

## Featured Articles

# Development of Information Platform Service for Facilitating Reform of Work Practices and User Value Maximization

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*OVERVIEW: The design of information platforms, an important part of the IT infrastructure that supports routine activities, needs to produce systems that are compatible with the work practices at the organization based on an understanding of developments in government that take account of changing real-world work practices and the associated technical trends. Given the documents published by the Fourth Joint Meeting of the Council on Economic and Fiscal Policy and the Industrial Competitiveness Council and a June 2014 Cabinet decision entitled, “Declaration to be the World’s Most Advanced IT Nation,” an important consideration in Japan relating to trends in work practices in recent years is that the designs of information platforms support the various measures being considered, including the establishment of new practices regarding work hours, promotion of “morning” work practices, and measures for the wider adoption of telework. Hitachi has developed information platform services that can make full use of the cloud to contribute to reforming work practices and that seek to maximize value for users, organizations, and others. Along with describing work on the development of information platform services, the benefits derived from application case studies, and the technologies and know-how used, this article also considers the outlook for the future.*

## INTRODUCTION

AMONG the issues associated with work practices in Japan are the difficulty of adopting more flexible work practices due to rigid forms of employment and employment systems, and the negative effect on productivity of the normalization of long work hours. The achievement of diverse work practices has become an urgent challenge for overcoming these issues.

## CHANGES TO WORK PRACTICES

At public-sector organizations, information platform services are an important part of the information technology (IT) infrastructure that is used by all staff and supports their routine activities. Accordingly, the design of an information platform needs to be chosen so as to be compatible with the work practices of the organization and its staff based on an understanding of developments in government that take account of changing real-world work practices and the associated technical trends.

Table 1 lists trends in work practices in Japan under the categories “people,” “time,” and “place” based on sources such as documents published by the Fourth Joint Meeting of the Council on Economic and Fiscal Policy and the Industrial Competitiveness Council and the June 2014 Cabinet decision entitled “Declaration to be the World’s Most Advanced IT Nation.”

## NEXT-GENERATION INFORMATION PLATFORMS

The concepts targeted by information platform services for reforming work practices are as follows.

- (1) Improvement of user convenience
- (2) Achievement of low-cost operation
- (3) Improvement of operational efficiency
- (4) Improvement of security

These initiatives are essential elements for supporting information platform services that are being required to become more advanced and efficient, and replacing conventional on-premises local-area network (LAN) and wide-area network

TABLE 1. Summary of Laws Relating to Work Practice Reforms Currently Under Consideration

*This table was collated by Hitachi Consulting Co., Ltd. based on documents from the Fourth Joint Meeting of the Council on Economic and Fiscal Policy and the Industrial Competitiveness Council and the June 2014 Cabinet decision entitled, "Declaration to be the World's Most Advanced IT Nation."*

|        | Considered reform                                      | Summary                                                                                                                                                                                                |
|--------|--------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| People | Increasing the number of women in management positions | 1. Ask companies to formulate action plans for increasing the number of women in management positions. However, a draft law on promoting women in the workplace lapsed due to dissolution of the Diet. |
|        | Recruiting global staff with advanced skills           | 2. Establish a work hours system that enables flexible work practices under which people can demonstrate creativity based on clear job descriptions/levels of achievement and pay-for-performance      |
| Time   | Establishing a new work hours system                   | 3. Consider changes such as discretionary work systems for management staff or extension of flex-time systems, without waiting for a decision on a new work hours system                               |
|        | Facilitating "morning" work practices                  |                                                                                                                                                                                                        |
|        | Revising the flex-time system                          |                                                                                                                                                                                                        |
| Place  | Promoting wider use of telework                        | 4. Establish awards system for recognizing early adopters and publish case studies of the practices of early adopters                                                                                  |

IT: information technology

(WAN) systems or public clouds as the infrastructure platforms for service delivery (see Fig. 1).

### Improvement of User Convenience

The aim is to improve convenience for users based on the concepts of work practice reforms and use of information "whenever (time), wherever (place), and in a way that enables them to work efficiently (pay-for-performance)."

### Achievement of Low-cost Operation

The aim is to provide low-cost operation while taking account of the factors that satisfy requirements for improving user convenience, increasing interoperation between services, and optimizing the total cost of ownership (TCO) throughout the lifecycle of an information platform service.

### Improvement of Operational Efficiency

The aim is to improve operational efficiency and establish standard practices that enable operation and maintenance to be performed in a consistent and trouble-free manner, and to reduce loss of time and operational errors due to one-off or other non-standard operations by establishing efficient system configurations and operating practices.

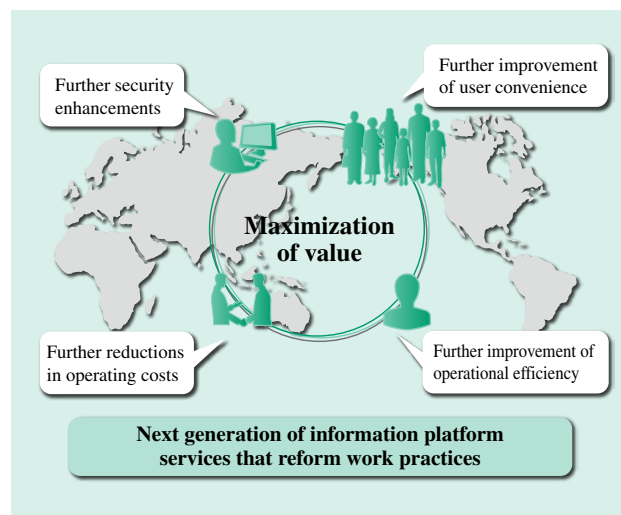


Fig. 1—Four Ways of Maximizing Value.

The aim is to reform work practices and maximize value by making full use of cloud services and selecting the best services for the work.

### Improvement of Security

The aim is to improve security by establishing systematic measures for the security of each information platform service, including preventing loss of information such as through cyber-attack or error, and by determining the security level required by each service (see Fig. 2).

## DEVELOPMENT OF SERVICES

In the development and selection of each set of information platform services, Hitachi has defined standards to ensure that they are as easy to use as possible for public-sector organizations.

Because information platform services are made up of a number of individual services and other products, combining services makes the overall architecture more complex and administration more difficult. Accordingly, they are at risk of higher TCO and lower return on investment (ROI) compared to currently operating LAN/WAN systems, being unable to take advantage of the benefits provided by the cloud.

In response, in the development and selection of services, Hitachi seeks to prevent this higher TCO and lower ROI by determining the factors that satisfy requirements for improving user convenience, increasing interoperation between services, and optimizing the TCO throughout the lifecycle of an information platform service in accordance with the concept of using a technical reference model (TRM) for information system procurement.

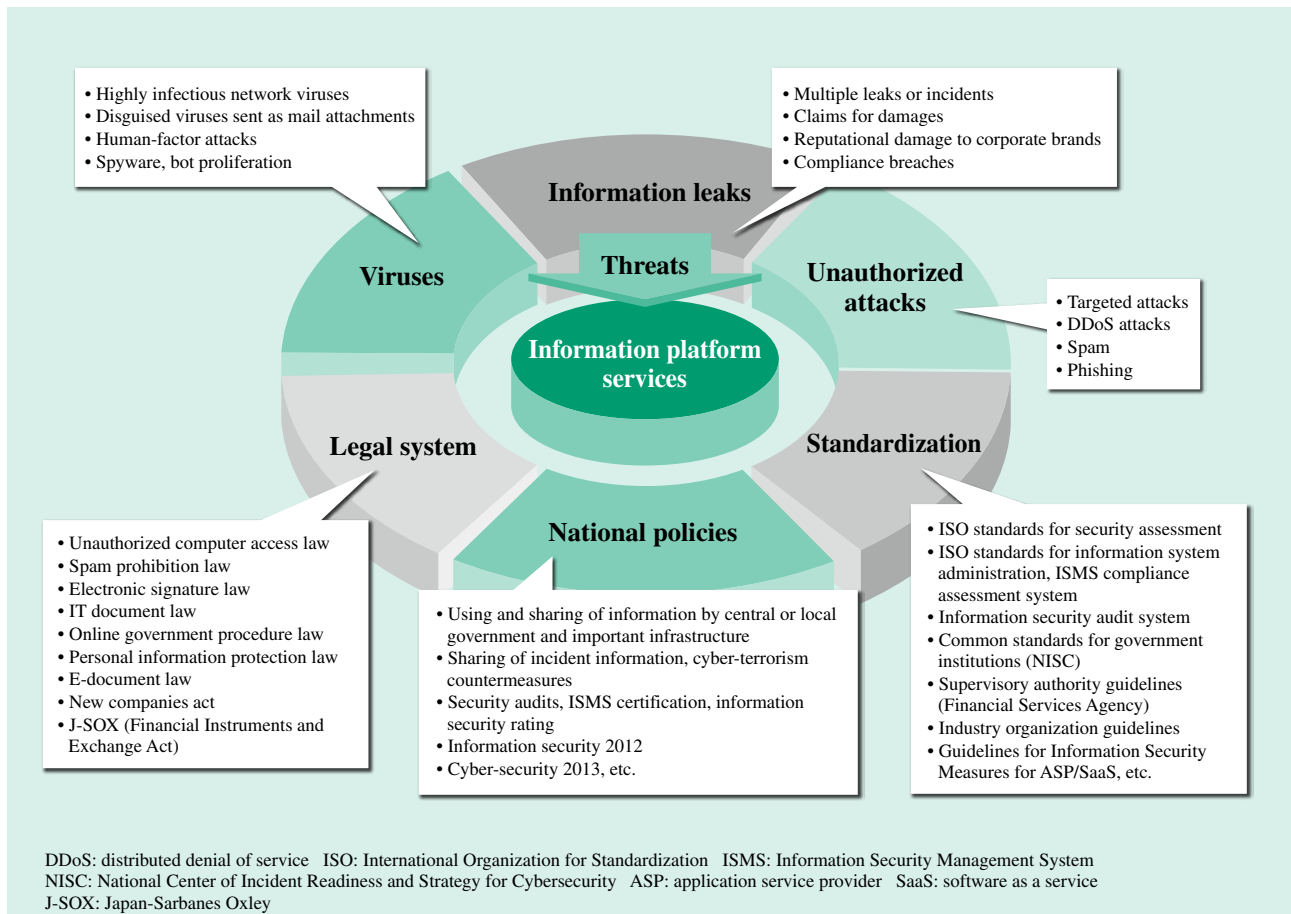


Fig. 2—Overview of Security as it Relates to Information Platform Services.

Hitachi will apply the information security philosophies and existing practices it has acquired as a provider of public IT solutions that support social infrastructure to information platform services.

The relevant factors for the development and selection of a set of information platform services are as described below (see Fig. 3).

### More Efficient Administration

A TRM aims to improve user convenience, increase interoperability between government information systems, optimize total costs across the business or system lifecycle, and boost procurement efficiency. It provides a model that is intended to establish and expand an environment of healthy competition within the IT industry by reducing barriers to entry through the wider adoption of impartial specification practices that put a priority of open standards. Accordingly, because it enables standard operating practices to be established so that operation and maintenance can be performed in a consistent and trouble-free manner, and reduces the loss of time and operational errors due to the one-off or other non-standard operations that occurred in situations in which the overall architecture was complex, it is expected to contribute

to the consolidation of administration work and a reduction in costs.

### Selecting Services that are Easy to Use

With the spread of cloud services, there are an increasing number of examples in which information platform services have been implemented efficiently by combining other services such as those based on software-as-a-service (SaaS) and desktop-as-a-service (DaaS) models with aims that include improving the efficiency of operational administration, reducing operating costs, and improving user convenience. On the other hand, there are also many cases in which various issues have arisen and the anticipated benefits have failed to emerge. Security, in particular, is crucial when entrusting information assets to the cloud, yet when systems are put together with the security level as the sole criterion, the risk is that the resulting system will be expensive and difficult to use, such as an inability to integrate operation across different functions. When selecting which information platform

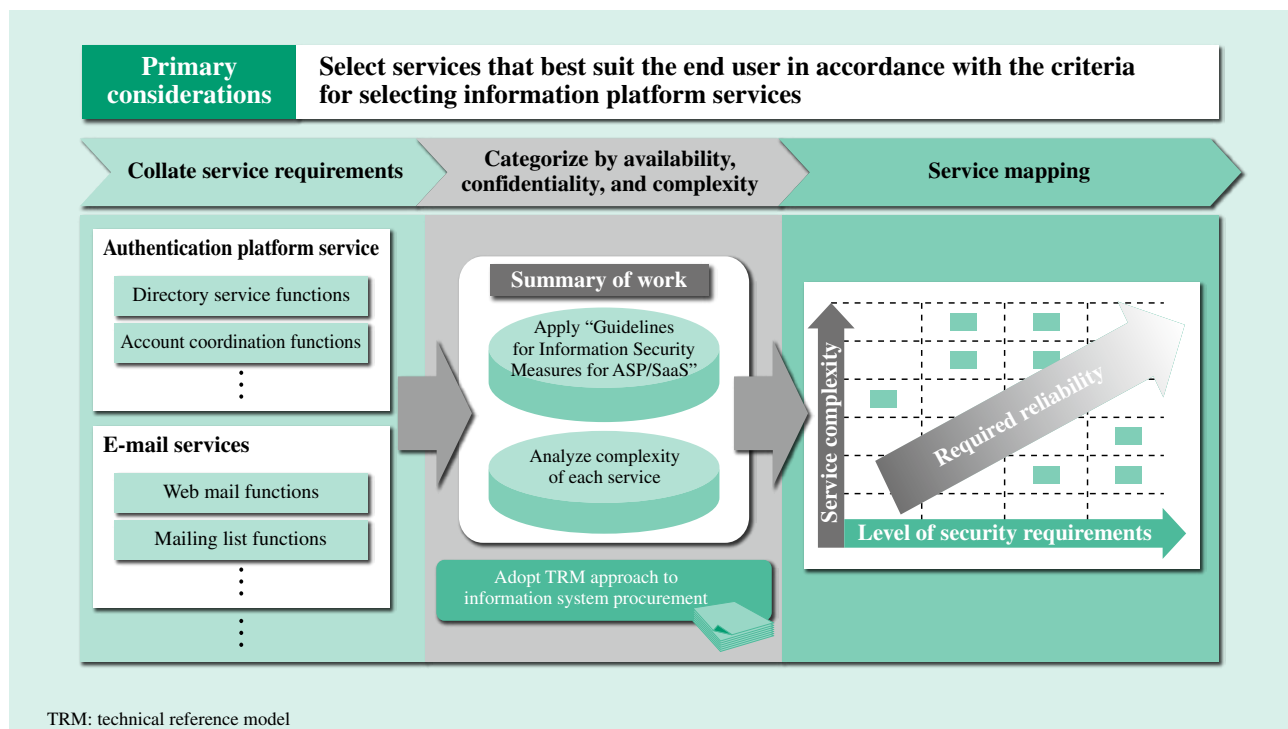


Fig. 3—Process for Selecting Suitable Information Platform Services.

Mapping of the required reliability is performed after categorizing and analyzing each service based on the functions it is required to provide.

services to include, Hitachi selects those services that are easiest for public-sector organizations to use, based on first clarifying the criteria with consideration for matters such as the security level required for each function and the complexity of interfaces between services (see Fig. 3).

#### (1) Analysis and collation of service complexities

As the individual information platform services need to work together and operate in an organic manner, the more functions are required to interoperate with a large number of other services the more consideration is required for things like interface consistency, meaning that these services can be treated as more complex. While services with sophisticated functions that work with a variety of different interfaces are typically expensive, services that feature excellent cost-performance without compromising ease-of-use can be supplied provided they have adequate functions even if the services have only a limited range of interfaces.

Examples of highly complex services include directory service functions for authentication platform services, thin client software services, mobile functions for rental services, and services for dealing with malware and other threats. Other comparatively complex services include single sign-on functions for

authentication platform services and e-mail functions for mail services.

When selecting services, it is important to determine whether or not information platform services interoperate and the degree of complexity of each service.

#### (2) Systematic collation of security considerations

Information platform services include SaaS and other complex services or products, and while these provide various advantages such as lower TCO and the rationalization of administration, because service operators and affiliated organizations build up large quantities of user information assets, it is important that they also implement appropriate information security measures.

For cloud system security, the Ministry of Internal Affairs and Communications of Japan has published the "Guidelines for Information Security Measures for ASP/SaaS"<sup>(1)</sup>. These guidelines state that the services provided by cloud services need to satisfy different security levels depending on the information they handle, extending to authentication services and groupware. Normally, information security means maintaining the "confidentiality," "integrity," and "availability" of information, these being the terms defined in Chapter 3 of the ISO/IEC 27001:2005 standard.

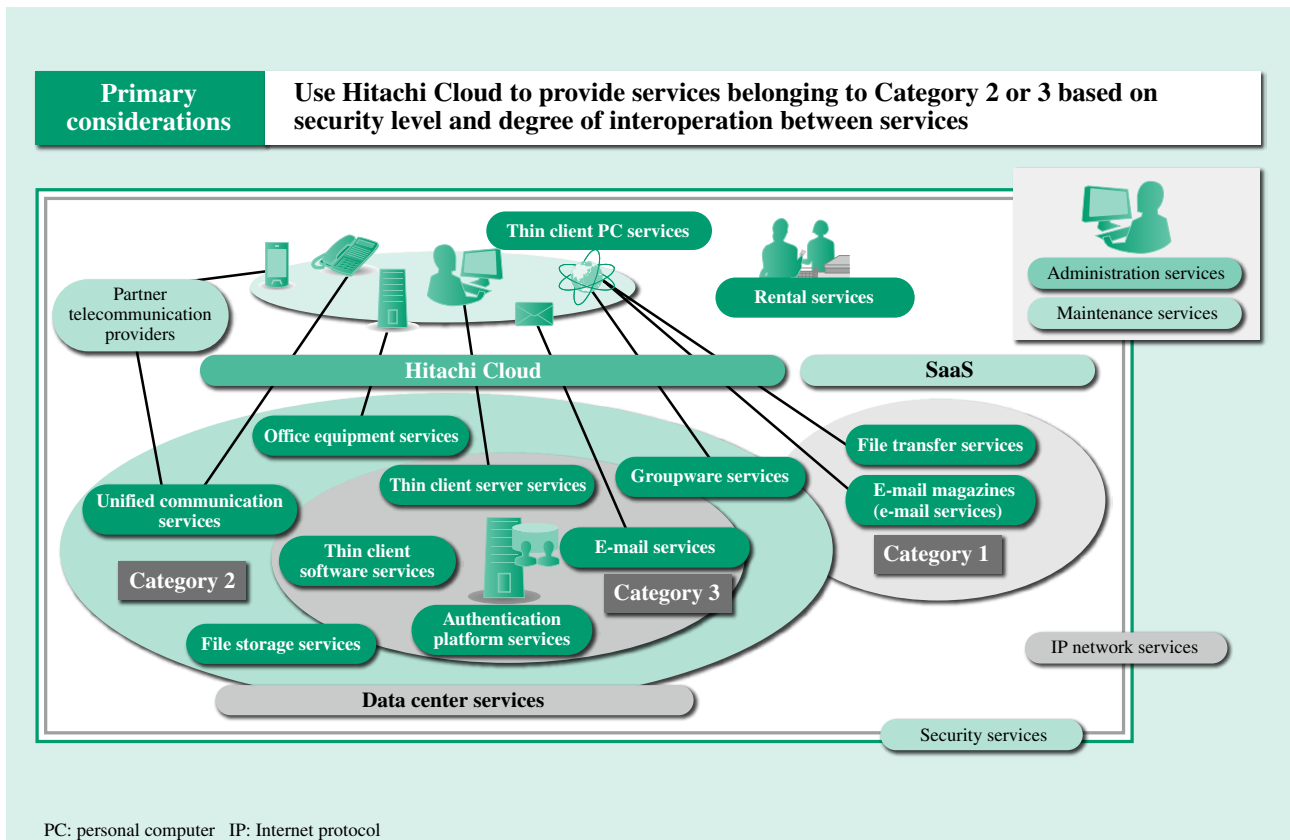


Fig. 4—Selecting Suitable Information Platform Services.

Along with utilizing Hitachi Cloud services, depending on security level, Hitachi also takes active steps to utilize services from other vendors as well as its own services.

Hitachi has systematically collated the individual information platform services based on these guidelines.

### Service Selection

Information platform services can be grouped into three categories based on considerations of service complexity and security. The selection criteria for each category are as follows.

(1) Category 1: Group of services that can be selected as needed

The minimal interaction between services in this category means that services with adequate functions are selected. Hitachi takes active steps to select services with excellent cost-performance, including those from other vendors.

(2) Category 2: Group of services that need to be checked to confirm they provide the required functions

As these are services of mid-level complexity, selection involves confirming how well they satisfy customer requirements and, if satisfactory, checking the compatibility of interfaces. These are chosen from among the services provided by Hitachi Cloud because of their compatibility and ease-of-operation.

(3) Category 3: Group of services with potential for adoption of an on-premises implementation

These are services with a high level of complexity and high security requirements that are implemented by combining highly reliable services from a single service provider. Alternatively, an on-premises implementation may be used. Services are selected from those available on Hitachi Cloud or are provided via systems configured independently on Hitachi Cloud.

Fig. 4 shows the various information platform services and categories.

### BENEFITS AND CHALLENGES IN PRACTICE

Customer confidence and trust can be earned by setting up a service management office (SMO) within Hitachi that undertakes integrated management and operation across different services so that they can link together in an organic manner, providing ongoing reliable operation of interoperating services, and acting as a point of contact for service inquiries that includes offering new services. The challenge for the

future is to establish mechanisms whereby the same consistent level of service can be provided regardless of which operation and maintenance staff perform the work.

## FUTURE OUTLOOK

Hitachi is currently working on implementing information platform services that will serve as “open market trials.” Here, “open market trial” refers to a system under which public and private sector entities can bid on equal terms for work on a public service that was previously the monopoly of a government agency, with the service contract being awarded to the bidder who offers the best in terms of both price and quality. Information platform services in the public sector are pioneers of the practice whereby government agencies focus on their core roles and contract out IT infrastructure, including service operation, to the private sector, and are significant in that they will be a subject of study by central and quasi-governmental agencies when they undertake future information platform upgrades. This is an area in which there will be more contracting out to the private sector in the future.

## CONCLUSIONS

This article has described how Hitachi has sought to contribute to business performance by customers as well as raise staff activity levels by developing information platform services. In the future, Hitachi intends to share ideas with customers about undertaking ongoing improvement activities relating to the use of systems based on considerations of reforming staff work practices and increasing utilization while making them part of routine work practices, pursuing the enhancement of service value and value maximization by working through the plan, do, check, act (PDCA) cycle. Hitachi also intends to draw on its past successes, including overseas activities, and take maximum advantage of the experience and know-how it has built up through customer projects in a variety of industries.

## REFERENCE

- (1) Study Group on ASP/SaaS Information Security Measures, Ministry of Internal Affairs and Communications, “Guidelines for Information Security Measures for ASP/SaaS,” (Jan. 2008), [http://www.soumu.go.jp/main\\_content/000166465.pdf](http://www.soumu.go.jp/main_content/000166465.pdf) in Japanese.

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