Creating Epoch-making Services that Excite Users

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Abstract

When the telephone first made it possible for people to chat with friends hundreds of miles away, and when the Internet made it possible to obtain thousands of books' worth of information without having to visit a library, people were excited by these technological advances. NTT Service Evolution Laboratories has set itself the challenge of developing technologies for the creation of new services that will generate as much excitement as the phone and Internet did. This article presents an overview of our work.

Keywords: highly realistic, agents, big data

1. Services based on four viewpoints

NTT Service Evolution Laboratories (EV Labs) has set itself the goal of creating exciting new services by 2020. With the aim of contributing to the success of the Olympic and Paralympic Games and other events to be held in Japan during that year, we are promoting research and development (R&D) of services that excite users from the following four viewpoints (see **Fig. 1**):

(1) Shared excitement: Sharing our excitement with people from all over Japan and from the rest of the world during the 2020 international festival
(2) Supporting growth: Addressing questions about what information and communication technology (ICT) has to offer for the growth of society
(3) Optimal navigation: Understanding the current location and situation, discovering the causes of any problems, and dealing with them effectively
(4) Hospitality by ICT: Providing the best possible hospitality with the latest ICT, to maintain a culture where all people can enjoy the convenience of ICT equally

1.1 Shared excitement

During international soccer matches, many users support their teams at public viewings in places with large screens such as in sports bars and in open areas outside train stations. Users gathering in the same place can be drawn into the ups and downs of the match, and when their team wins, they experience the same excitement as people who are actually at the stadium.

We expect that public viewings will be introduced for a more diverse range of sports in the future and will happen in more places. At EV Labs, we are conducting R&D aimed at providing more realistic match viewing, forming large screens more easily, distributing content simultaneously all over the world, and appropriately sharing content. Further details can be found in the article "Developing Technologies for Services that Deliver the Excitement of Games Worldwide" [1].

1.2 Supporting growth

If you think back to the time when you first learned to ride a bicycle, or when you first managed to swim 25 meters, you may recall that these achievements did not happen in isolation but occurred with the help of others such as family, friends, and teachers. Support is considered to include not only teaching ways of realizing goals, but also providing verbal encouragement (e.g., a mixture of praise and constructive criticism).

To offer support, it is first necessary to know about

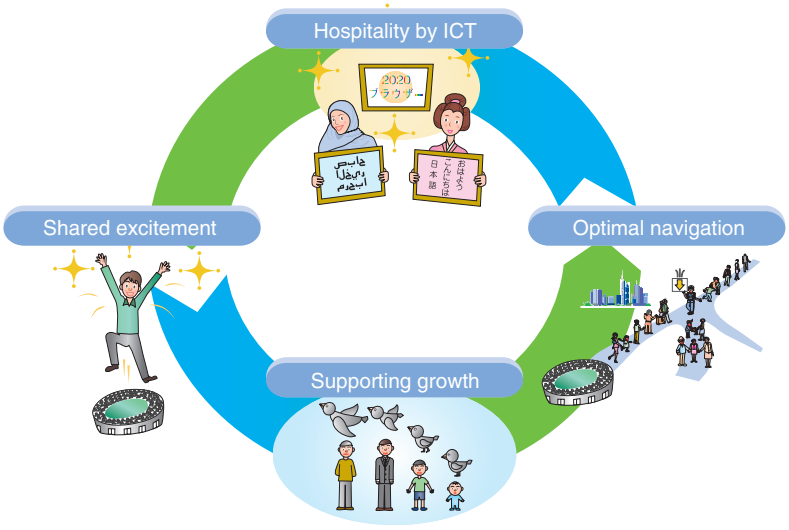

Fig. 1. Creating services that excite users.

the user's situation. Once that has been done, assistance for growth is provided by interacting with the user by giving a pep talk in order to decide how support should be provided. Since each user has different needs, the needs must be personalized. At EV Labs, entities called *personal agents* are being developed to provide personalized growth support. To ensure the convenience of users, the data and know-how accumulated through interactions with users should be stored on the network side (e.g., in the cloud), and should be accessible at any time as the users grow. This also means that the system should not be reliant on any particular type of network. Further details can be found in the article "Personal Agents to Support Personal Growth" [2].

1.3 Optimal navigation

If we could create a system that would make it possible for people to arrive at their destination without getting lost or stuck in traffic, it would be very convenient for users. One might even say that an optimal navigation system could help users to discover new things and find things they are interested in by making stopovers to fill up spare time instead of always taking the shortest path to the destination.

To realize such a system, we first estimate where the user is, and how the user is moving. Then we predict the motion as a crowd targeting a huge number of users.

Optimal navigation is implemented by analyzing individuals and groups. There are many different usage scenarios, but we are considering a framework that allows navigation in disaster situations. Further details can be found in the article "Proactive Navigation Optimized for Individual Users" [3].

1.4 Hospitality by ICT

People traveling overseas can feel anxious about many different things such as potential difficulties with the local language and food. Many foreigners will visit Japan in 2020, and we are investigating ways to provide useful services for them, such as providing information on food that is translated into their native language. Further details can be found in the article "Creating *Omotenashi* Services for Visitors and Spectators in 2020" [4].

We are also studying the form in which information can be suitably provided not only to foreigners but also to people of any nationality, gender, or age. For example, it will be necessary to consider language notations that require vertical writing or are dependent on the language characteristics of specific countries. Other considerations include providing *ruby* characters (pronunciation guides) for users who are unable to read *kanji*, and large characters for users who are unable to read small print. Hospitality will be provided by building on previous work relating to universal web design initiatives and behavior observations. Further details can be found in the article "Towards the Creation of Attractive Services Based on an Understanding of Users" [5].

2. Future development

Some aspects of the initiatives discussed in these Feature Articles—such as their commercialization and applications—are being studied together with partner companies. This makes it essential to facilitate co-innovation through collaboration. Further details can be found in the article "Efforts toward Co-Innovation Promotion" [6]. We will continue to promote research so that the services created through the efforts of EV Labs will one day be described as epoch-making.

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