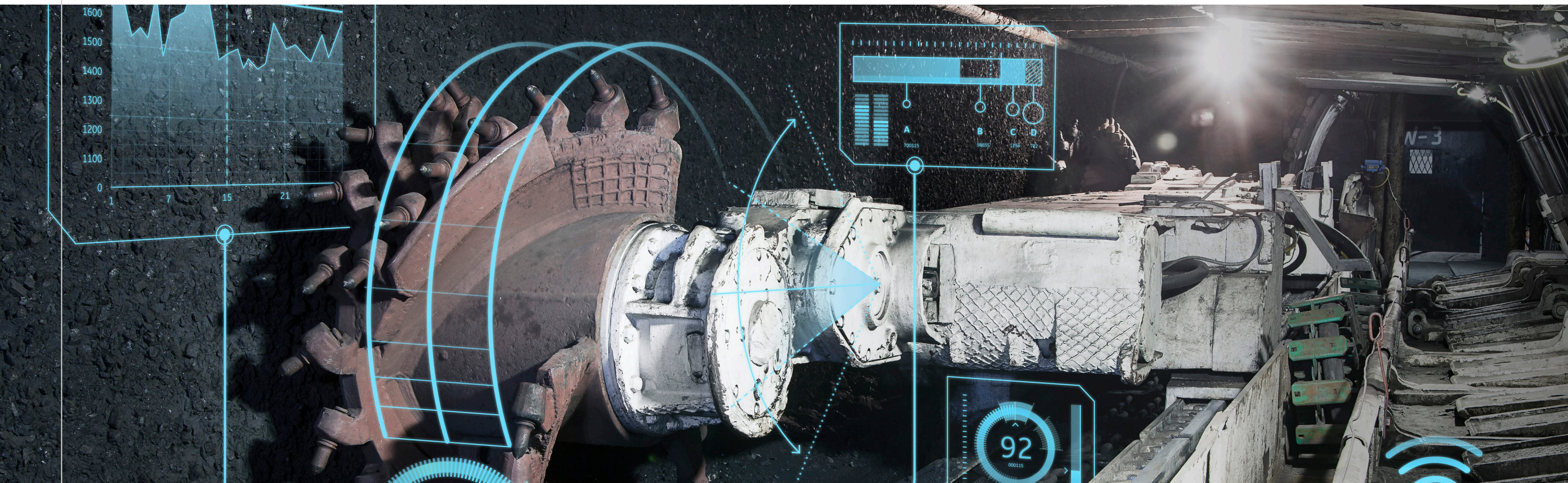# Data Science Services from GE Digital

Unlock new business value from your industrial enterprise data

How can you leverage your industrial data to drive powerful business outcomes?

The Industrial Internet of Things (IIoT) is bringing to light a vast amount of unprecedented data within industrial organizations. This data is allowing companies to optimize production, predict and minimize downtime, improve quality, and reduce costs—making operations more efficient than ever before. However, the amount of data that IIoT delivers can be overwhelming. And, knowing how to make the best use of your "dark" data can be challenging.
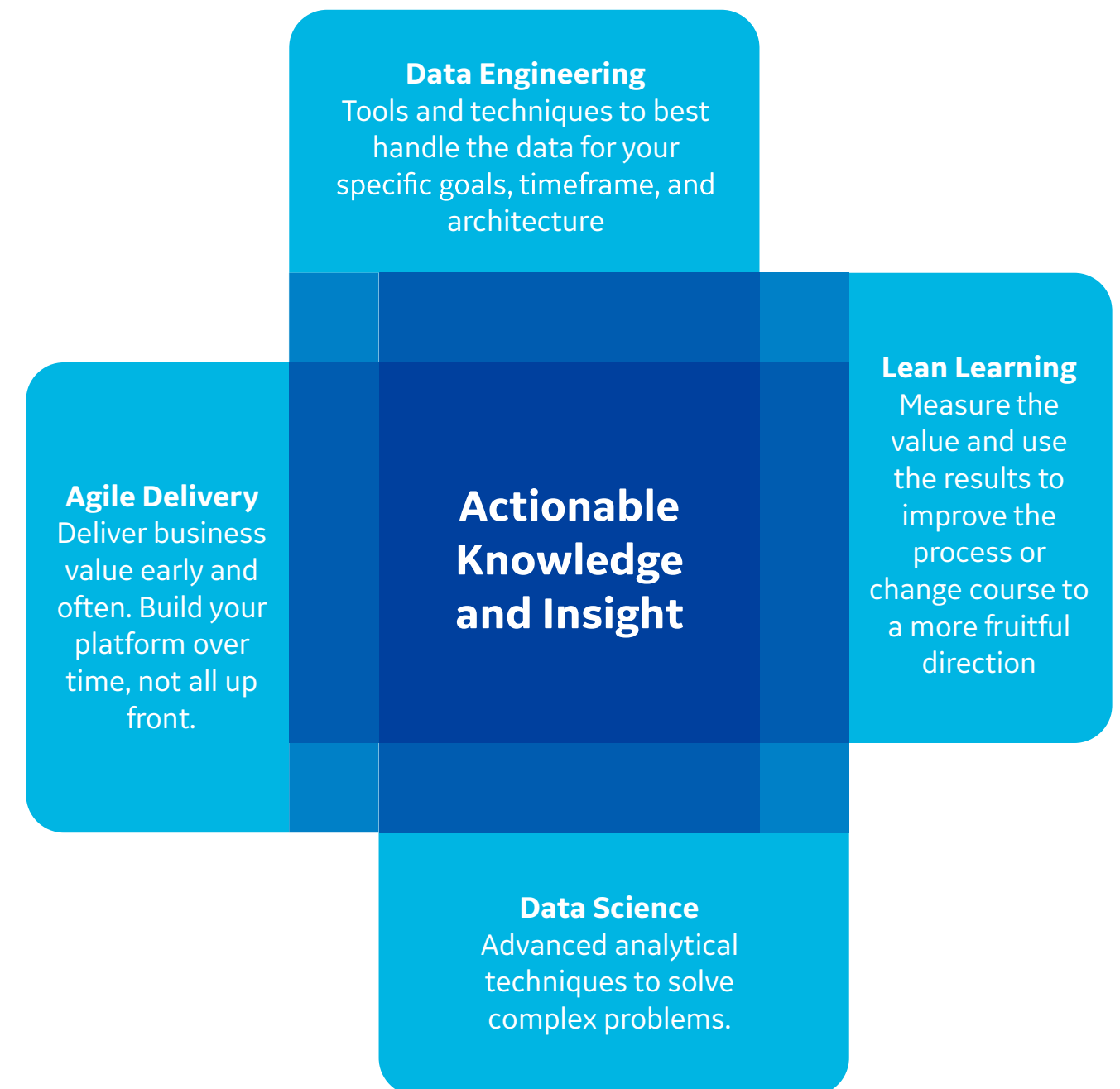
That's where data science comes in. Data science is the art of looking at data and applying mathematical tools to uncover key patterns within the data that will drive significant business value. Data science alone, however, may not be enough to solve your toughest issues. GE Digital's Data Science Services team uses a combination of physical principles, empirical knowledge, and data science to build you a solution.
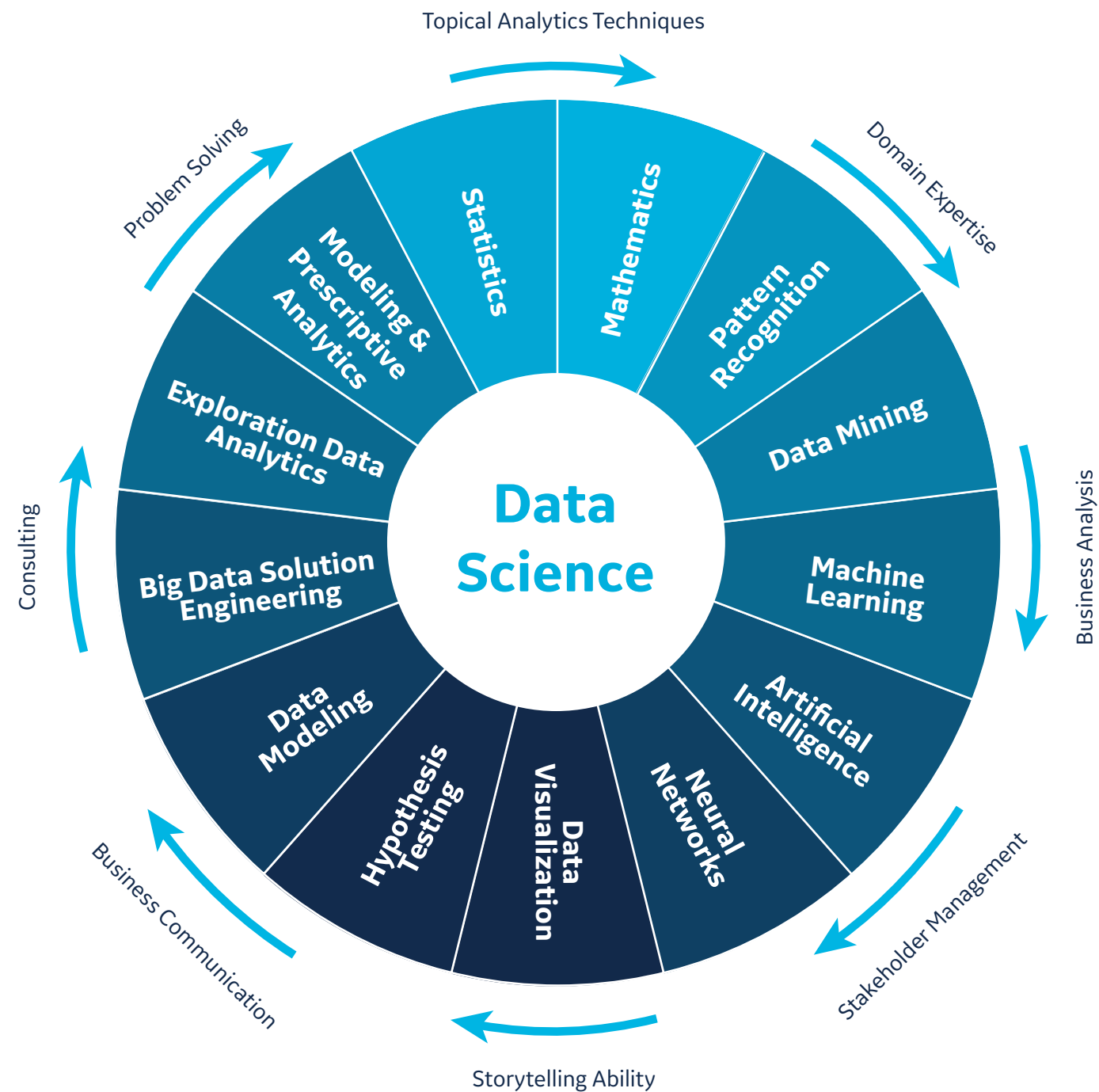
So, are you ready to get started with data science?

Data Science Services from GE Digital

GE Digital's Data Science Services team can help you build custom analytics that addresses a specific problem—or set of problems—within your company. Our team of experts work at the intersect of physical modeling, digitization of empirical knowledge, and traditional data science techniques.

By partnering with our Data Science Services team, you can achieve your business outcomes by uncovering relationships between your data and key business drivers.

Data Engineering
Tools and techniques to best handle the data for your specific goals, timeframe, and architecture

Agile Delivery
Deliver business value early and often. Build your platform over time, not all up front.

Actionable Knowledge and Insight

Lean Learning
Measure the value and use the results to improve the process or change course to a more fruitful direction

Data Science
Advanced analytical techniques to solve complex problems.

The circular diagram shows "Data Science" at center, surrounded by segments: Statistics, Mathematics, Pattern Recognition, Data Mining, Machine Learning, Artificial Intelligence, Neural Networks, Data Visualization, Hypothesis Testing, Data Modeling, Big Data Solution Engineering, Exploration Data Analytics, Modeling & Prescriptive Analytics. Outer labels: Topical Analytics Techniques, Domain Expertise, Business Analysis, Stakeholder Management, Storytelling Ability, Business Communication, Consulting, Problem Solving.

Benefits of data science

- Turn data into insights, and insights into actionable and tangible business outcomes

- Increase throughput, improve quality, or solve other common problems within manufacturing sites with data-driven root-cause analysis

- Build solutions for predictive analytics and data-driven management

- Improve field service operations through scheduling optimization

- Predict failures before they happen by understanding data patterns

- Identify corrective measures with prescriptive models

- Transform empirical knowledge into mathematical algorithms that can be operationalized through IIoT, Predix-based solutions

Whether you need assistance with getting outcomes from your data, building a predictive analytic solution for data-driven management, undertaking root-cause analysis, or transforming your business model, GE Digital's Data Science Services team can help.

We will get you started on a step-by-step plan to achieve your business goals and help you maximize the value of your industrial big data. Together, we'll help you build a digital transformation strategy across your enterprise—using data as the guide.

GE Transportation significantly reduced maintenance time and material cost with data science, resulting in savings of **$8MM – $10MM annually.**

Data science services offerings

1 Data science outcome exploration workout

Our outcome exploration workout enables you to better understand how to start building an analytics roadmap to reach your goals and improve business. By analyzing your available data sources, we can determine how to best solve for challenges you may be facing across your organization.

2 Data science exploration

If you're looking to address a specific need and would like to test your data for causality or predictive power prior to investing in developing a data science solution, then data science exploration is right for you. This is where we will evaluate data already available to better understand its value in optimizing the KPI you've identified or find a root-cause for the incident.

3 Data science solution

Our data science accelerator allows you to solve business problems Our Data Science Accelerator allows you to solve business problems and see the solution prototype before investing in the development of a production-ready application. Our experts will develop a holistic data-driven approach for your digital journey, and will identify new opportunities to drive powerful business outcomes through data science.

4 Data science training for executives

Change starts with you. Through a brief course, we will introduce data science capabilities to your executive team and showcase how data science analytics can drive business outcomes.

	1 Outcomes Exploration Workout	2 Data Science Exploration	3 Data Science Solution	4 Data Science Training
STARTER	2 days	5 days	12 weeks	2 days
STANDARD	2 days	29 days	12 weeks	7 days
PREMIER	7 days	31 days	custom	custom
ENTERPRISE	7 days	31 days	custom	custom

1 | Data science outcome exploration workout
2 DAYS - 1 WEEK

Focus on specific business areas with a two-day workout to help prioritize KPIs that can be optimized by leveraging insights from available data and develop a data science based solution approach.

Starter level of the outcome exploration workout includes

- Introduction
- Icebreaker session: understanding the design thinking process
- Outcome map with a list of prioritized-specific client problems that data science can solve, along with the appropriate KPIs to monitor
- Explanation of GE Digital's industrial data science capabilities and discussion on relevant use cases
- Data sources identification, assessment of data availability, and development of a data dictionary, which will be utilized for solving the identified problem or set of problems
- Creation of an analytics roadmap with a clear scope of the problem and next steps for possible solution

In addition to the activities mentioned, we offer more comprehensive plans that may include the ideation a Predix-based architecture for a future application, preliminary data evaluation, and UI/UX sketches of the solution to address your specific needs

STARTER	STANDARD	PREMIER	ENTERPRISE
2 days workout	2 days workout + Solution architect	2 days workout + Solution architect + 1 week data exploration + Report out	2 days workout + Solution architect + 1 week data exploration + Report out + User stories

2 | Data science exploration
1 WEEK - 1 MONTH

Got a problem? We've got your answer. Our data science team will review selected data sources related to the issue, assess the quality of the data available, and perform preliminary tests for causality and interactions among the variables. This preliminary assessment will help you understand if there are "quick wins" within your data and the probability of success in solving the problem with the data you have.

This offering can also be used to perform a preliminary root cause analysis. If you're looking to investigate the reasons for specific incidents, this is the right offering for you. Instead of developing the list of KPIs your company would like to optimize, we will co-develop a list of hypotheses to test and perform data exploration to validate or invalidate them with the goal of root-cause analysis.

For more complex use cases, we offer additional plans where we will help you develop and prioritize KPIs, work with data system owners to extract data for quality assessment and exploration, and identify potential relationships between data and the KPIs. Our objective is to test for predictivity, causality, and other relationships in the data that validate our initial assumptions around business impact.

The basic version of data science exploration includes

- Data profiling through data dictionary development and data quality assessment
- Preliminary understanding of interactions among variables and predictive power of your data that can help develop a predictive model or identify a root cause

STARTER	STANDARD	PREMIER	ENTERPRISE
1 week data exploration (max 10 data sources)	4 weeks data exploration (max 5 data sources)	4 weeks data exploration + Workout (max 5 data sources)	4 weeks data exploration + Workout (max 10 data sources)

3 | Data science solutions
MINIMUM 12 WEEKS

Work with GE Digital's Data Science Experts to develop a holistic approach to your IIoT journey. Our starter level of the data science solution offering, known as Data Science Accelerator, is intended to clarify opportunities to create meaningful business outcomes by leveraging data from your industrial or enterprise assets and operations. We'll collaborate with your team to identify business outcomes that can be effectively addressed using agile data science methodologies. We then analyze your data to construct models that address your desired outcomes and work with your team to implement those models.

Includes a data science exploration workout, data science exploration, analytic model, and prototype application development with bi-weekly customer touchpoints

- Explanation of GE Digital's industrial data science capabilities
- Outcome map with a list of specific use cases you can solve with data science and the associated KPIs
- Data availability assessment and development of a data dictionary from the data sources available

- Creation of analytics roadmap with outlined next steps
- Data exploration (includes data quality assessment, understanding interactions among variables, and data analysis in relation to KPIs)
- Development of a preliminary analytic model
- Report identifying potential value within data in relation to KPIs, and suggestions on next steps
- Analytic model built and verified
- UI wireframes/clickable prototype developed to showcase a solution

Once we've proven value from your data with the data science application prototype we've developed, we can partner with you to deliver a Predix-based production-ready application that your company can use to operationalize a data-driven solution and add business value.

STARTER	STANDARD	PREMIER	ENTERPRISE
12 weeks accelerator with MVP on Predix and pre-populated data	12 weeks accelerator with MVP on Predix (more than five data sources)	12+ weeks end-to-end solution development (Predix app)	Totally custom enterprise wide solution development (Opt : in collaboration with PS or EV)

4 | Data science training for executives
2 DAYS

With our introductory data science training, we will educate your executive team on the basics of data science, showcase several success stories, and explain how to identify use cases you can potentially solve for. We will work together and educate you on how to prioritize your outcomes and help you develop a data science roadmap for achieving a desired solution.

Starter level training includes

- Explanation of GE Digital's industrial data science capabilities and presentation of successful use cases across different industries

- Data science basics: How it works, machine learning, regression, and univariate analysis

- Hands-on discussion on the potential of data science in your company, including use case list creation and prioritization

- Collaborative development of an analytic roadmap

If you'd like to learn more specific data science techniques to be able to apply them to the use case you have, we offer additional plans that include more in-depth training. In our more comprehensive sessions, we will perform a data quality assessment on the use case of your choice and will explain what it takes to prepare your data for analysis*.

Get started with data science
GOLD FOR YOUR IIOT JOURNEY

Do you have a more specific need in mind? Our team can craft a custom consulting offering just for you, such as developing a new data-driven business model and co-creating analytics. We can help with everything from setting up your own data science team to on-site collaboration and algorithm development or improvement. We look forward to adding value to your digital industrial transformation with data science.

It's time to maximize the value of your industrial big data and use it to unlock new business value. Our team of world-class data scientists can help you uncover relationships between your data and key business drivers to help you achieve your business outcomes.

Contact us today to learn more about GE Digital's Data Science Services

CONTACT US

About GE

GE (NYSE: GE) is the world's Digital Industrial Company, transforming industry with software-defined machines and solutions that are connected, responsive, and predictive. GE is organized around a global exchange of knowledge, the "GE Store," through which each business shares and accesses the same technology, markets, structure, and intellect. Each invention further fuels innovation and application across our industrial sectors. With people, services, technology, and scale, GE delivers better outcomes for customers by speaking the language of industry.

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www.ge.com/digital