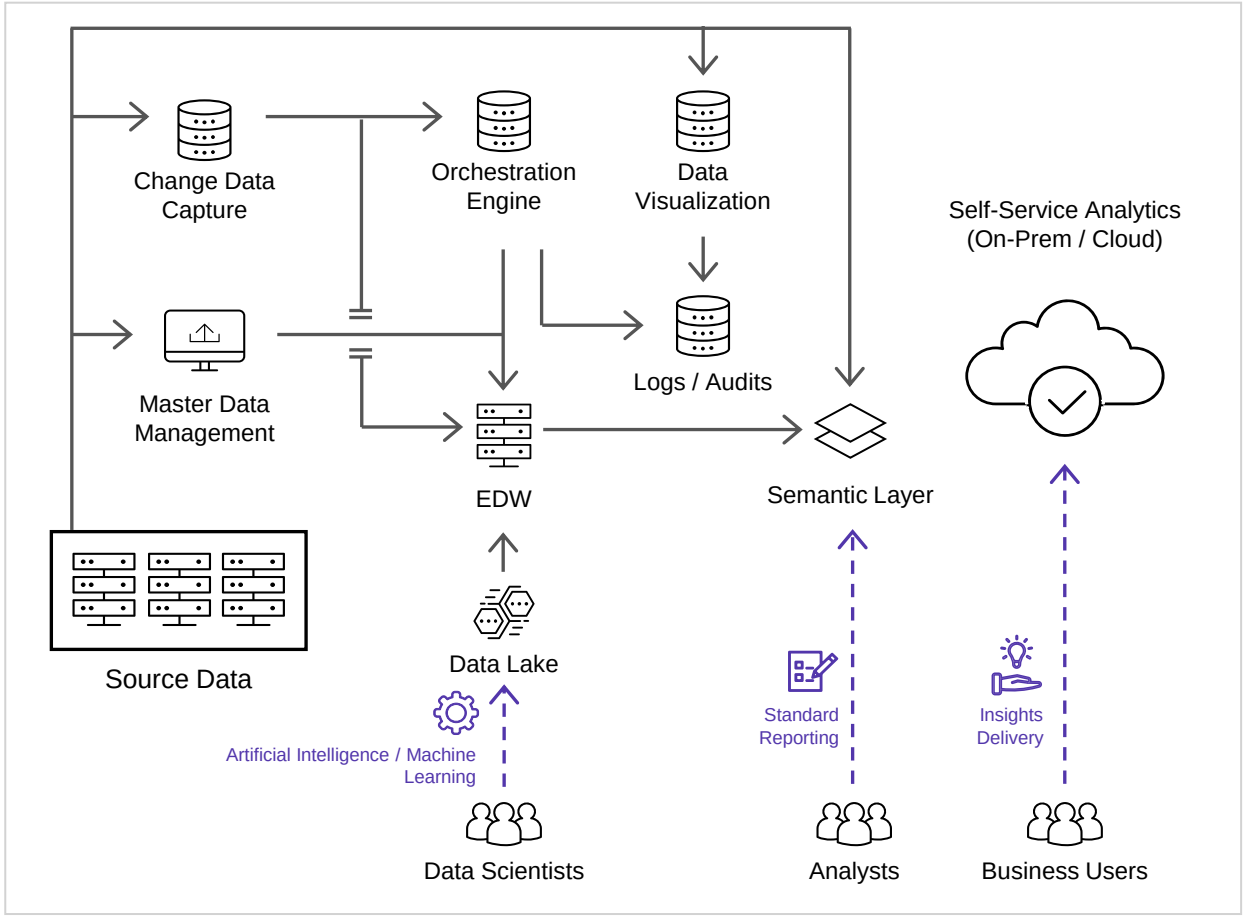
Operationalizing Data

Quick access to the data you need to address business issues by automating data capture and implementing interactive dashboards and technologies.

The data lifecycle has shifted to move from Business Intelligence/reporting to Advanced Analytics.

Principles of advanced analytics

- Quicker access to near raw data
- Applying research methodologies to focus on business questions and problems
- ‘Operationalize’ data once the value and models for that data is understood
- Support self serve data access and interactive dashboards through semantic layer and technologies
- Leverage the investment in data warehousing as a source into analytics
- Extend available data to support pressing questions for more informed decision-making
- Data Governance as a foundation

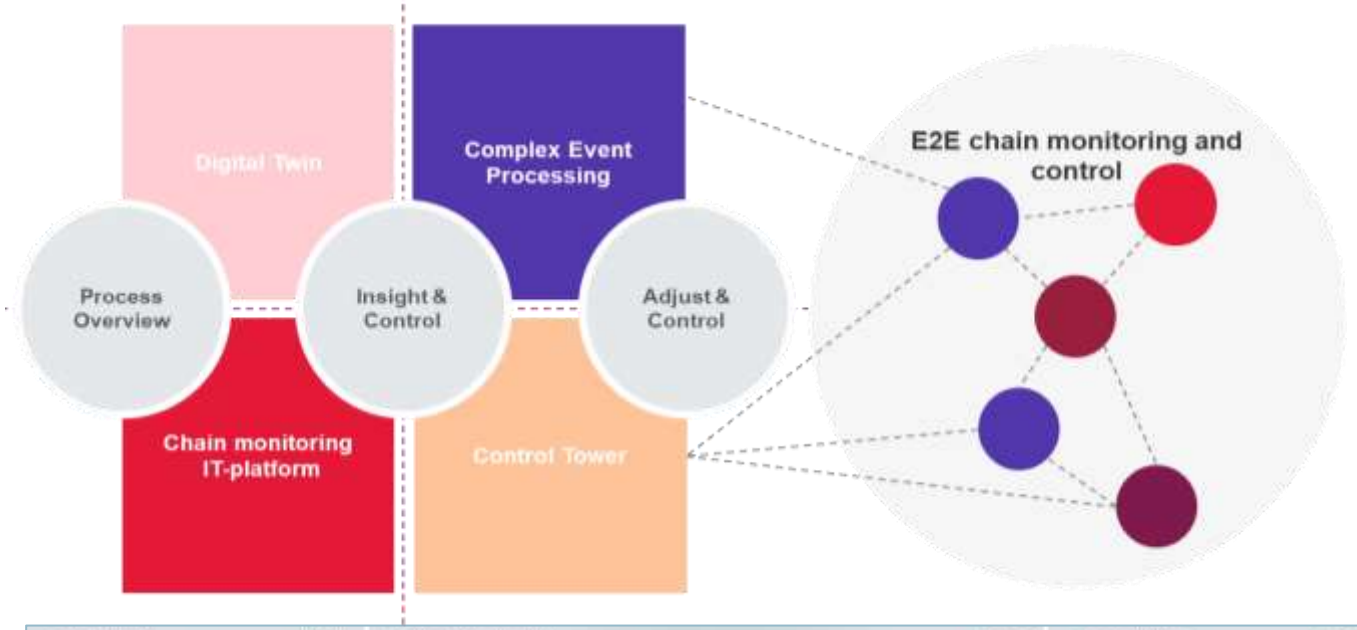


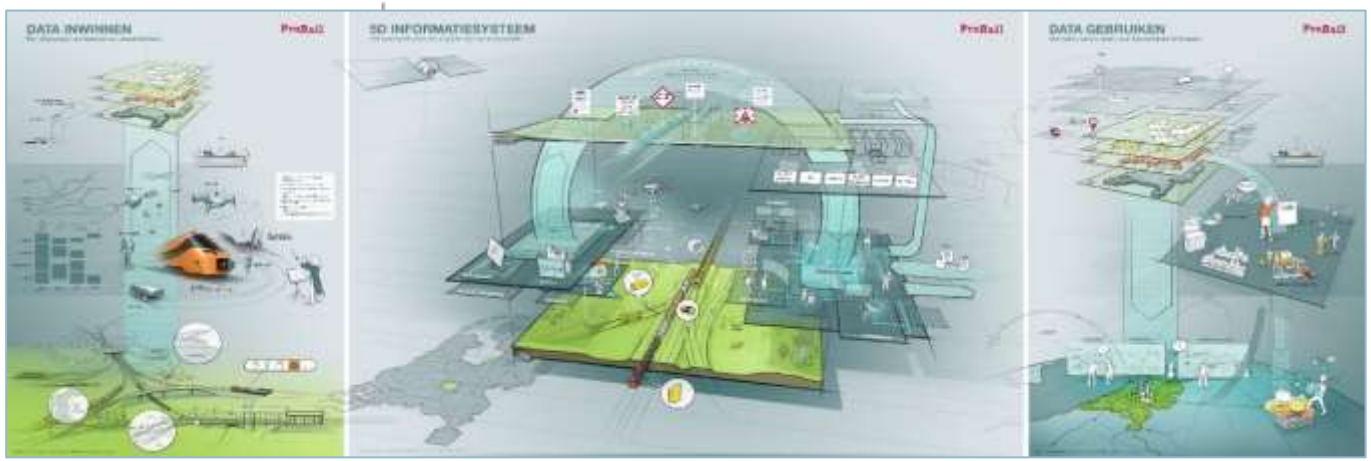
Leveraging the value of data

Digital Twins

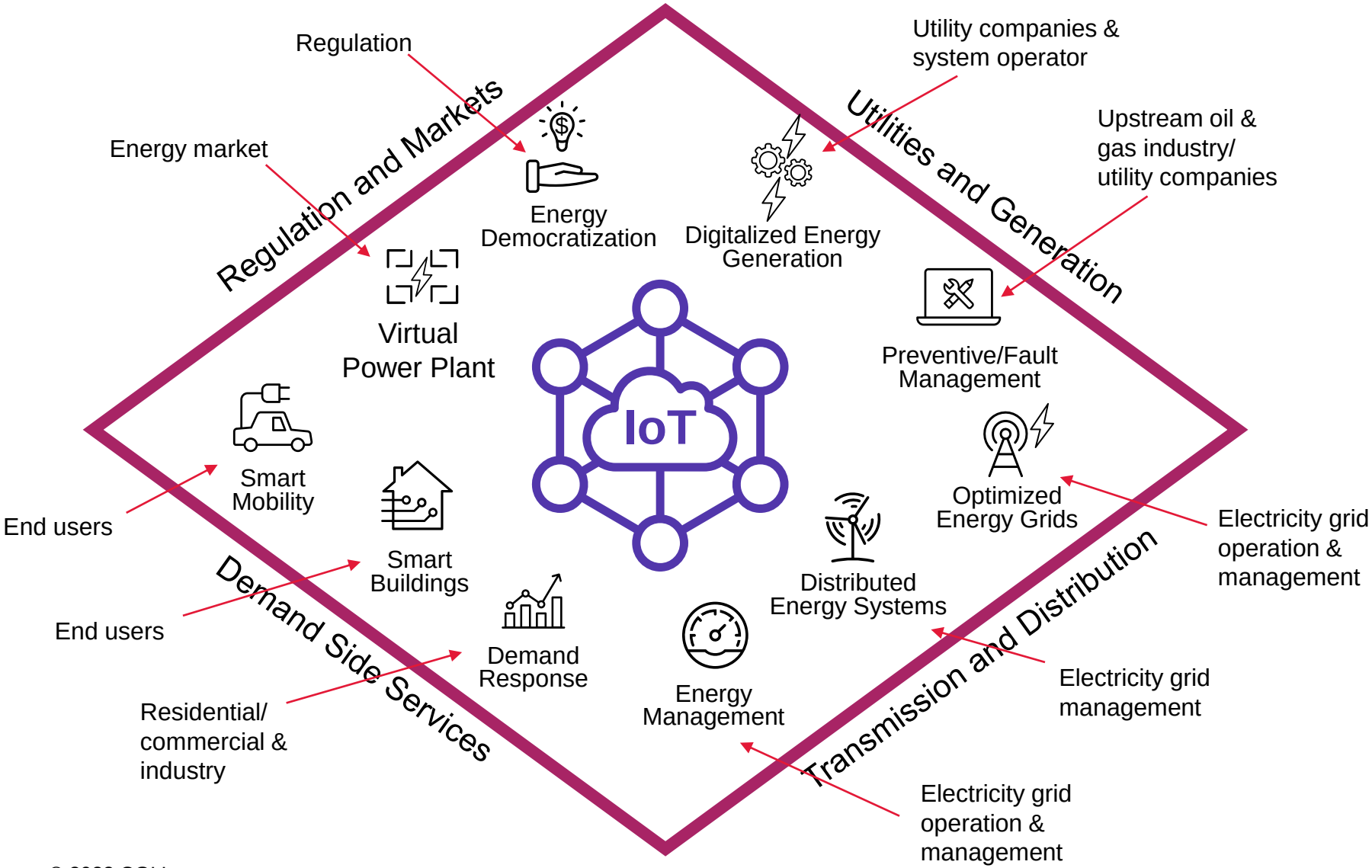
Building Blocks for IoT and Asset Optimization

- **Optimize Operations**
- **Predictive Maintenance**
- **Remote Asset Monitoring**
- **Leverage Digitization and Smart Devices**





Scope of Digital Twin benefits for the Energy Sector



- Application of IoT from smart energy grids to the end use of energy
- IoT-based digitization transforms the energy system from a centralized, unidirection to a distributed, smart, and integrated energy system.

When we mix location information with data, we solve a broader set of business problems

MEET

Geospatial Intelligence

Harnessing location intelligence to compete in the digital age

End-to-end system integration and consulting

Strategies & Prioritization → Collection & Creation → Modernization & Migration → Enrichment & Curation → Advanced Analytics → Accessibility & Dissemination → Decision Making

Self Serve Access to Data and Analytics

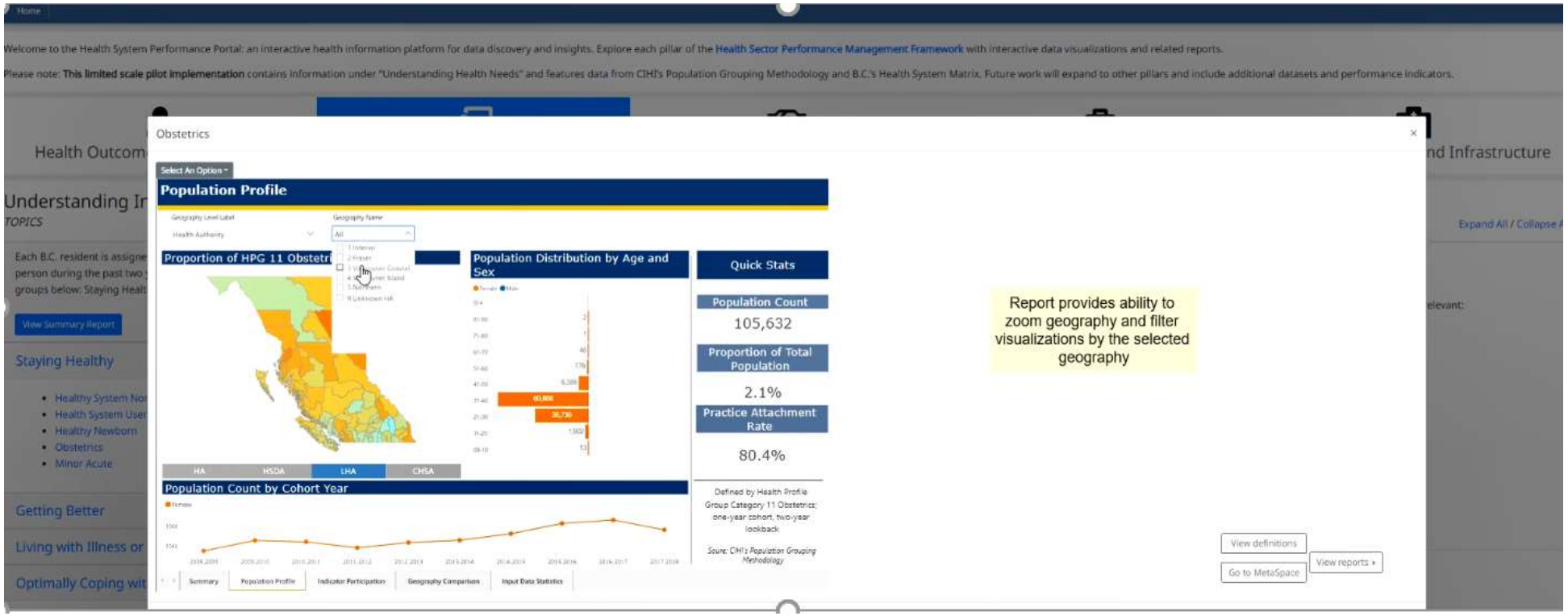
Getting real time data into the hands of decision-makers

Increasing Demand for:

Self Serve Data Access

Self Serve Access to Reporting

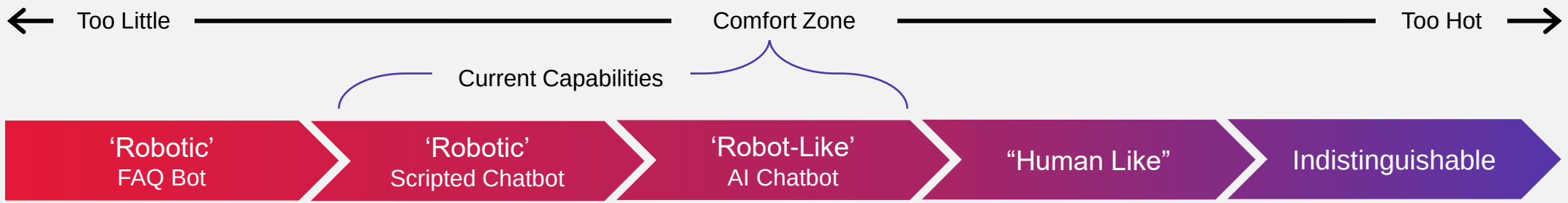
Leverage Analysts for Investigation rather than data collection and preparation



Intelligent Automation

Improve workflow and productivity using AI and RPA

CGI provide Chat Bot and Intelligent Automation that evolve at a pace that can accommodate changes



- Simple fully scripted, rule based, narrow content
- Limited number of channels / single language
- Menu & intent driven

- Complex fully scripted / structured communication
- Multi-channel / multi-language
- Rudimentary personas
- Warm handoff to a human agent

- Limited sentiment analysis / limited empathy
- Narrow intelligence, basic reasoning
- Deep integration into with care processes

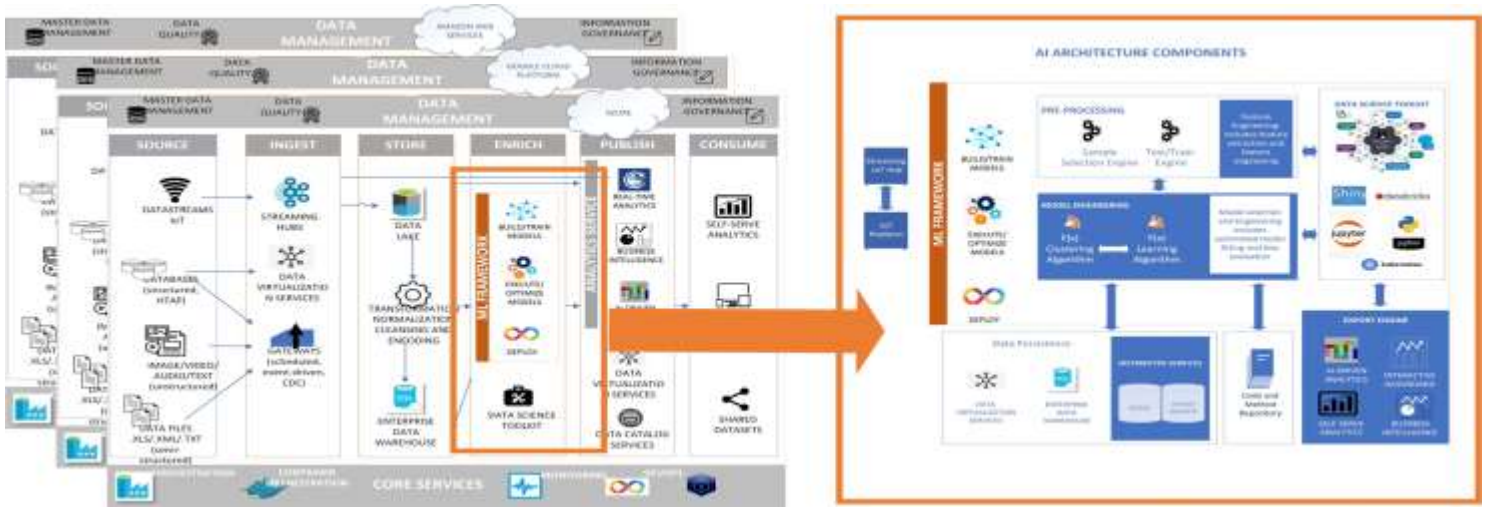
- Technology capable of emulating human capability: Avatars, Full speech recognition
- Full end-to-end autonomy, hypothesizing, reasoning
- Deep integration into with care processes

Cloud Analytics Platforms and Data Science

Help uncover non-obvious relationships and patterns buried in the data to provide new perspectives and predict outcomes using AI/ML

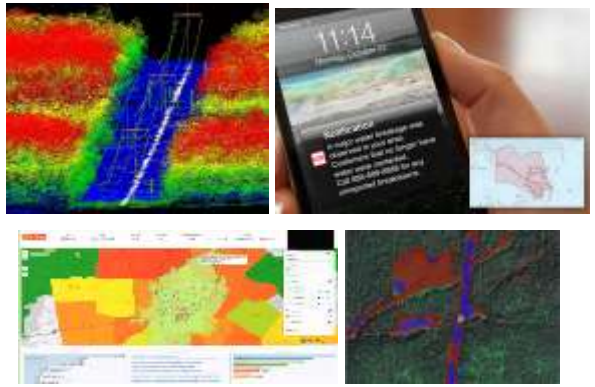
CGI provide end to end Data Platforms from Ingestion to Data Science support including:

- AI strategy and maturity assessments,
- AI implementation strategy
  - › Use Case Discovery and Definition
  - › Prioritization Framework
  - › Agile Analytics and AI Implementation
  - › Data Science Infrastructure
  - › Data Science Model selection
  - › Data Science modeling
  - › Data Visualization



Key use cases

GEOSPATIAL / EARTH OBSERVATION



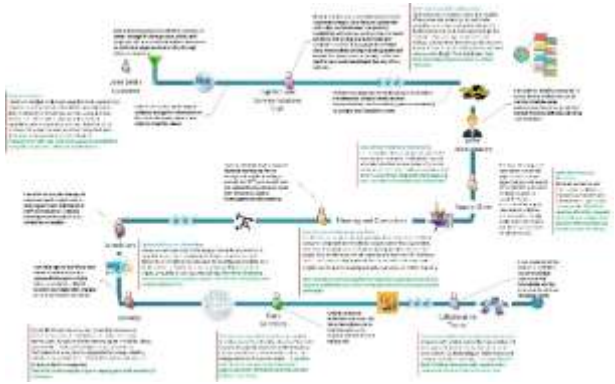
IOT / EDGE

DIGITAL TWIN

RENEWABLES MANAGEMENT

SMART ASSETS

AI JOURNEY



Best Practice Approach

1. Define your problem and research potential solutions

Know your business and know what pains you in your current stage and research on potential specific AI methods

2. Get your data in order

Data is the lifeblood of analytics and AI—treat it as a strategic asset, curate it and unlock its value

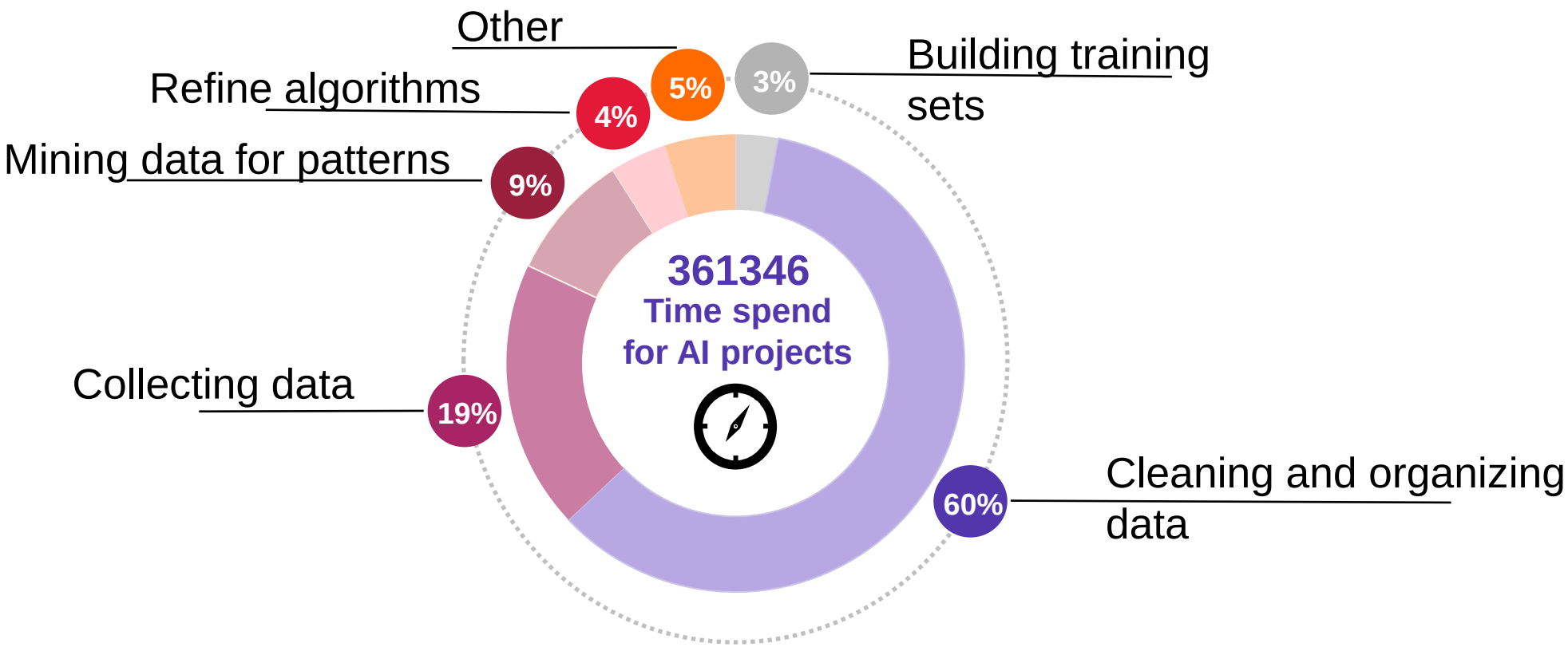
3. Start small and focused, and then learn to scale

More likely to be successful if the question is narrower. Think ahead and scale platforms.

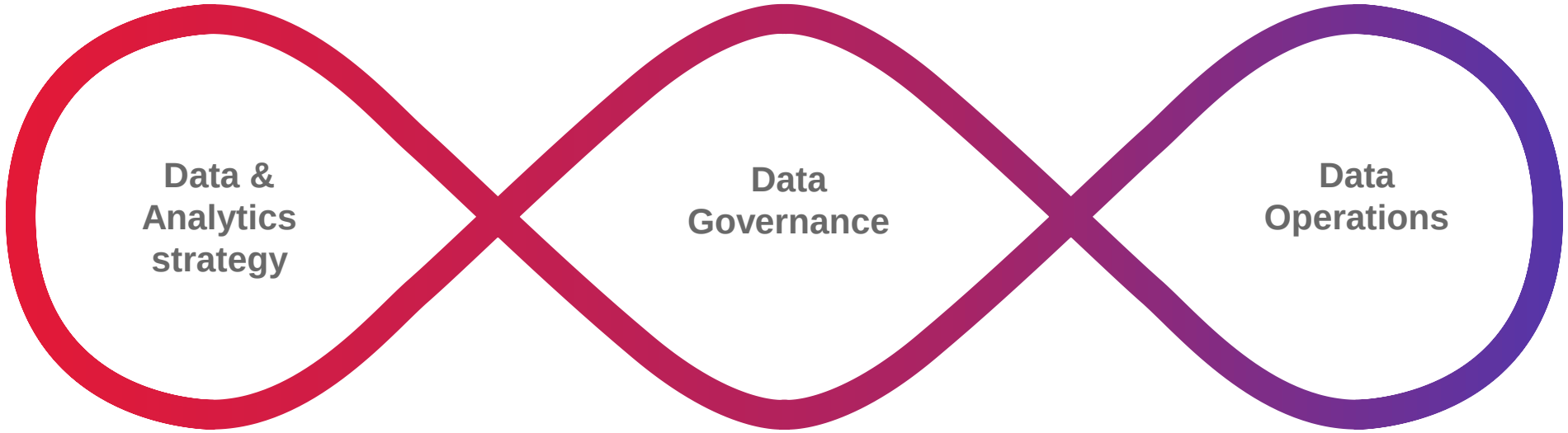
4. Mature to an industrialized operating model

Implement enterprise AI operating model for full lifecycle management including continuous improvement

Time spend for AI projects



It’s a continuous journey …



Insights you can act on

Founded in 1976, CGI is among the largest IT and business consulting services firms in the world.

We are insights-driven and outcomes-based to help accelerate returns on your investments. Across hundreds of locations worldwide, we provide comprehensive, scalable and sustainable IT and business consulting services that are informed globally and delivered locally.

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