

# Digital Transformation by Global ICT Infrastructure

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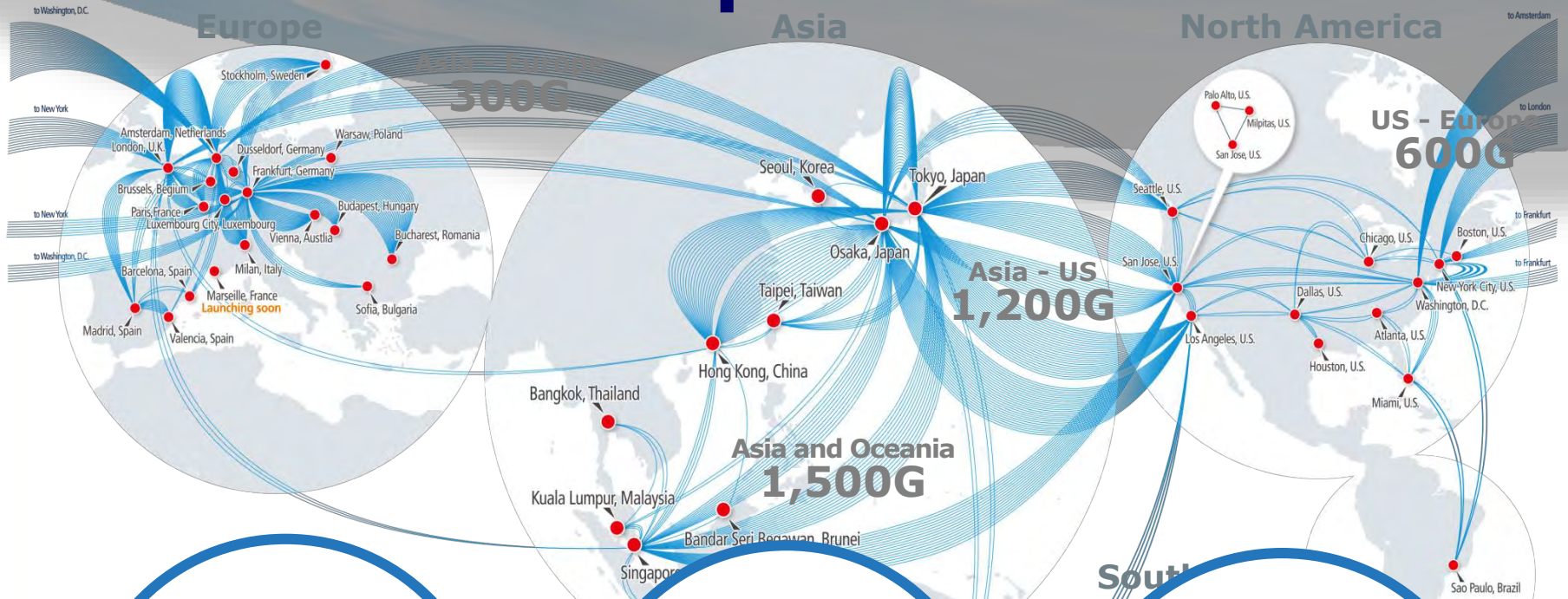


**SEAMLESS CLOUD  
FOR THE WORLD**  
Hosts **Enterprise**

# NTT Group



# NTT Group at a Glance



**#1**

in  
Data Center

**#2**

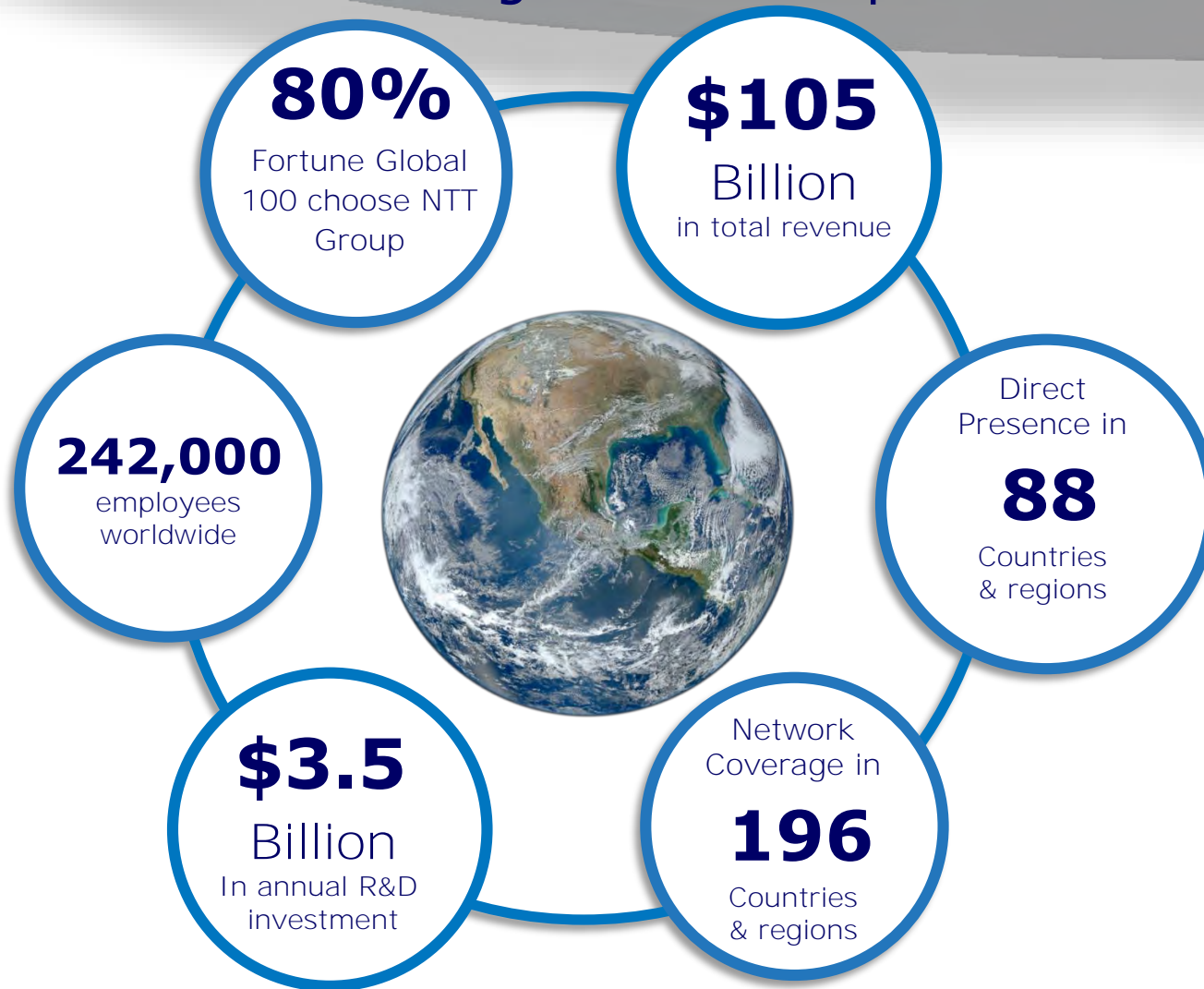
In Global IP  
Backbone

**Top 10**

In Marine  
Cable

# NTT Group

One of the world's largest ICT Companies (2014 Fortune Global 500)



# Customers Using Services Provided by NTT Com

## Japan

## Outside Japan

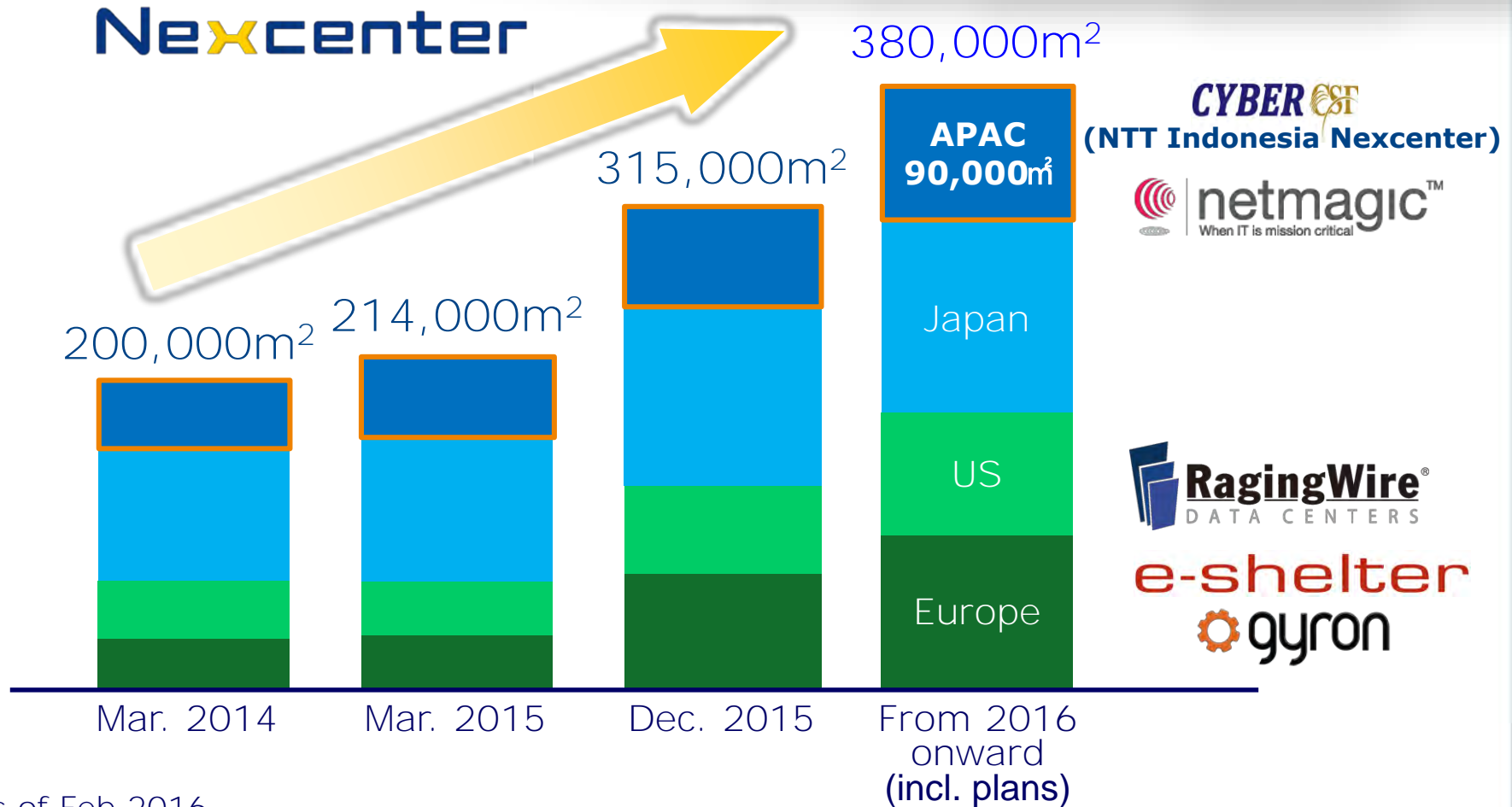


- 1. ICT Infrastructure:  
(Datacenter, Network, Cloud)**
- 2. IOT Service**
- 3. Security Service**

# **ICT Infrastructure (Datacenter, Network, Cloud)**

# Data Center: Nexcenter

- ◆ NTT Group has the world's largest data center space



\*As of Feb 2016



# Expansion of Nexcenter

APAC



India Mumbai 5  
October 2015



Thailand Bangkok 2  
December 2015



Hong Kong  
Financial FDC2  
December 2015

Japan



Tokyo No. 8  
March 2015



Osaka 5  
January 2016



UK  
Hemel Hempstead 3  
April 2016

US/Europe



US  
California Sacramento 3 (CA3)  
April 2015



US  
Virginia Ashburn 2 (VA2)  
April 2016



US  
Texas Dallas 1 (TX1)  
September 2016

# Thailand Bangkok 2 Data Center

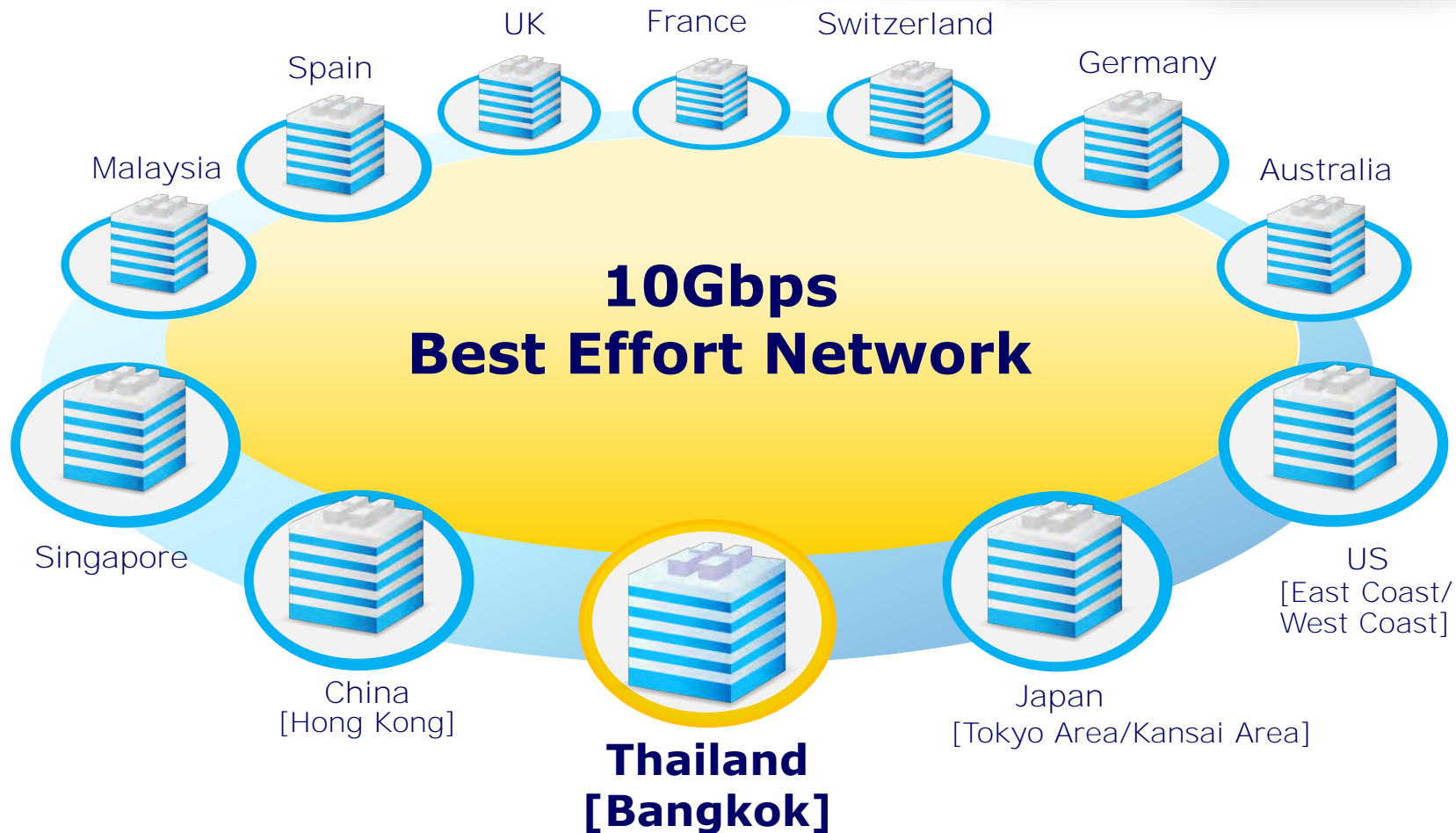
*The largest-scale Data Center  
in Thailand*

**1,400 racks      9.5MW**

- ◆ Safe location with low risk of flood
- ◆ Top-class reliability suited to financial institutions
- ◆ Fully equipped offices are suitable for BCP

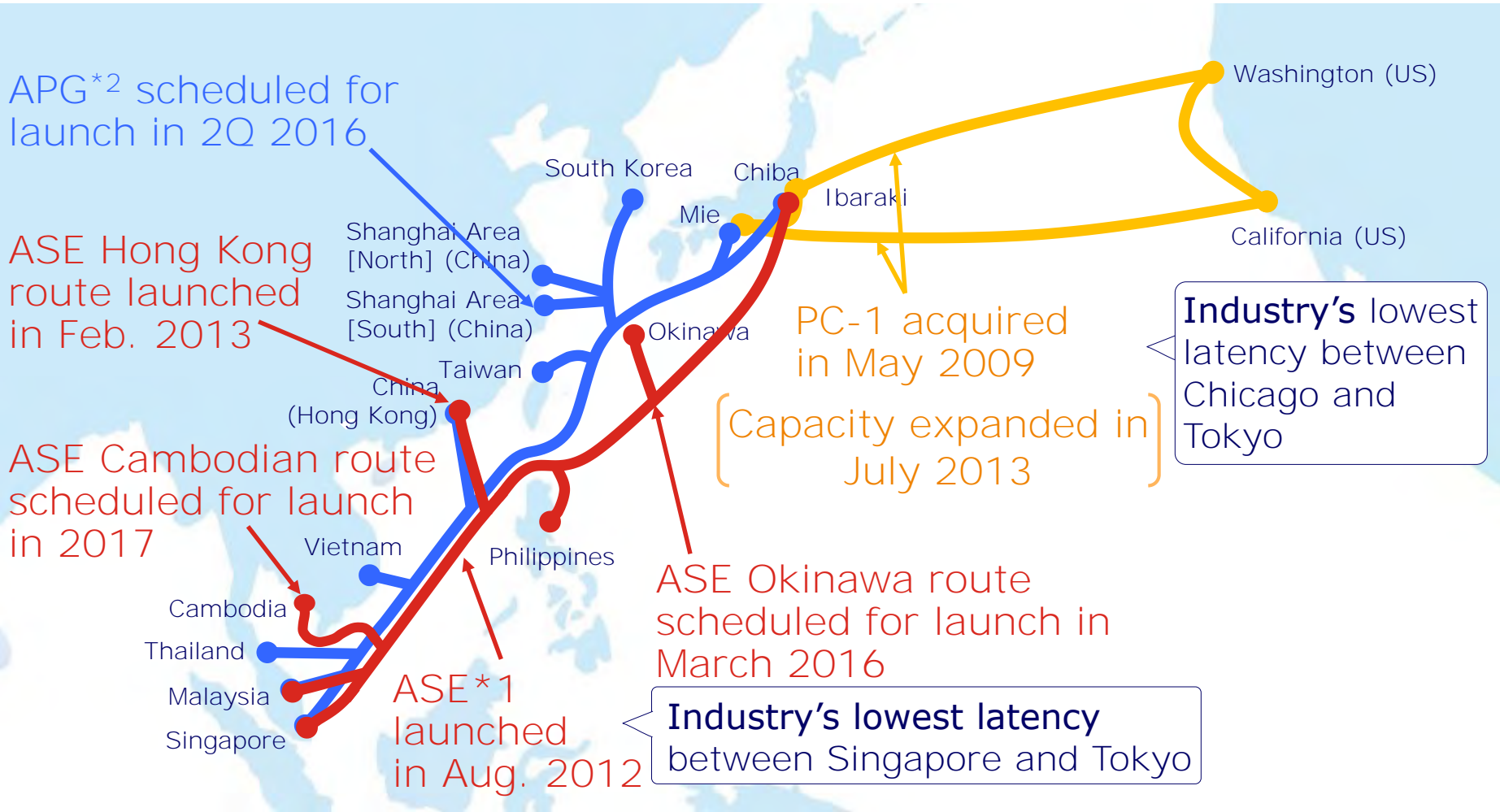
# Data Center Interconnectivity

- ◆ Connecting more than 30 data centers globally via 10Gbps closed network to support growing inter-system traffics



# Submarine Cables Systems

Connect major cities in Japan, APAC and US with industry's lowest latency



# Cloud: Enterprise Cloud

- ◆ Integrating ICT infrastructure for both traditional ICT and cloud-native ICT



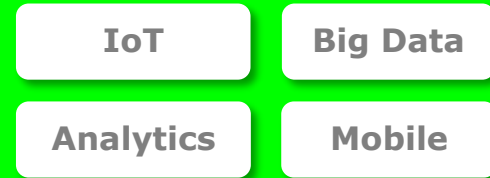
## Cloud-Enabled Traditional ICT

### Mission Critical Application



## Cloud Native ICT

### Digital Native Application



## Cloud Management Platform

## Enterprise Cloud



Hosted Private Cloud  
Bare Metal Server

Multi-Cloud for Enterprise

Colocation

Nexcenter

3<sup>rd</sup> party Cloud

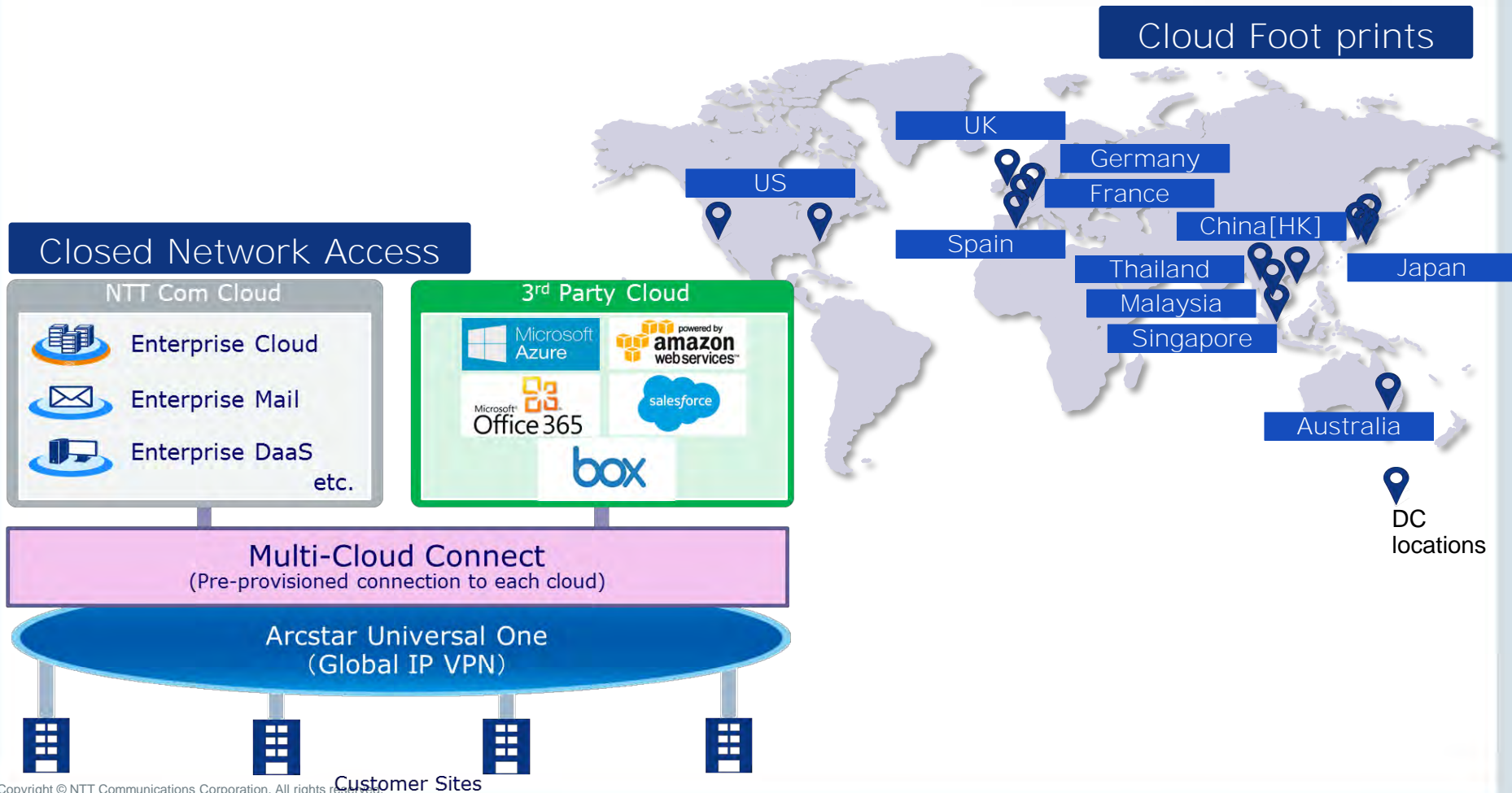


L2 Network



# Cloud Footprints and Secure Network Access

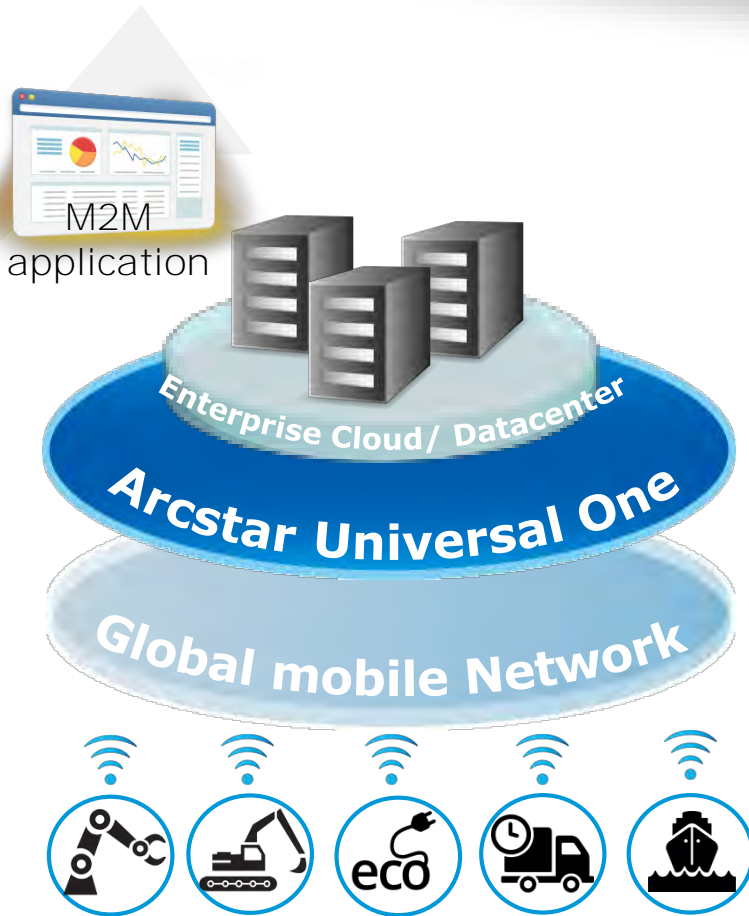
- ◆ Deployed in 14 locations, 11 countries
- ◆ Closed network (Global IP VPN) provides secure access to Cloud



# **IOT Service**

# IoT Platform

- ◆ Secure Global mobile network & Cloud Service support customers' M2M applications



Global Storage  
(140 regions including **Thailand**)



Global SIM  
(One SIM for all over the world)



Secure Network  
(End-End Closed NW)



Cloud Seamless  
(Integrated with Enterprise Cloud)



# IoT Field Test for Obayashi Corporation, Japan



大林組 ×



**Safety Management System**  
(Developed by NTT Com)

**Wearable sensor  
"hitoe"**  
(Developed by NTT&Toray)



**Arcstar Universal One**  
**Global Mobile Network**

- Monitor status of workers
- Improve safety at construction sites etc.

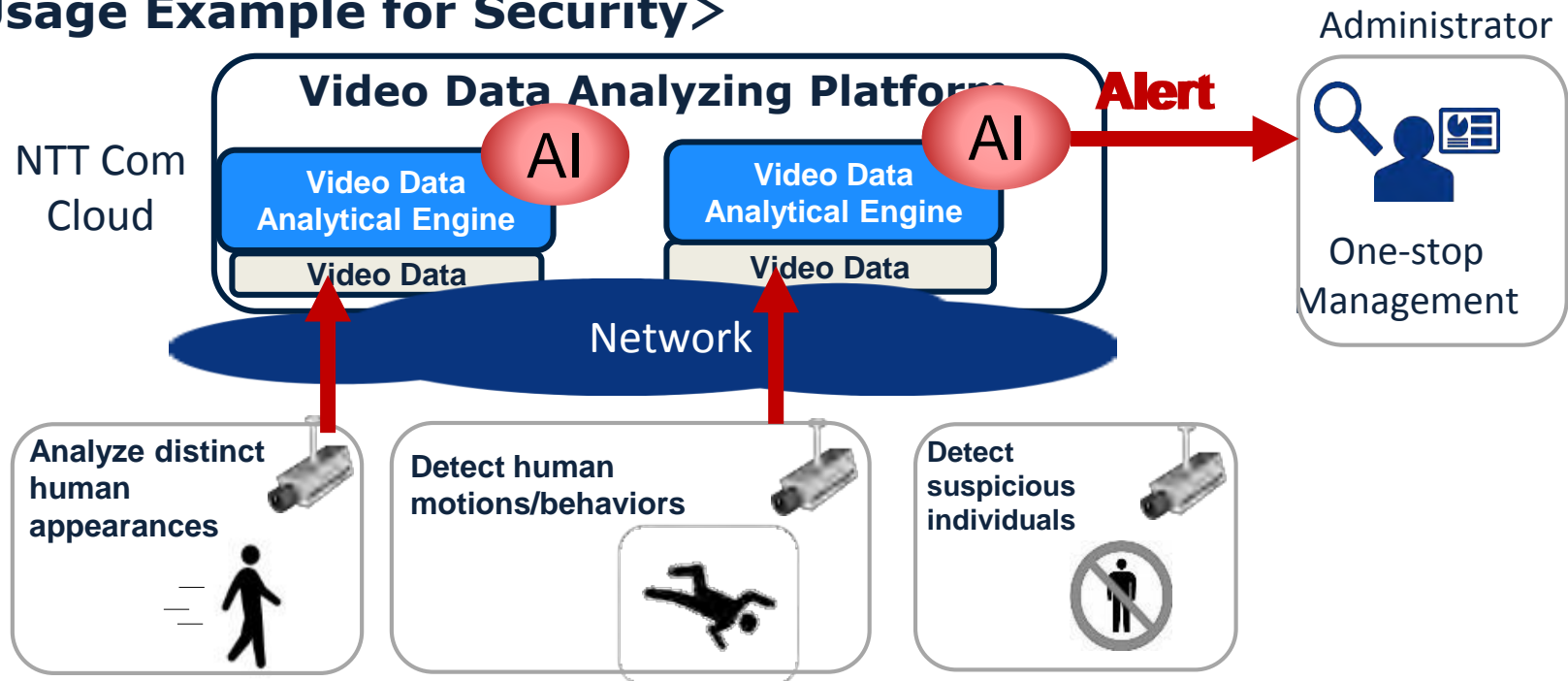


\* "hitoe" is a functional fibre material that can acquire heart rate and cardiac potential data just by wearing, whose registered trademark is owned by NTT Laboratory and Toray Industries, Inc.

# New AI Technology Identifies Specific Human Motions

New video analyzing platform as a service that utilizes Time-series Deep Learning (AI) to accurately analyze video data.

## <Usage Example for Security>

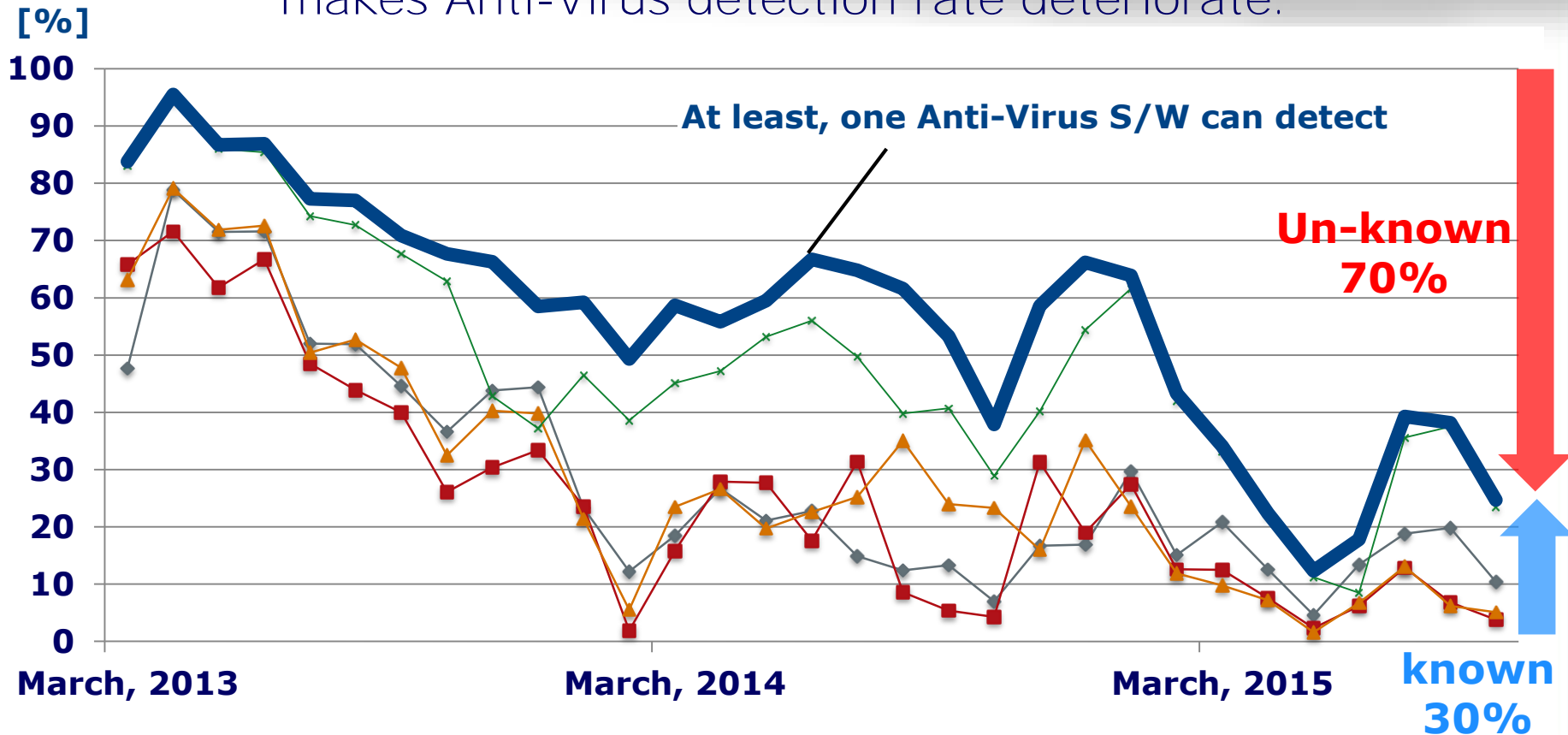


- ✓ Identification of defects/failures in plants,
- ✓ Understanding customers' purchase behaviors at stores
- ✓ Analyzing sports performance

# Security Service

# Limitation of Anti-Virus protection

- ◆ Advancing method of creating malware makes Anti-Virus detection rate deteriorate.



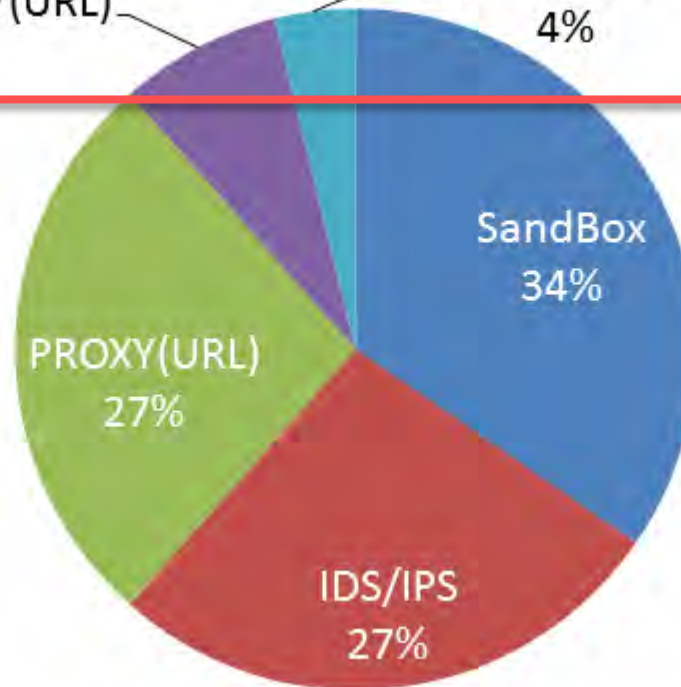
\*Data from Anti-Virus scan testing for Email 20million/Month in NTT Com GROC

# Automated security system cannot detect all of risks

## Invisible risks

IDS/IPS×PROXY(URL) 8%      IDS/IPS×SandBox 4%

Correlation analysis  
by SEIM and Human  
analyst can find



- ◆ Human enriched advanced analysis is required to mitigate the risks

# Number of Security Detection

\*Data from  
average number in  
NTT Com GROC

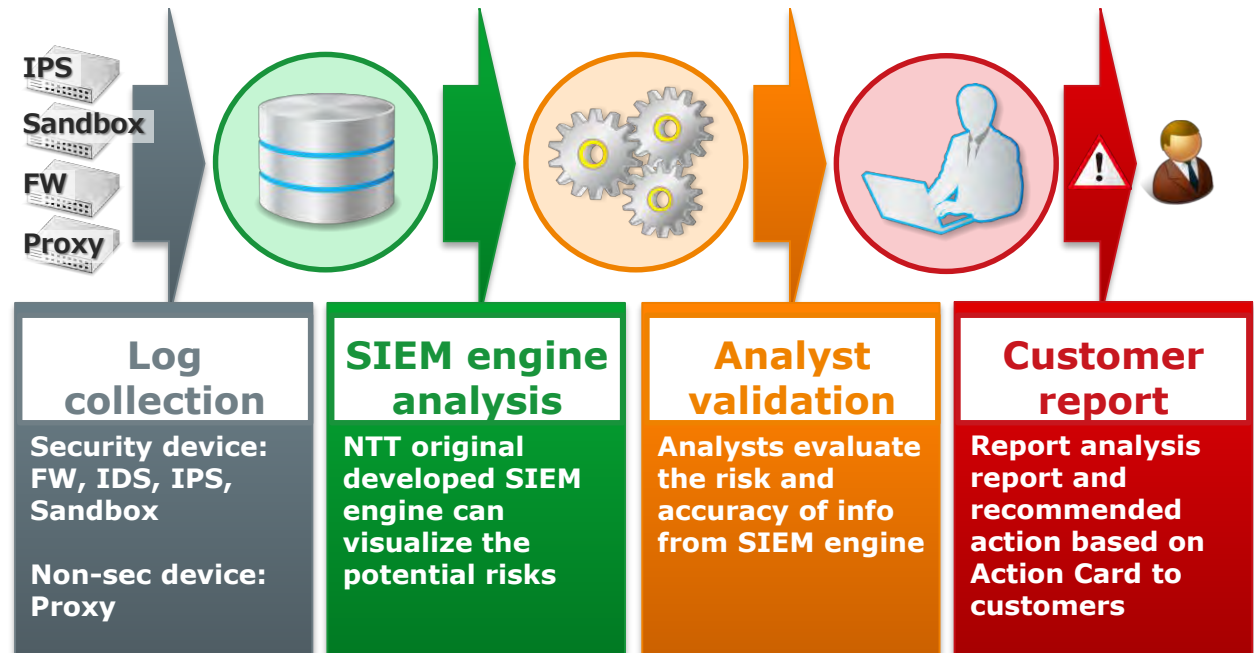
Number of security detections in a  
company per month by security systems

**12,000,000**

Number of security detection  
report by analysts

**10**

Human Enriched  
Advanced Analysis



# 'WideAngle' Managed Security Service

- ◆ Minimize security risks through in-house developed security operation platform and monitoring by risk analysts



# Global Foot print of Wide Angle

- ◆ Global Risk Operation Center(GROC) has 7 location world-wide

- 🗄️ SIEM Engine location
- 🔴 Security Consultant location
- ★ Global Risk Operation Center

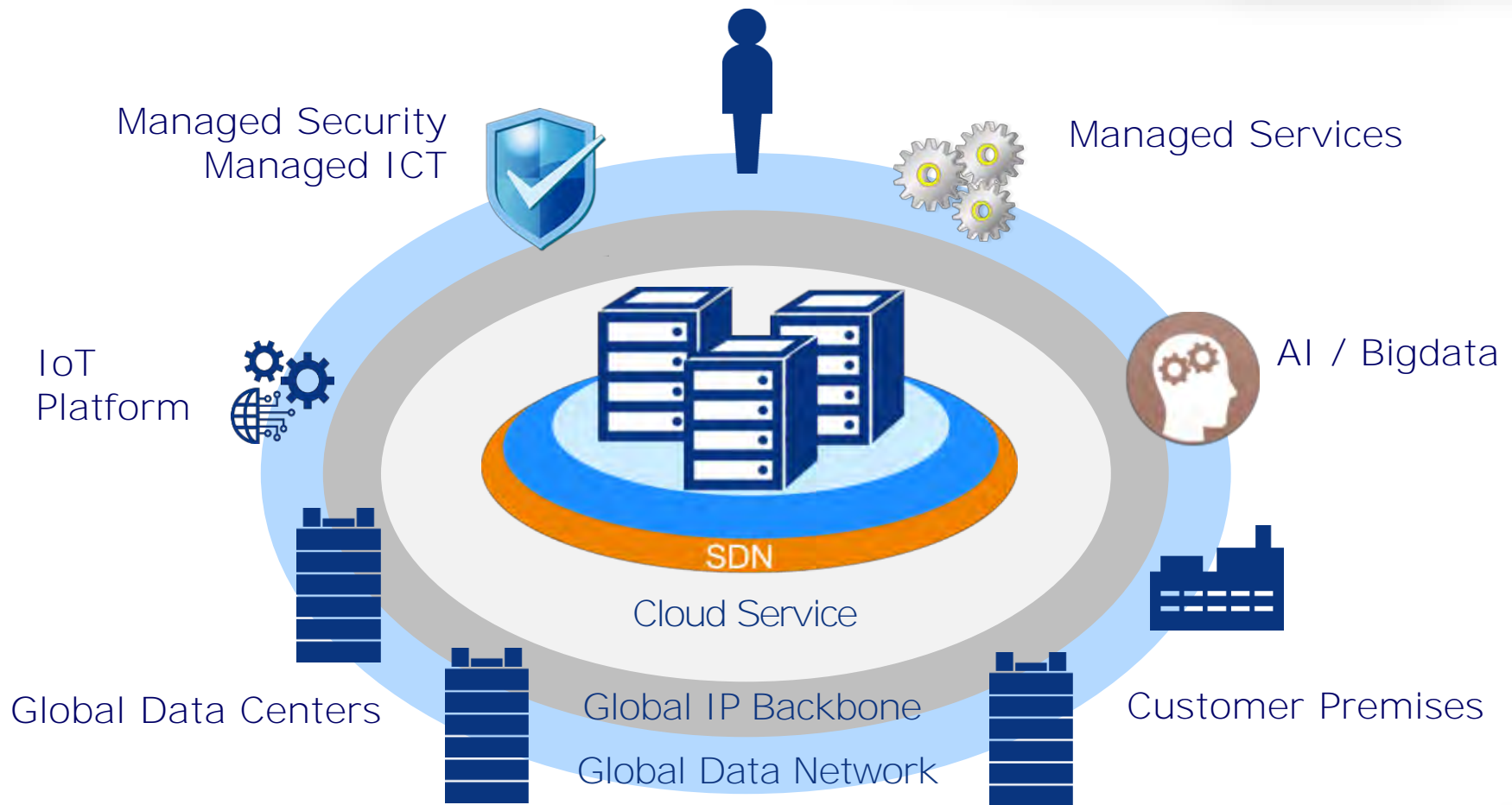


- 450 Security Specialists in 14 countries.
- Number of Managed Security Devices : 11,000 devices
- Number of Risk Consulting Service : 8,000 deals/ **25 year's activity**



# NTT Com Infrastructure Services

- ◆ Enhance customers' **ICT environment** and business by providing full-stack of services globally



Thank you



**Global ICT Partner**  
Innovative. Reliable. Seamless.