Fujitsu Technology and Service Vision

2014

FUJITSU

shaping tomorrow with you

Message from the President

The world is changing. Globalization and unprecedented technological advance are bringing huge opportunities for growth, along with the threat of emerging competition.

These fundamental changes are affecting our everyday lives, transforming everything from consumer behavior to the way we communicate.

At the same time we face complex social challenges. With an ever rising population, how do we manage resources like food, water and energy? How do we take care of our elderly, and how do we prepare against natural disasters? We have an obligation to use technology to respond to these threats.

Against this background, Fujitsu announced the first Fujitsu Technology and Service Vision in April 2013. It set out our vision of a Human Centric Intelligent Society, describing our approach to achieve it. Since the announcement, we have embarked on a set of initiatives to set us on the path to achieving our vision.

Meanwhile, ICT continues to evolve. People and now things can be connected via the Internet, generating massive amounts of information in the process. We can harness this information in real-time to make better judgments. These advanced technologies have the tremendous potential to enable innovation, changing industries and society, changing our lives.

We have revised the Fujitsu Technology and Service Vision, incorporating new ideas and actions to enable innovation. Fujitsu is working hard to build the next generation of technologies and services, towards our goal of realizing a Human Centric Intelligent Society.

We hope that this booklet will help you see the future more clearly and take advantage of the opportunities for innovation that arise from changing technology.

April 2014

Fujitsu Limited
President and Representative Director
Masami Yamamoto

Introduction

In this booklet, we set out our thinking on how ICT (Information and Communication Technology) will transform business and society. To achieve our vision of a Human Centric Intelligent Society, we set out innovation scenarios for business and society and show how these are underpinned by technology and service concepts. These concepts are embodied in our lineup of offerings. Our approach is firmly based on the Fujitsu Way, our corporate philosophy and code of conduct. To deliver value for our customers and across society, Fujitsu will strengthen research and development as well as our global resources in line with this.

We have three key messages for you.

First, a hyperconnected world is emerging. It will have a huge impact on the future. People and the things around us, all linked together, sharing information. More connectivity means more collaboration. It means vanishing boundaries. In the era of hyper-connectivity, the key to growth is how people will use ICT to deliver value.

Second, in this new era, innovation is realized by enabling and combining the three dimensions of people, information and infrastructure. Fujitsu calls this Human Centric Innovation. As your innovation partner, we want to help you create value through this new approach.

Third, in the future, value will be created by digital ecosystems. These are networks of digitally connected services that traverse the boundaries of organizations and industries, with each node co-creating value for the end consumer. Fujitsu wants to use the power of ICT to drive a safer, more prosperous and sustainable society, where knowledge is harnessed and people are empowered to innovate. We call this vision a Human Centric Intelligent Society. Fujitsu is working to realize a Human Centric Intelligent Society with our customers and partners. We are developing all of our technologies and services with this goal in mind.

We have also prepared innovation case studies and our comprehensive lineup of services, products and solutions in a separate booklet. We hope it will be useful for your reference.

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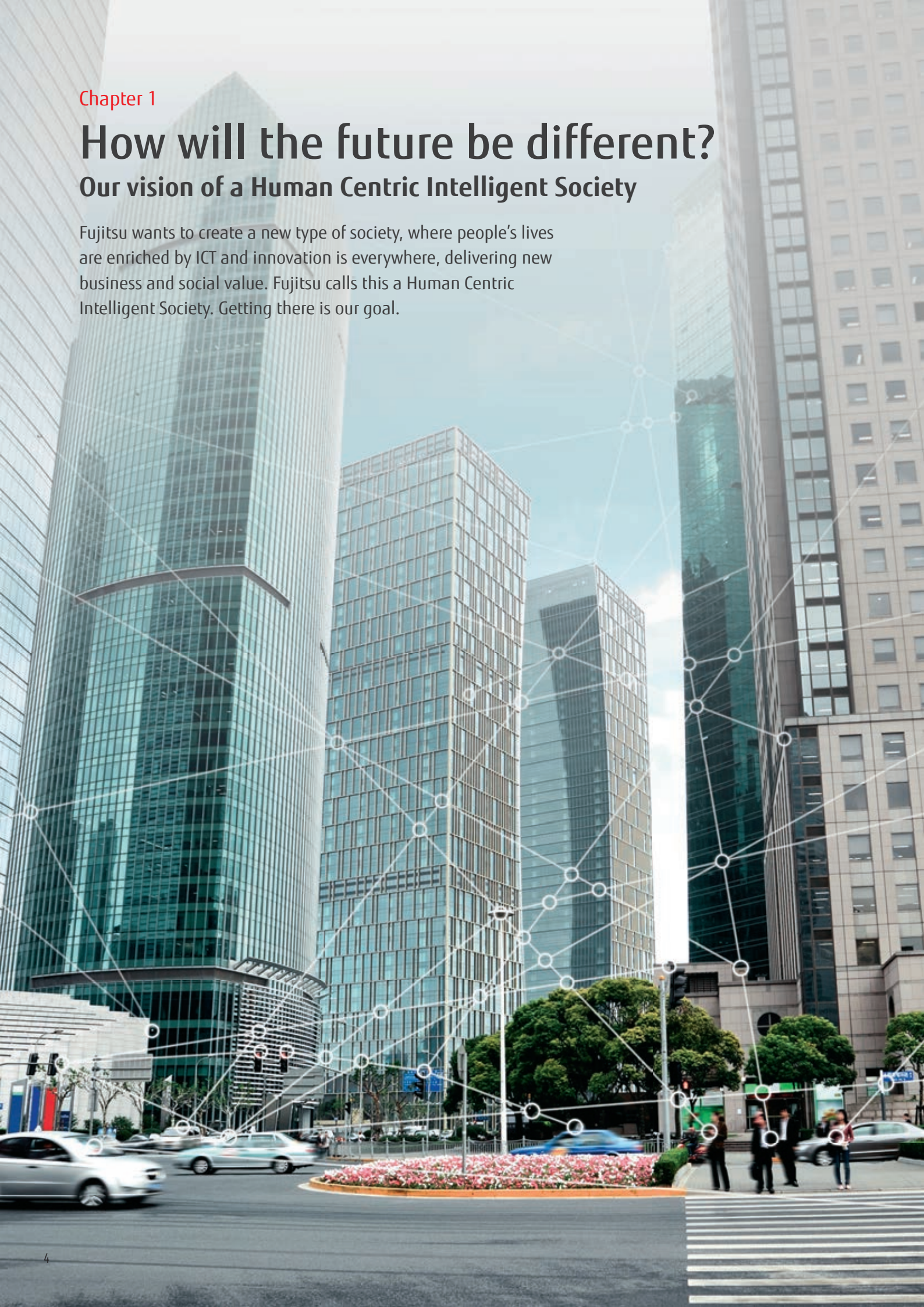
Chapter 1

How will the future be different?

Our vision of a Human Centric Intelligent Society

Fujitsu wants to create a new type of society, where people's lives are enriched by ICT and innovation is everywhere, delivering new business and social value. Fujitsu calls this a Human Centric Intelligent Society. Getting there is our goal.



A hyperconnected world

A new world is emerging. It is a world of connectivity. People and the things around us, all linked together, sharing information. The World Economic Forum calls it a Hyperconnected World and it will have a huge impact on the future. More connectivity means more collaboration. It means vanishing boundaries. It means changes to the way businesses work and how society creates value. It also means risk and uncertainty. It means the future will be different.

At the heart of a hyperconnected world is a new generation of the internet. You may have heard of the Internet of Things (IoT). The digital world will connect your car, air conditioner, washing machine, refrigerator, microwave oven, or even your light bulbs. In 2013, there were around 10 billion devices connected to the internet. This number will likely reach 50 billion or more by 2020.

The places where we live our lives - houses, shops, schools as well as the services we rely on - transportation, water and energy infrastructure all have the potential to be enhanced through digital connectivity. As the number of end points increases, so does the amount of information*1. Harnessing information will greatly empower people, streamline operations and create new value.

Anybody can innovate

With just a few good ideas, anybody can innovate. Today, connectivity makes the tools of innovation more accessible than ever. Mobility has put information at our fingertips. The smartphone app is how modern businesses connect with their customers.

Anybody can start a web-based business with no limit to the customers they can reach. The rapid rise of cloud computing has brought unprecedented access to computing resources and software on-demand.

This trend is not restricted to the digital world. 3D printing is set to transform manufacturing. We can craft prototypes instantly at low cost. Novices can carry out tasks that used to call for specialist skills. A new breed of DIY workshops are springing up where members can use a new generation of machine tools - from 3D printers to 3D CAD -as well as a vast array of other tools cheaply and easily. You no longer need the resources of a large company to manufacture products.

The availability of these technologies will continue to lower the bar to successful innovation*2. We can experiment and move on, without the lengthy production cycles of the past: instead of years and months, we will measure innovation in days and hours.

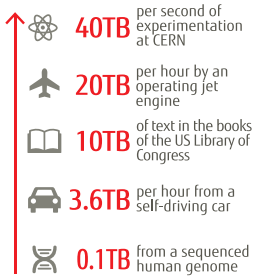
The opportunity and challenge of the future

A hyperconnected world is driving a new industrial revolution. People, information, processes, things, infrastructure and computing systems are meshing together. Massive amounts of information are being generated, creating new knowledge and huge potential for economic growth. Industry borders are vanishing. Companies in different industries have the means to collaborate with each other, to build and connect new processes to deliver value for their customers.

How we innovate is fundamentally changing. Armed with technology, individuals can play a more proactive role in realizing innovation. For organizations it will be critical to know how to harness the power of the individuals within them and how to collaborate with those outside to maximize opportunities.

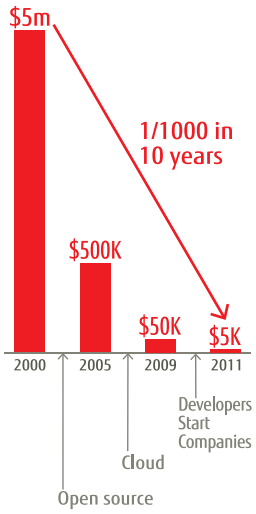
A hyperconnected world may bring a huge opportunity, but we will also face serious

*1 How much data?



Source : Economist, Intel IT Center, WIKIPEDIA, SmartData, Forbes

*2 Average cost of starting a business



Source: Key Note Speech, VCJ Venture Alpha Conference, Mark Suster (Partner, GRP) "The State of the Venture Capital Markets" OCTOBER 20, 2011

challenges of information security and privacy protection. It is critical to protect our data against the ever-increasing threats of cyber attacks and ensure the use of trusted information.

Today's enterprises must be aware of these trends and know how to respond. In this new world, we can't rely on what we have done before. In the past the ability to use cutting-edge technologies itself was a source of competitiveness, improving efficiency and building operational excellence. However, in a world where technologies are so accessible, this advantage is unsustainable.

What then is the key to success in a hyper-connected world? To Fujitsu the answer is simple: people. Organizations will look to their people for the innovative new ways to engage with their customers and deliver value for business and society. We are experiencing a shift to a new human centric paradigm.

A Human Centric Intelligent Society

Fujitsu has a vision for the future. We believe that human centric ICT can help create a more intelligent society, a better place for human beings and a better place to conduct our business. It is a sustainable world where we can live and prosper.
Human centric ICT is a style of technology

A human centric paradigm

	Traditional Paradigm	Human Centric Paradigm
Characteristics	■ Efficiency	■ Creativity
	■ Processes, static	■ Autonomy, dynamic
	■ Information	■ Knowledge
	■ Past	■ Present (real-time) & future
	■ Own	■ Share
	■ Lead by organizations	■ Lead by individuals
	■ High innovation cost	■ Low innovation cost
	■ Closed innovation	■ Open innovation
Role of ICT	■ Improvement of productivity ■ Cost reduction	■ Empowerment of people ■ Improvement of value ■ Innovation of business model

that empowers people. It is designed and built to meet our needs. It connects everything. It harnesses information to create knowledge that we can use anywhere, any time. It enables innovation. It creates value. It is the fusion of advanced technologies encompassing cloud, mobility, Big Data, social, the Internet of Things and more.

Fujitsu wants to use the power of human centric ICT to build a safer, more prosperous and sustainable society, where knowledge is continually harnessed and people are empowered to innovate. We call this vision a Human Centric Intelligent Society.

A future scenario - part 1

A traffic accident has happened in a busy city during rush hour. A young cyclist is badly injured. He urgently needs emergency treatment.
Fortunately, he lives in a Human Centric Intelligent Society.
The motion sensor in his wearable device detected the impact. It provides his exact location and sends his changing heart rate and blood pressure to a human centric ICT system, which raises the alarm. Before any passer-by could telephone for help, the control center is made aware of the emergency and they dispatch an ambulance.
The paramedics arrive and stabilize the young man. But there is not much time to save him: what is the quickest way to reach medical treatment? The system recognizes traffic is gridlocked around the nearest hospital, but the data shows the next alternative has a shortage of medical staff. There's an alternative: a hospital free from traffic and with staff available immediately. The system plots the best route through the traffic, estimating the cyclist will get access to emergency treatment 7 minutes faster.

As the ambulance speeds through the city, the city's traffic management system responds to the emergency. Traffic lights are changed in favor of the ambulance, saving yet more vital seconds.

Our 'future scenario', above, is in a healthcare context but the principle applies equally to any other area of human activity. If you think this sounds ambitious, consider that Fujitsu has equipped around 4,000 taxis running in Tokyo with GPS (Global Positioning System) sensors, sending ever-changing positional data to Fujitsu's cloud data center. The result is a visualization of real-time road traffic status of the world's largest metropolis, enabling navigation support and various other benefits.

A Human Centric Intelligent Society has two key characteristics. One is that intelligent ICT is embedded into every aspect of business and society. However, just making the world a smarter place is not enough. A second characteristic is that the creativity of people is harnessed and directed towards positive social outcomes and greater sustainability.

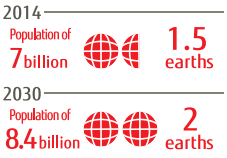
The world's population just passed the mark of 7 billion and continues to grow. We are aging and moving into cities, creating new challenges for our social infrastructure. This brings new challenges for resource management, healthcare, disaster mitigation and protecting our environment. Fujitsu strongly believes that ICT can take a leading role in addressing these global challenges*3. Aligning business activities to this goal is not just our aim, it is our obligation.

Fujitsu is working to realize a Human Centric Intelligent Society and this mission underpins all of our business activities. This is a long journey, but we are already taking steps along it.

*3 Global Challenges

> Population growth and environmental impact

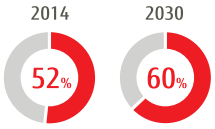
Capacity of earth to absorb impact of population



Source : WWF, OECD Environment Outlook, Worldometers

> Urbanization

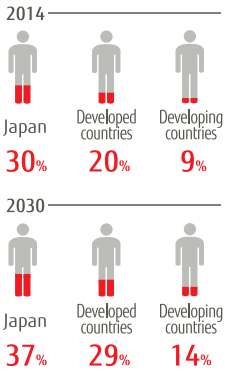
Urban population ratio



Source : United Nations

> Aging

Ratio of elderly population aged 60 and over



Source : United Nations

> Rise in the demand for food

Food production must increase

Source : IMF, FAO, IPSJapan

Chapter 2

A new approach to innovation

Enabling People, Information and Infrastructure

A Human Centric Intelligent Society means taking a fresh approach. The basis for business and social innovation will come from the management of three key dimensions: people, information and infrastructure.

Growth and Transformation through ICT

Our vision is for a world in which people are free to innovate. We call this a Human Centric Intelligent Society. In such a world, the opportunity for businesses is to create new value for their customers and for society too. But how do they realize this?

Today's most successful businesses share the characteristic of weaving ICT into the very core of their products and services. Take financial services. In the old days, customers could only consume these by visiting a bank. Then technology was introduced enabling us to bank online, without having to set foot in a branch. Today something different is happening. New digital entrants have brought radical and innovative new business models into the sector, changing the nature of the industry. Paypal and Kickstarter, for instance, have changed the way payments are made and investment is raised. Yet financial services are not unique in this regard. Zipcar has re-imagined how we hire cars; Airbnb has done the same for travel accommodation. For these companies, ICT is the core part of how they create value for their customers.

Going back fifty years, ICT was conceived as a tool to improve business efficiency. Even with the emergence of radical new technologies in the 1990s - e-commerce for instance - organizations still saw ICT mainly as a way of improving productivity. Of course this will remain a key function. But now this is only a part of the story. Human centric technologies bring new capabilities to business. These technologies can change the way a company interacts with its customers, the markets it can reach and the value it can offer. They enable forward-thinking companies to re-invent their business models.

We expect this to become mainstream business thinking in the future. In fact, today many CEOs of enterprises are seeing ICT as a prime driver of company growth. Research conducted by Gartner indicates that CEOs are prioritizing growth over cost reduction*4. Human centric technologies are playing a key role in that growth.

Innovation in three dimensions

Human centric ICT gives businesses an unprecedented opportunity in a hyperconnected world. They can unlock new competitive advantages as well as drive positive outcomes for society. So how do you harness technology to create new value for customers? How do you re-invent your business?

Today these are the most important questions an organization can ask. Fujitsu believes the answer comes from considering three key dimensions - people, information and infrastructure. Let us look at these dimensions in turn:

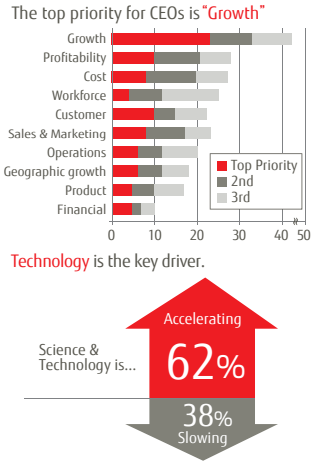
Human Empowerment

The relationship between people and innovation is changing. Traditionally organizations have relied on specialist development functions to create new products and services. But as we saw in Chapter 1, human centric technologies give people unprecedented access to the tools they need to innovate. ICT projects no longer require lengthy set up times.

Technologies can be acquired instantly via the cloud, and turned off just as easily. Equally, collaboration between people within the organization, as well as open collaboration outside of it is easier than ever. Mobile solutions and social networks provide a platform for people to work together without geographic constraints. In an era where anybody can innovate, empowering employees in this way is a path to growth.

***4 Expectations from Global CEOs**

A recent Gartner survey indicates the top strategic business priority for global CEOs is growth.
62% of CEOs believe science and technology is a key growth vector.



Gartner CEO survey, N = 391 CEOs & Senior Business Executives Worldwide
Source: Gartner Symposium/ITxpo 2013 "CEO and Business Leader Views in 2013: The Implications for IT Leadership" Mark Raskino, 16 October 2013

***5 AR (Augmented Reality)**
Augmented Reality is the real-time delivery of information in the form of text, graphics, audio or other virtual content into a real-world setting, to enhance a person's experience of their physical environment.

*6 Source : Science Daily (May 2013)

Big Data's economic impact
Information will be a major driver of economic growth. Mckinsey estimated that by 2020 the adoption of big-data analytics could be worth **$55B** a year to the retail industry in the US and **$270B** a year to manufacturing.

Source : McKinsey Global Institute, July 2013, http://www.mckinsey.com/insights/americas/us_game_changers

The relationship with customers will also change. Instead of focusing on a one-time-only sales transaction or marketing to large customer segments, companies have new opportunities to build dynamic relationships and real customer intimacy. For those companies that embrace it the prizes are huge. Nike for instance has used activity monitoring to build its brand just as Burberry has successfully built CRM and mobility into its business. Both have greatly enhanced their brand reputations as a result. Understanding the connection with each individual customer and maximizing the value of their experience will be key undertakings. In this two-way relationship customers will expect to play a role and even collaborate in the innovation process themselves.

Furthermore, technologies will reach into areas of business that have previously been difficult. For instance, augmented reality (AR)*5 is an emerging technology that splices information into a field of view and can be used for instance to inspect and maintain production equipment in factory plants. Or sensors in the soil which can be applied to improve crop yields, or body sensors used in healthcare.

Wearable technologies will certainly become widespread. Robots are also expected to support people in areas such as disaster relief, healthcare and aged care for the elderly in the future.

Creative Intelligence

Information is the greatest untapped resource in the world, a resource that is growing at an unimaginable rate. Indeed, it is estimated that 90% of world's data has been generated in the last 2 years*6.

But with global data resources increasing, the ability to analyze information to create insights and build knowledge will become a key business competency. By finding patterns from apparently unrelated facts and generating new hypotheses, organizations can develop a new understanding of the actions - and even intentions - of each customer. There is a huge opportunity to create value for them.

For new services, the credibility and security of information will also carry great importance.

Building security into data lowers the barrier for companies to collaborate, enabling them to build and exploit cross industry connections to maximize the value of each customer's experience. For example, insurance companies can use telemetry information from sensors in cars to offer cheaper premiums to careful drivers. But in order for customers to reap benefits, they must be able to have trust. Individual privacy cannot be ignored.

As technologies advance, new skills will be necessary to understand and fully exploit the value of information. The ability to discover insights from analysis of a company's data - and from seemingly unconnected data

sources as well - will become a core business competency. At the moment there are not enough data scientists*7 in the world to meet this demand. McKinsey reported that by 2018 we would face a shortage of 140-190 thousand professional analysts in US alone, and 1.5 million managers and analysts who can make decision based on the analysis results.

Connected Infrastructure

In a hyperconnected world sensors will be embedded into virtually any every-day object. From shoes to food packaging, from bicycles to tooth brushes, these devices and their supporting infrastructure will form a mesh of interconnections. Much is possible. Installing sensors in factories, plants, roads, tunnels, bridges, power and water infrastructure, for example, provides a rich source of real-time information.

This trend will be driven by a desire from businesses to improve product performance and deliver greater service value*8. It gives organizations the ability to fix faults pre-emptively, to enable more effective use of resources and to deliver innovative new services. The economic impact will be huge.

Connected infrastructure provides a significant opportunity for product manufacturers. A product sale no longer has to be a one-off transaction. When products can be linked to the internet, they create new connection points with individual customers. It becomes possible to provide services with high added value, and to invent new business models.

Combining the three dimensions of people, information and infrastructure is the key to business and social innovation. Enabled by human centric ICT, new services can be built in the exact context they are needed.

A future scenario - part 2

Human centric ICT systems work by spanning three dimensions - people, information and infrastructure. The system that helped the cyclist and supported the paramedics provided actionable insight in context. It derived its real value from information, providing it exactly at the location where it was needed.

Inter-connectivity was the key to this, enabling the cross-analysis of different sources of data. Integrating data from a personal motion sensor with an emergency response system enabled the ambulance to be dispatched so rapidly. Combining traffic data and operational hospital data provided the insight to plot the best route. And it was by using this location data with the city's traffic management system that the traffic signals could be used to speed up the journey.

At the same time, security is essential. Much of the data in question is highly sensitive, and can only deliver value if used in the right way. Such intelligent systems cannot function without secure connectivity.

***7 Data Scientist**
A data scientist is someone with the ability to blend maths, statistics and algorithms with an understanding of human behaviour. The data scientist brings different technologies together - such as machine learning, parallel distributed processing and composite event processing - to get the answers to important human questions.

***8 What C-suite executives are saying about the IoT**

75% of companies are already exploring the IoT

95% of executives expect their company to be using the IoT in 3 years' time

32% are talking about IoT at least once a month

Source : "The Internet of Things business index" The Economist Intelligence Unit Limited 2013 http://www.economistinsights.com/analysis/internet-things-business-index

Chapter 3

What we can do for you

Human Centric Innovation

Fujitsu will help our customers to deliver innovation that builds value in the era of a hyperconnected world.

Human Centric Innovation

We want to be your innovation partner, complementing your business knowledge with our technology expertise to realize the full potential of a hyperconnected world.

Innovation is taking on different characteristics in the era of human centric ICT - cloud, mobility, big data, social and the internet of things. It is fast and accessible. It is open and collaborative. It is led by individuals rather than organizations. In a world where everything is connected, we no longer operate in silos. And all the information we need is right at our fingertips.

Human Centric Innovation is a new approach to realizing business and social value by creating solutions and services that bring together the dimensions of people, information and infrastructure.

To enable Human Centric Innovation, Fujitsu will:
- Combine your business knowledge with our technology expertise to deliver valuable outcomes for your enterprise - innovation in products, services and business models.
- Integrate the technologies and services required to deliver the change.
- Provide life-cycle support and modernization of ICT assets, creating the right conditions to incubate further innovation.

New Business Models

How can an enterprise use human centric ICT to bring innovation into their business models? We see this as a continuous cycle of sense, analyze, optimize and act as shown in the diagram on the next page.

Organizations use connected infrastructure to continuously generate large flows of data in near real time, from people, internal ICT systems, the web, social networks and a wide range of external sensors.

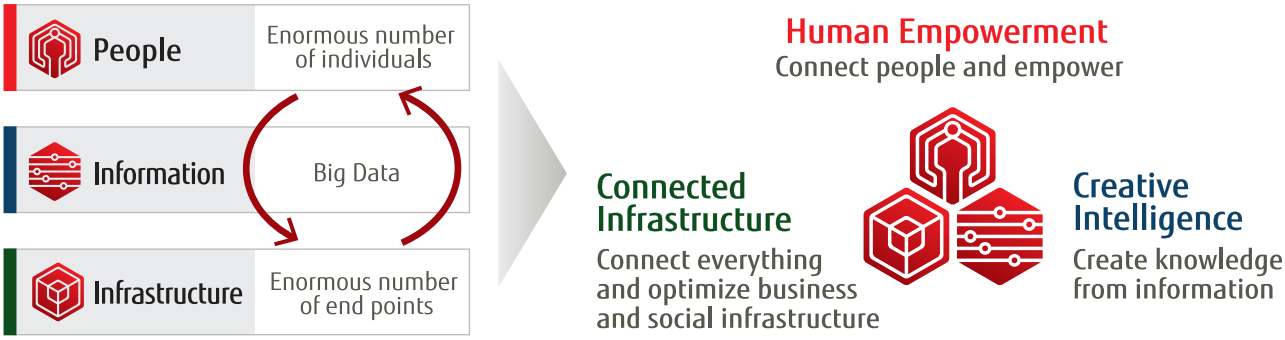
Bringing these sources of information together provokes the discovery of new insights and knowledge - the process of creative intelligence. An organization can develop response strategies to what it learns, leading it to optimize its business processes in new ways.

This might mean the enhancement of digitalized product functions, the ability to provide highly tailored services to each individual customer, or a beneficial change in business parameters like cost or agility.

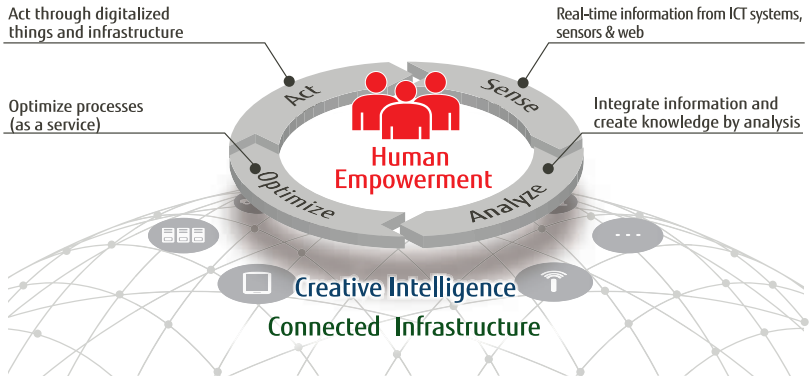
This in turn leads to human empowerment. People are better able to respond to changes in environments and are better informed to make judgments.

An enterprise can use this cyclical process to build competitive advantage. This could be

Human Centric Innovation



Embedding human centric ICT into business model



through operational excellence, being able to respond to changes in real time. It might be through product leadership, by using information to create new value in products. Or it could be through building customer intimacy.

This is not about the distant future. Fujitsu has been working with our customers to deliver exactly this type of innovation.

Metawater Co., Ltd., a provider of water infrastructure management services, has introduced a new style of inspection routines using Fujitsu's AR technologies. The company has launched the Water Business Cloud, a platform that uses embedded sensors throughout the system to monitor water level and quality as well as the conditions of facilities. It enables the public sector to ensure the sustainability of the water supply and sewage operations. During inspection work, when a smart tablet is held over a marker installed in the equipment, working guidance is displayed on the screen. The system can also reference work history and knowledge related to that piece of equipment for the engineer to read. Once the inspection is made, the maintenance results can be logged on the spot. This visualization has helped Metawater to improve the efficiency of inspection and maintenance work. It also enables the sharing of skilled engineers' experience throughout the organization, building operational excellence.

Human Centric Innovation is the approach we take to help our customers realize new opportunities by bringing together the three dimensions of people, information and infrastructure. But to deliver our vision of a Human Centric Intelligent Society means doing this on a much larger scale. How do we achieve this?

Co-creating value in the Digital Ecosystem

In a hyperconnected world, the scope of Human Centric Innovation is not limited to a single organization. It will traverse the conventional boundaries of industries, leading to the formation of digital ecosystems*9.

For instance, Airbus and Boeing are driving the implementation of RFID*10 tags for tracking individual parts in their airplanes (a modern aircraft has millions of parts). Fujitsu has developed AIT (Automated Identification Technologies) solutions using RFID and sensors, which are playing a key role for both these customers. Data such as the manufacturing date and maintenance history of individual parts are recorded in each RFID.

An AIT reader interprets these records instantly. The solution enables these companies to bring greater efficiency to their operations.

But crucially, the data can be accessed across the entire sector. Airlines, aircraft and parts manufacturers and other supplier organizations can all be connected into it. A global supply chain has emerged around AIT, enabling greater visibility of aircraft parts across the industry. This optimization of supply is expected to reduce the cost of parts substantially. In addition, the time and cost taken to put a plane in the air is reduced, which for airlines is a key business priority.

Looking to the future where everything is connected, organizations will operate across different fields and industries and will collaborate dynamically. As we have seen in the airline industry, information will be the medium that links companies together, weaving a value chain that spans different enterprises and enabling them to create greater value together.

Or let's think about healthcare and life science. Areas like personal monitoring and genetics are transforming the quantity and quality of health data. Combining clinical data and personal genetic information has the major potential to enable medicine specifically tailored to individual patients. It can enable preventive care for potential diseases that look to have high probabilities of developing later in life. In this field Fujitsu has already started collaborating with research institutions to apply our supercomputing capabilities for the analysis of genomes and the discovery of new drugs.

This kind of new knowledge has the potential to create greater value for the individual, if properly used by multiple companies and institutions. Building services around patient

data enables much greater integration of the whole industry - from pharmaceutical and insurance services to clinics, hospitals and other care organizations to science and research. This is not easy. We have to set out the necessary regulatory framework and proceed in a controlled way so as not to expose patients' privacy to risk. But if the challenges can be overcome, the healthcare industry will shift to a new value proposition in which 'wellbeing' rather than 'treatment' becomes the end product. It is outcomes like these that Fujitsu will be proactively acting to realize in collaboration with other organizations.

A future scenario - part 3

To the injured cyclist, seven minutes saved getting to A&E has immeasurable value. This value has been composed from a blend of different systems, connected together. The service provided by each system is 'stateless'; a virtual entity in the digital world, delivered into the physical world. The service spans different sectors - municipal government, transportation and healthcare. No one sector or industry would be able to deliver this value on its own.

***9 Digital Ecosystem**
The term 'ecosystem' is used in a business context to refer to a large community of organizations that work together to deliver mutual benefit, each acting to add net value to a shared product or service, but acting autonomously with no hierarchy or direct orchestration. A digital ecosystem is such a community that uses digital connections, information and services to raise value to an end consumer.

***10 RFID (Radio-Frequency Identification)**
The non-contact use of radio-frequency electromagnetic fields to access, register, update and delete data. It can be used to automatically identify and track objects which have RFID tags attached.

Cloud underpins Business Platform

In a Human Centric Intelligent Society, the means of creating value for your customers will come from open digital ecosystems - networks of digitally connected services, each node adding value to what your customer will consume or experience. Such open digital ecosystems have two defining characteristics - scale and diversity. The smartphone business is a good example. A number of cross-industrial enterprises including hardware manufacturers, network providers, application and software developers, video and music content providers, software distributors and retailers have connected in an organic fashion to establish a smartphone digital ecosystem. A valuable product of this ecosystem is the enormous number and diversity of applications that have flowed in. These applications can provide high value at low cost, tailored to various consumers' needs, leveraging the ecosystem for development, distribution and services.

Rather than delivering products or services from a fixed value chain as we did in the past, the digital ecosystem will organically form a flexible value chain spanning organizations and even different industries, by connecting people, information and infrastructure.

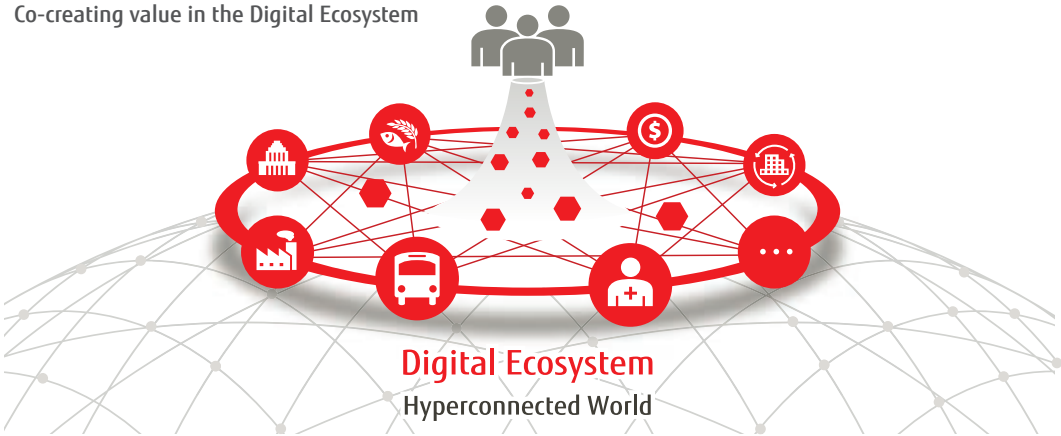
These services will be composed from various constituent elements, building value on top of existing products or services. Digital ecosystems are the mechanism for how value is created in a Human Centric Intelligent Society.

In the future, we envisage the emergence of 'distributed business', where a value chain will not be enclosed within a particular organization and its suppliers and partners but instead has an open web-like form that encompasses both commercial and public entities and across different industries.

In the past, products and services were either standardized at low cost targeted to a mass scale market or highly specialized at high cost targeted to a niche market. These were mutually exclusive characteristics. However, distributed business uses the scale and diversity of the ecosystem to provide services that are low cost, but also high value, tailored to meet the different needs of individual consumers in their context.

This will be a radical change in the way businesses work. Fujitsu sees this next generation of services being delivered through a business platform. The business platform provides all of the capabilities that people need to discover, integrate, build, deliver, distribute and monetize knowledge. Open innovation and co-creation will be important approaches to delivering value across the ecosystem, between individuals, companies and across industry boundaries.

Co-creating value in the Digital Ecosystem



In addition to using information available outside, they will increasingly make their information accessible by others, accelerating creation of new knowledge.

Cloud services based on open, integrated technology architecture underpin the business platform. Open APIs*11 are a small but critical element on this path, providing the 'glue' while concealing the internal architectural detail. Open APIs enable the connection of different software elements throughout the digital ecosystem. Security is the foundation of these services across the whole value chain. Fujitsu envisages that by leveraging the power of cloud, our customers can swiftly and flexibly advance to distributed business. With it they can overcome the challenges of delivering real and valuable innovation through collaboration with partners.

iHeart Studios, a digital content creator in England, is one such customer. The company uses the cloud integration service of Fujitsu RunMyProcess for their business platform. They use it to integrate multiple online services and have created an optimized digital business model. iHeart serves fashion retail customers and manages a workflow of some 5,000 photographs of fashion goods every week. By integrating all of the tasks in their business process - from receiving and scanning products, logging data to cloud-based CRM and accounting systems and the flow of internal and external communications - they saw a significant improvement in the efficiency of business operations. Furthermore they could give their customers real-time visibility of the service. As a result, sales increased by 600% over 12 months and they gained an advantage over their competitors. iHeart has used our cloud business platform to become a digital organization that composes services from others and becomes a business platform in turn for their customers.

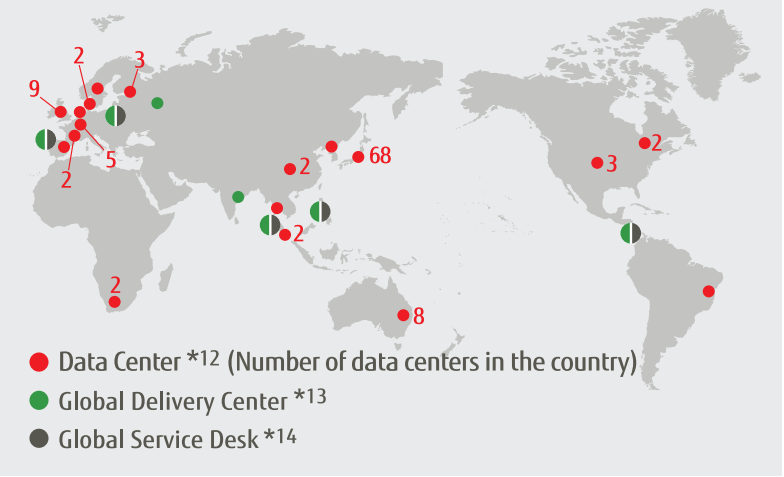
The digital ecosystem has an organic structure by definition. It is not centrally planned or implemented in a single mega-project. It grows piece by piece, link by link. This will not happen overnight. However, organizations can take their first steps today. Fujitsu provides a cloud platform that will enable you to integrate cloud services from your different providers as well as with our cloud services and your own internal systems. We can integrate physical channels, such as point of sale, with online channels. We are building the technologies that will enable the integration of everyday, physical objects into the digital world.

We can help you exploit knowledge created from analysis of information. Such information also includes a vast amount of open data. Fujitsu will continue to focus on developing technologies to enable various cross-industrial and cross-field enterprises to use information in trusted environments.

As your innovation partner, Fujitsu can help you prepare for the future and take advantage of opportunities that it offers. Together, we want to build a Human Centric Intelligent Society.

***11 API (Application Programming Interface)**
An API is a pre-defined set of functions which specify how software components should interact with each other. The API allows programmers to make use of existing software routines rather than writing new ones from scratch. It enables different systems to be easily linked and could be seen as the 'glue' that joins them.

Fujitsu Data Center / Delivery Center / Service Desk



***12 Data Center**
Our Data Centers offer highly secure, highly available and highly efficient services with unrivalled connectivity. They operate 24 hours a day, 365 days a year to support our customers' ICT systems.

***13 Global Delivery Center**
Fujitsu's Global Delivery Centers offer application development, operation and management services and remote infrastructure management services for our customers' ICT environments.

***14 Global Service Desk**
Our Global Service Desks respond to our customers' technical questions and provide incident management services including fault diagnosis as well as routine maintenance. They are located in Costa Rica, Portugal, Poland, Malaysia, and the Philippines.

Who are we?

At Fujitsu, we are passionate about delivering technologies crucial to people and society, while harnessing ICT to help create value for our customers. Fujitsu was established in 1935. The 79-year history of Fujitsu has been filled with our constant pursuit of innovation and realizing big dreams. Our first computer was developed in 1954. Fujitsu delivered the world's first Japanese language information systems in 1979. Fujitsu succeeded in the world's first 1 Terabit/sec WDM(Wavelength Division Multiplexing) transmission over a distance of 10,000km in 1999. More recently, the K computer jointly developed by RIKEN and Fujitsu was awarded the first place in the ranking of supercomputers in 2011.

How do we achieve these breakthroughs for our customers? Our approach to working with our customers is expressed by our brand promise of "shaping tomorrow with you." This brand promise stems from three key attributes of Fujitsu people: responsive, ambitious and genuine. We are responsive: our work begins by gaining a deep understanding of what our customers want to achieve. We are ambitious: we set challenging targets for realizing big dreams. We are genuine: our people want to be our customers' trusted partner.
Fujitsu has 170,000 people worldwide. We are the fourth largest IT services company in the world and the largest in Japan. In addition to IT services, we have a broad technology portfolio, encompassing servers, storage, software, network, mobiles and others.

Fujitsu has 100 data centers throughout the world, provides on-site service that covers 188 countries and service desks offered in 31 languages. Although we leverage our global capability, we respect local requirements. As a Japan-originating company, we have a unique heritage; a relentless quest for quality and reliability for our products and services.

Fujitsu's Technologies and Services for realizing innovation

Fujitsu has developed a portfolio of technologies and services to support the three dimensions of people, information and infrastructure. In the following section we set out our `Technology and Service Concepts'. These concepts encapsulate the key values that we believe ICT offers. They are key areas of focus from which the development of Fujitsu products and services stems. Our product lineup is also aligned to these concepts.
The diagram on the next page shows how Fujitsu's portfolio can deliver Human Centric Innovation.

In fact we believe the real value our customers get in working with us - whether infrastructure or business solutions, hardware or cloud - stems from our approach. We have a genuine desire to put them at the center of what we do. We don't subscribe to one size fits all as each customer has specific challenges and needs. This is underpinned by a global portfolio of products and technologies supported by great partnerships.

Together with our partners we can find and implement the best solution for our custom-

ers based on our rich set of global assets, our tools and methods, and of course the best people in the industry.

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. Through combining our technology and service portfolio, we will strive to integrate these three dimensions to realize a Human Centric Intelligent Society.

Human Empowerment

Innovations are realized through the empowerment of people. For the dimension of people, technologies and services will be provided based on the following technology and service concepts:
"Create Value through Integration": Fujitsu's engineers will help customers realize innovation.
"Mobility and Empowerment": people are empowered by mobile devices.

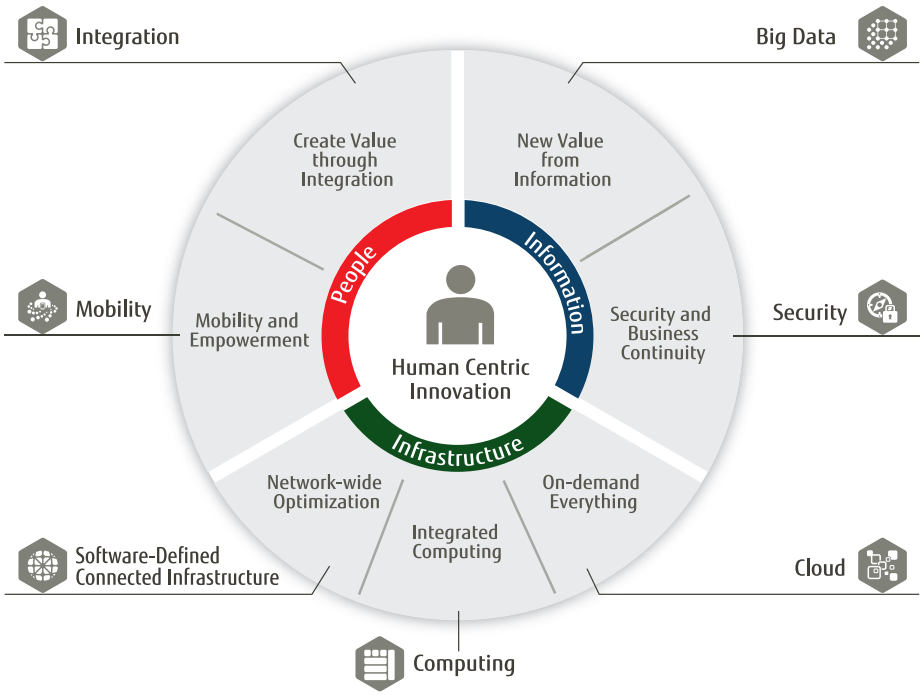
Creative Intelligence

New knowledge is created through analysis of a variety of information. Enhanced security against increasing risks is indispensable. For the dimension of information, technologies and services will be provided based on the following concepts:
"New Value from Information": Analysis of big data creates knowledge.
"Security and Business Sustainability": Security is a foundation for a Human Centric Intelligent Society.

Connected Infrastructure

Computing, networking, mobile devices as well as all sorts of things and infrastructure are optimally connected to create value. For the dimension of infrastructure, technologies and services will be provided based on the following concepts:
"On-demand Everything": cloud connects everything.
"Integrated Computing": autonomous and automated computing systems process different types of information and workloads.
"Network-wide Optimization": data centers, wide-area networks as well as mobile devices are optimized by intelligent software to meet the demand of a hyperconnected world.

Fujitsu is committed to strengthening technologies and services in accordance with these concepts. Each concept is explained in the following pages.



Create Value through Integration

Fujitsu integrates technology and services to realize innovation for customers

Helping customers to innovate

Bringing together the three dimensions of people, information, and infrastructure is the key to delivering innovation in the future. Fujitsu's engineers have the technology expertise to help customers achieve this. Fujitsu has implemented many different ICT system integration projects across various industries. We also have experience of integration of large-scale infrastructure, such as trading systems for stock exchanges, which require high performance and a high degree of reliability. We help to create new value by combining our ICT expertise with our customers' business knowledge.

In a hyperconnected world, harnessing the power of information will be a key driver of competitiveness. In order to improve value for customers or transform their business model, organizations will need to integrate new technologies such as mobility and Big Data with their existing business systems.

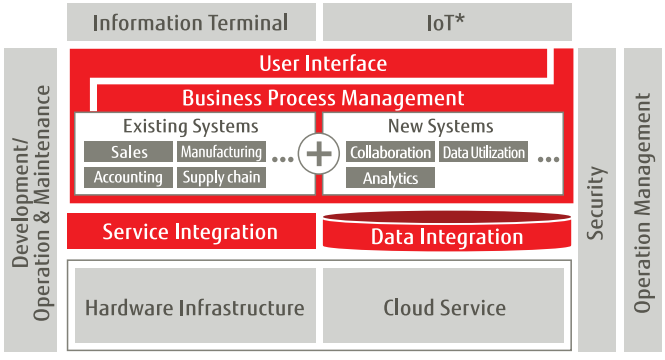
Fujitsu believes that the successful ICT systems of the future will display some key characteristics: They will securely allow external access to existing business systems, enable enterprise users to modify business process more easily, permit efficient data access via data integration, provide user interfaces for a variety of devices, and they will interlink different services. Not only will this improve operational efficiency, it will improve the agility of an organization and enable it to rapidly adapt to changes in its business environment. For example, harnessing real-time information will speed up management decisions and business operations.

Modernization to Innovation

However, it is not always easy to deliver new value with existing complex and aging ICT systems. Those systems still play important roles in executing the business processes of an organization, and need to be maintained. But modernizing such ICT assets is a key step to build for the future. The more an organization can adopt automation and self service in their existing systems, the more time will be freed up to pursue innovation and business value creation.

Fujitsu will help our customers create the systems they need, while still using their existing ICT assets as much as possible. We will flexibly integrate technologies, our services and those of our partners as well as open source technologies. We will also use rapid development methodologies such as agile development*, in addition to our established reliable framework SDEM*.

Successful ICT system



*IoT: Internet of Things

* Agile development: Agile Development is adaptive development methodology intended for maximizing customers' business value that include iterative builds from requirements with higher priority in short periods of time from 1 to 4 weeks.
* SDEM: SDEM (Solution-oriented system Development Engineering Methodology) is a standard process that consists of comprehensively organized activities of information system planning, development, operation and maintenance.

Mobility and Empowerment

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

People are the key

Human empowerment is one of the foundations of a Human Centric Intelligent Society. Fujitsu is maximizing the potential of mobile devices as a personal technology platform, and a key to empowering people. Fujitsu has been applying our advanced sensing technology to provide context-aware support for people in their immediate setting. These technologies are mounted onto single low-power consumption LSI called a "Human Centric Engine (HCE)" in our smartphone, PC and tablet. The data produced can be uploaded directly to the cloud for analysis.*

Transforming work style

With the rapid rise of smartphones and tablets, enterprises have a huge opportunity to harness these technologies to improve the creativity and productivity of their employees. Social networking is naturally driven by smart devices, and this is now a serious strategic consideration for any organization. BYOD (Bring Your Own Device) is also becoming a common way of empowering employees.

In 2013, we launched a cloud-based service platform, called "FUJITSU Cloud PaaS MobileSUITE", to deliver work style transformation with smart devices for enterprise customers in Japan. This service enables instant access to business applications anywhere, anytime. Business customers require a higher level of security than the everyday customer, and Fujitsu offers strong security features. We have adopted fingerprint authentication ahead of the industry, as well as biometric technologies such as palm-vein authentication and iris recognition.

In addition, Fujitsu is introducing technologies which support people in areas which ICT has not yet been widely applied. Augmented Reality technology and wearable devices are both examples.

* Delivering value with Human Centric Engine
For example, this technology can be used to monitor a person's sleep. The log it produces will show, for instance, whether or not the user is snoring or breathing irregularly and this knowledge can be used to create health benefits. The Sleep Log can be further combined with daytime pedometric and activity level data to enable real-time monitoring of daily life. The application of HCE will continue to expand as one of the key technology areas in the era of IoT.

New Value from Information

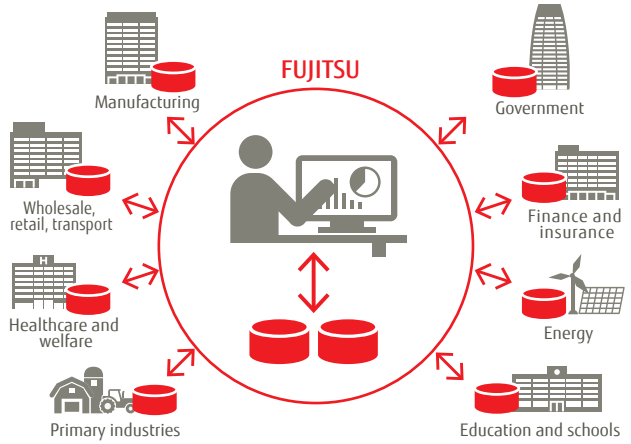
Creating knowledge from information with advanced technologies and analytical expertise

Creating knowledge from Big Data

Fujitsu helps our customers to create knowledge from analyzing information, enabling the development of new products or transforming business processes. Big Data is bringing new opportunities for innovation. However, just collecting data is not enough. Advanced technologies and professional analytical skills are required to find meaningful patterns and deliver new insights.

Fujitsu offers cutting-edge technologies such as ultra-fast parallel processing, complex event processing and data mining. We also provide cloud services for Big Data. Customers can use services on an as-needed basis in accordance with their particular demands. Fujitsu's "Data Curators*" who have expert analytical skills will assist your knowledge creation process. They will learn your challenges, help choose relevant data sets and create and test hypotheses.

Unless new knowledge is applied in a business context, it is unlikely to impact the growth of organizations. To this end, it is important to connect the systems of information analysis and the systems of business operation. We can support the integration of these systems, based on our long-term experience as a system integrator.



Fujitsu has launched "DataPlaza", a forum for linking and aggregating data. This service enables organizations to use external data such as social media, linking data owners with those that seek to use it. In this way, we aim to energize data use and create a new open ecosystem.

Open Data

The use of open data* is expected to have a significant impact on the global economy. For example, the Japanese government has emphasized open data in its new IT Strategy. It calls for the creation of new public services as well as new businesses that leverage the open data from the public sector. Fujitsu is proactively working to use open data for a new generation of business. For example, we applied open data to create a new tourism cloud service. We are participating in an open data trial project of the Ministry of Internal Affairs and Communications as well.

Fujitsu Laboratories is collaborating with the Insight Center for Analytics, Ireland in the research and development of "Linked Open Data (LOD)". We are jointly developing the technologies including "LOD for all*" and "automatic LOD creation" for the advanced use of open data.

* Data Curator: Data Curator is a specialist in data collection, analysis, sharing, and other forms of utilizing data.
* Open Data: Open data is data sets of public institutions or companies, freely available to everyone to use and republish as they wish, without restrictions from copyright, patents or any other mechanisms of control.
* LOD for All: LOD for all aims to deliver the single-stop entry point for Linked Open Data (LOD) utilization. It provides browsing, searching and accessing capability of publically available Linked Data.

Security and Business Continuity

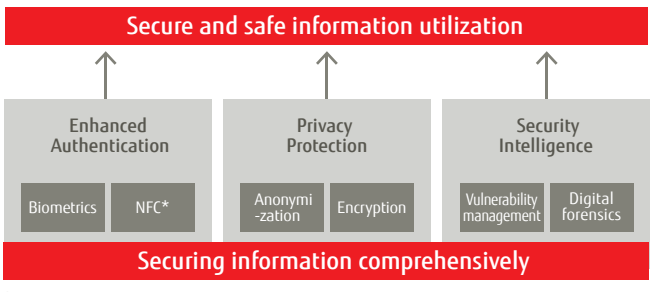
Realizing a safe and secure ICT environment -- enhanced authentication platforms, privacy protection and security intelligence

Three measures for safe and secure ICT

In a Human Centric Intelligent Society, the reliability of information is a key priority. In addition to ensuring the accuracy of information, it is essential to have a mechanism in place to maintain continuous business operations and access to information. Considering the increasing incidence of cyber-attacks, it is realistic to assume security breaches will continue to be a threat.

As your innovation partner, Fujitsu responds to your security and business continuity needs. We will propose a security strategy to suit your operational needs and solutions that support them. We will help you realize a safe and secure ICT environment to ensure the continuous operation of your business and the protection of your customers. To this end, we are focusing our resources on three measures: enhanced authentication platforms, privacy protection and security intelligence.

We will provide robust authentication platforms, by combining best in breed technologies. For example, we can offer our world-leading biometric technologies, such as palm-vein authentication, and near field communication (NFC) technology. We also provide centralized management of device assets, application and support services for loss and theft. These services will work with all smart devices regardless of model or network carrier, and will also suit a BYOD policy if you have one.



*Near Field Communication

Fujitsu is developing a variety of technologies to enable the secure use of information. These include technologies that make personal information anonymous and for processing information while it is still encrypted. We have developed our "Cloud Information Gateway Technology" to enable enterprise customers to use external services without transferring the actual data to them. This is achieved by concealing confidential information of the customer's internal data at the gateway and storing only anonymized data in the cloud. We expect these new technologies will promote the use of cloud as a collaboration platform and lead to information sharing between different organizations across industries.

Security intelligence is the practice of analyzing information flows to foresee any potential threats. Fujitsu is focusing on providing our customers with prediction-based Security Intelligence in order to respond to the threat of cyber-attacks.

Solutions best fit for you

Fujitsu recently established a "Security Initiative Center" in Tokyo in January, 2014. We believe when it comes to security, one size does not fit all. Our security experts develop security policies, measures and solutions which best suit your operational environment and provide continuous support. We will leverage our expertise to help our customers strengthen security and business continuity.

On-demand Everything

Cloud integration accelerates innovation

Everything in clouds

In the not-so-distant future, cloud computing will move into the background, becoming a ubiquitous platform to support business and society everywhere. The phrase 'cloud computing' may disappear as well. Fujitsu will strengthen cloud service as a platform to connect everything - people, information and things - enabling organizations to share information and innovate together.

Integrating cloud services

Cloud services are well suited to rapidly changing business environments. With cloud, organizations can quickly adapt to changes of requirements and processes. In a hyperconnected world, successful businesses will develop new software and services by integrating new and existing technology components, via APIs(Application Programming Interfaces). This gives greater flexibility and agility.

Fujitsu is working to help customers deliver more of their business processes "as a service" from the cloud. You will be able to streamline your ICT environments by integrating these services. You can bring together public cloud, private cloud or on-premise infrastructure according to what you need, and manage all of them in a consistent, unified framework.

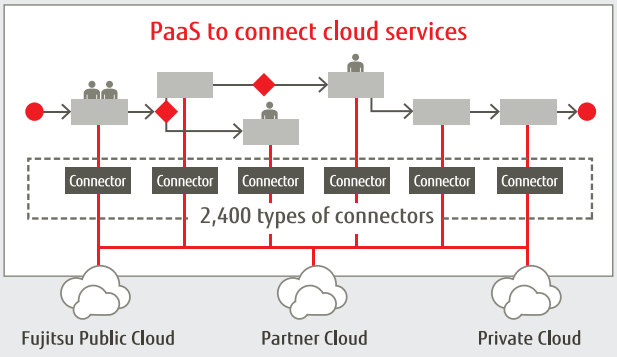
To achieve this, Fujitsu provides cloud services built on our reliable hardware and software as well as open-standard technologies. We integrate and manage our various partners' cloud services and our own cloud services with our customers' on-premise systems.

In 2013, Fujitsu acquired RunMyProcess, a French-based cloud service integrator. The company's toolbox which can link 2,400 cloud interfaces has strengthened our cloud integration capability significantly.

Delivering trusted cloud globally

The reliability of cloud services is important as they widely support business and society. Fujitsu has deployed our global scale cloud service in Japan, Australia, Singapore, the US, UK and Germany, achieving 99.9998% availability. Delivering trusted cloud services on a global basis represents the next chapter in the story of Fujitsu's commitment to quality, from a heritage that began with mainframe computers.

Integrated operation in multi cloud environment



Optimal selection of cloud services from Fujitsu or partners

Integrated Computing

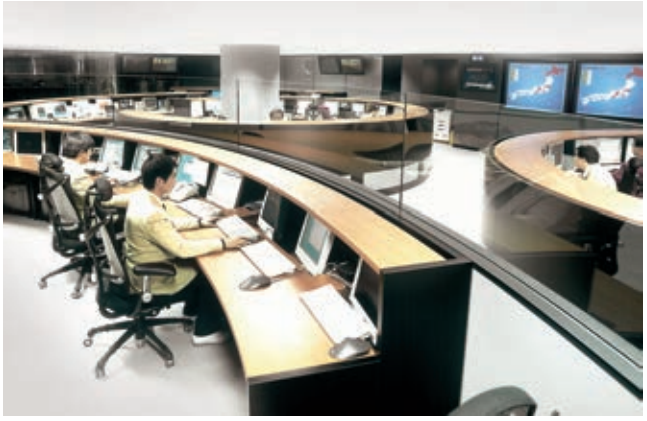
Automating computing systems, enabling an energy efficient 'organic data center'

The Organic Data Center

Traditionally, computing systems have been introduced to improve back office productivity and reduce costs. In the era of a hyperconnected world, computing systems are expected to deliver other benefits - agile responses to business changes, flexible processing powers scaling to the variety and volume of data. And they must also be energy efficient.

To meet these requirements, Fujitsu is looking to develop greater automation of computing systems and to deliver cloud platforms and data center services which are more flexible and easy to use. Hardware resources such as servers, storages and networks will be virtualized as stateless pools. These resources will be orchestrated by intelligent software. Further, we envisage that software and hardware will be automatically deployed to suit the requirements of applications such as databases, data warehouse or analytics.

In addition, resources will dynamically scale to meet changing processing requirements, enabling streamlined operations and easier maintenance throughout the lifecycle. Today's computing systems have huge processing power, but they generate an enormous amount of heat and consume large amounts of electric power, both through their normal operation and for the cooling systems they require. Energy efficiency of the data center has therefore become a key challenge.



Fujitsu is working to realize the intelligent data center. This is a dedicated computing environment featuring low power consumption computing systems, automated operations management, exhaust heat and cooling, management of power consumption and also advanced security and disaster recovery.

Our aim is to provide an "organic data center", in which multiple data centers work together flexibly over the wide area network and optimize autonomously.

Dynamic Integrated Systems

As part of our integrated computing strategy, we are developing "Dynamic Integrated Systems*". Embodying Fujitsu's strong expertise in system integration and operation, Dynamic Integrated Systems are pre-configured, vertically integrated stacks of hardware and software that allow customers to efficiently run business applications in on-premise installations. In addition, overall integration, operation and maintenance costs will be reduced.

Fujitsu will continue to develop these vertically integrated systems as a next-generation platform for realizing business innovation.

* Dynamic Integrated Systems: Currently, Fujitsu is offering "FUJITSU Integrated System Cloud Ready Blocks" as cloud infrastructure and "FUJITSU Integrated System HA Database Ready" as our ultra-fast database infrastructure. We continue to introduce new products to meet various application needs such as big-data, mobility and security.

Network-wide Optimization

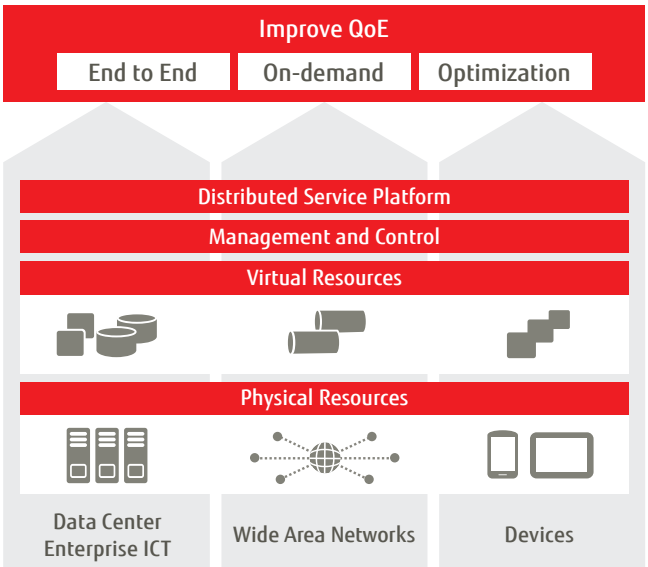
Realizing distributed computing, leveraging Software-Defined Connected Infrastructure (SDCI)

Evolution to distributed computing

In the era of a hyperconnected world, everything will be connected and large, diverse amounts of data will be processed in real time. ICT will be required to respond to the dynamically changing flow of information. Fujitsu believes that ICT will evolve into network-wide distributed computing, where computing resources will be provisioned and seamlessly connected over networks.

Fujitsu refers to these approaches to ICT infrastructure in a wide-area distributed computing environment, as "Software-Defined Connected Infrastructure (SDCI)". And to help to enable SDCI environments, we have formulated "FUJITSU Intelligent Networking and Computing Architecture," a new architecture for next-generation ICT infrastructure. The aim of this architecture is to allow for the total optimization of computing, wide-area networks, and smart devices employed by end users.

Schematic Drawing of Architecture



We think that with our broad technology portfolio as well as excellent relationships with technology and service partners, this challenging goal is achievable. Looking to the future, when literally billions of things are connected to networks and generating data, it will be unrealistic to manually configure all the settings of computers and networks. This architecture aims to orchestrate all ICT resources using intelligent software to meet business and service requirements and dynamically scale them in response to changing information needs.

The new ICT environments will strengthen competitiveness, improve service quality and streamline operations. Service can be delivered to end users on-demand, anywhere and anytime, improving their quality of experience (QoE). In the area of operations, the platform will enable highly reliable services through visualization of service quality and performance. Moreover it will allow solving faults proactively and preventatively, from devices to data centers.

Software-Defined Connected Infrastructure

Software-Defined Connected Infrastructure has already entered deployment. We implemented the new architecture in our global cloud, FUJITSU Cloud IaaS Trusted Public S5, connecting computing resources deployed in data centers around the globe. Fujitsu has also implemented it into our Dynamic Integrated Systems and network virtualization equipment (Converged Fabric Switch, IPCOM VX series). We plan to release more products conforming to this architecture, around the world.

The future of computing for a new society

The future of intelligent computing

Fujitsu Laboratories is participating in an artificial intelligence project with Japan's National Institute of Informatics (NII) called the "Todai Robot Project." It asks the question: "Can a robot pass the University of Tokyo entrance exam?" The objective is to make a computer think and learn the way humans do, by finding out patterns and rules from past data as well as engaging expert knowledge available on the web. In developing this machine learning technology, we envision that a computer will autonomously interpret the meanings of questions, gain understanding and then find the correct answers. The technology will have huge applications in healthcare, product design, marketing and other fields in the future.

Fujitsu is also pursuing the research of intelligent computing. This will use a new inference technology. While current machine learning technologies deal with fixed data sets, intelligent computing is based on unlimited data. The computer autonomously works on a trial and error basis, to find the answer. Intelligent computing will open the possibility to find solutions to complex challenges in society. For example, when a seriously injured person is taken to hospital, an intelligent traffic control system will automatically control the traffic lights for the ambulance. In this way, delivering truly human centric services will become possible.

The evolution of computing power

Fujitsu and National Aerospace Laboratory of Japan (now JAXA) developed the Numerical Wind Tunnel (NWT), a supercomputer based on the world's first vector parallel architecture and achieved the number one position on the TOP500 world supercomputer rankings in 1993. 18 years later, in 2011, the "K computer" jointly developed by RIKEN and Fujitsu, became the fastest-ranked supercomputer in the world. It achieved outstanding performance increase by 60,000 times of NWT. The ultra-high computing power has already been applied to many areas such as disaster mitigation through tsunami simulation and new drug development. Now, Fujitsu is conducting research to achieve computing speeds 100 times faster than the K computer.

A supercomputer in the 1990s was about as tall as a person. Today, the same processing power is available from a palm-sized smartphone. The continuing enhancement of CPU, memory and storage is driving the evolution of computing power. Along with improving the processing power of supercomputers, Fujitsu is working on new human-centric computing capabilities through the research and development of low-power sensors, wearable devices and more versatile smartphones.

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A Note Concerning Future Projections, Forecasts and Plans
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