November 28, 2000

# Market Creation Activity for Cultivating Demand for Hikari Services

- NTT will explore Hikari business opportunities with external partners -

## Introduction

NTT has been exploring business opportunities with an eye to bringing about the transition from the traditional telephone-centric business to the information sharing business befitting the multimedia age. The market is undergoing a dynamic change. The explosive growth of the Internet as well as the rapid progress in the US and other countries towards broadband networks is making the multimedia society (more recently referred to as the IT society) a reality. In consideration of these developments, we would like (1) to clarify our service vision, which centers on the use of "photonic" networks to bring about the fully-fledged broadband services required in the 21st century, and (2) to describe our approach to the cultivation of business opportunities in cooperation with partners and the development of the necessary service infrastructure, with the objective of creating "Hikari" businesses enabled by photonic networks. ("Hikari" is the Japanese word for "light." We have used it to suggest "optical" and "photonic." Hikari also implies the concept of "forefront," "hope," and "innovation" as we propose a new life style to consumers.)

## 1. Trends in broadband services, and NTT's approach.

In the future, by 2010 at the latest, the virtual world of the Internet will be closely linked to the real world, and various devices, including even some simple appliances, will be connected to the Internet, making virtual information more and more realistic. Under such circumstances, the virtual world will increasingly function as the environment for the real world and will lead to the formation of new cultures and societies.

NTT is introducing broadband networks to bring about the development of the above-mentioned environment. Although some argue that DSL and CATV, which are being introduced in the US and other countries, are fast enough for the broadband Internet of the future, NTT is of the view that the rate of a couple of Mbit/s is a far cry from what will be desired in a few years time. At the least, the broadband service should allow the viewer to enjoy the broadcast-quality TV that he or she has grown so accustomed to. Such high performance can only be achieved by fiber-optic networks.

From December this year, NTT East and NTT West will start operating a high-speed fiber-optic Internet access trial service at the maximum rate of 10 Mbit/s in parts of Tokyo and Osaka cities. This trial service represents the Mega Media concept announced in 1996 (10 Mbit/s at 10 thousand yen scheduled for 2005), now brought

forward by five years. In May this year, the Wide LAN service was offered in Kanazawa and other cities. The year 2000 will indeed be remembered as NTT's "Hikari Year One" in the history of the photonic network services.

Competition in fiber-optic communication has already started as competitors have begun to install optical fibers to their customers. NTT makes it a policy to introduce optical fibers where there is a demand. NTT therefore considers that, if it wishes to expand the optical network infrastructure in a competitive environment, it will also have to cultivate a demand for it.

In addition to the movement in the infrastructure area, there are expanding businesses in other areas that promise to encourage the introduction of broadband services. Music, video and other diverse and rich content is being circulated today, and new service platforms have emerged, such as an interactive TV platform and broadband portals. The budding of broadband is also evident in the terminal and home appliance field, where home gateways and high-capacity games machines are being placed in the market.

NTT will foster the demand for photonic-based applications by developing business models appropriate for the expected photonic age, in partnership with groups working in different fields such as those mentioned above. This effort will generate new demands or expand existing demands, which in turn will encourage strengthening of the infrastructure, resulting in a positive spiral of growth.


## 2. Development of Hikari-soft service infrastructure

In the photonic age, the environment for network services will evolve from a war based simply on price to one based on the ability to fully utilize the network's capabilities for service. In recognition of this evolution, NTT is speeding up the circulation of rich content, which is only possible with a photonic network offering features such as super high-speed download and high-quality video delivery, and is accelerating the creation of new applications, such as new network business tools. It is doing this by building the Hikari-soft service infrastructure for value-added services, which will allow maximum use of the characteristics of the photonic network, "high speed and broad bandwidth," "interactive capability," and "ability to integrate composite media." NTT calls such an information sharing service backed by the characteristics of the optical network "Hikari-soft service," and refers to its infrastructure as the "Hikari-soft service infrastructure."

With a view to providing Hikari-soft service, NTT will harness its powerful R&D resources in what may be called breathing a new vitality into the optical network that has been extensively installed in anticipation of the advent of the broadband age. Specifically, besides the optical network, NTT will advance research into the information-sharing platform that allows conveyance of greater reality through interactive high-quality video transmission, and provides a safe and secure use of the network. NTT will also develop applications and services for Hikari-soft services that will be provided over this infrastructure.

In our R&D on the service infrastructure, the different parts of the infrastructure, such as the network, the information sharing platform and network terminals, are all integrated in such a way that they are tuned to each service category. As our target services, we have identified three categories listed below, each of which is expected to

be profoundly influenced by the availability and capability of the optical network. These will be our primary R&D targets.

1) "Hikari content": high-quality delivery of digital content, specifically targeted at the broadcasting, publishing, music and entertainment industries.
   Examples)
   - Personal video broadcasting and digital cinema, which capitalize on the "high speed and broadband" nature of the optical network,
   - Hyper-broadcast, which represents the convergence of communications and broadcasting, and which capitalizes on the optical network's ability to "integrate composite media."

2) "Hikari commerce": e-commerce that can transcend real-world shopping, specifically targeted at the distribution, logistics and finance industries.
   Examples)
   - 3D browsing of merchandise and high-definition catalogs, which capitalizes on the "high speed and broadband" nature,
   - Virtual fitting room and consultation with sales stuff, which capitalizes on the "interactive" nature,
   - Interactive commercials, which capitalize on the ability to "integrate composite media."

3) "Hikari community": sharing of a super virtual-reality space, specifically targeted at telecommunications, medical care and welfare, environment and public service.
   Examples)
   - Multi-location family home, high-quality community video discussion, network consulting, and virtual campus, which capitalize on both the "high speed and broadband" and "interactive" characteristics.

## 3. Cultivation of business opportunities by recruiting partners

In cultivating demand, the NTT Group (in which the operating companies and R&D divisions will work closely) will form partnerships with content providers, service providers (xSP), home appliance manufacturers, etc., to jointly study business models, and verify business feasibility by actually providing service to general users.

Our plan is to build a Hikari-soft service infrastructure on top of the high-speed fiber-optic Internet access trial service mentioned earlier in a selected area by April 2001, and provide our partners with the environment in which they can create businesses that generate Hikari demands. NTT calls such exploration of the market with partners "market creation." Market creation is the cultivation of demand through real implementation and operation of business and thus is quite different from our field trials, where the main objective is system and functional verification.

We hope that the companies that are studying the possibility of a business trial in order to generate new Hikari-soft business will form partnerships with the NTT Group and use the Hikari-soft service infrastructure. The NTT Group will not only make the trial environment available but also extend its technical support on the use of the photonic network.

The trial will start at the rate of 10 Mbit/s, but NTT will develop, with its partners, applications and business models that assume the availability of an access service at up to 100 Mbit/s. In this way, all the members of the NTT Group will work together to bring about the early growth of the Hikari-soft service.

Since May this year, as part of trials of business feasibility on the optical network, NTT has been conducting the "FTTH Kanazawa Trial" to cultivate regional information-sharing business using optical network access and information home appliances. From December 2000, "NTT West Cyber Business World (see press release of November 27) will start to verify business models with the participation of content producers and consumers. This pioneering move toward fostering a viable Hikari-soft service is the first step in our all-out efforts on market creation.

## 4. Participation in the Hikari Service Architecture Consortium

Before this press release, there was an announcement that the "Hikari Service Architecture Consortium" (leading promoter: Professor Hiroshi Yasuda of the University of Tokyo) will be established (scheduled for January 2001) to study modeling of the service architecture and to specify business rules and interface details between different systems with the objective of encouraging various industries to cooperate in building and providing services. As one of the promoters of the Consortium, NTT will extend its strong support to the Consortium in the effort to create standards in both technology and service concepts, which hopefully will prove to be accepted as de facto, in cooperation with a broad spectrum of industries. In so doing, NTT will contribute to the growth of the IT industry and transform the results of the Consortium's work into the actual deployment of Hikari-soft services.

## Conclusion

In order to bring about the IT revolution based on the photonic network, NTT is promoting R&D on the Hikari-soft service infrastructure and the development and provision of Hikari-soft services, and contributing to the cultivation and expansion of the demand for fiber-optics in cooperation with a variety of industries and general users.

[ Contacts for inquiries ]

Oku / Nakamura
HIKARI Service Promotion Project
Research and Development Sector, NTT

Phone:     0422-59-3504

FAX:       0422-59-5583

Email:     hikari-info@lab.ntt.co.jp

**URL: http://www.ntt.co.jp/RD/hikari/**

(To be available from December 8, 2000)



NTT NEWS RELEASE