IT Management SaaS

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Fujitsu is engaged in a variety of activities to provide its customers with new value-added services through the use of cloud computing. One of these activities is the development of software as a service (SaaS)-based information technology (IT) management services featuring Fujitsu's middleware products and technologies. These services will enable customers to use an IT management system over the Internet, so they will no longer need to own and maintain such a system in-house. They will therefore enjoy a number of benefits, including lower initial deployment costs and a shorter deployment period. This paper describes Fujitsu's approach to providing SaaS-based IT management services using Fujitsu middleware products. It outlines these services and market trends and describes the benefits, deployment models, and functional requirements of SaaS-based IT management services. It also explains how Fujitsu intends to meet those requirements and touches upon future challenges that must be met.

1. Introduction

Customers are increasingly expressing a desire to reduce information technology (IT) costs through the introduction of cloud computing. Although the outsourcing of non-core businesses such as the operations management of information-processing systems (referred to below as "IT systems") already exists in a format that includes not only system operation but system maintenance as well, the number of corporate customers adopting such a format has been limited. One reason given for this is that the outsourcing of certain business operations would require the movement of staff and significant restructuring of the organization, presenting a formidable obstacle to adoption.

A new model that provides customers with an alternative format is outsourcing only the operation and maintenance of the IT management system while keeping the business operations that make use of the system in-house.

This model enables reduction of company assets dedicated to IT management while outsourcing the operation and maintenance of the IT management system—a non-core business. It also enables reduction of initial deployment costs. Since actual in-house business operations are unchanged, this model can be easily introduced to a greater number of customers.

Fujitsu is helping customers reduce IT costs by constructing a service provision platform that combines a number of its existing middleware products, thereby facilitating the provision of services with the functions that customers need. In this way, our corporate customers can make immediate use of needed functions over the Internet without having to construct a system with these functions in-house.

This paper introduces Fujitsu's activities related to the provision of IT management services in a software as a service (SaaS) format as a specific example of the company's efforts in

this area.

2. What is IT management?

Today, IT systems consisting of computers and other equipment have become essential to corporate activities, and they have come to be used for a wide variety of applications. The number of units of information-processing equipment like computers used in a large corporation can range from several thousand to several tens of thousands.

IT management basically aims to efficiently manage IT systems. It should also prevent IT system failures from affecting business operations and promote efficient use and sharing of IT systems so as to increase the return on IT system capital investments.

We can think of IT management as being broadly divided into three layers, each of which can be further divided into a number of categories within which various types of software are provided. The main categories and the

middleware products provided by Fujitsu for use in IT management are shown in **Figure 1**.

1) Resource management

This layer manages individual IT resources including servers, storage, networks, and personal computers (PCs).
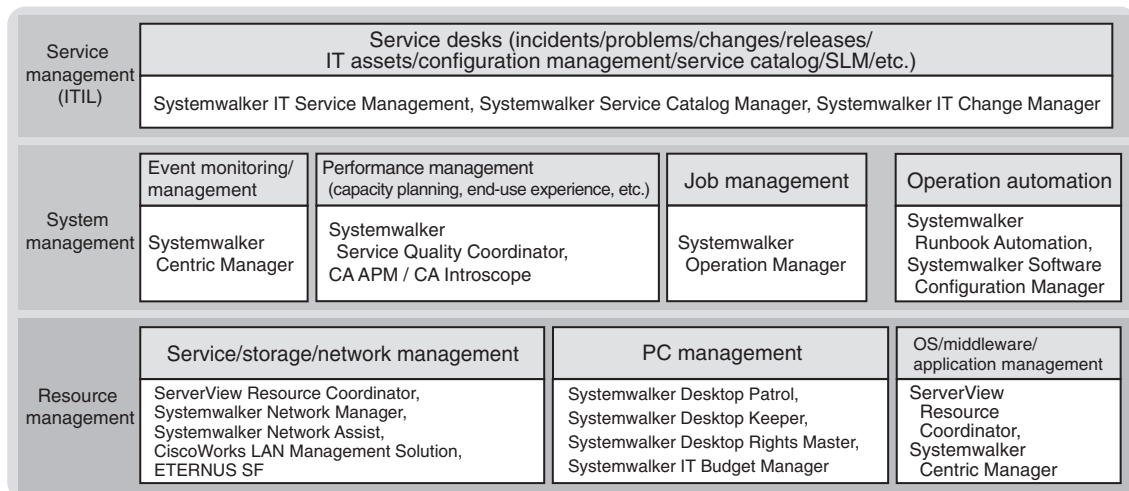
2) System management

The role of this layer is to ensure that the various types of IT resources run efficiently as part of the IT system. This includes event monitoring to detect failures in IT resources or signs warning of such failures as well as performance management, job management, and operation automation.

3) Service management

This layer ensures that the IT system efficiently provides the functions and services necessary for the business. It includes, for example, incident management for managing the process of solving operational problems, problem management for investigating the causes of incidents and providing solutions,

IT management

Service management (ITIL)	Service desks (incidents/problems/changes/releases/ IT assets/configuration management/service catalog/SLM/etc.)			
	Systemwalker IT Service Management, Systemwalker Service Catalog Manager, Systemwalker IT Change Manager			
System management	Event monitoring/ management	Performance management (capacity planning, end-use experience, etc.)	Job management	Operation automation
	Systemwalker Centric Manager	Systemwalker Service Quality Coordinator, CA APM / CA Introscope	Systemwalker Operation Manager	Systemwalker Runbook Automation, Systemwalker Software Configuration Manager
Resource management	Service/storage/network management		PC management	OS/middleware/ application management
	ServerView Resource Coordinator, Systemwalker Network Manager, Systemwalker Network Assist, CiscoWorks LAN Management Solution, ETERNUS SF		Systemwalker Desktop Patrol, Systemwalker Desktop Keeper, Systemwalker Desktop Rights Master, Systemwalker IT Budget Manager	ServerView Resource Coordinator, Systemwalker Centric Manager

Management target

Servers   Storage   Networks   PCs   OS/middleware/applications

Figure 1
Fujitsu products by IT management layer and category.

and management of IT system configuration information and changes thereto.

All of these tasks are considered to be part of IT management, but the requirements for carrying them out vary by category. For example, server, storage, and network management in the resource management layer as well as event monitoring/management and performance management in the system management layer often involve cases in which failures or problems in individual IT resources or IT systems must be either prevented or detected soon after they occur so that measures to minimize their effect on business can be taken immediately, that is, in real time.

In contrast, all of the functions in the service management layer are assigned to "service desks," each of which requires a full lineup of functions for integrating information from a wide variety of IT resources and managing that information in a unified manner.

3. What is IT management SaaS?

The conventional approach to implementing an IT management system is for the customer to purchase the necessary hardware and software, to construct the system in-house, and to operate, maintain, and use that system on its own. This approach naturally requires the customer to make an initial investment to purchase the hardware and software and to construct the system. It may also take several months at the least and more than one year in some cases to get the system up and running. Once operating, moreover, the system, which has already required an initial investment and startup lead time, will itself generate ongoing operational and maintenance work, such as the application of security patches, to keep it running.

One way to alleviate this problem is to apply the IT management SaaS model. This model enables an IT management system, which has traditionally been owned and operated by the customer, to be provided over the Internet by a vendor. The customer can then use the system without having to own the hardware and software making up the system (**Figure 2**).

SaaS-based IT management offers several advantages.

· Lower initial deployment costs
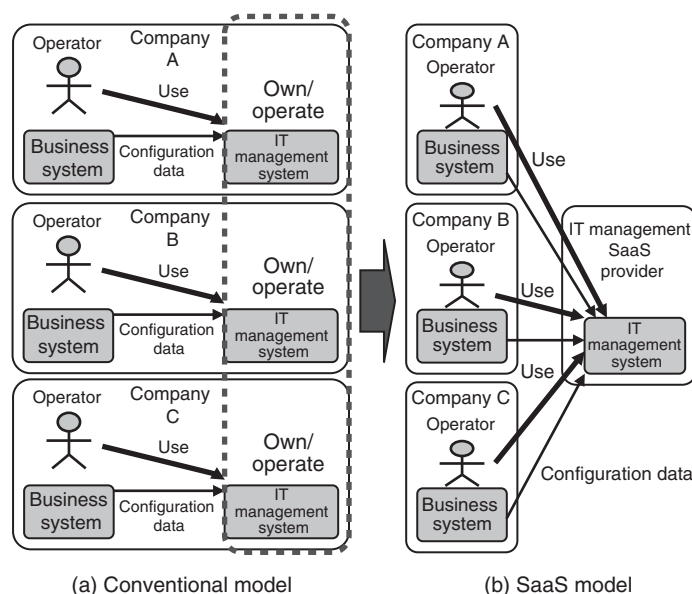

(a) Conventional model (b) SaaS model

Figure 2
IT management models.

- Quicker system deployment
- Fewer in-house resources needed for operation and maintenance
- Lower fixed-asset expenses
- More flexible system changes

4. Trends in IT management SaaS

Forrester Research, Inc., a market research company, forecasts that the worldwide market for IT management software will grow to 3.36 trillion yen by 2013 from 1.79 trillion yen in 2008 and that the portion of this market made up by IT management SaaS will grow to 440 billion yen by 2013 from 20 billion yen in 2008,[1] as shown in **Figure 3 (a)**.

In addition, IDC Japan forecasts that the market for IT management software in Japan will grow to 350 billion yen by 2013 from 280 billion yen in 2008 and that the portion of this market made up by IT management SaaS will reach a level of 8.3 billion yen by 2013,[2] as shown in **Figure 3 (b)**.

These forecasts suggest that the IT management SaaS model is being increasingly accepted in both the global and Japanese markets.

5. Use cases for IT management SaaS model

There are three main use cases for the IT management SaaS model (**Figure 4**).

1) Customer outsources system operation (operation-outsourcing type)

In this use case, all IT management operations are outsourced to a company that performs IT operations for other companies. This company uses IT management SaaS to perform system operations.

Since operations management of the IT system is performed by the outsourcing company, the customer has no need to use the SaaS-based IT management system. However, the customer can still use the system when necessary to view operating conditions in real time.

2) Customer uses and operates IT management SaaS (public-SaaS type)

In this use case, a service provider provides a SaaS-based IT management service, and the customer uses its functions over the Internet. Using IT management SaaS in this way provides a number of benefits. It can greatly reduce initial
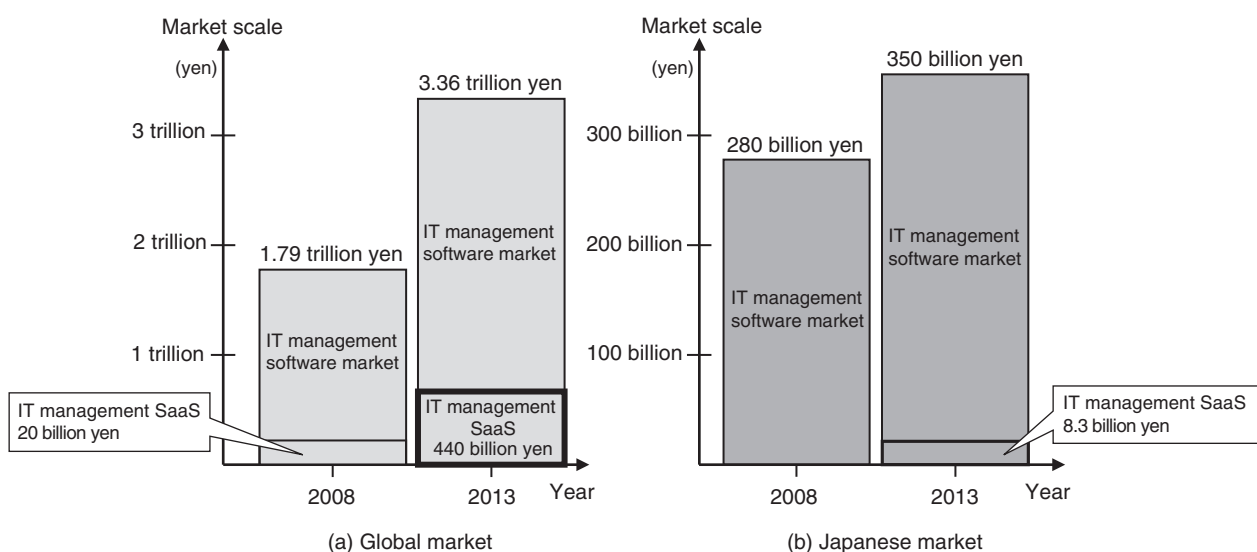

Figure 3
Growth in IT management software markets.

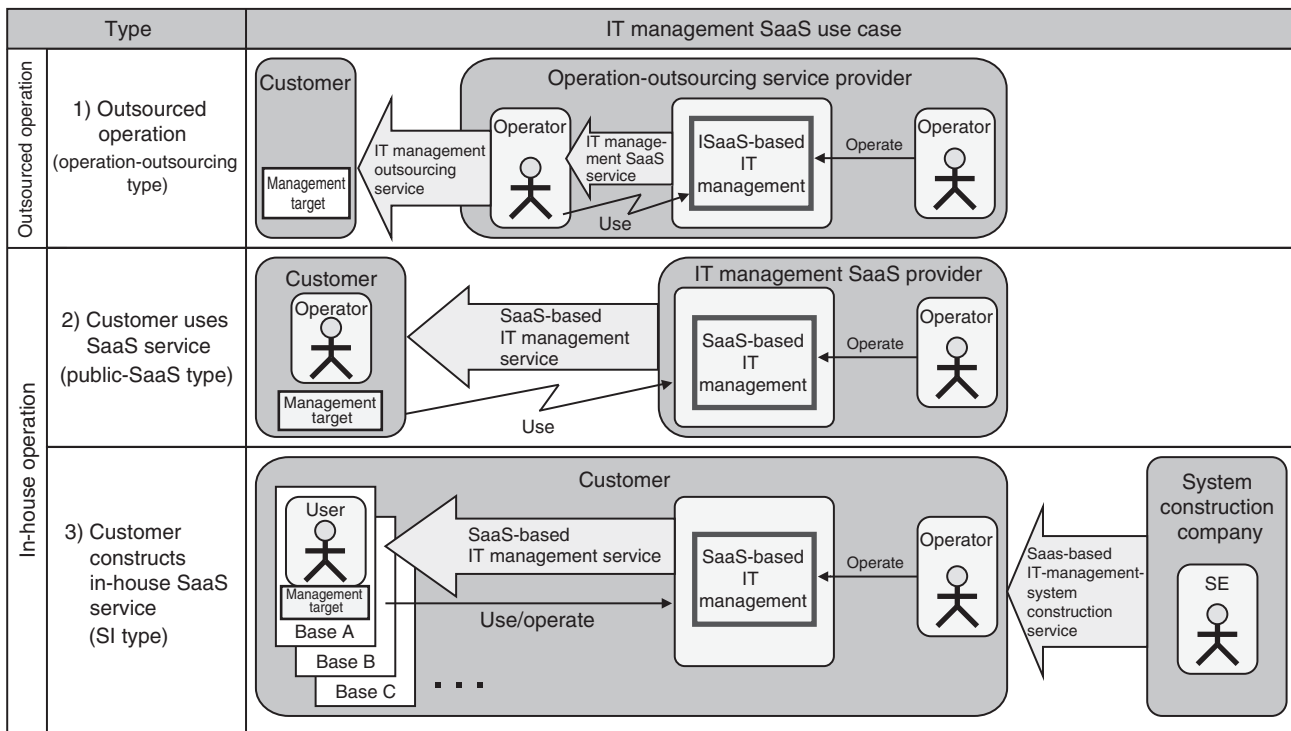|	Type	IT management SaaS use case

Figure 4
Typical use cases for IT management SaaS model.

deployment costs, shorten system deployment time, make operation and maintenance of the IT management system itself unnecessary, and reduce expenses since fixed assets for this system are no longer owned.

3) Customer constructs SaaS-based IT management system for company offices and plants and group companies (SI type)

In this use case, the head office of a company constructs a SaaS-based in-house IT management system, enabling its offices and plants and group companies to make use of IT management SaaS functions.

This format enables homogeneous IT management functions to be provided to company offices and plants and group companies and governance and compliance policies to be strengthened.

6. Functional requirements for using IT management SaaS

The functional requirements for using IT management SaaS have been drawn up to aid in system construction. Three key requirements have been identified.

1) Security measures

Considering that a SaaS-based IT management system stores customer information, security measures must be implemented both on the system provider's side and in the communication link between the customer and provider.

2) Self-customization

In addition to providing standard functions, IT management SaaS must provide the customer with a certain amount of freedom to customize these functions. For example, the customer must be able to customize what items are to be managed and the layout of those items on console displays.

3) Linking with customer's site

IT management SaaS is significantly different from conventional SaaS in that linking with the customer's site is practically

indispensible. This is because servers, storage, network devices, etc. that are targeted by the SaaS-based IT management service are generally located in the customer's data center. This requires secure system linking between the provider and the customer's site over the Internet.

7. Fujitsu's efforts in IT management SaaS

Fujitsu is preparing to provide a SaaS-based IT management service that satisfies the requirements described in the previous section. To this end, Fujitsu has formed an in-house, cross-organization project team made up of staff from its middleware product development department, which has been developing IT management products, and its service provision department, which has been providing SaaS services, to work toward the provision of IT management SaaS.

Fujitsu is working, in particular, to integrate a number of middleware products in order to provide in SaaS format the service-desk functions in Figure 1 as part of IT management. The middleware products used for this purpose are Systemwalker IT Service Management, which provides functions for managing incidents, problems, etc., Systemwalker IT Change Manager, which provides functions for managing changes, configuration information, and system releases, and some of the functions in Systemwalker Service Quality Coordinator to display the data managed by the above products.

Fujitsu is also working to upgrade functions to satisfy the above requirements. For example, operations that previously made use of such middleware products on the customer's intranet would all be confined to that intranet, which means that communications between products would not necessarily have to be encrypted. When middleware products are used over the Internet, however, functional enhancements such as encrypting data transmission must be made so that the system on the customer's side can be securely linked with that on the provider's side.

8. Future issues

While Fujitsu is hurrying to provide a SaaS-based IT management service to meet customer expectations as soon as possible, there are two key issues that must be addressed before this service can be provided to customers with confidence.

1) Enhancing self-customization

A SaaS-based system provides standard functions, and there are times when customers would like to customize those functions as desired. Fujitsu aims to provide a level of customizability satisfactory to customers and intends to ensure that any customized functions can continue to be used in the event of upgrades to the IT management SaaS platform itself. Studies are being made in this regard, and the possibility of making architectural changes to current products is not being ruled out.

2) Raising efficiency to lower costs

Fujitsu aims to lower operation costs and to pass on cost savings to its customers by making more efficient use of its servers and other infrastructure components and by promoting the automation of operations. In terms of middleware products, Fujitsu is working to lower costs by using new products and technologies that automate and raise the efficiency of operations.

This paper focused on IT management SaaS, but to provide services that customers find to be even more useful and convenient, Fujitsu aims to add value to services by making even small-scale improvements such as enabling seamless data interlinking between products.

9. Conclusion

This paper described Fujitsu's activities related to the provision of IT management services in a SaaS format as a means of managing a customer's IT system in a SaaS environment.

The growth in cloud computing reflects a move from system ownership to system use, and the SaaS-based IT management model introduced here is one example of how Fujitsu is responding to demands for cloud computing in various ways. This model enables the construction, operation, and maintenance of an IT management system—a non-core business—to be outsourced, thereby shortening system deployment time and reducing initial deployment costs. It is Fujitsu's desire to provide its customers with these benefits.

References

1) P. O'Neill et al.: How Big Is SaaS in IT Management Software? Forrester, November 17, 2008.
2) IDC Japan: Domestic System/Network Management Software Market Sales Forecast (2008–2013), August 2008. (in Japanese).

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