

PREDIX

Your platform for the Industrial Internet

Investment in the Industrial Internet of Things (IIoT) is expected to top \$60 trillion during the next 15 years.¹ The amount of industrial data generated will be massive in terms of volume, velocity, and variety. Industrial data is growing twice as quickly as data in any other economic sector. To extract insight from that data and achieve positive operating outcomes—such as replacing break-fix service models with predictive maintenance—every industrial company will need to drive its operations using data and advanced analytics.



GE created Predix to address the unique needs of industrial companies on the path to digitization.

Using Predix*, you can connect machine assets of any vendor and any vintage, to quickly build and deliver advanced applications that turn operational data into actionable insights. Predix gives you everything you need to build, deploy, and operate industrial applications, putting you in charge of your Industrial Internet journey. GE has the industrial know-how to help you transform because we are transforming our own industrial companies. We are actively deploying Predix across GE's plants and factories, and using Predix to secure and monitor GE's industrial assets deployed worldwide.

Tapping into the power of an open, purpose-built industrial analytics platform can help you get the answers you need—when you need them—to plan ahead and optimize performance. Industrial companies need a software platform that:

- Is specialized for industrial machines and processes
- Supports heterogeneous data acquisition, storage, management, integration, and access
- Provides advanced predictive analytics
- Guides personnel with intuitive user experiences
- Is delivered securely in the cloud using open standards and community processes

Why GE created Predix

Predix was born from GE's need for a hardened, massively scalable industrial analytic infrastructure to:

- Handle the velocity, volume, and variety of GE's industrial data, accelerating the digitization of our own plants and factories
- Deliver our extensive portfolio of software products and services to customers and partners worldwide
- Empower a partner marketplace of high-value industrial solutions

Why a cloud platform makes sense

Predix industrial cloud delivers purpose-built tools and computing resources, allowing companies to accelerate their transformations and innovate rapidly by:

- Connecting to a wide variety of GE and non-GE assets
- Building analytic apps quickly using purpose-built tools
- Minimizing CAPEX spends
- Leveraging pre-built industrial models and services
- Scaling usage elastically on demand

Why data + analytics = outcomes

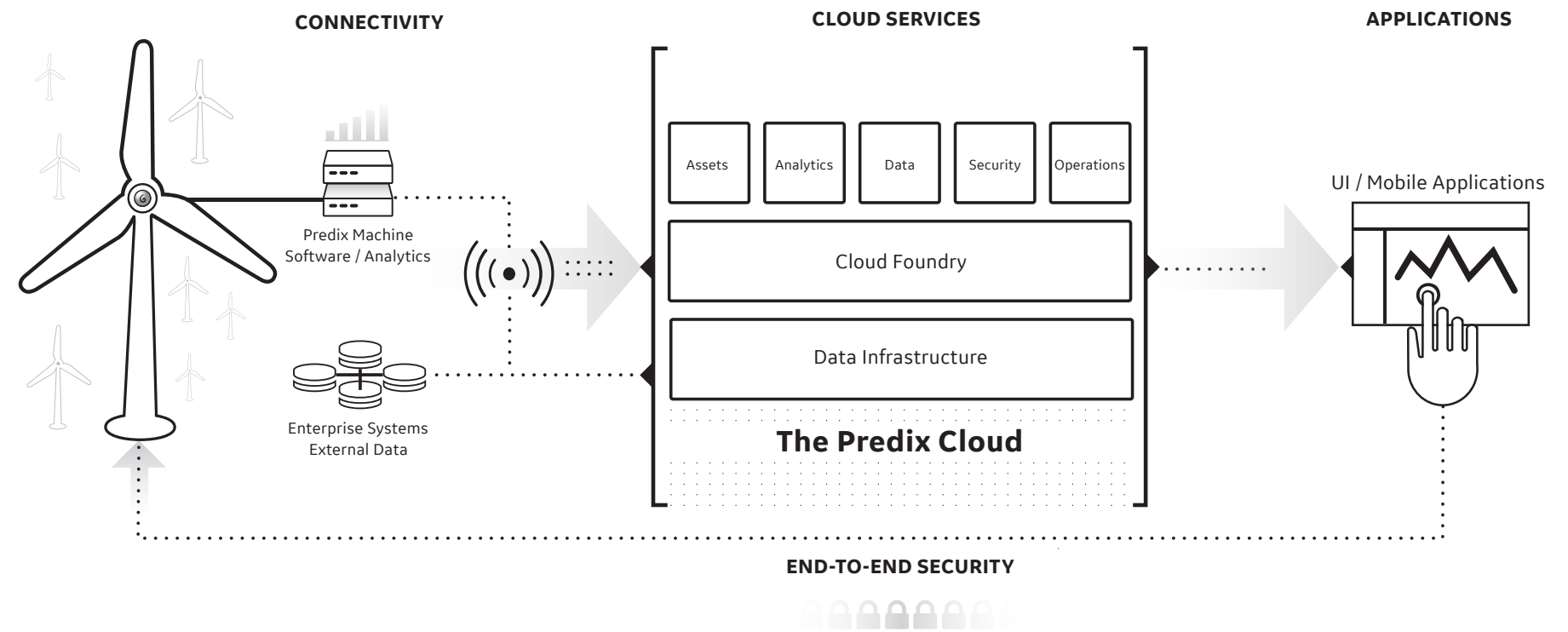
Using Predix, GE Digital and our partners deliver a wide spectrum of applications and analytic services to help you drive key business outcomes:

- Machine and equipment health management
- Predictive maintenance strategies
- Manufacturing automation and efficiency
- Logistics optimization
- Machine and factory operator intelligence

The Predix Industrial Cloud Platform

PURPOSE-BUILT FOR INDUSTRIAL APPLICATIONS

Predix is based on a multi-tenant “gated community” model, ensuring that tenants of the Predix cloud belong to the industrial ecosystem. This reduces the risk of bad actors entering the community and, unlike public cloud platforms, enables Predix to comply with rigorous regulatory requirements. Support for a variety of data governance, federation, and privacy protection is included, as are stringent security features such as perimeter security, data encryption in flight and at rest, access control, and data visibility.



Industrial-grade security

Security is embedded at every level of the Predix cloud stack. This specialized approach offers industrial-grade security, as every layer is monitored and scanned for vulnerabilities. Capabilities include encryption, key management, incident response services, logging, network-level security, support for end-to-end chain of custody reporting for code and data, and 24/7 security and network operations centers.

Connectivity as a service

Industrial clouds consume and analyze massive volumes of data by connecting to a wide variety of machines, sensors, control systems, data sources, and devices. Predix compresses connectivity timelines by providing:

- Access via satellite, fixed, and cellular networks
- Secure VPN services between edge and cloud assets
- Remote control via VNC, RDP, SSH, and HTTP
- End-to-end connectivity monitoring and notification

Asset models, analytics and applications

Predix enables developers to create digital models of physical assets and, in many cases, use asset models provided by GE's product companies. By combining asset models, advanced analytic microservices, and GE Digital's commercial applications, Predix users can gain critical insights that drive business outcomes such as maintenance optimization, plant operating efficiencies, and machine operator intelligence.

Professional Services

EXPERTISE TO POWER YOUR DIGITAL INDUSTRIAL INITIATIVES

GE Digital and our partners offer a range of professional services to assist you at every point in your Industrial Internet journey. Leveraging our own experiences, we can help your team choose an effective starting point, quickly gain connectivity to critical assets, and derive useful insights from your industrial data. Our Implementation Services are designed to flexibly accommodate your unique needs and provide your team with knowledge that can be immediately applied to new Industrial Internet initiatives.

Advisory services

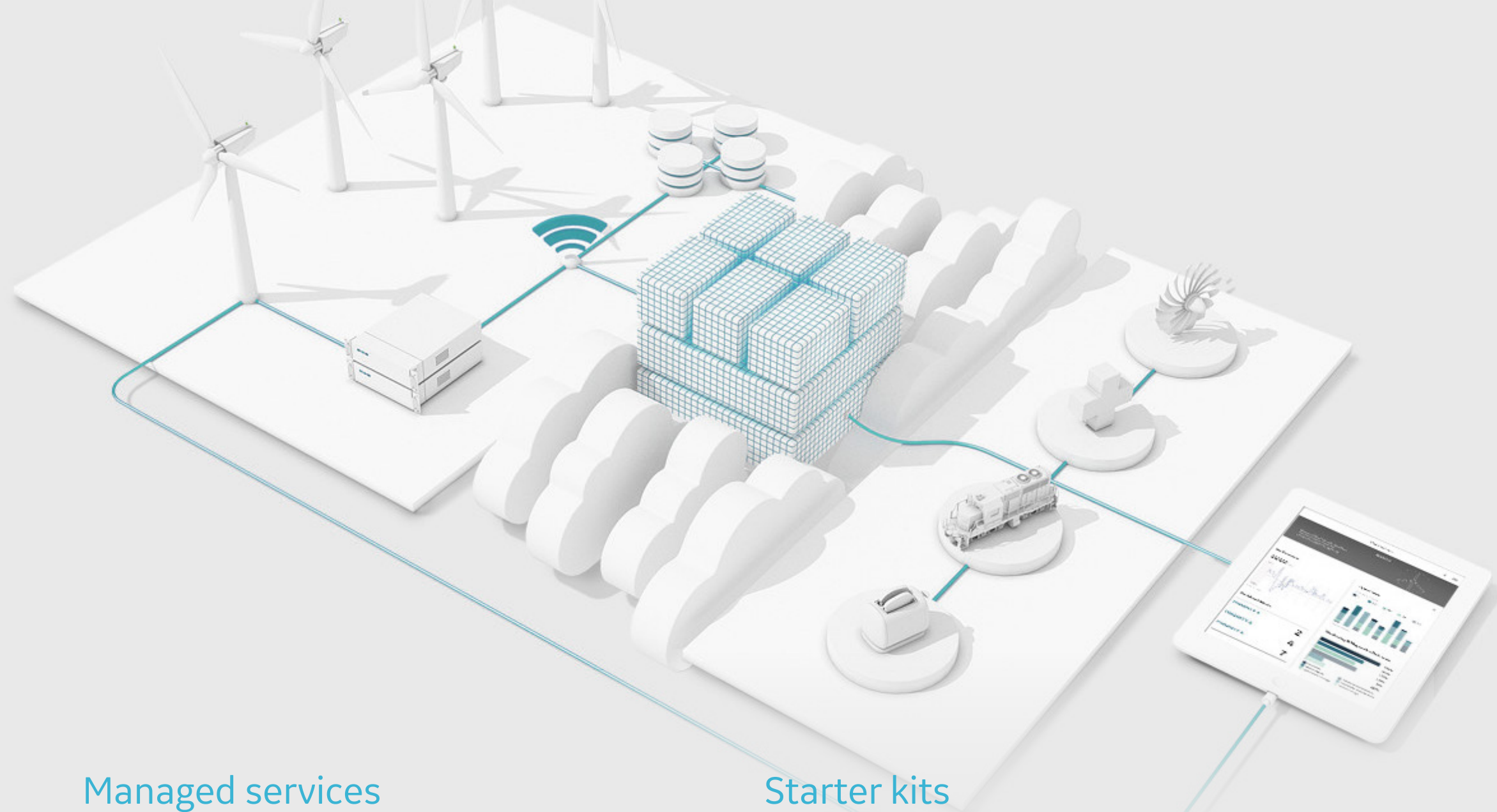
Whether you are starting your Industrial Internet journey or taking existing investments to the next level, our Advisory Services offer guidance, acceleration, and scale. IIoT Workshops, Design Thinking, and Data Science sessions from GE Digital's domain experts help you assess maturity, inspire new thinking, mine existing data, and ultimately create a plan for IIoT adoption.

Managed services

Our Remote Monitoring & Diagnostics team has been managing clients' critical machines for 10+ years, with over \$10B in industrial assets under management, using true predictive analytics technology. Whether we are monitoring an offshore oil platform, a wind farm, or a combined cycle turbine, our team's goal is to ensure production is always running and provide you with actionable notifications so you can avoid downtime and catastrophic failures.

Starter kits

If your goal is to reduce equipment costs, improve manufacturing efficiency, or enhance the effectiveness of machine operators, GE Digital's Starter Kits will get your project moving quickly—often within one week. Working alongside your plant engineers, we will install the Predix-ready Field Agent into your infrastructure and arm you with best practices for data collection, analysis, and insight.



GE Digital

INDUSTRIAL INTERNET INNOVATOR, PARTNER,
AND COLLABORATOR

Several years ago, we embarked on a journey to transform GE's plants and factories into digital industrial leaders. Early in that journey, we realized that we, along with many other industrial community stakeholders, needed a scalable, highly-available cloud platform, purpose-built for the unique needs of industrial companies. In creating Predix, we combine advanced data management and analytics with a community of trusted partners –to collectively drive positive changes across the industrial landscape.

“Like GE, Pitney Bowes is in the midst of its own physical and digital transformation. With APM apps running on the Predix cloud, we're able to extract and analyze data from our assets faster than ever, and use that insight to drive real business outcomes for Pitney Bowes and its clients. GE knows industrial machines and related data analytics better than anyone.”

Roger Pilc | Chief Innovation Officer, Pitney Bowes

Industrial domain leadership

Predix delivers breakthrough outcomes, driven by GE's extensive expertise in the physics of machines, materials science, and manufacturing processes. We have experience with more than 60 industrial regulatory frameworks, and our worldwide leadership spans core industries such as oil and gas, power generation, transportation, food and beverage, chemical, and heavy equipment.

Scale and financial commitment

GE has operating scale that extends across industries and borders. We monitor more than \$1 trillion in industrial assets annually. We are investing over \$1 billion to make Predix the premier industrial cloud platform, enabling our customers and partners to leverage best-in-class solutions for connectivity, industrial data management, and advanced analytics.

Partner ecosystem and marketplace

GE leads the industry by partnering with proven players, investing in technologies, sharing best practices, and driving standards for interoperability. Predix partners are leveraging decades of GE's science and engineering know-how, plus their own expertise, to build advanced industrial applications. Together, we are building a vibrant marketplace and working collaboratively to drive transformative changes for our shared customers.



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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1. GE estimates: <https://www.ge.com/digital/press-releases/GE-Announces-Predix-Cloud-Worlds-First-Cloud-Service-Built-Industrial-Data-Analytics>

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