

Special Articles on Services for Next-Generation Smartphones

Smartphone Services as New Business Platform

With the introduction of the “dmenu” and “dmarket” portals on its winter/spring 2011-2012 smartphone models, NTT DOCOMO has greatly expanded its service lineup for smartphones making such popular services as i-concier and Data Security Service available to smartphone users. These new portals will, of course, bring more enjoyment and convenience to smartphone users, but they will also lay a foundation for the development and expansion of new services and businesses that NTT DOCOMO plans to provide over the next 5 - 10 years.

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1. Introduction

In Japan, the iPhone^{*1} was first introduced in 2008, and against a backdrop of strong sales, a number of Japanese handset makers began to design and provide smartphones of their own. Smartphone sales have been growing favorably since then.

A major feature of the smartphone is that it allows users to add functions on their own by downloading applications so that their mobile terminals can evolve to ones that best fit their needs. However, for users who have become accustomed to using an i-mode terminal, which is a “packaged product”

designed specifically for mobile communications, a smartphone with a high degree of freedom is not necessarily easy to use.

For content providers as well, there have been no mechanism for applying i-mode business to smartphones. In short, no efficient business environment has so far been provided on smartphones.

NTT DOCOMO had been making efforts to expand business on i-mode by attaching much importance to collaboration with content providers. As a consequence, imperfect mechanism for expanding business to smartphones can only mean lost service and business

opportunities in the future.

To respond to changes in the market brought about by the rapid penetration of smartphones, NTT DOCOMO recognized the need for setting up a new environment quickly and identified three requirements that had to be met: development of a common interface for smartphone use, creation of paths leading to services on smartphones, and construction of a business platform. Satisfying these requirements would make it possible to activate a content market for the smartphone era in a form conducive to user needs and to fully demonstrate the hidden potential of the smartphone. NTT DOCOMO has suc-

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*1 iPhone®: A registered trademark of Apple, Inc. United States, used within Japan under a license from Aiphone Co., Ltd.

cessfully implemented this new environment with the result that smartphones have become more convenient and enjoyable to use.

2. Service Overview

2.1 Development of a Common Interface for Smartphone Use

The development of multi-function mobile phones has the unfortunate result of complicating the User Interface (UI). And to make matters worse, smartphone products are being commercialized by various makers using their own original designs, which may be a source of bewilderment for some users who have become accustomed to using i-mode terminals over many years. Multi-function and original designs can prevent the outstanding features of the smartphones from being fully used and can hinder the convenience and enjoyment of mobile phones that many users have come to experience with i-mode terminals.

In light of this situation, we have implemented a common UI (home application) on smartphones provided by NTT DOCOMO. This achieves a common user experience^{*2} on NTT DOCOMO smartphones and provides a path to the functions and services that the user wants to use by intuitive operations even on a smartphone (Palette UI) [1].

With Palette UI, icons and widgets^{*3} are arranged on the screen beforehand. This not only achieves a path to services and content but also enables tele-

phone and phonebook functions that users have become accustomed to over many years to be loaded in common with other functions. As a result, an even more convenient environment having a high degree of customer satisfaction can be provided.

2.2 Creation of Paths Leading to Services

An overview of paths to services from the home screen of a smartphone are shown in **Figure 1**.

1) dmenu

Google Play^{TM*4} presents products from a variety of content providers—it is an attractive platform^{*5} in the sense that many items of content can be displayed on a large scale. However, for content providers who have been doing

business on i-mode by creating their own stores and leading users to them via various paths, Google Play lacks flexibility in terms of attracting customers and generating profits.

With the aim, therefore, of constructing a platform on smartphones that would inherit the i-mode ecosystem (business model), NTT DOCOMO provides “dmenu”, which can be thought of as a smartphone version of i-menu.

This dmenu is a portal collecting links to official content as a redesign of “DOCOMO Market” that had previously been located on the top page of NTT DOCOMO smartphones. The top menu, search results, and other aspects of dmenu can significantly help content providers guide users to their content.

As of the end of February 2012,

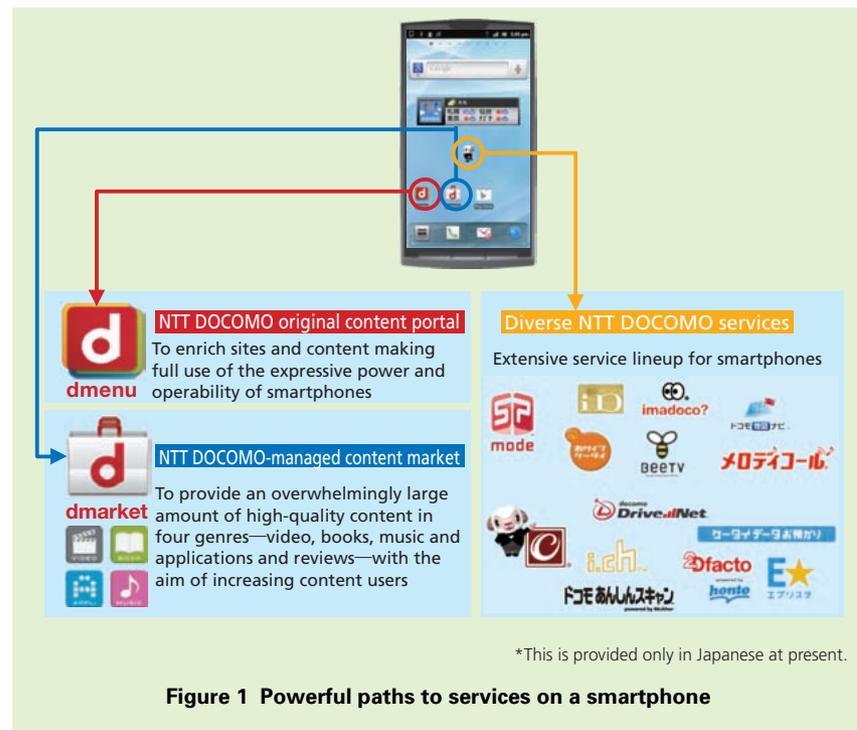


Figure 1 Powerful paths to services on a smartphone

^{*2} **User experience:** The user interface achieved without stress when using, consuming, or owning a product or service. A concept that goes beyond individual functions and ease-of-use to include whether the user can enjoy and meaningfully experience what he or she truly wants to do.

^{*3} **Widget:** A generic term for a simple function described by application software, displayed on a PC’s desktop screen or a smartphone’s home screen and executed in a specific runtime environment. Also called “gadget” or “desktop tool.” Widgets have been expanded for use on

mobile terminals.

^{*4} **Google PlayTM:** A trademark or registered trademark of Google, Inc., United States.

^{*5} **Platform:** OS or operating environment for running applications.

approximately 2,700 companies and 4,500 sites were providing services via dmenu including services that had not previously been provided for smartphone use. With dmenu, users have access to content and services in a wide array of genres.

2) dmarket

The dmarket portal adds movies to the DOCOMO Market service provided by i-mode. By becoming a service provider in its own right, NTT DOCOMO is offering direct sales to users in a more reasonable, easy-to-understand format.

This portal provides four categories of contents as follows (dmarket figures are those of January 2012):

- VIDEO store providing unlimited viewing of approximately 5,000 titles (20,000 episodes) of movies, dramas and animation for a monthly fee of 525 yen
- MUSIC store delivering a huge amount of music content (approximately 1-million songs) in a wide range of genres on a level unparalleled in Japan
- BOOK store enabling users to enjoy a stock of approximately 35,000 titles including major comics, popular novels and how-to books on a scale not offered by any competing service
- Applications and reviews store that offers recommended applications from Google Play content as previously provided by DOCOMO Market

Users can access these four stores

through powerful paths on smartphones including the dmarket icon, content widgets, dmenu and i-channel. Through these paths, all users can come to feel the true value of smartphones in simplifying operations and making services even more convenient.

2.3 Construction of a Business Platform

Despite the various changes associated with making a transition from an existing i-mode terminal to a smartphone, users will be able to continue using their My Menu items previously registered on i-mode. This means that content providers that had developed various types of businesses on i-mode will not lose the customer base they had built there and will be able to expand their business with a sense of continuity on the smartphone.

Likewise, additional services like i-concier and i-channel will not be canceled with a move to a smartphone. These services will be inherited from i-mode so that users will be able to continue using them without having to make any special settings.

Of course, users will be able to continue using major services like Omakase Lock (remote locking service) and Data Security Service previously rolled out on i-mode.

2.4 Other Content Platforms

Other platforms include an authentication system and charging system

both set up with the aim of making the use of smartphones more convenient and enjoyable for users.

The user authentication system that was implemented as a matter of course on i-mode (in which simply accessing a site meant that only those pages dedicated to that user would be displayed) could not previously be implemented on smartphones. In the past, smartphone users have been required to enter an ID and password for each site they wished to log onto. This bothersome requirement has been eliminated with the provision of dmenu by enabling users to use simple operations on par with those of i-mode while introducing a robust security mechanism.

In terms of charging, smartphones now support handset-based payments as well as monthly charging and individual charging as in the past. As a result, more flexible options can now be provided to both smartphone users and content providers.

3. Conclusion

The developments described in this article center about the “personalization of services.” The i-concier service is one example of how this personalization of services has already begun, but with dmarket as a foundation, NTT DOCOMO seeks further evolution in this area by interlinking all the services that it provides and by combining data-backup systems, history systems, social and environmental systems, and external

data in useful ways.

Looking forward, NTT DOCOMO wants users to be able to use services and content freely not only on smartphones but also on tablet computers and other mobile devices. The approach to accomplishing this is to set up a mechanism by which services can be provided not on the basis of a particular device but through a connection with a personal ID (multi-device support).

NTT DOCOMO will pursue the early realization of personalized services and multi-device support to make the use of mobile devices even more enjoyable and convenient for users. It will also pursue expanded collaboration with various alliances and enterprises to promote innovation by converging mobile communications with various types of industries and services. It is NTT DOCOMO's ultimate aim to

make users' lives and business endeavors more secure, convenient, and efficient and to achieve a thoroughly "smart life" for everyone.

REFERENCE

- [1] T. Yamamoto et al.: Application Functions for Winter/Spring 2011-2012 Models," NTT DOCOMO Technical Journal, Vol.13, No.4, pp.4-14, Mar. 2012.