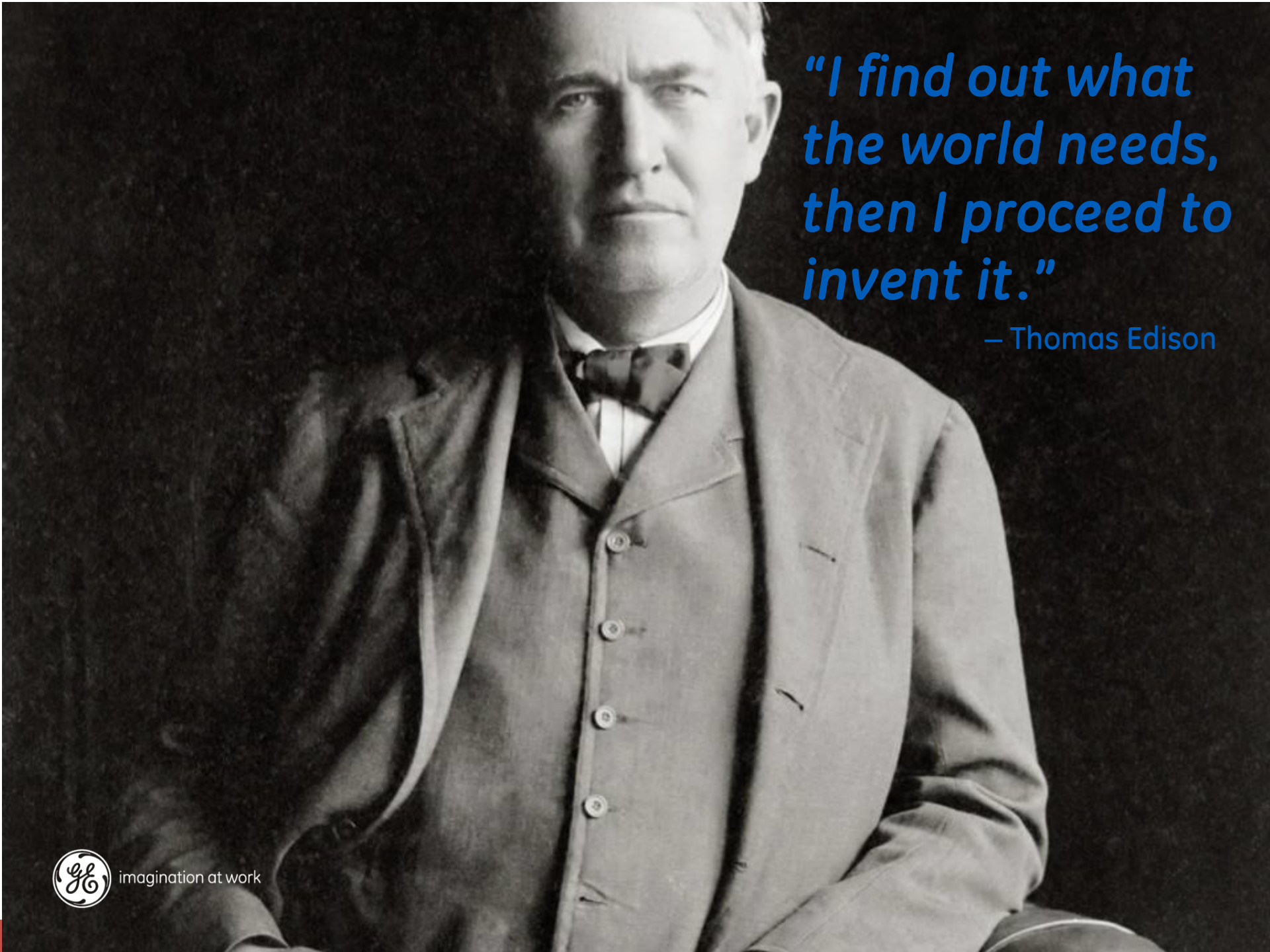


Adopting the IoT Paradigm – GE's journey to becoming a digital industrial company



Wouter Van Wersch
President & CEO, GE ASEAN

January , 2016

A black and white portrait of Thomas Edison, showing him from the chest up. He is wearing a dark suit jacket over a vest and a white shirt with a bow tie. He has a serious expression and is looking slightly to the right of the camera. The background is dark and out of focus.

*"I find out what
the world needs,
then I proceed to
invent it."*

– Thomas Edison

GE TODAY: THE DIGITAL INDUSTRIAL COMPANY

THE PORTFOLIO: World-class industrial businesses

GE STORE: Foundation for world-class performance

DIGITAL INDUSTRIAL: Leading a new productivity revolution

CULTURE OF SIMPLIFICATION: Speed and customer outcomes

VALUABLE: Win in the market, build with investors



THE VISION IS CLEAR

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

Jeff Immelt
GE Chairman & CEO



FORCES SHAPING THE INDUSTRIAL INTERNET

1 Internet of things

A living network of 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

Challenges

1. **Changing Mindsets i.e. attitudes, behaviours, processes - starting with our own**
2. **Connectivity across and Interactivity amongst between geographies, sectors, companies, disciplines and cultures.**
3. **Volume and speed - Data, Data Everywhere, but no Insights to Act On**

Industrial Big Data – Fast and Vast

BEFORE

1 KB / FLIGHT

30 PARAMETERS

3 SNAPSHOTS / FLIGHT

Takeoff (average diagnostics)

Cruise (average diagnostics)

Landing (average diagnostics)



NOW

500 GB / FLIGHT

5,000 PARAMETERS

1 SNAPSHOT / SEC

Air Speed Calibrated

Altitude

Cooling Valve Position

Exhaust Gas Temperature

Fuel Flow

Ground Speed

and more...



INDUSTRIAL INTERNET: BUSINESS VALUE

Efficiency and cost savings

The ability to model and understand the physical world makes it easier to optimize assets and processes






New customer services

Data and the insights it provides will enable new customer services and business models

Risk avoidance

Increased visibility and control help address environmental, health, and human safety issues

THE VALUE TO CUSTOMERS IS HUGE

	Industry	Segment	Type of savings	Estimated value over 15 years (Billion nominal US dollars)
	Aviation	Commercial	1% fuel savings	\$30B
	Healthcare	System-wide	1% reduction in system inefficiency	\$63B
	Rail	Freight	1% reduction in system inefficiency	\$27B
	Power	Gas-fired generation	1% fuel savings	\$66B
	Oil and Gas	Exploration and development	1% reduction in capital expenditures	\$90B

Note: Illustrative examples based on potential one percent savings applied across specific global industry sectors. Source: GE estimates

BEYOND THE POWER OF 1%, GE NOW BRINGS CUSTOMERS A POTENTIAL 20% PERFORMANCE IMPROVEMENT ACROSS INDUSTRIES

Case Study – GE Aviation

Asset productivity, minimized disruptions, improved forecasting

25

Airlines



3.4M

Flights



340TB

Data

Isolate
root causes



Identify
sub-optimal
performance
parts



Minimize
disruptions

2,000X

Performance
improvement



10X

Cost reduction



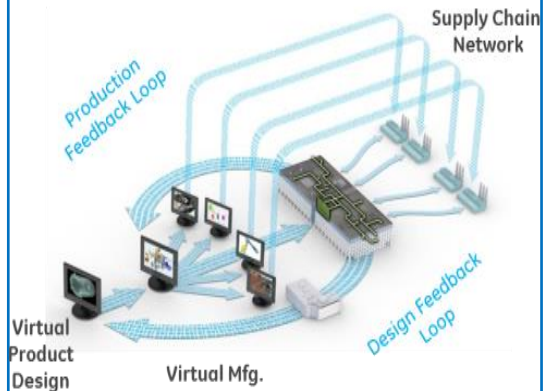
7 DAYS

Time-to-market for
new analytic app

Illustrative Aviation example based on Predix solution currently in development. Estimates based on data exploration, simulation and asset utilization models.

GE IS THE DIGITAL INDUSTRIAL COMPANY

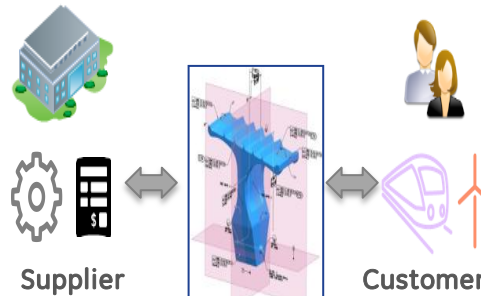
GE FOR GE



PRODUCTIVITY

Digital thread
Predix + data
Digital twin

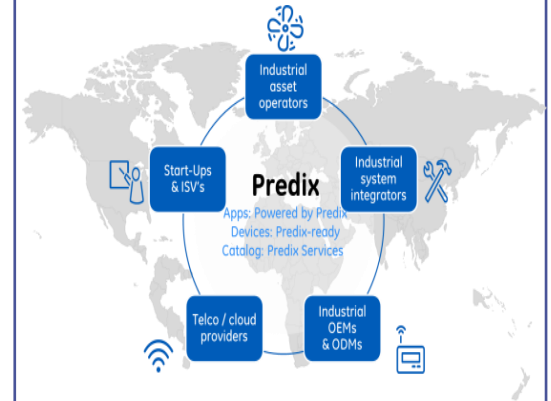
GE FOR CUSTOMERS



APPS

GE's software business
"Inside-out" strategy
Outcomes for customers

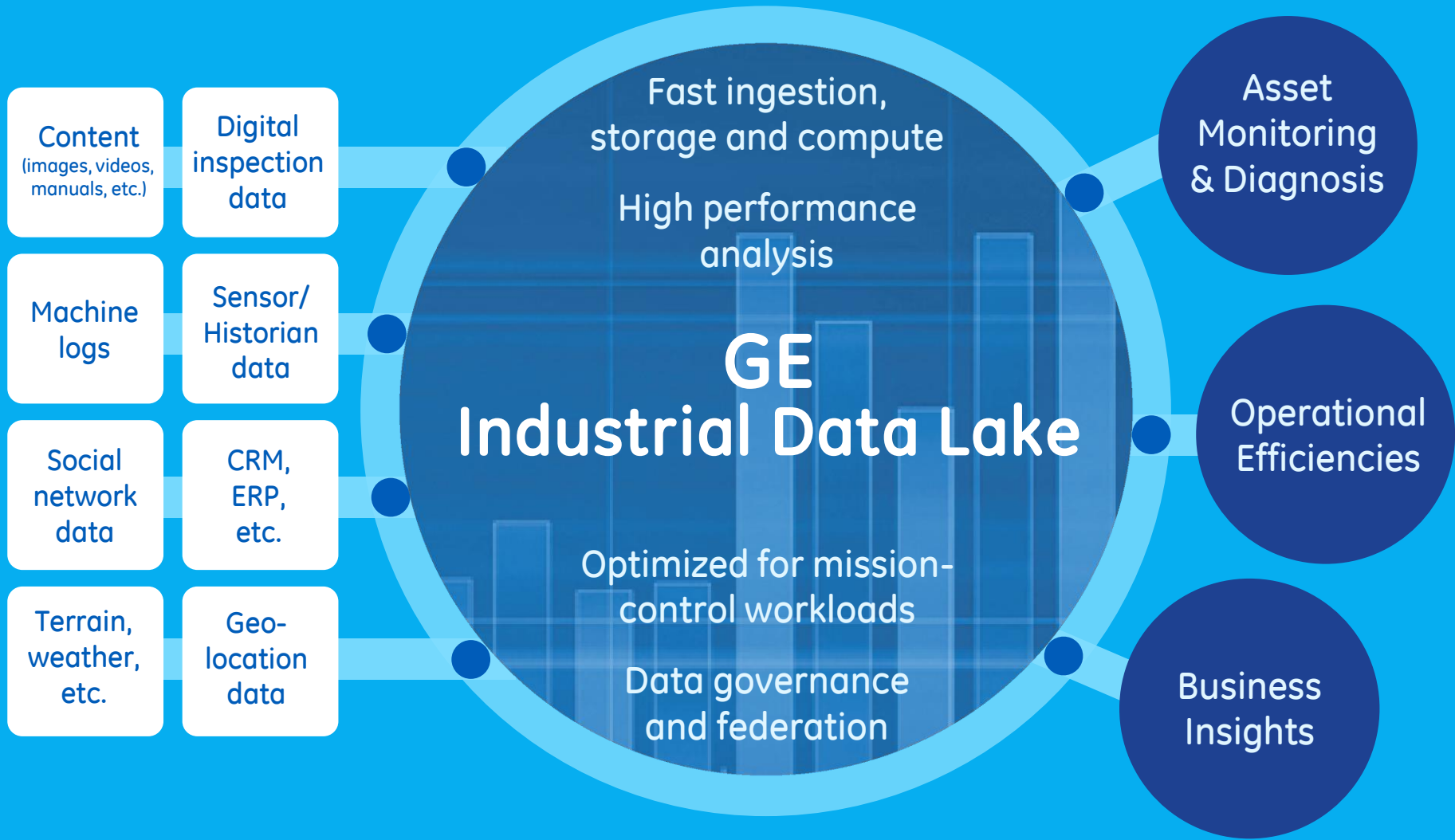
GE FOR WORLD



PLATFORM

Predix
Secure
Cloud for industry

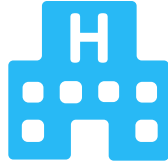
AGGREGATING DATA BRINGS NEW OUTCOMES



MANY INDUSTRIES, MANY SOLUTIONS – ONE PLATFORM



GE
Aviation



GE
Healthcare



GE
Rail



GE
Oil & Gas



GE
Power
Generation



GE
Power
Distribution



GE
Manufacturing



GE
Water



GE
Mining



GE
Wind

PREDIX PLATFORM

GE's software platform for the Industrial Internet

GE DIGITAL'S EVOLVING ECOSYSTEM

We collaborate to extend the reach of our Industrial Internet solutions

Guiding principles

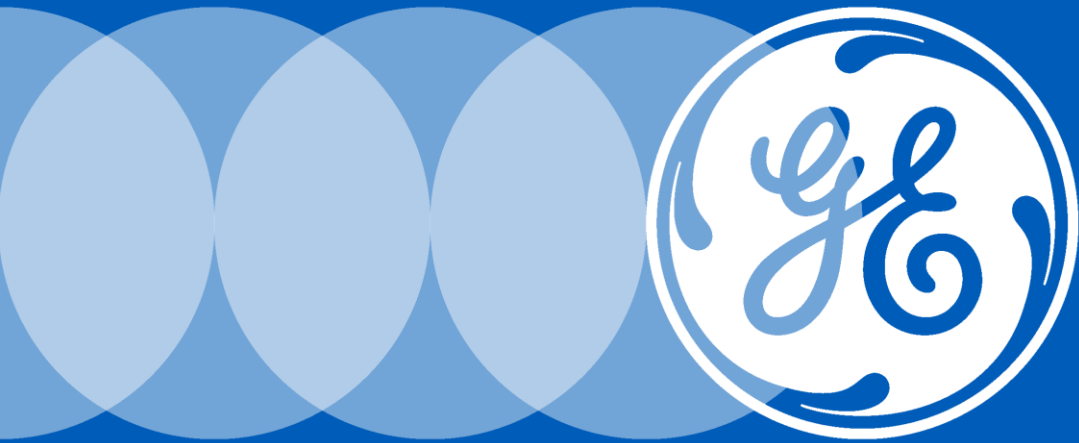
- Develop distinctive technologies
- Pursue new markets
- Work with the best
- Share risk and reward

GE is a founding member of the IIC



In Summary

<https://www.youtube.com/watch?v=rWcffadDNdM>



Thank you