In this feature, we introduce the role that Fujitsu's advanced technologies and solutions are playing in realizing a "Human Centric Intelligent Society", along with comments from Fujitsu employees who support these efforts.

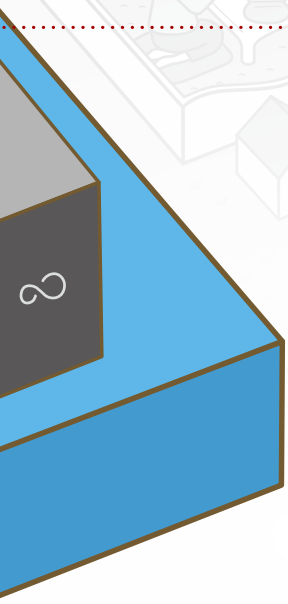
Toshifumi Obayashi
Manager
Technology Div.
Telematics Services Business Unit

Striving to Develop the World's Most User-Friendly Smartphone

I'm involved in smartphone product development. We are setting Fujitsu apart in the market by putting technology honed over the years in models like Raku-Raku Phone to use in smartphones. Because smartphones are so intimately connected to people's lives, the approach we emphasize is to make them human centric and easy to use. In addition to improving their basic functionality, we work to make our smartphones versatile enough to adapt to the usage environment and the individual characteristics and behavior of the user. More specifically, our focus has been on three points: visibility enhancement, to make "point and shoot" moments happen smoothly and with stunning clarity; stress-free, intuitive operability; and making it easy for anyone to hear during voice calls anytime and anywhere. We concentrated, for example, on having volume and sound quality adjust automatically during calls in places with lots of background noise or while moving to make calls easier to hear. Another unique Fujitsu advantage is handset models that are waterproof, yet feature stylish exterior design. The most compelling aspect of my job is having to respond in a timely fashion to the blazingly fast pace of market changes, while at the same time being a catalyst for those very same changes. Our aim is to develop the most user-friendly smartphones in the world, not only looking at functionality, but with an eye toward exterior beauty and design as well.

DOCOMO smartphone F12C—water-resistant, compact, easy to use and packed with features

Ken Hayashida
Director
Mobile Phone Product Marketing Dept. I
Marketing Div.
Mobile Phones Unit



Next-generation supercomputer system* shows promise in delivering synergies with the cloud computing business

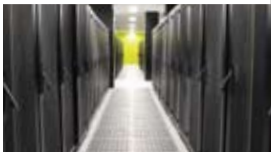
The range of fields for the application of ICT has broadened, ushering in a dramatic increase in unprecedented services. This trend will likely open up a vast new scope of applications for supercomputers capable of high-speed processing of large-scale, complex calculations. Applying CPU (central processing unit) technology developed for supercomputers to other areas will allow Fujitsu to enhance the competitiveness of servers, storage and other offerings, and is expected to yield synergies with the massive data processing demands of the cloud computing business.

* For more on supercomputers, see "The Story Behind the Shipment of the Next-Generation Supercomputer System" on p. 061

Datacenters: Leveraging cloud infrastructure to create new businesses

Cloud computing* technology is the key to advancing ICT utilization in new fields. Fujitsu datacenters use ICT to generate new businesses by funneling massive volumes of diverse real-world data into cloud platforms, then by performing analysis of this data make it more visually intuitive. Moreover the results that emerge can be leveraged in the real world.

* See pp. 028–029 for an introduction to employees supporting the cloud computing business.



New machine room at the Fujitsu Tatebayashi System Center

Striving to Take Society a Step Forward by Mining Diverse Data for Information of Real Value to People

There are many forms that the "Human Centric Intelligent Society" could potentially take. One that I'm hoping for is a society that delivers the services and information that people need in a timely manner while they are on the go. Achieving this requires knowing a person's location and surrounding environment in real-time, then formulating and providing information of value as a service to that person in consideration of their circumstances.

We opted to turn our attention to the position data aspect of this issue, which led to the development of a new service called SPATIOWL.

SPATIOWL is a cloud computing environment for achieving real-time services tailored to a person's location. Positioning is determined by gathering data on the position of people and vehicles, as well as information on the local surroundings collected via sensors. Fujitsu uses this environment to generate traffic information in real-time based on a vehicle's location. Corporate and group customers can also leverage the environment provided by SPATIOWL and information generated by Fujitsu to develop information provision services suited to people's movements. This information could also be useful in urban planning proposals and the delivery of new services to local residents. These are just a few examples of the unique service development and new value creation potential that position data utilization can offer.

We are constantly in search of new business models and technologies that will enable previously unimagined services. There is no tried-and-true map for getting there, which leaves developers with an extremely challenging mission. With that said, I'm determined to give my best to moving a step closer to a society that people find more enjoyable.

Mobile base stations ready for LTE, the next-generation mobile communications standard

Fujitsu is providing mobile base stations that offer high performance, low power consumption, and compatibility with Long Term Evolution (LTE), the anticipated global standard set for adoption in markets worldwide. With the emergence of smartphones expected to gain momentum, LTE will allow fast, large-volume data communications through mobile terminals. In the future, users can expect to see diverse services that take advantage of these features.

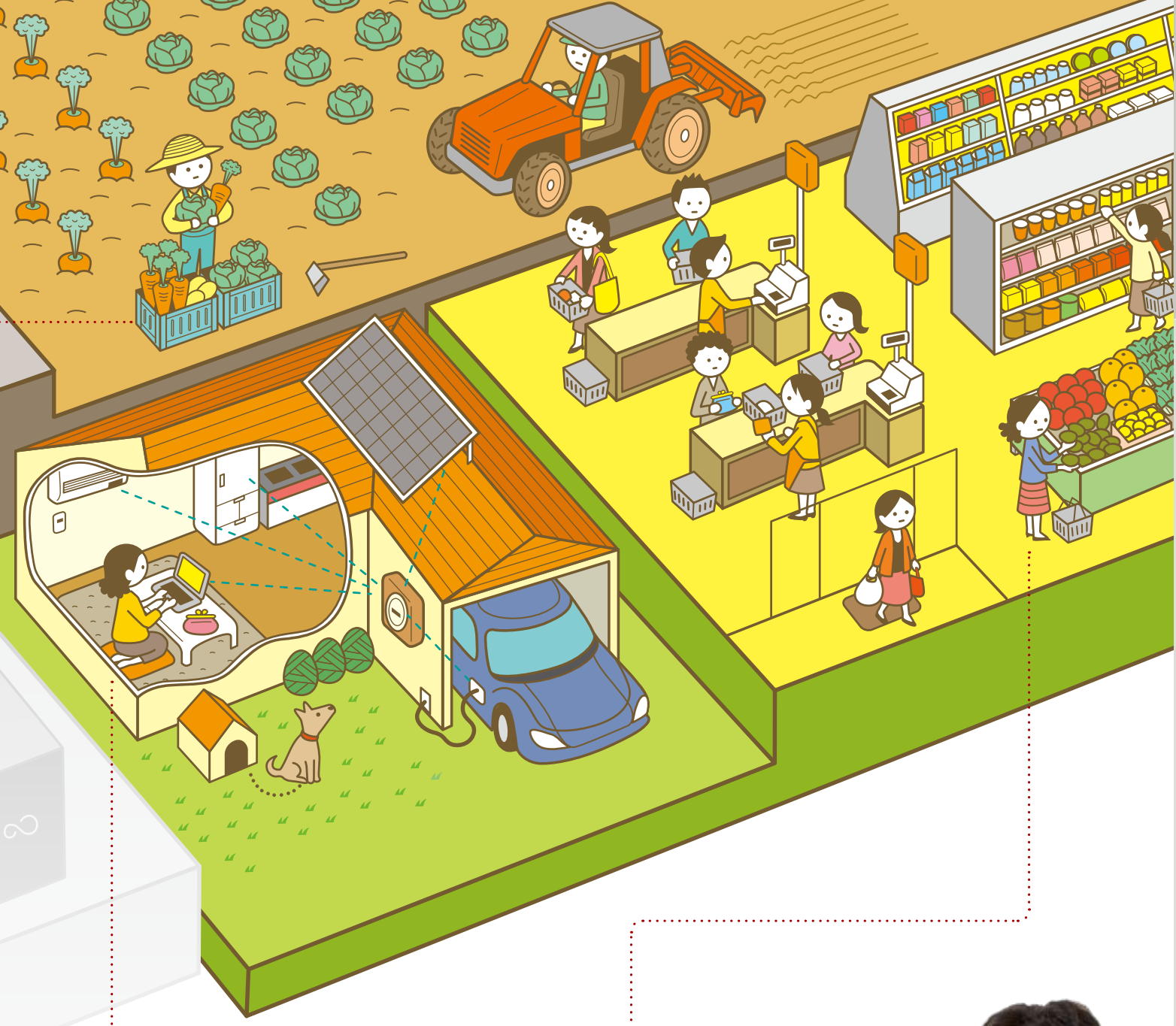
LTE wireless base station system

The agricultural cloud: Leveraging the experience and expertise passed down to today

The use of sensors to manage and monitor weather and soil conditions will allow fertilizers and agrochemicals to be applied with optimal timing, leading to vast improvements in productivity. Agriculture draws from many years of accumulated experience and expertise. Now, by bringing ICT to bear, younger generations can take a far more active part in this enterprise, allowing that valuable knowledge to be put to broader and more effective use.

Smart meters: Going beyond smart for expected eco benefits

Smart meters are power meters equipped with communication functionality. This advance allows for remote meter reading of electricity usage without the need for an onsite inspector. It also permits data on electronic device power consumption and usage patterns to be sent to electric utilities, making it possible to optimize electricity generation timing. The expected end result is more efficient power generation and transmission. By informing households of their power consumption, utility charges and other data in real time, the smart meters that electric power companies install should offer eco benefits by, for example, helping to curb consumer-side electricity consumption.



Extracting New Added-Value Information From a Sea of Data

From 1989 until now, my research has focused on data mining, where we analyze huge volumes of textual and numerical data for useful information. Since 2010, as a part of Fujitsu's push to make the "Human Centric Intelligent Society" a reality, my research has sought to develop a cross-functional way to collect, compile and analyze data on individual lifestyles, corporate activities and social conditions using social media, sensors and other tools. The object is to bring a range of viewpoints to complex social problems for solutions that would be impossible for individuals and companies working alone to achieve. Take, for example, the problem of food product loss, which can happen with overproduction or when consumers purchase more than they need. By closely analyzing consumer buying behavior, we can show the locations and times when food is most in demand, making it possible to reduce waste.

Even if the target for analysis is a massive pool of data, it's not uncommon to only end up with the same results that you initially anticipated. Going beyond that hurdle to find new added-value information is a challenging task, and one that can put a lot of pressure on me at times. But having customers agree with our approach and ultimately remark on the impressive power of Fujitsu technology is what really motivates me to move forward.

Isamu Watanabe

Director
Social Solution Laboratory
Software Systems Laboratories
Fujitsu Laboratories Ltd.

Medical cloud for coping with the aging of society

Using data mining technology to analyze data amassed in the Fujitsu cloud infrastructure on weight, blood pressure and other diagnostics that sensors routinely capture will make it possible to predict with higher accuracy the likelihood of disease onset so that preventative action can be taken. By broadly linking medical institutions, local governments and other entities, Fujitsu hopes to deliver effective health care solutions for our increasingly elderly society.

Using Sensors to Deliver More Accessible ICT

For years, I was involved in data mining technology research. As that technology has progressed, my work has now turned to the development of sensors for gathering new data, much of which previously went unutilized, and proposing solutions that actively use that data. In healthcare for example, we are developing wireless sensors for capturing a wealth of biometric data, including weight, pulse and temperature, as well as a person's daily routines. The aim is to then analyze this data to provide timely and medically useful information for improving an individual's health. In agriculture, the behavior of farm operators that apply sensing technology is used to derive costs for agricultural work, as well as to extrapolate relationships between environmental data and agricultural produce cultivation. Sensors are an important basic technology, but the ultimate purpose of our research is to deliver services utilizing ICT in a form that people will find easier to use. In a human centric society, our research results show promise in finding application in a variety of fields. My own feeling is that the most difficult hurdle, and ultimately the most interesting aspect of our work, lies in having to think long and hard on data collection methods that allow the vision of "if only we could do this with ICT" to become a reality.

Yoshinori Yaginuma
Director
Human Solutions Laboratory
Human Centric Computing Laboratories
Fujitsu Laboratories Ltd.

Optical transmission systems: Making the high-speed transfer of large data volumes a reality

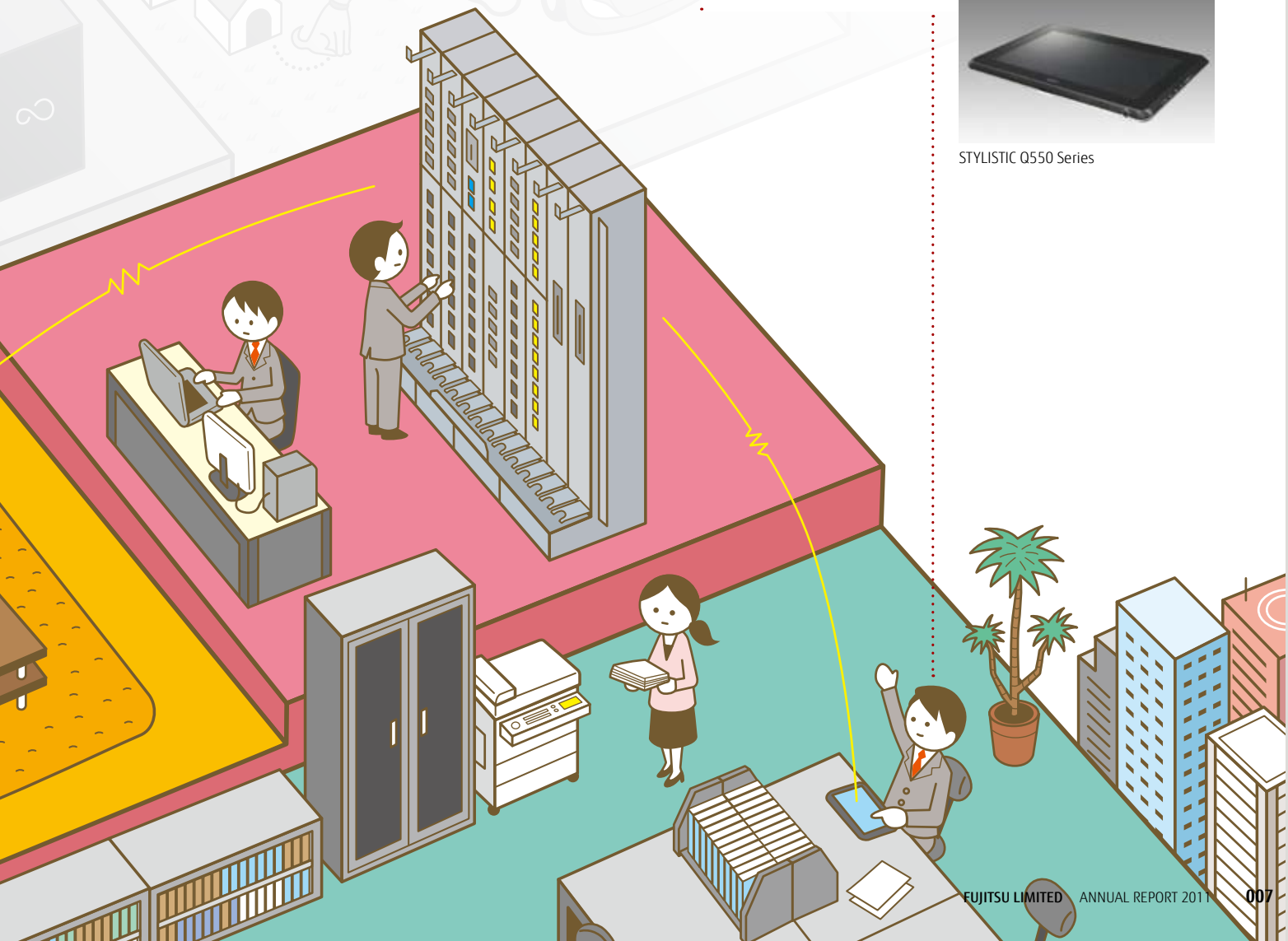
Fujitsu is providing communications markets in North America and Japan with optical transmission systems. During optical communications, these systems handle a variety of tasks, including converting electrical signals into optical signals, signal relaying and directional rerouting. Today, as individuals transfer video and other large volumes of data, optical communications is poised to become even more essential as a tool for data communications owing to its exceptionally fast speeds and the simultaneous transmission of large volumes of data over long distances.

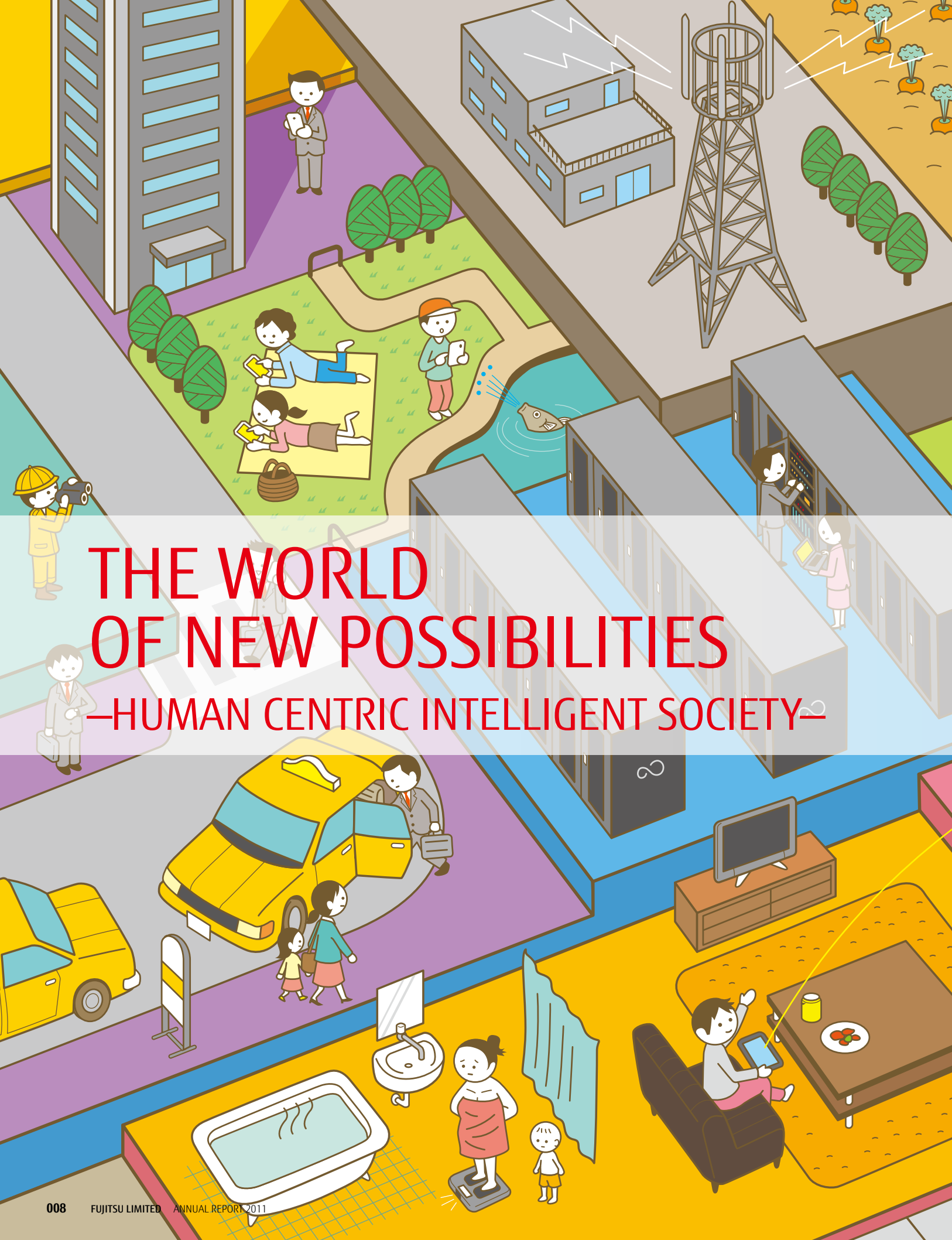
FLASHWAVE 9500 optical transmission system

Thin, lightweight, touch-panel operated tablet PCs

Easy to carry, thin and lightweight tablet PCs feature touch-panel screens, allowing intuitive access to applications, text entry and other tasks at the touch of a finger. As change in the communications environment accelerates, tablet PCs are becoming increasingly widespread for use as ubiquitous terminals well-suited to the cloud computing era both at home and in business.

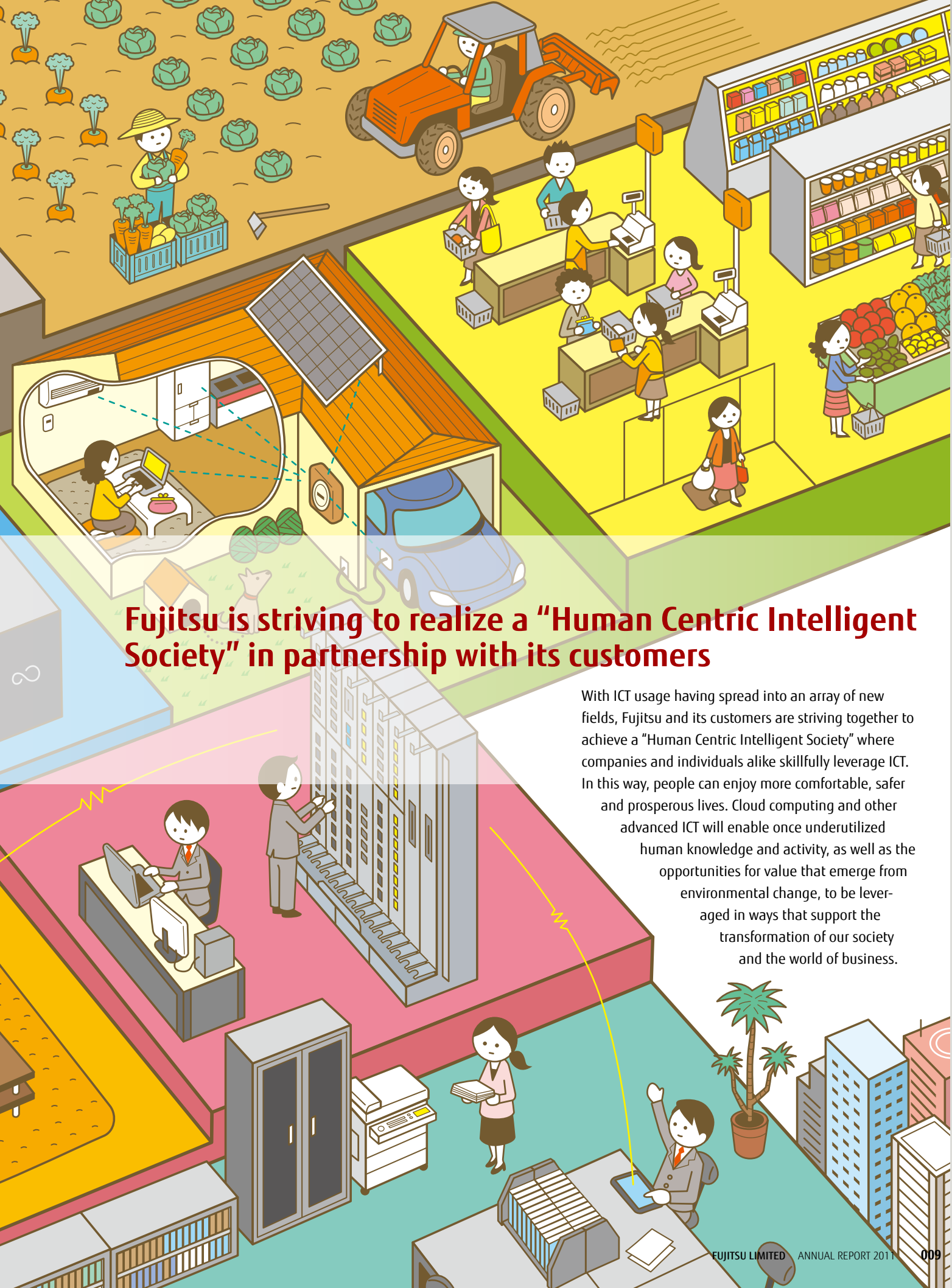
STYLISTIC Q550 Series





THE WORLD OF NEW POSSIBILITIES

–HUMAN CENTRIC INTELLIGENT SOCIETY–



Fujitsu is striving to realize a "Human Centric Intelligent Society" in partnership with its customers

With ICT usage having spread into an array of new fields, Fujitsu and its customers are striving together to achieve a "Human Centric Intelligent Society" where companies and individuals alike skillfully leverage ICT. In this way, people can enjoy more comfortable, safer and prosperous lives. Cloud computing and other advanced ICT will enable once underutilized human knowledge and activity, as well as the opportunities for value that emerge from environmental change, to be leveraged in ways that support the transformation of our society and the world of business.