

Special
Feature

“Today’s Innovation is Tomorrow’s Basic”



At DNP, we take an active approach to business, based on our awareness that “Today’s Innovation is Tomorrow’s Basic.” We work hard to expand our businesses in the medium and long terms.

As societies around the world undergo major changes, including changes to consumers’ lifestyles, the problems we need to solve are becoming more complex and more diverse. Especially in Japan, there is increasing demand for better quality of life in our “ultra-aging” society, for the nurturing of children who will carry future generations, and for answers to problems such as how to find ample supplies of clean, renewable energy and how to preserve our global environment. This situation presents an opportunity to lead the world in addressing these problems and offering solutions for them.

DNP intends to make the most of this opportunity. We will combine our printing technologies and other strengths in seeking solutions to these problems, and we will generate many products and services that consumers will want to have near at hand as “basic” aspects of their daily lives. We aim to help create a pleasant, abundant future in which the world’s many problems have been solved.

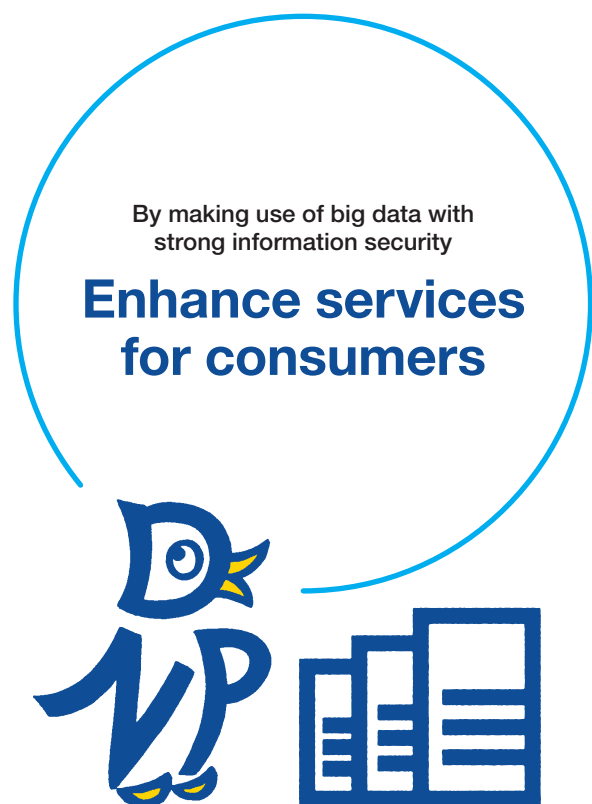
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“DNPenguin” is an original character formed from the letters “D, N, and P.” We make use of this character to introduce DNP’s products, services, and corporate activities in ways that are easy for the public to understand: in our showrooms, in newspaper and television advertising, on our websites and at exhibitions, etc. “DNPenguin” was born in May 2012, in order to add a point of contact between DNP and consumers, and to increase our corporate brand value.

Making Use of Big Data

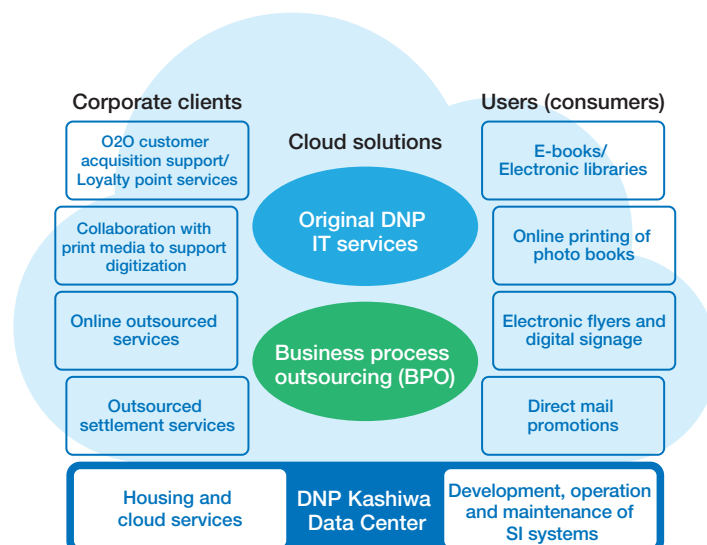
New cutting-edge data center allows secure and reliable use of personal information and other sensitive data



*Market size: Economic impact of big data usage on retailing estimated at roughly 1 trillion yen in the fiscal year through March 2017 (according to data from the Development Bank of Japan)

In December 2013, we began operating our new DNP Kashiwa Data Center as the basis for safe and reliable operation of our consumer-oriented services, such as our e-book stores, electronic library services, and photo book production services, as well as services aimed at DNP's corporate customers. The new center is equipped with strong protections against data leakage, earthquakes, and fire.

By adopting the cloud technology of Nihon Unisys, Ltd., we intend to use this new facility to appropriately manage “big data,” including consumers’ service usage and purchasing histories, in order to increase the business value of DNP’s information services.



DNP’s electronic library service improves convenience for both libraries and their users

In April 2014, DNP began offering—in collaboration with Nihon Unisys, Ltd., Toshokan Ryutsu Center Co., Ltd. (TRC), and Maruzen Co., Ltd.—a cloud-based electronic library service that makes use of its new data center.

The service provides public and university libraries with e-books and the system tools they need in order to construct and operate electronic libraries. By using our data center with its high degree of information security and flexible expandability, DNP can identify the preferences of each library user based on stored borrowing histories, and use that information to recommend electronic books.

We can provide about 10,000 titles from a variety of fields including art and literature, business, language learning, and

specialized fields, and we are continuing to expand our lineup. Because DNP handles everything from content transmission to purchasing management, we can lighten the management burden on libraries and sell e-books at the same time.

DNP planned and designed the overall electronic library service, while Nihon Unisys handles design and development of the necessary systems and provides the cloud environment. Mobilebook.jp Inc., a DNP group company, procures most of the e-books. TRC provides the service to public libraries while Maruzen provides it to university libraries. We will continue to enhance the service in line with requests from consumers and library operators as we aim to sign up 300 libraries within five years.

Total support for pleasant shopping experiences

DNP helps consumers enjoy pleasant and satisfying shopping experiences by providing optimized information services based on understanding each consumer's individual lifestyle through product search histories and purchase histories, etc. DNP makes shopping more convenient for consumers and supports the sales promotion efforts of corporate clients by offering devices that make consumers want to go to certain stores, incentives that induce them to purchase once in the store, and services that increase communication with consumers in a variety of venues.

Building new infrastructure for communicating with consumers

"Recepi!" is DNP's original household budget-tracking application, which allows users to easily create a record of household expenses by simply photographing cash register receipts with a smartphone. Not only does "Recepi!" allow users to manage their daily expenses, but it proposes recipes that use the foods they purchase and distributes information about discounts, etc., tailored to each user's purchasing information. We are working on developing new communication services that link consumers with distributors and manufacturers, for example through a data tie-up between "Recepi!" and the e-receipt system developed by Toshiba Tec Corporation. During the year from July 2013, when we began distributing the application, to June 2014, the application was downloaded more than 800,000 times and 20 million receipts were registered, indicating that many consumers are using the application on a daily basis.

The core idea of "Recepi!" is a sales promotion model that follows consumers' buying habits, and we plan to continue developing it in tandem with the Orikomio! e-flyer service that we started in 2001. DNP's idea of web-based sales promotion is not mass distribution of the same information to a large number of consumers indiscriminately, but rather to customize the most appropriate information and provide it in accordance with each person's buying history. Going forward, we will continue to respond in detail to consumers' specific needs.



In March 2014, we used our "Recepi!" technology to release an application called "Recepre" that enables users to respond to special offers simply by using their smartphone to scan their sales receipt. The application makes it easy to apply for prizes offered only to purchasers of a specific product, unlike in the past when consumers had to affix their receipt to a postcard and send it in by mail. The system has already been adopted by major food manufacturers and sporting goods makers, and its use is spreading.

Store-brand O2O smartphone applications

Recently we have seen an increase in smartphone-based O2O (Online to Offline) services that send customers to stores or encourage them to buy. DNP has developed a cloud-based O2O service called "PASSMART," which it began providing in November 2013.

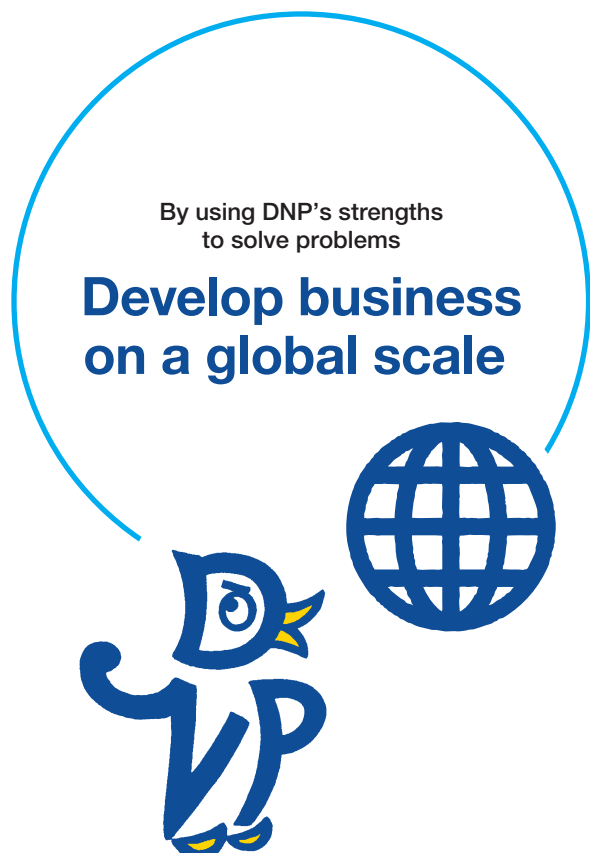
Companies can use "PASSMART" to quickly build their own smartphone application for consumers to use. The companies can update the news, coupons, membership cards and online flyers that they distribute through their application at any time, making it easier for consumers to keep track of these benefits. The service includes usage logs and functions that help measure the effectiveness of sales promotions.

"PASSMART" is being used by a variety of industries, including supermarkets, drug stores, specialty shops and other retail businesses. In the future, we intend to form links with other services—both inside and outside DNP—and expand this service to serve as a mode of interactive communication between companies and consumers.



DNP’s Global Development

Working to solve a variety of problems for the whole world



*Market size: Average GDP growth in Asia in 2015 forecast at +6.4% (according to the Asian Development Bank's "Asian Economic Outlook 2014," covering 45 Asia-Pacific countries and regions excluding Japan, Australia and New Zealand)

Today, the whole world seeks solutions to social issues like minimizing the burdens that humans place on the environment, using energy efficiently, ensuring the safety and reliability of food, clothing and shelter, and adopting universal design. DNP looks beyond Japan to the entire world as we seek to “make the best use of our strengths” in our thorough responses to problems shared by the whole world as well as to problems specific to certain regions.

Ever since we opened a Hong Kong office in 1964—half a century ago—we have actively developed our overseas business and expanded our operating locations in Europe, Asia, North America, Australia and elsewhere. Lifestyles of people in the ASEAN countries are changing especially rapidly today, giving rise to higher expectations for DNP goods and services that are needed for comfortable living and that deliver outstanding functionality. Below are some examples of global initiatives we undertook in the year ended March 2014 in response to the needs of these markets.

Packaging

Increasing production capacity, mainly in Southeast Asia

In 1972, DNP perceived a business opportunity amid the lifestyle changes and social changes that were taking place in Indonesia. Aiming to spread Japan's “packaging culture,” we established PT DNP Indonesia that year. By firmly establishing ourselves in the region and providing high-quality, cost-competitive products and services that meet diverse needs, we built solid relationships of trust with manufacturers that do business worldwide, and with other corporate clients. Especially in the area of high-added value film packages, including barrier films for wrapping foods and household items, we captured more than half of the Indonesian market.

In May 2013, we commenced operation of a new film packaging plant in Vietnam, where economic growth remains strong. By improving packaging functionality and reducing environmental burdens at the same time, we expect this plant to post 5.0 billion yen in sales in the fiscal year through March 2017. DNP aims to be a packaging manufacturer that plays an integral

role in the region by having the new plant and PT DNP Indonesia cooperate to develop products and services that are suited to the climate and lifestyles of the Indochina and surrounding countries.



Examples of DNP packages made outside Japan

Imaging Communication

Using DNP's global make-up systems to actively develop business

In the 1980s, DNP applied coating and other technologies cultivated through its printing business to the development of two types of thermal transfer printing media: dye-sublimation and thermal resin. Today, DNP is among the top suppliers of both of these types of products worldwide.

In recent years, there has been a worldwide shift in the photo printing market from using wet methods involving developing solutions to dry methods that do not require liquids developers. Among the dry methods, dye-sublimation systems have won praise for producing virtually instantaneous prints, and because the necessary equipment costs less and is easier to maintain compared to wet methods.

Demand for ID photos, souvenir photos at tourist destinations, and other instant photo printing is growing especially quickly in Southeast Asia. In December 2013, DNP completed construction of a plant in Malaysia to produce dye-sublimation materials for photo printing in order to meet this demand, particularly in emerging countries. The new plant uses an integrated production system to perform every process from coating to packaging in-house, in order to better respond to customers requirements and deadlines. We aim for net sales of about 4.0 billion yen in the fiscal year through March 2017. Going forward, we will use our capacity for developing printing systems and software, in addition to development and production of print media, in order to provide convenient products and services for consumers' enjoyment.

Meanwhile, most growth in demand for thermal resin-type

media is related to printing barcodes, which are used mainly in manufacturing and logistics control. More than 40% of worldwide demand for these products comes from North, Central and South America. In order to strengthen our supply framework to meet this demand, in May 2013 we augmented the production equipment at our Pittsburgh thermal resin-type media plant in order to greatly reduce lead time and expand our business.



Malaysian plant



Dye-sublimation thermal transfer printing media



Barcodes printed with thermal resin-type printing media

Smart Cards

Boosting the competitiveness of DNP's smart card business in Southeast Asia

In 1981, DNP became one of the first companies in Japan to manufacture, issue, and develop software for smart cards. Ever since, we have continued to lead the Japanese market as we provide smart card-related solutions in a variety of fields including finance, communications, distribution, and transportation.

Recent years have seen soaring smart card usage in Southeast Asia, for applications such as credit cards, prepaid cards, SIM cards for mobile phones, transport tickets and electronic toll collection (ETC). In response to this growth in demand, DNP agreed to form a business and capital tie up with MK Smart Joint Stock Company (MKS), Vietnam's leading company in manufacturing and sales of smart cards, and in March 2014 we acquired shares in MKS.

MKS is the only company in Vietnam that is authorized to manufacture and issue global brand prepaid cards, and it supplies all types of smart cards as Vietnam's top manufacturer. In the future, DNP and MKS will increase their competitiveness in the world market by making use of DNP's advanced smart card-

related technological abilities, and will provide smart cards to the whole world with a focus on Southeast Asia. Also, as Vietnamese demand for BPO services is expected to increase, DNP will use the expertise it has cultivated in Japan to accelerate BPO development in Vietnam.



MK Smart's Hanoi plant

Creating Homes for the Future

Contributing to healthy and comfortable living



*Market size: The Japanese government's goal for the existing home distribution and renovation market by 2020: 20 trillion yen (from the "Comprehensive Plan for Existing Housing and Renovation" by Japan's Ministry of Land, Infrastructure, Transport and Tourism)

Regardless of how times change, consumers' persistent desire for healthy, fulfilling and comfortable lifestyles continues to present major business opportunities. In our view, one of the most important elements of a comfortable life is a home.

Home is where we spend a great deal of our time. When we buy a home, it is a major purchase. Most people probably choose their home with an eye toward the future; for example they consider how it will affect their children's growth, their family life, work, and life after retirement. Thinking about one's home means thinking about one's future.

In 1951, DNP became the first company in Japan to succeed at continuous printing of wood-grain decorative materials which could be installed with highly inconspicuous seams. Ever since, we have continued to provide a variety of products that lend color to residential spaces. Allow us to introduce DNP solutions that contribute to comfortable living so that homes can remain comfortable even as times change in the future.

“Living Space” solutions centered around EB technologies

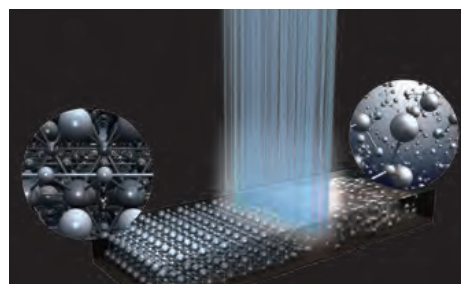
DNP views homes, offices, medical and nursing care facilities, automobiles, railroad passenger cars and anywhere else where humans spend time as “living spaces.” We develop and provide many types of products and services aimed at the various “living spaces-related” companies that are our clients. As we develop our business, we keep in mind a number of concepts that are indispensable to the development of living spaces, including environmental and energy conservation, safety and reliability, health and comfort, and compatibility with an aging society, smart homes, and smart cities.

Electron beam (EB) technology is the core proprietary technology that supports DNP's comprehensive “living space solutions.” DNP has applied for more than 1,000 patents related to this technology. By incorporating EB exposure in the manufacturing processes of all kinds of surface materials such as floor, wall and door coverings, the functionality of the surface is instantly increased. Not only does the product become more resistant to abrasion, deterioration and fading, it also becomes easier to maintain since dirt can be easily wiped away. Compared to conventional methods using thermosetting, EB technology-based manufacturing processes use less energy, entail less emission of greenhouse gases, and do not involve any of the 13 substances regulated by the Japanese Ministry of Health, Labor and Welfare as causes of sick house syndrome. In other words, EB technology is a next-generation technology that is friendly to

consumers and to the environment.

In Japan, growth in the home renovation market is expected to outpace growth in new home construction as existing homes become outdated while family composition and lifestyles continue to change. This being the case, we expect to see increasing demand for interior and exterior materials that are outstandingly durable and functional, friendly to both inhabitants and the environment, beautiful and comfortable to live with.

DNP offers total solutions encompassing everything from materials development to space design, coordination, installation and construction method development. Our aim is to create living spaces for a future in which consumers can enjoy comfortable lifestyles based on “functional value” mainly provided by EB technology, and “emotional value” mainly resulting from good design.



Conceptual illustration of electron beam (EB) technology

Broadening our lineup of Ellio products made by coating and printing directly on steel plates

Products in DNP's Ellio series, developed in cooperation with Nippon Steel & Sumitomo Metal Corporation, are made by directly coating and printing on steel plate, stainless steel, aluminum or other metal base materials developed by Nippon Steel & Sumitomo Metal. These products combine the fire resistance and other benefits of metal with authentic-feeling, luxurious textures. They are used in a wide range of applications including front entrance doors, bathroom unit wall panels, hotel and office building exteriors, elevator interiors and train car interiors (overseas as well as in Japan), and exterior panels for

refrigerators and other electric appliances.

In 2012, we developed "High-reflective, Light-diffusing Ellio," which effectively reflects natural and artificial light, thereby brightening the space where it is installed by diffusing indirect light into every corner. Using this material on walls and ceilings helps reduce the amount of energy required to light the space. In addition to making efficient use of solar light and heat and other natural energy sources, DNP will continue to focus on developing eco-friendly lifestyle materials that provide excellent thermal insulation and light-blocking functions.



Ellio exterior product on a train platform waiting room

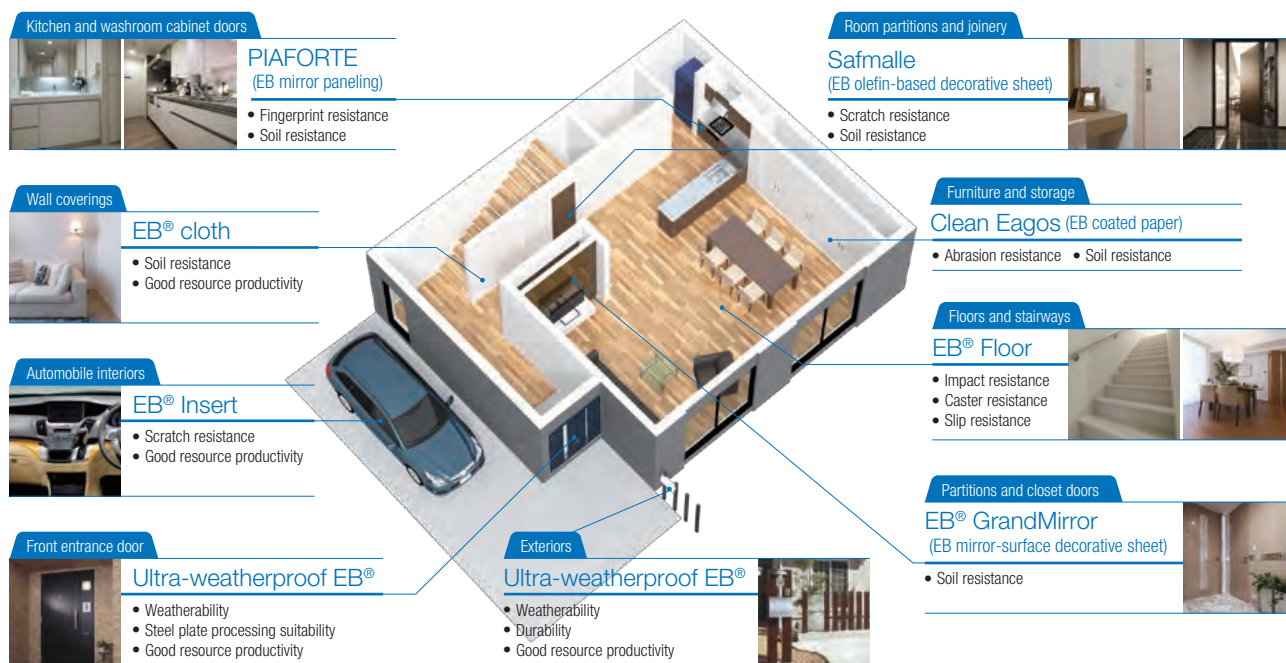


Ellio in a hotel interior application



Ellio applied to the exterior wall of a condominium building

EB Solutions for Living Spaces



Life Science Business Development

For a healthier tomorrow



*Market size: Global market for industries related to regenerative medicine is expected to reach 1.1 trillion yen in 2020 (according to a report on commercialization and industrialization of regenerative medicine by Japan's Ministry of Economy, Trade and Industry)

As populations age in many countries around the world, people are looking for better quality of life as well as for solutions related to medical care and pharmaceuticals. DNP views these types of business as part of its “Life Science” field, where it is concentrating on generating businesses that make use of its strengths in printing and information technologies.

In 1985, DNP applied its technology for making ink out of enzymes and technology for precisely transcribing minute patterns to the production of products such as urine testing paper. In 2004, in collaboration with Tokyo Medical and Dental University, we succeeded in forming capillary patterns on substrates. Building on this success, in 2008 we launched CytoGraph™, the world's first commercial cell culture substrates that enable the cultivation of cells in a variety of patterns and sizes.

Meanwhile, DNP has cultivated color management and 3-D image processing as basic printing techniques, along with information technologies including database system construction and management. These technologies are being used in a wide variety of fields, including cell evaluation for regenerative medicine and diagnostic support.

We intend to develop the field of life science into a new mainstay business for DNP.

Development of the world's first eye-shaped diagnostic system based on 3D MRI image analysis

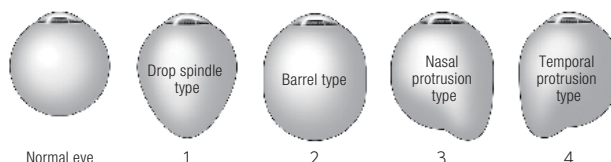
Nearsightedness (myopia) has been generally believed to be caused when the eye's crystalline lens fails to focus correctly, but recent research has shown that one reason for this failure is distortion of the eye globe.

In myopia involving this type of distortion, called “pathological myopia,” distortion of the eye globe itself affects structures such as the retina or optic nerve. It can also lead to problems that make it difficult to correct vision through eyeglasses or contact lenses, such as retinal detachment, glaucoma, or optic nerve damage. Pathological myopia is the number five cause of blindness. Since some 5% of people over 40 years old develop the disease, the number of cases will likely increase in the future.

Four patterns of eye globe deformity commonly found among Japanese with pathological myopia

There are four types of eye globe deformities associated with pathological myopia. (All of the images below are of the right eye globe viewed from below.)

1. Tapered in back, right-left symmetrical (called drop spindle or strawberry type)
2. Blunted edges, right-left symmetrical (barrel type)
3. Asymmetrical between right and left, with protrusion on the side facing the nose (nasal protrusion type)
4. Asymmetrical between right and left, with protrusion on the side facing the temple (temporal protrusion type)

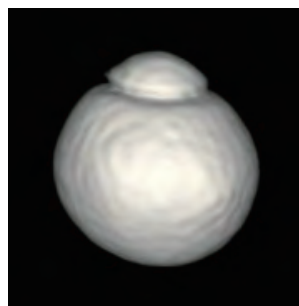


DNP collaborated with Tokyo Medical and Dental University on research into the causes of pathological myopia and development of technologies that can lead to early discovery and treatment. As a result, we developed the world's first eye globe shaped diagnostic system based on 3D MRI image analysis. This system, which was introduced at an academic conference in 2012, makes it possible to get a three-dimensional view of an eye globe and ascertain when distortion entails a high risk of leading to pathological myopia.

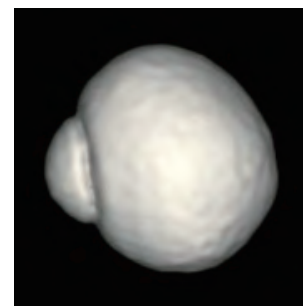
The diagnostic system makes it possible to accurately grasp the shape of an eye globe to allow more precise diagnosis. We expect this ability to lead to the development of a completely new treatment method whereby patients at high risk of developing pathological myopia will be detected early on so that the course of the disease can be curbed.

3D MRI image of an eye globe used in this recent study

A normal eye globe looks good from any angle.



Eye globe viewed from below



Eye globe viewed from nose side

Marketing of embryo culture dishes to fertility clinics

More than 240,000 in-vitro fertilizations were performed in Japan in 2010, as the procedure is becoming an increasingly common treatment for infertility. However it remains expensive, and the success rate declines as the age of the prospective mother increases, giving rise to demand for improved technologies for cultivating embryos fertilized outside the womb.

In 2011, while working with the University of Tokyo and the National Livestock Breeding Center on a collaborative study aimed at determining whether or not individual embryos were growing normally, DNP developed a culture dish with micro-wells for tracking individual embryos separately from others in the same dish. The dish was brought to market after thoroughly verifying its usefulness through testing using livestock embryos.

Based on the expertise that we gained through this project, we designed a new version for use by fertility clinics and succeeded in producing a dish that increases the likelihood of successful impregnation. After testing for various safety issues, including controls against bacteria and endotoxins, we completed development of the "WOW (Well-of-the-Well) Culture Dish" that makes it easier to observe and manipulate individual embryos within a group at fertility clinics. In cooperation with MM Yume Clinic, a fertility clinic in Yokohama, DNP tested the performance of its dish against that of the droplet culture method

currently used for in-vitro fertilization. Based on the dish's good performance in terms of embryonic development and blastocyst production, DNP decided to start full-scale marketing of the dish to fertility clinics.

The "WOW Culture Dish" makes it possible to individually manage embryos while cultivating them as a group by placing each embryo in its own minute depression, or micro-well. DNP began marketing it to fertility clinics in October 2013.

	New product	Droplet culture method	
	Culture medium Embryo Oil	Individual embryos	Multiple embryos
Individual management	○	○	×
Group culture	○	×	○
Ease of control	○	△	△

