### REVIEW OF OPERATIONS BY SEGMENT

# **Technology Solutions**

### Services

#### Competitive Advantage

We support the global use of ICT by leveraging an extensive track record in diverse industries and regions as well as the expertise and insight that we have accumulated.

The Services business ranks top by market share in Japan and fifth globally. We provide services across a wide range of countries and regions, including Europe, the Americas, Asia, and Oceania. Outsourcing services are a key field for us, and through our worldwide network of more than 100 datacenters in 16 countries centered in Japan and Europe, we offer cloud services such as JaaS, PaaS, and SaaS that make operation of customers' ICT systems easier and help make customers' operations greener.

We also have an extensive track record in building large-scale and leading-edge systems in a broad spectrum of industries and fields, including manufacturing, distribution, finance, the public sector, communications, healthcare, and education. That record has been underpinned by wide-ranging systems engineering resources with leading-edge technological skills to help customers use ICT across countries, regions, and languages. It spans national government-based systems through to those of corporate customers with global bases.

Through the use of not only conventional mission-critical systems but also the cloud, IoT, AI, security technologies, and other new digital technologies, we are enhancing our "Connected Services" and contributing to the value creation efforts of customers and society while initiating business innovation.

#### Market Trends and Opportunities

The IT services market is expected to grow globally amid an increasing focus on broadening business opportunities and efficiency through the use of ICT. In Japan, IT investment promises to increase in the lead-up to the Tokyo 2020 Olympic and Paralympic Games.

In Japan's IT services market, a CAGR of 1.2% is expected between 2016 and 2019. In the domestic economy, investment is likely to remain firm due to new service launches, infrastructure development, and security strengthening in preparation for the Tokyo 2020 Olympic and Paralympic Games. New trends are emerging in various industries such as FinTech in the financial field, omni-channel retailing (a multi-channel approach to sales spanning shopping online through to shopping at brick-and-mortar stores) in the retail field, and IoT implementation in the manufacturing field. Other trends include the promotion of regional medical information exchange in the healthcare field and the acceleration of the introduction of tablet computers to elementary schools, junior high schools, and other educational facilities.

In the worldwide IT services market, expansion in Asia is expected to drive a CAGR of 3.0% between 2016 and 2019. Although there is uncertainty about market trends centered on the United Kingdom and Europe, stepped-up use of ICT to reduce costs is likely. Further, economic expansion is likely to continue in emerging economies. Given these economic conditions, IT investment in each region is projected to rise steadily.

#### Issues

With the increasing buoyancy of the IT services market, advancing businesses that provide next-generation services and entering new business fields are pressing tasks. To realize new services, we will further develop our skill sets.

With respect to services, in Japan's brisk market we believe that it is important to transition from the construction of conventional systems toward services catering to the growing demand for the construction of new systems that incorporate the cloud and other technologies. At the same time, we must accelerate the establishment of new services for industries and fields in which, until recently, the use of ICT had not been advanced. Expanding markets by entering new business fields will be indispensable for growth going forward. Further, the overseas business is shifting its focus from products to services. In parallel with these efforts, however, we need to shift from businesses centered on managed infrastructure services for customers' systems toward business application services, thereby deepening our engagement with customers' mainstay operations. Also, in Japan and overseas a common requirement for the Group is to further develop skill sets that enable the realization of new services. Therefore, an important task going forward will be to develop personnel globally who can lead digital transformation with more-advanced, specialized skill sets. This task includes the enhancement and utilization of offshore resources.

#### **Initiatives Going Forward**

We aim to promote business centered on the "Fujitsu Digital Business Platform MetaArc" and to expand into new business sectors in Japan and overseas. From an ICT perspective, we aim to support customers' efforts to innovate and expand globally.

We actively aim to propose not only conventional system construction but also the use of new systems to tap into strong IT investment momentum in Japan. In particular, we will focus on expanding businesses centered on MetaArc and advancing "digital co-creation," which entails working with customers to develop their mainstay operations. We will combine the core Systems of Record (SoR), a key in-house strength, with the new Systems of Engagement (SoE) group of services, which utilize such advanced digital technologies as IoT and AI. In this way, the segment will promote businesses that fully leverage its knowledge and experience, provide Connected Services, and support customers' innovation.

Overseas, as part of business model transformation, we are tackling transformation of digital businesses. Focusing on Europe, we are reducing personnel numbers and hiring personnel with the new skill sets required for the digital businesses that we intend to strengthen going forward. The segment will shift toward business application services that are closer to customers' mainstay operations. Thus, the segment will transition from businesses centered on products to service businesses under the "global matrix organization."

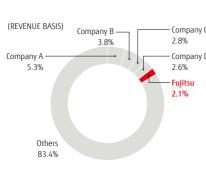
Based on a common platform of services in Japan and overseas, we offer ICT support to customers with bases overseas as well as to those expanding globally by broadening operations from Japan into other markets.

#### IT SERVICES MARKET SHARE IN JAPAN IN 2016



Source: Gartner, "Market Share: IT Services 2016," April 19, 2017, vendor revenue-based \* Chart created by Fujitsu based on Gartner data

#### **GLOBAL IT SERVICES MARKET SHARE IN 2016**



Source: Gartner, "Market Share: IT Services 2016," April 19, 2017, vendor revenue-based \* Chart created by Fujitsu based on Gartner data

### IT SERVICES MARKET FORECAST (JAPAN / GLOBAL)



Source: IDC Worldwide Black Book 2017, June 2017



A rendering of tourists using the Discover TOYAMA app, which enhances sightseeing in Toyama Prefecture



Joint verification of an IoT-enabled plant-wide productivity visualization system at Intel's Penang plant



A scoring support system for gymnastics competitions and a new form of televising such competitions (rendering of future products)

# System Platforms

#### **Competitive Advantage**

Fujitsu supplies an extensive lineup of system products centering on servers around the world, ranking top in server market share in Japan and ninth globally. In optical transmission systems, the Company has large market shares in Japan and overseas underpinned by its advanced technologies and highly regarded support capabilities.

#### **System Products**

The system products business centers on servers, where Fujitsu boasts top share in the Japanese market. Globally, we provide a broad product lineup to meet diverse customer needs, including advanced and highly reliable mainframes and UNIX servers that support the mission-critical systems of corporations. These servers are equipped with proprietary CPUs—Fujitsu is one of the few global ICT companies with the technology to manufacture its own processor chips. We also provide x86 servers to support cloud computing and storage system able to hold huge—and ever-increasing—amounts of data.

#### **Network Products**

With network products, Fujitsu holds high market shares in optical transmission systems and mobile-phone base stations used by mobile communications carriers in Japan, backed by its advanced technology and support capabilities. We have also maintained a large market share in the highly competitive North American market for optical transmission systems, where we have benefited from our highly regarded technological capabilities and lengthy track record. We have also taken the lead over other companies in offering solutions that meet new customer needs accompanying the move toward network virtualization as typified by softwaredefined networking (SDN).

#### Market Trends and Opportunities

The global server market is expected to grow supported by market expansion in emerging economies and increasing datacenter demand. In the optical transmission market, we expect to see increased investment in network virtualization and softwarization.

#### **System Products**

In Japan's server market, a CAGR of -5.1% is expected between 2016 and 2019. The x86 server market, which was trending toward growth, is likely to contract as cloud services expand. Also, demand in the high-end server market is forecast to weaken with the ending of a round of business deals for major projects.

In the overseas server market, meanwhile, a CAGR of 2.4% is projected between 2016 and 2019. In this market, volume-zone servers are likely to grow amid higher demand for datacenters accompanying expansion of emerging markets and an increase in social media services and cloud services.

#### **Network Products**

In the optical transmission market, investment in facilities and equipment has been declining in and outside of Japan as mobile communications carriers shift the focus of their investment from infrastructure to enhancing services. Recently, there has been an increasingly marked trend toward the adoption of disaggregation for datacenters and other facilities. Disaggregation entails a server separating components and resources into subsystems rather than all functions being included within one piece of hardware.

In addition, with accelerated moves toward network virtualization and softwarization, investment in 100 Gbps optical transmission, and the integration of optical transmission and packet processing, we expect investment to continue to expand over the medium term, though only slight growth is projected for the market as a whole.

#### Issues

We need to raise business efficiency and competitiveness in response to the advance of commoditization and the contraction of the server market. In network systems, we need to quickly shift our emphasis to next-generation businesses applying virtualization technology.

#### **System Products**

In the server business, the market particularly for low-end models has become increasingly commoditized and price competition has been intensifying. The server market has been contracting due to the growing use of cloud-based systems. We must seek to boost competitiveness and raise market share by cutting costs and increasing efficiency even as we maintain product quality.

#### **Network Products**

Customers in Japan and overseas have continued to rein in capital expenditure, continuing the trend seen in the previous fiscal year. In the network industry, there has also been an ongoing shift from hardware-based to software-based control. In response, we need to quickly transform our business from a hardware-centric focus to one providing next-generation network systems sought by customers that use virtualization technologies and software control such as SDN and Network Function Virtualization (NFV). In doing so, we need to push forward with leading-edge and cost-efficient technology development.

#### **Initiatives Going Forward**

We intend to contribute to the realization of the IoT through infrastructure using MetaArc and in-house products. We aim to accelerate business model transformation globally, develop solutions adapted to network virtualization technologies, and step up the shift toward services.

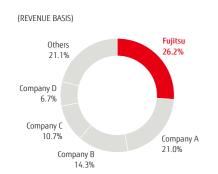
#### **System Products**

Servers, storage, and software products provide a vital platform for realizing the IoT. We are supporting infrastructure platforms by providing highly reliable, high-performance services using in-house products incorporated within our MetaArc.

#### **Network Products**

While further reinforcing the development of solutions tailored to the use of SDN and NFV network virtualization technologies, we are shifting our focus toward services and accelerating business model transformation both in Japan and overseas. We also aim to expand businesses catering to the growing traffic volumes of datacenters. We will achieve this mainly through our new 1FINITY optical transmission system for datacenters. In the mobile system field, we are stepping up 5G technology development and standardization.

#### SERVER MARKET SHARE IN JAPAN IN 2016



Source: IDC Japan, "Japan Quarterly Server Tracker CY17Q1,"

#### OPTICAL FIBER NETWORKING MARKET SHARE IN NORTH AMERICA IN 2016



Source: Ovum, "Market Share Spreadsheet & Analysis 1Q17 Global ON." May 2017

#### SERVER MARKET FORECAST (JAPAN / GLOBAL)



Japan (left) Global (right) es: IDC Japan, "Japan Quarterly Server Tracker–Forecast," June 16, 2017, for Japan; IDC, "Worldwide Quarterly Server Forecast, 2017Q1," for global data



PRIMERGY CX2550 M4 2-way multi-node x86 server



Fujitsu Storage ETERNUS DX8000 S3 series hybrid storage system



Fujitsu Network 1FINITY series

# **Ubiquitous Solutions**

#### **Current Initiatives**

The Ubiquitous Solutions business comprises the PC business, mobile phone business, and the car navigation systems business.

In the PC business, Fujitsu Client Computing Limited is shifting toward high-value-added products to increase differentiation. In these efforts, the company is focusing on the Fujitsu Group's strengths—individual customization and security-related products. Since October 2016, a strategic alliance with Lenovo Group Limited has been considered. The goal is to create models that will be competitive in the global market.

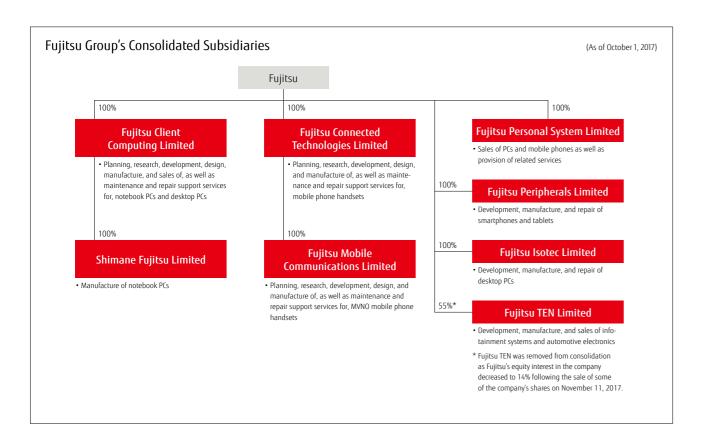
In the mobile phone business, Fujitsu Connected Technologies Limited is expanding the market share of its established smartphone business while growing market share in such new markets as Mobile Virtual Network Operator (MVNO) devices and corporateuse devices. Distinctive products are being marketed, including the easy-to-use Raku-Raku Smartphone, which targets the senior generation, and mobile phones for children.

As for the car navigation systems business, in April 2017 the Group decided to transfer some of its stake in car electronics manufacturing subsidiary Fujitsu TEN Limited to DENSO CORPORATION. Stepping up collaboration, Fujitsu TEN and DENSO will strengthen the automotive and mobility IoT businesses.

#### Fiscal 2016 Business Results and Outlook

In fiscal 2016, the Ubiquitous Solutions segment recorded a 1.5% year-on-year decrease in revenue, to ¥1,025.7 billion. In the mobile phone business, revenue declined due to lower mobile phone shipments, which resulted from a lengthening of the replacement cycle in the smartphone market. The revenue of the PC business grew thanks to the steady sales of corporate PCs. Although overseas revenue went down by 7.6%, it was essentially unchanged year on year if the effect of exchange rates is excluded. Reflecting significant improvements in the PC and mobile phone businesses, the business segment posted operating profit of ¥28.7 billion, compared with the previous fiscal year's operating loss. As well as the beneficial effect of the higher revenue from PCs in the Japanese market, the PC and mobile phone businesses also reduced costs and increased cost efficiencies. Furthermore, the mobilewear business increased earnings.

Looking ahead, the revenue and operating profit of Fujitsu TEN, some of whose shares Fujitsu has decided to sell, will not be included in the Company's business results in fiscal 2017, the year ending March 31, 2018. The mobile phone business will reinforce existing businesses by acquiring mobile phone models for Raku-Raku Smartphone and for new service plans. At the same time, the business will grow sales in such expanding markets as MVNO and SIM-free corporate-use devices. The PC business aims to increase volume by leveraging Fujitsu's strengths through customized and security-related products.



## **Device Solutions**

#### **Current Initiatives**

Fujitsu's Device Solutions business comprises the LSI device business and the electronic components business.

In the LSI device business, the Fujitsu Semiconductor Group has three core operations: (1) system memory businesses centering on ferroelectric random access memory (FRAM), which has the low-voltage, high-speed read/write endurance and low power consumption characteristics ideally suited to an energy-conserving society; (2) wafer foundry services, the first in the world to use ultra-low-power Deeply Depleted Channel (DDC) transistor and gallium nitride (GaN) mass production technologies; and (3) LSI device sales in which solutions and a vast array of electronic device products produced by the Fujitsu Group and other manufacturers in Japan and overseas are supplied to customers not only in Japan but also across the Americas, Europe, and Asia.

In the electronic components business, we anticipate strong growth in demand for high-performance semiconductors in IoTrelated and other markets. Publicly listed consolidated subsidiaries in the Fujitsu Group, namely Shinko Electric Industries, are leading our efforts to bolster marketing and development capabilities and broaden our technological reach as we seek to commercialize new products and tap into that demand.

#### Fiscal 2016 Business Results and Outlook

In fiscal 2016, the Device Solutions segment posted a 9.9% year-onyear decline in revenue, to ¥544.3 billion. In Japan, revenue decreased 14.6% as lackluster demand for LSI devices for smartphones affected business results. Overseas revenue declined by 5.5%. Due to yen appreciation, US dollar-denominated export sales of LSI devices and electronic components declined. Operating profit was ¥4.2 billion, ¥26.1 billion lower than in the previous fiscal year. In addition to the decrease in US dollar-denominated export sales, which had an approximately ¥20 billion negative effect on earnings, less revenue from LSI devices affected business results. In fiscal 2016, the business segment incurred business model transformation expenses of ¥4.0 billion, up ¥4.0 billion year on year. The business segment recognized expenses arising from the restructuring of production bases related to the electronic components business in Japan and overseas.

As for the outlook, the LSI device market has been firmly recovering, centered on high-end LSI devices for smartphones since bottoming out of a slump in the first half of 2016. Similarly, demand for electronic components is likely to rise not only in relation to smartphones but also in the automotive, datacenter, and industrial equipment areas. In these business conditions, we will redouble efforts to deliver high-quality products and services to a broad spectrum of customers so that they can significantly advance the competitiveness and performance of their products.

