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Agenda

- Background
- Why Japan?
 - Technology adoption within Asia, and factors
- The Cloud: The benefits, the challenges
- The Unique Evolution of the Cloud in Japan : Three Phases
- Cloud Use Cases
 - Coca Cola Japan
 - Government (IoT)
 - Semi-Conductor Manufacturer (IoT)

Why Japan?

Asia occupies 40% of world's wealth and 60% of population

	GDP/CAP	POP (mil)	
China	\$8,254	1440	\$11,886
Japan	\$49,188	127	\$6,247
India	\$2,169	1380	\$2,993
South Korea	\$28,606	51	\$1,459
Australia	\$57,071	24	\$1,370
Indonesia	\$4,451	273	\$1,215
Thailand	\$6,503	70	\$455
Malaysia	\$12,478	32	\$399
Philippines	\$3,338	109	\$364
Singapore	\$58,830	6	\$353
Hong Kong	\$37,957	7	\$266
New Zealand	\$38,993	5	\$195
Macau	\$55,110	0.6	\$33

Factors for Identifying Markets to Enter:

- 1) Purchasing Power
- 2) Population
- 3) Relevance of local market for the technology
- Examples
- 4) Readiness of Local market for the technology
- 5) Why not China?
- 6) Familiarity w/English

Example AWS Ranking

The Cloud: The benefits, the challenges

**THERE IS NO
CLOUD ...**



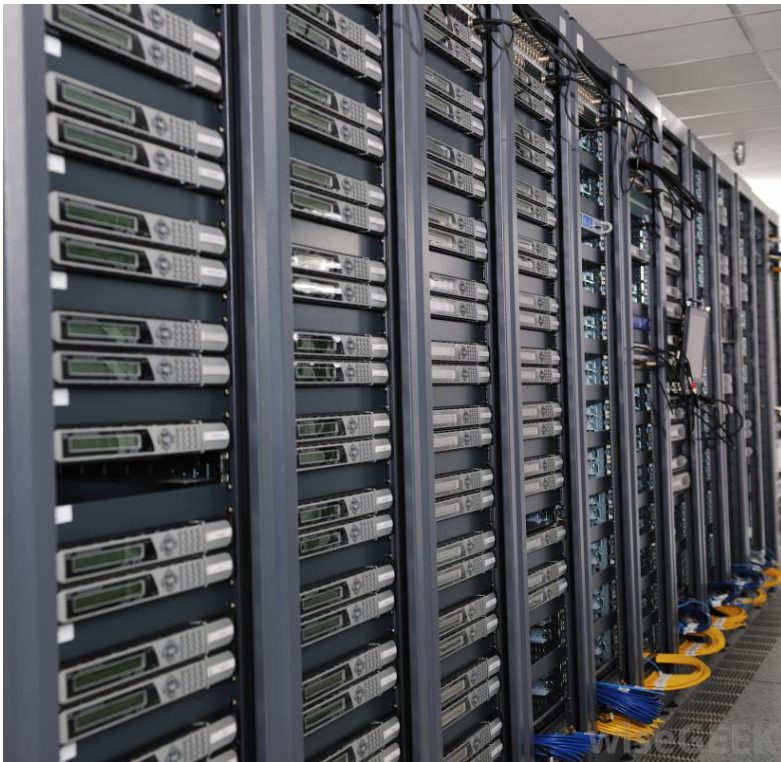
**JUST
SOMEONE
ELSE'S
COMPUTER**

***What
is
the
Cloud?***

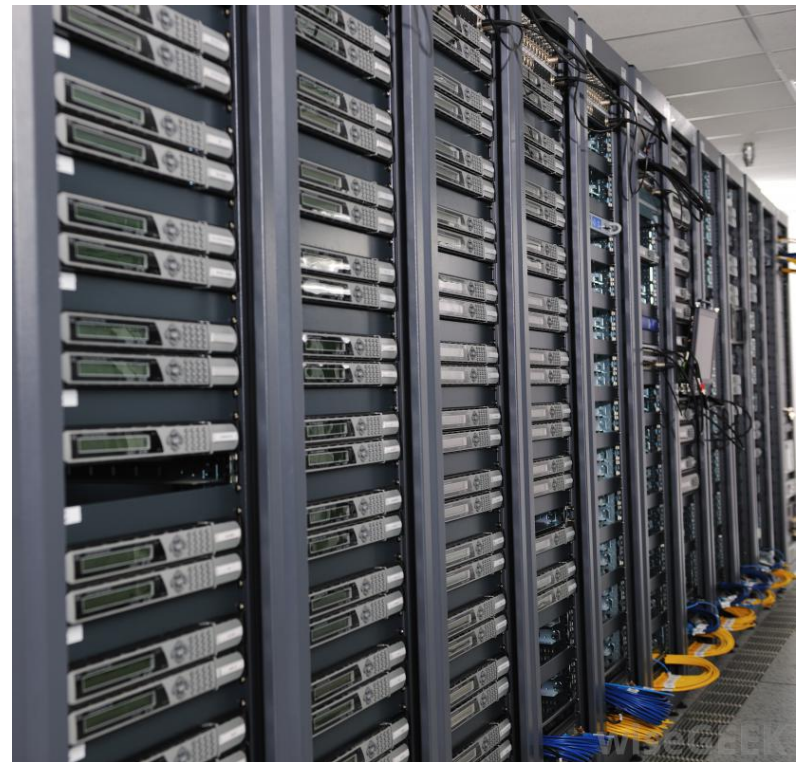
**THE CLOUD IS A
HIGHLY
VIRTUALIZED
SHARED POOL
OF COMPUTE
AND STORAGE
RESOURCES
AND THEIR
DEPENDANT
SERVICES,
ACCESSED
THROUGH AN API**

IT Infrastructure – What Does it Look Like?

BEFORE THE CLOUD



THE CLOUD



Two Operative Words: VIRTUALIZATION and API

Basic Computing Stack

Application

Application

Operating System

Hardware



Traditional vs. Modern

Application Development and Deployment Cycle

Waterfall Development

Monolithic Applications (some w/10s of millions of lines of code!)

Deployment lead times in months and years

Managing the hardware and dependent OS, upgrades:

- human resource and cost intensive

DEVELOPERS



OPERATORS

Traditional vs. Modern Application Development and Deployment

Enter: Modern Development Cycle
Enter: DevOps

Microservices

Containers

Virtualized Infrastructure

Kubernetes

CICD (Continuous Development Continuous Integration)

Providing elastic infrastructure scalability, freedom from infrastructure hassles,
pay-as-you-go, and very importantly...

..... *much shorter time-to-deployment*

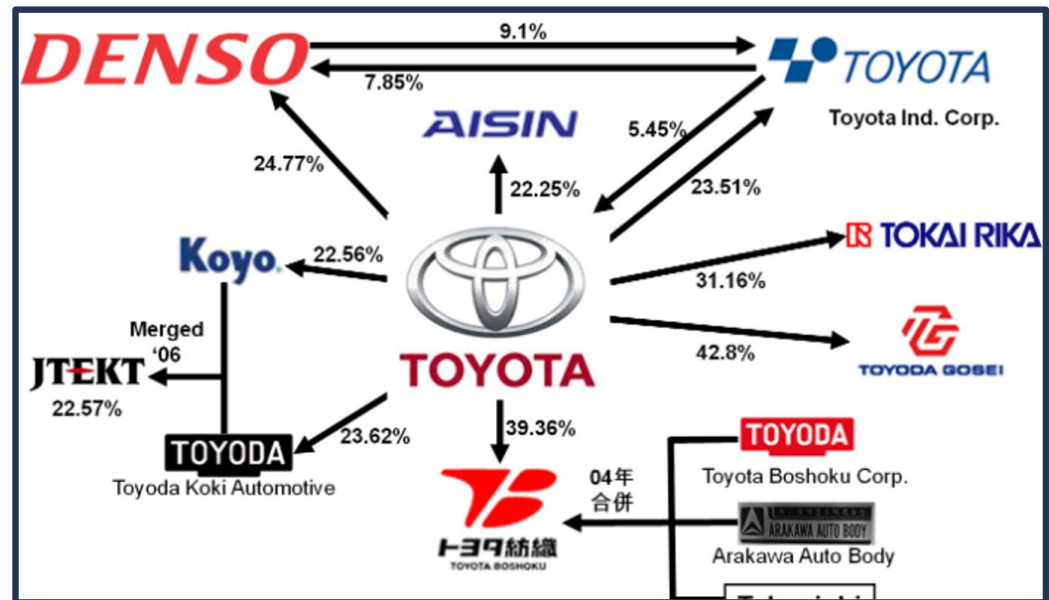
Uber

This is all core to digital transformation



Japan's Structural Impediments to Technology Adoption

- Japan' IT Talent Pool- where art thou? -
- the 80-20 rule
- Japan's CIO- Where Art Thou?
- System integrators under-motivated to promote cost optimization lacked 'cloud native' talent
- *Enter Japan's Venture Companies*



Cloud Adoption in Japan: The Scorecard

Breaking down into three phases of cloud adoption

- Migration to *Hyperscalar* (public cloud)
- Emergence of *Private and Hybrid Cloud*
- The '*Edge*'

1st Evolutionary Phase: Japan

Dev and Ops often outsourced to different system integrators

Ultra legacy monolithic applications difficult to port

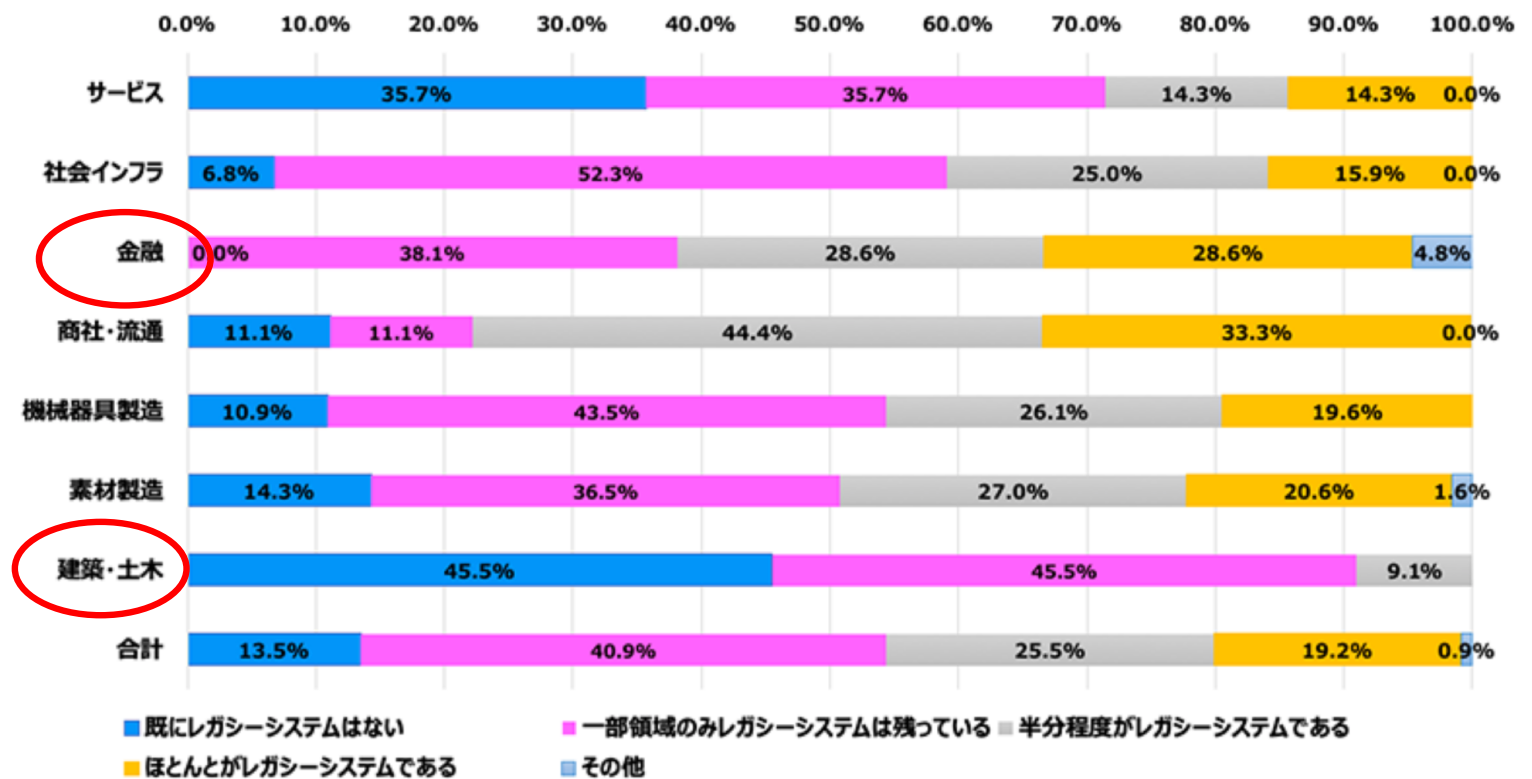
RESULT:

Belated and limited adoption at virtually all traditional enterprise

Degree of adoption varies greatly with vertical industry

How Much Legacy Exists in Each Vertical Industry?

企業のレガシーシステムの残存率



The Laggard :
Financial
Services

The Lion :
Architecture
Civil Engineering

Tapping the Bridge Before Crossing...

石橋叩き
叩き渡り



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CLOUDIAN

2nd Evolutionary Phase

The Emergence of Private Cloud and Hybrid Cloud

- Not just someone else's computer

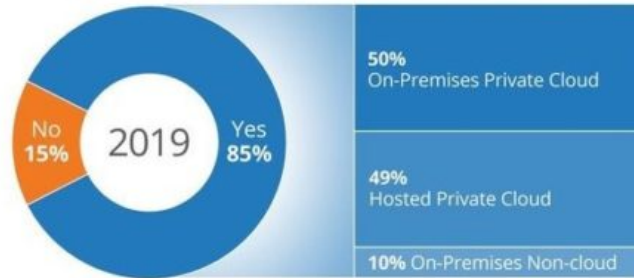
IDC Data Repatriation Report

85% of Customers Report Cloud Repatriation Activities

Into Production from Test/Dev is Reported by 44% of Customers

Public Cloud Repatriation Rates

Q. In the last year, has your organization migrated any applications or data that were primarily part of a public cloud environment to a private cloud or on-premises environment?



Percent of Public Applications Expected to Repatriate Over the Next Two Years (Average)

Q. Using your best guess, what proportion of the public cloud applications installed today will move to a private cloud, hosted private cloud or non-cloud environment over the next two years?

49%

Types of Applications Repatriated (Multiple Select)

Lift and Shift	56%
Into Production from Test	44%
Refactor & Shift	32%
Moved from SaaS	13%

Top Repatriation Drivers




Source: IDC's CloudPulse Q119, June 2019, n=2211

© IDC

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Apple Computer Repatriates and Reduces Cloud Costs by over 50%

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EXCLUSIVE **AMAZON** **APPLE**

Apple Slashed Amazon Cloud Spending 50 Percent in Bid for Self-Sufficiency

By [Amir Efrati](#) and [Kevin McLaughlin](#) April 25, 2019 6:31 AM PDT · Comments by [Inderjeet Singh](#), [Amir Efrati](#) and 2 others **Subscribe now**

Apple has cut its spending on Amazon Web Services dramatically over the past year, to around **\$370 million in 2018** from **\$775 million in 2017** according to a person with direct knowledge of the figures. The reduction is partly due to Apple's decision to operate more of its own cloud services, in keeping with the company's broader philosophy of controlling the technology behind its products.



NASA spends additional **\$30m/year** for EGRESS ONLY

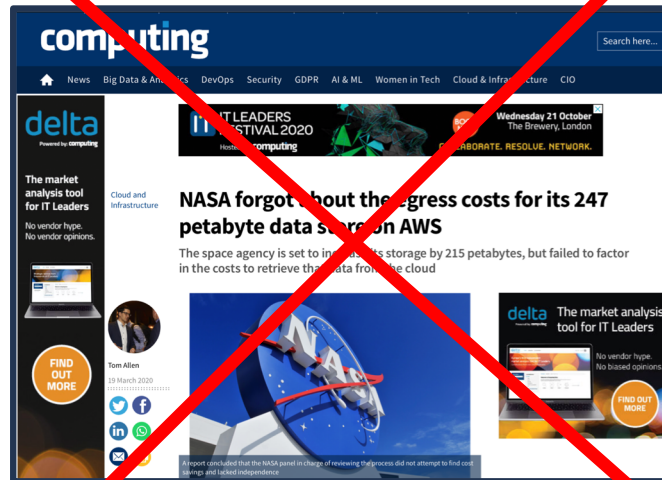
The screenshot shows a website header for 'computing' with a search bar and navigation links: News, Big Data & Analytics, DevOps, Security, GDPR, AI & ML, Women in Tech, Cloud & Infrastructure, CIO. Below the header is a banner for 'IT LEADERS FESTIVAL 2020' on Wednesday 21 October at The Brewery, London, with a 'BOOK NOW' button and the tagline 'COLLABORATE. RESOLVE. NETWORK.'. The main article is titled 'NASA forgot about the egress costs for its 247 petabyte data store on AWS' and is categorized under 'Cloud and Infrastructure'. The sub-headline reads: 'The space agency is set to increase its storage by 215 petabytes, but failed to factor in the costs to retrieve that data from the cloud'. The author is Tom Allen, dated 19 March 2020. There are social media sharing icons for Twitter, Facebook, LinkedIn, and WhatsApp. A 'delta' logo is visible in the top left and right corners of the article area, with the text 'The market analysis tool for IT Leaders' and 'No vendor hype. No biased opinions.' and a 'FIND OUT MORE' button.

The audit suggests an increased cloud spend of around **\$30m a year by 2025**, as a result of the egress charges, on top of NASA's **\$65m-per-year** deal with AWS.

Japan in Phase 2...

...Japan was a late adopter of public cloud, but an early adopter of private cloud

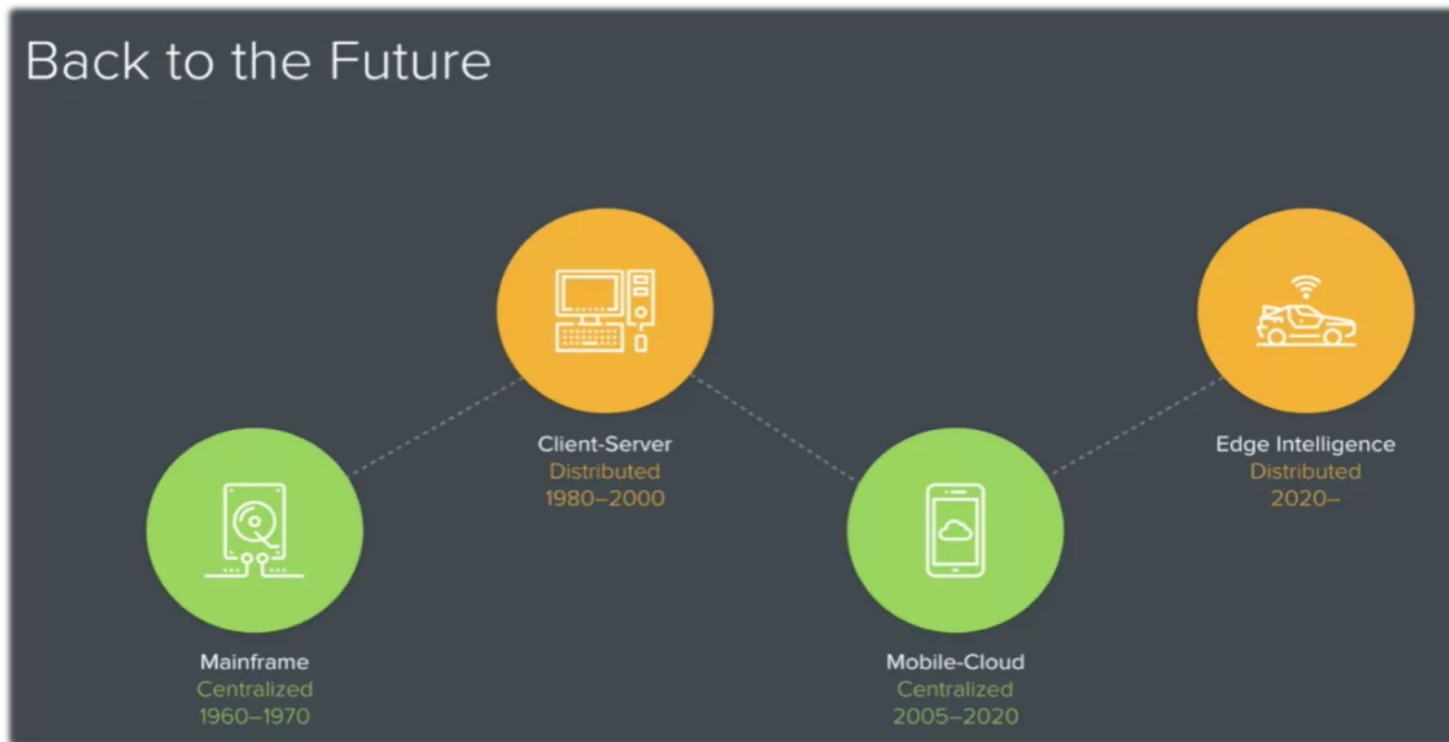
- they were able to take advantage of the tremendous progress in development in first half of 2010s
- Japanese companies well understood the mid to long-term costs of public cloud



**Does not
happen in
Japan!**

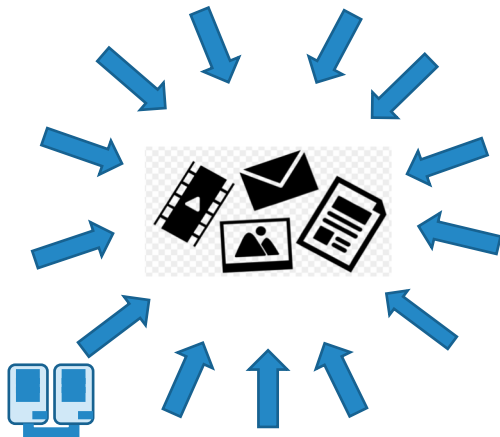
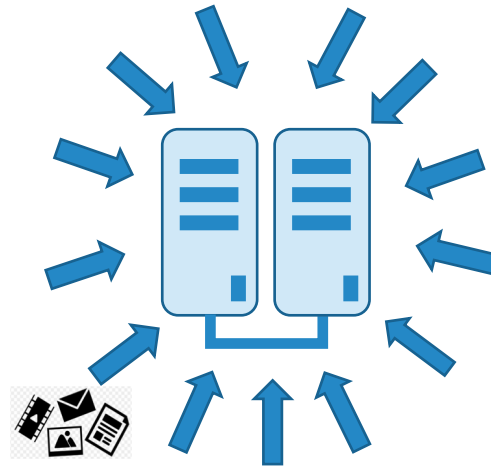
3rd Evolutionary Phase: The Edge...

Where data collection meets the best of the cloud

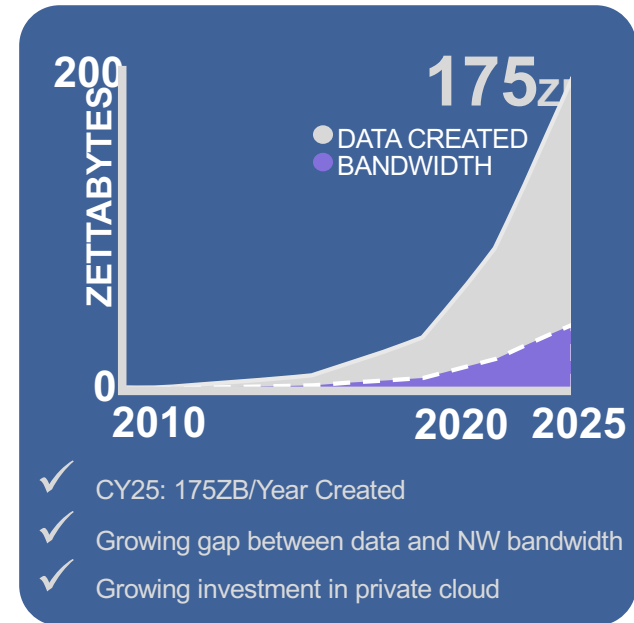


The Edge....

**THE OLD WAY:
MOVING DATA TO COMPUTE**



**THE NEW WAY:
MOVING COMPUTE TO DATA**



Japan in Phase 3...

.. Developing some of the most advanced examples worldwide of bringing the the cloud to the edge, for example...

- Developing sophisticated data collection and analytical platforms based on S3 datalakes in areas such as manufacturing, agriculture, etc.

Now lets take a look at some interesting use cases...

Two Japanese Datalake Use Cases

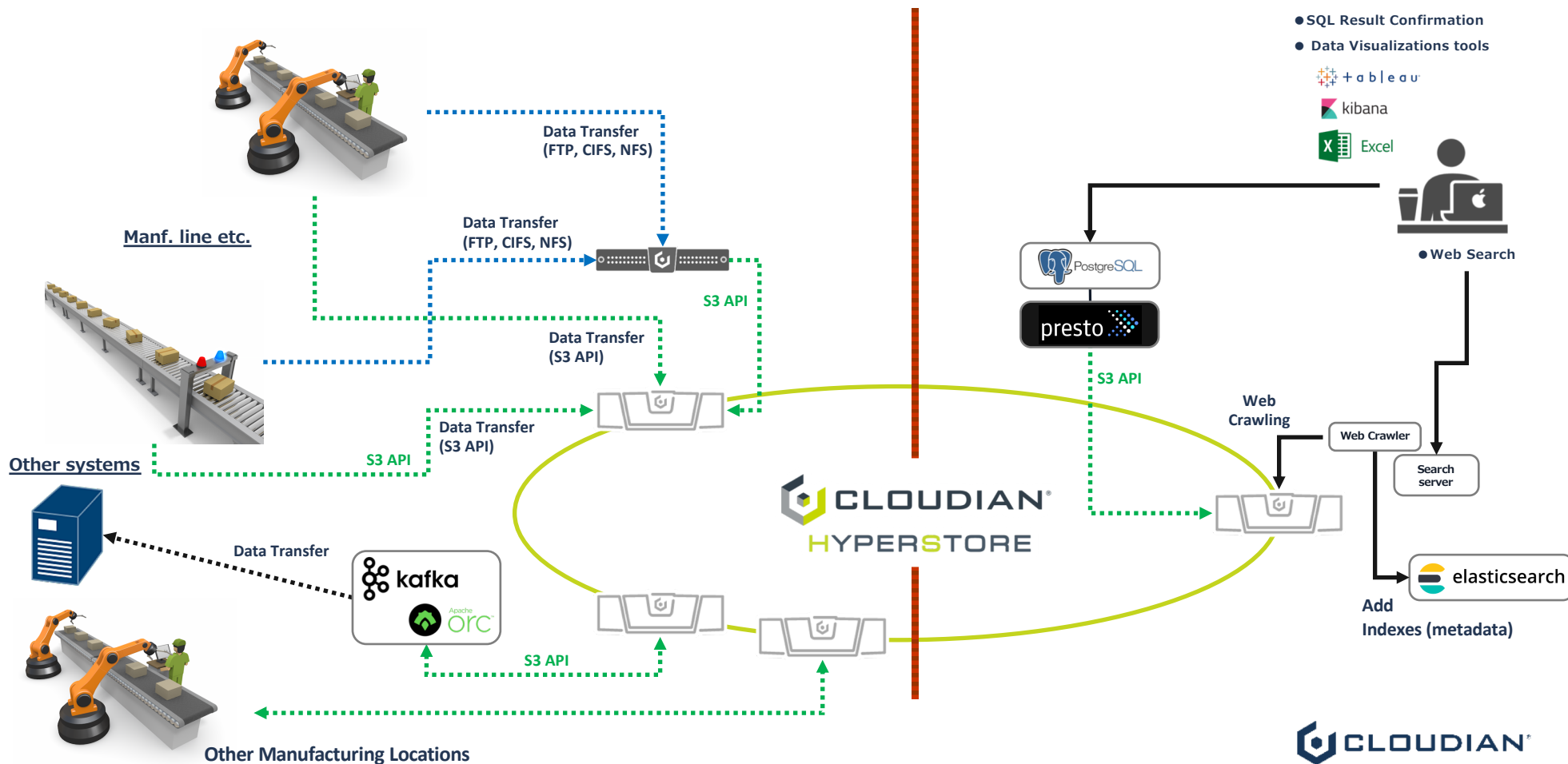
A Manufacturing

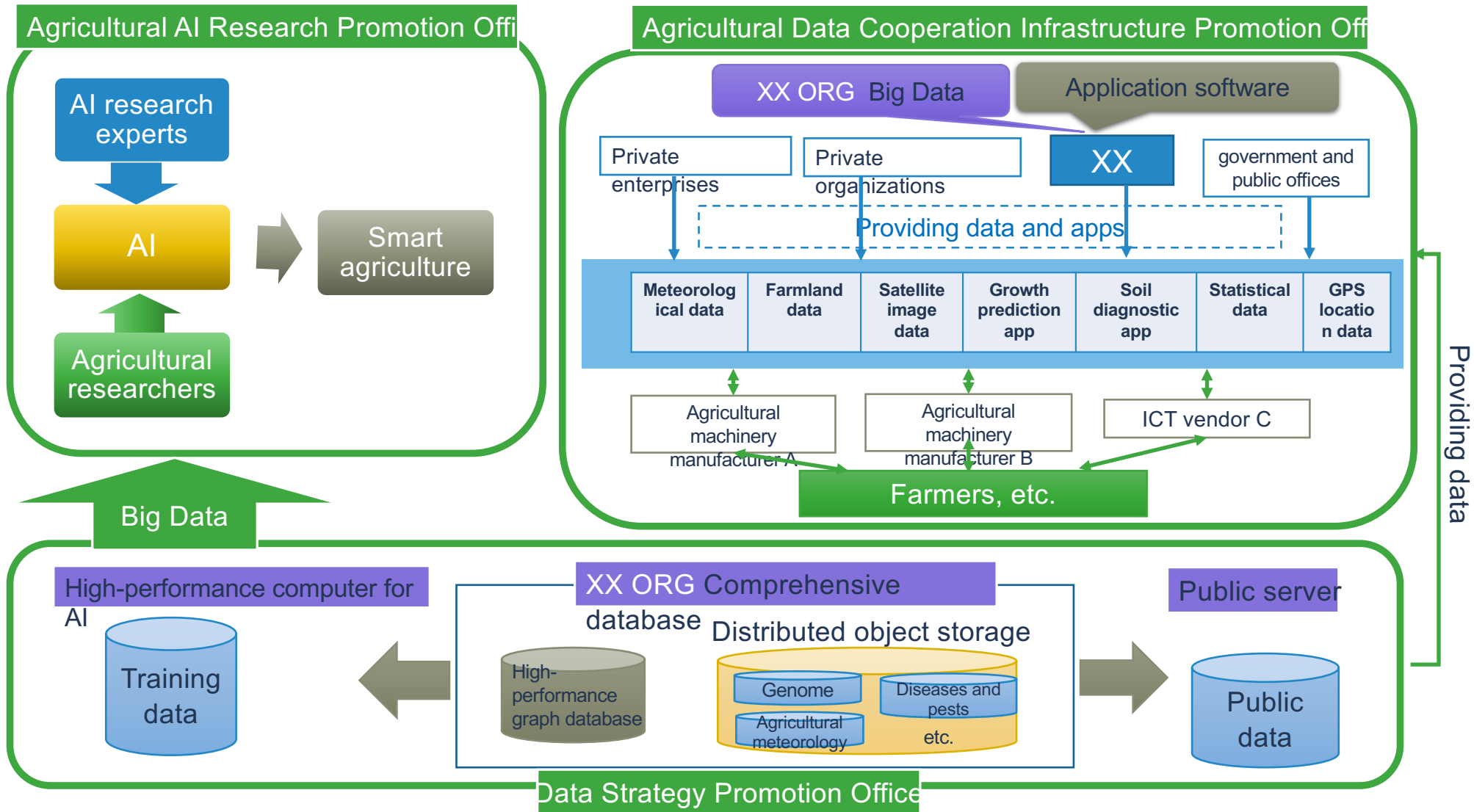
- Use HyperStore as a Data Lake
- Collect sensor data from production line
- Cooperation with existing system
- Search from ElasticSearch
- Big-Data Analysis by Presto
- Executive report UI

A Government

- Realizing Society 5.0
- Use HyperStore as a Data Lake
- Collect sensor data from the field
- Genome data, Weather data
- Big-Data Analysis using AI
- Executive report UI

DX Example : S3 Datalake (Japanese manf company)





Agricultural AI Research Promotion Office

Agricultural Data Cooperation Infrastructure Promotion Office

Big Data

High-performance computer for AI

XX ORG Comprehensive database

Public server

Data Strategy Promotion Office

Providing data

Cutting-Edge Tech Modernizes Age-old Practice

**MUFG, Japan's Largest Bank
Deploys AI-based System
Capable of Digitizing over
300m Hanko (Chop)
- using Ripcord Technology**

2020年 7月 27日 16:01 · 2020年 7月 27日 16:01 更新

   B!





2016
**HADOOP
SUMMIT**



TASTE THE FEELING®

From a single droplet to a full bottle, our journey to Hadoop at Coca-Cola east Japan

October 27, 2016

Information Systems, Enterprise Architect
& Innovation project manager

Damien Contreras
ダミアン コントレラ

Coca-Cola East Japan

コカ・コーライーストジャパン株式会社

Vending Replenishment: The Business Case

HIGH Nbr. OF MACHINES

550,000 VM, On/Offline



Nbr. SKUs per VM

25 SKUs, Hot & Cold



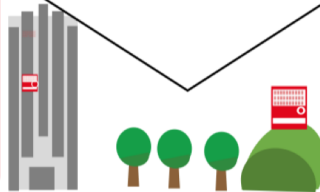
How to:

Reduce nbr. of visits
Optimize Truck stock
Avoid out of stocks



EXTERNAL FACTORS

(Weather, City data, Geo-Location, Events)

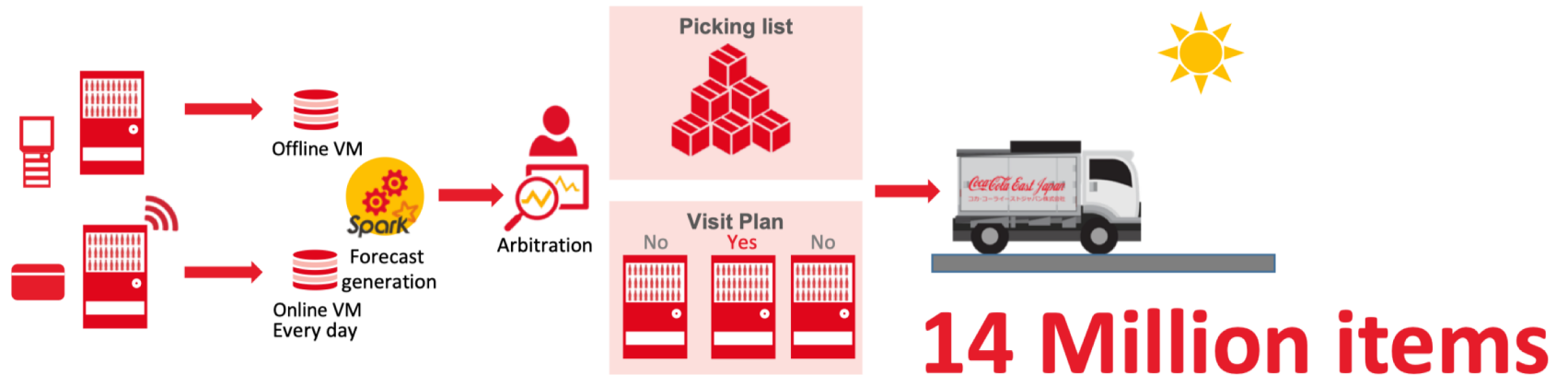


VENDING ROUTES

(Visit List per truck, Logistics dependence)



Vending replenishment forecast: The Project



Hadoop Has Delivered:

- Feed **5GB+** of new data everyday
- Process high volume of data (in-memory) **300GB+**
- Integrate from different data sources
- Generate more complicated forecast than legacy systems

The Challenge:

- Deployment in 3 months
- **1 ½ hour** to generate the forecast
- **+20%** of accuracy versus previous version
- **120 steps** in the program



END