Transforming GE to Digital Industrial

Bill Ruh
SVP & Chief Digital Officer, GE
CEO, GE Digital

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# GE Transforming

## Divest

<table>
<thead>
<tr>
<th>CONSUMER</th>
<th>FINANCING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appliances</td>
<td>Capital</td>
</tr>
<tr>
<td></td>
<td>Synchrony</td>
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</tbody>
</table>

## Invest + Disrupt

<table>
<thead>
<tr>
<th>INDUSTRIAL</th>
<th>ALSTOM</th>
<th>DIGITAL</th>
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<tbody>
<tr>
<td>GE Aviation</td>
<td>GE Power</td>
<td>Renewables</td>
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<tr>
<td>GE Transportation</td>
<td>GE Energy Mgmt</td>
<td>Thermal</td>
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<td>GE Healthcare</td>
<td>GE Oil &amp; Gas</td>
<td>Grid</td>
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<tr>
<td>Vertical Finance</td>
<td>GE Lighting</td>
<td>GE Digital</td>
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## Culture + Transformation

The first Digital Industrial company
The Digital Transformation
How We Are Evolving

Software-defined everything & data as revenue generator → New Business Models → GE Digital Wind Farm Current, powered by GE

Speed of change requires months to days, scalability → Cloud-based Platform → Predix – Industrial OS

Building on current IT investments and assets → Convergence of IT & OT → GE Digital
Software is Impacting Every Industry

<table>
<thead>
<tr>
<th>Company</th>
<th>Industry</th>
<th>Market Cap (BN)</th>
<th>Key Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airbnb</td>
<td>Hotel Service</td>
<td>20</td>
<td>Owns no real-estate</td>
</tr>
<tr>
<td>Apple</td>
<td>Consumer App Economy</td>
<td>18</td>
<td>Creates a few apps</td>
</tr>
<tr>
<td>Uber</td>
<td>Taxi Service</td>
<td>50</td>
<td>Owns no vehicles</td>
</tr>
</tbody>
</table>
Digital Industrial Revolution in Full Force

By 2020

+1B
Growth in the installed Base of Smart Meters

100M
Internet connected light bulbs

152M
Cars connect to the internet...6 fold increase

10^6
Terabytes a day generated by GE machines

Winners will master data and insights ... At speed & scale
Mode 1

- ERP Platform
- On Prem Data Centers

- Data
- Applications
- Security
- ERP Suppliers

Mode 2

- Insight & Analytics Platform
- Hybrid Cloud

- Algorithms & Data
- Cloud Services
- Security, Risk, Safety & Quality
- Emerging Suppliers
Industrial Internet Market by 2020: ~$225B

<table>
<thead>
<tr>
<th>Applications</th>
<th>Consumer ~$170B</th>
<th>Enterprise [IT] ~$206B</th>
<th>Industrial [OT] ~$225B</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>$82B</td>
<td>$131B</td>
<td>$125B</td>
</tr>
<tr>
<td>Platform</td>
<td>$88B</td>
<td>$75B</td>
<td>$100B</td>
</tr>
</tbody>
</table>

- Google
- Apple
- Workday
- Salesforce
- Alibaba
- AWS
- IBM
- Windows Azure
- GE
Digital Industrial Framework

Smart machines & digital thread | Design thru installed base

"Analytical apps" → customer outcomes

Power of 1%
- Growth
- Uptime
- Efficiency
- Safety
- Capacity

Assets under management
- # apps
- # partners
- $ outcomes

Smart machines & digital thread | Design thru installed base

Predix platform
Cloud-based platform for the Industrial Internet
- Connected assets
- Industrial data science
- Industrial data management
- Cloud & mobile

Capabilities for industrial companies
- Monitoring & diagnostics
- Predictive maintenance
- Asset lifecycle
- Operations & intelligence

Our play
System productivity
+ CSA value
Upgrades
HW/SW sales
Collaboration
+ Partner value
New growth
GE Opportunity

**Industrial Productivity**

- 4% (1991 - 2010)
- 1% (2011 - 2015)

**Meets the Digital Twin**

- Physics + Analytics

**For Railroad**
- IT can improve communication
- OT ... one mile velocity ... earnings +20%

**For GE**
- ~$210B of Services backlog
- Improvement a win-win with customers

- Value of operational insight > connectivity
- Need data to drive results
- Role of CIO changing ... more operational

- Value of asset + analytics > either individually
- Dramatically changes potential value of installed base companies
- Financial impact of “per asset model” is immense
- Predix is not only an enabler to the business – it IS the business
- The platform is the defense against disintermediation
- The Industrial Internet is different than the Consumer Internet
Predix Platform is the Enabler

Cloud-based platform for Industrial Internet
- Connected assets
- Industrial data management
- Industrial data science
- Cloud & mobile

Capabilities for Industrial companies
- Monitoring & diagnostics
- Asset lifecycle
- Predictive maintenance
- Operations & intelligence

Reliability
Increase availability & longer asset life

Cost Reduction
Lower operating costs with greater efficiencies

Risk Mitigation
Lower operations and financial risk

Profitable Growth
Increase production for market advancement

Value for Investors
+ $/IB
+ Margins
+ 40
+ Revenue in services backlog
+ Product feedback
+ Total service offerings
Rail: Digital Transportation

Transportation Digital sales
- Train performance + optimization solutions
- Customer performance analytics
- Non-GE fleet penetration
- Programs with all N.A. Class I and many global railroads

~$0.5B

20%+

'16F
Healthcare: Cloud Advanced Visualization

Knowledge + collaborative ecosystem around smart devices

Hospital
- Data sent to cloud
- Images processed
- View & manipulate image on browser devices

Remote Clinicians ➡ GEHC Cloud & Analytics

- Anywhere access to analytics & images (Rads, Specialists)
- Navigate findings, combine with other data in cloud
- Collaborate with multi-disciplinary team
- Customers build their own apps

Healthcare Digital Sales
- Solid departmental system growth
- Big IB of image management
- Analytics around productivity
- Potential for disease management

~$1.5B
New installs 10%+
'16F
Implementing the Digital Thread

**Engineering design | Design for productivity/cost**

Our Experience

**H Turbine**
...2X faster, lower launch cost

**Manufacture | Optimized manufacturing**

**75 Brilliant Factories**
...driving yield, cycle, downtime

**Services | Condition-based services**

**30,000 Field Engineers**
...sensor based, onboard algorithms, mobile

GE: best example of the Industrial Internet at work
GE: 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

$15B software business by 2020