



# GE: The Digital Industrial

~GEが語る ビジネストランスフォーメーションにおける  
クラウド活用の重要性~

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# 産業のデジタル化のポートフォリオ



POWER

~\$22B  
66K  
EMPLOYEES



ENERGY  
MANAGEMENT

~\$8B  
47K  
EMPLOYEES



RENEWABLE  
ENERGY

~\$6B  
13K  
EMPLOYEES



OIL & GAS

~\$17B  
46K  
EMPLOYEES



AVIATION

\$25B  
45K  
EMPLOYEES



TRANSPORTATION

\$6B  
13K  
EMPLOYEES



HEALTHCARE

\$18B  
55K  
EMPLOYEES



APPLIANCES  
& LIGHTING

\$9B  
25K  
EMPLOYEES

2014 REVENUES



CAPITAL  
VERTICALS  
\$11B



GE DIGITAL  
~\$6B\*

\* Revenue by year end 2016

# 産業のデジタル化が意味するものは？



GE: ソフトウェアベースの機械とソリューションで産業を変革



# 第三の市場の時代へようこそ

まず最初の市場の時代は資源への不平等なアクセスによって誕生

第二の市場の時代は情報への不平等なアクセスによって誕生

第三の市場の時代はそれに加えて  
"インサイト"へのアクセスがカギとなる

# ソフトウェアがあらゆる産業に影響を及ぼす



Apple

18BN

Consumer App Economy

Creates a  
few apps



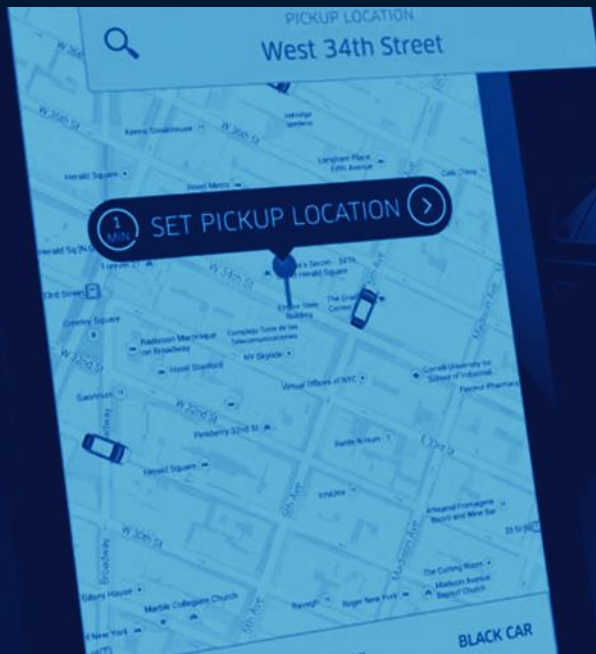
# ソフトウェアがあらゆる産業に影響を及ぼす



UBER

50BN  
Taxi Service

Owns no  
vehicles





# 産業のデジタル化が急激に加速

By 2020



+1B

Growth in the installed  
Base of Smart Meters

10B

Internet connected  
light bulbs

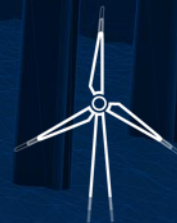


152M

Cars connect to the  
internet...6 fold increase

10

Petabytes a day  
generated by GE machines



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

# デジタルトランスフォーメーション

How we are evolving

Increased opportunities for software-defined everything; & data as a 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 Internet  
Operating System

Building on current IT investments and assets



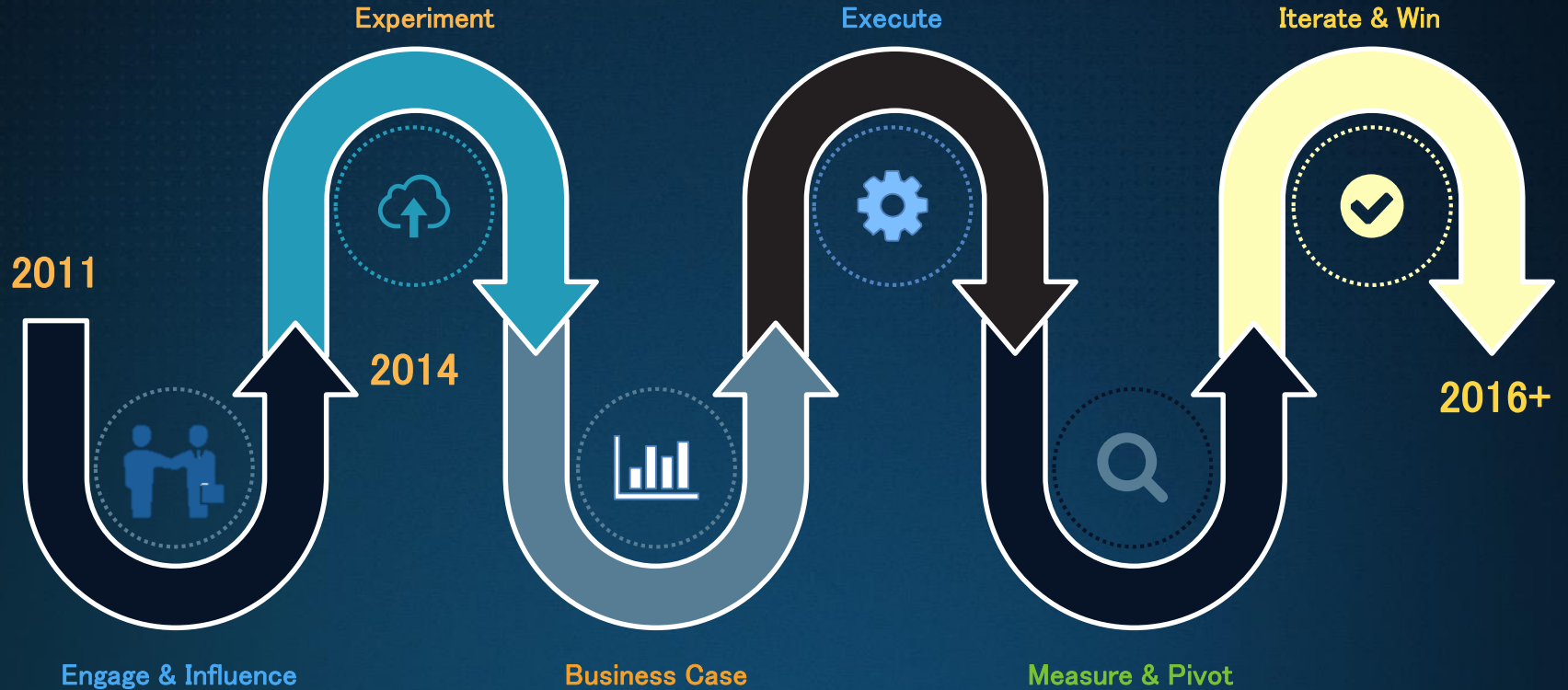
Convergence of IT and OT



GE Digital

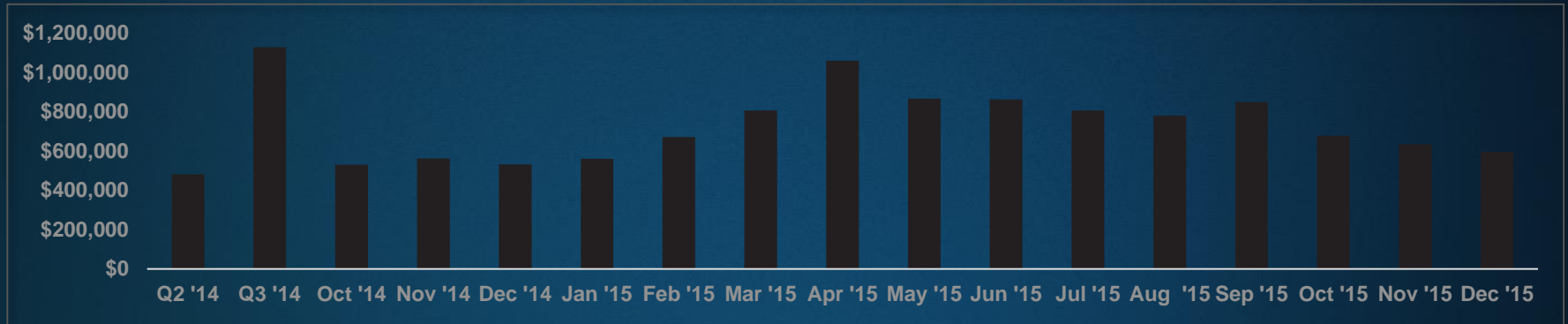


# GEにおけるクラウドジャーニー



# 結果の例 – GE Oil & Gas

*Apps Migrated*



# GEの現在のクラウドジャーニーの数字



**8** Business Units using AWS  
Public Cloud\*



**45** AWS Services available for  
GE Consumption\*



**749** Applications deployed in  
AWS Public Cloud\*



**83** AWS Enterprise Virtual  
Private Clouds deployed\*



**4** Datacenters closed in 2015



**1,364** Apps  
decommissioned in 2015



**9,000** Apps moving to  
AWS in 3 years



Down to **34** Datacenters  
in **4** years

\*as of January 2016

# 学んだ教訓

Automate, then Automate  
More



Embrace Agile



Work Instead of Workflow



Security at Every Layer



Bias toward action



Encourage (calculated)  
Risks



## Enablers

**Collaboration** - Embed Security & Risk teams, CIO + CTO + Corp partnership

**Transformation** – Rebuild technology skill sets, encourage diversity and embrace “hands-on”

**Cloud Aware** – Rehosting is OK if it maximizes margin, agility, resilience & performance

**Pipeline** – A pipeline of 50+ will ensure consistent velocity



# デジタルツインが重要

## PER ASSET ANALYTICS

Exact data on usage and environment for a single machine to optimize its performance

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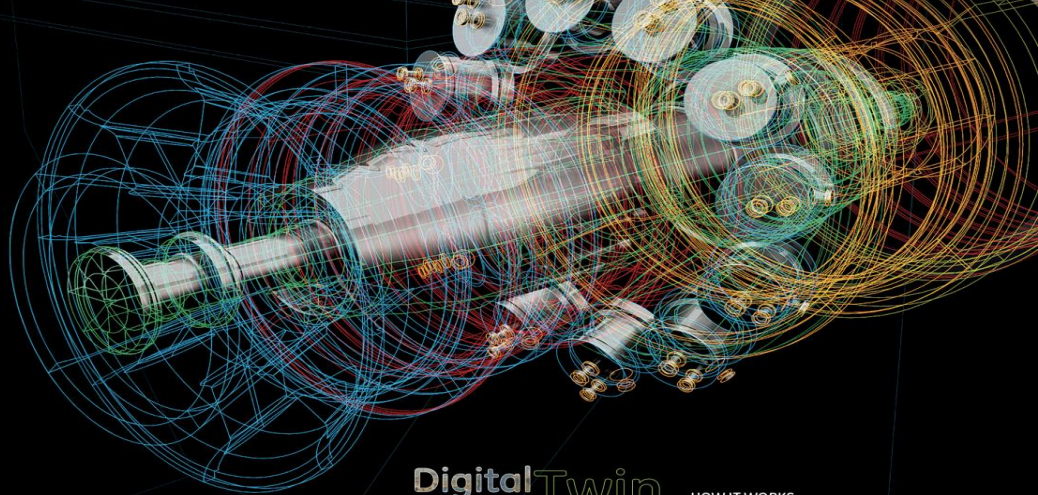
## NEW SERVICES

Digital Twin + Controls + Predix

## DIGITAL TWIN

### THE FUTURE OF SERVICES FOR GE

Animated with real-world data, the Digital Twin is a virtual replica of any product, and is designed to help GE predict and respond to customer problems.



## DigitalTwin

HOW IT WORKS

PHYSICAL MODEL

+

DATA

=

OUTCOME



Gas turbine + steam turbine



Plant operational data, weather forecasts



Increased fuel efficiency

Combined-cycle power plant

PHYSICAL MODEL

+

DATA

=

OUTCOME



\$1 blade + coating



Per-flight data, environmental conditions, prior damage



Optimized inspection schedule

GE90 aircraft engine





Flying in North America

2.6 Service Years

Last inspection found  
distress ranking <2

Flies 80% in Pacific NW

Temp. T49  
delta <10 Deg. F

Due for overhaul in  
7.1 Months

