UNIVERGE Mobile Portal Service: A Smart Device Utilization Platform Optimized for BYOD

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Abstract

The dissemination of smart devices is rapidly increasing the need for BYOD (“Bring Your Own Device”), the use of individually-owned terminals in business. The UNIVERGE Mobile Portal Service allows a variety of smart devices owned by individual employees to safely use the e-mail, address book and groupware systems of their offices without leaving data on their smart device terminals. As it can be started as a trial involving a small number of users, this paper introduces it as an ideal service for customers who are considering the use of BYOD.

Keywords

smart device, BYOD, security, cloud-based service, mobile work

1. Introduction

BYOD (“Bring Your Own Device”) is a term that is said to be derived from “BYOD” (“Bring Your Own Drink, Bottle”). It means a system in which employees bring their personal terminals into their offices for use in the business.

The advantages of BYOD for every employee include the possibility of using their favorite terminal for business, the reduction of the number of terminals carried and the possibility of continuing the same operation while at home or in the field as well as in the office. As there are also advantages for enterprises, such as the elimination of the need to prepare corporate terminals for employees and expectations of improved productivity, BYOD has recently become a center of attention.

However, the actual introduction of BYOD encounters several barriers, including systemic problems such as measures for dealing with a large variety of individually-owned terminals, keeping up with OS version upgrades and security measures against information leaks, etc., as well as the preparation of in-house rules and an operations support system.

The UNIVERGE Mobile Portal Service introduced in this paper is a cloud-based service that can make the smooth start-up of a BYOD system possible by solving various issues related to its introduction while reducing the introduction cost.

2. Service Outline

The UNIVERGE Mobile Portal Service makes it possible to safely use the e-mail, address book and groupware usually used in the office on a smart device, anytime and anywhere. The innovation in work style brought about by this service will increase the daily productivity of business through the effective use of time (**Fig. 1**).

This service is a cloud-based version of the acclaimed UNIVERGE Keitai Portal system based on on-premise products. The on-premise system has already been introduced in many enterprises, mainly large ones. At NEC, too, it is used in the daily work of about 15,000 employees of the corporation.

Providing the same system as a cloud-based service can render the construction of new server farms unnecessary, making application to the small and medium business (SMB) market as well as to small startup systems possible.

While the UNIVERGE Mobile Portal Service is provided as a service for the secure utilization of smart devices, inquiries

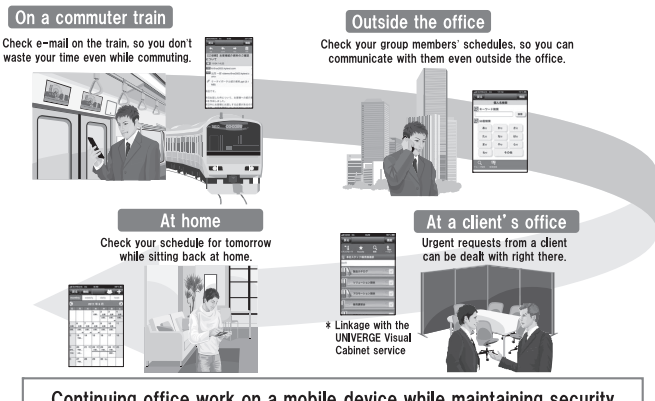

Fig. 1 Work style changes with smart devices.

and introductions of the service for BYOD have recently been increasing drastically. The functions and specifications of the present service are optimum for use in BYOD. Details of the service and its characteristics will be described in the following sections.

3. Service Details

As a cloud service linked with the e-mail and groupware systems already in use by each customer, the UNIVERGE Mobile Portal Service implements the following functions (**Fig. 2**).

(1) Connection to customer systems

The Cloud Gateway Box (the router of the UNIVERGE IX Series) is installed in the environment in which the customer's e-mail and groupware systems are installed and connected to our data center through VPN to provide secure services.

(2) Linkage with e-mail and groupware

For e-mail, linkage with a POP/SMTP-compatible system is possible. Unicode compatibility allows globally-compatible smart devices to read e-mails in various languages, including Japanese and English as well as Korean and Chinese. A service for opening files attached to e-mails is provided as standard for reading Microsoft Word and Excel documents as well as PDF documents.

For groupware, compatibility with StarOfficeX, Lotus Notes/Domino and Exchange is provided for the use of schedulers and phone directories. (For a list of compatible versions, please contact the inquiry destination mentioned at the end of this paper.)

(3) Linkage with a document management service

The UNIVERGE Mobile Portal Service can be linked with the UNIVERGE Visual Cabinet Service, a visual document management service for reading registered documents without leaving information on smartphone terminals (**Fig. 3**). This makes it possible to securely share and browse highly confidential documents, such as sales promotion tools and product price information for service engineers and installation work manuals for engineers, from outside the office.

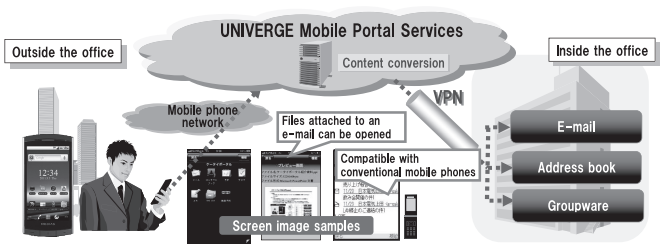

Fig. 2 UNIVERGE mobile portal service provision.

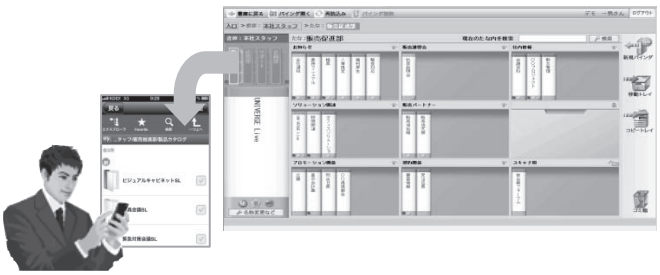

Fig. 3 Service linkage with UNIVERGE visual cabinet.

4. Features Matching the Needs of BYOD

In the above, we described the representative functions of the service. In this section, we will discuss the features that make this service ideal for use in a BYOD environment.

(1) Perfect security measures

Usable terminals are identified by a two-factor authentication based on a unique ID incorporated in the application installed in each terminal and a password. Access from non-permitted terminals is denied. When a terminal is used for browsing e-mails or documents attached to them, the implementation of "smart devices as thin clients" does not leave any browsed information on the terminal, so safety can be assured even if the terminal is lost. In addition, in the case of an emergency, the service can be stopped by an individual user from a remote location as well as by a manager so that the risk of information leak can be minimized.

Mechanisms are available, such as MDM (Mobile Device Management), for remotely erasing the information in a terminal using a remote wipe function, but these sometimes pose problems if the SIM card is removed or the terminal is located outside the reach of radio waves. As there are also other problems, such as the erasure of precious personal information including family pictures and the exposure of personal usage information such as website browsing history and installed applications, the application of MDM to BYOD terminals remains an is-

sue to be developed in the future.
We believe that, with BYOD, it should be fundamental to implement a mechanism for not leaving information on terminals in order to reduce the burdens of individual employees as well as to simplify operations.

(2) Compatibility with various devices

When we look at the mobile terminals owned by individuals, we see a flood of various terminals including traditional mobile phones, smartphones and tablet terminals. As each of these uses different OSes, browsers and screen sizes, it can be assumed to be impossible to identify all the possible specifications used in personal terminals.
Even when we focus on smartphones, it is difficult to comply with various terminal sizes and keep up with rapidly changing OS versions. When an enterprise develops a BYOD-compatible application by itself, a large capital and labor investment is required to deal with each and every difficulty of individual user terminals and version upgrading for many OSes.
The UNIVERGE Mobile Portal Service provides content by converting it to match the terminal size of each smart device. It also deals with version upgrading for Android and iOS at the service level so that modification of servers in on-premise products for version upgrading is not required. (However, version upgrading of terminals may sometimes be necessary.)
In spite of rapid dissemination, the market penetration of smartphones is only around 30%. Since about 70% of individually-owned terminals are still traditional mobile phones, it is for the present important that BYOD be compatible with mobile phones. The present service is compatible with traditional mobile phone terminals from NTT DoCoMo and KDDI. (With SoftBank, compatibility is available only with smart devices.)
In many cases, an individual owns more than one terminal. The present service permits the registration of up to three terminals per user. (Only one can be used at a time.) As a result, if an application is registered in a traditional mobile phone owned by the enterprise, a smartphone owned by the individual employee and a tablet owned by the individual employee, the employee is capable of executing business operations using the optimum terminal at the required time, according to the use case (**Fig. 4**).

(3) Small start possibility

Customers considering introducing BYOD often say that they cannot determine the service target, the number of

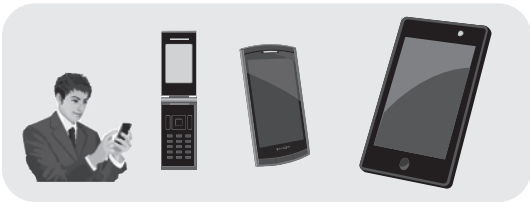

Fig. 4 Registration of three terminals per user.

those who need the service and the degree to which the users of the service will increase.
As a customer tries to prepare in-house rules, there are a large number of items to be studied, for example the flow from application and approval to stoppage of service, the flow to be taken in the case of terminal loss and the formulation of a written pledge and letters of consent.
Techniques for the above are not established at present. However, even if the way to be taken is unclear, it is important that we advance step by step with hypothetical thinking by repeating trials and trying small starts to promote the introduction of smart devices. From this viewpoint, we experienced difficulties in the easy startup of on-premise-type systems because of the need for large initial investments.
The UNIVERGE Mobile Portal Service makes possible a small start from a minimum of ten users by simply installing the router for the VPN connection with the customer's environment. In addition, the service prepares a trial environment based on a simplified VPN system so that a trial for a limited time can be made by installing only a notebook PC, without changing the customer's network environment. This will be a great support for the smooth introduction of BYOD to customers.
From a viewpoint limited only to cost, the cost of an on-premise-type introduction is sometimes lower than a service-type introduction when the scale of introduction is as large as thousands of employees. It is therefore also possible to make a flexible plan to begin with the UNIVERGE Mobile Portal Service and, when the scale of the system increases, to switch to the UNIVERGE Keitai Portal, which uses on-premise-type products.

5. Efforts for BYOD made at NEC

At NEC, we also started trials for adopting BYOD in limited departments in August 2012. After verifying the results, we

started a full-scale introduction in November. The main points of our efforts for introduction are as follows.

(1) Purpose of introduction

Our purpose is "to improve business productivity," with the idea that the execution of business operations using familiar terminals can increase the speed of operations and enable a quick response to customers.

(2) Policy of use

In principle, business operations are to be executed using the terminals supplied by the corporation. However, the use of BYOD is accepted upon request from each employee with approval from the department to which he or she is assigned.

The conditions for the use of BYOD include submission of the letter of consent formulated by the corporation.

(3) Range of use

The targets are set to PCs and smartphones owned by individuals. A mechanism to avoid leaving confidential business data on these individual terminals is adopted. The service is deployed first among the management-level staff of the corporation.

For the systems used, the PCs use a software-type thin client system and the smart devices use the UNIVERGE Keitai Portal, which is the on-premise-type version. As described above, the UNIVERGE Keitai Portal system has already been used by 15,000 users at the NEC Group, so it can be deployed with little trouble in terms of operability and system management.

We also participated in the trial as users and responded to questionnaires aiming at full-scale introduction. In the trial, we realized that using the smartphones we are accustomed to use in private life is, after all, comfortable and can actually improve productivity.

We have heard that almost all of the users who participated in the trial expressed approval for full-scale introduction. Though the deployment was started with management-level staff due to issues related to working hours, it is expected that the deployment will expand to the corporate level, including all employees.

6. Future Enhancement Policies

We will continue enhancing the UNIVERGE Mobile Portal Service as a service enabling safe and convenient business execution from smart devices, including BYOD devices.

The specific enhancement policies are as follows.

(1) Simplified introduction

The simplified VPN system currently used in the trials will be commercialized as a product to be used in real environments. This makes it possible to introduce and start the service more easily and quickly without altering customers' current network environment.

(2) Improved operability

Both the on-premise product and the service product will be improved by putting emphasis on "operability," or how effectively users can access and use the service from outside the office while assuring security. We have already collected opinions and needs from customers and have attempted to enhance the service by using it ourselves. Since the most important point in the use of smart devices is "usability" rather than functionality, we are determined to enhance operability continually in the future.

(3) Enhancement of communication functions

Tools for convenient communication with friends, such as Skype and LINE, are popular for personal use. We have already provided an internal call solution using smart devices for use in in-house communications, but we will also provide an internal call service linked with the phone directory function of the UNIVERGE Mobile Portal Service. In the future, we are also planning to provide an integrated communication function covering internal calls and instant messages using BYOD terminals that does not impose phone charges on individuals.

7. Conclusion

It is said that 20% of enterprises have distributed mobile terminals to their employees. On the other hand, there is also a survey report that more than 50% of employees have at least once used their personal terminals in business, regardless of whether it is permitted by the enterprise or not.

The employees who use their terminals may be doing so because of the current situation in which mobile terminals are distributed with priority for employees who often leave the office, such as directors and sales engineers, but are not distributed to employees who work out of the office only occasionally, such as technical staff and the marketing and sales promotion staff who work in the office supporting the field staff.

Since there are employees who conduct their business us-

ing their own terminals and this involves the risk of information leak, it should be recognized that the time has already come for enterprises to consider the use of BYOD as a countermeasure against such a risk.

The UNIVERGE Mobile Portal Service will be the core of our efforts to provide working environments in which as many employees as possible can work in the required places at the required times without being bound to their offices.

For more details about the UNIVERGE Mobile Portal Service, please contact:

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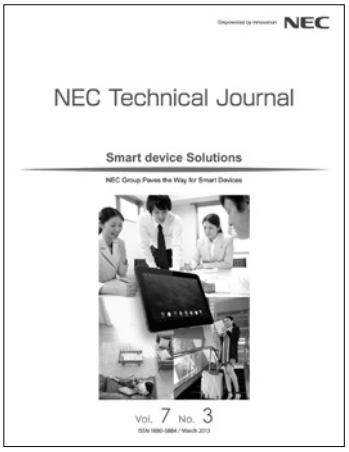

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