In-house Use of Web 2.0: Enterprise 2.0

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Abstract

The concept of Enterprise 2.0 that uses the Web 2.0 technology for corporate affairs is expanding. The concept of Enterprise 2.0 is implemented by combining technologies for blogging, SNS, Wiki and RSS as well as open-source software. Enterprise 2.0 may be delivered to the customer as a service as well as a system.

1. Introduction

Since the Web 2.0 Conference held in October 2005 in the Unite States, "Web 2.0" technologies have been rapidly winning acceptance. In Japan, the year 2006 can be regarded as a "Web 2.0 boom" year, as seen with the success of the best selling book entitled "The Theory of Web Evolution" by Mochio Umeda. As Web 2.0 has expanded the range of recognition, representative services of Web 2.0, such as the blog and SNS, has also spread rapidly. The term blog is now recognized by 98.6% of people and 25.3% of those who recognize it say that they now open their blogs to the public[1]. This means that a quarter of Internet users open their blogs to the public. The largest SNS in Japan, 'mixi' has increased its users from 2 million in January 2006 to 5.2 million in October of the same year, an increase of about 2-1/2 times in less than a year.

These trends related to Web 2.0 have been observed mainly in the use of the Internet by consumers, but the trend of utilizing the Web 2.0 technology in-house are recently emerging among private enterprises (**Fig. 1**). For example, some enterprises are using the blog as a means of improving communica-
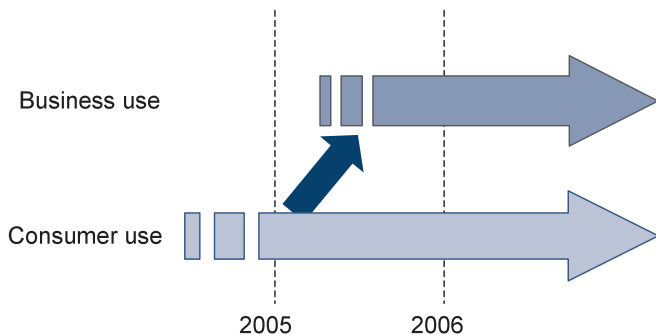

Fig. 1　Dissemination of Web 2.0.

tions between employees or the SNS for sharing links between people. In the past, technologies and usages related to the computer have initially been disseminated first by specialist advanced enterprises and later transferred on to consumers. However, Web 2.0 has reversed this flow, causing the technology disseminated among the consumers to be used in enterprises.

2. Enterprise 2.0

Recently we often come across the term Enterprise 2.0. However, there is no established definition of Enterprise 2.0 because of the large variety of different opinions.

Andrew P. McAfee, assistant professor at the Harvard Business School who is said to have proposed the term of Enterprise 2.0 for the first time, posted an article entitled "Enterprise 2.0: The Dawn of Emergent Collaboration"[3] in the MIT Sloan Management Review of April, 2006. In this article, he explained that Enterprise 2.0 is to use the Web 2.0 technology that is represented by the blog and Wiki as a knowledge management tool in a private enterprise environment. He also pointed out that Enterprise 2.0 technology consists of six components, which he called "SLATES" after their initials. These were; Search, Links, Authoring, Tags, Extensions and Signals.

The Nikkei Computer magazine featured Enterprise 2.0 in its April 3, 2006 issue[4], and an article in it said that "systems that enable free utilization of the information required for achieving results in the businesses" should generically be called Enterprise 2.0. It also introduced the usage of the blog in an enterprise as a typical case of the use of Enterprise 2.0.

Both of the above definitions adopt the technologies (blog, Wiki, etc.) and/or concepts (user participation, long tail, etc.)
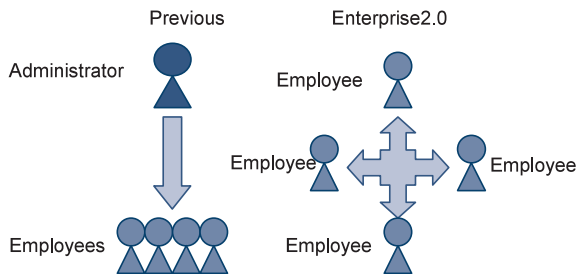
Fig. 2 Differences from previous information sharing systems.

of Web 2.0 as a mechanism for information sharing.

Based on the above, we would like to define Enterprise 2.0 as "a mechanism for promoting information sharing inside and outside an enterprise by adopting the technologies and concepts of Web 2.0." for this paper (**Fig. 2**).

Utilization of information in an enterprise is called knowledge management, and various products and techniques are provided for this purpose. Then, what is the difference between knowledge management and Enterprise 2.0? The traditional in-house portal systems and document management systems have been managed by system administrators who have also transmitted the related information. On the other hand, the use of the blog, SNS and Wiki based on the concept of "user participation" of Web 2.0 has drastically changed the method of system usage to that of independent use by employees.

3. Enterprise 2.0 Market Trends

The term Enterprise 2.0 is a relatively new one but the Web 2.0 technologies such as the blog, SNS and Wiki began to be used by enterprises before this term was proposed. Casio Computer Co., Ltd. introduced the in-house blog in July 2004 and has been using it as the in-house CMS (Contents Management System) and information portal. NTT East Corporation introduced an in-house SNS called "Sati" in the fall of 2005 to promote information sharing across the enterprise and visualization of human links. At NEC Corporation, we introduced the in-house blog "Innovation Café" in September 2005, which presently has more than 1,500 users. Some development departments of NEC have also been utilizing Wiki independently from around 2002 or 2003.

Nevertheless, a recent survey showed that users of in-house blogs are still relatively few.[5] The use of the blog, SNS and Wiki is now much advanced on the Internet. The usage is particularly disseminated among the younger generation and its use has become a daily habit among the generation that will be employed in the coming years. As they do not show any hesita-

tion about using these tools for exchanging and sharing information it is likely that after they begin to work the use of these tools will grow rapidly among this generation of workers.

4. Enterprise 2.0 Product Trends

Since 2006 manufacturers are upgrading their efforts for releasing Enterprise 2.0 products to support in-house blog or SNS systems. Six Apart Ltd., which has a large share in the blog server market, offers a Movable Type Enterprise as an in-house usage-oriented version of its previous products. This product is composed of a Movable Type that presupposes use on the Internet with a group function, workflow function and blog portal function added to it. Hitachi, Ltd. also offers an in-house blog-dedicated product called BOXERBLOG-iB. This product also incorporates the functions dedicated to the in-house blog such as a group function, portal function and RSS distribution software linkage function as in the Movable Type. Drecom Co., Ltd. offers the Drecom Blog Office, which NEC has introduced into their products. Both of the two products above also feature functions specific to in-house use added to the basic functions of the blog as used by consumers on the Internet. The number of in-house SNS products is not as large as the number of blog products but they include the Beat Office by Beat Communication Co., Ltd., which NTT East Corporation has introduced into their system, and the OpenPNE that is the most popular open source software SNS product developed by Tejimaya Inc. These in-house SNS products also features groupware type functions such as scheduler and facility reservation functions in addition to the basic functions used with the Internet SNS.

There are no noteworthy products related to Wiki in Japan, but those in the United States include the JotSpot featuring the mashup facility (acquired by Google) and the SocialText well know for WYSIWYG.

The products introduced above are intended to offer one of either; a blog, SNS or Wiki. Meanwhile, the products from IBM (Lotus Connection), Oracle (WebCenter Suite) and Microsoft (SharePoint Server 2007) can or will provide blog, SNS and Wiki platforms in a single package.

5. Enterprise 2.0-Related Products from NEC

One of the Enterprise 2.0-related products that are currently handled by NEC is the Blog Office developed by Drecom Co., Ltd. NEC markets the Drecom Blog Office by linking the IP

telephony server "UNIVERGE SV7000" to it.

The Enterprise 2.0-related products that will be marketed by NEC include the SuiteTwo[6)] that was developed by Spike-Source Inc. in the United States.

5.1 SuiteTwo

SuiteTwo is a product composed of a suite of proven Web 2.0 technology software including blog, Wiki and RSS software for use within an enterprise. SuiteTwo uses the SpikeSource Core Stack (discussed later) from SpikeSource Inc. as middleware for the web server and database. This package which integrates applications and middleware allows an enterprise to easily introduce the Web 2.0 technology to its network.

SuiteTwo is composed of the following Web 2.0 products (**Fig. 3**)

1) Movable Type

This is a blog software developed by Six Apart, Ltd. It has a customization function that is compatible with many third party extension functions.

2) SocialText

Wiki software developed by SocialText. It allows Wiki editing based on WYSIWYG.

3) NewsGator

Web-based RSS reader by NewsGator Technologies, Inc. It is compatible with cellular phones as well as with browsers.

4) SimpleFeed

RSS-generating server software by SimpleFeed, Inc. It allows each end user to generate a personalized RSS.

SuiteTwo is capable of managing the above products through an integrated interface.

5.2 SpikeSource Core Stack

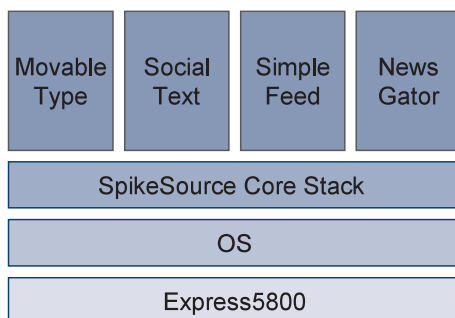The four parts of Web 2.0 software included in SuiteTwo use the SpikeSource Core Stack developed by SpikeSource, Inc. as the middleware stack. The SpikeSource Core Stack is a package integrating the open source middleware provided by SpikeSource, Inc. (**Fig. 4**). It contains Apache, Tomcat, PostgreSQL, MySQL and PHP, and offers patches and technical support services. Using the SpikeSource Core Stack makes it possible to reduce the risks in system construction as well as the human labor. The combination of open source middleware that has already been verified will also facilitates the system administration.

With Web 2.0, an environment called the LAMP is used in the majority of cases. LAMP stands for the combination of Linux, Apache, MySQL and PHP. This environment is organized entirely as a group of open source software. As the SpikeSource Core Stack supports all of the software, it has high affinity to Web 2.0 systems and is therefore the optimum product for use with the middleware stack of SuiteTwo. The SpikeSource Core Stack features the possibility that users may reduce the middleware maintenance work thanks to the operation verification, patches and technical support. To make use of this advantage further, we at NEC verify the operations of the various applications on the SpikeSource Core Stack and deliver it as a combined product with applications.

5.3 SNS Products

SuiteTwo contains the blog, Wiki and RSS software but does not include that for the SNS. Regarding the distribution of in-house SNS as described in Section 3, it is necessary to provide SNS as well as the blog and Wiki. Web 2.0 often uses open source software, and open source software for SNS called OpenPNE is distributed in Japan. OpenPNE was developed by Tejimaya, Inc. and provided as open source software for use in the construction of SNS systems. At present, the SNS in Japan is provided as large-scale services such as mixi and GREE, but

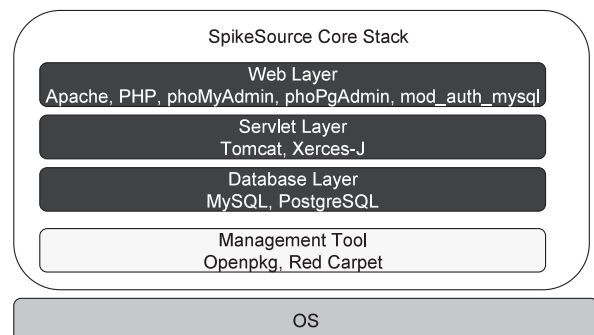Fig. 3　Configuration of Suite Two.
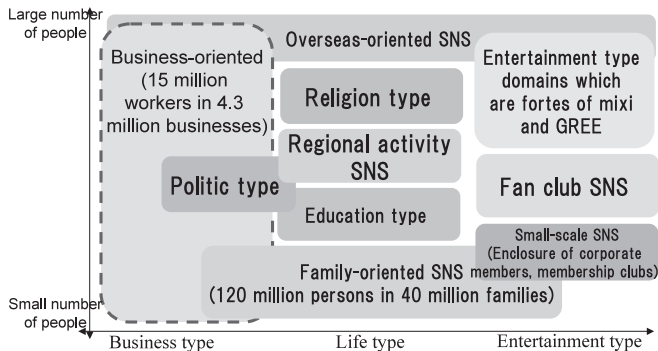

Fig. 4　SpikeSource Core Stack.

Fig. 5 Range of SNS Utilization (Source: Tejimaya, Inc.)

the start of OpenPNE has triggered the creation of small-scale SNS systems that deal with various different topics. Because OpenPNE is an open source that can be used free of charge, it is expected to be used in many enterprises including small ones (**Fig. 5**).

The use of OpenPNE inside an enterprise allows it to monitor relations between its employees. The information on the human links formed with OpenPNE can be used in the sharing and disclosure of information through a blog, Wiki and RSS. The sharing and disclosure of information achieved in this way will be available within an optimum range.Thanks to being open source software, OpenPNE can be disseminated rapidly. Functional extensions can also be achieved at a very high speed compared to commercialized package software.

5.4 Enterprise 2.0 and SaaS

Since all of the technologies used by Enterprise 2.0 are web technologies, they can be installed in the form of network services as well as with the system installation using appliance products. The method of using Software as a Service is called SaaS. Software installation with SaaS can reduce the initial costs compared to installation in an enterprise environment in the form of a system. In addition, it also allows the enterprise to entrust system administration completely to the service provider and eliminates the need for any system administration skills from the enterprise. This point makes SaaS very suitable for installation in small enterprises. In the work styles of enterprises, it is expected that the execution of projects based on the collaboration of multiple enterprises will get more active in the future. It is also expected that when Enterprise 2.0 is delivered with SaaS, information sharing between enterprises via the network will be more readily facilitated.To provide software as a service, the vendor is required to prepare all of the data center facility, server hardware, storage, OS, middleware and ap-

plications. Since NEC handles all of the products that are necessary for SaaS, it is capable of providing SaaS with more optimized functions and costs than otherwise.

6. Conclusion

Enterprise 2.0 is expected to spread widely as a mechanism of in-house information sharing among enterprises in the future. To utilize the existing technologies such as blogging, SNS, Wiki and RSS more effectively inside an enterprise, it is regarded that a mechanism that is different to their use on the Internet will be required. At NEC, we are studying solutions such as the in-house information search, social bookmarking and map linkage technologies that can improve the job efficiency of an enterprise by combining NEC-originated technologies for the effective in-house use of Web 2.0 technologies such as blogging, SNS, Wiki and RSS.

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* Some products and services introduced in this paper are mainly provided for the domestic market.
* The corporate and product names mentioned in this paper are trademarks or registered trademarks of their respective owners.

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