IoT platform service helping to improve competitiveness of manufacturing industry

NTT DATA
Big Data Business Promotion Office
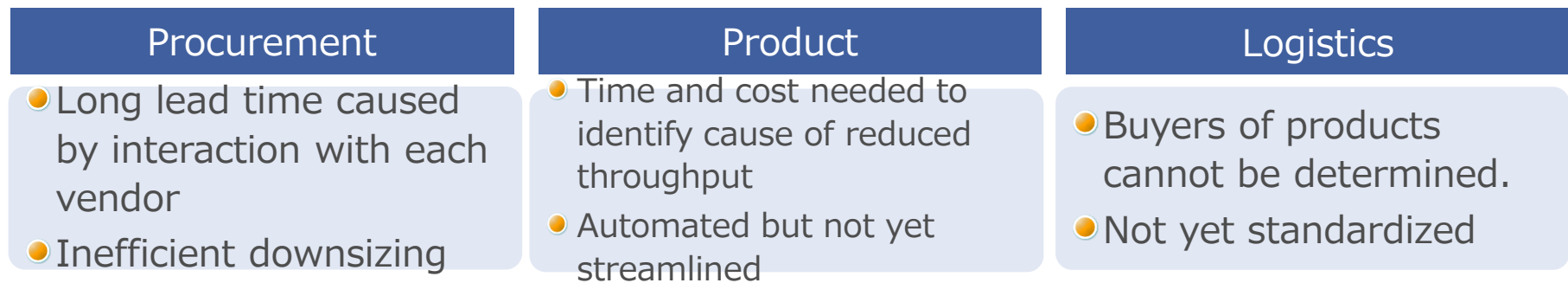April 2017

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Trend: IoT/Industry 4.0 etc. are hot topics in manufacturing industry.

→ Manufacturers require a system that makes data openly available and allows the various stakeholders who form their value chains to solve problems quickly and uninterruptedly.
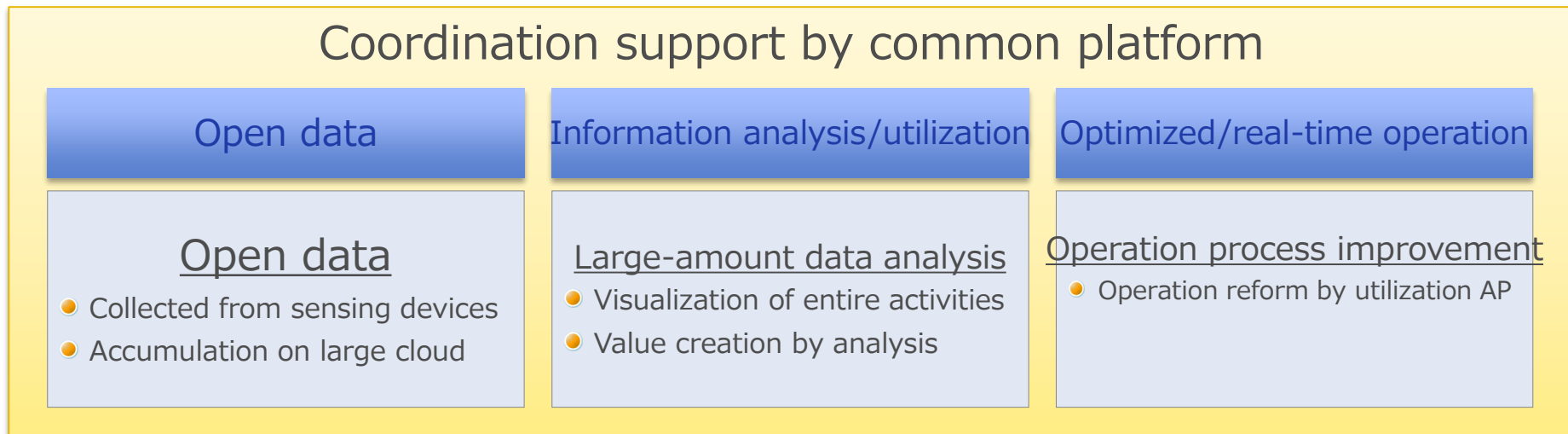
Concept: The implementation should not be divided into phases and should involve the entire supply chain.

→ Strong mutual coordination by common platform

Procurement	Product	Logistics

Challenges

Procurement	Product	Logistics
• Long lead time caused by interaction with each vendor • Inefficient downsizing	• Time and cost needed to identify cause of reduced throughput • Automated but not yet streamlined	• Buyers of products cannot be determined. • Not yet standardized

Coordination support by common platform

Open data	Information analysis/utilization	Optimized/real-time operation
Open data • Collected from sensing devices • Accumulation on large cloud	**Large-amount data analysis** • Visualization of entire activities • Value creation by analysis	**Operation process improvement** • Operation reform by utilization AP

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Based on our past activities, NTT DATA believes that the following three factors are what's really required to support the development of IoT for manufacturers.
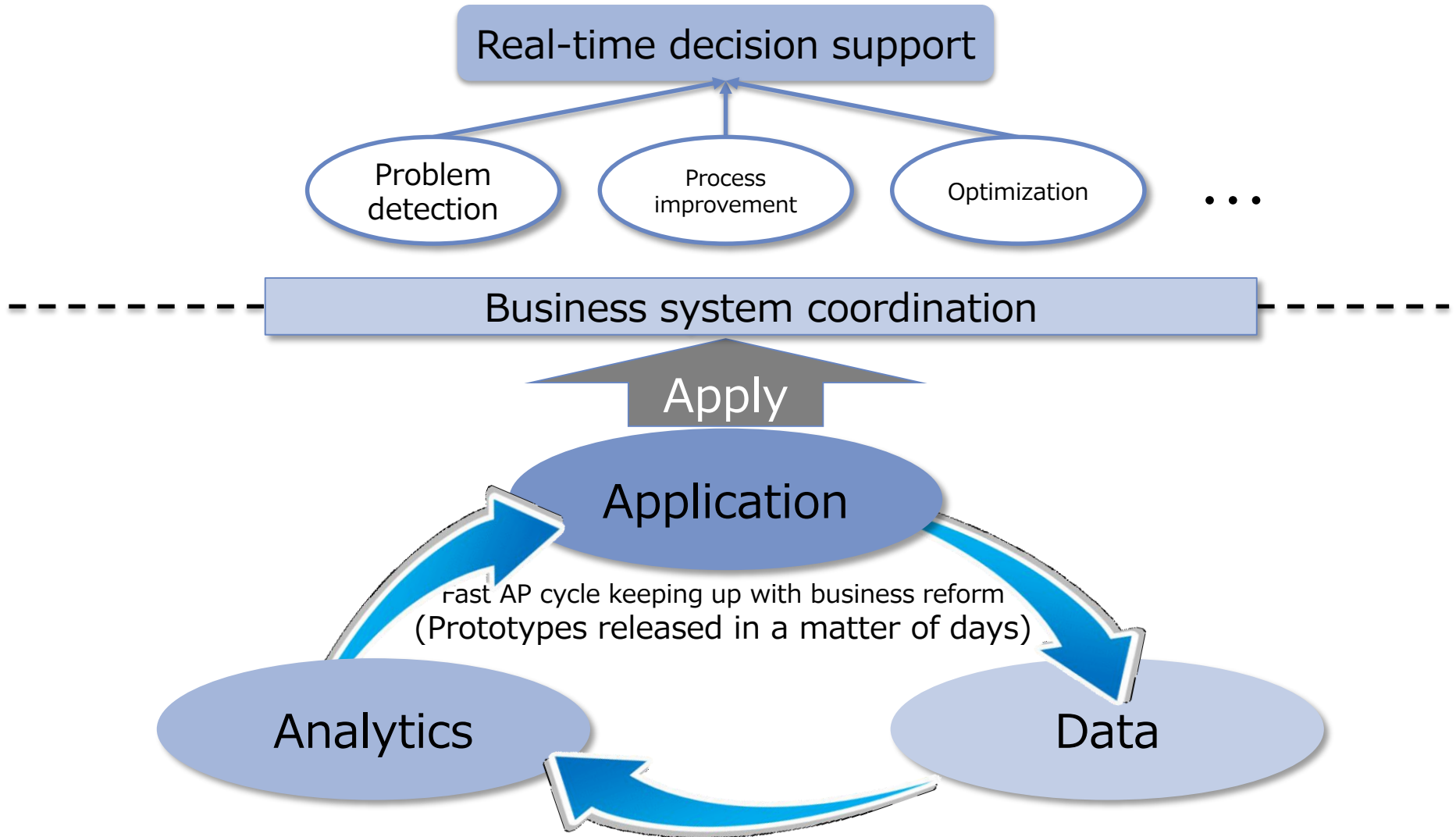
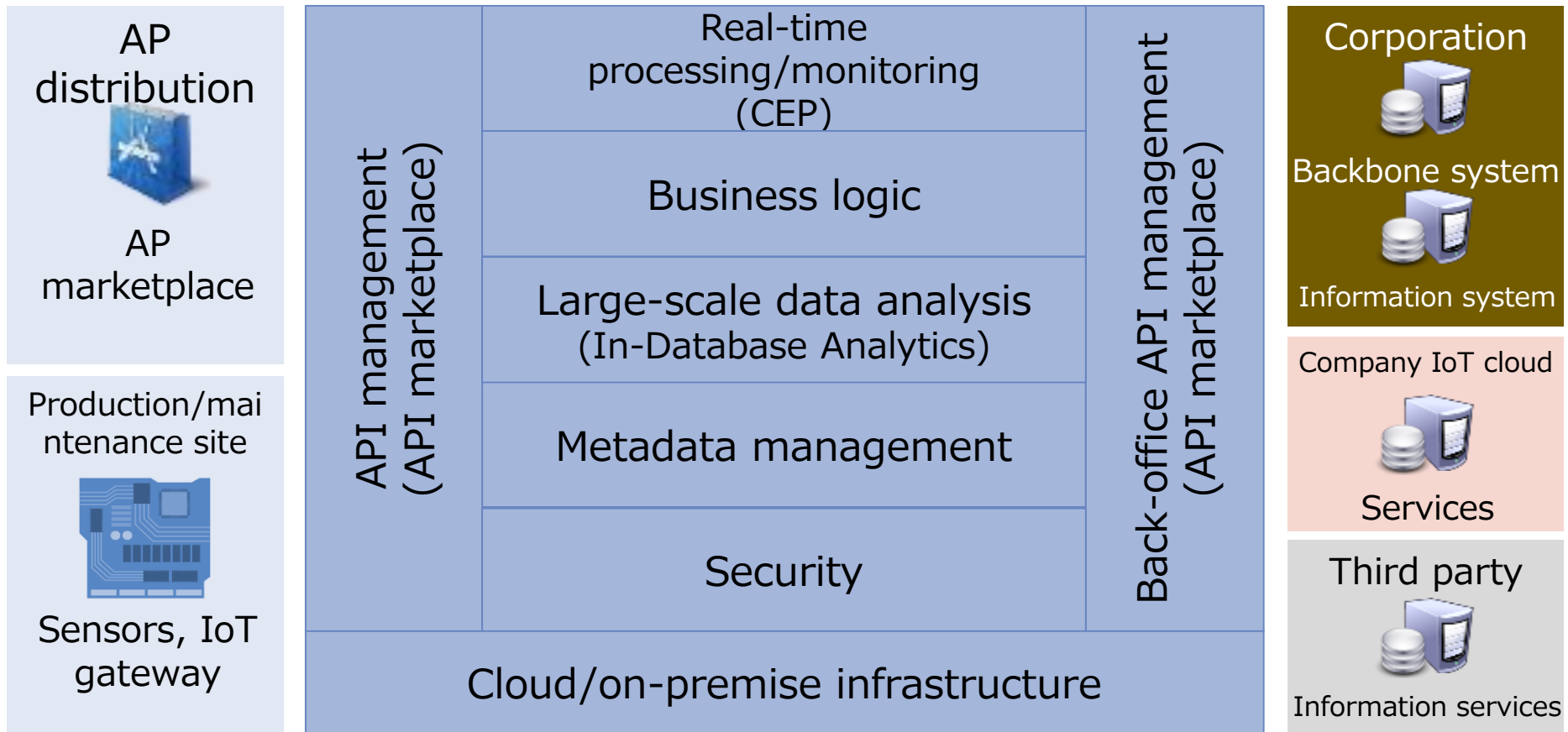| Open (Interoperability)	Open data and participation of stakeholders in global supply chain
Real-time	Real-time visualization of entire value chain Prescriptive process intervention based on cause prediction for problem
Evolutionary	Uninterrupted evolution of business processes through distributed/spontaneous cooperation among stakeholders

Real-time decision support

- Problem detection
- Process improvement
- Optimization
- . . .

Business system coordination

Apply

Application

Fast AP cycle keeping up with business reform
(Prototypes released in a matter of days)

Analytics

Data

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Building blocks of large-scale, real-time data analysis platform are common functions for allowing applications using collected data to be built or distributed easily.
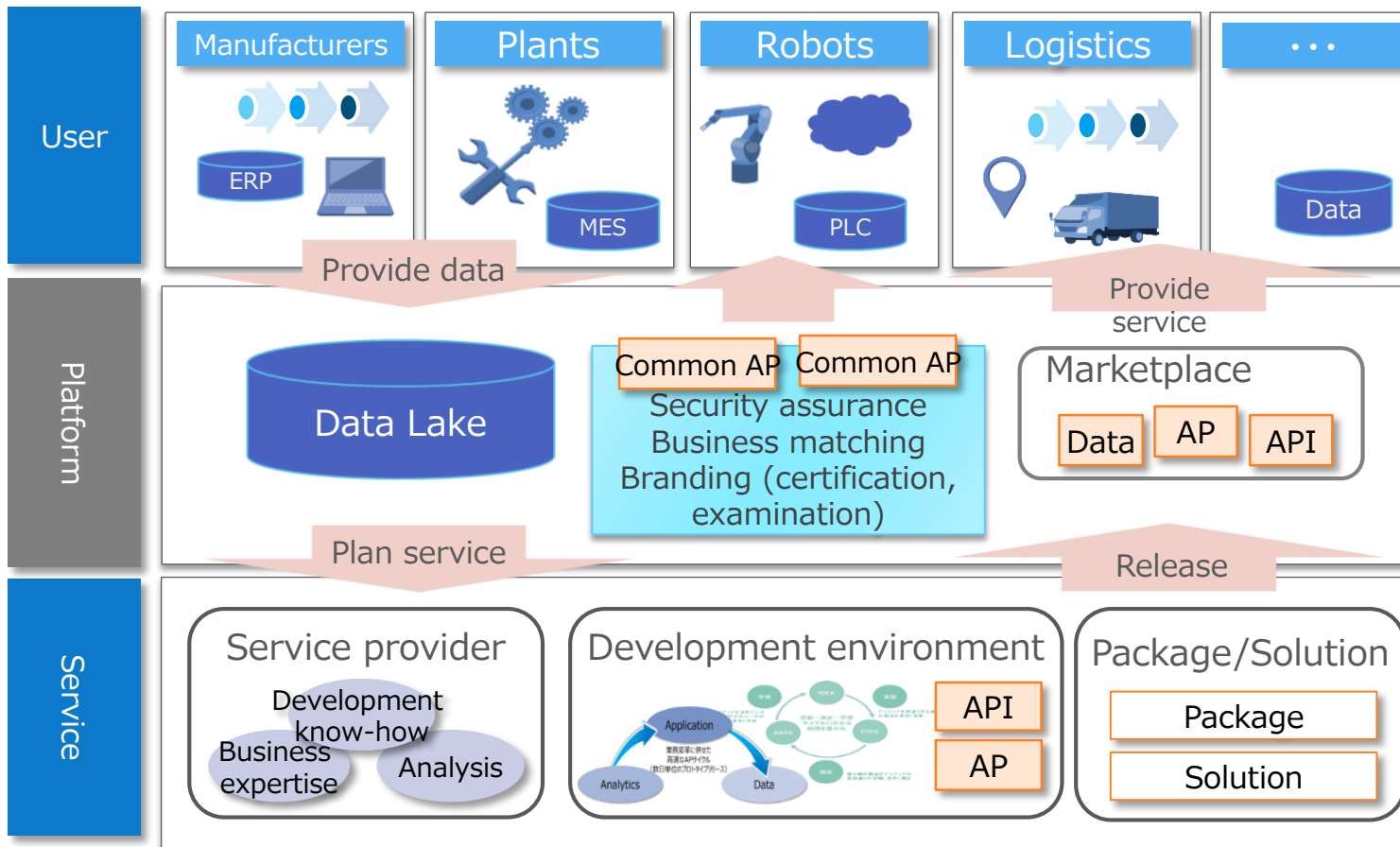

AP distribution

AP marketplace

Production/maintenance site

Sensors, IoT gateway

API management (API marketplace)

Real-time processing/monitoring (CEP)

Business logic

Large-scale data analysis (In-Database Analytics)

Metadata management

Security

Back-office API management (API marketplace)

Cloud/on-premise infrastructure

Corporation

Backbone system

Information system

Company IoT cloud

Services

Third party

Information services

■ The most important characteristics of the platform leading to a business advantage: as users increase, new value is created and a virtuous circle emerges.
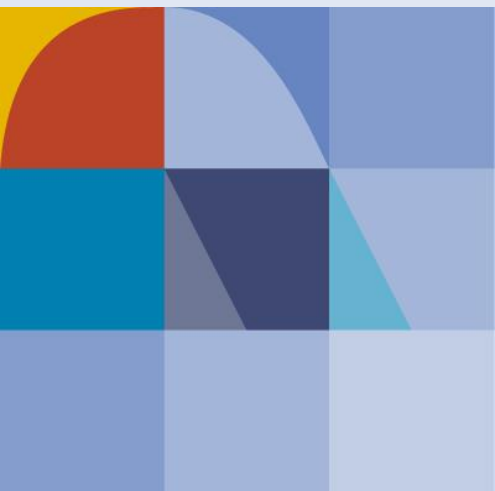
Utilization of platform

Effect

User

| Manufacturers | Plants | Robots | Logistics | · · · |

ERP / MES / PLC / Data

Provide data

Platform

Data Lake

Common AP   Common AP
Security assurance
Business matching
Branding (certification, examination)

Provide service

Marketplace
Data   AP   API

Plan service

Release

Service

Service provider
Development know-how
Business expertise   Analysis

Development environment
Application
Analytics   Data
API
AP

Package/Solution
Package
Solution

Effect:

Creating new business opportunities

Improving PF value by accumulating a wide variety of data

Creating data utilization services with higher value