



Industrial Internet & Advanced Manufacturing

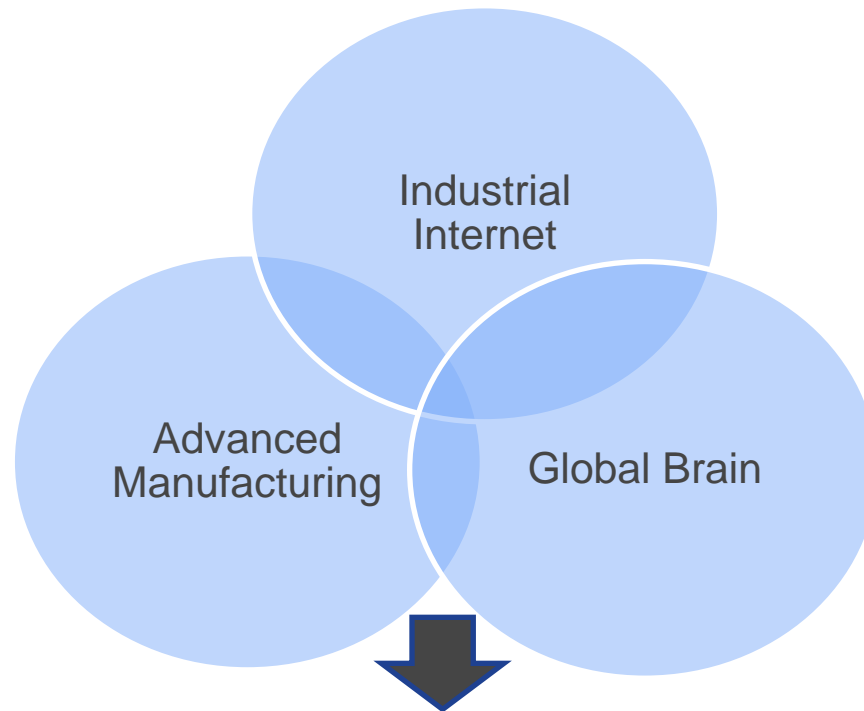
Marco Annunziata, Chief Economist
April 08, 2014

Imagination at work.

The Future of Work

Advanced Manufacturing + The Industrial Internet + The Global Brain

*The worlds of hardware and software are converging, leading to new methods and processes for **Advanced Manufacturing** and unlocking the potential for significant productivity boosts and costs savings.*



Delivering significant productivity and cost savings.



Advanced Manufacturing Vision

New products, processes realized through agile, lean methods; breakthrough tools and materials; and open interfaces and collaboration.



Simplify the global supply chain

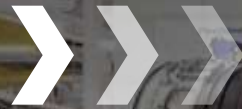
... closer, more competitive, innovative, efficient.

Redesign and reimagine what is made

... new products and parts, improve performance, simplify.

Transform factories

... production efficiencies, improve sustainability, grow manufacturing ecosystem.



Increase Speed, Improve Quality & Performance, More Uptime



Power of Advanced Manufacturing

ENGINEERING



Enhanced product features



MACHINES



Greater efficiency



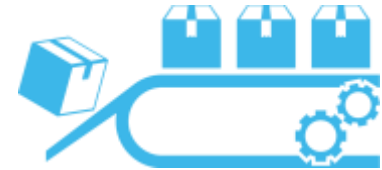
FACTORIES



More productivity



SUPPLY CHAIN



More efficiency and resilience



Productivity, efficiency and sustainability





“ The real opportunity for change... surpassing the magnitude of the consumer Internet... is the Industrial Internet, a global network that connects people, data and machines.”



Industrial Internet will Drive GDP

Digital Technology Will Drive Next Wave of Industrial Productivity

- Industrial sectors are on the cusp of a major wave of innovation
- The Internet is still evolving: The next chapter will embrace the physical world
- As the “Internet of Things” meets “Big Data and Analytics” industrial sectors will be transformed



Forces shaping the Industrial Internet



1 Internet of things

Connected machines, data, and people

2 Intelligent machines

Increasing system intelligence through embedded software

3 Big Data

Transforming massive volumes of information into intelligence

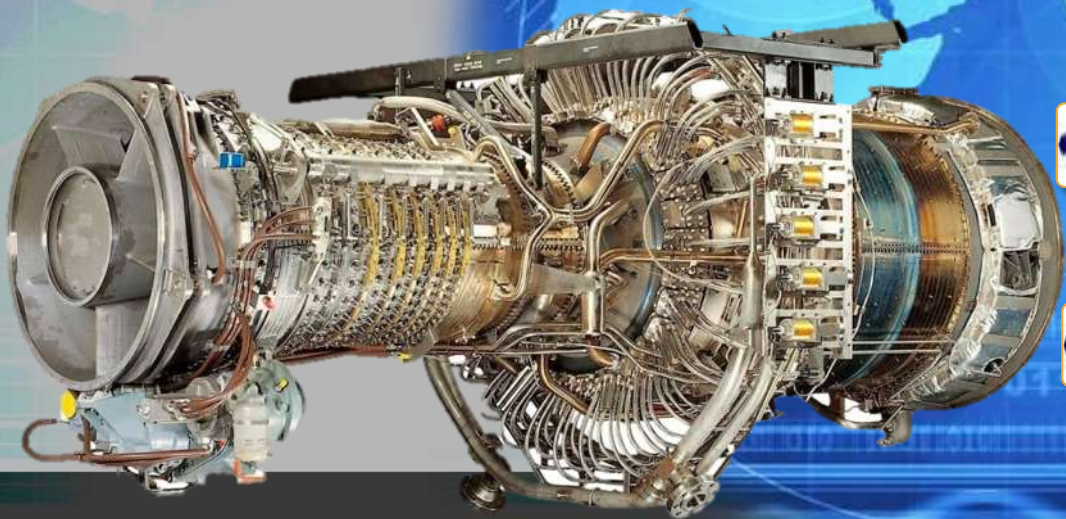
4 Analytics

Generating data-driven insights and enhancing asset performance



Industrial Big Data Analytics

1 gas turbine compressor blade monitoring potential: 500 gigabytes per day



GE Software Center

Igniting the next industrial revolution by connecting minds and machines

\$1B+ investment
over 3 years

- Launched in 2011
- Silicon Valley location
- Innovation Center
- Aggressive strategy for talent acquisition & growth



GE Software organization

GE Software is part of GE Global Research, providing innovative technology to GE's businesses



Connect and align

GE Software connects and aligns the more than 10,000 GE software professionals who use information to develop digital offerings that solve GE customers' most pressing challenges



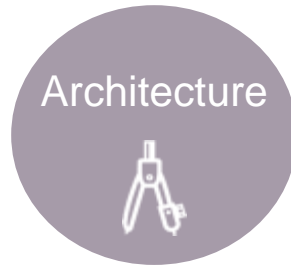
Collaborate

Our architects and engineers collaborate with our global experts from multiple industries to combine our decades of experience with infrastructure equipment and software solutions

Software Center Shared Services



Optimizing the software portfolio to maximize market success



Defining new business and delivery models for software and services



Developing and deploying scalable predictive solutions to enable Industrial Internet programs



Providing a unified, service-based solution on a protected, fully-automated network



Focusing on security management strategies to prevent, detect, and fix risks to GE's data, assets, and intellectual property



Driving revenue and growth by increasing adoption and demand



Transforming raw data into insights and opportunities, through descriptive, predictive, and prescriptive analytics



Developing applications and solutions around asset optimization and operations optimization



Predix™ Powers Predictivity™



GE
Aviation



GE Energy
Management



GE
Healthcare



GE
Oil & Gas



GE Power &
Water



GE
Transportation

GE Predictivity Solutions

Vertical Solutions for industrial asset and operation optimization

Predix Platform

Common software platform for machine, network, server and UX



Predictivity Solutions



GE Aviation – Engine reliability, fuel performance, flight safety solutions, navigation insights.



GE Healthcare Asset management, patient safety, patient flow, collaboration across networks



GE Manufacturing Manufacturing process efficiencies, food safety assurance



GE Mining Concentrator insights and efficiency – maximized mine production



GE Oil & Gas Total equipment reliability, sub-sea inspection system optimization, field production, pipeline insights and expert collaboration



GE Power Distribution Grid delivery optimization – advanced meter insights



GE Power Generation Turbine power flexibility and performance, maximizing asset lifetime



GE Rail Locomotive Uptime, efficient trip management, maintenance and parts management, network efficiencies



GE Water Connected controls for plant operations to increase efficiencies and reliability



GE Wind Wind turbine performance, total wind farm output maximized



Predictive Big Data Insights Create New Sources of Value

Condition-based Maintenance

Better Operational Decision-making



imagination at work

Future of Work: Implications

- Distributed manufacturing 
- Global growth and trade 
- Employer / employee relationship 
- IP 
- ...



