



Digital Thread Activates \$700M+* in Productivity Gains for GE

About Digital Thread

Digital Thread is the connection of data throughout the value stream, leveraging assets as the key to drive automation, collective information, and insights. By continuing to connect the Digital Thread, we are able to improve on-time delivery, increase profitability, advance customer satisfaction, drive incremental productivity, and generate revenue. Digital Thread is representative of the full end-to-end business process linking data and information throughout a product or system lifecycle.

Opportunity

Any time industrial equipment spends offline has a profound impact on productivity and ultimately revenue. GE has been focused on creating persona-based applications to improve overall productivity and digitizing our own equipment and field service operations using the same technology we sell to customers through the Digital Thread.



The result?

A **\$700+ million** savings across GE.

2016 Value Chain Productivity

Services	\$510 [†]
Manufacturing/Supply Chain	\$90 [†]
Engineering	\$70 [†]
Cross-thread connecting across value chain	\$30 [†]
Commercial	\$30 [†]

[†] All figures are approximate.

We established digital hubs around the globe—real-world work spaces where cross-sections of GE employees collaborate on software and product development focused on business processes, data and analytics, digital thread, brilliant factories, security and risk, and Predix development. Together, they create applications focused on Digital Thread product lines: Engineering, Services, Supply Chain, Finance, and more.

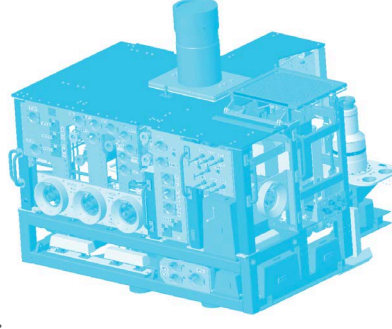


\$200 million

of GE's services productivity was attributed to Service Automation standardizing field service tools throughout the GE Store.

Productivity savings driven by enhanced engineering designs and improved fleet performance

- ↓ 90% cost of quality reduction
- ↓ 40% manufacturing & assembly cycle reductions
- ↑ 100% on time delivery shipping ahead of schedule
- ↑ \$13M+ digital productivity savings



\$70 million achieved through model-based enterprise, digital product, intelligent designs enabling virtual validation, digital configuration & cost management, digital manufacturing, digital services.



\$22 million digital productivity

- ↓ 43% decrease in disruptions^a
- ↑ 12 additional days of utilization^b

^a- Unscheduled engine removals 1H2016
^b- Analytics-based inspection 1H2016

GE Digital's Brilliant Manufacturing solution

During the process, we realized "digital" is only part of the equation. Brilliant Factories are excelling in other areas as well:



Brilliant Factory

A sophisticated factory that combines lean, advanced, and additive manufacturing with advanced software analytics to enhance productivity.



Digital maturity

Digital analytics that help improve productivity and connectivity (powered by Predix).



Lean manufacturing

Systemic method to maximize customer value through elimination of waste within the system.



Advanced manufacturing

Cutting-edge technology and new processes to lower costs and accelerate the innovation, speed, and performance of industrial products.



Additive manufacturing

A method to build 3D objects by adding layer-upon-layer of material (3D printing).

From concept to reality

We instituted a rigorous GE-wide monthly operating mechanism to accelerate lessons learned, share best practices, and expertise, as well as drive re-use of products. Here are seven Brilliant Factory showcase sites where digital solutions were built on a foundation of lean productivity:

2016 Brilliant Factory showcases

Transportation: Grove City

- ↑ 7% efficiency
- 10% → 80% customized work scopes
- ↑ 2 inventory turns

Multi-modal: Pune

- ↓ OCPH\$ by 40%
- ↑ 18% equipment effectiveness
- ↑ 3 inventory turns

Healthcare: Hino

- ↓ 32% hrs/CT unit
- ↓ 42% CT lead time
- ↑ 2 inventory turns

Hino Brilliant Factory accomplishment

Lean

- 100% lean certified lines (18/18) @ Hino
- Quarterly AWO → Monthly AWO
- Achieved ZERO Cranes @ CT
- #17th Hino Lean Academy Complete
- 100+ students in 2017

Digital

- Machine connect → Connected 24 machines
- Process connect → RFID/Beacon/Predix
- Process flow → 100% MES deployment
- Visualization → Data Lake, Predix

Future Brilliant Manufacturing plans

17 Brilliant Factories in 2017 with a plan to grow to 300+

- Consistent game plan & KPIs:
- Value stream maps
 - Lead times down
 - Inventory turns up



While our discoveries benefit our own transformation, they exist for our customers to use and to iterate on. Find out how GE Digital's Brilliant Manufacturing can make your organization a 21st century manufacturing powerhouse. Ready to get started?

Visit www.ge.com/digital/brilliant-manufacturing

or call 1-855-YOUR1GE / 1-855-968-7143.



* For 2016. Spent >\$300M to generate the \$700M+ in savings

About GE Digital

GE Digital operations streams more efficiently, World-class talent and software capabilities driving digital industrial transformation for big gains in productivity, availability and longevity. We do this by leveraging Predix, our industrial cloud platform purpose built for the demanding safety & security needs of industrials.

© 2017, GE. All rights reserved.