

OCPを振り返る

(Journey of OCP)

2019年6月27日

藤見 和英 (Kazuhide Fujimi) / Server Infra. Engineer



Purpose for Presentation

OCP導入の雰囲気を知ってもらおう

(Get the image of OCP adoption)

(+ 2 Video)

About Speaker

Speaker Intro.



藤見 和英 (Kazuhide Fujimi)



since **2010**



since **2010**

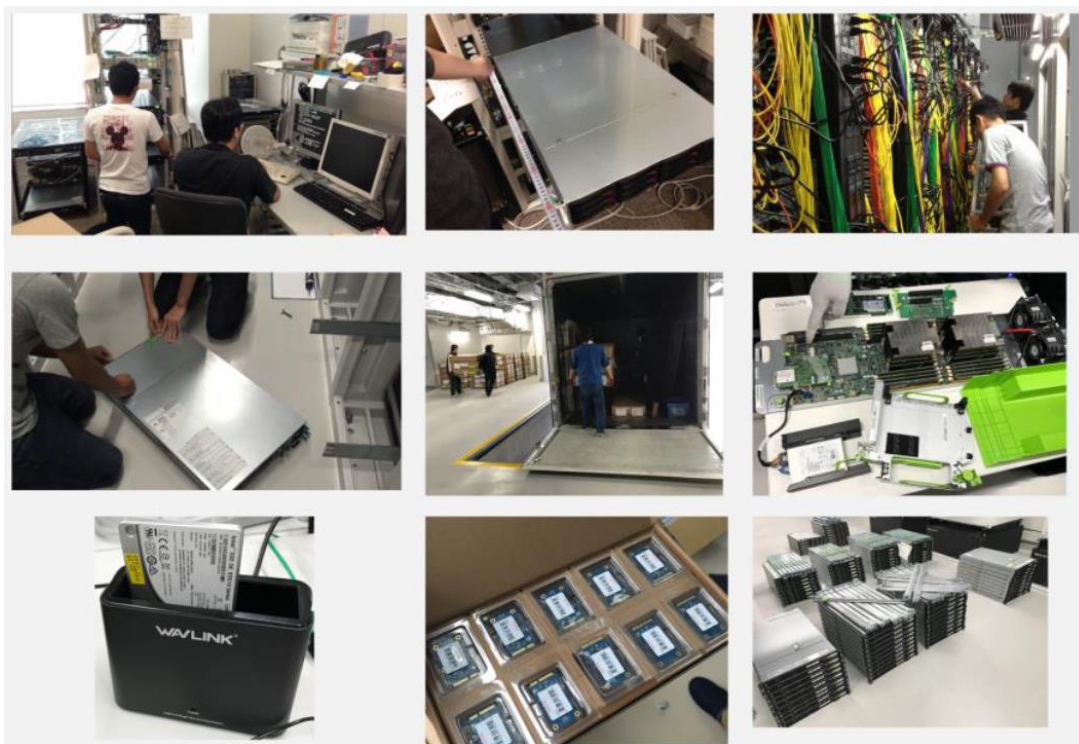


since **2016**

Speaker Intro.

仕事 (Responsibility)

Infra. Work (80%)



OCP Presence Activity (20%)



Agenda

Agenda

- **Introduction**
 - About Company
 - About Infra.
- **振り返り (Journey of OCP)**
 - これまでのOCP取り組み (Effort of OCP)
 - コストパフォーマンス (Cost Performance)
 - 運用の実際 (Operation for OCP)
- **まとめ (Conclusion)**
 - これからのOCP取り組み (Next step for OCP)

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About Company

About Company



1. Characteristics of Yahoo! JAPAN

Over 100 various services and high quality data



*As of December 2018



Tokyo - JP

Over 6,000 Employees

Over 20 years Company History

(Founded in January 31, 1996)

OPEN

About Company

2. Characteristics of Yahoo! JAPAN

one of the largest user volume in Japan



PC users



Smartphone users

Yahoo! JAPAN, 24731

Google, 17564

YouTube, 13353

Amazon, 11823

Rakuten, 11385

Twitter, 6630

livedoor, 6344

Ameba, 5996

Facebook, 5956

Naver Japan, 4708

(in thousands)

Google, 66081

Yahoo! JAPAN, 60499

LINE, 58601

YouTube, 53684

Facebook, 47166

Rakuten, 45171

Amazon, 39386

Twitter, 39182

Instagram, 32207

Hatena, 27074

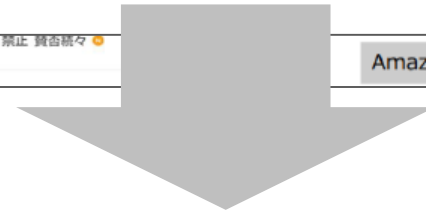
(in thousands)

*Source: "Nielsen NetView" PC access from home or office (excluding internet apps), "Nielsen Mobile NetView" Smartphone access (including apps). Average of April to September 2018 summarized by brand level. Calculated by Yahoo! JAPAN from "Nielsen NetView Custom Data feed".



About Company

Top-Class CSP



Large-Scale Infra.

Amazon, 11823

YouTube, 53684

About Infra. Overview

About Infra. Overview

Server and Rack Infra. Overview



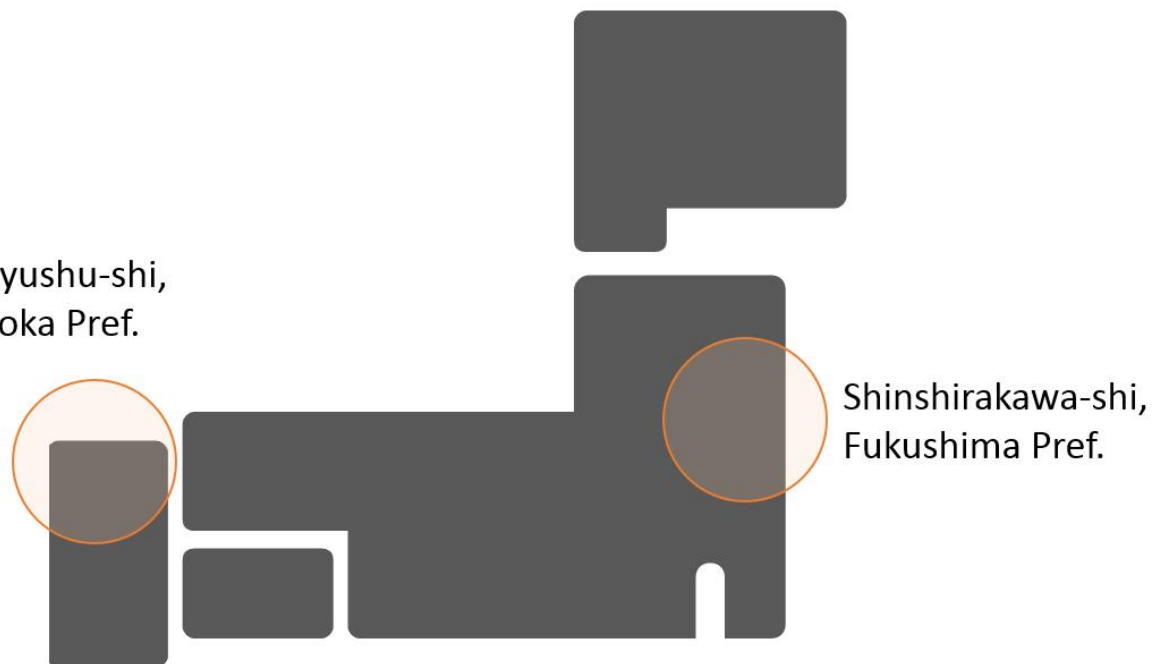
- Physical Server almost **80,000**
- EIA19 : >90% / OCP(v1,v2) : <10%



- Rack > **5,000**
- EIA19 : >95% / OCP(v1,v2) : <5%

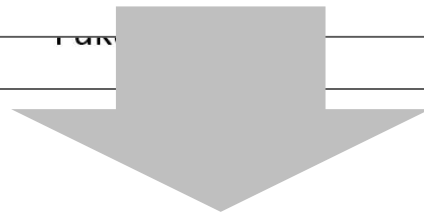
Yahoo Japan DataCenter Location

Kitakyushu-shi,
Fukuoka Pref.

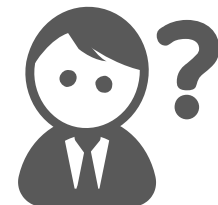


About Infra. Overview

Large-Scale Infra.



Who is Management/Operation? (How many?)



- EIA19 : >95% / OCP(v1,v2) : <5%

About Infra. Organization

About Infra. Organization

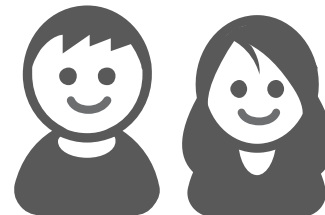
Management and Operation for Production Infra.



Site Operation Division
Vice President

100+

Infra. Engineer



About Infra. Organization



Site Operation Division
Vice President

100+

Infra. Engineer

Infrastructure Tech1
Dept. Director

Infrastructure Tech2
Dept. Director

Infrastructure Tech3
Dept. Director

Infrastructure Tech4
Dept. Director

Operating System
Configuration Tools

Server
Storage
DataCenter Operation

L2/L3 Network
BackBone
Network Operation

Platform / CDN
Development
Operation



About Infra. Organization

調達 (Procurement)



Financial Side

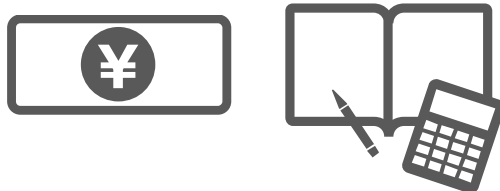
About Infra. Organization

調達 (Procurement)



Technical Side

Financial Side



Approach
for
adoption

OCP Vendor



Key Component Supplier

SAMSUNG



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Effort of OCP

これまでのOCP取り組み (Effort of OCP)

Overview of OCP at Yahoo! JAPAN



Total Server Node : Over **4,000**
node

2016 ● Adoption Leopard (OCPv1)

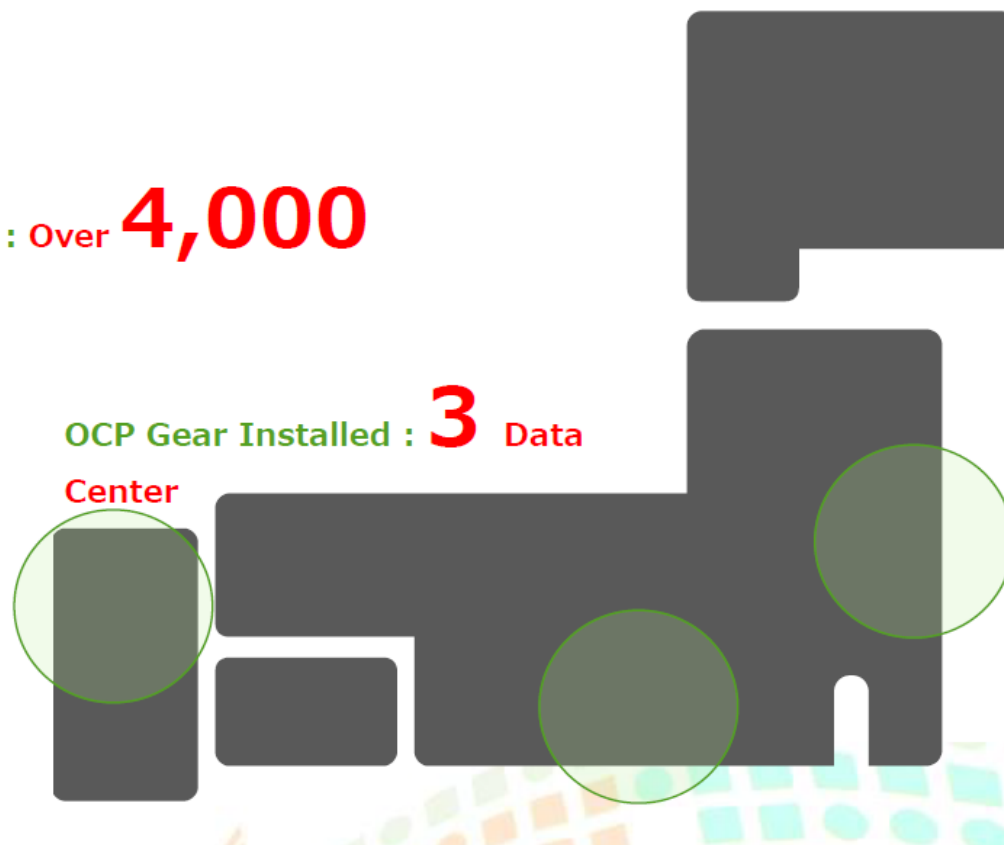
2017 ● Adoption Leopard (OCPv2)

2018 ● Adoption Leopard/TiogaPass (OCPv2)

2019 ● Adoption for TiogaPass (OCPv2)
- Planning to ESA

OCP experience: **4** year

OCP Gear Installed : **3** Data
Center



これまでのOCP取り組み (Effort of OCP)

Number of Delivery for OCP : >10

Level 10 (L10) is component level delivery style with the work of assembly in DC.



Level 11 (L11) is rack level delivery style without the work of assembly in DC.

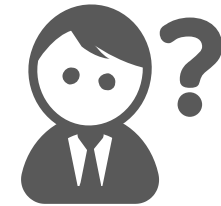


14

これまでのOCP取り組み (Effort of OCP)

Number of Delivery for OCP : >10

Level 11



Level 11 (L11) is rack level delivery style without the work of assembly in DC.



14

Video No1

TBA

Factory (Taiwan)



L11 works (Tokyo)



Data Center(Shinshirakawa)

Cost Performance

(Server Unit Price)

Cost Performance

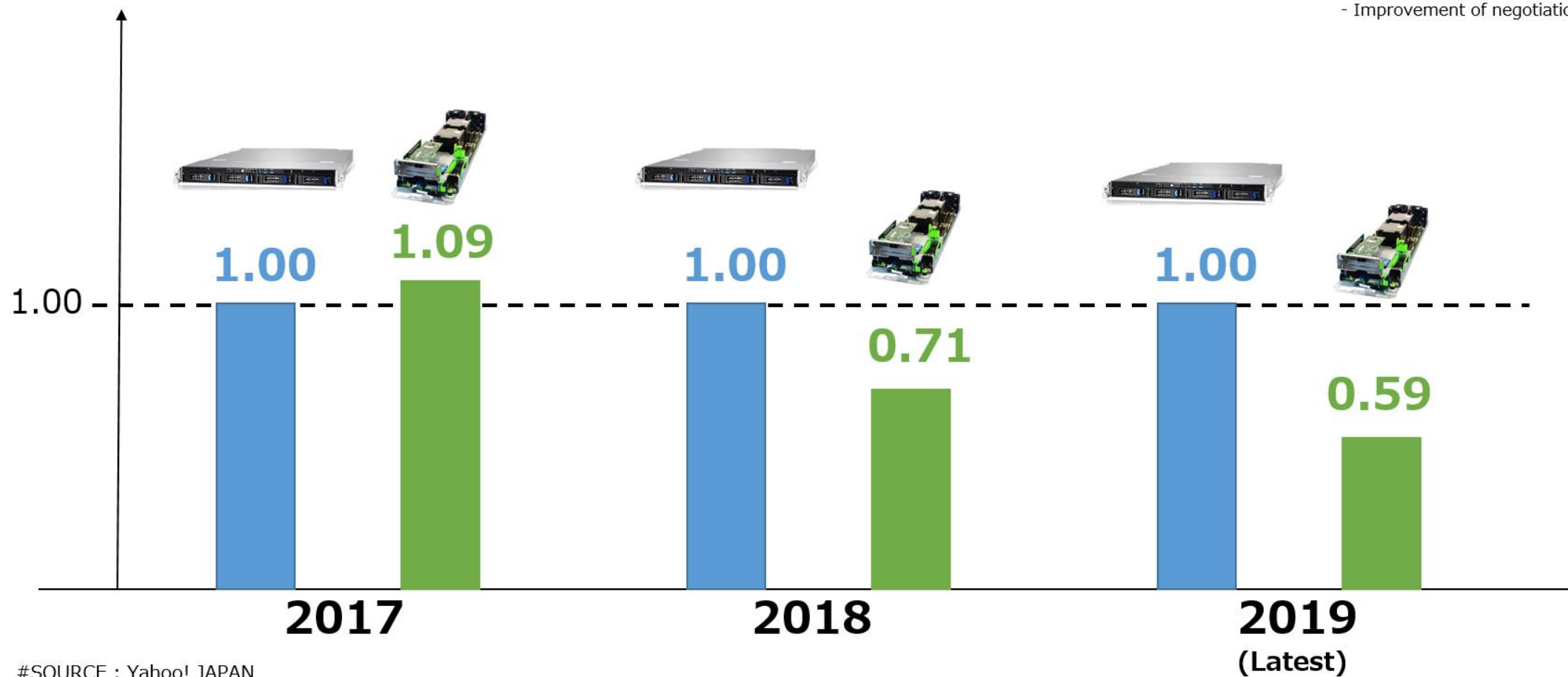
Server Unit Price

Price Scale
(Based on EIA19 as 1.00)



Price Tips

- Mature OCP market
- Optimization of cost structure
- Improvement of negotiation



#SOURCE : Yahoo! JAPAN

Cost Performance

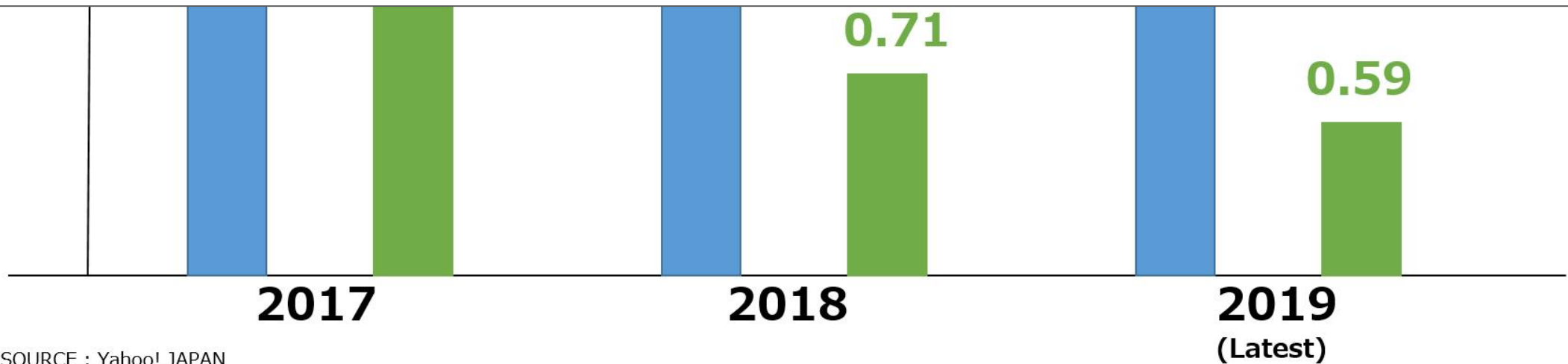
Server Unit Price

Price Scale



Price Trend

41% better price



#SOURCE : Yahoo! JAPAN

Cost Performance

(Rack Cost = L11)

Rack Cost ?

Level 11 (L11) is rack level delivery style without the work of assembly in DC.



14

(+ Server Unit Cost)



VS

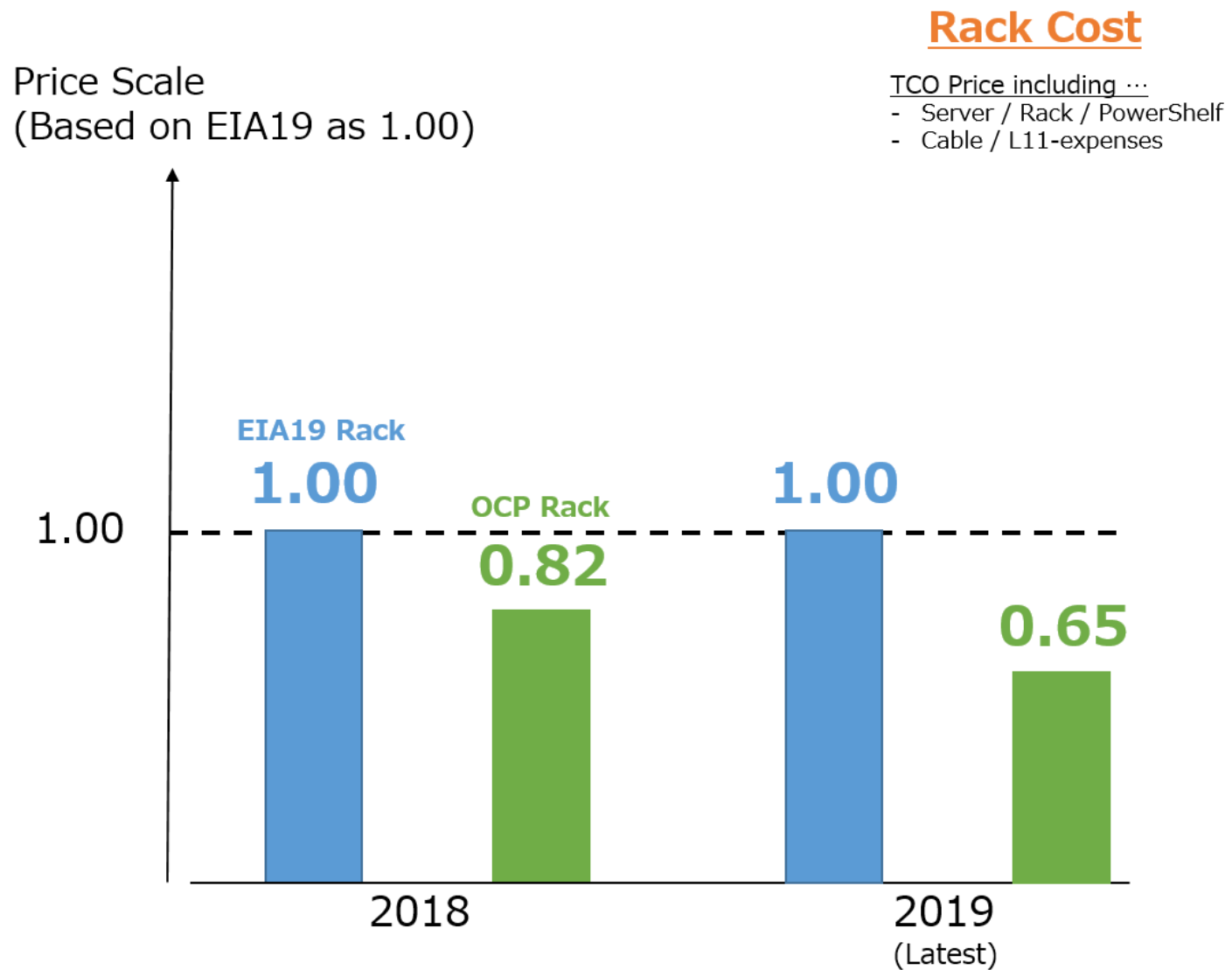


(POC)



No Including Network

Cost Performance



Cost Performance

Rack Cost

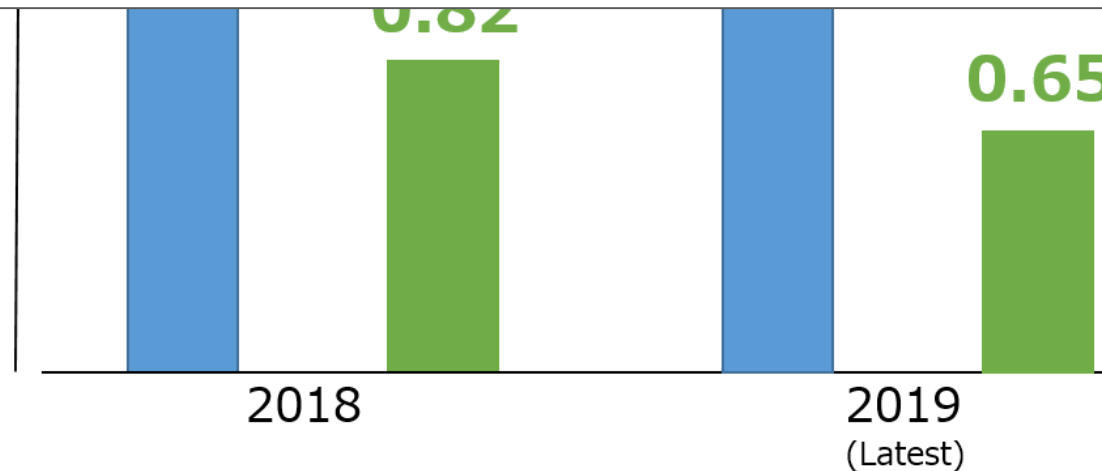
Price Scale

(Base Unit: 1000000 JPY)

TCO Price including ...

- Server / Rack / PowerShelf

35% better price

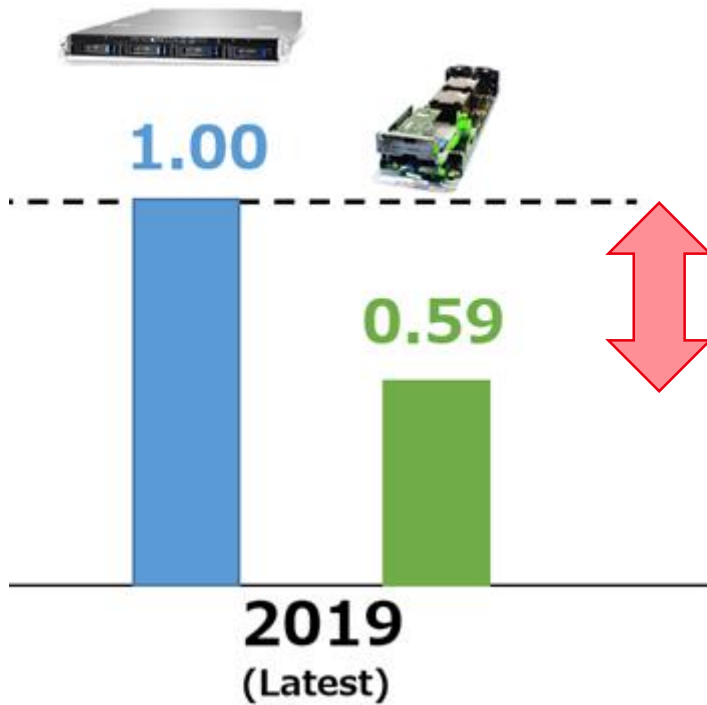


Breakdown

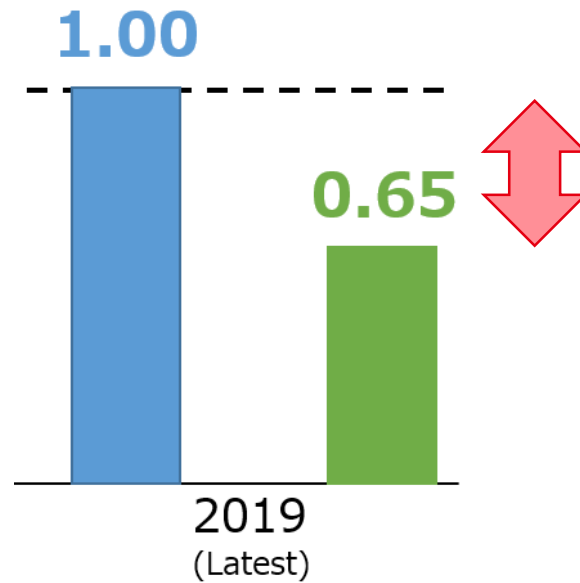
(FY2019 Cost Performance)

Cost Performance

Server Unit



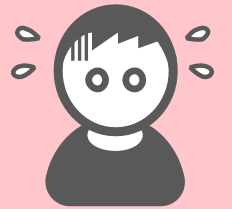
Rack Cost



GAP

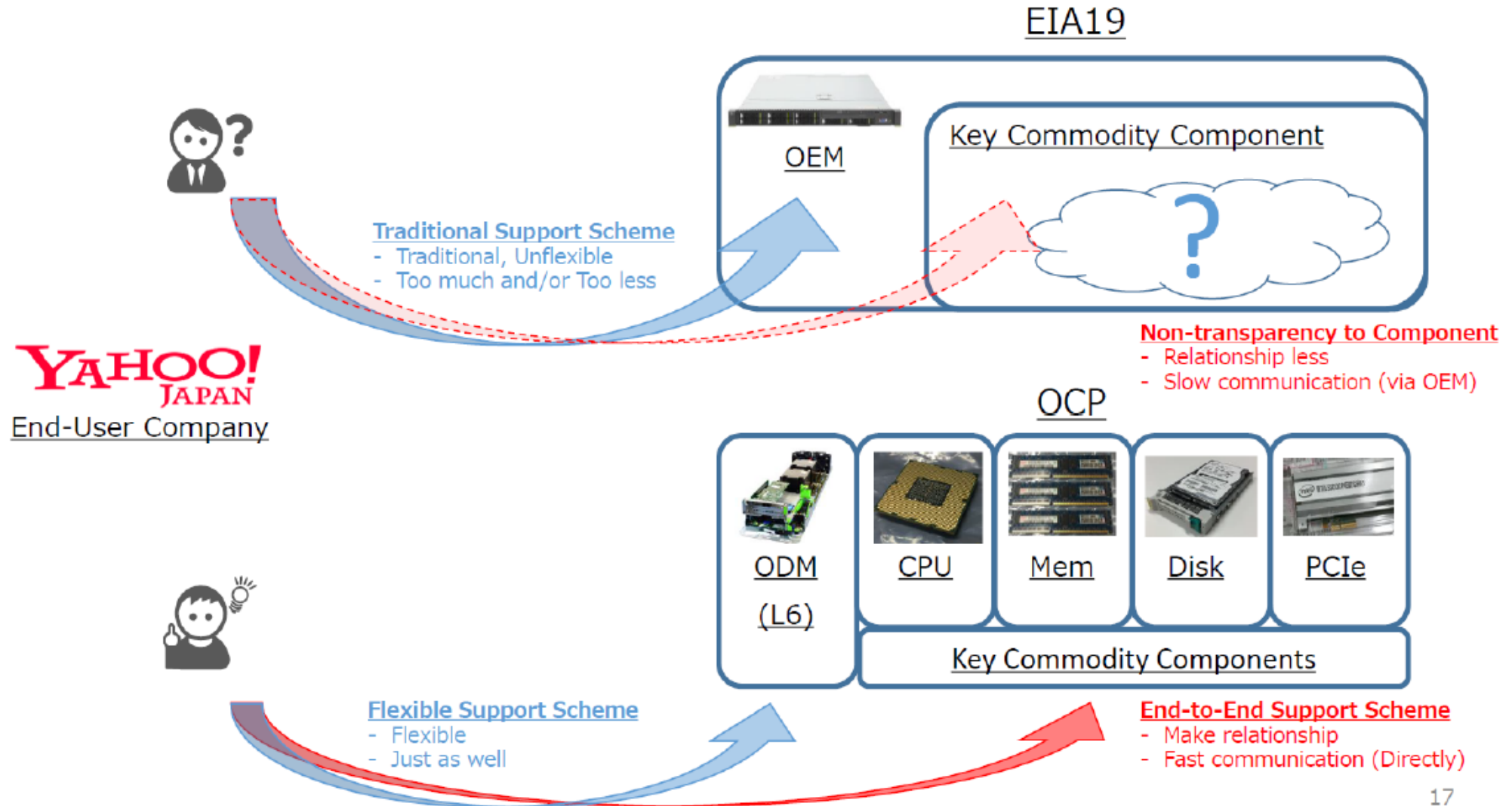
- PowerShelf
- OpenRack

Cost expensive...



Why(How) is Cost Performance?

Why(How) is Cost Performance?



Operation for OCP

Operation for OCP



Delivery



Rack Front



Rack Rear



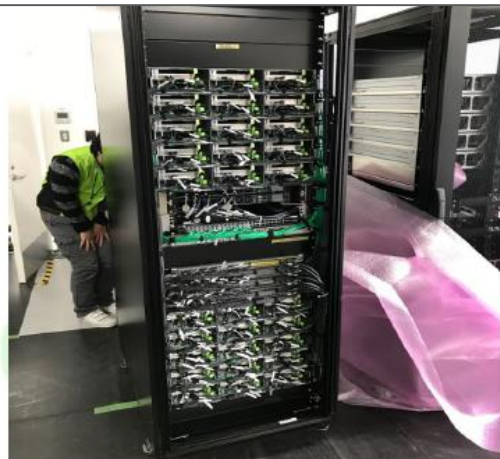
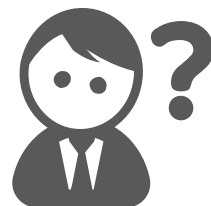
Operation



Operation for OCP



How to operate in actual?



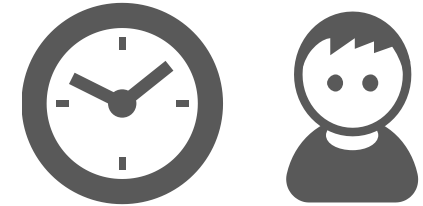
Video No2

TBA

Node Un-racking



Node Racking



Monitor output

(個人的な)良い点 / Benefit in my opinion



How about OPEX?

How about OPEX?

OPEX

- **Power Consumption**
- **Air Conditioning**



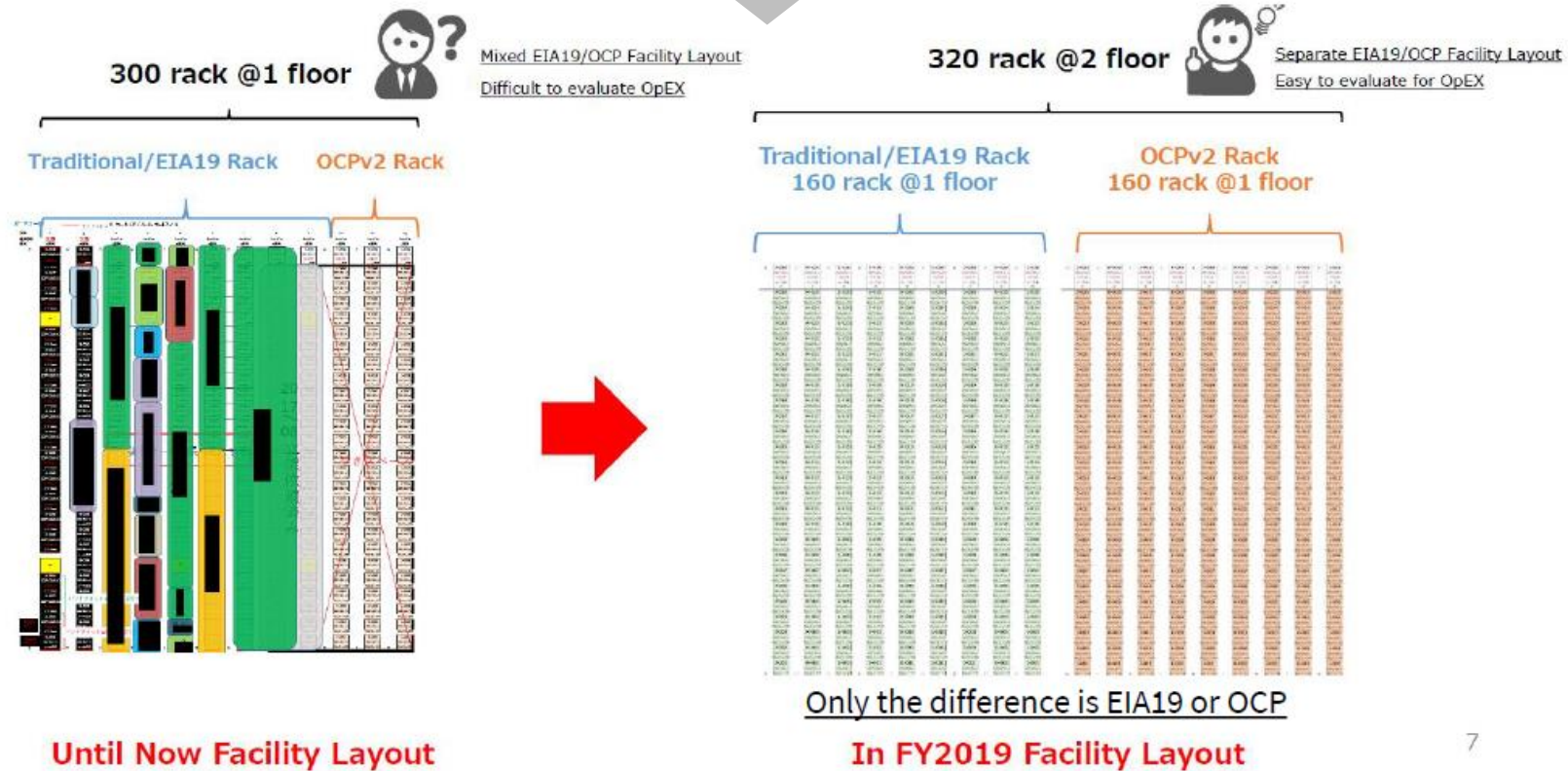
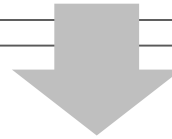
How?

- **Efficiency**
- **Cost Impact**



How about OPEX?

No evaluation



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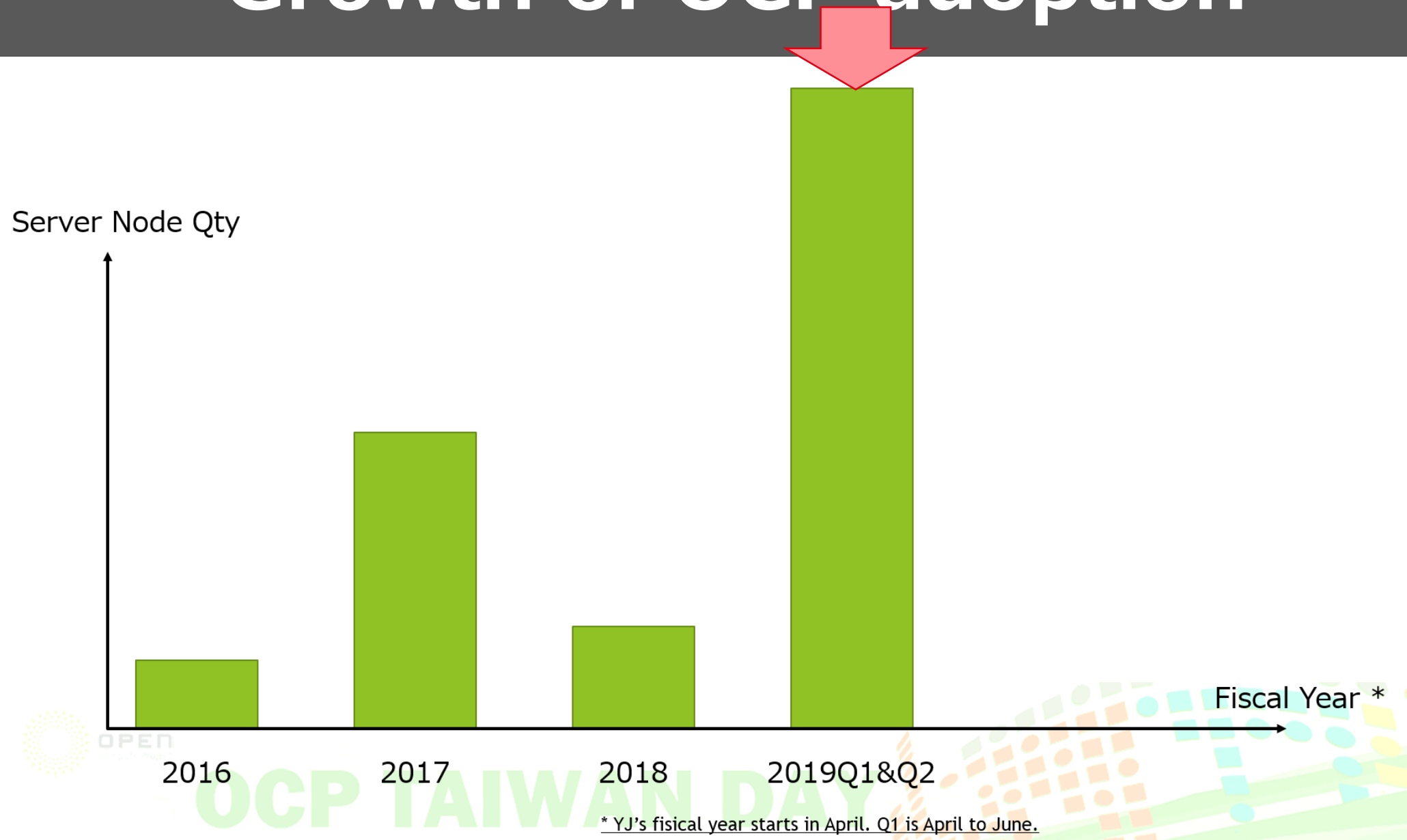
Next Step for OCP



OCP拡大 (More expanding)

- Cost Performance
- Can Operate/Install

Growth of OCP adoption



All adoption is OCP?

=> No

Why?

ハードルがある (Barriers)

Lead Time

(Server Node)

(+ PowerShlef)

Barriers(LeadTime)

#SOURCE: Yahoo! JAPAN

PO Date

Delivery Date



1.0 - 2.0 Month

- LT is advantageous. Because of the OEM is very commodity in JP market.
- Distribution volume is large, Inventory is large with each L6/Key Components.
- OEM is delivered as L10. Rack, Networks and Others is separate delivery.



2.0 - 3.0 Month

(+PowerShelf also)



Delivery at YJ! DC

Space



No enough space for installing OCP Rack
=> **Design for Standard Rack**

Barriers(Space)



Can install OCP with ESA for Standard Rack

Barriers(Space)



Concern ...



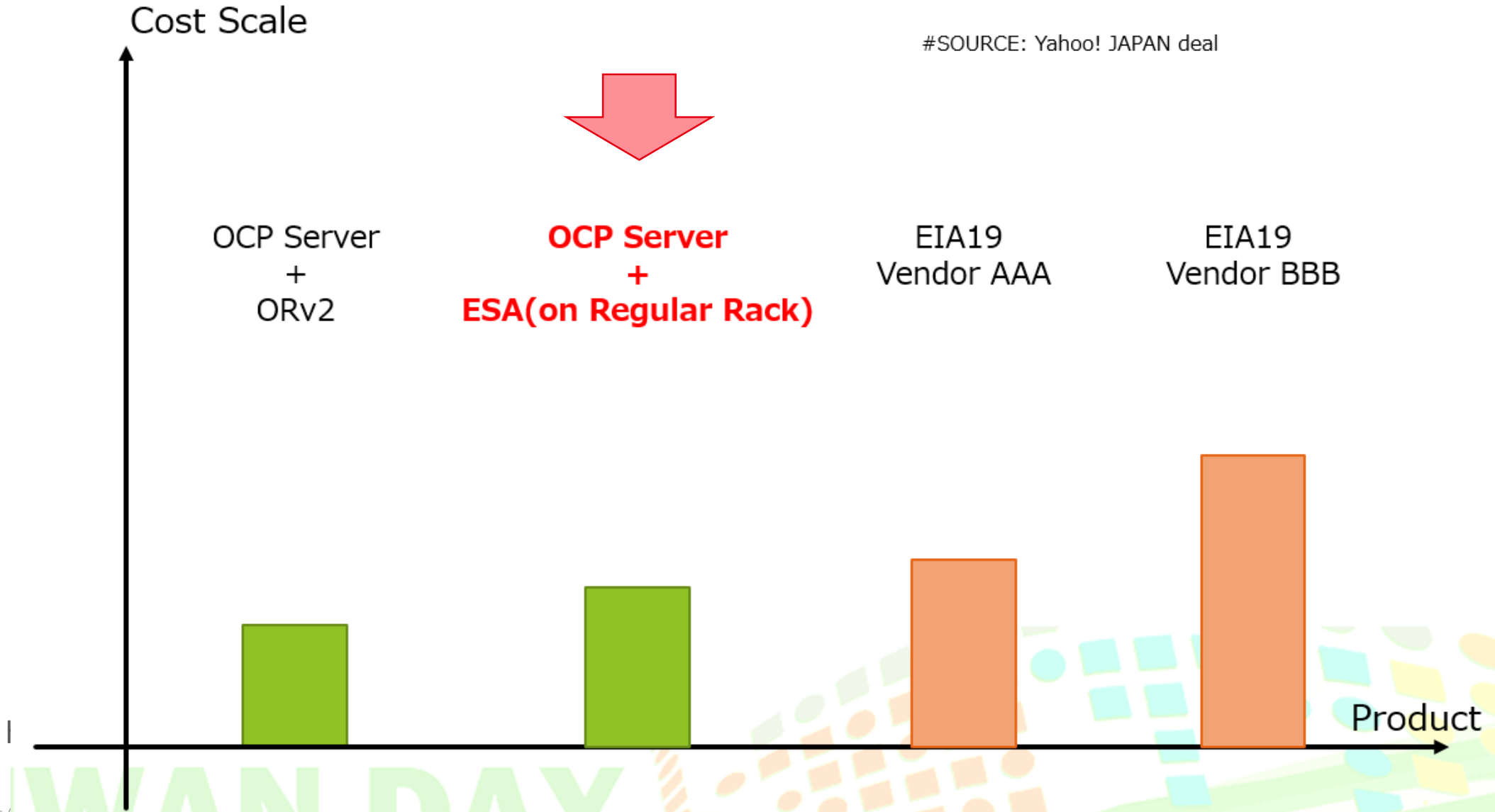
Cost of ESA



MITAC  **MCT**

<https://www.opencompute.org/products/267/mitac-esa-v1-rail-kit>

Barriers(Space)



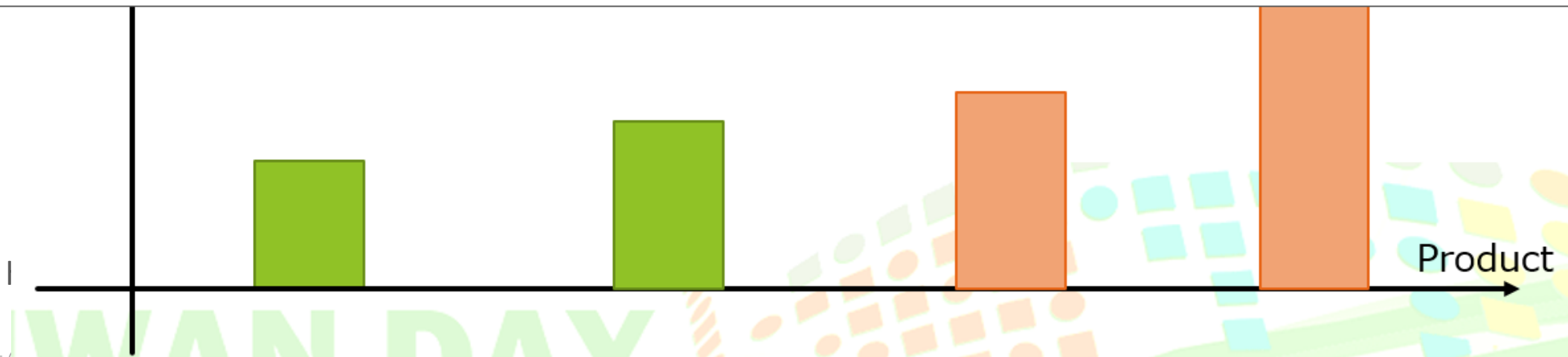
Barriers(Space)

Cost Scale

#SOURCE: Yahoo! JAPAN deal




Plan to adopt ≐ 20 in August



Conclusion

Conclusion

- 大規模にOCP導入をしている
 - 4Year
 - Node over 4,000
- 高コストパフォーマンス(High Cost Performance)
 - Server good price (41%) 
 - L11 Rack Cost (35%)
 - However... Rack/PowerShelf = Cost expensive 
- 納品/運用も可能(Can install and operate)
- 今後のOCP
 - 拡大していく(Expanding)
 - ハードルもあり(Barriers) => Lead Time and Space (ESA)

EOP

(Expecting of YJ! OCP activity)