Capital Alliance with OSIsoft, LLC

MITSUI & CO.

April 5th, 2016

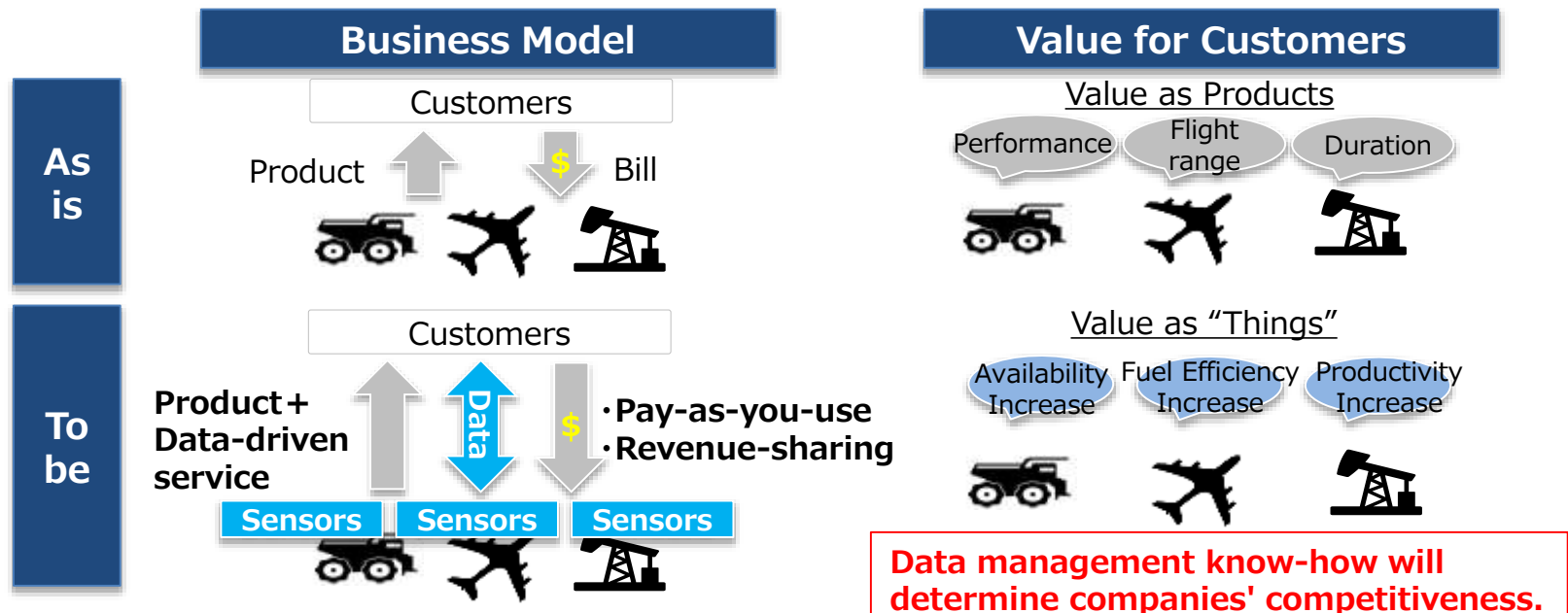Mitsui & Co., IT & Communication Business Unit

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1-1. IoT trends

- The Internet of Things (IoT) is transforming business models.
- The **conventional "product-sales model"** will be **transformed into a "service model"** that generates value for customers, enabling them to achieve cost reduction and greater earnings by drawing on the data gathered from "things".
- We are approaching a time when companies' competitiveness will be determined by data management know-how, and **Mitsui, driven by IoT knowledge, will create new business and transform our business models**.

Innovation with IoT: Transformation from "product-sales model" to "service model"

Business Model	**Value for Customers**

As is

Customers

Product ⬆️ $ ⬇️ Bill

Value as Products

Performance | Flight range | Duration

To be

Customers

Product＋Data-driven service

Data $ ·Pay-as-you-use ·Revenue-sharing

Sensors Sensors Sensors

Value as "Things"

Availability Increase | Fuel Efficiency Increase | Productivity Increase

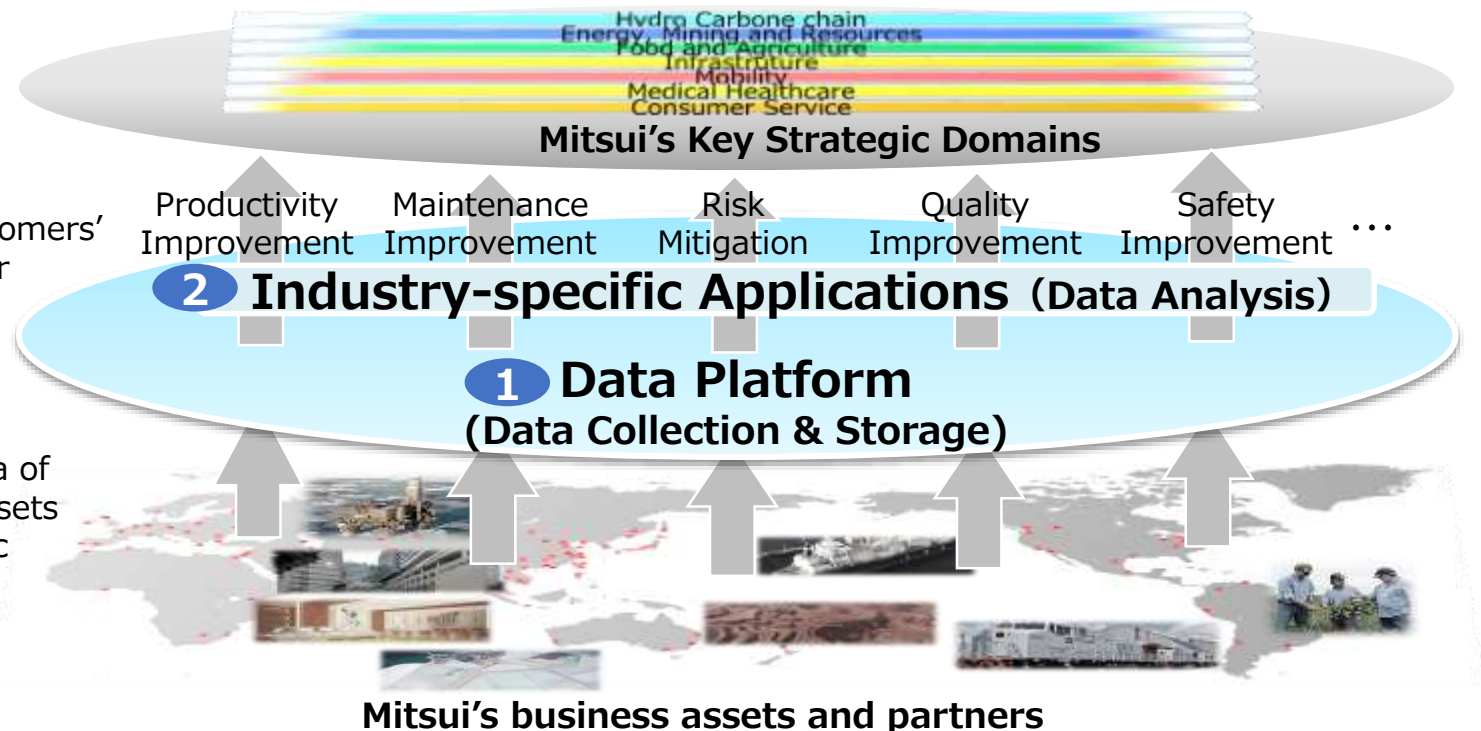**Data management know-how will determine companies' competitiveness.**

1-2. Mitsui's IoT Vision

- **Invest proactively ① in "Data Platform" applicable to industry-specific business ② for establishing solutions responding to individual industrial needs.**
- By leveraging our extensive business assets and neutrality as a *sogo shosha* (general trading company), we aim to realize "IoT for Customers".
- **Provide services that contribute to users' productivity improvement and creation of added value for customers through collaboration with partners.**

Hydro Carbone chain
Energy, Mining and Resources
Food and Agriculture
Infrastructure
Mobility
Medical Healthcare
Consumer Service

Mitsui's Key Strategic Domains

·Provide optimal applications for solutions for customers' business ("IoT for Customers")

Productivity Improvement　Maintenance Improvement　Risk Mitigation　Quality Improvement　Safety Improvement ···

② Industry-specific Applications (Data Analysis)

① Data Platform (Data Collection & Storage)

·Operational data of each business assets
·Industry-specific needs for IoT

Mitsui's business assets and partners

2-1. OSIsoft Overview

- **Name:** **OSIsoft, LLC** (Limited Liability Company in Delaware)
- **HQ:** San Leandro, California, USA
- **Founded:** 1980
- **CEO (Founder):** J. Patrick Kennedy
- **Location/Employees:** 21+ countries/1,200+ employees
- **Main Investors:** Founder, Kleiner Perkins Caufield Byers (VC),
  Technology Crossover Ventures (VC), Mitsui & Co., etc.
- **Business:**
  - **Development/sales of the IoT data management software "PI System" for a variety of industries, such as utilities, oil & gas, and manufacturing**
  - **Global leader in data management technologies for industrial customers, M2M systems, and the Internet of Things**
- **Revenue:** USD 300+ million
- **Investment Ratio:** 5.0%

2-2. OSIsoft Overview

OSIsoft.

MITSUI & CO.

- **Strength:**
    - OSIsoft has specialized in development/sales of the PI System since the 1980s and become a **global leader in data management technologies for industrial customers, M2M systems, and the Internet of Things**.
    - The strength of the PI System is **data compatibility** that enables collection of a huge variety of sensor-based data (compatible with 450+ data protocols)
    - Also, data-compression technology enabling storage of 10 years of msec interval data and **high-quality customer support services**

- **Track Record:**
    - Installed in 127 countries/2,200 companies/17,000 sites
        - 1,000+ power & utility companies
          (50-60% share of all installed capacities in the US)
        - 95% share of oil & gas companies ranked in the Fortune Global Top 40
        - 65% share of process-manufacturing companies ranked in the Fortune Global Top 500
    - Core industries: Utility, oil & gas, chemicals, mining, pharmaceutical, pulp & paper, etc.

Track records

PI System
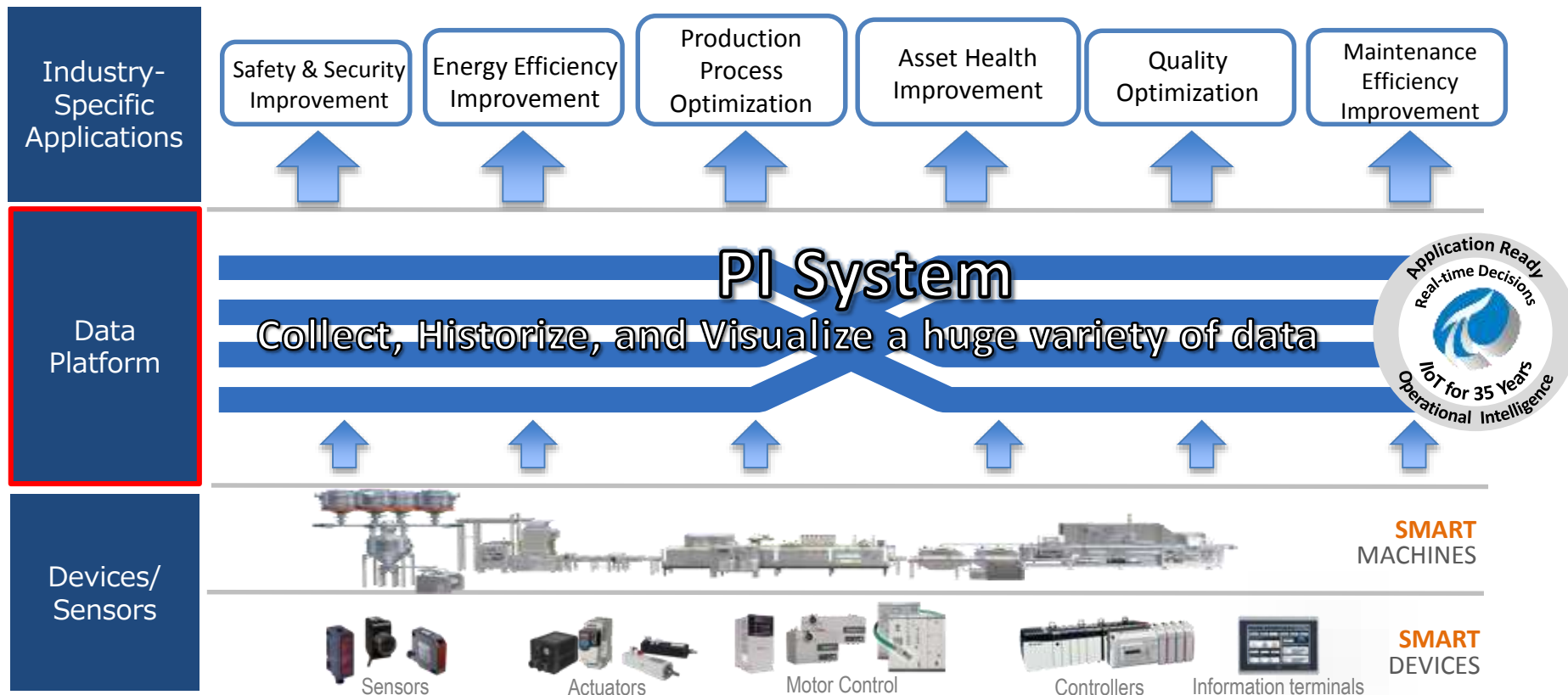
1. CAISO
(California Independent System Operator)
- Real-time monitoring for California power grid with PI System
- Installed in all US grid operators

2. Saudi Aramco

OSIsoft is the best partner for Mitsui in the data platform business field.
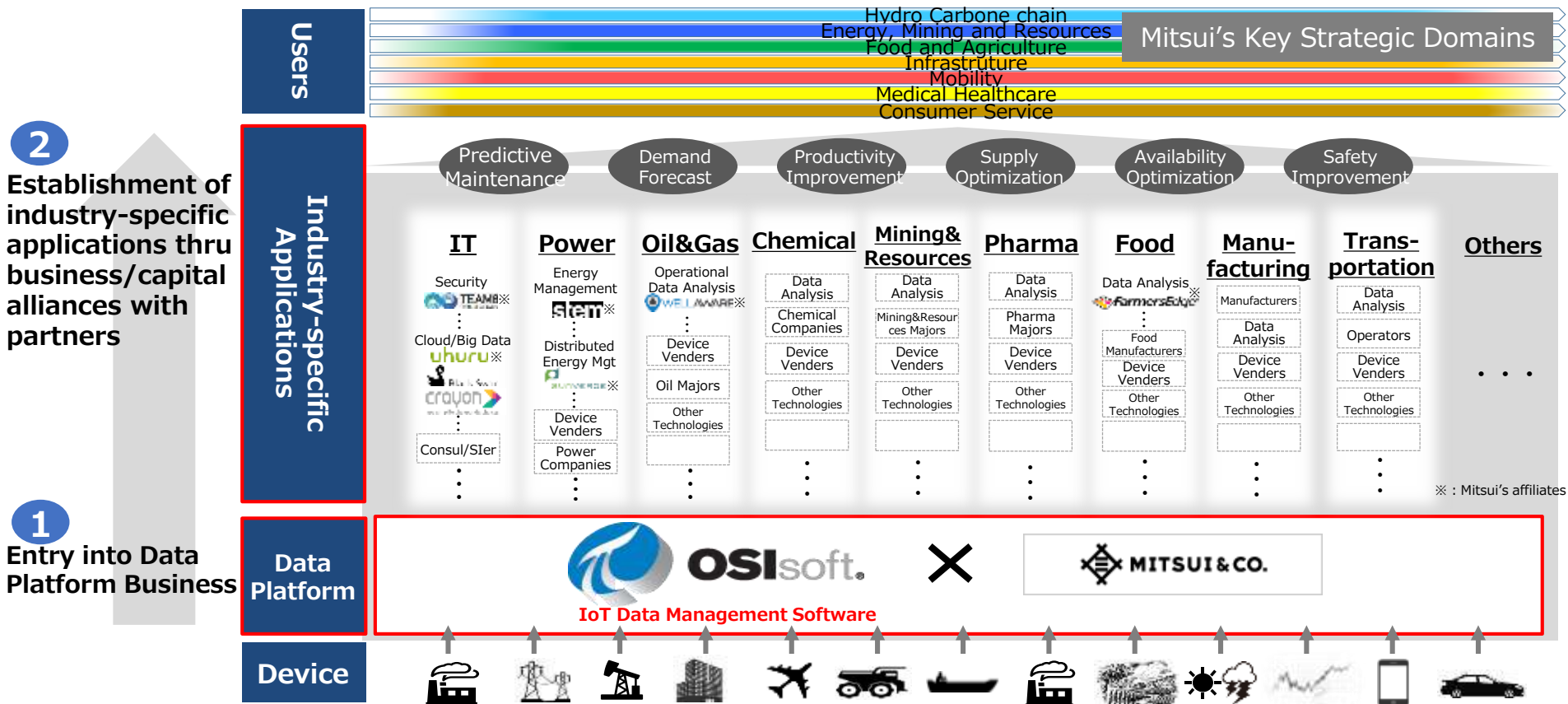
2-3. IoT Data Management software "PI System"

- **The PI System is a "Data Platform" that collects/stores/outputs sensor-based data of a huge variety of devices and visualizes the real-time data and simplifies the introduction of industry-specific applications.**
- With increasing customer need for IoT and the spread of industry-specific applications, the value of the Data Platform should also improve.

Industry-Specific Applications

Safety & Security Improvement	Energy Efficiency Improvement	Production Process Optimization	Asset Health Improvement	Quality Optimization	Maintenance Efficiency Improvement

Data Platform

PI System
Collect, Historize, and Visualize a huge variety of data

Application Ready
Real-time Decisions
IoT for 35 Years
Operational Intelligence

Devices/Sensors

SMART MACHINES

Sensors Actuators Motor Control Controllers Information terminals
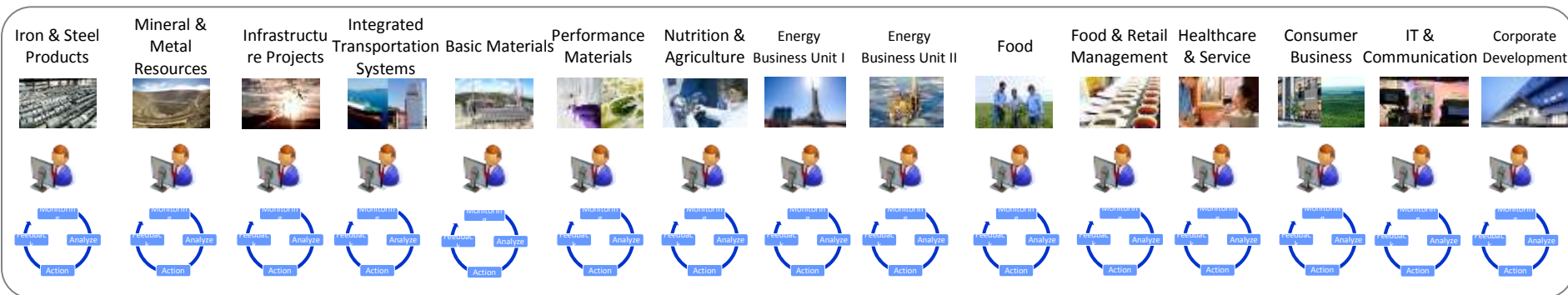
SMART DEVICES

3-1. Strategy for Industry-Specific Applications

- **Enter Data Platform business** through a capital alliance with OSIsoft and support OSIsoft's growth
- **Grasp customer needs for IoT and identify business opportunities through partnership with OSIsoft**
- **Develop industry-specific applications** through business/capital alliances with domestic and overseas IT companies and industrial customers

Users

Hydro Carbone chain
Energy, Mining and Resources
Food and Agriculture
Infrastruture
Mobility
Medical Healthcare
Consumer Service

Mitsui's Key Strategic Domains

② Establishment of industry-specific applications thru business/capital alliances with partners

Industry-specific Applications

Predictive Maintenance | Demand Forecast | Productivity Improvement | Supply Optimization | Availability Optimization | Safety Improvement

IT
Security
TEAMS ※
Cloud/Big Data
uhuru ※
Blu's Sour
crayon
Consul/SIer

Power
Energy Management
SGT ※
Distributed Energy Mgt
※
Device Venders
Power Companies

Oil&Gas
Operational Data Analysis
WELLAWARE ※
Device Venders
Oil Majors
Other Technologies

Chemical
Data Analysis
Chemical Companies
Device Venders
Other Technologies

Mining& Resources
Data Analysis
Mining&Resources Majors
Device Venders
Other Technologies

Pharma
Data Analysis
Pharma Majors
Device Venders
Other Technologies

Food
Data Analysis
FarmersEdge ※
Food Manufacturers
Device Venders
Other Technologies

Manu-facturing
Manufacturers
Data Analysis
Device Venders
Other Technologies

Trans-portation
Data Analysis
Operators
Device Venders
Other Technologies

Others
・・・

※ : Mitsui's affiliates

① Entry into Data Platform Business

Data Platform

OSISoft. ✕ **MITSUI&CO.**

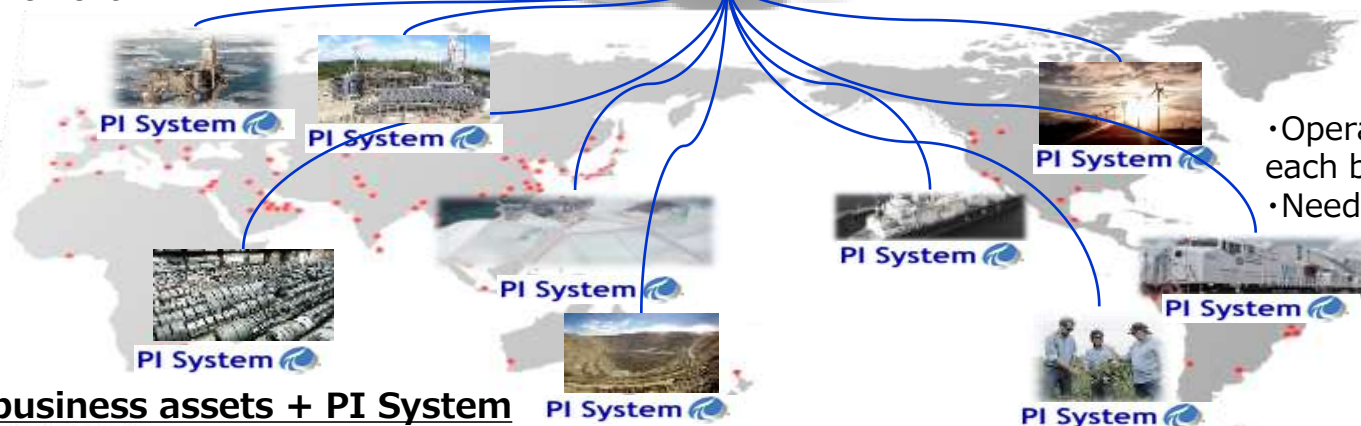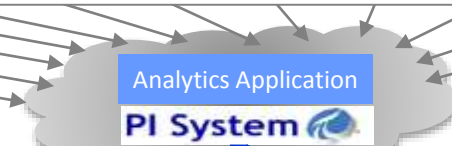**IoT Data Management Software**

Device

3-2. Digital Transformation of Mitsui

- Proactively utilize the PI System and industry-specific applications in the Mitsui & Co. group
- Work to achieve improved efficiency of business asset operations and cost reduction, aiming at improvement of the profitability of existing business and business transformation

Mitsui's 15 Business Units

·Monitoring/Analysis of operational data
·Cost reduction/Productivity improvement

·Operational data of each business asset
·Need for IoT

Mitsui's business assets + PI System

360° business innovation.

MITSUI & CO.