Technology Reports

Collaborating with Customers on Service Creation: "My DOCOMO Labs"

In an environment of increasingly strong competition between mobile operators, "My DOCOMO Labs" is attempting to identify potential customer needs in hopes of creating new centers of value. We hope to co-create new services by conducting public experiments to studying customers' potential needs.

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1. Introduction

The domestic mobile phone market in Japan continues to mature as the penetration rate of mobile terminals in the population increases from year to year. With the introduction of new operators in the market and initiatives like Mobile Number Portability (MNP)[*1], competition between operators is becoming more fierce. All operators are working to create new value, beyond their existing communications business, and to find new sources of revenue.

Examining the current market, actual customer needs have been segmented by diversifying lifestyles and values. Because of this, markets for individual services and products that satisfy these needs are becoming smaller, and it is becoming more difficult to create new sources of profit by developing products and services based on such needs. For example, since the peak in size of the game market in 1997, game content has become more complex, genres have segmented to meet individual needs, sales of individual game software or hardware products have decreased, and the scale of the whole market had been shrinking from year to year.

In order to overcome the current barriers, to create new value and acquire new sources of revenue, it will be necessary to bring new products and services into society that meet customers' potential needs, rather than attempting to meet all of their fragmented actual needs. By providing products like the Nintendo DS[®*2] and Wii[®*3], Nintendo Co., Ltd. has met the potential need for games that can be enjoyed simply and intuitively, resulting in a large expansion in game hardware and software revenue and increasing the scope of the sluggish game market.

C. Christensen concluded that innovation leading to the creation of new markets does not result when new product development is done based directly on customer requests [1]. In other words, it is possible to discover customers' actual needs by listening to them and analyzing interview results, but they are not even aware of their potential needs, so they cannot be drawn directly from customers. This is even more true for today's customers and their diversifying values and lifestyles. A new framework for developing new services based on potential needs, which was not conventionally done, is therefore needed.

The "My DOCOMO Labs" site, which has been open since April, 2008, implements an initiative to ask questions of customers, drawing out these potential needs and applying the results to product development. Through this initiative, we have established a framework for developing new services and creating services to meet customers' potential needs.

In this article, we describe the need for a new framework for service development and give an overall explanation of the framework. We also outline the concrete initiative called "My DOCOMO Labs," and plans for its future development.

2. Framework for New-value Creation: "Co-creation"

In order to create new value, a new approach to value-creation frameworks is needed, different from conventional approaches with a corporate focus, and characterized by marketing (**Figure 1** (a)). C. K. Prahalad has identified co-creation as an important approach, departing from conventional value-creation frameworks [2].

Co-creation refers to a process where a company and its customers cooperate in creating value, instead of the one-way movement of conventional processes, from the company to the customer, or from customer to the company. In co-creation frameworks, the company presents a concept to customers in the form of a concrete proto-
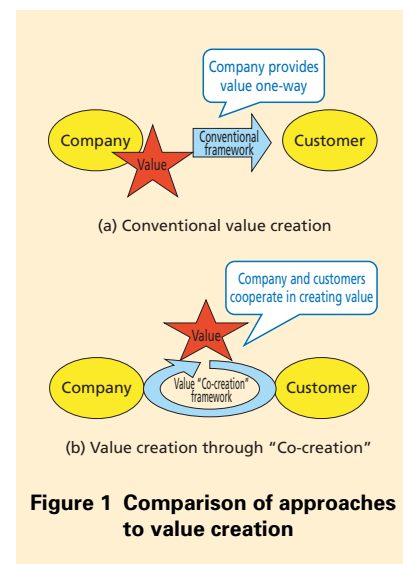
type and gathers responses and opinions, which it then applies to the prototype. By providing a framework where customers can participate from the planning stages, potential needs are actualized and made concrete, creating new value (Fig. 1 (b)).

As mentioned previously, potential needs are those that customers are not yet aware of, so services meeting these needs have potential for high added-value. However, whether customers accept a product or service is not determined by rational factors like usability or convenience, but depends on feelings like whether they "like it," or it is "interesting." This brings much uncertainty and risk in commercializing a product [3]. In a co-creation framework, this uncertainty can be eliminated by involving customers cooperatively from the planning stages. As an example, Yamaha Corp. uses the "Music e club®,"*4 music portal Web site to announce plans for proposed products they have designed, and feed customer comments back into the development process. This has led to the development of hit products like the "Hikaru Guitar" (EZ-EG) and the "Singing Trumpet" (EZ-TP).

In addition to eliminating uncertainty in product development, co-creation frameworks can also help to increase value. Customers sometimes come up with uses for products not anticipated by the developers after the product is released, and by feeding this informa-

tion back into the product, new value can be created. As an example of this, NISSIN FOOD PRODUCTS Co., Ltd. took a hint from customers preparing their SEAFOOD NOODLE product using hot milk, to develop a new, "MILK SEAFOOD NOODLE" product, which was also a hit. With co-creation frameworks, it becomes easier to get this sort of feedback about new product uses from customers because of the close link between company and customer.

Besides the examples mentioned above, co-creation initiatives and the number of companies undertaking them have been increasing in recent years. At NTT, they will provide an information environment with the flexibility and extendibility of the Internet together with the stability and reliability of the fixed-line telephone network through Next Generation Networks (NGNs)*5, but they are also establishing a "Next-

Figure 1 Comparison of approaches to value creation

generation-service co-creation forum" to support co-creation of new businesses using this NGN. Through activity on this forum, they hope to encourage the activities of ambitious companies and individuals and to collaborate with them. The co-creative approach is becoming more important in producing new value in this way.

3. "Co-creation" Frameworks

An overview of a framework for co-creation of services with customers is shown in **Figure 2**. The framework functions by providing a prototype service and obtaining feedback through close links with customers and related companies, co-creating services that satisfy potential needs. Also, by proactively announcing technical information from NTT DOCOMO R&D, we can work with customers to co-create the future direction for services and technologies as well as NTT DOCOMO's appeal as a technical leader.

1) Providing Prototype Service

The prototype service department provides prototype services to customers that apply for them, based NTT DOCOMO's vision of future mobile phones. Customers can freely state and discuss their opinions, and useful ideas are selected from these. These results are studied, analyzing for potential needs and future marketability. The prototype services are improved and the direction of future services is decided based on this analysis. NTT DOCOMO can share the future direction with customers through repetition of this process. Technologies from related external companies are also introduced, allowing promising technologies to be incorporated in services if they are aligned with the direction of future services.

2) Announcing Technical Information

Rather than simply explaining them, new technologies from NTT DOCOMO R&D designed to support the future vision are presented proactively in a

form that customers can understand easily through visualization or experience. Feedback from customer responses is gathered and analyzed, and the results used to add new technology to services or verify the technical direction.

By establishing a new framework as described above, evaluation from customers can be obtained from the service-planning stages, allowing co-creation of services with customers. Furthermore, it also becomes possible to improve NTT DOCOMO's leadership image through proactive announcement of the latest technology. We can also create new services satisfying potential customer needs across wide-ranging fields by strengthening external communication, such as links to companies related to our various business divisions, and internal communication, by announcing ideas and sharing feedback based on background in the various internal divisions.

4. The "My DOCOMO Labs" Initiative

4.1 Overview of "My DOCOMO Labs"

"My DOCOMO Labs" is an experimental Web site designed to co-create services that produce new value together with customers, and to distribute information about upcoming services and new technologies from NTT DOCOMO R&D. Its objective is to co-create future services together
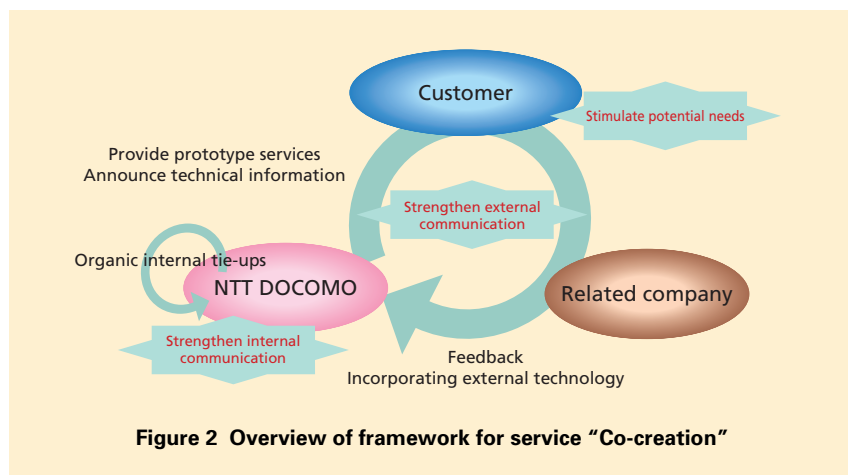

Figure 2 Overview of framework for service "Co-creation"

by sharing and having customers identify with NTT DOCOMO's vision for mobile phones, and gathering their suggestions and opinions. An image of the Web site is shown in **Figure 3**.

4.2 Overview of Services for the Near Future

1) Cocowa

"Cocowa" is a service that uses the portability and real-time nature of the mobile terminal to allow users to record their thoughts at the current location, to find comments and other information about a place or thing, and to use mapping and location information to publish this type of information. In the future, not only will you be able to contribute text, image or video information to a map, but the service will allow you to contribute information by tagging objects in real space, and to view this information using cameras and Head-Mounted Displays (HMDs)[*6], creating a fusion of real and virtual worlds (**Figure 4**).

2) Omoide Frame

"Omoide Frame" is a photo communication service which uses a simple and informal interface with a theme of family connections. This new communication service helps strengthen the connection between family members living far apart by allowing stored memories to be shared easily. Even the elderly, or others that may not have technical skill, can easily view photographs sent to them from mobile terminal by simply plugging in a power cable. In the future, the service will offer not only photographs, but will store and share the unlimited memories of a whole life of experience, and be able to fill a living area with memories, like ambient music, without the need complicated devices such as PCs or mobile terminals (**Figure 5**).

4.3 Implementation Status

"Cocowa" and "Omoide Frame" experiments were conducted through "My DOCOMO Labs" starting in April 2008 and the service evaluation results are now being analyzed. Before performing the customer experiment, the Omoide Frame service concept was pre-tested in an NTT DOCOMO-internal test on the NTT DOCOMO intranet and generally received a positive response. We also received suggestions for several uses not anticipated by the developers, such as displaying output on a large display at a wedding, or using it as a communication tool between employees.

5. Conclusion

We have described the need to stimulate the potential needs of customers and provide new value in the current environment of increasing competition among mobile operators and have given an overview of "My DOCOMO Labs," whose goal is to create new value by
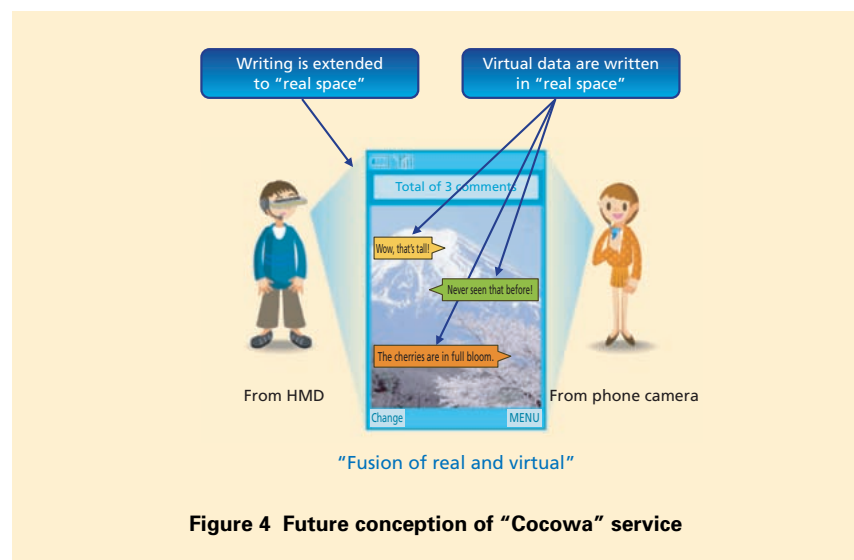

Figure 3 Screen shot of the "My DOCOMO Labs" Web site

Writing is extended to "real space"

Virtual data are written in "real space"

Total of 3 comments

Wow, that's tall!

Never seen that before!

The cherries are in full bloom.

From HMD

From phone camera

Change   MENU

"Fusion of real and virtual"

Figure 4 Future conception of "Cocowa" service

*6 **HMD**: Display equipment that is mounted on the head, with screen(s) placed directly in front of the eyes. In addition to displaying simple video, HMDs are also used as virtual reality devices, with techniques like presenting different images to the right and left eyes to create a 3D image, or creating a virtual visual field by changing the images in accordance with head movements.

Figure 5 Future conception of the "Omoide Frame" service
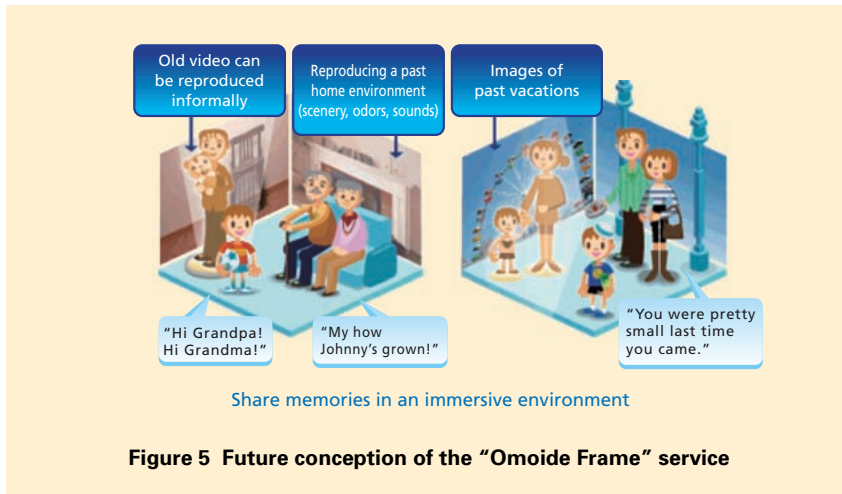
studying these potential needs through public experiments. We also described some of the services provided by "My DOCOMO Labs." In the future, we will update the site each quarter with several items regarding upcoming services or technical information, and make on-going improvements to these services based on customer feedback. We will continue to co-create new services, using both internal and external technology, in collaboration between NTT DOCOMO, our customers and related companies.

REFERENCES

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[3] M. Saotome and M. Gunji: "Co-Creation Management Strategy," Mitsubishi Research Institute Club, Vol. 15, No. 2, pp. 32-35, Feb. 2008 (in Japanese).