

## Summary Translation of Question & Answer Session at Presentation on Expanding Software and Services for the Cloud Computing Era

**Date:** December 21, 2009  
**Location:** Fujitsu Headquarters, Tokyo  
**Presenters:** Takaaki Abe, President, Services Business Unit, Fujitsu Limited  
Toru Shibata, President, System Engineering Technology Unit  
Akihiro Okada, General Manager, Cloud Service Integration Division

### **Questioner A**

***Q1:** Can you explain the roles of the Cloud Architect Office and Cloud Implementation and Verification Center, which were established today, along with the number of staff in each of these new organizations?*

**A1:** (Abe) Altogether, there are about 100 staff working on cloud-related projects, combining the personnel in these two new organizations with staff in other divisions working on cloud service platforms. The staff are about evenly distributed between the two organizations, and we plan to increase their numbers in the future.

The role of the Cloud Architect Office is to bring together solutions experts from different vertical industries and have them develop cloud services based on their deep understanding of and know-how from the frontline business. The role of the Cloud Implementation and Verification Center is to make it possible for the know-how from the Cloud Architect Office to be smoothly and quickly transferred into the development and implementation of new infrastructures.

### **Questioner B**

***Q1:** In the presentation, you mentioned TRIOLE as a standardized IT platform. In the cloud computing era, will you create new templates and make new investments in TRIOLE?*

**A1:** (Shibata) The TRIOLE concept has changed significantly since it was first announced. At the start, it was primarily a concept for creating standardized hardware infrastructures. Now, TRIOLE is a concept for building proposals to customers based on known usage patterns and purposes so that we can make an offering that best matches their needs and expectations. We will continue to integrate new technologies into TRIOLE and the concept will be further refined.

***Q2:** So does that mean that you're not going to make new investments specifically for the development of TRIOLE cloud templates?*

**A2:** (Shibata) TRIOLE can be used to develop usage patterns for virtualization platforms, the initial stage of cloud services, or for frontline platforms, the next stage. But we're not thinking of making a new investment into TRIOLE specifically to position it for cloud computing.

***Q3:** In this presentation, you've said that your strength is your comprehensive capabilities. But 10 years ago, I remember hearing Fujitsu make the same claim when discussing the Internet business. What exactly are Fujitsu's distinctive competencies in cloud computing?*

**A3:** (Abe) Comprehensive capabilities will be all the more important in the cloud computing era. In the Internet era, necessary technology and know-how have been discrete. Only Fujitsu has the ability to tap the know-how of our more than 20,000 systems engineers and leverage it for the cloud.

(Shibata) Other vendors have certain areas that they are strong in—products or networks, for example. Cloud computing is about bringing together all of these different

capabilities and developing a comprehensive capability. Emerging vendors outside Japan are trying to use M&As to develop this total capability, but only Fujitsu has it right now.

### **Questioner C**

*Q1: In today's presentation, you talked a lot about private clouds, but can you tell us more about your public cloud initiatives?*

**A1:** (Abe) Our main focus right now is in private clouds, but we will offer the same types of service platforms for public clouds as well. In addition, next year we plan to offer a different cloud platform that addresses cost concerns. But whether it's a public or private cloud environment, we plan to have a single standard for providing trusted, high-quality cloud services to our customers.

*Q2: Can you tell us about your initiatives for large-scale cloud environments for social infrastructure, which are distinguished by the large amounts and many different types of data they process?*

**A2:** (Okada) As one example of cloud-oriented social infrastructure, we are conducting field tests of a new service in the agriculture industry. The tests are taking place in western Miyazaki and Shiga prefectures, and will also start in the northern Hokkaido Prefecture. Farm workers wear sensors so that their position and work progress can be automatically tracked, and these sensing systems are combined with other sensor data from the fields on soil conditions, climate, and crop growth. A Fujitsu data mining system analyzes all the data. Based on various forecasts made from the data, farmers can build optimized sales, production, and work plans, while also tracking their actual production and sales. We've conducted three rounds of pilot tests and we see a real potential for cloud computing and data mining to be used in the agriculture industry. There is also potential for cloud services in the medical and nursing industries, and we believe intelligent transport systems (ITS) can also use the cloud environment to optimize routing and for other purposes. Field tests are continuing in these fields as well.

*Q3: Are these social infrastructure systems based on centralized or distributed cloud environments and what kind of environment do you foresee being used in the future?*

**A3:** (Okada) The sensing systems are distributed. The data are also gathered locally, and only the changes in the data are transmitted to the cloud. We are building a structure in which physically separate cloud datacenters are virtualized to perform as one system.

### **Questioner D**

*Q1. In the cloud computing era, the hardware business is expected to shrink. How is Fujitsu creating new business models to address this change? Will you need completely new approaches to the IT business?*

**A1.** (Abe) Servers aren't going to disappear in the cloud computing era. Mainframe systems, open systems, and cloud systems will also coexist. In this computing structure, there will be some change, but even five years from now, the basic structure will be the same—the demand for hardware will not decline suddenly.

Another point to consider is that the advent of cloud services will also promote server consolidation. Datacenters will become the core, including the datacenters at our customers' premises. The distribution of servers among work offices will gradually be consolidated into datacenters and the methods for managing software will also change. But we don't see the business model shifting suddenly to a completely new one. As explained during the presentation, Fujitsu is bringing together basic research, server, software and other development resources for the cloud under the new, specialized organizations and will pursue various new business models appropriate for this era.

*Q2. By 2015, due to the impact of cloud computing, to what extent do you see hardware sales declining? Will sales of new cloud services be able to offset that decline?*

**A2.** (Abe) Generally speaking, if you assume that existing IT applications are migrated to work as cloud services, hardware sales could be expected to decline somewhat due to the consolidation trend brought on by cloud computing. But as cloud computing is applied to new social systems, the amount of data will grow significantly. In addition, the types of terminals used will not only be general-purpose machines, but specialized terminals for agriculture, for example. These different kinds of specialized terminals will be developed to meet individual industry needs, so in that sense, some types of hardware demand can be expected to increase.

#### **Questioner E**

*Q1. When Fujitsu announced cloud services offerings in Japan in April of this year, you also announced a sales target of 300 billion yen for Japan in three years. Is there any change to your forecast of market size and sales target?*

**A1.** (Abe) The sales target of 300 billion yen in Japan has not changed. As far as the market size, we have estimated that cloud services will account for about 20% of IT sales by 2015, when the Japanese market is forecast to be worth 12 trillion yen.

*Q2. After your cloud services business is on track, what kind of profit margins do you expect?*

**A2:** (Abe) In keeping with our medium-term targets, we expect the services business to have a margin of about 8%. In the longer term, we're planning to increase that to 10%. Even if the services business offerings change, our targets will not change.

#### **Questioner F**

*Q1. Do you have any cloud services similar to salesforce.com's Force.com?*

**A1.** (Shibata) We have similar tools, but currently they are being used as internal development tools and we don't offer them as products. We are still evaluating whether we should offer services similar to those from salesforce.com and Amazon, and what business models we should use for our cloud offerings. We don't have any specific plans for similar services right now.

*Q2. In May, you announced a tie-up with salesforce.com in Japan. Please explain in general your partnership plans in the cloud field, including possible capital alliances.*

**A2.** (Abe) As explained on slide 8 of the presentation, Fujitsu has the comprehensive capability to deliver cloud services platforms, but depending on how the cloud computing market develops, we will form partnerships in certain areas of market, and we may also consider M&As. Partnerships with strong companies will be an important second pillar of our business strategy.

#### **Questioner G**

*Q1. What's the benefit of cloud computing for your customers?*

**A1.** (Abe) Customers will be able to lower the operating costs of their IT divisions, but the greater benefit will be that customers can more effectively use IT in their core businesses. Fujitsu works with customers to find ways to effectively apply IT to their business, and this ability is one of our distinctive strengths.

*Q2. Good technology appears to be critical for cloud computing. What distinctive technologies does Fujitsu have in this area?*

**A2.** (Okada) One of our strengths is that we have OS, middleware, routers, storage systems and other product development teams working together on cloud platforms. Our engineers are developing virtualization technologies and the overall control systems for cloud computing. Right now, at our Tatebayashi System Center, we have 30 different trial projects that take advantage of these integrated new technologies.

### **Questioner H**

*Q1. You mentioned that there have been more than 800 cloud-related inquiries. Please tell us more about the customers' industries and their company size. Are some of these Fujitsu Business Systems's customers? Also, what has been the response of manufacturers?*

**A1.** (Abe) The inquiries have come from companies from all different industries, and there's no single industry that stands out. Many of the larger customers are interested in co-sourcing schemes where we collaborate closely with them to develop new business. Among the 800 inquiries, there are some medium-sized customers, but a higher percentage of large-sized companies right now. None of the inquiries are related to business with Fujitsu Business Systems. For manufacturers, cloud services are appealing because manufacturers need to strictly control costs as well as expand their businesses globally. Manufacturers tend to be aggressive about finding ways to use IT to improve their businesses, and we see their interest in cloud computing.

### **Questioner I**

*Q1. My impression is that 800 inquiries aren't very many at all, but do you think that's a fair assessment? How many of those inquiries have led to actual contracts? Also, will there be customers who want to leave their entire IT management to Fujitsu?*

**A1.** (Abe) The 800 inquiries are between April and December only, and they represent completely new business opportunities not including ASP and outsourcing inquiries, so I think this is a very high number. Customers are still unsure about whether they should use our platform to standardize their IT systems, manage and maintain platforms themselves, or outsource their entire IT systems to us. It will likely take 2-3 years before they can find a clear direction. It's unlikely that our customers will make a dramatic switch from one method of IT management to another, but instead will continue to use their own platforms and link their mission-critical platforms in their datacenters to our cloud platforms. When the customers find that using our cloud services makes their business more efficient from a cost perspective, then they will outsource certain functions to us, and there will also be customers who, given their business and use of IT, will choose to outsource everything to us. Large companies, however, will likely continue to use both internal platforms and our platforms at the same time.

### **Questioner J**

*Q1. When you say that you offer superior quality, what exactly do you mean by "quality"? Is the service level agreement (SLA)? Will these high-quality attributes appeal to customers outside Japan as well?*

**A1.** (Abe) In terms of SLAs, we have customers in Japan for which 99.9999% availability is not good enough, and for these customers we need high-quality services that include contingency plans for recovery in case their systems go down. Fujitsu can offer this level of availability service in its high-quality cloud services.

Globally, we are collaborating with subsidiary Fujitsu Services in the UK on the development of platform technology. We are setting global quality standards for our cloud services which include basic reliability standards, escalation rules when systems fail, Tier standards for datacenter facilities, and in other areas. The actual services quality is different depending on the needs of customers in each region, so we have to leave that aspect of quality to each country and region. "Japanese quality" is recognizable around the world, and we can use this attribute to promote our cloud platforms.

*Q2. You said that solutions system engineers (SEs) from the various verticals are assigned to the Cloud Architect Office and Cloud Implementation and Verification Center, but I don't understand the relationship between the cloud architects and the SEs for different verticals. Can you explain exactly how these engineers are approaching the verticals in relation to cloud services.*

**A2.** (Shibata) The Cloud Architect Office has SEs from all the different vertical industries. In Japan, each vertical industry has its own quality requirements. If we offered the same level of quality to all the verticals, the cost would be extremely high. That's why we need SEs with know-how in each vertical industry to help design services with quality standards appropriate for that industry.

*Q3. Can we assume, then, that you will be offering a different cloud platform for each industry?*

**A3.** (Shibata) The core platform will be largely the same. The differences between industries will be in the kinds of applications developed and software that if offered over the platform.

### **Questioner K**

*Q1. As cloud computing becomes more pervasive, we can expect the system production technology to become more efficient and it's likely that offshore centers will be utilized more. If that's the case, won't this mean that you don't really need SEs in Japan anymore?*

**A1.** (Shibata) As I mentioned during the presentation, cloud computing will give rise to new kinds of data, and new types of applications will have to be developed, along with new methods of operation to maintain systems. There's a possibility that the number of engineers used to actually write programs will decline. Much of the current investment into IT is in maintenance (program upgrades and system maintenance). As system maintenance becomes gradually consolidated into datacenters, the SEs needed for this area will decline, but at the same time, there will be a greater frequency in program upgrades. Now, many customers have a five-year system upgrade cycle concurrent with the hardware lifecycle, but this will change into a new cycle with constant upgrades to meet the changing business conditions. In the end, there will be more work involving the development of system requirements, confirmation and maintenance of secure and stable services. There will be shifts in the nature of work, but work will not disappear.

*Q2. Overall, however, won't the total amount of work (primarily the higher level work of defining system requirements) decline?*

**A2.** (Shibata) I don't think there will be a net minus. The capabilities our SEs have today won't enable them to do the high-level system requirement work needed for the cloud era. For that reason, we have to establish new system requirement definition methods which make it easier to build requirements based on the system level and by which SEs and customers can work together easier and fulfill their respective responsibilities.

(Abe) I don't think the amount of work will decline. There will be difference in the development style, for example the development machines and the operational machines will be the same. There will be industries like agriculture with special requirements that SEs will need to address, and that will cause some shifts. In addition, there will be certain maintenance and data exchange issues between cloud systems and open systems that will require more investment. Overall, there's a possibility the amount of work will increase.

### **Questioner L**

*Q1. It seems there is a growing trend that customers are willing to accept a little less quality for the greater ease of use offered by cloud computing. By fixating on quality, won't it be difficult for Fujitsu to expand its cloud business?*

**A1.** (Abe) There may be some customers who are willing to accept a level of service that provides system recovery in a half of a day or some hours after failure. But there are many systems with strict quality requirements and our approach will be to use that level of quality as our basis and then tailor our offerings further to meet the specific quality and other needs of our customers.