



# Fujitsu Technology and Service Vision

Case Studies  
Services, Products and Solutions

2014

shaping tomorrow with you

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**Case Studies**

# Bringing together people, information and infrastructure to realize innovation

Harness ICT to create business and social value

Organizations have started to realize innovation by combining the three dimensions of people, information and infrastructure. These case studies show how our customers are taking a new approach.





## Panasonic Corporation

# Using Cloud-enabled Home Appliances for a Better Lifestyle

### Human Centric Innovation



Services based on cloud-enabled home appliances to give people a better lifestyle



Collecting data from smartphones and performing analysis to accelerate development of new products and services



Cloud services collecting and using big data

“We aim to develop a new cloud-based business model that offers people new value by integrating different services, apart from the traditional business of selling standalone home appliances. Partnering with Fujitsu, which has great expertise in the cloud and big data, we intend to launch a new business.”

*Hiroyuki Kubotani, Chief Engineer, Cloud Solutions Center, R&D Division*

### Creating new value by integrating smart home appliances with the cloud

Our growing ability to interconnect electrical and electronic devices at home with computers and networks will lead to new services that deliver unprecedented comfort and convenience.

As networks connect everything in the society, and the Internet of Things (IoT) becomes a reality, home electronics and white goods are being transformed into cloud-enabled, networked smart appliances. They are capable of transmitting consumer-generated data and the insights gained through analysis of this data will be fed back to households. The combination of networking, data harvesting and big data analytics will lead to innovative new services in line with personal, business, community and societal needs.



Leading electronics manufacturer Panasonic views this megatrend as an opportunity to enrich the lifestyles of the people who use its products. For example, with the participant’s permission, Panasonic envisages applying big data analytics to smart appliance use data collected at the Point of Use (POU). In order to investigate the feasibility of cloud services using smart appliances, Panasonic and Fujitsu are together conducting workshops and research. The pilot project leverages their respective strengths, namely, Panasonic’s data collected from smart appliances and Fujitsu’s cloud technology for efficient analysis and visualization of the data.

### Collect POU data on frozen foods for analysis by Fujitsu's cloud service

Panasonic's R&D Division and Fujitsu launched a pilot project in April 2013 using smart appliances and cloud technology. Logs sent from smart appliances are analyzed in the cloud. The object is to verify whether raw data can be processed into useful information affording insights into consumer behavior.

The project involves Panasonic employees, using Panasonic's steam oven in their homes. They connect to the cloud service via smartphones. The convergence service was provided by Fujitsu. Fujitsu also acts as a consultant for the project.

The first theme selected for the project is frozen food. Participants scan the barcode on the package of frozen food using their smartphone to receive the cooking data from Panasonic's data center. On the smartphone they enter the quantity to be cooked and place the device against the oven. Then, the oven automatically starts cooking for the frozen food and simultaneously sends POU data to the cloud.

The aim is to enhance the convenience of home appliances and obtain information on consumer behavior from the POU data. This gives Panasonic a greater understanding of how their customers are using their products than they ever would from Point of Sale (POS) data alone. With this they can create new products and services much more tailored to the needs of their customers.

### Transforming the industry with information

Through this joint project, Panasonic has confirmed the viability of a business integrating smart home appliances with a cloud service.

Analysis of data logs from participants in the cloud reveals, for example, the time, day, quantity, and type of food consumed. Food producers can use this to develop insights around their products - from portion sizing, packaging, even down to the quality of food itself. It is envisaged that statistical data harvested from consenting consumers' smart appliances will be used for forecasting consumption of specific products, leading to better customer experience and more efficient operations.

Supermarket chains and other retailers would



be able to use such a system to distribute special-offers and e-coupons tailored to meet individuals' preferences and lifestyles direct to their smartphones. For Panasonic, the advent of smart appliances plus the growing collaboration with partners in other industries will create new opportunities for building new customer experiences and creating customer intimacy. Analysis of data on smart appliance use in the home will reveal valuable insights into consumers' latent needs that can shape a new generation of products and services. Once everything is connected, comfort and convenience will soar. Initiatives are already underway to make this happen.

#### Customer Profile

##### Panasonic Corporation

Address: Osaka, Japan

Founded: 1935

Employees: 285,817 including affiliated companies

URL: <http://panasonic.net/>



## iHeart Studios

# New Workflow Helps Grow by More Than 600% in 12 Months

### Human Centric Innovation



Simplicity of the technology makes it easy for new user adoption without substantial training cycles



Status of received items is visible in the application, ensuring full transparency of the process



RunMyProcess, the cloud integration platform, connecting a wide range of cloud services

"RunMyProcess\* has provided iHeart Studios with a competitive advantage in the industry... and is supporting continuous improvement across all processes leading to greater efficiencies"

*Sjors Bos, General Manager*

### Business process transformation in response to rapid business growth

iHeart Studios is a rapidly expanding digital content studio based in London, with a strong ambition of becoming the biggest photography studio in the UK. Since 2008, iHeart Studios has been working with top retailers to supply high-quality creative visual content. With its expansion, iHeart Studios was looking for a way to manage and organize their workflow. All work was done manually with little technology involved. The teams would receive boxes of clothing items from multiple clients, enter data on each item into a Google spreadsheet, and then organize photo shoots according to clothing rails.

Using spreadsheets to record item information didn't give the clients enough visibility of where their items were within the photo shoot process. The lack of a connected system complicated the process management, leading to errors when

managing rails, extra re-shoots, and higher costs. The studio needed a unified way to manage its entire business workflow, from the arrival of the clothes to photography, retouching, and returning the customers' items.

All workflow solutions iHeart Studios considered were either too costly or couldn't provide the required level of customization for their specific processes. In 2012, iHeart Studios approached twenty26, process automation and integration consultancy firm, for a workflow solution, who advised a RunMyProcess business process management application.



**Introduction of a new platform that supports and visualizes the entire business process**

iHeart Studios worked closely with twenty26 to develop and integrate a RunMyProcess application that would manage the entire business process and lead-to-cash workflow, from an initial sales enquiry to sending a final invoice to the client.

The RunMyProcess-based application uses Salesforce as the primary information system. Because all information on the project is stored in a single source, it simplifies the project management task for iHeart Studios. The teams can also monitor all Key Performance Indicators at all time thanks to real-time dashboards.

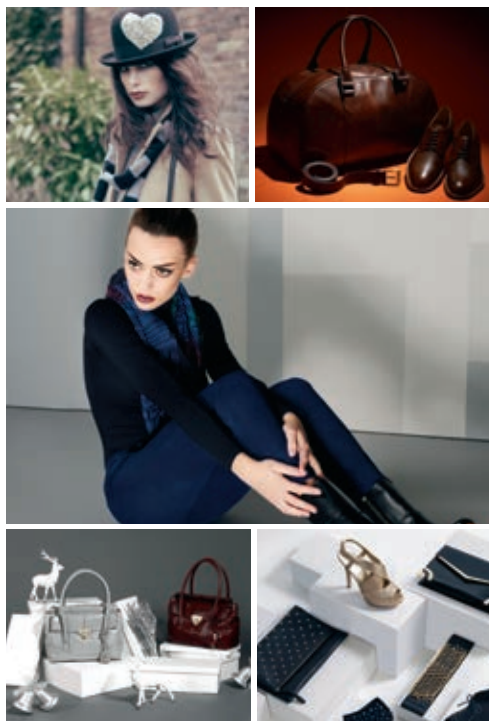
The application allows the team to identify and classify damaged or missing objects, as well as create records for items that were not originally listed in the "Collection report". The application also notifies the staff if the received item has already been photo shot for the client. This helps the team save time, as no double shots are made, and save costs for the clients who don't have to pay twice for the same shots.

iHeart Studios is very satisfied with the developed application. "RunMyProcess has enabled iHeart Studios to get full end-to-end managed processes and business transparency, which adds value to the core product and ensures our client base with security and confidence on the management of their products and the completeness of their jobs", shares Sjors Bos, the General Manager of iHeart Studios.

Thanks to this automated business process, iHeart Studios is now able to process a larger amount of orders, growing by more than 600% in 12 months, without major disruption in the business processes. To respond to rising demand, iHeart Studios also increased their user base: growing from 12 to 102 employees in 6 months. "Simplicity of the technology makes it easy for new user adoption without substantial training cycles ", explains Bos.

**Evolving the system to run the process like a continuous production line**

At the moment iHeart Studios is further working with RunMyProcess to develop a new version of the application that is more adapted to the needs of this rapidly expanding business.



**RunMyProcess**

Fujitsu's cloud integration platform PaaS which provides more than 2,400 available connectors from SaaS and other applications. (Please see P.24 of "Fujitsu Technology and Service Vision Main Booklet")

The arrival of new clients, including luxury London department stores, large high street fashion retail chains and premium fashion & sports brands, that send 1,000+ items for photo shoot daily, forces iHeart Studios to evolve their business model, becoming less job specific and more like a continuous production line. The release of an updated application is planned for the start of 2014.

Customer Profile
<p><b>iHeart Studios</b>                      Address: London, United Kingdom                      Founded: 2008                      Employees: 102                      URL: <a href="http://iheartstudios.com/">http://iheartstudios.com/</a></p>



## Isetan Mitsukoshi Holdings Ltd.

# Using Insight to Deliver Better Customer Service

### Human Centric Innovation



Clear insights into the success of top sales assistants can help other personnel improve service quality



Customer service of sales assistants quantified using data on customer interactions and sales



ICT-based framework for automatic data collection on sales assistant activities

“Using ICT, we were able to see information clearly that were obscure to us before. The technology has also brought entirely new possibilities into view.”

*Genichi Fujii, Senior Manager, Corporate Planning Division, Strategic Planning Headquarters*

### Turning competence in sales into a competitive strength

In August 2011, Isetan Mitsukoshi Holdings (IMHDS) embarked on a project to improve group-wide productivity. As Mr. Fujii explains: “These days, department stores cannot survive just on what they sell. We must build a more reliable earnings structure for the future, and this means cultivating a corporate culture that encourages all employees to have aspirations and take pride in their work. We also need to strengthen our ability to sell to customers and turn this into a source of competitiveness.”

The best sales assistants generate sales several times bigger than the company average. However, since the high performance comes from the individual competence and skills, it is extremely difficult to identify specific factors that account for the success of these sales assistants. IMHDS had made numerous attempts to systematize the skills of the top sales assistants, but

with limited success. “We tried to observe how long the top sellers spent on the sales floor or with customers, and we conducted surveys,” says Mr. Katsunori Takizawa, Senior Manager in Business Planning & Operations, “but we were unable to establish a practical, systematic approach because gathering and analyzing all the data required needed so much work.”

### Analysis of successful selling behavior

In the words of Mr. Fujii, “We wondered if we could gain an objective view of these traditionally subjective skills using Fujitsu’s knowledge and technology.” IMHDS decided to undertake a





thorough analysis of what made the best sales assistants so successful using Fujitsu's Field Innovation (FI)\* professional service.

A full-scale trial was conducted over the course of the first weekend of October 2012 for a section of the women's fashion sales floor at the Isetan Tachikawa store. Visual observations of the sales floor were made every 30 seconds to gather data on the number and length of customer interactions and to track staff movements. This allowed the actions of each sales assistant to be objectively measured and recorded in numerical form.

Comparison of these data showed that the top sales assistants had more customer interactions and spent up to 1.5-2 times longer with customers, resulting in a corresponding difference in the sales generated. The data also revealed that the best sales assistants tended to wait for customers in positions with a good view of the entire sales floor. Those who waited at the entry points to the sales floor tended to traverse entire space, which wastes movement and actually time to interact with customers. The data showed that differences in positioning and behavior were largely responsible for differences in the number of customer interactions and time spent with customers.

"From our Point of Sale (PoS) data, we can only know what customers actually buy; we do not know how many sales opportunities we are losing. The findings gave us real, actionable insight into how to improve" said Mr. Takizawa.

### Using ICT to create objective data on customer interactions

The trial at the Isetan Tachikawa store demonstrated the potential of capturing objective data on customer interactions. IMHDS decided to partner with Fujitsu to analyze the sales floors at other stores using ICT. In 2013, trials using various technology and systems were initiated at the Isetan Urawa and Shinjuku flagship stores. The trial at the Shinjuku flagship store took place over the first weekend of December 2013 using Fujitsu-supplied smartphones to observe and identify successful sales behavior. Like the first trial at the Isetan Tachikawa store, it was a success in terms of generating objective data on the behavior of sales assistants. IMHDS's Corporate Planning Division gave the

results of the trial to the relevant sales floor managers as feedback. Managers were impressed: they thought that quantifying customer interactions and making a theoretical analysis of these sales floor-related factors would be helpful in making improvements, and that the objective data analysis made a convincing case. Sharing the results of these analyses with sales assistants is also beginning to generate increased sales.

Mr. Fujii believes that using ICT to generate these kinds of data is useful in clarifying factors where previously managers only had a subjective sense of what might be happening. "These data are more convincing, and so will help us develop concrete measures," he says. "However, we are still only at the trial stage, and we are a long way from our ultimate goal. Using Fujitsu's ICT and related technical expertise, we think we can take greater steps in increasing productivity. This opens the door for department stores and other retailers to whole new avenues of business opportunities."

#### Sales assistant tracking (Isetan Urawa)

- Larger dots show initial customer contact

#### Top sales assistants



Wait in the top-right or bottom-left of the sales floor, where total area can be viewed, thus catching more customers

#### Average sales assistants



Typically traverse entire space, which wastes movement and actually time to interact with customers

#### Customer Profile

#### Isetan Mitsukoshi Holdings Ltd.

Address: Tokyo, Japan  
 Founded: 2008  
 URL: <http://www.imhds.co.jp/english/>

\*Field Innovation (FI): Fujitsu's initiative for business on how to solve issues and implement related measures, based on visualizing what is actually happening in the field through research



## Soitec S.A.

# Lowering and Simplifying Costs through Cloud Service

### Human Centric Innovation



Educating staff and changing working styles to embrace cloud



Sharing and using information between the research and development/manufacturing bases in Europe, US and Asia on cloud



Reducing the proportion of fixed IT costs to control and reduce the IT costs by adopting cloud

“The aim is to move 70% of Soitec’s computing power to the cloud over the next three years, and to cut the proportion of variable costs by half.”

*Laurent Maumet, CIO*

### Migrating to the cloud to reduce cost

Headquartered near Grenoble in Southern France, Soitec is a world-class enterprise that leads the world in the manufacturing of innovative semiconductor materials in the energy and electronics industries. The company’s main products include core technologies such as SOI wafers (Silicon-on-Insulator) and CPV (concentrating photovoltaics) systems. Though it is young - established in 1992 - the company operates manufacturing and research and development bases in the US, China, Singapore and France and has been supplying their products and systems to the electronics and energy sectors all over the world.

Reflecting the Soitec business philosophy of continuous pursuit of invention, its IT division has been promoting innovation. This division has initiated server integration and thin-client implementation through virtualization since 2006. While recognizing that cloud would one day shape the way business and IT operate,

Soitec considered the company’s IT sufficient for supporting its business at that time. However, two incidents occurred that changed their thinking.

In 2007 the company attempted to introduce an IT system to a silicon wafer manufacturing base which was being constructed in Singapore. It took nine months to settle contracts with a large number of vendors and negotiations proved complex. Their expansion plans were further hampered by poor network connectivity to the region.

Then, the following year, the Financial Crisis impacted the company’s business in a major way. Losing nearly a third of their annual revenue, Soitec needed to make cost savings and looked to IT to contribute a 30% cost saving.



Soitec's IT cost structure was a 60/40 split between fixed and variable costs. The company considered first reducing the variable costs; however, it became apparent that the variable costs could only be cut by half at best (which would be 20% of the entire costs). So the company looked at their fixed costs and what they could move to the cloud.

The migration path was not a smooth one. Even though Soitec had developed a cloud migration plan they had trouble choosing a cloud service provider. They came to the conclusion that none of the many cloud service providers that existed in Europe and the US could immediately meet their needs.

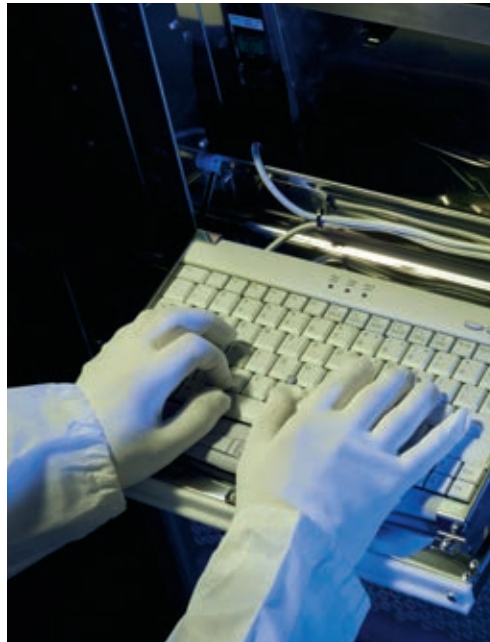
Given this situation, Soitec shifted to a policy of starting small and then gradually migrating to cloud. Soitec had selected Fujitsu as a global outsourcer, to provide a managed service for their ICT. Fujitsu was a natural choice to be their cloud migration partner, to carry out their plans in collaboration.

### Delivering a global cloud service and meeting local needs

The most important factor was whether or not the vendor was capable of providing cloud services globally. Soitec, with facilities in Europe, the Americas, Africa, Asia and Japan, valued Fujitsu's global strength, operating datacenters in more than 100 locations. Being able to receive technical support in Soitec's major business regions (France, the US, Singapore and China) was crucial.

Corporate culture was also important. Soitec already had a number of customers and partnerships in Japan, appraised Fujitsu's working style and felt that they could work together to carry out the project. Fujitsu's genuine desire to understand Soitec's business needs also contributed to good "chemistry" between the companies.

The cloud switchover got under way in December 2012. With the cloud service as a core, Fujitsu's services were incorporated for helpdesk and terminal support. Conversion of the fixed costs to variable costs was achieved, resulting in an environment that can flexibly adapt with business change.



### Changing working styles

Soitec are currently mid-way in their cloud journey. Their employees have seen first-hand how working environments can be transformed by cloud. Soitec focuses on staff education, helping employees to get the best out of cloud capabilities, and to help make a smooth transition away from their more familiar computing technologies.

Looking ahead, Soitec plans to migrate 70% of their computing resources to the cloud within three years. They want to keep on reforming how their business uses ICT with the goal of reducing the proportion of variable costs by half.

#### Customer Profile

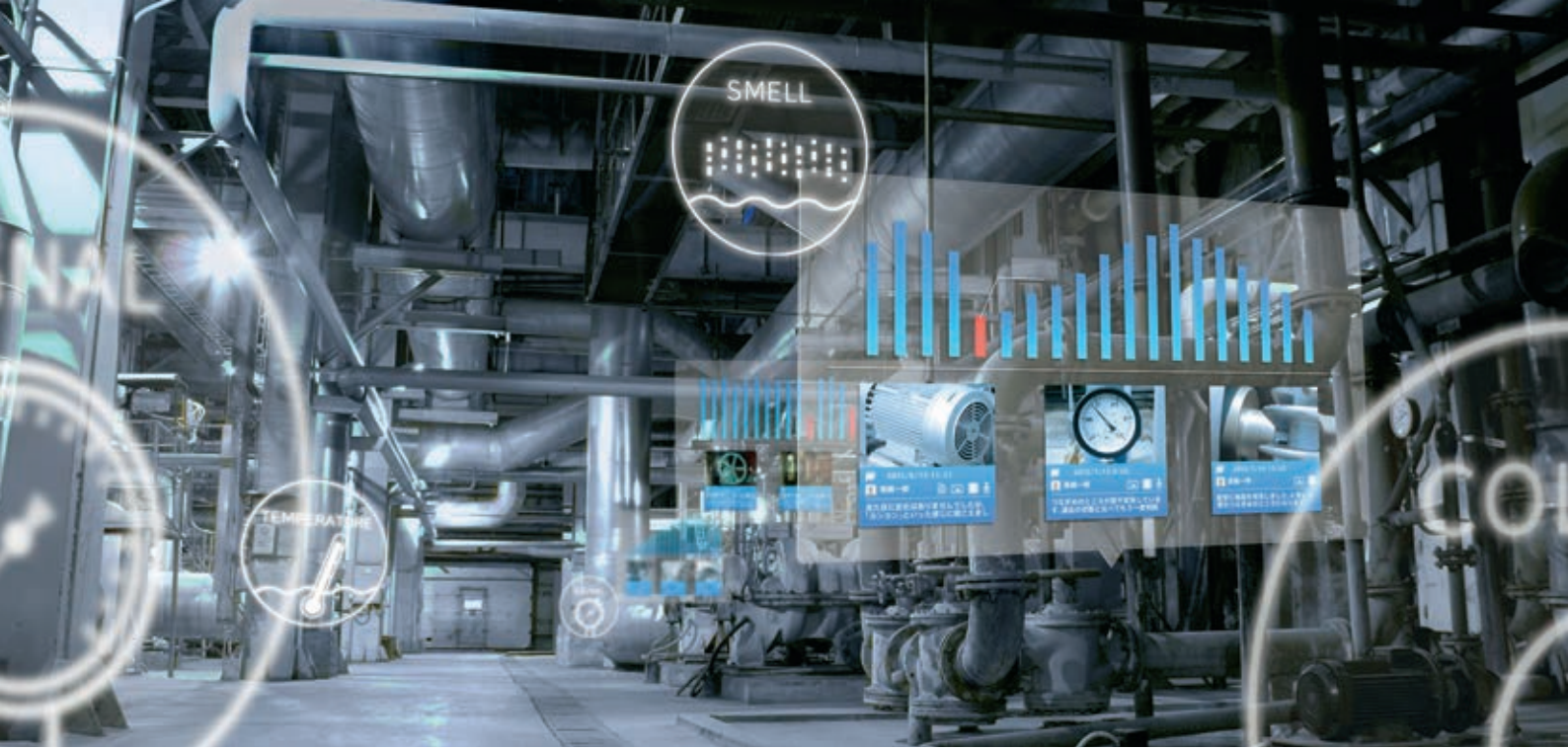
##### Soitec S. A.

Address: Bernin, France

Founded: 1992

Employees: 1,500

URL: <http://www.soitec.com/en/>



## Metawater Co., Ltd.

# Overhauling Water Facility Maintenance Using Augmented Reality Technology

### Human Centric Innovation



Use of AR technology boosts efficiency of on-site facility inspections while enabling less experienced workers to provide high-quality services



Expertise harnessed into a sharable database that also supports better prediction of component failures



Efficient facility maintenance operations using tablets, on-site monitoring sensors and cloud services for data collection

“Using the tablets allows less experienced operators to spot problems easily by comparing the situations they encounter with stored images of normal operations.”

*Yasushi Nakamura, Director*

### The challenge of knowledge transfer in the water industry

Much of Japan’s social infrastructure was built between the 1950s and the 1970s when Japan’s economy was expanding rapidly. Much of this is now aging. The repair and maintenance of infrastructure, like expressways and water supply, is a major challenge for the country.

Metawater is a leading Japanese provider of repair and maintenance services for water and sewage infrastructure. They also design, manufacture and install water purification plants and other public water supply facilities. With a national market share of 25%, Metawater is the leading service provider for local governments across Japan. Demand from local governments for repair and maintenance services is growing within this sector.

The company faces two principal challenges. The first is how to transfer the skills and experience in water facility repair and maintenance of the engineers approaching retirement. The



second is how to improve efficiency. Water purification plants and other water and sewage facilities have many individual components, maintaining them is a complex task.

However, the work of water maintenance engineers has undergone a major change. Nowadays tablet computers are tools of the trade. Using the built-in camera the engineer can view a component with relevant information overlaid on the screen. If the engineer notices anything wrong, he or she can take pictures of the area concerned and record an audio explanation.

### Easy-to-use Augmented Reality system

The technology that makes this possible is the FUJITSU Software Interstage AR Processing

- > FUJITSU Software Interstage  
AR Processing Server
- > FUJITSU Cloud IaaS Trusted Public S5

Server, which provides augmented reality (AR) technology. The system uses a set of “AR markers” that enable the device’s camera to recognize the relevant components irrespective of water, pollution, distance or camera shake and display related information on the screen. A typical large-scale water purification plant employs a set of around 400 AR markers in the form of diagnostic sheets that an engineer can access instantly. This eliminates the need for engineers to carry manuals and note down inspection records on paper. The software enables consistent quality of maintenance work not dependent on individuals’ skills.

Metawater had previously developed an application for use in inspections, but it was not well accepted by maintenance engineers. Based on field research, Fujitsu created a mock-up of an AR system. Having visited sites many times to listen to the feedback of Metawater engineers, our team of service, technology and design development engineers reflected Metawater’s needs in an easy-to-use interface with all the necessary functions. This AR system has boosted the efficiency of inspection operations significantly.

Another advantage of the system is that inspection data can be stored on the server for analysis. By comparing with historical data of component failures, the images and audio recordings can be used to predict similar failures so that components can be replaced before this happens.

Prediction of component failures using on-site observations can transform water facility management. Rather than using time as the key parameter based on the suggested useful lives of components, facilities are managed based on their observed condition. This can translate into a substantial reduction in maintenance costs, with the gathered data also providing an easy means to accumulate relevant expertise.

### Aspiring to be an industry-wide standard platform

Metawater began using the “Smart Field Service” in October 2013 on its “Water Business Cloud” platform.

Fujitsu’s public cloud service Trusted Public S5 is hosting Metawater’s cloud-based platform. Metawater, the first customer of Trusted Public

S5, began using the service ahead of its official launch in 2011 and has been a user of Fujitsu’s cloud ever since.

The “Water Business Cloud” collects data from sensors installed throughout water facilities to monitor the operational status of the infrastructure as well as variables such as the level, quality and pressure of the water supply. As part of the service it offers, Metawater shares this information with local governments and water management enterprises. Metawater has introduced the “Smart Field Service” to the roughly 100 water purification plants in Japan it now services under contract.

By 2017, Metawater aims to expand its service provision to 1,000 local governments across Japan, which would represent a market share of 50%. The company also plans to encourage acceptance of its platform as the de facto standard by offering interfaces with the systems of other service providers.

Adoption of Metawater’s service is not only revolutionizing Japan’s water and sewage industry, but could also contribute to solving social issues on a global scale by supporting environmental protection and helping improve quality of life.

#### Customer Profile

##### Metawater Co., Ltd.

Address: Tokyo, Japan

Founded: 2008

Employees: 1,960 including affiliated companies

URL: <https://www.metawater.co.jp/eng/>



## Aeon Agri Create Co., Ltd.

# Transforming Farming by Exploiting ICT

### Human Centric Innovation



Gathering and sharing expertise enables efficient farming operations regardless of the experience of workers



Integrating farming with analytical systems and finance systems enables production and quality management



The Akisai platform provides integrated support of production, sales and management using sensors and smart devices

"In cooperation with Fujitsu, we continuously improve the system which will be used by a wide range of farmers."

*Yasuaki Fukunaga, President*

### A New farming enterprise

Established in July 2009, Aeon Agri Create is a farming subsidiary of the Aeon Group, which includes one of Japan's leading supermarket chains. Japan's agricultural sector is hampered by social change - arable land is being abandoned because of a lack of people willing to take over farms. Meanwhile Japan's farmers are growing older. The philosophy of Aeon Agri Create is "to develop farming and add value to customers" through efficient farming methods and the development of new value chains for agricultural production.

The workforce of Aeon Agri Create was initially made up of people whose professional background was in other types of work within the Aeon Group. It was effectively a farming organization created from scratch. The company applies ICT to develop and share farming expertise so that people without much farming experience can deliver good results. This "ICT farming" enterprise has been created in partnership with Fujitsu.

### Cutting-edge data-dependent ICT approach

Aeon's farms use Fujitsu's Akisai cloud computing service as the basis for daily farm operation and monitoring. Workers use tablets, smartphones or other mobile devices to gather data on farming operations, checking pesticide or fertilizer use while also keeping track of operational costs. The GPS function in the smart devices enables the gathered data to be linked with the specific farm and the area within the farm. Workers can also record if crops have suffered from blight or insects, which further adds to the knowledge base.

Aeon has voluntarily adopted the GLOBAL G.A.P. standards for certification of good agricultural practice that were developed in Europe. Strin-



gent quality assurance checks and procedures based on these standards are built into the IT systems used by Aeon.

The data gathered on farming operations are shared and applied to farm management. At its head office, Aeon integrates the farming plans, crop yield forecasts, field observations, harvest data and other farm-related information into its accounting database. In this way, Aeon head office ensures that the information from all of Aeon's farms is reflected in each set of quarterly financial results. Aeon is now starting to apply the farming and accounting data to analysis of its farming operations.

Aeon is currently trialing an analytical system developed in-house that allows managers to look in detail at projected crop yields and revenue for each plot land on every farm. This system provides more accurate estimates of farm output for business management purposes.

For instance, analysis of the data gathered from planting Japanese mustard spinach has suggested that crop yields per hectare could be improved by up to 33% by using sunlight and heat to eradicate weeds while selecting the best harvesting timing. Aeon has applied these objective data-driven results to produce more crop in the next season and set a production target based on this. Aeon aims to use integrated data analysis as the basis for more advanced farming operations, and thereby establish a successful "ICT farming" enterprise.

### All supported from the cloud

At present, Aeon Agri Create directly manages 15 farms covering over 200 hectares in locations across Japan. The total land under cultivation is expected to expand to over 300 hectares by March 2015. Fujitsu cloud computing services are supporting this nationwide farming operation.

The application of ICT to farming by Aeon Agri Create to deliver reliable supplies of fresh vegetables to Aeon Group stores has helped develop Aeon's brand within the agricultural sector. Repeated trial-and-error development of systems has enabled Aeon Agri Create to achieve its current success in a short period of four years.

Two significant recent developments stand out. The first is the applied use of farm-generat-

ed data to support strategic crop planting. This potentially paves the way to optimize farm production by incorporating Point of Sale data and consumer demand based on in-store sales operation.

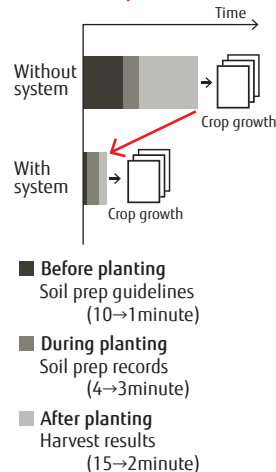
The second initiative is the expanded application of ICT farming practice to subcontracted growers. By supplying ICT-based expertise, Aeon Agri Create aims to forge win-win relationships with other farmers and help them become more competitive. The goal is to foster long-term commercial partnerships while also generating more data that Aeon can use to secure a more stable supply of produce for Aeon Group stores. The plan calls for extending the application of ICT farming to the current 3,000 subcontracted farmers, step by step.

Other agricultural and large-scale farming enterprises are also seeking the ICT farming expertise that Aeon Agri Create has accumulated. Based on the experience gained through the partnership with Aeon Agri Create, Fujitsu has developed the Akisai cloud computing platform using sensors and smart devices for applications across the agricultural sector, including livestock farming.

As of January 2014, the Akisai user base comprises 160 companies, including Aeon Agri Create. Aeon is taking a proactive stance toward sharing the advanced expertise it has forged in farming to support more widespread adoption of ICT-based farming methods. This is helping to re-energize Japan's agricultural sector as more people are encouraged to take up farming and more efficient farm management methods are developed. The creative partnership between Aeon Agri Create and Fujitsu promises to deliver even more impressive results.

### Benefits of production history management system

- > Time savings of up to 80%
- > Elimination of manual-input errors



#### Customer Profile

#### Aeon Agri Create Co., Ltd.

Address: Chiba, Japan  
Founded: 2009  
Employees: 280



## Qantas Airways Limited

# Targeting a 10% Reduction of CO<sub>2</sub>e\* by 2020

### Human Centric Innovation



Understanding the opportunity for reducing energy consumption in the workplace through transformation of ICT



Using global benchmarking and ICT energy baseline tools to understand the current impact and level of ICT Sustainability maturity, and the strengths and opportunities



Increasing the awareness of the impact of ICT Infrastructure and the opportunities for efficiency

“Every one of our 35,000 staff uses technology in their workplace. If we can give visibility to environmental impact and encourage them to reduce energy use, people’s behaviour will change.”

*David Glover,  
Head of Technology Security, Risk & Safety*

### To be a leading sustainable business

As one of the world’s leading airlines and an iconic Australian brand, Qantas (ASX: QAN) employs 35,700 people and its portfolio includes the Qantas and Jetstar airlines, which carry more than 40 million passengers each year, and subsidiary businesses such as Qantas Freight Enterprises, Q Catering and Qantas Frequent Flyer. Qantas is aligning its ICT strategies with the Group’s broad sustainability charter. With a \$4.4 billion annual fuel bill for its airline fleet, ICT energy use may appear as a blip on the Qantas radar. But as sophisticated technologies underpin the Group’s broad efficiency and corporate social responsibility goals, and its sizeable ICT infrastructure produces a significant 6,000 tonnes of CO<sub>2</sub>e per year, ICT sustainability must play its part in meeting reduction targets.

John Valastro is Head of Environment, Resilience and Workplace Transformation, a unit that

has been deliberately placed within the Office of the CEO at Qantas Airways Limited. He said: “Many companies now have an environment team but Qantas identifies its sustainability credentials as vital to its brand.”

“Our [Group Environment and Resilience] responsibility is to provide the CEO and Board with the assurance of long term improvement in our environmental objectives. We are able to set energy targets at Board level. We know what’s achievable and what’s a stretch – we go for the stretch.”

“The 2020 target is for a 10 percent reduction in our footprint - while gaining all the cost benefits. We’re on track to deliver because these targets are visible to everyone and we are able to work across the Group to make sure that better practices in energy efficiency are widely shared – this effort has all the ticks,” Valastro said. Qantas recognised that only with baseline measurement could it determine what projects should be undertaken, what could be achieved and what tools and help were required. “Delivery is absolutely fundamental and successful execution means holding every division to account - so metrics are crucial,” Valastro said.



- > Fujitsu ICT Sustainability Framework
- > Fujitsu Global ICT Sustainability Benchmark
- > Green IT Policy and Statement of Intent
- > ICT Energy Baseline

## Analyzing ICT's environmental impact and initiating activities based on a comprehensive plan

With its proven environmental credentials, Fujitsu was contracted to help Qantas align its ICT strategies with corporate-wide sustainability goals.

Four sets of solutions/services were implemented by Fujitsu — “Fujitsu ICT Sustainability Framework,” “Fujitsu Global ICT Sustainability Benchmark,” “Green IT Policy and Statement of Intent” and “ICT Energy Baseline.” With this information, Qantas was able to fully understand the impact of ICT and also the opportunities for efficiency with a solid reference point for which to develop future business cases.

“The Fujitsu assessment helped give prominence to the environment as an ICT focus area. It’s been a positive discipline having Fujitsu on the case with its team’s knowledge and enthusiasm.” – David Glover, Head of Technology Security, Risk & Safety for the Qantas Group

The Benchmark Report highlighted how Metrics is the key to success, and that ICT energy use must be visible and treated like any other financial account. Power management of ICT equipment is considered ‘low hanging fruit’ towards environmental improvement. Fujitsu was able to demonstrate how power management software, unlike the multiple year payback for most ICT purchases, returned on Qantas’ investment in less than a year.

Qantas scored a very high Enablement score of 65 (out of 100) as Glover explains: “Technology underpins our every move. Smart analytics is changing the way we plan and respond.”

The Index ranks highly those organisations, like Qantas, that use environmentally efficient datacentres such as the facilities operated by

Fujitsu and others.

Glover said: “We’re working collectively as an organisation to trend use down. And we’re helped by Fujitsu having very good policies and procedures in place for equipment life-cycle responsibility.”

Glover views the powerful Benchmark Report as “a very useful head start for us; it is providing the baseline and momentum for what we do. With Fujitsu’s structured approach we can see it all in one picture and chart our direction. ”

The Fujitsu analysis pinpointed changes that immediately resulted in a significant financial savings from the annual energy usage of 40,000 ICT assets – which also translates to reducing the production of CO2e by thousands of tonnes.

The Qantas sustainability strategy is speaking the language of business: its compelling message is dollar driven, with consequent benefits to the environment.

Over the past five years Qantas has virtualised its server fleet with the benefits of greater flexibility and speed of delivery, resulting in lower cost of delivery and power usage.

A move to the new Qantas Campus in early 2013 provided a sustainable fresh start for the organisation. Its series of purpose-built, environmentally sensitive office wings have sensor controlled lighting and effective management of printing and paper usage. In late 2013 the ICT division and its infrastructure will also move into new premises. Its ‘best operation’ approach includes maximising hot desking, lowering energy use, increasing collaboration and communications technologies, and having a greater ability to measure and report. Qantas IT is to set an example of what can be achieved across the Group.

Plans will see the implementation of the Fujitsu ICT Sustainability Framework which includes a measurement and reporting tool. Specialist power management software, recommended by Fujitsu, will quantify power use, reduction strategies and savings.



### Customer Profile

#### Qantas Airways Limited

Address: Mascot, NSW, Australia

Founded: 1920

Employees: 35,700

URL: <http://www.qantas.com.au/travel/airlines/home/au/en/>



## Research Center for Advanced Science and Technology, The University of Tokyo

# Cloud Service Enables 'in Silico' Drug Discovery\*

### Human Centric Innovation



Cloud service powering new  
drug development



Computer simulations  
identify novel molecular  
designs



TC Cloud with supercomputer  
performance runs analytical  
simulations

"We seek to develop breakthrough drugs by integrating the accumulated drug discovery research outcomes of academia with those of pharmaceutical companies derived from the analytical simulation on cloud."

*Tatsuhiko Kodama, Professor*

### ICT boosts the possibility of drug discovery

At the Research Center for Advanced Science and Technology, the University of Tokyo (RCAST) is pursuing interdisciplinary research covering key domains: information, biology, environment, material, universal-design and society. A sixth domain is biochemical medicine, and RCAST is trying to understand the mechanisms of diseases and pursuing R&D into new drugs.

At the heart of traditional approaches to pharmaceutical R&D is the search for molecules with a desired effect from among those existing in nature. The current approaches are to discover potential drug candidates by screening existing compounds against target characteristics and to design new molecular combinations based on knowledge of physiology and molecular biology. Pharmaceutical companies and research institutes around the world are eager to harness cutting-edge science and technology in their quest for new drugs.

Regardless of whether the approach is drug discovery or drug design, in practice, scientists select candidates that they think may have the desired effect from a knowledge base and modify their substructure to enhance their efficacy. Since the number of molecules in the knowledge base is limited, they are running out of possibilities.

The answer is to create new, previously unknown chemical compounds. Whereas the current knowledge base covers some 20 million ( $2 \times 10^7$ ) molecules, there are estimated to be as many as  $10^{20}$  molecules theoretically synthesizable. This opens up new possibilities in the quest for new drugs.

In silico screening facilitates discovery of new substances. The relationship between a key and



a keyhole is often used to explain metaphorically the efficacy of a drug. For example, at the time of the year when hay fever is rife in Japan, one often sees TV commercials for sinus medicines that block the molecules that causes the allergy. Here, the key is the drug, and the keyhole is the specific section of a protein that triggers the allergy symptoms. Drug discovery involves finding a key that exactly fits the keyhole. With *in silico* drug discovery, drug candidates are screened by simulation based on 3D modeling of proteins.

Simulation is also used to home in on highly efficacious molecules from among the numerous candidates that have been identified. Experiments are unnecessary because the entire process is computerized.

By dispensing with actual synthesis of a molecule or testing *in vitro* or *in vivo*, this approach accelerates drug discovery and cuts costs. Since the performance of CPUs and other hardware is improving all the time, computer simulation allows testing of an increasing number of new molecules more rapidly at progressively lower cost.

### Cloud environment for scalability with supercomputer performance

RCAST's ambitious *in silico* drug discovery initiatives are supported by Fujitsu's cloud service for analytical simulations, the FUJITSU Technical Computing Solution TC Cloud. With over 10,000 CPU cores and general-purpose computing on graphics processing units (GPGPU)\* delivering theoretical peak computing performance of over 230 teraflops\* and 250 teraflops, respectively, TC Cloud offers performance comparable to that of a supercomputer.

RCAST is leveraging TC Cloud's overwhelming computing power to speed the creation of promising new molecules for drug discovery. With TC Cloud, RCAST benefits from a large-scale computing environment unconstrained by the power-consumption restrictions within the university campus. The scalability of the cloud means future needs can be met by simply adding computing resources as research expands.

Going forward, RCAST is eager to conduct joint research with pharmaceutical companies and other private-sector enterprises. With TC Cloud

on track to be the leading platform for drug discovery in Japan, a bright future beckons. That is why the University of Tokyo, which has its own supercomputer and high-performance computing (HPC) cloud environment, decided to use Fujitsu's cloud service for analytical simulations. This commercial HPC cloud service is available throughout industry, government and academia and therefore enables collaboration on simulations of candidate drug compounds.

TC Cloud opens the door to the development of new drugs outside the scope of traditional experiment-based approaches. Fujitsu ICT is working for the wellbeing of people worldwide.



#### Customer Profile

#### Research Center for Advanced Science and Technology, The University of Tokyo

Address: Tokyo, Japan

Founded: 1987

Number of Personnel: 304 faculty members and 84 students (as of March 1st, 2014)

URL: <http://www.rcast.u-tokyo.ac.jp/en/>

\**In silico* drug discovery: The use of computer simulations to identify small molecule and other potential therapeutic drug candidates

\*GPGPU: Technology that employs special processors originally used in graphic processing for general computational applications other than graphics processing

\*Teraflops: A trillion floating-point operations per second



## Emory Healthcare

# Realizing Uninterrupted Access to Healthcare Information via Multiple Devices

### Human Centric Innovation



Enabling healthcare staff to view necessary information anytime and anywhere



Enabling safe access to patients' medical histories and healthcare information on critical patient care applications



Realizing 24/7 operations of a highly available healthcare system

"In addition to the infrastructure automation and seamless integration, I have seen an increase in both cost savings and my own efficiency."

*Bill Akins, Senior System Specialist*

### Constructing VDI\* on the blade servers ensuring efficiency, availability and information protection

Emory Healthcare, a major healthcare group located in Atlanta, Georgia in the U.S., provides excellent healthcare services to members of the community through the Emory Healthcare Network that links healthcare institutions including hospitals, clinics and local healthcare providers. The core of this network consists of six hospitals, including Emory University Hospital. The number of employees in the entire group counts approximately 10,000. A total of 1,800 doctors in the group include around 70 specialists and 220 general practitioners who engage in primary care.

For its healthcare employees, establishing uninterrupted access to the healthcare information system is extremely important. In order to provide timely and accurate healthcare to individual patients while moving from room to room, bed to bed and patient to patient, they

need to access the healthcare information system with four must-have (or mandatory) requirements: "access from anywhere", "from a wide range of devices", "at anytime" and of course, "securely".

The scale of the healthcare information system implemented in the Emory Healthcare Network is extremely large, consisting of more than 20 healthcare centers, over 10,000 users and personal computers and over 600 mobile workstations. 24/7 continuous operation is also a prerequisite, requiring IT infrastructure to be not only high-performing but also highly available.

To respond to these rigorous requirements, Fujitsu proposed a Citrix XenDesktop for desktop delivery with Egenera PAN Manager for hosting



and managing the back-end environment and FUJITSU Server PRIMERGY BX900 in the data center, the blade server designed to accommodate changing business requirements quickly and easily. The remote desktop each user accesses runs on this server and screen/keyboard/mouse data is exchanged through the network to satisfy the business access requirements.

The remote desktop system in Emory Healthcare was designed to manage up to 25,000 managed desktops and 4,000-5,000 concurrent users. A safe and reliable remote desktop infrastructure capable of 24/7 continuous operation and compatible with the healthcare information protection standards was introduced.

As a result of its VDI initiative, Emory Healthcare has realized significant cost savings and avoided unnecessary capital and operational expenses.

Additionally, Emory has seen a dramatic improvement in the accessibility of desktop services as well as an 80 percent reduction in data center complexity.

**Available from anywhere and from a wide range of devices**

Thanks to the introduction of the remote desktop infrastructure, healthcare employees in the Emory Healthcare Network have seen huge improvements in their access to the healthcare information system.

Emory Healthcare’s need for access “from anywhere” is also met by connecting mobile devices to wired and wireless LAN systems installed at hospitals and clinics. Its compatibility with Windows, iOS and Android enables access from a variety of mobile devices, including personal devices owned by the healthcare employees.

**Auto recovery from failures in just a matter of minutes**

What makes “anytime” possible are numerous redundant features equipped in the blade server. Since the power supply unit, exhaust fan and management blade (management server) are individually hot-swappable\*, even when one of the units fails, it can be replaced without turning off the system. Even during system maintenance for upgrading the OS or middle-ware, the system does not need to be shut



down. The system features significant additional characteristics, including resources that can be flexibly added as the number of users grows, auto recovery from hardware/software failures in just a matter of minutes, a service level management function and secured business continuity through auto processing in the event of a natural disaster.

Egenera PAN Manager’s single pane management window monitors managed devices and virtual machines on a single screen, and requires only one person to perform operational management even for such a large scale VDI. It does not require any more staff even if the scale is expanded. As a result, the desktop related management costs were reduced by half according to Emory Healthcare’s estimate.

Providing an environment that can be securely accessed 24/7 from anywhere and any device – Emory Healthcare will continue to improve healthcare quality. Fujitsu provides Emory Healthcare with the “anytime” and “securely” accessible system and environment.

Customer Profile
<p><b>Emory Healthcare</b>                      Address: Atlanta, Georgia, United States of America                      Founded: 1905                      Employees: 10,000                      URL: <a href="https://www.emoryhealthcare.org/">https://www.emoryhealthcare.org/</a></p>

\*VDI: virtual desktop infrastructure

\*hot-swappable: function of replacing computer system components without shutting down the system



## University of Tsukuba Elementary School

# Future Classroom Project Shows how ICT can Benefit Education

### Human Centric Innovation



Interactive, collaborative class where information sharing and group discussion foster problem-solving skills



Enabling the best educational opportunities for each student based on their progress and learning history



Interactive hardware including multiscreen displays, electronic whiteboards, and tablet PCs with educational applications stimulate discussions in classroom

“In our school each class is taught by a subject teacher. We are developing ICT-based lessons for each subject. Inspired by the success of this initiative so far and eager to share our expertise, we would like to help promote this innovative ICT-driven approach to education in schools nationwide.”

*Yasuhiro Hosonaga, Vice Principal*

### A school with a mission

The University of Tsukuba Elementary School traces its history back to a primary school established in 1873 in Tokyo that was affiliated with Japan’s first national teacher training college, which eventually became the University of Tsukuba. Inspired by its mission of pioneering new approaches in primary education, the University of Tsukuba Elementary School has been at the forefront of advances in primary education in Japan. Every year the school is visited by more than 10,000 educators from Japan and abroad. The school’s educational philosophy and techniques are introduced at numerous educational institutions.

The school began using ICT in teaching over 10 years ago. The ICT Utilization Committee established within the School has been spearheading on the practical use of ICT in the class-



room.

The progress of ICT is expected to be a catalyst for innovation in education. The Japanese government’s target is to create an educational environment where every student has a networked device by 2020.

However, despite the government’s target, most schools in Japan remain in a world of chalk and talk. Classroom facilities at many schools have been unchanged for decades. Desks are lined up facing a blackboard. Typically, the teacher lectures and the pupils are expected to passively soak up knowledge.

The school launched the Future Classroom demonstration project in June 2013 to promote effective use of ICT in education. Office equipment supplier Uchida Yoko, application vendor Microsoft Japan, and Fujitsu are collaborating

with the school for this project, drawing on their respective strengths.

### Realizing ICT's potential to enrich primary education

For this project, a classroom is transformed into an ICT environment, equipped with ICT devices, to explore innovative learning activities that enrich primary education.

In this classroom, each student has a Fujitsu Windows 8 tablet PC. The classroom is equipped with a multiscreen display on which the teacher's tablet screen and students' tablet screens can be shown, desks and chairs that can be easily and flexibly rearranged, an electronic interactive whiteboard, a wireless LAN, battery chargers for tablets, educational applications, and so on.

This equipment encourage children to actively participate in class. The teacher can send assignments to the children's tablets, children move their desks as needed for group discussion or pair work, and can use the multiscreen display to present the results of their work.

Taking advantage of the characteristic that each class is taught by a subject teacher, the school is developing ICT-based model lessons for each subject and researching ICT-based teaching methods to enable productive group discussion and collaborative learning, and monitoring pupils' progress over the long term. The school is making its findings available to educators nationwide by inviting them to observe classes and through seminars.

The well-equipped classroom with its electronic whiteboard and multiscreen display is fascinating and attracting the children. They love having their own tablets and enjoy the lessons. Today's youngsters are digital natives raised in a world where the internet, laptops, tablets, game consoles, smartphones and the like are part of the fabric of everyday life. They take to the tablets like ducks to water. When working in pairs, children tend to naturally divide their responsibilities-one doing the research while the other preparing a presentation, for example.

As the Future Classroom demonstration project suggests, tablets, not paper, will be at the heart of the future learning environment. The children use pen-input tablets that emulate paper-like usability and are suitable for classes

that require handwriting and use of a ruler. Textbooks distributed online are rich in visual imagery to stimulate children's interest. Use of the tablets not only allows each child to share information with others instantaneously and keep abreast with what his or her peers are doing, but also to swiftly access resources, research and find information. Tablets are the optimum devices for collaborative learning in which children can take the initiative.

When it comes to the future of education, tablets will come into their own, transforming the world into one big classroom. In fact, tablets are already used outdoors for nature study, with children capturing images of insects and plants or recording birdsongs.

Tablets can link the school with the home. Children will take their tablets home so that they can continue learning at home, perhaps together with their parents, about whatever has caught their interest at school. Such behavior is expected to enrich the child's educational experience.

Learning records of each child accumulated through tablets will be used to optimize education opportunities for each child.

The Future Classroom initiative helps set the ground for the next stage of ICT-driven innovation in the classroom. The educational sector is about to shift gears from the demonstration phase to widespread deployment of best practice. ICT is destined to be ever more instrumental in helping young people to get the best possible education.

#### Customer Profile

#### University of Tsukuba Elementary School

Address : Tokyo, Japan

Founded: 1873

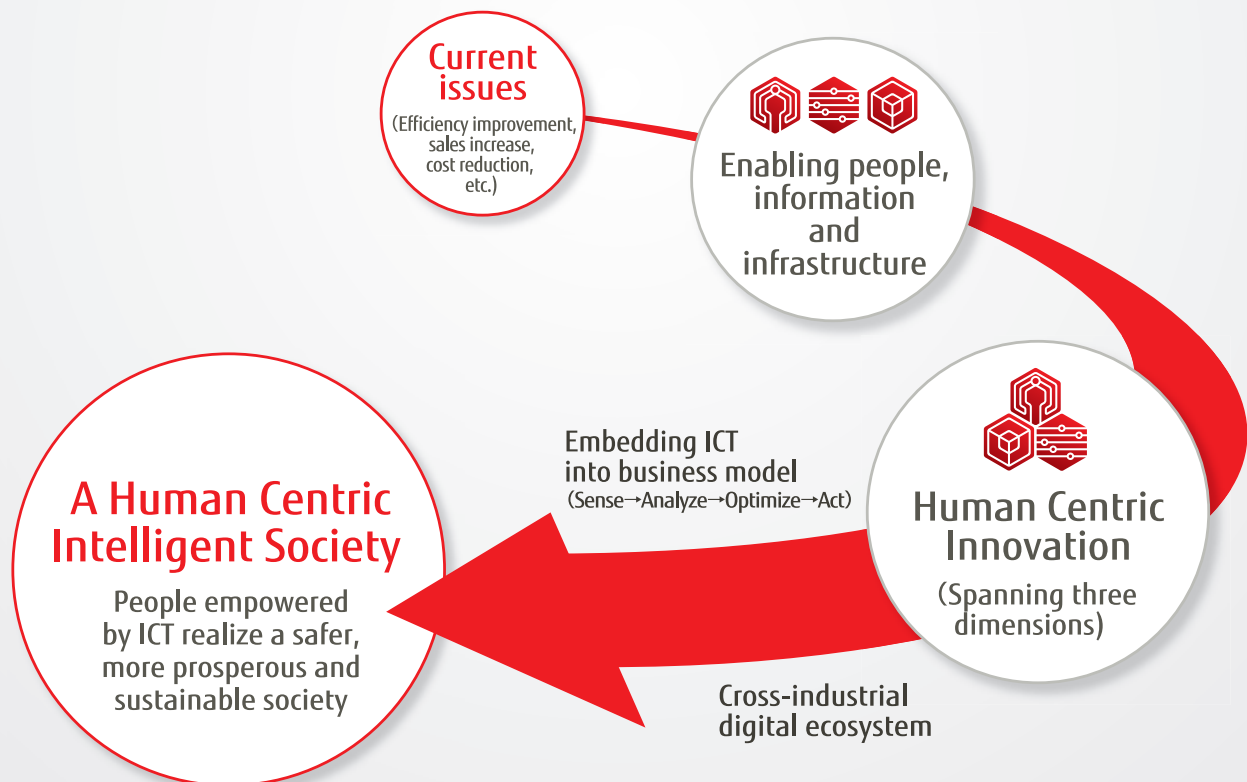
History : Established as a primary school affiliated with Tokyo Teacher Training College. Japan's first elementary school based on a national educational system.

# A journey toward a Human Centric Intelligent Society

These examples show how our different customers have used ICT to respond to the problems they were facing. Whether they were looking for efficiency improvements, better customer relationships or to increase profit, the approach of Human Centric Innovation has been central. Combining the three dimensions of people, information and infrastructure was effective in overcoming challenges and creating value.

Some of our customers have started to use ICT to develop new business models, building the first links in new digital ecosystems.

We are working with these organizations to help them create greater value for the future. As your innovation partner, we want to help you innovate, and together build a Human Centric Intelligent Society.





Services, Products and Solutions

# Technologies and Services to Realize Human Centric Innovation

Fujitsu is one of the very few global ICT companies that can support customers and deliver innovation in all three dimensions of people, information and infrastructure.



# Fujitsu's technologies and services delivering Human Centric Innovation

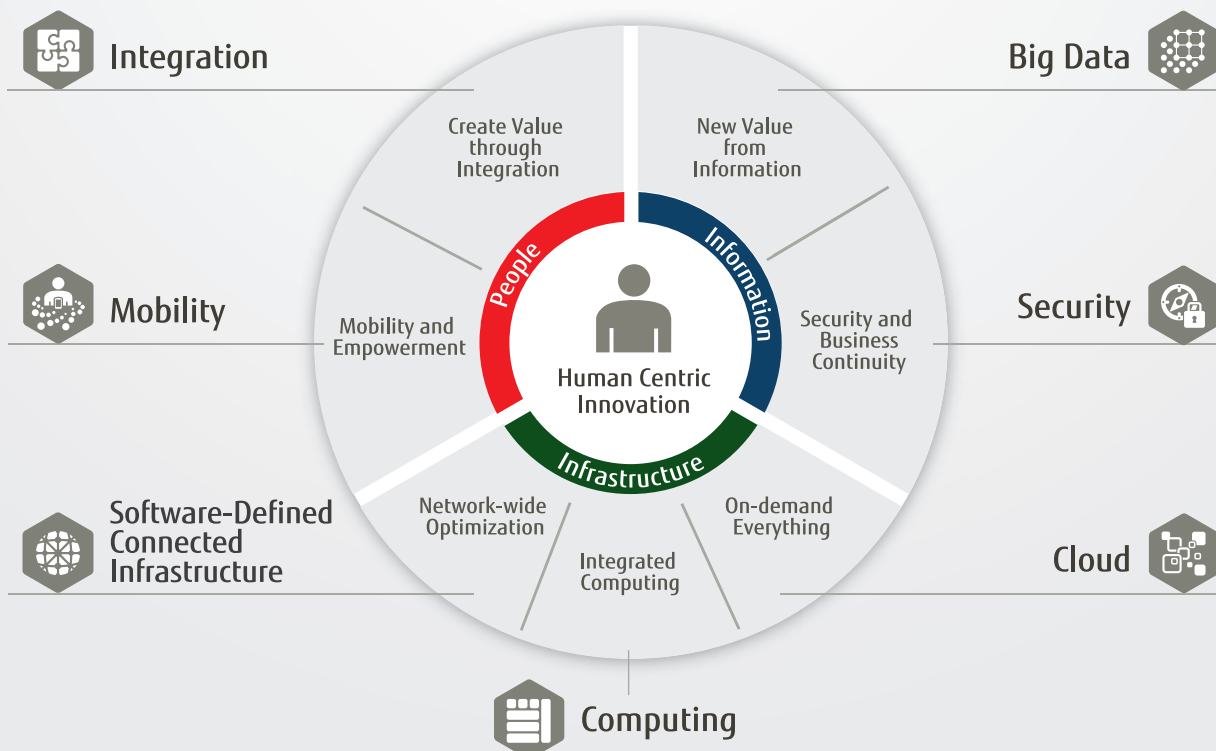
## Human Centric Innovation

In a hyperconnected world, innovation is taking on different characteristics. Human Centric Innovation is a new approach to realizing business and social value by creating solutions and services that bring together people, information and infrastructure.



## Values we provide

By developing our own capabilities and through collaboration with partners, Fujitsu is strengthening our portfolio of technologies and services in alignment with the concepts set out in our Technology and Service Vision. Our services, products and solutions enabling each concept are explained in the following pages.



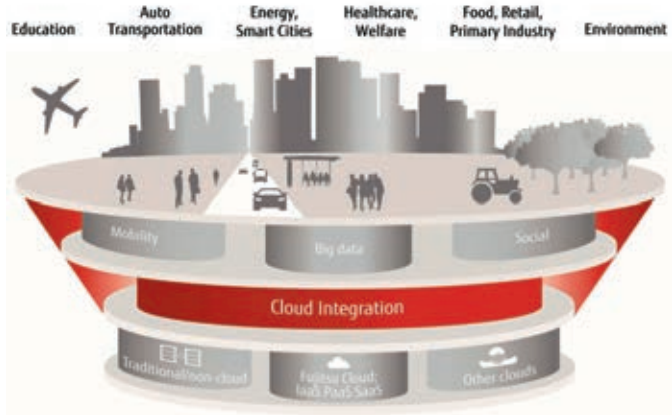


Human Empowerment

# Create Value through Integration

Fujitsu uses expertise to drive innovation for customers through co-creation and the optimal integration of technology and services

Fujitsu delivers next level resolution for customers in a competitive business environment. Leveraging the latest industry trends, advanced system development techniques and business know-how, our System Engineers from a broad range of business fields, provide end-to-end integration services from planning and consulting to system operation. In this way, Fujitsu strives to create value through business innovation, a better society and by working with customers.



## Services, Products and Solutions

### Services

#### Business Services

Fujitsu's portfolio encompasses capabilities from IT Optimization and Sustainability consulting services, which confront real business issues including cost, efficiency and the environment.

##### ■ Business Consulting

Fujitsu's Business Consulting enables clients to achieve greater operational efficiencies, performance and maximize ROI of current existing and planned IT implementations and business strategies.

##### ■ IT Consulting

Fujitsu's IT Effectiveness services ensure customers' current and future investments in IT are maximized and support business objectives. Fujitsu uses a consulting led approach, aided by robust assessment tools. Services include; IT Strategy and Effectiveness, Application Value Assessment, Legacy Modernization, Flexible Work Environment, Data Center Assessment, IT Service Management.

#### Application Services

Fujitsu provides a full range of application services to support the development, integration, testing, deployment and on-going management of both custom developed and packaged applications. The services focus on delivering business and productivity improvements for organizations. Solutions frequently involve the integration of external and existing internal systems to deliver benefits across business processes. The services cover both project based activity and on-going management; they leverage cloud services for effective delivery where appropriate; and address the challenges of migrating and modernizing application assets as well as new applications.

##### ■ Enterprise Applications

Fujitsu's Enterprise Applications services cover the design, development, configuration, implementation, rollout and on-going management of solutions based on packaged ERP applications. Fujitsu provides scalable services for market leading software products such as SAP and Oracle, covering core business functions including finance, HR and supply chain management.

##### ■ Application Development and Integration

Application Development and Integration Services help customers respond to change by defining and delivering application transformation projects. Fujitsu's experience in dealing with complex multi-vendor environments and emerging trends/technologies, ensures that projects are managed professionally and on budget. Offerings include; Package Implementation Services, Custom Application Development, Systems Integration, Application Modernization and Migration, Test and Validation Services.

##### ■ FUJITSU Cloud Integration Platform

First to market, the FUJITSU Cloud Integration Platform provides you with the ability to manage and integrate multiple cloud services and covers the 3 core areas needed for successful cloud adoption across an organization: Cloud aggregation, Cloud integration, and Cloud management. It builds on proven heritage in both system and service integration and our Fujitsu Cloud solutions such as RunMyProcess, Cloud Enablement Services, IT Management as a Service, Backup as a Service, IaaS, and 3rd party cloud services.

##### ■ Legacy Modernization

A comprehensive set of Legacy Modernization services that enable customers to more easily migrate or modernize legacy applications to reap the benefits of Cloud Services, minimizing the risks and costs - and giving them greater flexibility for the future.

Legacy Modernization comprises:

- Application Value Assessment: identifying which applications would benefit from legacy modernization and cloud deployment.
- Application Modernization: utilizing the cloud without moving the entire application to the cloud - for instance, moving the front end or database.
- Application Migration: migrating entire applications to the cloud.



## Services, Products and Solutions

### Services

#### Managed Infrastructure Services

Fujitsu's Managed Infrastructure services provide a cost effective, reliable and flexible ICT infrastructure to customers. This infrastructure may be owned by the customer or Fujitsu on their behalf. Our services comprise Data Center Services, End User Services, Service Desk, Technical & Maintenance Services, Infrastructure as a Service, and Network and Communication.

##### ■ Data Center Services

Fujitsu's Data Center Services provide our customers with the complete range of services to ensure their IT systems are fully operational for their users as well as to improve their IT flexibility, efficiency, performance and to reduce their costs. Our operational Datacenter Services comprise Datacenter Hosting (facilities); IT Infrastructure Management for servers, storage and other DC and cloud hosted infrastructure; backup and recovery services as well as DC network services. In addition Fujitsu has technical consultancy and project services that enable us to undertake assessment, advisory, migration and transformation projects for our customers - either as part of a wider outsource or as part of the customer's journey towards cloud infrastructure. As part of the transformation of customer infrastructure we may include FUJITSU Cloud IaaS.

##### ■ End User Services (EUS)

Fujitsu's End User Services are for organizations who want to securely access their workplace data and services on any device in any location. EUS underpins business agility and delivers business value while reducing the costs to business, and improving the user experience. EUS is a superset of a number of offerings and services that enables Fujitsu to offer a blend of traditional and cloud based services to meet each customer's individual needs. EUS encompasses: Desktop Managed Service, Virtual Client Services, Managed Mobile, Unified Communication & Collaboration, - all supported by Service Desk, Technical & Maintenance Services and Service Delivery Management.

##### ■ Service Desk

We can offer multi-lingual service desk support in 41 languages globally and our local service desks are enhanced by our 6 global service desks in Costa Rica, Malaysia, Morocco, Poland, Portugal, and the Philippines. Fujitsu's service desk agents are committed to delivering exemplary service quality that enhances user experiences. They are empowered to go beyond fixing problems and to identify root causes. Our focus is on the value we can create for our clients and the quality of the customer experience we deliver. By applying Sense and Respond® - our approach to implementing lean principles in a service environment, we seek to fix users' problems quickly and easily, and to see how these problems can be eliminated permanently -eradicating waste from the IT service. Through TRIOLE for Services, all our global service desks work to the same processes and standards, compliant with the ISO 20000 international standard, operating to best practice principles and delivering exemplary service quality.

##### ■ Technical and Maintenance Services

Fujitsu has a proven track record in delivering technical and maintenance services on a global scale. Expert Fujitsu teams have the capability and capacity to deliver all services locally - anywhere around the world. Our standardized offering can be adapted and expanded to meet your individual needs. Our services fall into three main categories:

- Specialist maintenance services: provide break-fix services for infrastructure
- End User related services: typically as part of a broader outsource service
- Project Services: we undertake projects around deploying new infrastructure or applications

#### Product Support Services

Fujitsu offers a wide variety of sophisticated products with the latest technology as well as comprehensive services to supplement the standard warranty including support for customers to get started. The Fujitsu approach ensures prompt, smooth installation for rollouts all around the world. Fujitsu employs standardized support building blocks enabling responsive support around the clock. The standard warranty can be extended for a pre-defined response or recovery time, with a wide range of offerings.

### Products

#### Software

Fujitsu is the only Japanese vendor with a systematic software product lineup. Fujitsu integrates optimal systems according to customer needs and objectives, based on a core lineup of proprietary technologies and products combined with supplementary partner software products and open-source software.

##### ■ FUJITSU Software Interstage Business Operations Platform

This solution integrates multiple business systems using a web service, supports companies in developing new business processes. The solution has a wide range of features, including connectors that link existing SAP systems and other business packages as web services without requiring application revisions or connection add-ons, processes, data connectivity, and user interfaces. With this single solution, companies can build services that support new business processes.

## Case Study

- > Isetan Mitsukoshi Holdings Ltd. P.8
- > Aeon Agri Create Co., Ltd. P.14
- > Qantas Airways Limited P.16
- > Research Center for Advanced Science and Technology, The University of Tokyo P.18

## Services, Products and Solutions

### Solutions

#### Industry Solutions

Fujitsu's long and comprehensive global experience means we have been able to develop expertise across a number of industries. Working together with customers we drive value by utilizing industry specific know-how.

<b>Healthcare</b>	<b>Telecommunications</b>	<b>Public Sector</b>	<b>Life Sciences</b>	<b>Media</b>
<b>Retail</b>	<b>Education</b>	<b>Energy and Utilities</b>	<b>Distribution</b>	
<b>Financial Services</b>	<b>Defense and National Security</b>	<b>Automotive</b>	<b>Food and Beverage</b>	
<b>Manufacturing</b>		<b>Logistics</b>	<b>Betting and Gaming</b>	

#### Infrastructure Solutions

Infrastructure Solutions typically consist of various IT components and combine them to serve specific usage scenarios. Decades of experience and collaboration with leading software vendors have enabled us to offer platform-specific as well as platform-independent operating and management solutions and frameworks that provide best-in-class quality.

**Private Cloud Infrastructures**  
**SAP Infrastructure Solutions**  
**Virtual Client Computing**  
**Construction Solutions**

#### Business and Technology Solutions

##### ■ Intelligent Society Solution

Utilization of ICT has gained popularity in social infrastructure fields such as Food, Agriculture, Health & Medical care, Transportation, Education and Energy. Aimed at addressing various social challenges in these fields, Fujitsu is continuously creating new value through innovative ICT such as cloud and mobility solutions.

- FUJITSU Intelligent Society Solution RFID and Sensor Solution
- FUJITSU Intelligent Society Solution Akisai

##### ■ Technical Computing Solution

Building on our long-standing history of innovation, 30 years of experience in the development of supercomputers and the exceptional depth and breadth of our offering, we provide the enabling technologies and services for a wide range of aerospace, meteorology, astronomy, healthcare and industrial projects. We have also teamed up with numerous prominent research agencies to design bespoke solutions for the most varied and challenging technical computing applications.

- FUJITSU Technical Computing Solution TC Cloud

##### ■ Sustainability Solution

Balancing economic, social, and environmental sustainability presents both opportunities and challenges for modern-day businesses. Organizations that understand the need to use their ICT innovatively while focusing on its optimization, resource and energy efficiency will gain from both a business advantage as well as social responsibility. Fujitsu helps your organization optimize the efficiency of its ICT equipment and data centers, saving you money and reducing greenhouse gas. Our Enterprise Sustainability Services align your sustainability objectives with your business goals for sustainable growth.

- FUJITSU Enterprise Sustainability Consulting
- FUJITSU ICT Sustainability Framework
- FUJITSU ICT Sustainability Benchmark

Note: Availability featured here may differ by region.



## Human Empowerment

# Mobility and Empowerment

Human centric mobility supports people's decisions and actions, transforming their workplace

FUJITSU Mobile Initiative is the latest of Fujitsu's ongoing efforts to leverage our vertical integration and customization capabilities to respond to the diverse mobile technology needs of customers and society. Through this initiative, Fujitsu will deliver customers ideal mobile solutions by putting in place a structure that encompasses the company's comprehensive lineup, ranging from mobile devices and network technologies, to security and mobile communication platforms and applications, together with its mobile integration and operational services that are backed by its long track record.

## Services, Products and Solutions

### Services

#### Managed Infrastructure Services

##### ■ End User Services(EUS)

Fujitsu's End User Services are for organizations who want to securely access their workplace data and services on any device in any location. EUS underpins business agility and delivers business value while reducing the costs to business, and improving the user experience. We achieve this by offering a single blended service that allows us to provide the best-fit service model to satisfy the different roles and requirements of your users. Virtual Client Services and Managed Mobile are architected to be integrated and so provide a seamless end user experience that maximizes individual productivity. (For a full description please see the "Create Value through Integration" section.)

##### ■ Virtual Client Services

Fujitsu's proven approach to exploiting desktop virtualization to help organizations looking to transform their desktop service to provide a more flexible solution that will reduce both business and IT costs while improving the user experience.

##### ■ Managed Mobile

Fujitsu can help manage the growing complexity of non-standard,

geographically dispersed mobile infrastructure environments, while safeguarding corporate data and protecting privacy. Our managed mobile offering is an enterprise-class, cloud-based, modular services for securely managing mobile devices, applications and access to data.

##### ■ Network and Communications

Fujitsu's network services for inter-site communications, deliver a carrier-class network infrastructure combining cost competitiveness and security with high performance. An innovative alternative to traditional networks, our cloud connectivity services are based on an aggregate bandwidth pricing model. Cloud communication services offer consumption-based voice and unified communication applications hosted in the cloud, including Hosted Voice over IP. Collaboration, Contact Center and Mobile Device Management.

##### ■ Global WAN Services

Fujitsu Wide Area Network (WAN) provides global connectivity. This includes Managed WAN, Managed Virtual Private Networks, Managed Wavelength and Managed Firewall Services together with Campus LAN and Distributed LAN services.

### Products

#### Client Computing Devices

Fujitsu is a leading provider of mobile and stationary devices for corporate customers. Fujitsu tablets have become the standard in a wide variety of environments including Government, Healthcare, Sales Force Automation, and Education. In addition, customers have come to depend on the reliability, quality, innovation and human centric technology of Fujitsu products. Furthermore, Fujitsu offers a complete range of environmentally conscious products and uses environmentally friendly technologies and processes throughout the entire product lifecycle.

##### ■ Notebooks and Tablets

The broad Fujitsu LIFEBOOK notebook and STYLISTIC tablet portfolio offers a range of powerful products covering the needs of enterprise as well as small and medium businesses. Extensive configuration options provide ultimate flexibility and convenience, and innovative energy-saving technology reduces the environmental footprint of your notebooks. Moreover, every Fujitsu LIFEBOOK and STYLISTIC delivers the highest reliability, supported by 30 years of experience.

##### ■ PCs

The Fujitsu ESPRIMO family brings a complete range of fully featured and highly expandable PCs that dependably run the office applications of today and tomorrow. Their superior reliability comes from best-in-class Fujitsu development and outstanding production quality. The world's most efficient power supplies lower your energy bill and reduce your environmental footprint. With individual configuration options and the unique manageability solution, ESPRIMO PCs help reduce deployment costs and flexibly manage each system for years to come.

##### ■ Workstations

Fujitsu's CELSIUS workstations offer a sophisticated combination of leading-edge processor and graphics performance to increase application efficiency. These high-quality, modular products in multiple form factors are configurable for an organization's precise needs. Thanks to comprehensive ISV certification, customers enjoy smooth and trouble-free operation of all your applications. Best-in-

class noise emissions help maximize productivity by contributing to a quieter working environment.

##### ■ Thin Clients

For optimized server-based computing or desktop virtualization, choose FUTRO thin clients. Every device in the range is designed and engineered to help ensure performance, security, easy manageability and cost-effectiveness. They also deliver up to 80% lower TCO over their long lifecycle compared with a standard PC. Plus, ease-of-use, standardization and quiet operation ensure maximum user comfort.

##### ■ Smart Devices

Fujitsu offers a diverse lineup of smart devices that can be tailored to customer needs. Fujitsu's smartphones and tablets are equipped with proprietary human centric technology that enables ultimate connectivity and smart functions for daily lives, such as 4G/LTE connectivity and intuitive touch-panel operation, and other features

##### ■ Peripheral Devices

Fujitsu provide a comprehensive array of displays and accessories to make life easier and more enjoyable. The comprehensive Fujitsu Display portfolio covers every usage environment and application. These displays deliver an unrivalled combination of innovative technologies for best usability, picture performance, connectivity and energy efficiency. From printer, accessories or scanner products - whatever you need, Fujitsu's range of peripherals will provide it.

### Solutions

#### Infrastructure Solutions

##### ■ Virtual Client Computing

Desktop virtualization helps improve service quality and security, increase flexibility, and reduce costs. Fujitsu provides desktop virtualization solutions based on best-in-class virtualization technolo-

gies, proven infrastructure products, and end-to-end lifecycle services from a single source. Customers benefit from rapid implementation and reduced risk resulting from Fujitsu's extensive project experience.

Note: Availability featured here may differ by region.



Creative Intelligence

# New Value from Information

Creating knowledge from information with advanced technology and analytical expertise

Advances in ICT have made it possible to integrate conventional business data with sensor data, positioning data, social media posts, logs, and other forms of big data. Following which the data can then be collected, analyzed, and used in real time to create new business opportunities for customers. Big data is now an important part of social innovation that spans regions and industries such as food and agriculture, transport, health and medicine. At the same time, companies are looking for ways to use big data to differentiate themselves from their competitors and develop new businesses, making the sophisticated analysis and use of big data a pressing business issue.

## Services, Products and Solutions

### Services

#### Application Services

##### ■ Software as a Service

Fujitsu offers a wide range of packaged applications as subscription-based services - supported by implementation, customization and integration services- including on-demand apps for office productivity, customer relationship management, IT management and other key industry and enterprise applications.

##### ■ Platform as a Service

Our long term vision for PaaS is to gather together in one high productivity business platform all of the capabilities needed to rapidly create, integrate, distribute and monetize composite services across complex new ecosystems of platforms, devices, providers, integrators and consumers.

#### Managed Infrastructure Services

##### ■ Data Center Services

Fujitsu's Data Center Services provide our customers with the complete range of services to ensure their IT systems are fully

operational for their users as well as to improve their IT flexibility, efficiency, performance and to reduce their costs. (For a full description please see the "Create Value through Integration" section.)

#### Intelligent Data Services

Intelligent Data Services collectively refers to services designed to establish a cycle of combining knowledge obtained from gathering, storing, and analyzing large volumes of sensor data. Then combining this with knowledge to guide people. These services harness Fujitsu's comprehensive technological capabilities, along with customer business expertise and customer channels developed over many years. By embedding ICT devices into objects of all kinds in the physical world (real world), Fujitsu will catalyze innovation to help achieve a prosperous human centric society.

- Cloud Services as a Platform for Big Data: platform services for data utilization
- SPATIOOWL: new location data cloud services
- Data Curation Service: creating new value for customers by fusing various kinds of big data
- Skin Memory: a service that enables people to easily check their own skin condition using smartphones
- DataPlaza: social media analysis tool for supporting the analysis of consumer feedback from social media data

### Products

#### Software

Fujitsu provides a systematic lineup of software products designed to facilitate the use of big data. This lineup features software products that customers can easily use on-site. Fujitsu has developed, through implementation of Platform Services for Data Utilization, a cloud service for utilizing big data. In addition, we have helped customers to utilize big data by making it simple to install and operate, and by providing an ecosystem that makes it easy for customers to combine software with other products including open-source software.

##### ■ Middleware (for Bigdata)

- FUJITSU Software Interstage Big Data Parallel Processing Server
- FUJITSU Software Interstage Big Data Complex Event Processing Server
- FUJITSU Software Interstage eXtreme Transaction Processing Server
- FUJITSU Software Symfoware Analytics Server

### Solutions

#### Infrastructure Solutions

##### ■ Private Cloud Infrastructures

Fujitsu offers a range of options for quickly building and scaling private clouds and hybrid clouds. The pre-integrated IT infrastructure solutions combine high-performance and energy-efficient hardware, a holistic operating environment, an optimized deployment service together with a comprehensive professional service portfolio to reduce complexity in design, build and operation of private cloud infrastructures.

##### ■ FUJITSU Integrated System Cloud Ready Blocks

This solution is a pre-integrated and pre-tested infrastructure solution combining hardware (server, network and storage) , software (virtualization and operating environment) and integrated services (deployment and maintenance services) to shorten time to production, drive down operating costs and increase operational efficiency. The combination of factory-integrated building blocks and services reduces workloads, time and complexity in the consult, design and build phases, not to mention operations and maintenance. In addition, optional complementary services are offered on demand.

Note: Availability featured here may differ by region.



Creative Intelligence

# Security and Business Continuity

Realize a safe and secure ICT environment with enhanced authentication platforms, privacy protection and security intelligence.

Fujitsu continuously develops and provides security-related products and services. Through proven countermeasures and operations, Fujitsu, comprising of approximately 300 companies worldwide, handles several hundred million individual cyber-attacks each day. In order to apply this security expertise to our customers and deliver integrated support, including system enhancement and operation, and education and training, Fujitsu has organized a range of products and services into the new FUJITSU Security Initiative. In establishing the Security Initiative Center, Fujitsu provides a one-stop shop of support functions for constantly maintaining the optimal level of security for our customers' environments. This newly packaged collection of products and services is currently available in Japan and will be rolled out globally in stages.

## Services, Products and Solutions

### Services

#### Application Services

##### Information Management

Fujitsu provides services for the management and exploitation of information throughout its lifecycle. These services cover:

- User Experience solutions for users to access, locate, exploit and input information. Including portals, search, web content management, business insight/analytics, forms and mobile.
- Enterprise Collaboration enabling knowledge workers to share and draw on information enterprise-wide whilst making the most of the latest mobile and communications tools
- Enterprise Process support focused on defining, improving and orchestrating key business processes using Business Process Management technologies to increase efficiency and improve service delivery
- Enterprise Lifecycle Management solutions to capture and secure information and make it available across the business in compli-

ance with regulatory requirements. Including electronic document and records management (EDRM), eDiscovery, lifecycle management and archiving.

##### Enterprise Applications

Fujitsu's Enterprise Applications services cover the design, development, configuration, implementation, rollout and on-going management of solutions based on packaged ERP applications. (For a full description please see the "Create Value through Integration" section.)

##### Software as a Service

Fujitsu offers a wide range of packaged applications as subscription-based services - supported by implementation, customization and integration services - including on-demand apps for office productivity, customer relationship management, IT management and other key industry and enterprise applications.

#### Managed Infrastructure Services

##### Data Center Services

Fujitsu's Data Center Services provide our customers with the complete range of services to ensure their IT systems are fully operational for their users as well as to improve their IT flexibility, efficiency, performance and to reduce their costs. (For a full description please see the "Create Value through Integration" section.)

##### End User Services (EUS)

Fujitsu's End User Services are for organizations who want to securely access their workplace data and services on any device in any location. EUS underpins business agility and delivers business value while reducing the costs to business, and improving the user experience. (For a full description please see the "Create Value through Integration" section.)

### Solutions

#### Business and Technology Solutions

##### Security Solutions

Having a secure IT environment is becoming more and more important. With continual advancements in technology and innovation, confidential business information is at a higher risk of exposure. Understanding that mobility and connectivity are a part of today's business environment, Fujitsu takes a focused approach to ensuring security around all of our solutions. The combination of Fujitsu's user security expertise and partnerships with leading security vendors, ensures superior security. Fujitsu's extensive range of user security products and solutions are easy to integrate and can be enhanced with complementary software and hardware offerings to meet unique user security requirements. Two prominent solution examples for authentication / identity management and compliant archiving are described here.

##### Authentication / Identity management solutions - based on Fujitsu's PalmSecure technology

Fujitsu's Authentication / ID Management solutions are based on Fujitsu's biometric palm vein technology and provide high reliability and authentication security for a wide range of applications in different market segments. This hygienic, contact-less authentication technology uses vascular patterns as personal identification data. These patterns are unique to individuals and more reliable in verifying identity than token and knowledge-based methods. Selecting this biometric technology for a specific security application will drastically increase the application's safety and the comfort for the users. We also have new software solutions combined with Fujitsu PalmSecure -e.g. for enabling the monitoring and controlling of a SAP system by re-authentication at user-specific checkpoints during SAP operations as a significant security improvement.

Based on FUJITSU Biometric Authentication PalmSecure we have introduced another new software solution for facilitating secure two-factor authentication as well as secure transfer of data transac-

tions - providing a reliable means of identification for people and organizations who share data and information. The introduction of new mobile workplace systems with integrated PalmSecure technology increases security dramatically. The combination of PalmSecure technology based on Match-on-Device solutions and high level security software is an ideal basis for secured cloud access- and secured payment applications. Fujitsu's PalmSecure enables our customers to protect end-to-end their sensitive and mission-critical information with secured access points and workplaces at the front end and secured applications in the data center.

##### Compliant Archiving Solutions

Fujitsu SecDocs helps customers to keep the same permanent evidential value of electronic documents as paper documents in order to legally safeguard business processes. This solution is an open standards-based archiving middleware and offers permanent protection of electronic documents, grants consistency and originality of documents for a long time 100 years or over.

SecDocs is a modular client-specific system, developed for all commonly used operating systems and can be quickly integrated into heterogeneous and dynamic IT- Environments and business processes. The basic functions are provided via web services and connectors and guarantee maximum interoperability with leading applications and storage systems.

SecDocs complies with the BSI TR 03125 for confidential electronic long-term storage and is certified to ISO/IEC 15408 (Common Criteria EAL 4+).

With Fujitsu Secure Mailroom, an input management system for Fujitsu scanners, we help customers to handle large paper documents and/or to migrate easily from paper archives directly to a trusted electronic archive as an End-to-End solution.

Note: Availability featured here may differ by region.



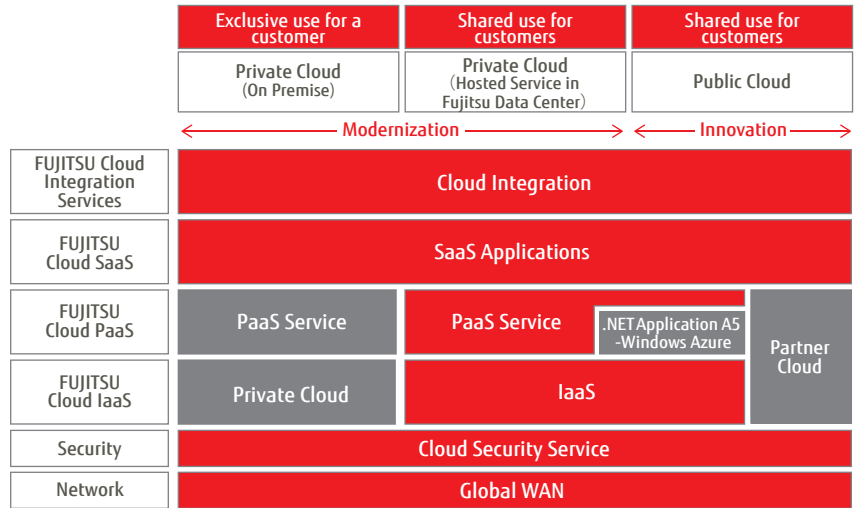


Connected Infrastructure

# On-demand Everything

Cloud integration accelerates innovation

The FUJITSU Cloud Initiative represents the company's continued effort to provide customers with cloud solutions that are ideally suited to their ICT needs. This includes everything from private clouds to hybrid clouds, and from integration services to the full cloud sphere of IaaS, PaaS, and SaaS. We ultimately aim to make it easy for businesses, large or small, to benefit from cloud services enabling them to innovate and grow.



## Services, Products and Solutions

### Services

#### Application Services

##### ■ Software as a Service

Fujitsu offers a wide range of packaged applications as subscription-based services - supported by implementation, customization and integration services - including on-demand apps for office productivity, IT management, and other key industry and enterprise applications.

##### ■ IT Management as a Service

Fujitsu ITMaaS is a suite of SaaS based applications providing the infrastructure, application monitoring and service desk capabilities needed to underpin an efficient and cost-effective IT Management operation.

##### ■ Backup as a Service

Fujitsu BaaS provides a fail proof, cloud-based backup and recovery service. Delivered from our IaaS Trusted Public S5, it offers the levels of speed, convenience and reliability demanded by organizations today.

##### ■ Platform as a Service

Our long term vision for PaaS is to gather together in one high productivity business platform all of the capabilities needed to rapidly create, integrate, distribute and monetize composite services across complex new ecosystems of platforms, devices, providers, integrators and consumers.

##### ■ FUJITSU Cloud PaaS RunMyProcess

The Fujitsu RunMyProcess platform makes use of business process management (BPM) concepts to provide a unique mix of structured workflows, integration and agility helping customers from all around the world meet their evolving business needs. By leveraging an easy-to-use, drag-and-drop design and more than 2,400 available connectors for SaaS and other applications, as well as full integration with Google Apps, Fujitsu RunMyProcess customers can rapidly build and deploy highly customized business applications.

##### ■ FUJITSU Cloud Enablement Services

This provides a platform with standard functions needed to build and operate a customer's SaaS, such as an enterprise app store, ID management and authentication, and subscriptions and fees. This service lets companies focus on developing and operating the applications and packages that are at the core of their business, increasing their productivity and dramatically speeding up the process of launching a SaaS by as much as a factor of six (from approximately one year to approximately two months, according to Fujitsu research).

##### ■ FUJITSU Cloud PaaS A5 for Windows Azure™

Fujitsu works with other cloud providers to ensure the optimal mix of private, public, on-premise and hosted cloud solutions is achieved. Fujitsu is the world's first Microsoft partner to be able to deliver Microsoft Azure as a cloud service. Fujitsu Hybrid Cloud Services links Microsoft Windows Azure-based components to Windows Server-based components, running either on premise or on a Fujitsu cloud platform.



## Services, Products and Solutions

### Services

#### Managed Infrastructure Services

##### ■ Data Center Services

Fujitsu's Data Center Services provide our customers with the complete range of services to ensure their IT systems are fully operational for their users as well as to improve their IT flexibility, efficiency, performance and to reduce their costs. Our operational Datacenter Services comprise Datacenter Hosting (facilities); IT Infrastructure Management for servers, storage and other DC and cloud hosted infrastructure; backup and recovery services as well as DC network services. In addition Fujitsu has technical consultancy and project services that enable us to undertake assessment, advisory, migration and transformation projects for our customers - either as part of a wider outsourcing or as part of the customer's journey towards cloud infrastructure. As part of the transformation of customer infrastructure we may include FUJITSU Cloud IaaS.

##### ■ Managed Hosting

We provide a range of managed hosting services to meet your specific business needs. These cover every aspect of implementation and management for your virtual compute and storage environment, including platform and directory services, infrastructure applications and database environment. Each service offers a range of options to allow you to select the package that is right for your business.

##### ■ End User Services (EUS)

Fujitsu's End User Services are for organizations who want to securely access their workplace data and services on any device in any location. EUS underpins business agility and delivers business value while reducing the costs to business, and improving the user experience. We achieve this by offering a single blended service that allows us to provide the best-fit service model to satisfy the different roles and requirements of your users. Virtual Client Services and Managed Mobile are architected to be integrated and so provide a seamless end user experience that maximizes individual productivity. (For a full description please see the "Create Value through Integration" section.)

##### ■ Virtual Client Services

Fujitsu's proven approach to exploiting desktop virtualization to help organizations looking to transform their desktop service to provide a more flexible solution that will reduce both business and IT costs while improving the user experience.

##### ■ Managed Mobile

Fujitsu can help manage the growing complexity of non-standard, geographically dispersed mobile infrastructure environments, while safeguarding corporate data and protecting privacy. (For a full description please see the "Mobility and Empowerment" section.)

##### ■ Network and Communication

Fujitsu's network services for inter-site communications, deliver a carrier-class network infrastructure combining cost competitiveness and security with high performance. (For a full description please see the "Mobility and Empowerment" section.)

##### ■ Global WAN Services

Fujitsu Wide Area Network (WAN) provides global connectivity. This includes Managed WAN, Managed Virtual Private Networks, Managed Wavelength and Managed Firewall Services together with Campus LAN and Distributed LAN services.

##### ■ Infrastructure as a Service

Fujitsu cloud infrastructure services deliver flexibility and value with the necessary high level of security and service quality expected from enterprise-class IT. To fulfill different requirements, Fujitsu has a comprehensive range of IaaS and Private Cloud solutions.

##### ■ FUJITSU Cloud IaaS Trusted Public S5

Trusted Public S5 provides a pool of scalable, robust, secure and customizable, virtual IT resources, available on demand on a pay-per-use basis. Designed from the ground up with business users in mind, it delivers enterprise-grade performance with high availability. It is delivered via our global network of data centers - in Japan, Australia, USA, Singapore, UK and Germany- to provide cost-effective and secure access to on demand infrastructures.

##### ■ FUJITSU Cloud IaaS Private Hosted

In accordance with geographical regulations governing where data is stored and processed, as well as a need for organizations to consider local customer sentiment, Fujitsu offers IaaS Private Hosted. This platform provides tailored services specific to regional needs and makes it an ideal solution for running your enterprise class production systems such as Microsoft, Oracle, and SAP on a pay-as-you-go basis.

### Solutions

#### Infrastructure Solutions

##### ■ Private Cloud Infrastructures

Fujitsu offers a range of options for quickly building and scaling private clouds and hybrid clouds. The pre-integrated IT infrastructure solutions combine high-performance and energy-efficient hardware, a holistic operating environment, an optimized deployment service together with a comprehensive professional service portfolio to reduce complexity in design, build and operation of private cloud infrastructures.

##### ■ FUJITSU Integrated System Cloud Ready Blocks

This solution is a pre-integrated and pre-tested infrastructure solution combining hardware (server, network and storage), software (virtualization and operating environment) and integrated services (deployment and maintenance services) to shorten time to production, drive down operating costs and increase operational efficiency. (For a full description please see the "New Value from Information" section.)

##### ■ FUJITSU Dynamic Infrastructures for VMware vCloud

This solution is based on a reference architecture consisting of servers, network and storage hardware, plus VMware virtualization and management software for building an Infrastructure as a Service platform. The reference architecture leverages Fujitsu design and configuration best practices. It is optimized to reduce complexity in the design and build phase of a VMware vCloud Director environment - and at a significantly lower cost compared with do-it-yourself approaches.

##### ■ vShape

The Solution for virtual infrastructures FUJITSU vShape is an infrastructure solution for VMware or Hyper-V environments integrating the expertise and technologies of leading manufacturers of servers, storage systems, and networks. These are PRIMERGY servers from FUJITSU, ETERNUS storage systems from FUJITSU or FAS systems from NetApp and switches from Brocade. All these components are ideally synchronized for defined software packages and validated as a single solution. vShape reduces integration and implementation time and risks of building virtual infrastructures.

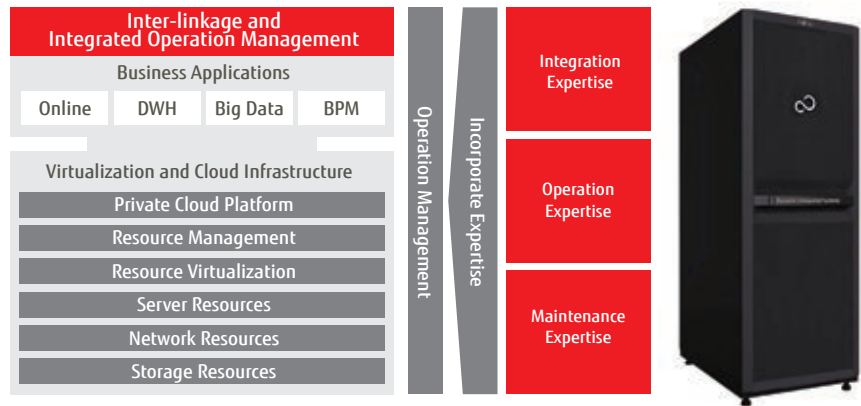
Note: Availability featured here may differ by region.



# Connected Infrastructure Integrated Computing

Automating computing systems to enable energy-efficient, eco-friendly 'organic' datacenters

Fujitsu provides computing systems designed for specific business requirements, leveraging our hardware and software technologies and expertise in systems integration and operation. Fujitsu's Dynamic Integrated Systems converge these technologies and expertise to strengthen our customers' competitiveness.



## Services, Products and Solutions

### Products

#### Server

The FUJITSU server line represents one of the broadest portfolios in the market. This enables us to talk with our customers as a trusted advisor with the target to provide them with the right combination of systems, solutions and know-how to guarantee maximum productivity, efficiency and flexibility, delivering confidence and reliability.

- **Mainframe**
  - FUJITSU Server GS21, BS2000, VME
- **FUJITSU Server PRIMERGY**
  - Industry's most complete x86-based portfolio for companies of all sizes, across all industries and for any type of workload
- **FUJITSU Server PRIMEQUEST**
  - Enhance the economic benefits of x86 industry standards complemented with fault immune mission critical system architecture
- **FUJITSU M10 SPARC based server**
  - Unmatched scalability of up to 64 processors together with highest RAS features and a modular architecture
- **FUJITSU Supercomputer PRIMEHPC FX10**
  - Fujitsu's supercomputer provides the ability to address high magnitude problems by delivering over 23 petaflops, a quantum leap in processing performance.

#### Storage

Under the direction "Business-centric Storage" Fujitsu provides ETERNUS DX disk systems, ETERNUS data protection appliances and ETERNUS LT tape systems enabling customers to align storage resources with business priorities and to manage their increasing data volumes at less costs of growth.

- **Disk Storage Systems**
  - FUJITSU Storage ETERNUS DX series
- **Tape Systems**
  - FUJITSU Storage ETERNUS LT series
- **Data Protection Appliances**
  - FUJITSU Storage ETERNUS CS series
- **Storage Management Software**
  - FUJITSU Storage ETERNUS SF suite

#### Software

Fujitsu is the only Japanese vendor with a systematic software product lineup. Fujitsu integrates optimal systems according to customer needs and objectives, based on a core lineup of proprietary technologies and products combined with supplementary partner software products and open-source software.

- **BPM/SOA/XBRL**
  - FUJITSU Software Interstage
- **Operation Management**
  - FUJITSU Software Systemwalker
- **Database**
  - FUJITSU Software Symfoware
  - Oracle
  - Microsoft
- **Resource Management**
  - FUJITSU Software ServerView Resource Orchestrator
- **Hypervisor**
  - Microsoft Hyper-V
  - VMware vSphere

#### Network

Along with in-house development of products that facilitate business continuity, security measures, and operation and management, Fujitsu can evaluate and verify third-party products. By embedding these products in networks, Fujitsu supplies optimal networks for each customer to rapidly meet their diversifying needs.

- Router
- LAN Switch
- Security
- Bandwidth Control, Load Balancer
- IP Telephony
- Unified Communication

### Solutions

#### Infrastructure Solutions

Fujitsu provides various infrastructure solutions from pre-tested appliances and reference architecture to highly integrated platforms. Customers benefit from Fujitsu design excellence in end-to-end infrastructure solutions and the experience gained from hundreds of customer installations.

- **Private Cloud Infrastructures**
  - FUJITSU Integrated System Cloud Ready Blocks
  - Dynamic Infrastructure for VMware vCloud

- **Virtualization**
  - vShape reference architectures for VMware and Hyper-V
- **SAP Infrastructure Solutions**
  - FlexFrame Orchestrator
  - SAP HANA
  - BW Accelerator Infrastructure
- **Microsoft**
  - FUJITSU Cluster-in-a-box
  - FUJITSU SQL Server Data Warehouse Appliance

Note: Availability featured here may differ by region.

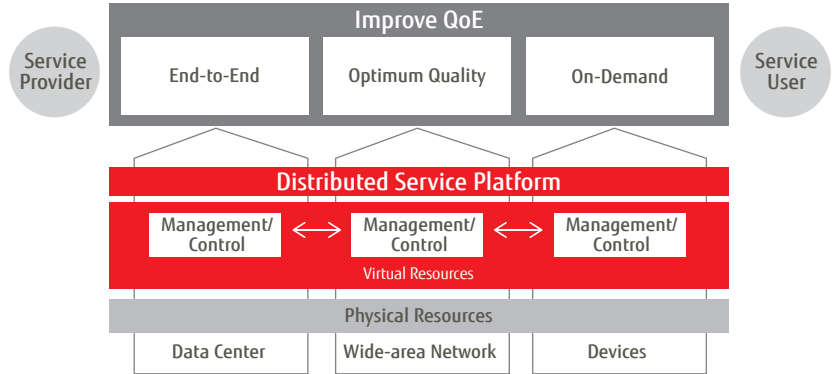


Connected Infrastructure

# Network-wide Optimization

Realizing distributed computing,  
leveraging Software-Defined Connected Infrastructure (SDCI)

In the future, everything will be connected and large amounts of diverse data will be processed in real time. Fujitsu has proposed the "FUJITSU Intelligent Networking and Computing Architecture" as a new architecture for next-generation ICT infrastructure. In alignment, Fujitsu plans to release products that will conform to this architecture across various areas of technology, including wide-area networking.



## Services, Products and Solutions

### Services

#### Managed Infrastructure Services

##### ■ Network and Communications

Fujitsu's network services for inter-site communications, deliver a carrier-class network infrastructure combining cost competitiveness and security with high performance. (For a full description please see the "On-demand Everything" section.)

##### ■ Global WAN Services

Fujitsu Wide Area Network (WAN) provides global connectivity. This includes Managed WAN, Managed Virtual Private Networks, Managed Wavelength and Managed Firewall Services together with Campus LAN and Distributed LAN services.

### Products

#### Software

The penetration of broadband networks has led to an increase of digitized data flowing through networks. As a result, a variety of services are now provided over networks, such as IP telephony and video distribution services. As next-generation networks become increasingly important to society, network infrastructure has become large and complex. This has created a host of crucial issues for service providers. Issues include network operation and management and problem resolution methods, in addition to quality assurance for network services and infrastructure operation and management.

To solve these issues, Fujitsu provides network service management software that enables operation and management and quality assurance for next-generation networks.

##### ■ Network Management Software

- Dynamic Resource Management Software
  - FUJITSU Software ServerView Resource Orchestrator
- Network Operation and Management Software
  - FUJITSU Software Systemwalker Network Manager
  - FUJITSU Software Systemwalker Network Assist
- Network Service Management Software
  - FUJITSU Software Systemwalker Service Quality Coordinator

#### Network

Fujitsu supplies a comprehensive range of network products, including communications systems for carriers and network devices for enterprises. The former constitutes the backbone of our ICT-driven society, such as core networks, metro networks, and access networks. The latter is used to integrate internal networks within enterprises.

- Network System
- Network Access
- Network Transport
- Network Service Platform
- Network Service Node
- Router
- LAN Switch
- Security
- Bandwidth Control
- Load Balancer
- IP Telephony
- Unified Communication

Note: Availability featured here may differ by region.



## Working Together

Fujitsu is working to co-create a Human Centric Intelligent Society with our customers, partners and other stakeholders. It is a world where people's lives are enriched by ICT and innovation is everywhere.

### Co-creation with our customers and society

Fujitsu's brand promise - shaping tomorrow with you - represents our desire to contribute to a prosperous future and our commitment to working together with our customers and stakeholders.

### Co-creation with our partners

We value our relationships with many partners. Fujitsu is working with them in different parts of the value chain: planning, development, implementation, operations and maintenance of ICT services, products and solutions. We are working to strengthen our partner ecosystem for delivering greater value for our customers.

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### Global Technology and Solutions Partners

To offer the best solutions, Fujitsu has developed strategic alliances with these leading ICT companies. Bringing together our in-house technologies and their complementary capabilities enables us to co-create new value for our customers.



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