



Concepts and Value of Cloud Services



Foreword

- This chapter introduces the concepts and value of cloud services and the HUAWEI CLOUD development strategy.



Objectives

- In this course, you will learn about:
 - Evolution of cloud computing
 - Concepts, evolution, categories, and value of cloud services
 - Application of cloud services
 - HUAWEI CLOUD development strategy

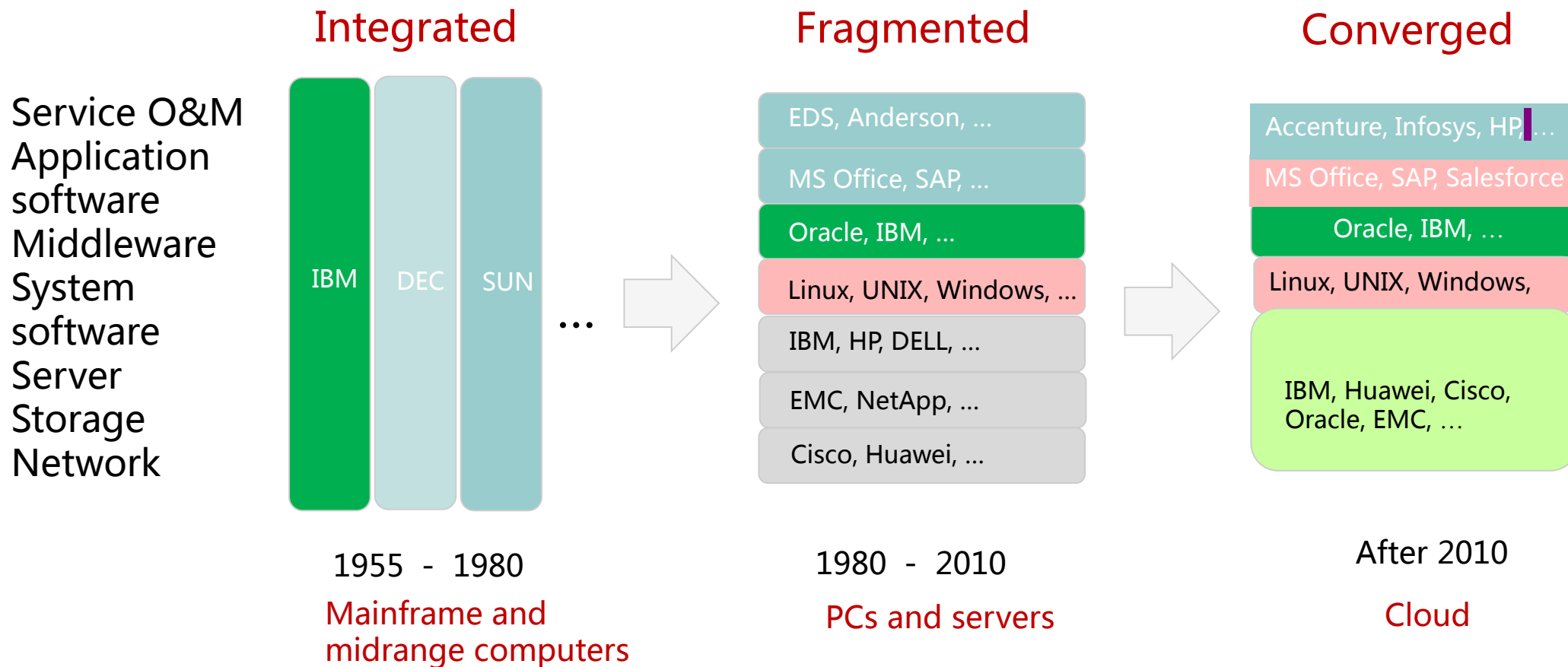


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Evolution of the Enterprise IT Architecture





Pain Points of Current Enterprise IT Infrastructure

Slow Business Launch and Complicated Lifecycle Management



Hardware purchase



Software installation



Service commissioning



Weeks

Time consumption

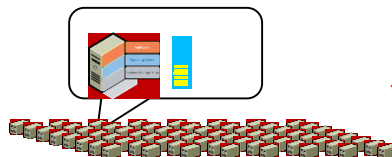
Hardware and software are procured separately, and service deployment is slow.



Hours or days

High TCO

Resource utilization

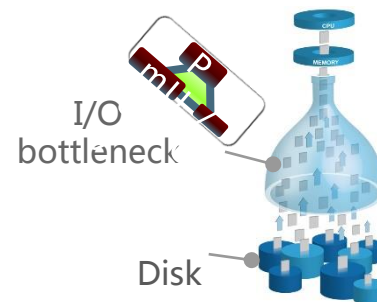


< 30%

Low server utilization, expensive external storage, and low power efficiency

Key Application Performance Constrained by I/O Bottleneck

I/O bottleneck

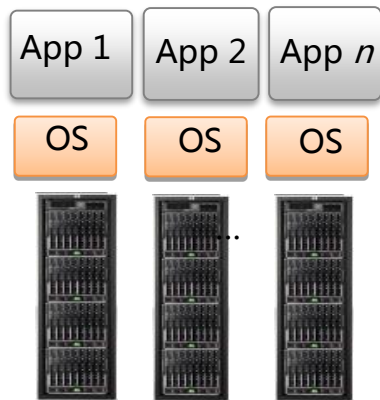




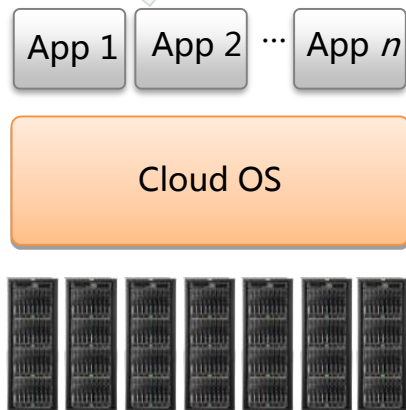
Convergence and Restructuring, Transforming Enterprise IT Infrastructure

Service applications
solely occupying the
host

Cloud computers using
hardware of multiple
vendors



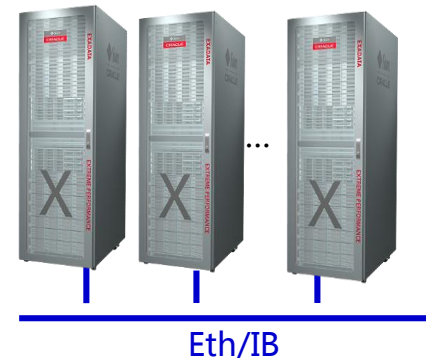
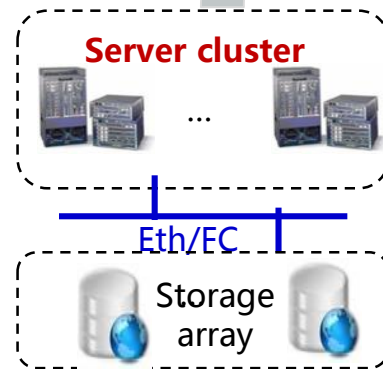
Midrange/server



Cloud infrastructure
resource pool

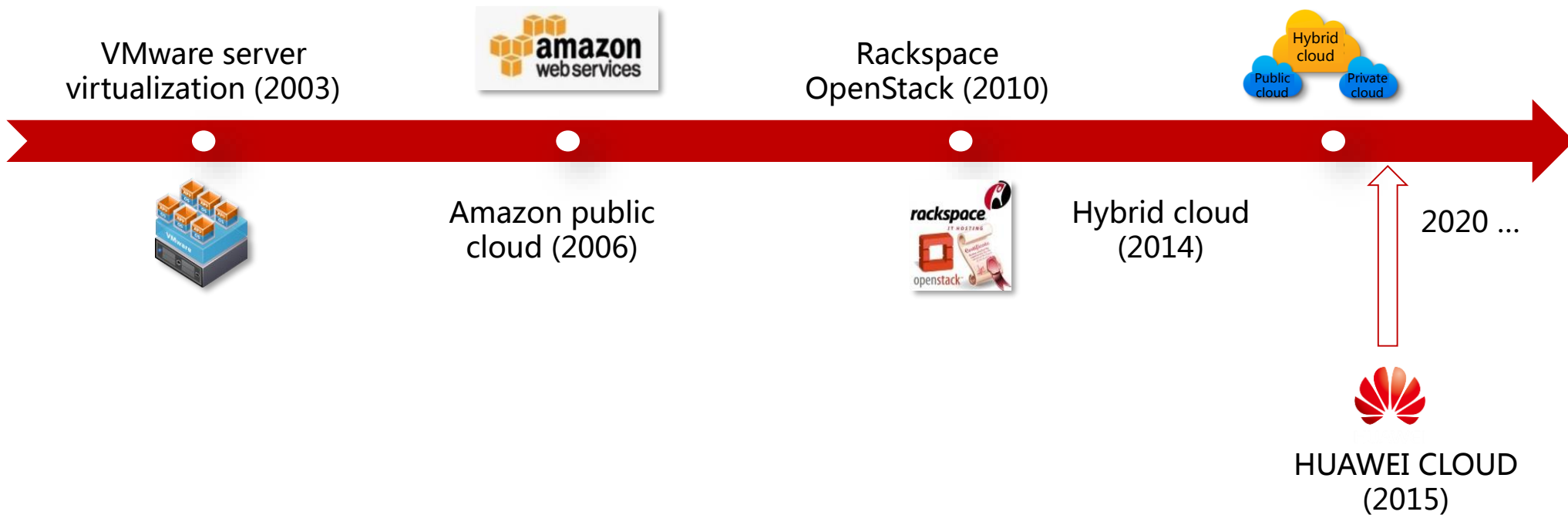
Server + SAN/NAS

Deep convergence of computing,
storage, and network resources to
form homogenous cloud
computers





Cloud Computing Technology Development





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Cloud Computing Definition

Definition from National Institute of Standards and Technology (NIST)

Cloud computing is a model for enabling ubiquitous, convenient, on-demand network access to a **shared pool of configurable resources** (networks, servers, storage, applications, and services) that can be **rapidly provisioned and released** with **minimal** management or service provider **interaction**.



Cloud Computing Characteristics

- On-demand self-service
- Broad network access
- Resource pooling
- Rapid scalability
- Measurable service



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Cloud Computing Development



Virtualization	Private Cloud	Public Cloud	Hybrid Cloud
<ul style="list-style-type: none">• Computing virtualization• Storage virtualization• Network and security virtualization	<ul style="list-style-type: none">• Automated management• Elastic resource scheduling• HA and DRS based on big clusters	<ul style="list-style-type: none">• Multi-DC consolidation• Multi-level backup and DR• SDN virtualization	<ul style="list-style-type: none">• Double engines• Consistent user experience• Software-defined DC



Cloud Computing Deployment Models

Private
cloud

Private cloud

Cloud developed by an enterprise using their own or leased infrastructure resources

Community
cloud

Community/Industry cloud

Infrastructure-sharing cloud developed for a specific community or industry

Public
cloud

Public cloud

Large infrastructure cloud leased to the public

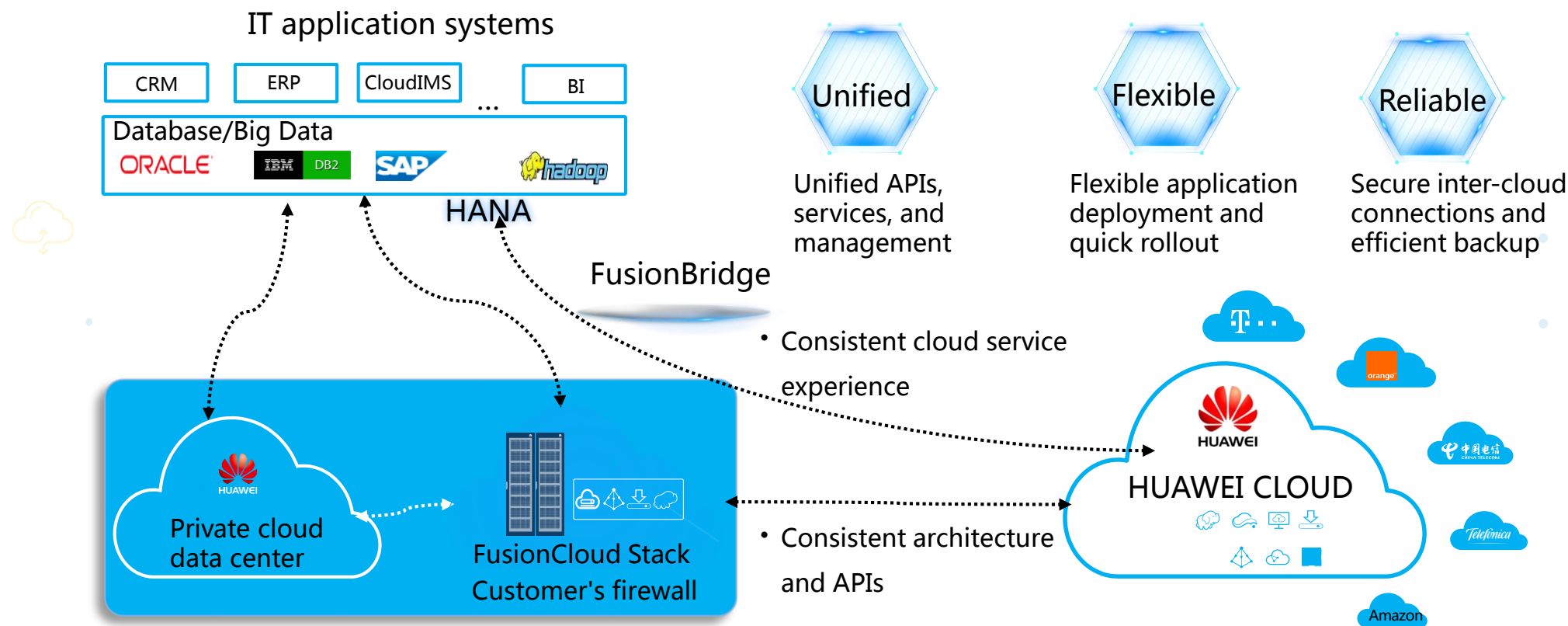
Hybrid
cloud

Hybrid cloud

Cloud involving two or more deployment models



Hybrid Cloud - Smooth Cloud Transition



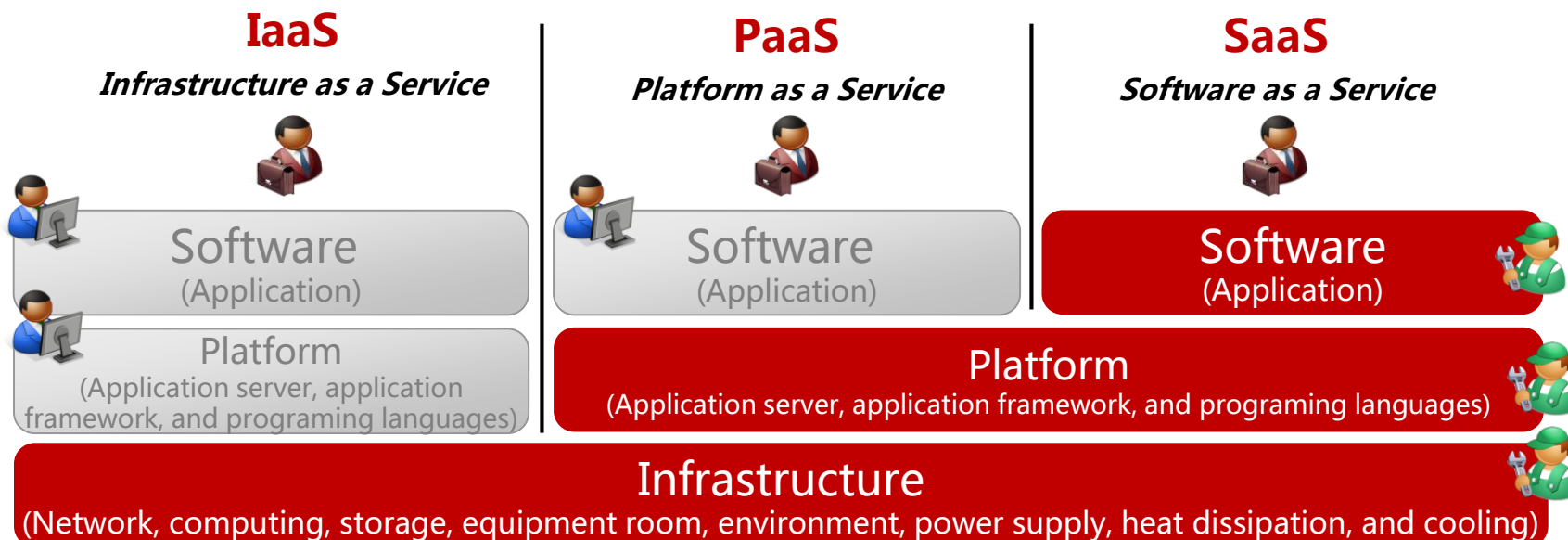


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Typical Categorization of Cloud Computing - Based on the Service Layer



Category	Content	Business Opportunity
SaaS	<ul style="list-style-type: none">Internet Web 2.0 application (MM)Enterprise application (ERP, CRM, etc.)	<ul style="list-style-type: none">"Walmart" of applications and software
PaaS	<ul style="list-style-type: none">Application operation and development environmentApplication development components (email/message/billing/payment)	<ul style="list-style-type: none">Unearth network resource potentialControl the network platform
IaaS	<ul style="list-style-type: none">Leases computing, storage, network, DNS, and other basic IT services.	<ul style="list-style-type: none">Cost-effective and elastic IT resourcesApplication and web hosting

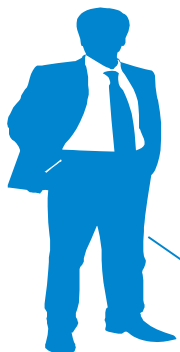


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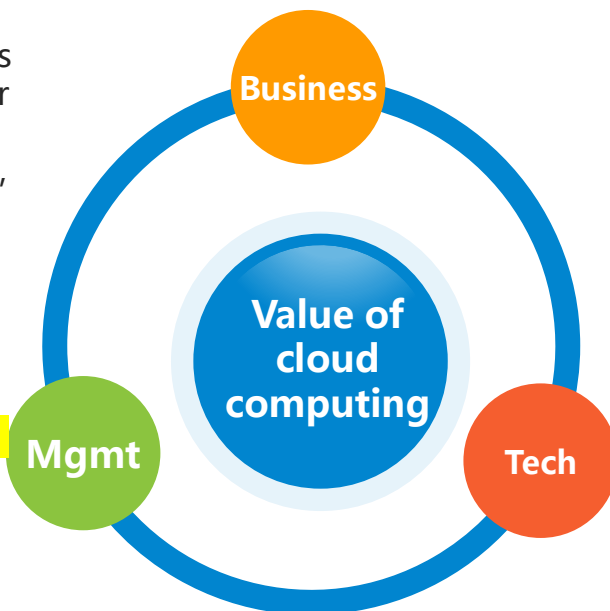


Value of Cloud Computing in the New Economy



"As a CEO, my responsibility is to create sustainable value for the company within a consistently changing market, employee turnover, and complicated business environment.

Cloud computing optimizes the business model, allowing us to fully seize business opportunities and **stay ahead of competitors!**"



"As a CTO, I study the development trends and maturity of technologies, and predict their impact on business operations and profitability.

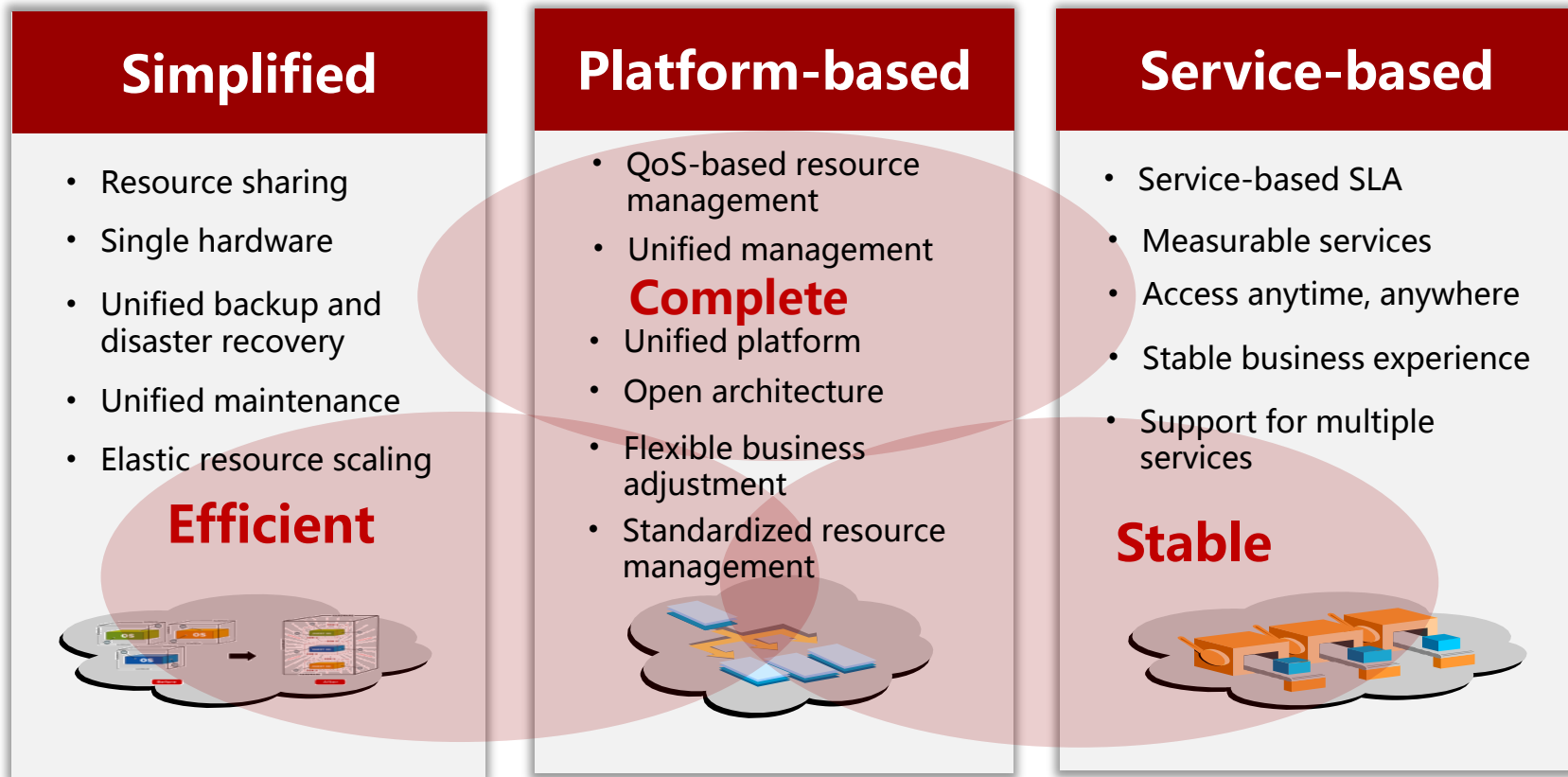
In future, IT will be a key competitive edge, and cloud computing is **disrupting traditional IT architecture**. The advantages of traditional architecture are vanishing, and cloud computing will enable IT transformation. **Let's rebuild our core competitiveness!**"



"As a CIO, I help achieve company objectives by guiding the utilization of information technologies. With cloud computing, we are able to meet business requirements anytime by providing IT services to our customers **using the resource pool with controllable costs**. This would be an impossible goal without the cloud."



Huawei's Understanding and Pursuit of a Cloud Platform



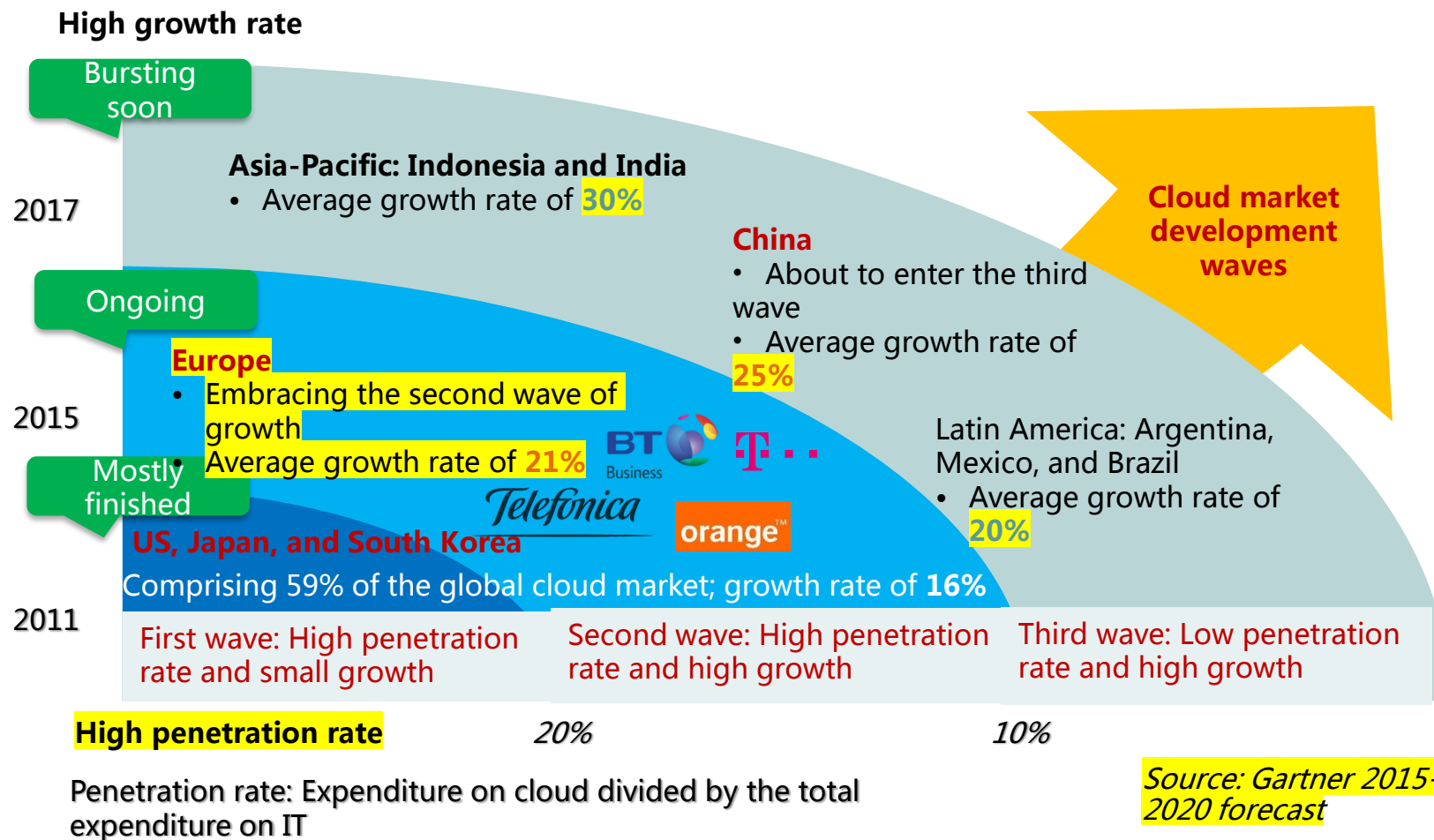


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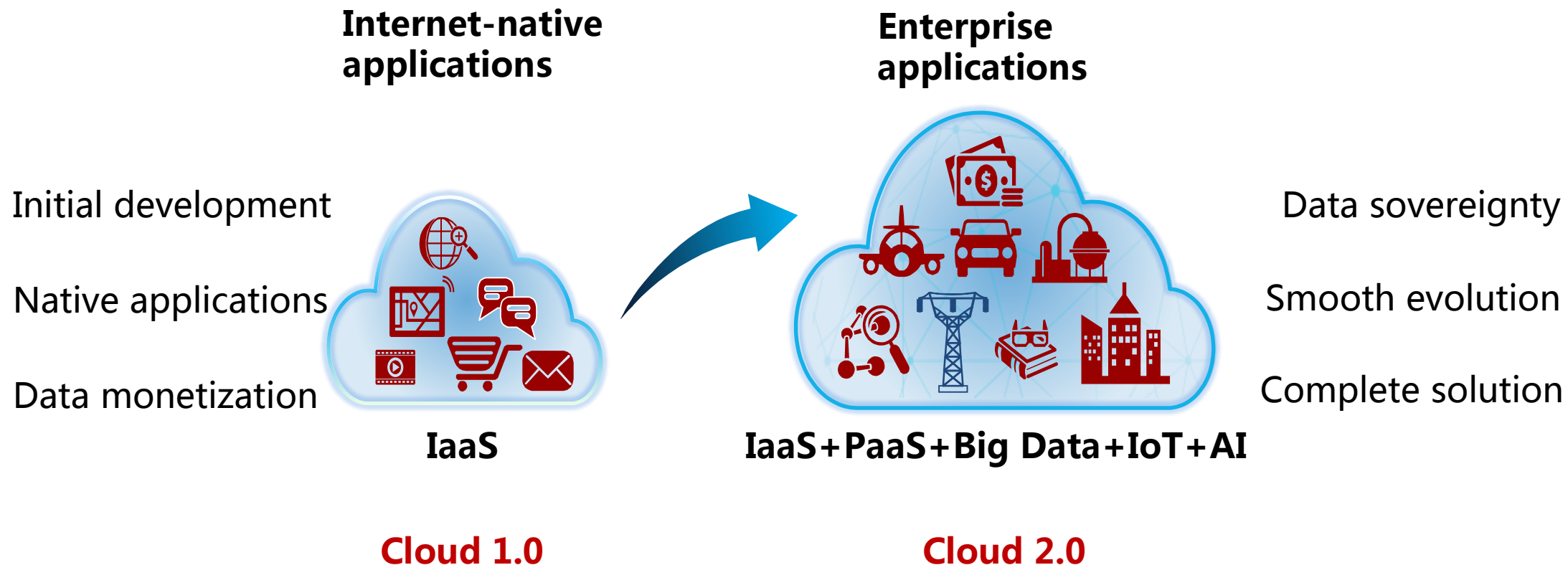


Rapid Cloud Computing Development and Bursting Market Demand





Enterprises Will Lead Next Decade





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Construction of Global Capability Centers

170+

Countries and regions



16

R&D centers

36

Joint innovation centers

14

Regional offices



45

Training centers



176,000

Employees



Cloud Computing Is Huawei's Core Focus for Next Decade

- Optimized user experience and customer value
- Future-oriented development and strategic industry adjustment

Three customer groups

Carriers

Governments and enterprises

Consumers

Five industries



Basic telco network



Telco software



IT and cloud computing



Enterprise communication



Devices

Shared platforms and chips



HUAWEI CLOUD Positioning

**Focus on IaaS, Enable PaaS,
and Converge SaaS**

Stick to "being integrated"

Strict privacy and security for data and applications

Make enterprise ICT services convenient



Huawei Established Its Cloud BU in 2017

Cloud services have become a basic business model.

Since 2017, Huawei has been developing an open public cloud platform based on cloud services.

Huawei focuses on major industries and collaborates with partners to build a mutually beneficial cloud ecosystem.

Cloud BU established for the public cloud business



Quiz

1. Which of the following are deployment models of cloud computing?
 - A. Public cloud
 - B. Private cloud
 - C. Hybrid cloud
 - D. Community/Industry cloud



Quiz

1. Which of the following are deployment models of cloud computing?
 - A. Public cloud
 - B. Private cloud
 - C. Hybrid cloud
 - D. Community/Industry cloud



Summary

- Describes the concept and evolution of cloud computing.
- Introduces main categories, service domains, and value of cloud services.
- Introduces applications and development of cloud services.
- Introduces the HUAWEI CLOUD development strategy.



Recommendations

- Huawei Learning website
 - <http://support.huawei.com/learning/Index!toTrainIndex>
- Huawei public cloud service website
 - <https://www.huaweicloud.com/en-us/>



More Information

Acronym/ Abbreviation	Full Spelling
ICT	Information and Communications Technology
SAN	Storage Area Network
NAS	Network Attached Storage
QoS	Quality of Service
SLA	Service Level Agreement
TCO	Total Cost of Ownership
SDN	Software Defined Networking

The background of the image shows silhouettes of several groups of business professionals in a modern office environment. They are standing on a highly reflective floor, and their reflections are clearly visible. The entire scene is overlaid with a semi-transparent blue filter. In the center, the text "Thank You" is written in a large, white, sans-serif font, with the website address "www.huawei.com" in a smaller, white, sans-serif font directly below it.

Thank You

www.huawei.com