Carrier Network Business Growth Strategy

July 8, 2010

Carrier Network Business Unit

Executive Vice President and Member of the Board

Junji Yasui

To be a leading global company leveraging the power of innovation to realize an information society friendly to humans and the earth

NEC Group Vision 2017
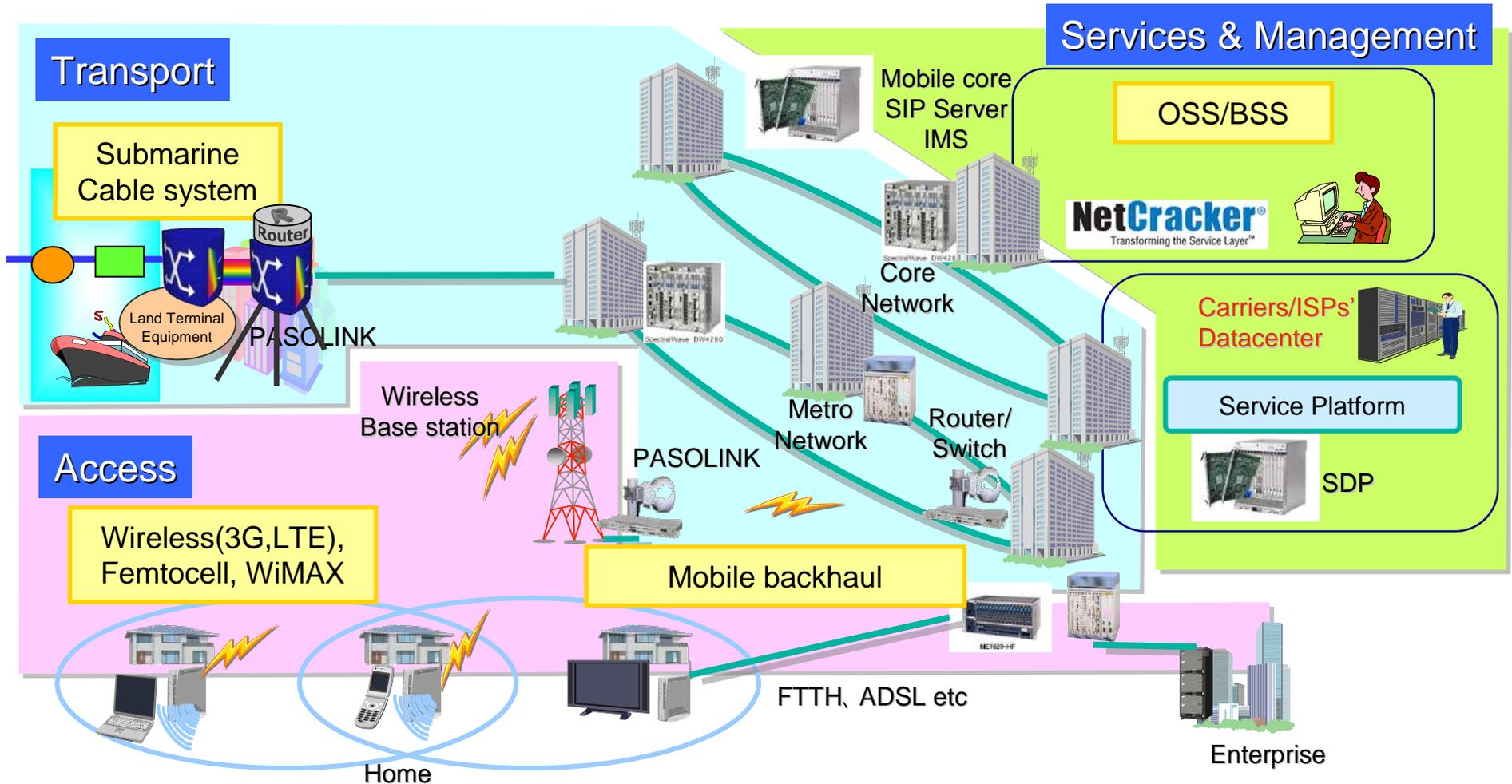
1. Business overview

2. Mid-term business environment

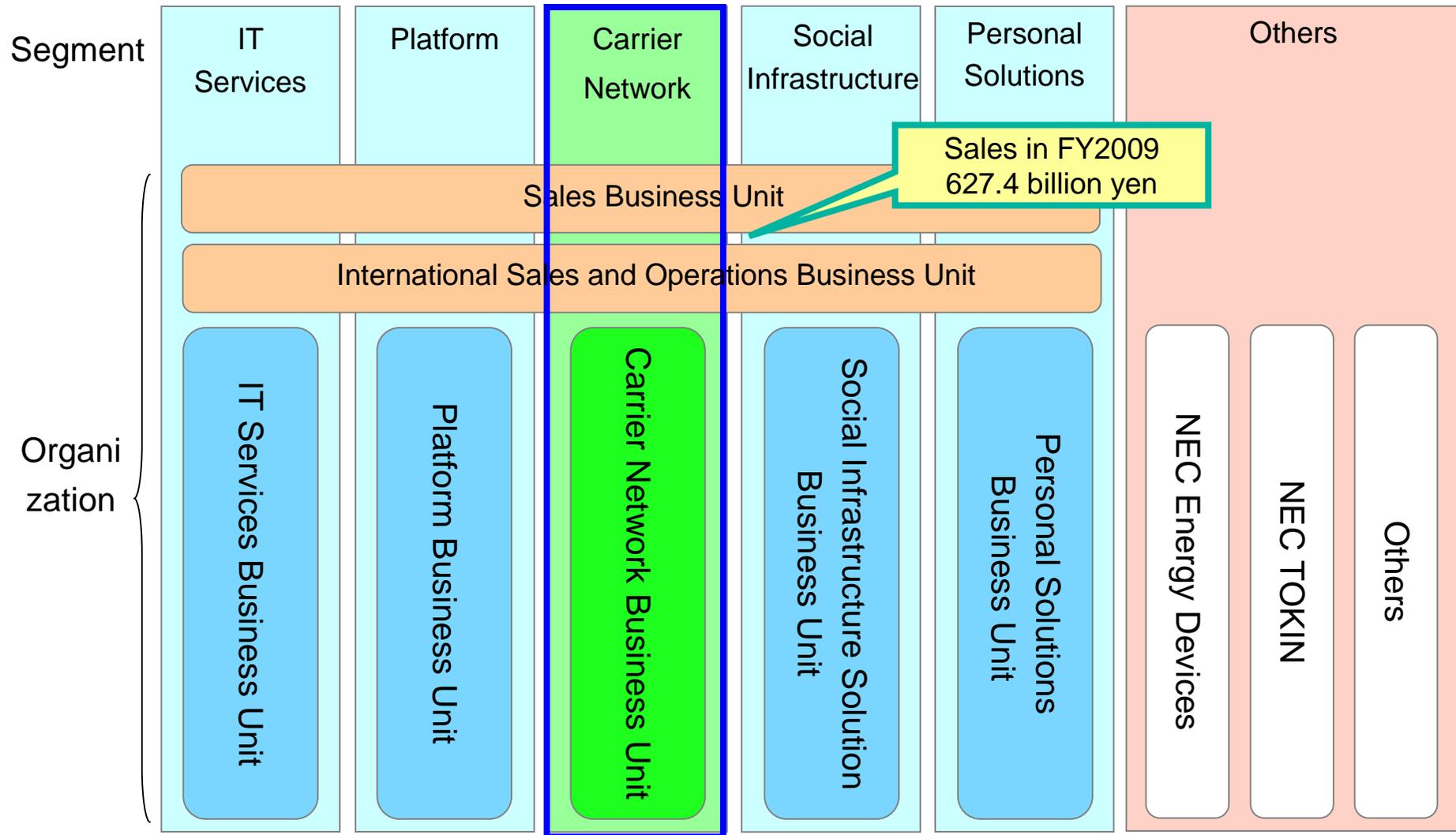3. Key business strategy

4. Measures to enhance global competitiveness

5. Toward achieving V2012

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Business Domain

Provide products/systems/services as a business partner and support the transformation of carrier services

Transport

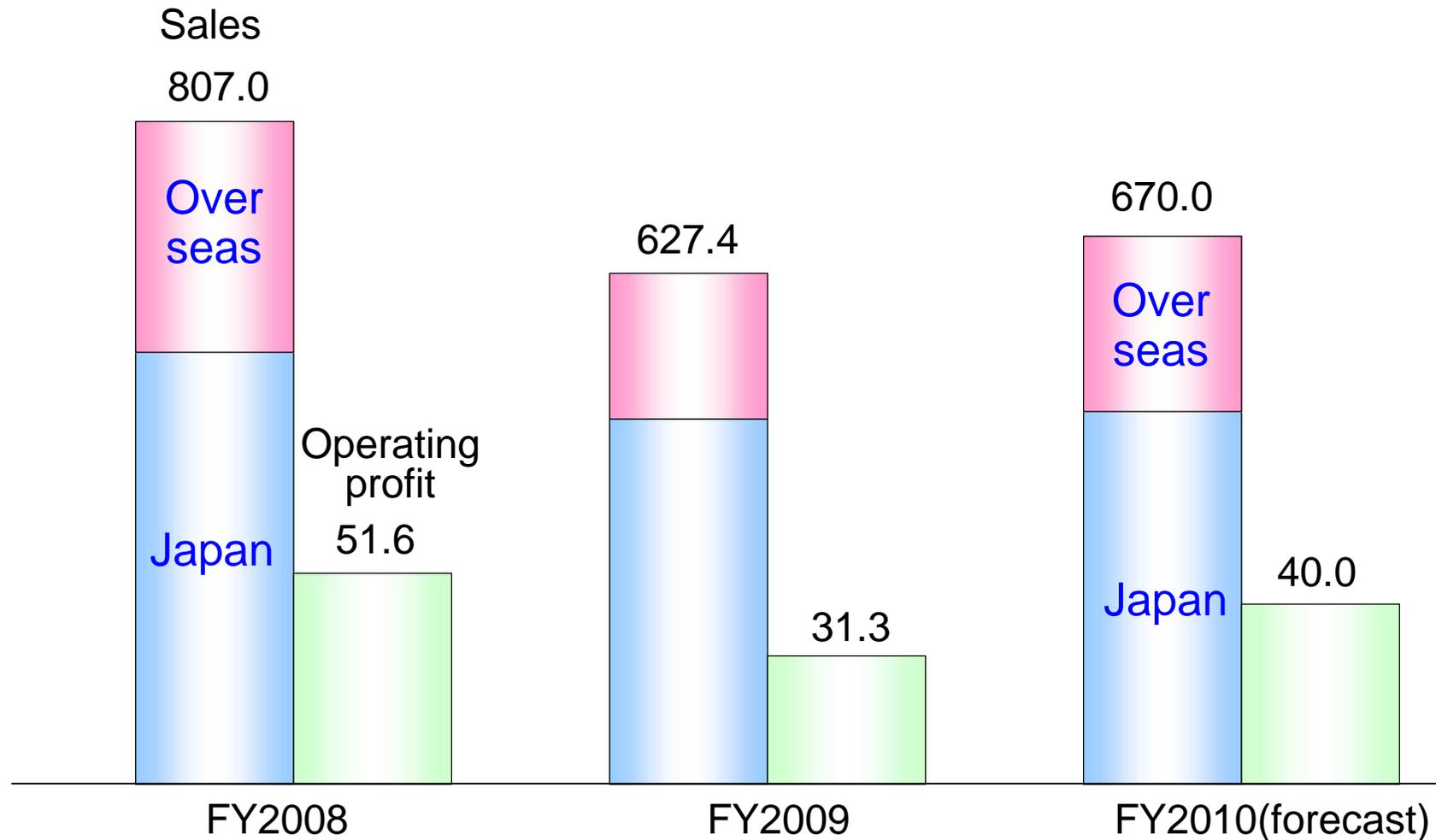Submarine Cable system

Router

Land Terminal Equipment

PASOLINK

Access

Wireless(3G,LTE), Femtocell, WiMAX

Wireless Base station

PASOLINK

Mobile backhaul

Home

FTTH ADSL etc

Services & Management

Mobile core SIP Server IMS

OSS/BSS

NetCracker — Transforming the Service Layer™

Core Network

Metro Network

Router/ Switch

Carriers/ISPs' Datacenter

Service Platform

SDP

Enterprise

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Business Organization

Segment	IT Services	Platform	Carrier Network	Social Infrastructure	Personal Solutions	Others

Sales Business Unit

International Sales and Operations Business Unit

Sales in FY2009 627.4 billion yen

Organi zation

IT Services Business Unit	Platform Business Unit	Carrier Network Business Unit	Social Infrastructure Solution Business Unit	Personal Solutions Business Unit	NEC Energy Devices	NEC TOKIN	Others

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Sales and Operating Profit of Carrier Network Business

(Billions of Yen)

Sales

807.0

Over seas

Japan

Operating profit

51.6

627.4

Over seas

Japan

31.3

670.0

Over seas

Japan

40.0

FY2008

FY2009

FY2010(forecast)

* Forecast as of July 8, 2010

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Market Environment and NEC's Business Situation

	FY2009	FY2010
Market environment	●Market shrinkage due to the slowdown of world economy (-10~-15%) ●Continued shakeout of vendors and the rise of Chinese vendors ●Investment restraint by Japanese carriers	●Recovery of world market (Approx.+5%) Growth in emerging market Data traffic increase by the widespread use of smart phones ●Continued investment restraint by Japanese carrier Total investment will decrease while carrier will begin to invest in LTE
NEC's business situation	●Significant sales decrease (approx.-20%) Decreased in wireless overseas, such as PASOLINK Delayed in signing the contract of large scale project in submarine cable systems Impact of the appreciation yen ●Lowered the breakeven point by enhancing selling expense and development investment efficiency	●Sales increase (approx.+7%) Launching new model of PASOLINK sign the contract of large scale project in submarine cable systems Sales increase in LTE/ WiMAX/ Femto ●Maintain a leaner cost structure increase profit by top-line growth

* Forecast as of July 8, 2010

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Sales in FY2009

Japan: Investment in Fixed Line NGN remained high, while the Investment in 3G decreased
Overseas: Decreased due to investment restraint by carriers, delay of singing the contract
of large scale project and the impact of the appreciation of the Yen

-Investment by carriers remained high
-Delay in executing revised national budget

(Billions of Yen)

FY2008

807.0

Fixed line
in Japan
(approx.-10%)

Wireless
in Japan
(approx.-20%)

Fixed line
overseas
(approx.-30%)

Wireless
overseas
(approx.-35%)

Impact of the
Appreciation Yen
(approx.-7%)

FY2009

627.4

Decreased due to investment
restraint in 3G by carriers

Delayed signing the contract of
large scale submarine cable project

Decreased due to investment restraint by carriers
but secured WW No.1 share for three consecutive years
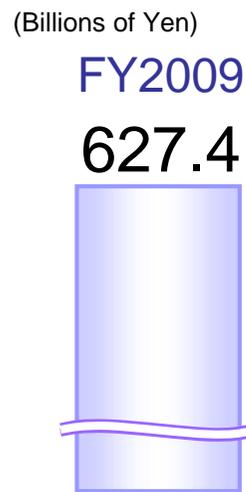
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Sales Forecast in FY2010

Japan: Anticipate certain sales level while the investment in 3G decreased
   Anticipate demands of existing network migration
Overseas: Recovery of submarine cable systems and investment in wireless broadband
   PASOLINK will expand compared with the last year due to increasing cellular subscriber in emerging market

Submarine cable systems; APCN2 expansion etc.
NetCracker; Expand the synergy business with NEC

Wireless overseas
(approx.+10%)

FY2010 (Forecast)

670.0

Fixed line overseas
(approx.+40%)

Propose the service & management business to carriers and promote greater investment

Fixed line in Japan
(slight increase)

PASOLINK; Maintain and enhance our competitiveness by launching the new product. Approach to emerging markets
Femtocell; Expand the business in Europe

(Billions of Yen)

FY2009

627.4

Wireless in Japan
(slight decrease)

Expandnext-generation wireless broadband (LTE, WiMAX)
Promote greater investment from carriers through smart-phone demand

* Forecast as of July 8, 2010
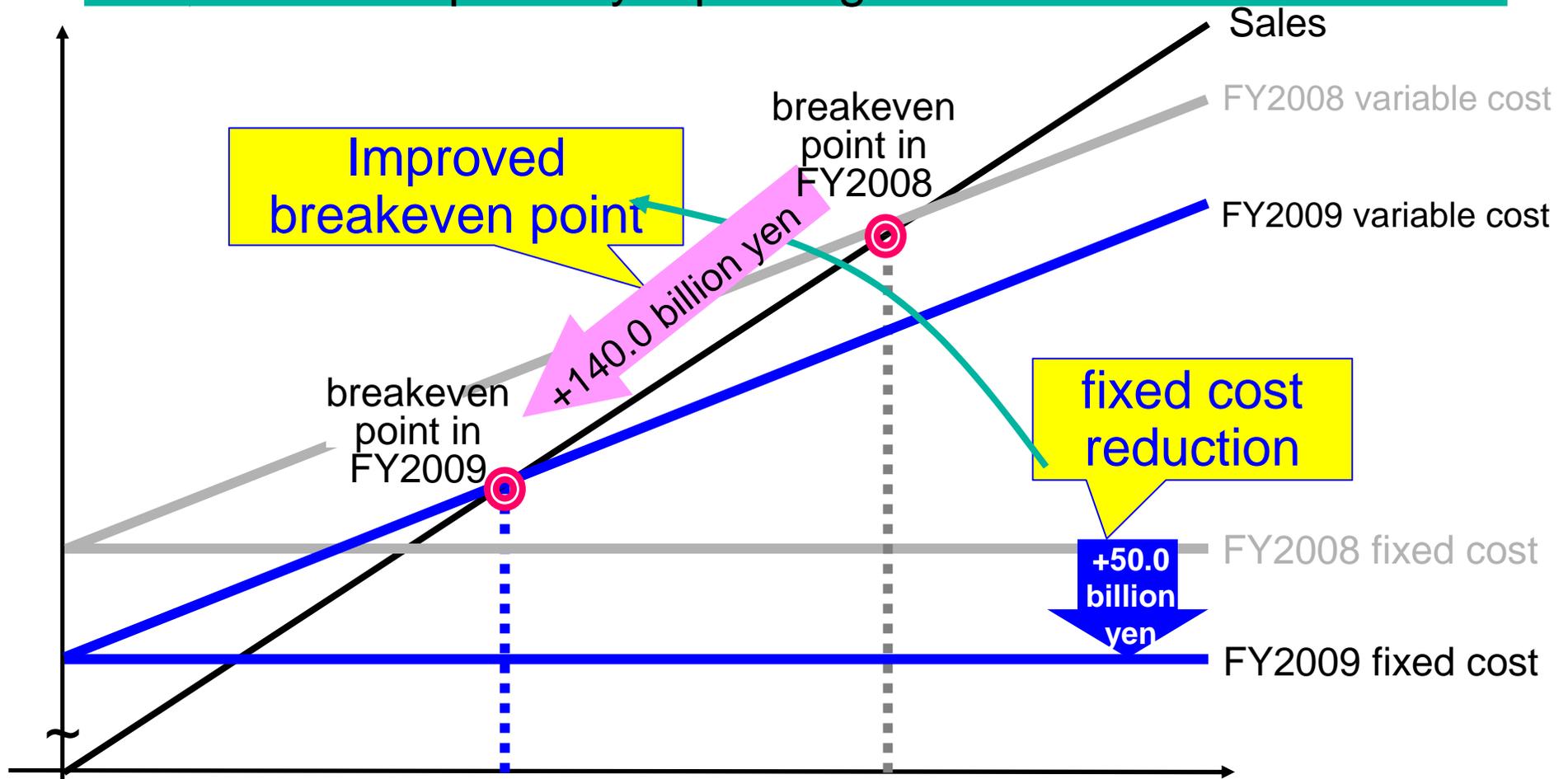
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Lowered Breakeven point

Improved breakeven point by enhancing SGA and development investment efficiency

➡ Increase profit by top-line growth

Sales

FY2008 variable cost

breakeven point in FY2008

FY2009 variable cost

Improved breakeven point

+140.0 billion yen

fixed cost reduction

breakeven point in FY2009

+50.0 billion yen

FY2008 fixed cost

FY2009 fixed cost

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Recent Achievements (1/3)

> **Steady progress of next-generation wireless broadband business**
> ● Provide globally next-generation wireless broadband solution underlying cloud service

Trial succeeded

Trial succeeded

Provided Base station

World first, Provided IMS-based femtocell

LTE

Femtocell

WiMAX

Network Norway

Denmark TDC

UQ Communications

France SFR

NTT DOCOMO

Supplied Base station, Core network system, MBH Switch

Tatung InfoComm

Commercial service started

KDDI

Lab trial succeeded

Commercial service started

Singtel

Selected as a vendor for base station

Telefonica

Field trial succeeded

PASOLINK; Secured WW No.1 market share for 3 consecutive years

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Recent Achievements (2/3)

Completed two large-scale submarine cable system projects
Deployed domestic submarine earthquake observation system, also received first order from overseas market (Taiwan)
- NEC is the only supplier in Japan in the field of submarine system application

Projects completed in 2009

Won Large-scale wavelength Expansion Project
(Total length 19000Km,40Gb/s)

HSCS

AUFS

RJCN

Unity

APCN2

Total length 9500Km
Maximum capacity
4.8Tb/s

TPE

I-Me-We

AAG

AJC

DSCN

EAC2

TIS

JASUKA

DMCS

JACABARE

Total length 12000Km
NEC is responsible for 4300Km
Maximum capacity 3.84Tb/s
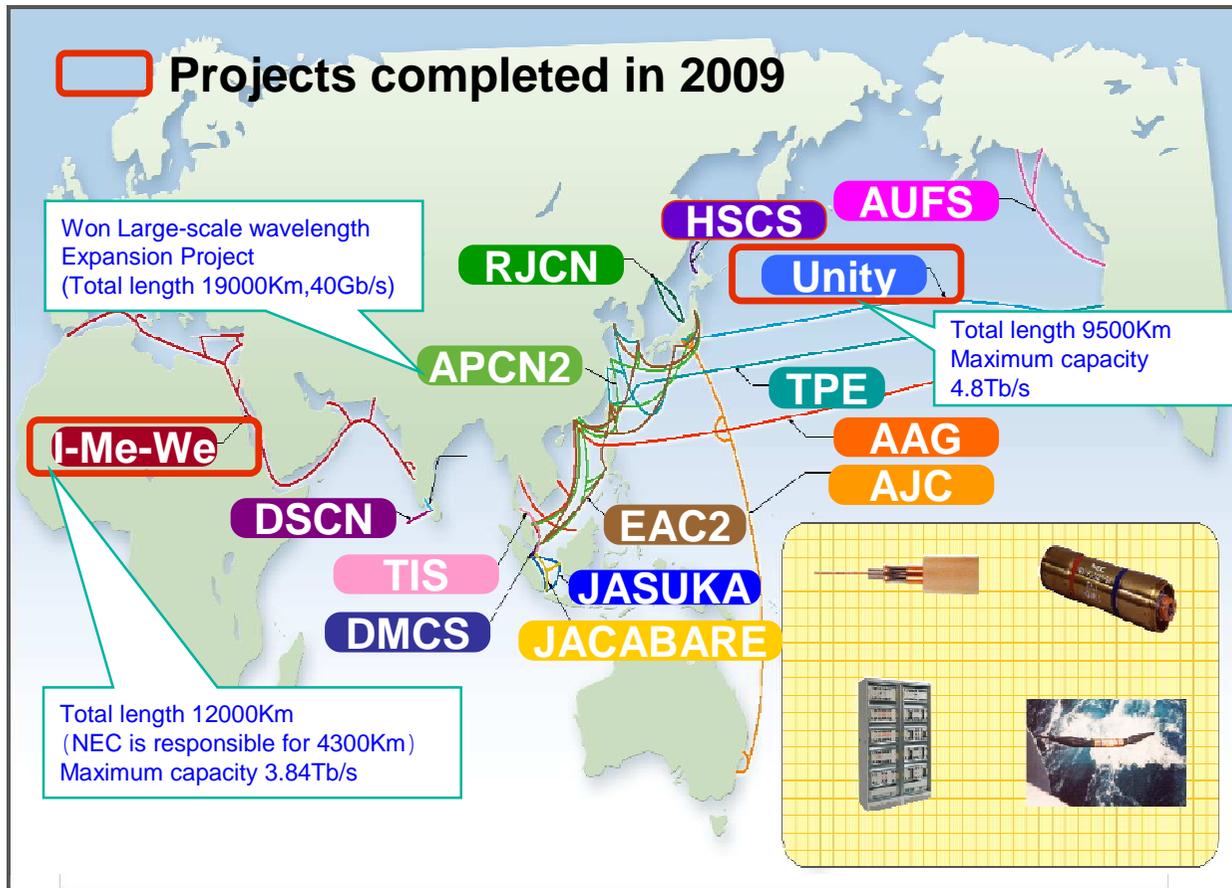
Started operation of submarine network observation system off the coast of Japan's Kii Peninsula (DONET)

Backbone cable

Extended branching unit

Observational equipment
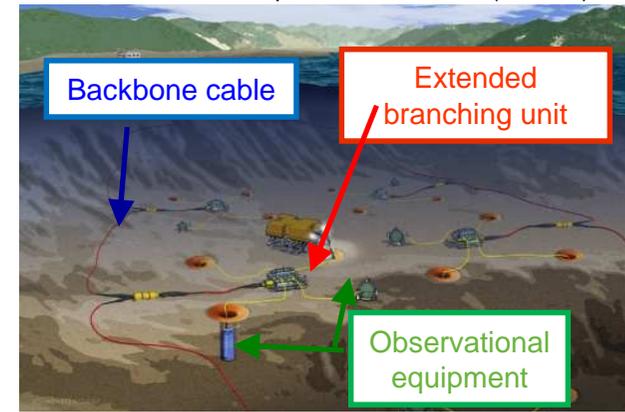
Submarine Seismograph System;
First order from Taiwan Meteorological Agency

Toucheng

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Recent Achievements (3/3)

NetCracker expand platform implementation business for telecom carriers

● Won operations support systems from major Japanese and overseas carrier

NetCracker®

France Telecom, Orange, WIND, MTC, SPRINT, Telestra, DiGi, Mobistar, COMSTAR Cote d'ivoire etc.
Delivered to 40 major global carriers

http://www.netcracker.com/en/customers/customers/

Russia (September 2009
VimpelCom Group

Germany (March 2010)
Deutsche Telekom AG

First order from NTTDoCoM
(December 2009

Malaysia (June 2009
Maxis Communications

New Zealand
(December 2009
Telecom New Zealand

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Our Strength

High response capabilities in Japan's advanced broadband & mobile area

Secure high market share by responding requirements from advanced customers
- NGN Related Products (IMS/SIP) Approx. 65% market share
- LTE   Delivered wireless base stations, core network system, MBH switch for NTT DoCoMo
        Selected as a wireless base station vendor for KDDI
- WiMAX Delivered wireless base station for UQ Communications

Global presence by providing high-reliable and high-quality products

Provide products and technologies cultivated as a partner of domestic customers
- PASOLINK WW No.1 share for three consecutive years/ Delivered to 141 countries
- LTE/WiMAX The only domestic vendor which has a delivery and trial record for overseas carriers
- Submarine cable systems Positioning world top 3 vendor as a total solution provider including submarine line terminal equipment, repeaters and cables

Cloud solution capability utilized by the integration of IT and Network

Create and provide various cloud services by utilizing both IT and network assets
- Service operation management   Expand global business by the synergy with NetCracker (WW No.4 share)
- Cloud system Implementation Meet various customer needs as "One NEC"

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Mid-term Market Trends and Business Opportunities

Rapid Spread of Smartphones

- Cumulative shipments of 50 million iPhone
- Android handsets also undergoing rapid growth
- Usage of mobile rich content increasing

Steep Rise in Demand for Mobile Phones in Emerging Countries

- Rapid progress in the BRICs, Middle East, etc.
- Indian subscribers: 16 million per month, cumulative total of 620 million subscribers

Increase in Video / Images / User-Generated Content, etc.

- Video, games and SNS over mobile devices
- People around the world able to upload and watch video stored on servers around the world YouTube: accessed by over 20 million people each day

Flattening of the World, Globalization of Enterprises

- Transmission of data among different businesses
- International data centers

Mobile Networks Becoming Increasingly Sophisticated and Fast

- Major traffic has shifted from voice to data
- Increased speed of wireless access to accommodate the steep rise in mobile data usage

Increased Traffic

- Global rebuilding of mobile backhaul
- Demand for high-capacity transmission to different countries and massive data centers

Progress of IT/Network Integration

- Healthy demand for OSS/BSS, optimization services, etc.
- Progress of business transformations on telecom carriers
- Increased Carrier Cloud and IT system services

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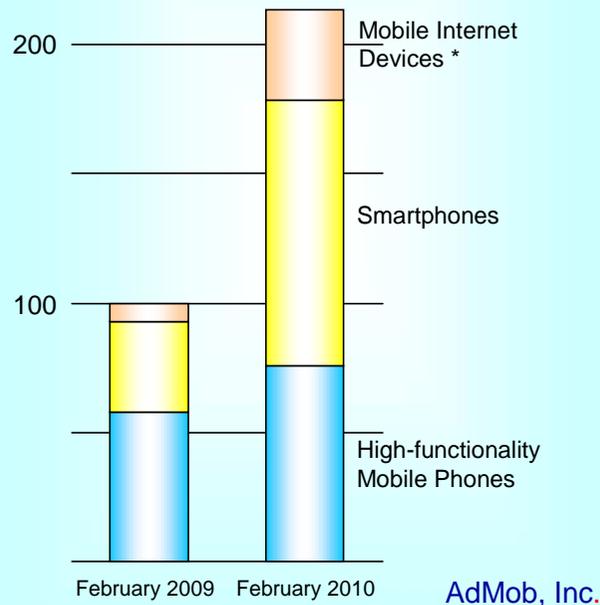
Steep Rise in Mobile Data

- Mobile usage patterns are evolving from voice to data
- Network services and IT Services are integrated
- Accelerate to transform business structure on Telecom Carriers
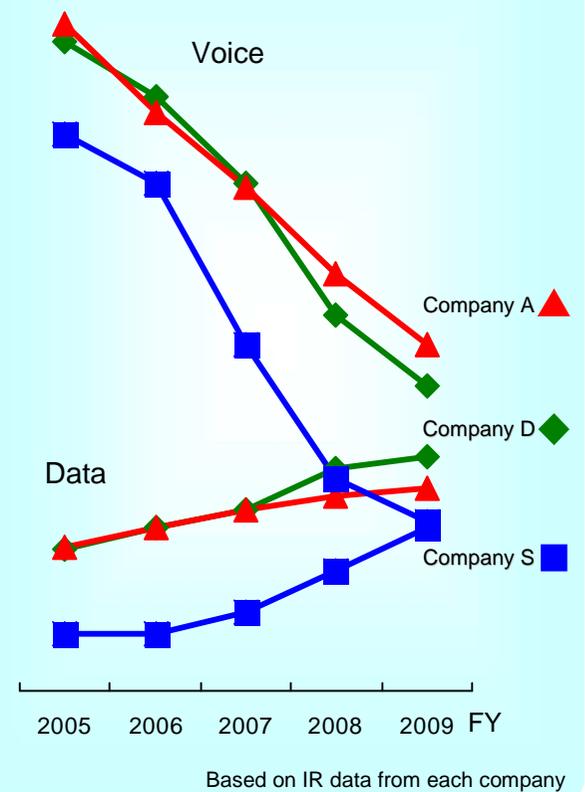
Changes in the Worldwide Mobile Phone Market

(millions of units)

1,405

Smartphones rise to over one third

Mobile Phones

2009 2010 2011 2012 2013 2014 CY

Ovum-RHK
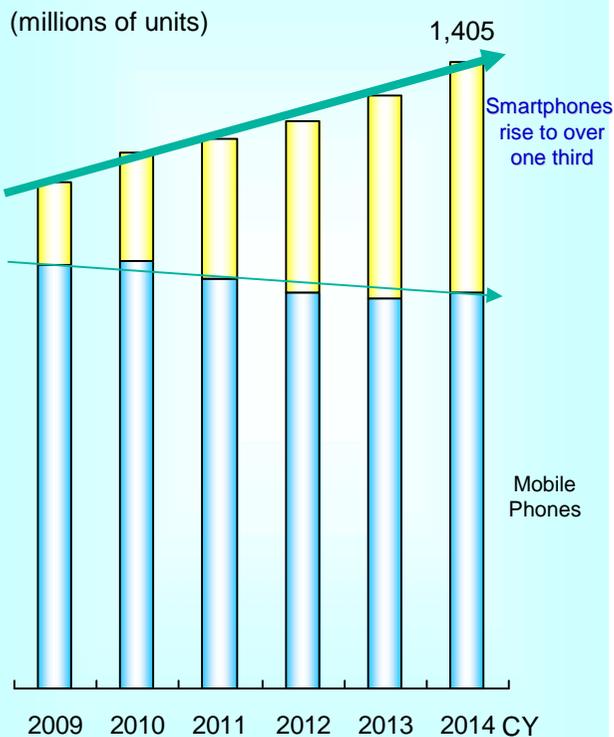
Rapid Traffic Increasing by Smartphones

Proportion of traffic by handset model on the AdMob Network (when 100 is taken as the index value in February 2009)

200

Mobile Internet Devices *

Smartphones

100

High-functionality Mobile Phones

February 2009   February 2010

AdMob, Inc.

* iPod touch, Sony PSP, Nintendo DSi, etc.

Shift in ARPU for Domestic Mobile Carriers

Voice

Company A ▲

Company D ◆

Data

Company S ■

2005 2006 2007 2008 2009 FY

Based on IR data from each company

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ICT-related Expenditure by Telecom Carriers

Expenditure on network-related products accounts for roughly half of the total, and continues to trend upwards

Expenditure on ICT services also accounts for a large proportion (35%)

ICT-related Expenditure by Telecom Carriers

[billions of US dollars]
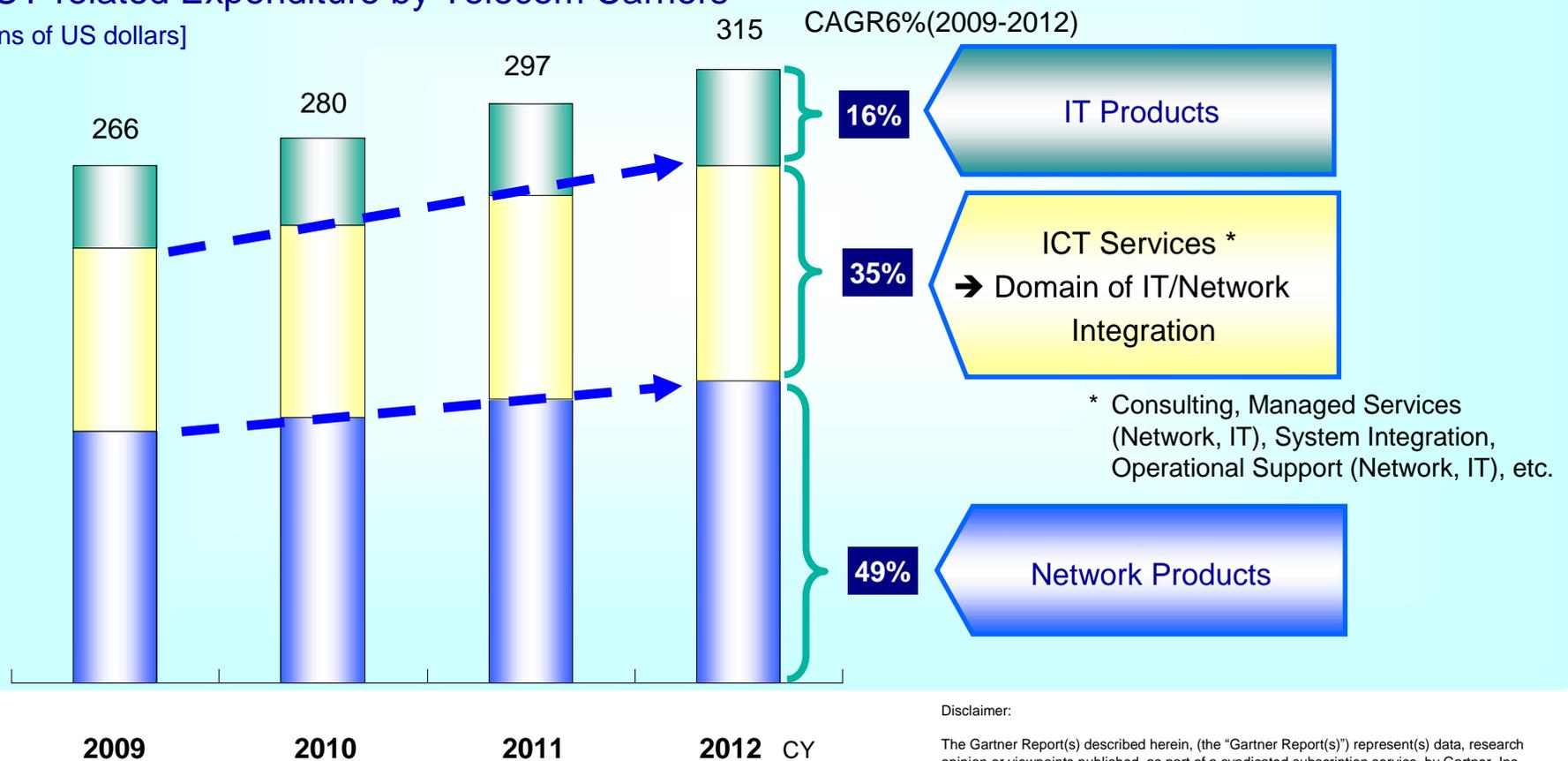
315 CAGR6%(2009-2012)

297

280

266

16% → IT Products

35% → ICT Services *
→ Domain of IT/Network Integration

* Consulting, Managed Services (Network, IT), System Integration, Operational Support (Network, IT), etc.

49% → Network Products

2009   **2010**   **2011**   **2012** CY

Source: Gartner "Forecast: Industry Market Strategies by Vertical Industry, Worldwide, 2006-2012, 1Q09 Update," February 6, 2009
Graph produced by NEC based on Gartner data

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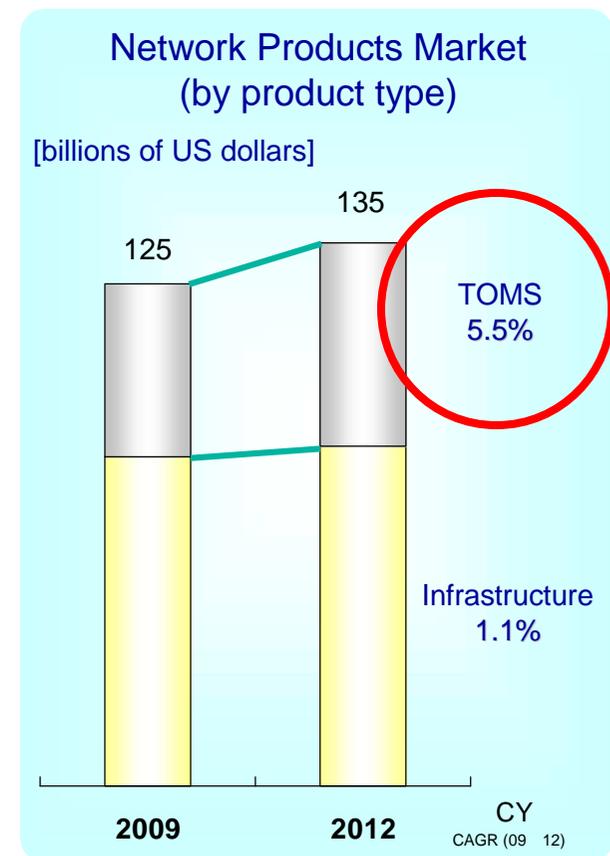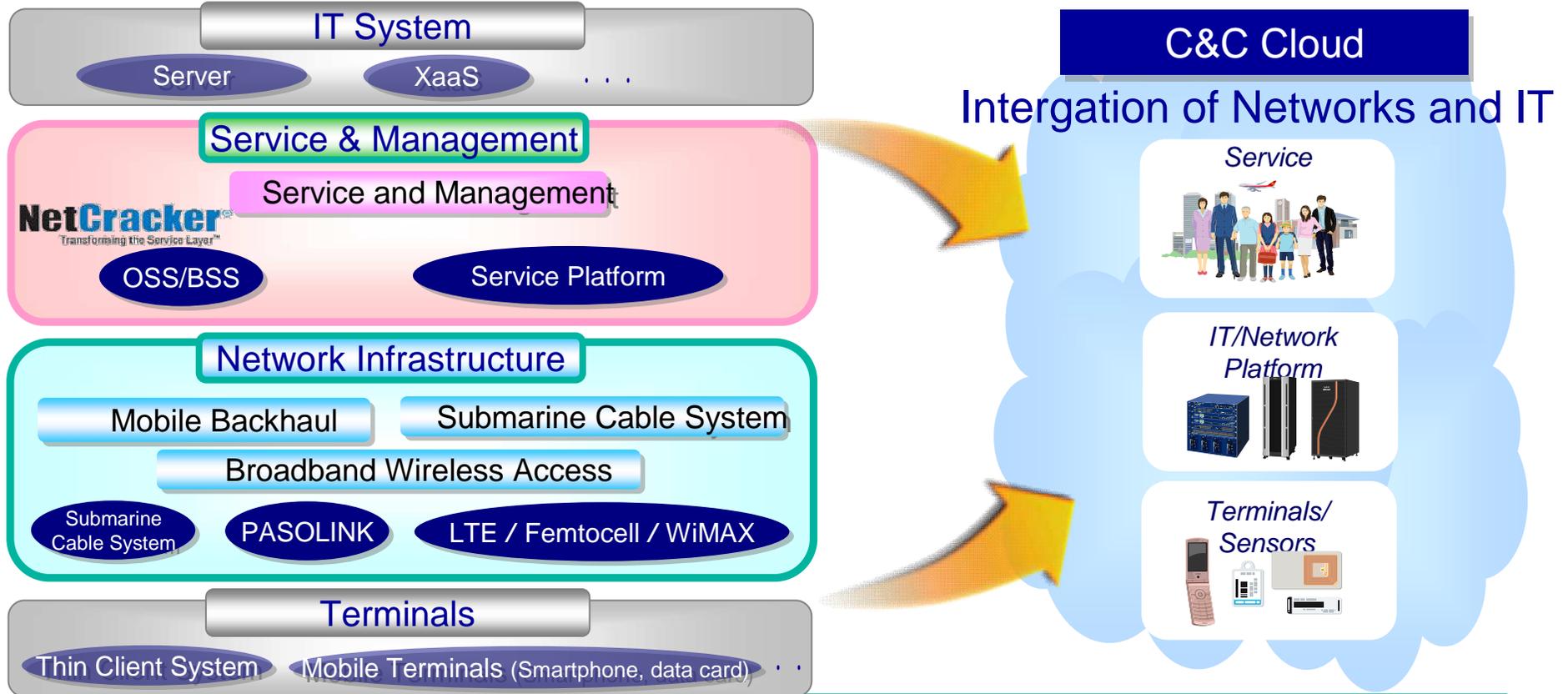
Growth Areas in Telecom Carrier Market

- Increased portion in growth rates and actual amounts centered around mobile
- Growth rates in Emerging countries surpassing those in developed countries
- Growth rates of OSS/BSS and SDP exceeding those of Infrastructure
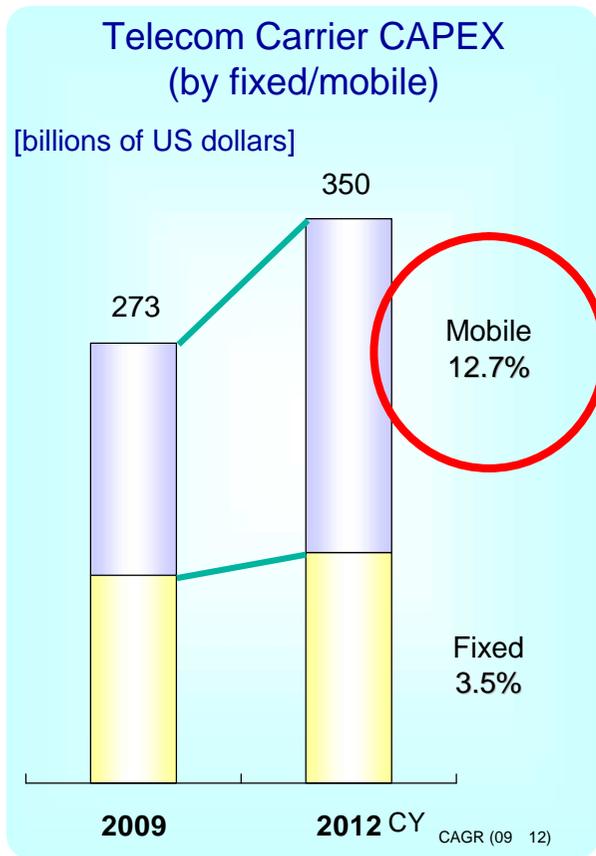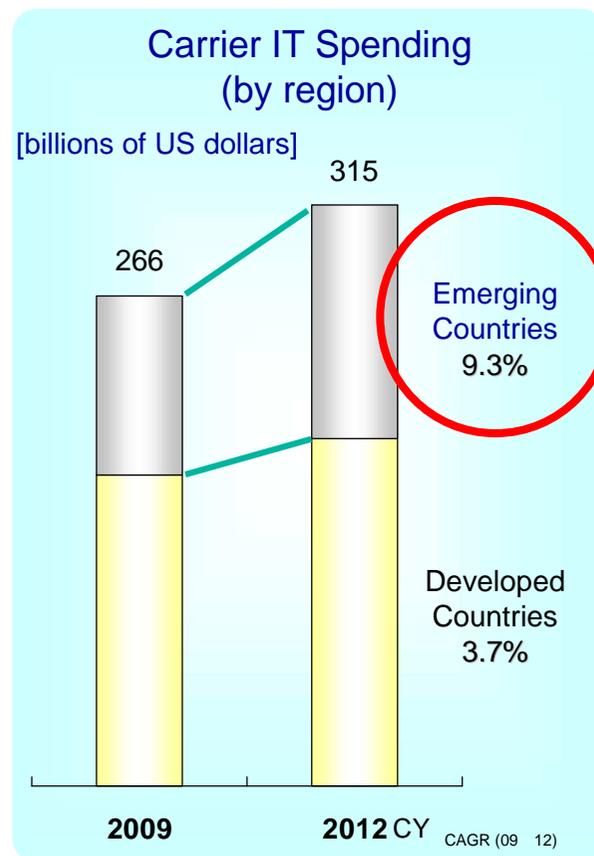
Telecom Carrier CAPEX
(by fixed/mobile)

[billions of US dollars]

350

273

Mobile
12.7%

Fixed
3.5%

2009   **2012** CY   CAGR (09 12)

(Ovum-RHK: Oct 2009)

Carrier IT Spending
(by region)

[billions of US dollars]

315

266

Emerging
Countries
9.3%

Developed
Countries
3.7%

2009   **2012** CY   CAGR (09 12)

Source: Gartner "Forecast: Industry Market Strategies by Vertical Industry,
Worldwide, 2006-2012, 1Q09 Update," February 6, 2009
Graph produced by NEC based on Gartner data

Network Products Market
(by product type)

[billions of US dollars]

135

125

TOMS
5.5%

Infrastructure
1.1%

2009   **2012**   CY   CAGR (09 12)

Source: Gartner "Dataquest Insight: Global Telecommunications Market Take,
December 2009," January 18, 2010
Graph produced by NEC based on Gartner data

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Mid-term Business Policy

Expanding C&C Cloud related business by focusing on primary business areas where NEC's strength can be achieved

IT System
- Server
- XaaS

Service & Management

Service and Management

NetCracker®
Transforming the Service Layer™

- OSS/BSS
- Service Platform

Network Infrastructure
- Mobile Backhaul
- Submarine Cable System
- Broadband Wireless Access
- Submarine Cable System
- PASOLINK
- LTE Femtocell WiMAX

Terminals
- Thin Client System
- Mobile Terminals (Smartphone, data card)

C&C Cloud

Intergation of Networks and IT

Service

IT/Network Platform

Terminals/ Sensors

Our goal:
 Challenges for gaining prominent position in global markets while increasing growth and earnings profit
Achieving sales of 900 billion yen (Operating profit ratio: 9%) in the Carrier Network business in FY2012

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Key Business Areas

Focusing on business areas where NEC can capitalize on its strengths and secure attractive global business

Key Business Area	Attractiveness of Market	Strength of NEC
☐ Wireless Broadband Access	• Large Market • High Market Growth	• Field-proven installation of LTE in Japan • Field-proven installation in Femtocell and WiMAX • IT and Network integrated solutions
☐ Mobile Backhaul	• Increase of mobile subscribers in emerging countries • Increase of packet demand and wide coverage due to adaptation of LTE	• PASOLINK WW #1 share for three consecutive years • RF Technology • TDM/Packet Hybrid Network Technology
☐ Submarine Cable System	• Continuing demand for installation due to increasing international traffic	• Top three global position • Operation Value Chain • Advanced optical technology (40Gbps digital coherent)
☐ Service & Management	• Increasing demand for reduced OPEX • Increasing demand for value added services	• NetCracker Ranked 4th WW share • Field-proven installation of Service Platforms in Japan

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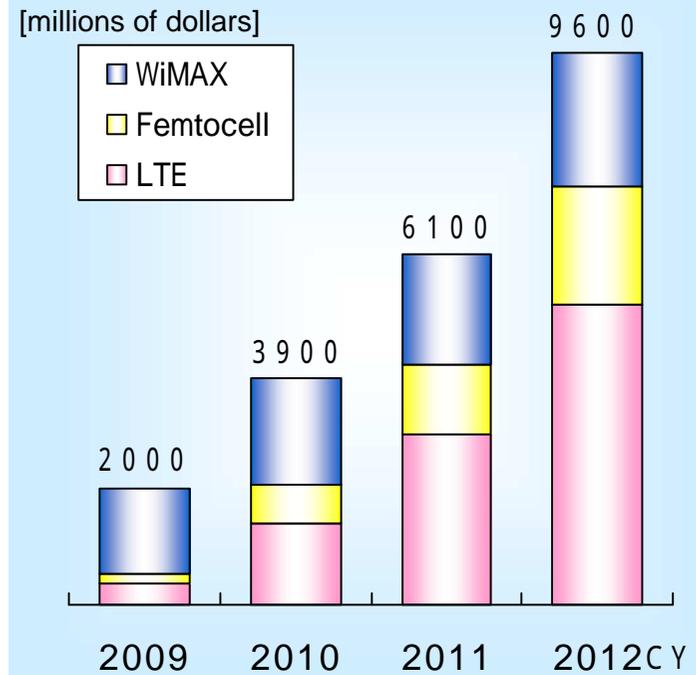
Wireless Broadband Access Network Business

Wireless broadband access network is the core component for Cloud solutions

Focus on solutions that leads to data centric IT/NW

- LTE — Major player for wireless broadband
- Femtocell — Minimum investment and suitable for data services
- WiMAX — For advanced users of wireless broadband

Cloud Services

Network

Home
Femtocell

Public (Fixed)
(WiMAX)

Services

Network

Public (Mobile)
(LTE/WiMAX)

Hotspot
LTE/Femtocell/WiMAX
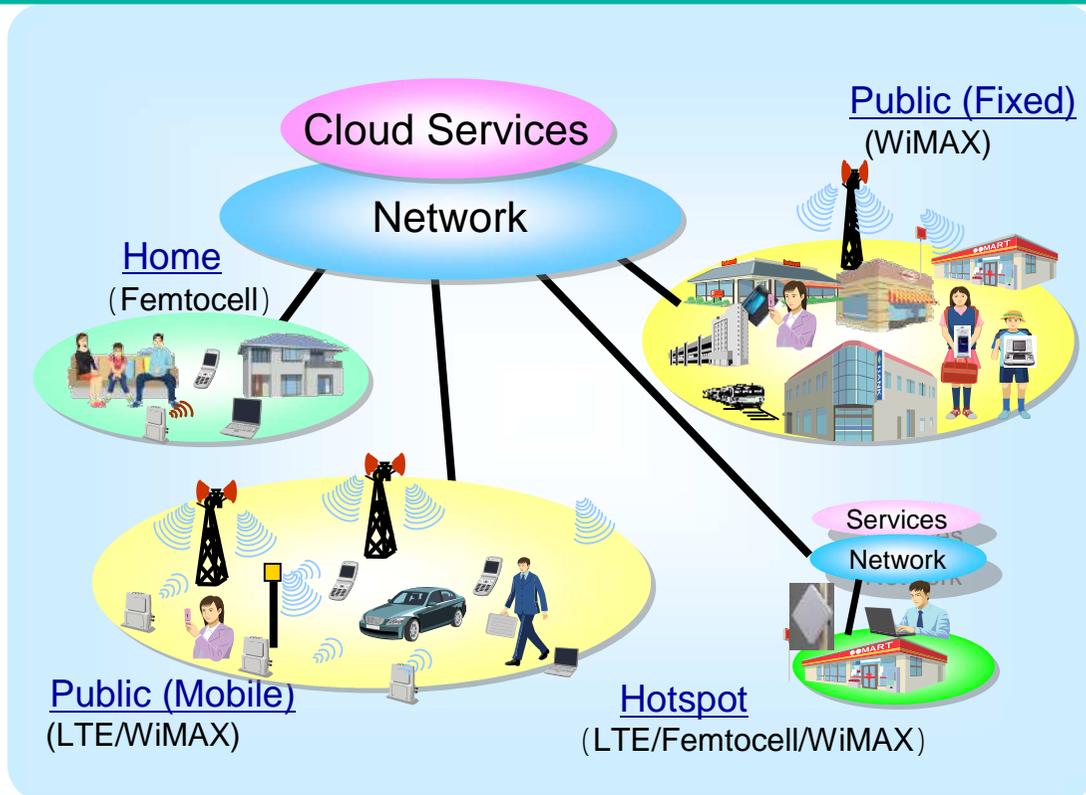
Investment in Wireless Broadband Access Equipment

[millions of dollars]

- WiMAX
- Femtocell
- LTE

2009   2010   2011   2012

Source: NEC estimates based on various sources

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LTE Business

NEC's strengths

- Developed and promoted among the world's top leaders. Introduced to the domestic market   Expanding global deployment
- Designed by utilizing all potential features of LTE
    - (1) Small size/ Low Power Consumption
    - (2) Adopts SON which reduces installation and operating costs, and maximizes system performances
- Provides End-to-End (E2E) solutions from base stations (eNodeB) to Core (EPC)
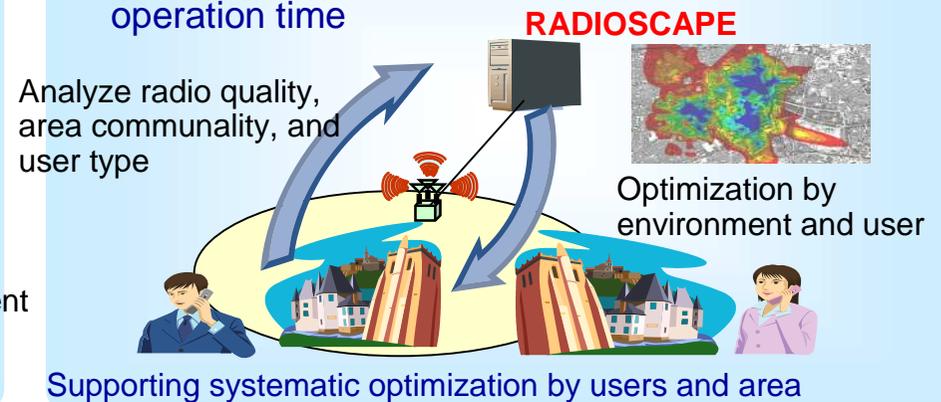
Market Oriented Strategy

- Japan: Steady implementation of projects for advanced customers
- Overseas: Focus on small cells that support high speed LTE and LTE Femtocells

LTE Network Products

PDN

EPC

World's smallest class Compact EPC

LTE External Radio Equipment (RRH)

eNodeB
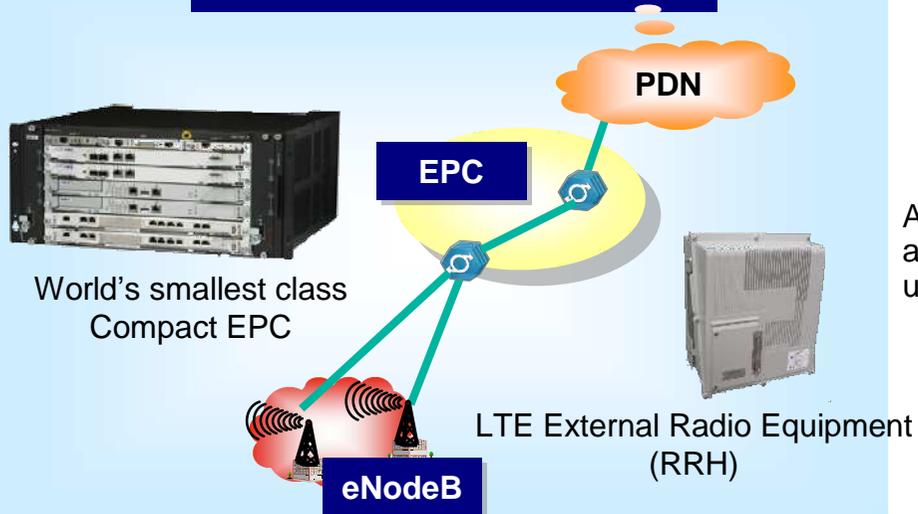
NEC's SON (Self Organizing Network)

Easy field work/installation (OneTouch)
➔ Reduce installation and recovery time, and operation time

RADIOSCAPE

Analyze radio quality, area communality, and user type

Optimization by environment and user

Supporting systematic optimization by users and area

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Femtocell Business

NEC's strengths
- Proven technology and achievement in the Femtocell market
  - World's most advanced commercial record in IMS based Femtocell
  - Commercial records in Europe prior to other prominent competitors
  - Technology, know-how and skills fostered by3G-FMC in Japan
- Technology and achievement in LTE-Femtocell

Market oriented Strategy
- Full scale development of LTE Femtocell
- Provide various services (Home ICT) by integrating with Home gateway

Mobile Core Network

IMS Core

Broadband Internet

Femto Access point
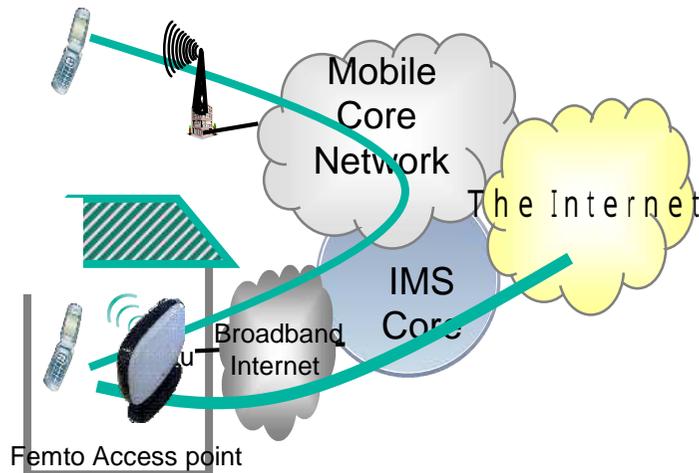
Easy installation
by using current broadband internet lines

Supply record of Femtocell in domestic/overseas markets

Commercial Systems
- Softbank Mobile   (World's first IMS based system)
- SFR-France   RAN-GW method system

Trial Systems
- Network Norway, TDC (Denmark)

Femto Forum's Femtocell Industry Awards
"Femtocell Network Design and Technology Innovation"

Two Consecutive Years

24 June 2010

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WiMAX Business

Global deployment with advanced customers

UQ Communications

2010.3 Started shipment of base stations

Contribute to UQC's proactive

area expansion

WiMAX Forum's Wave2 (2.5GHz)

Received certificate.

Interoperability among different venders

<Predominance of products and technology>

Single outdoor/indoor unit by adopting a high amplifier

PasoWingsBS202

M-Taiwan Project

2007.5 Received order for trial
Started demo-trial with Tatung in Oct.

2008.6 Established R&D Center

2010.3 WiMAX system for

Tatung InfoComm began commercial

operation

Hualien

Kaohsiung   Pintong

Crown Prince Hospital Foundation in Thailand

2008.8 Received order
Connection to clinics within 5KM centering
on Chiang Khong Hospital

2009.3 Service launched

N

Laos

BS1

Mekong river

Chiang Khong
Hospital   (3.5km)

(5km)   CP
(Tambon
Gathan)

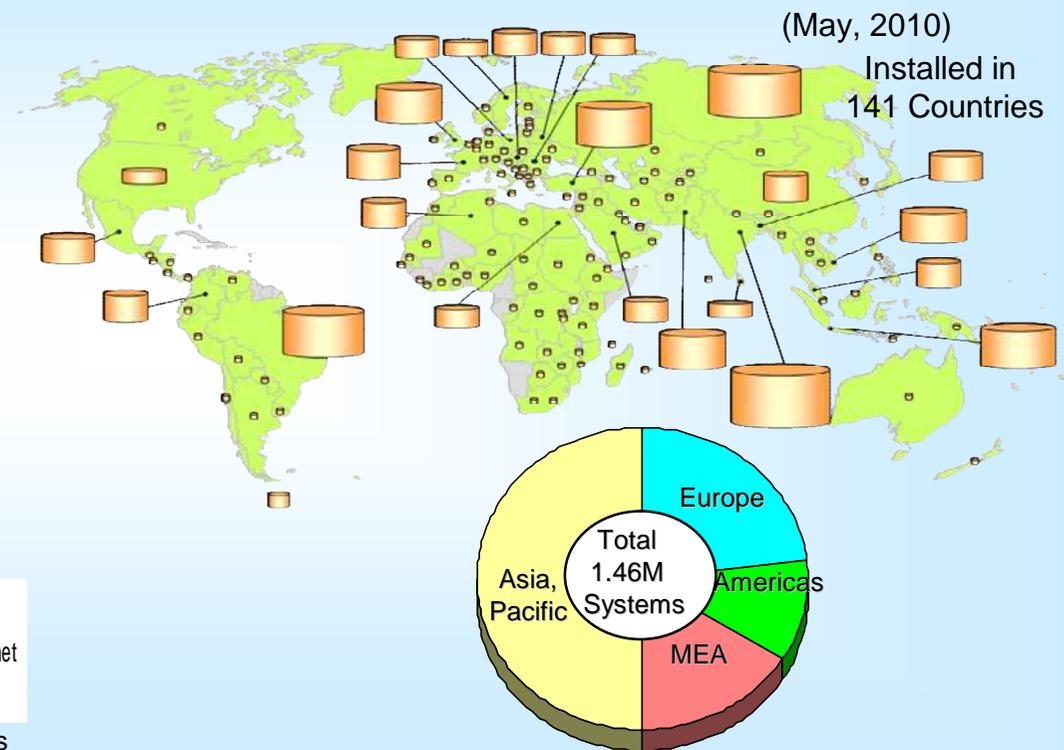Thailand   CP
E(Thung
Ngew)
CP   (Nummar)
E

Mobile Backhaul Business

The most important infrastructure to support the rapid increase in demand for both mobile telephone and mobile data services

- Secured highest quality of radio transmission technology and greater (non-price related) competitiveness through manufacturing
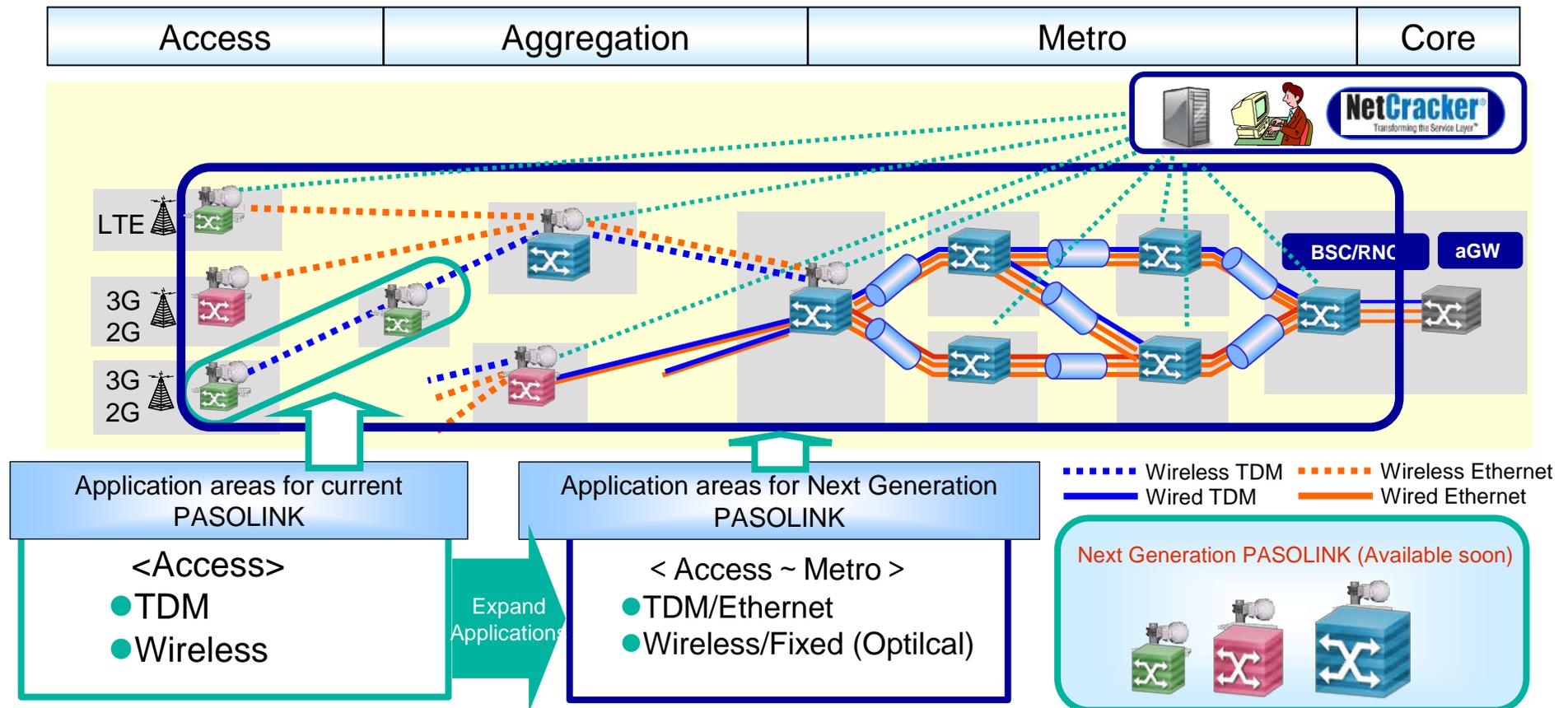- Secured top market share by adopting advanced mobile backhaul

Mobile Backhaul Equipment (WW)

[millions of dollars]

Legend:
- Others
- Microwave TDM
- Ethernet cell site gateways
- SONET/SDH and WDM
- Microwave Ethernet & Dual TDM/Ethernet
- Ethernet cell site routers

Source:Infonetics, Mobile Backhaul Equipment and Services
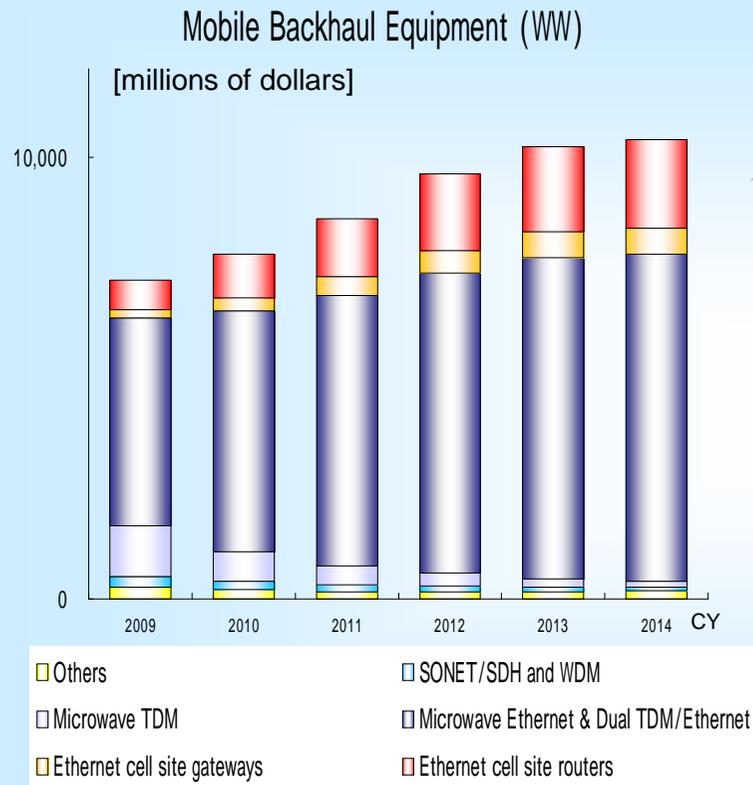
Supply record of PASOLINK

(May, 2010)
Installed in 141 Countries

Total 1.46M Systems
- Europe
- Americas
- MEA
- Asia, Pacific

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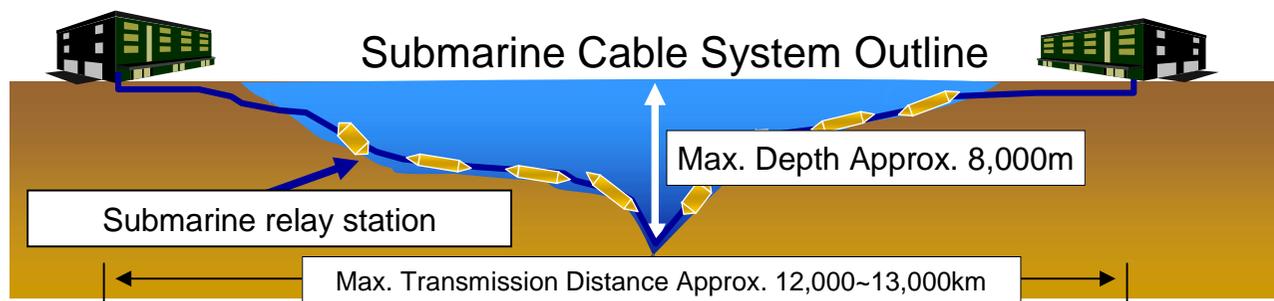# Advancement of Mobile Backhaul Solutions

Combining NEC's Wireless, Optical, IP and OSS technologies
- Capable of supporting both new and old systems cohesively and economically during the migration from 2G/3G to 3.9G (LTE)
- Provide E2E/Mutlilayer path management through integrated NMS and OSS, as well as high expandability and high reliability
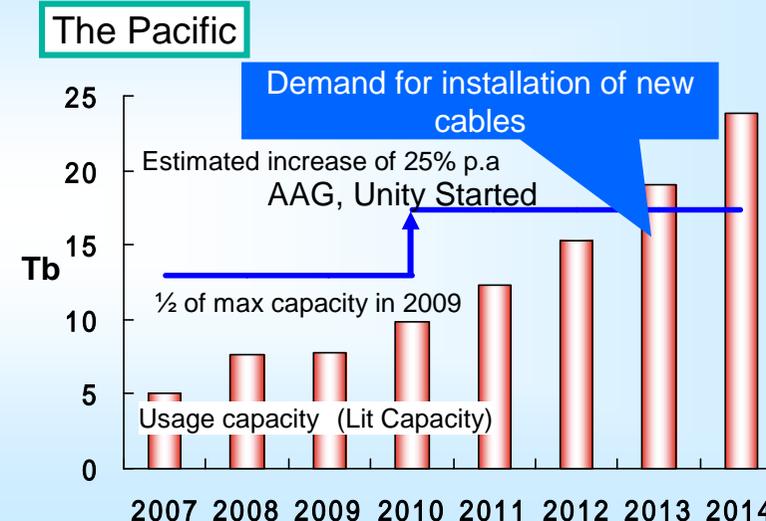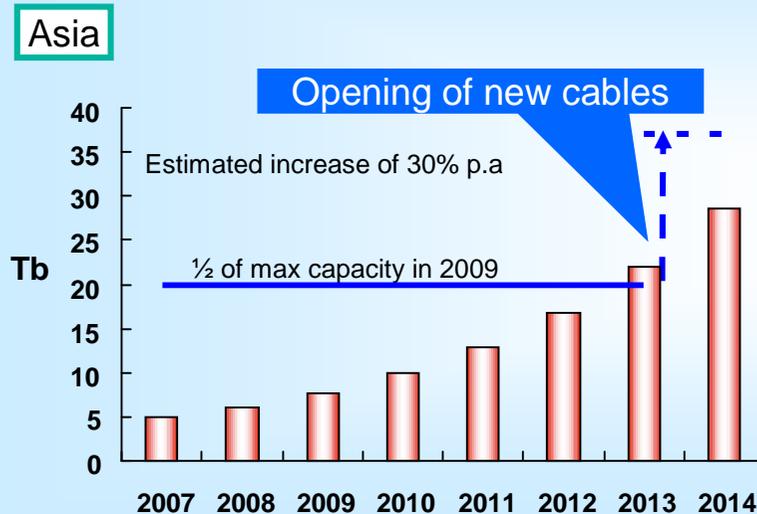
Access	Aggregation	Metro	Core

LTE
3G 2G
3G 2G

BSC/RNC aGW

NetCracker®
Transforming the Service Layer*

······ Wireless TDM   ······ Wireless Ethernet
—— Wired TDM   —— Wired Ethernet

Application areas for current PASOLINK

\<Access\>
- TDM
- Wireless

Expand Applications

Application areas for Next Generation PASOLINK

Access   Metro
- TDM/Ethernet
- Wireless/Fixed (Optilcal)

Next Generation PASOLINK (Available soon)

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Submarine Cable System Business Initiatives

- Continuing demand for new cable installation due to steady increases in traffic from expanding international data transfers
- NEC is one of the world's top three venders for providing E2E solutions, including cable manufacturing
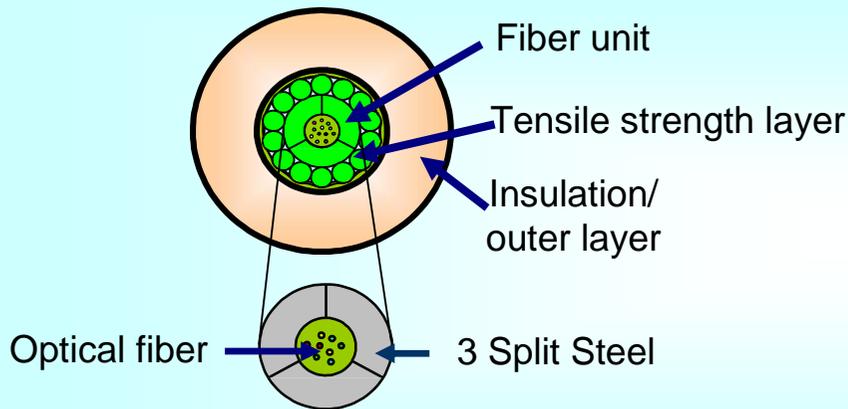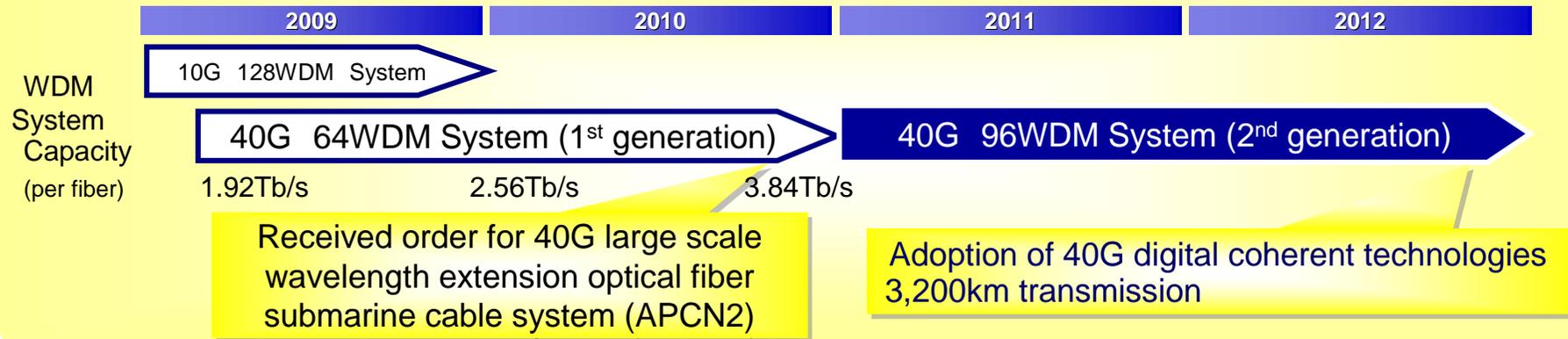
Submarine Cable System Outline

Max. Depth Approx. 8,000m

Submarine relay station

Max. Transmission Distance Approx. 12,000~13,000km

Construction of the "Unity" high capacity optical submarine cable
(2009/11/1 Chikura)
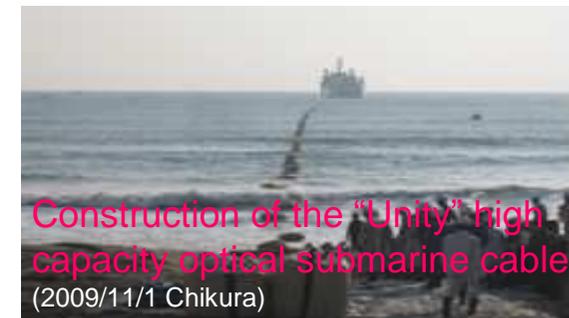
Capacity of the Optical Submarine Cable among Asia and the Pacific

Asia

Opening of new cables

Estimated increase of 30% p.a

½ of max capacity in 2009

Tb

40
35
30
25
20
15
10
5
0

2007 2008 2009 2010 2011 2012 2013 2014

The Pacific

Demand for installation of new cables

Estimated increase of 25% p.a
AAG, Unity Started

½ of max capacity in 2009

Usage capacity (Lit Capacity)

Tb

25
20
15
10
5
0

2007 2008 2009 2010 2011 2012 2013 2014

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Strengthen Submarine Cable System Business

Competitive system provided by advanced optical transmission and submarine cable technologies
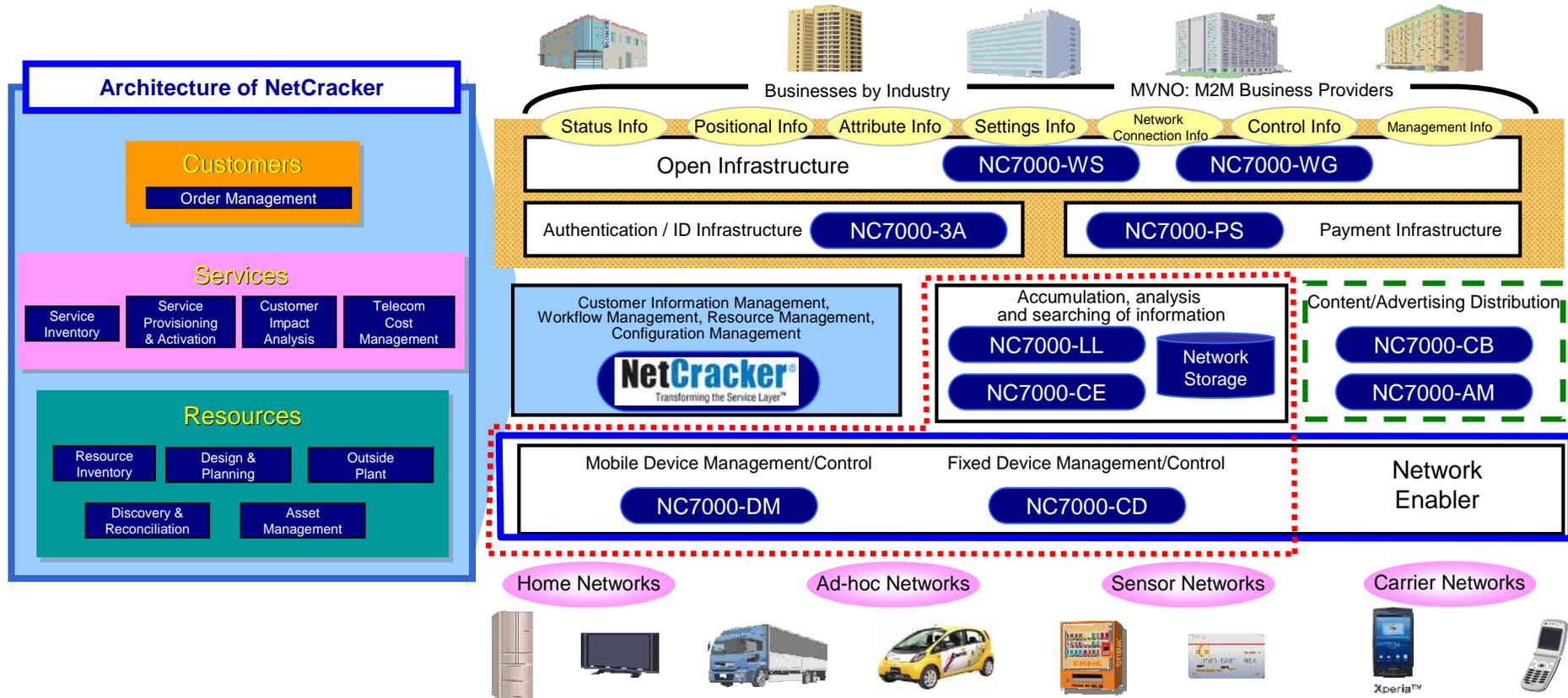
Advanced Submarine Cable System Technology

2009	2010	2011	2012

WDM System Capacity (per fiber)

10G   128WDM   System

40G   64WDM System (1st generation)

40G   96WDM System (2nd generation)

1.92Tb/s   2.56Tb/s   3.84Tb/s

Received order for 40G large scale wavelength extension optical fiber submarine cable system (APCN2)

Adoption of 40G digital coherent technologies 3,200km transmission

Fiber unit

Tensile strength layer

Insulation/ outer layer

Optical fiber

3 Split Steel

OCC – SC500 Submarine Cable Structure

Next generation submarine cable systems combining high performance, high reliability and cost benefits
(Features and Benefits of OCC-SC500)

17mm cable diameter, world's smallest class

OCC's original "3 Split Steel" technologies

- Durable construction
- High speed production
- Avoid effects associated with welding
- Reduced production process

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Initiatives Towards Service & Management Businesses

Provide solutions that contribute to increased sales and reduced operational costs for carriers
- Improve capabilities for high value-added services through NEC's service platform products (NC7000 Series)　　(Smartphone-supported services, M2M-supported services, etc.)
- Achieve optimum utilization of network resources and automation of service delivery with OSS/BSS (NetCracker)

Architecture of NetCracker

Customers
- Order Management

Services
- Service Inventory
- Service Provisioning & Activation
- Customer Impact Analysis
- Telecom Cost Management

Resources
- Resource Inventory
- Design & Planning
- Outside Plant
- Discovery & Reconciliation
- Asset Management

Businesses by Industry | MVNO: M2M Business Providers

Status Info | Positional Info | Attribute Info | Settings Info | Network Connection Info | Control Info | Management Info

Open Infrastructure — NC7000-WS | NC7000-WG

Authentication / ID Infrastructure — NC7000-3A | NC7000-PS — Payment Infrastructure

Customer Information Management, Workflow Management, Resource Management, Configuration Management — NetCracker® Transforming the Service Layer™

Accumulation, analysis and searching of information — NC7000-LL | NC7000-CE | Network Storage

Content/Advertising Distribution — NC7000-CB | NC7000-AM

Mobile Device Management/Control — NC7000-DM | Fixed Device Management/Control — NC7000-CD | Network Enabler

Home Networks | Ad-hoc Networks | Sensor Networks | Carrier Networks

Xperia™

Empowered by Innovation **NEC**

OSS/BSS Business

Large market share in OSS product essential in service diversification
- Firm customer footprint and powerful consulting / sales strength at a global scale

Contribute to significant operational costs reduction and revolutionary improvements
→ Business Transformation

Enhancement of the Management System Achieved by NetCracker

Management System

Expandability, Flexibility

⇅

Advent of a range of services and prices

IP Networks

Telephone | Mobile Phone | Data | Video

Business Support System (BSS)

Operational Support System (OSS)

NetCracker®

Service Provisioning Support

Service Quality Control

Billing Management

- Early introduction / provision of new services
- Management streamlining
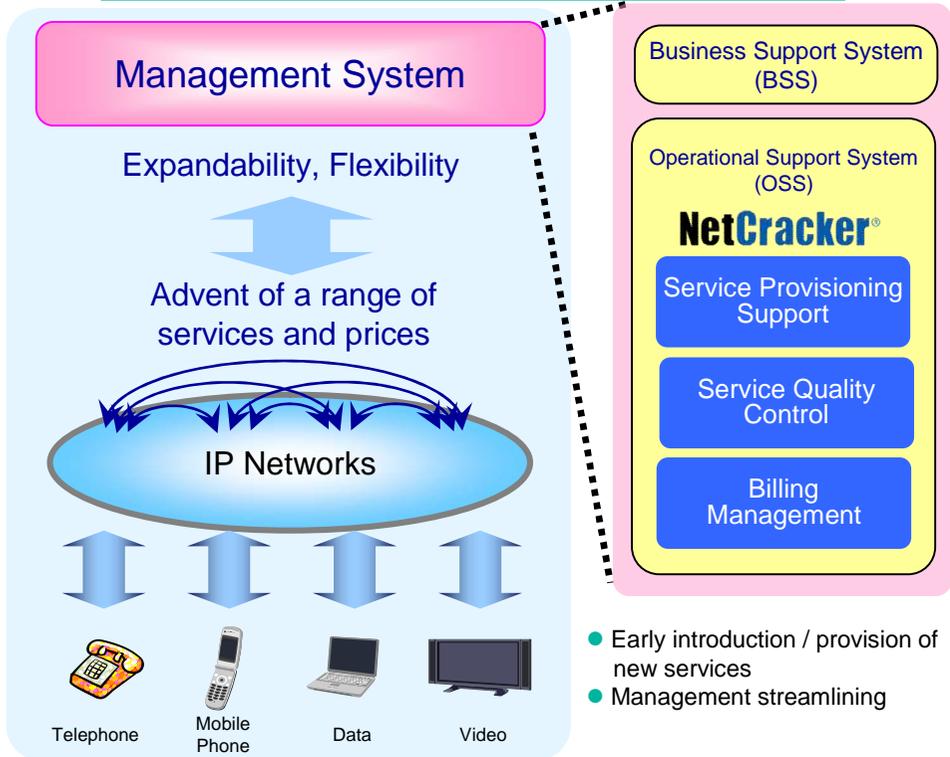
Growing OSS/BSS Market and NetCracker

[millions of US dollars]

The Best Practices Award
TM Forum Award 2009

- Billing / Customer Care
- Assurance
- Fulfillment

CAGR 7.0%
(2008　2012)

2008　2009　2010　2011　2012

Analysis Mason

Receiving award at the TM Forum Awards

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Enhancing OSS/BSS Business

- Enhance product lineup from fulfillment (service provisioning support) with highly competitive and a strong track record, to the fields of total OSS and TOMS
- Expand the its market segments through synergy with NEC products family (MBH, Data Centers, etc.)

Enhancing OSS Product Line

TOMS

OSS

Service Platforms / Applications

WFM / CRM / Billing Assurance / NMS

Fulfillment
(current NetCracker)

MBH Synergy

IT/DC Synergy

...

OSS Sole Market

Solution Synergy Market

NetCracker incorporates NEC service platforms and applications proven through domestic market and provides SE / SI services in the global market.

NC9000 (IMS) NC7000 (SDP) NC5000 (QoS)

Provide various features such as network optimization, under cooperating with the NEC products family.

NetCracker®

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Empowered by Innovation **NEC**

Service Platform Business: Services for Smartphone

Increase telecom carriers' profit through providing services for Smartphones etc.

Smartphone Features

- Business application market
- Larger screens
- A multimedia device, not a phone
- Better with mobile mobile
- Compatibility and connectivity to the internet
- Integrated business tools

Service Categories

- Smartphone Internet Service (Smartphone version of internet service)
- Movie / Video Services
- Community / P2P Services
- Seamless Converged (FMC) Services
- Business Use Services

Services for Smartphone

- Apps + Personalized Ad Distribution
- E-book Services
- Movie / Video Vault Services
- Augmented Reality Services
- Voice Broadcasting Service
- Rich Communication Service
- Home ICT (M2M)
- Device Agnostic Service Platform
- ID Authentication/Private Information Service Platform
- Thin Client Service

Smartphones, iPad, PC, TV, Photo frame, etc.

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Service Platform Business: M2M

M2M (Machine to Machine) application on our service platform will create "Ubiquitous Networked Society"

Sensing
- Environmental sensing services
- Agricultural sensing services

Visualization of weather and vegetation information

Telematics
- EV drive services
- Drive-Net-Navigation services

Battery monitors for EV, collection service for recharging costs

Telemeter
- Home ecology services
- Remote monitoring services

Monitor the volume of electricity in home power outlets, control on/off

Agriculture ICT Solution

Farm

Field Server
elab experience

Farmers

Sensor Data
Temp, Humidity
Soil info
Web camera...

Farm Know-how

OPEN API

Sensor Info.   Matching   Farm Smarts
Device Mngmnt   Workflow Mngment
Certification

Telecom Carrier Service Platform: NC7000 Series

Telecom Carrier Network

Temp, Humidity
Atmospheric pressure, Rain
Solar radiation
Remote monitoring
Harvest, fertilize, pest control

Info Release

Farm Info Portal

/23.4
Weather Info

Web Camera

Farmer

Sensor Info

Community

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Toward C&C Cloud

Telecom carrier network with high speed and mobility is the foundation of cloud services
Focus on creating cloud environments, smart grids and IT/NW integrated platforms

		FY2009	FY2012
Cloud Services/Cloud Environment Building	**Enterprise**	Cloud-oriented services Proof in NEC Intranet PaaS PaaS: Platform as a Service Strengthen Digital Signage Small/Mid-sized SaaS	Global deployment of cloud-oriented data centers
	Telecom Carrier	NGN/LTE Construction OSS Public cloud construction by telecom carriers (international) Managed desktop services	Growing orders from international telecom carriers
	Social Infrastructure	Public Safety Municipality Clouds Commercial Telematics (logistics)	Smart Grid Smart Infrastructure (Transport)
	IT/NW Integrated PF	Cloud Platform Suite	

C&C Cloud

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Carrier Cloud Business

Establish the Carrier Cloud business on a global scale, with IT and network technology and expertise

Expand experiences in Telefonica across telecom carriers in Europe

- Order for SaaS system by Telefonica Spain (July last year)
- Agreement of joint rollout for cloud business in Latin America with Telefonica (February)

Established in NEC Ibérica (Madrid, Spain), a subsidiary of NEC Europe Ltd.

Establishment of Global Competence Center

Telecom Carrier Network

ADSL

Users   Users

Abiko NGN Conformance Center

ADSL environment in telecom carriers is simulated and verified at the Conformance Center in the NEC Abiko Plant.

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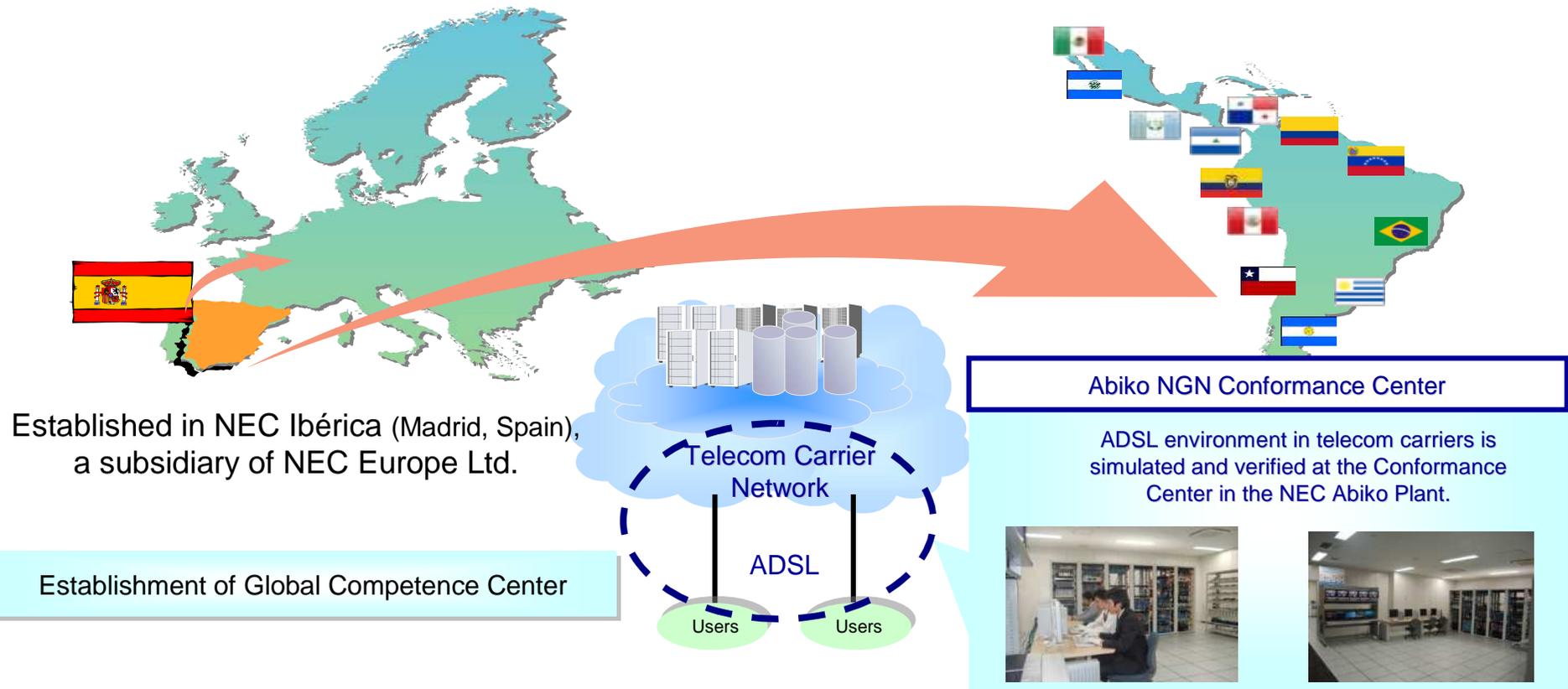
Smart Grid Business

Apply various products and technologies in Carrier Network Business to energy networks as well.
(Wire line and wireless network, network management, customer and usage management, etc.)

Establishment of Smart Network Businesses and Technologies

Create businesses with partners

- Smart meters
  (automated meter reading systems)
- HEMS (home energy management systems)
- Quick chargers for electric vehicles

Smart Grid

Enter the smart grid market that utilizes ICT and energy storing technologies
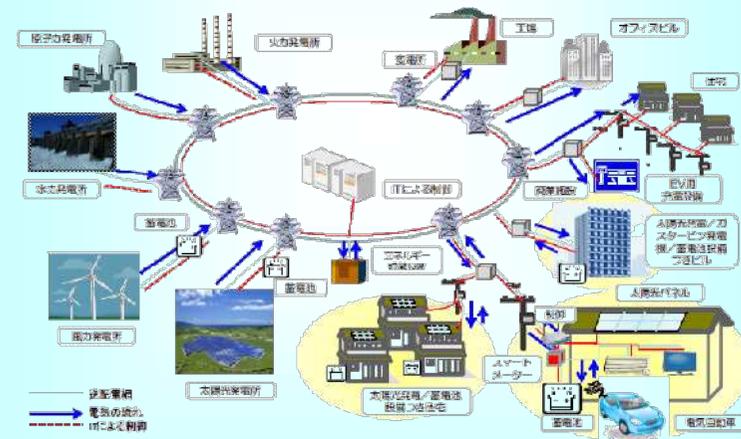
Ministry of Economy, Trade and Industry
Seminar on International Standardization Concerning Next-Generation Energy Systems (January 2010)
http://www.jisc.go.jp/jisc/data/soukai/018/san03.pdf

Empowered by Innovation   **NEC**

1. Business overview

2. Mid-term business environment

3. Key business strategy

4. Measures to enhance global competitiveness

5. Toward achieving V2012

Empowered by Innovation NEC

Enhancing the Global Business Structure

New structure of the five-region global structure and human resource development
- Accumulation of expertise through the creation of regionally-developed solutions and establishment of competence centers

Ensure competitiveness through off-shore activities and actively utilize M&A / partnerships

Overseas Sales (Existing business/Key business)

(Billions of Yen)

400

200

Services & Management

Submarine Cable system

Mobile backhaul
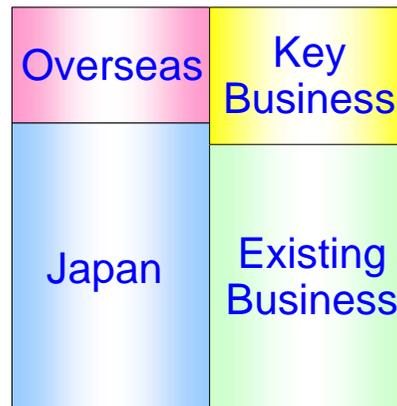
Wireless Broadband Access

Key Business

Existing Business

2009   2012 FY
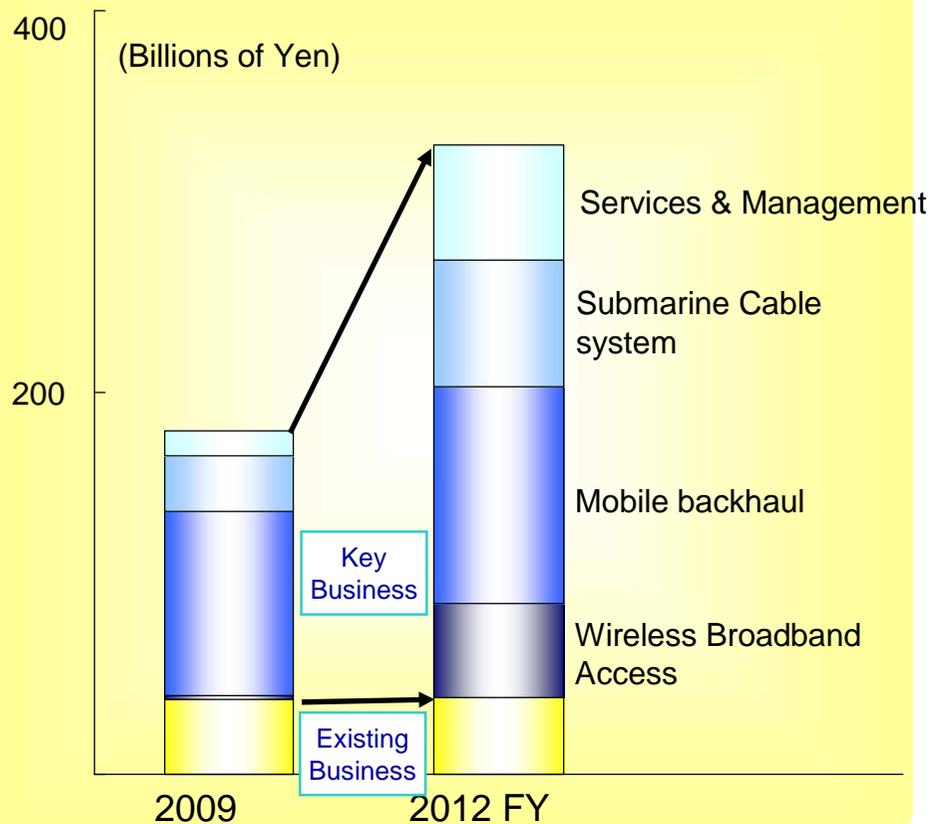
Establish competence center/Create solutions
- Femtocell(London) Cloud(Spain)
- NetCracker Business Expansion(North America)
- Service Business Expansion(Latin America)

Global human resource
(GTI: Global Track to Innovator)
- Program training for the early development of human resources who will work globally in the furture.
  - Local work experience in each specialized area for 1 to 2 years

Offshore Activities
- 25% of outsourced development done offshore (2012)
- Expansion of offshore fields (SI/SE/contact centers, etc.)

M&A, Partnerships
- Full utilization of the assets of acquired companies (NetCracker, OCC, NECEastern Europe)
- Partnerships, enhancement of ecosystems
  - NGN Partnership Program
  - OEM Partners (UbiquiSys, Juniper, Kineto, etc.)

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Enhancing Product Strength through Base Technologies

Differentiation with core technologies → Enhance global competitiveness of products in focused areas

Apply Radio Frequency Amplifiers with World-Class Efficiency to LTE/WiMAX Base Station Units

● Reduce the size and power consumption of base station units, reducing installation space and power consumption, and cutting the costs of installation and operation

Achieve a power amplification efficiency of over 45%
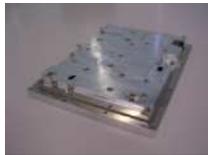
High-Efficiency Radio Frequency Amplifier

LTE Outdoor Wireless Unit (RRH)

Realization of World's First 100G Long-distance Real-time Digital Coherent Communication

● Develop a transponder that carries out long-distance optical transmission in real-time with a 100G digital coherent optical transmission system. "Success in real-time communication over a 1,520 km long-distance optical transmission section in Verizon field trials."

Received Signal

Real-time processing of received waveform from 1,520-kilometer optical transmission route

Received Waveform after Digital Signal Processing
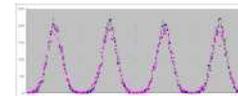
Practical Application of 40G Submarine Optical Cable System Terminal Equipment

● First-ever application of optical wavelength multiplex terminal equipment fitted with a 40G transponder in a wavelength expansion project for the APCN 2 large-scale submarine optical cable system

NS Series T640SW / 40G Transponder

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Enhanced Competitiveness through QCD Reforms

> Management innovation from innovation in plant production throughout overall business, including front-loading.
> - Production innovation: Put QCD reforms into practice at production sites.
> - Front-loading: Incorporate QCD at the product planning and development design stages.

[Carrier Network Business]　　　　　[Main Base (NEWIN)]

→ **Q: Quality Reform**
- Strengthening of development/design upstream processes
- Enhanced management of purchased components

→ **C: Cost Reform**
- Setting of cost targets in anticipation of market prices
- Thorough screening of project orders
- Increased offshore and multi-vendor utilization

→ **D: Delivery Reform**
- Shorten total lead times
  - Shortened development times
  - Expand production for firm orders

Quality Loss Cost (Ratio to Sales)
0.2% Improvement

FY2007　FY2008　FY2009

Amount of Cost Reform (Ratio to Sales)
3.8% improvement

FY2007　FY2008　FY2009

Inventory Turnover Period (Liquidity)
2-day improvement

Improvement equivalent to balance of 3.1 billion

FY2007　FY2008　FY2009

In-Process Defect Rate
(Mobile Line)

Start of Production for New Models

Maintaining Zero Defects

4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3 4 5 6 7 8 9 10 11 12 1 2 3

FY2007　FY2008　FY2009

Improved Productivity (Regular Volume per Person)
<PASOLINK (NEO IDU)>

2.9 times/ 3 years

(reference index 1.0 in second half, 2006)

4Q 1Q 2Q 3Q 4Q 1Q 2Q 3Q 4Q 1Q 2Q 3Q 4Q

FY2006　FY2007　FY2008　FY2009

Percentage of Orders Handled with a Lead Time of "less than three weeks"
(Supply Lead Time from Order Receipt to Shipping)

<PASOLINK>

26% increase

1st half 2007　1st half 2008　2nd half 2009

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5. Toward achieving V2012

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Toward achieving V2012

Our goal:
900 billion yen in sales (operating profit margin 9%) by FY2012

	FY2009	FY2012
Overseas Sales ratio	28%	40%
Key Business ratio	34%	50%
Operating profit ratio	5%	9%

(Billions of Yen)

Sales
900

CAGR +13% 09   12

Sales
627.4

Overseas | Key Business

Japan | Existing Business

Overseas | Key Business

Japan | Existing Business
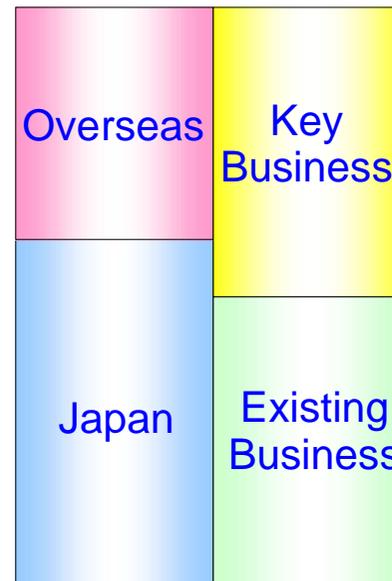
Wireless Broadband Access
Mobile Backhaul
Submarine Cable System
Services & Management

FY2009

FY2012

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* Forecast as of July 8, 2010

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