

# Major Subsidiaries and Affiliates

(As of March 31, 2016)

## Printing

		Capital (¥ million)	Ownership ratio of voting rights (%)
DNP Hokkaido Co., Ltd.	General affairs, accounting work and other business services	350	100.0
DNP Tohoku Co., Ltd.	General affairs, accounting work and other business services	350	100.0
DNP Chubu Co., Ltd.	General affairs, accounting work and other business services	350	100.0
DNP Nishi Nippon Co., Ltd.	General affairs, accounting work and other business services	400	100.0
DNP Shikoku Co., Ltd.	Film making, printing, bookbinding; production and sale of packaging	50	97.0
<b>Information Communication</b>			
<b>Books and Magazines</b>			
DNP Book Factory Co., Ltd.	Film making, printing and bookbinding	200	100.0
DNP Media Art Co., Ltd.	Film making	180	100.0
OGUCHI BOOK BINDING & PRINTING CO., LTD.	Binding and post-processing	49	100.0 (15.1)
Tien Wah Press (Pte.) Ltd.	Film making, printing and bookbinding	(S\$1,000) 4,600	100.0
<b>Commercial Printing</b>			
DNP Graphica Co., Ltd.	Printing and bookbinding	100	100.0
DNP Media Create Co., Ltd.	Planning, production, film making and plate making	100	100.0
<b>Business Forms</b>			
INTELLIGENT WAVE INC.	Development and maintenance of software	843	50.6
DNP Data Techno Co., Ltd.	Production and sale of business forms and plastic cards	100	100.0
NBC Co., Ltd.*	Mailing of printed matter, etc.	20	100.0
DNP Media Support Co., Ltd.	Printing, production and sale of magnetic cards	10	95.0
MK Smart Joint Stock Company	Production and sale of plastic cards and business forms	(VND 1,000,000) 100,000	36.3
<b>C &amp; I</b>			
DNP Art Communications Co., Ltd.	Planning, production and sale of artistic images and videos	300	100.0
DNP AV Center Co., Ltd.	Imaging software planning and production	100	100.0
DNP Digitalcom Co., Ltd.	Website planning, production and delivery	100	100.0
DNP Social Links Co., Ltd.	Planning, development and operation of online advertising and computer systems, etc.	10	100.0
DNP Information and Services (Shanghai) Co., Ltd.	Planning and production of electronic media	(CNY 1,000) 1,000	100.0 (100.0)
<b>Imaging Communication</b>			
DNP Imaging Comm Co., Ltd.	Thermal ribbons for thermal transfer, dye-sublimation type transfer printing	100	100.0
DNP Photo Imaging Japan Co., Ltd.	ID photo business and sale of photographic supplies and components; production and sale of original books	100	100.0
DNP ID System Co., Ltd.	Sale of equipment for making driver licenses and ID photos	60	100.0
DNP Imagingcomm Asia Sdn. Bhd.	Processing and sale of thermal transfer ribbons	(RM 1,000) 190,000	100.0
DNP Imagingcomm America Corporation	Processing and sale of thermal transfer ribbons	(US\$1,000) 71,980	100.0 (100.0)
Foto Fantasy, Inc.	Development, production and operation of automated systems that take and print photos	(US\$1,000) 10	100.0 (100.0)
DNP Photo Imaging Europe SAS	Sale of photo-related products	(Euro 1,000) 2,408	100.0
DNP Imagingcomm Europe B.V.	Processing and sale of thermal transfer ribbons	(Euro 1,000) 1,000	100.0
<b>Lifestyle and Industrial Supplies</b>			
<b>Packaging</b>			
LIFESCAPE MARKETING CORPORATION	Research, compilation and provision of various kinds of information about purchasing and consumption of foods and beverages	430	84.0
DNP Technopack Co., Ltd.	Production, printing and processing of packaging materials	300	100.0
Sagami Yoki Co., Ltd.	Production of laminated tubes	200	90.0
Aseptic Systems Co., Ltd.	Production and sale of packaging equipment and aseptic filling equipment	100	100.0
DNP Hosoi Co., Ltd.	Filling and processing of packages	80	100.0
DNP Field Eyes Co., Ltd.	Marketing research and consulting	50	100.0
DNP Vietnam Co., Ltd.	Production and sale of packaging materials	(US\$1,000) 31,500	100.0 (20.0)
PT DNP Indonesia	Production and sale of packaging materials	(US\$1,000) 26,000	51.0
<b>Lifestyle Materials</b>			
DNP Lifestyle Materials Marketing Co., Ltd.	Sale of decorative products	300	100.0
DNP Ellio Co., Ltd.	Printing and processing of steel, aluminum and other metals	300	50.0
DNP Lifestyle Materials Co., Ltd.	Film making, plate making, printing and processing of decorative materials	200	100.0
<b>Industrial Supplies</b>			
DNP High-performance Materials Co., Ltd.	Production of fillers for photovoltaic cells	200	100.0
<b>Electronics</b>			
<b>Display Components</b>			
DNP Color Techno Kameyama Co., Ltd.	Production and sale of color filters for LCDs	2,500	100.0
DNP Precision Devices Himeji Co., Ltd.	Production of display-related components	400	100.0
DNP Denmark A/S	Production and sale of precision electronic components	(Dkr 1,000) 135,000	100.0
<b>Electronic Devices</b>			
DT Fine Electronics Co., Ltd.	Production and sale of semiconductor components	490	65.0
DNP Fine Optronics Co., Ltd.	Production of precision electronic components	300	100.0
DNP LSI Design Co., Ltd.	Design and production of drawings used in semiconductor production	100	100.0
Photronics DNP Mask Corporation	Production and sale of photomasks	(NT 1,000) 2,259,276	49.9
DNP Photomask Europe S.p.A.	Production and sale of photomasks	(Euro 1,000) 47,200	80.5

Capital  
(¥ million)

Ownership ratio  
of voting rights (%)

Other		
Nihon Unisys, Ltd.	Development and sale of software; computer system support services	5,483 19.4
Maruzen CHI Holdings Co., Ltd.	Investment in operating companies	3,000 53.0
Toshokan Ryutsu Center Co., Ltd.	Sale of books, creation of data, library operation support, and consulting	266 53.0 (53.0)
MARUZEN-YUSHODO Company, Limited	Sale of books, magazines and stationery; importation and sale of rare Western books and academic books	100 53.0 (53.0)
MARUZEN PUBLISHING CO., LTD.	Publishing	50 53.0 (53.0)
MaruzenJunkudo Bookstores Co., Ltd.	Sale of books, magazines, and stationery	50 53.0 (53.0)
honto Book Service Co., Ltd.	Agency and sale of electronic books	50 53.0 (53.0)
BOOKOFF CORPORATION LIMITED	Used bookstore operation; development and operation of new used goods businesses; management guidance for affiliated stores	3,652 15.6 (9.4)
BUNKYODO GROUP HOLDINGS CO., LTD.	Investment in operating companies	2,035 51.8 (16.0)
DNP Fine Chemicals Co., Ltd.	Production and sale of chemical products	2,000 100.0
DNP Fine Chemicals Utsunomiya Co., Ltd.	Production, purchasing and sale of photographic materials and pharmaceuticals	100 100.0 (100.0)
All About, Inc.	Online shopping business, specialist referral business	1,199 31.8
DNP Logistics Co., Ltd.	Freight transport, warehousing, packing and shipping operations	626 100.0
2Dfacto, Inc.	Operation of hybrid bookstore network	500 80.5 (0.7)
DIC Graphics Corporation	Production and sale of printing ink	500 33.4
VISUAL JAPAN INC.*	Development, sale, and maintenance of computer software	435 86.7
PSP Corporation.	Planning, research, development, sales and maintenance of internal systems for hospitals and clinics	379 20.1
CAFI Corporation.*	Remote diagnostic imaging service	32 51.1
Publishing Marketing Innovation Japan Co., Ltd.	Research and policy planning aimed at activating Japan's publications distribution markets	50 50.0
SHUFUNOTOMO Co., Ltd.	Editing and sale of books and magazines	100 99.6
D.N.K. Co., Ltd.	Production, sale and repair of printing equipment and machine tools	100 100.0
DNP Trading Co., Ltd.	Trading of paper, materials and all types of merchandise	100 94.3
MobileBook.jp, Inc.	Electronic publishing and distribution platform services and e-book distribution service	100 63.4
DNP Multi Print Co., Ltd.	Film making, printing and bookbinding	100 100.0
Metro Systems Co., Ltd.	Planning, design, development, maintenance and support operations for information systems	100 100.0 (90.0)
DNP SP Tech Co., Ltd.	Planning and production of promotional materials	80 100.0
CYBER KNOWLEDGE ACADEMY Co., Ltd.	Operation of academy for training and developing personnel to defend against targeted cyber attacks	70 100.0
Kyoku Shuppan Co., Ltd.	Editing and sale of textbooks and educational materials	60 48.2
DNP Tamura Plastic Co., Ltd.	Production and sale of automotive goods and various types of plastic products	60 100.0
My Earth Projects LLC*	Planning, production and sale of trading cards	50 99.8
DNP HyperTech Co., Ltd.	Production and sale of computers and peripheral devices; development, production and sale of software	40 100.0
CP Design Consulting Co., Ltd.*	Personal information protection and risk management consulting	40 92.5
M's Communicate Co., Ltd.*	Consulting and related to customer membership program services	30 95.0
At Table Co., Ltd.*	Research, consulting and planning related to production and sales promotions for supermarkets and other retailers	30 66.6
DNP Dexerials Consulting Co., Ltd.	Business planning and proposals	10 50.0
DNP Asia Pacific Pte. Ltd.	Coordination of DNP businesses in the Southeast Asia/Oceania region	(S\$1,000) 100.0
		2,000
DNP Business Consulting (Shanghai) Co., Ltd.*	Study of Chinese market and business feasibility	(US\$1,000) 100.0
		420
Personal Welfare, Facility Service and Others		
DNP Facility Services Co., Ltd.	Building facilities maintenance and management; sports and welfare facility operation; security	350 100.0
DNP Information Systems Co., Ltd.	Design, development and maintenance of information systems; production and sale of software	100 100.0
DNP Human Services Co., Ltd.	Planning and management related to personnel plans	90 100.0
Uzumine Country Club Co., Ltd.*	Management of golf courses	33 88.7
DNP Accounting Services Co., Ltd.	Accounting agency and consulting services	30 100.0
DNP Techno Research Co., Ltd.*	Studies related to patents and the preparation of contracts	20 100.0
Overseas Sales		
DNP Korea Co., Ltd.*	Sale of precision electronic components	(Krw 1,000) 100.0
		500,000
DNP Corporation USA	Investment in operating companies	(US\$1,000) 100.0
		62,164 (7.1)
DNP Taiwan Co., Ltd.	Sale of precision electronic components	(NT 1,000) 100.0
		10,000
DNP International Trading (Shanghai) Co., Ltd.*	Sale of printed matter, etc.	(US\$1,000) 100.0
		5,400
Dai Nippon Printing (Thailand) Co., Ltd.*	Sale of packaging supplies and precision electronic components	(THB 1,000) 100.0
		200,000
DNP Singapore Pte. Ltd.*	Sale of precision electronic components and decorative materials	(S\$1,000) 100.0
		350
DNP UK Co., Ltd.*	Sale of decorative materials	(£1,000) 100.0
		120
DNP America, LLC	Sale of printed materials, precision electronic components, and decorative materials	(US\$1,000) 100.0
		100 (100.0)
DNP Holding USA Corporation	Investment in operating companies	(US\$1,000) 100.0
		100 (100.0)
DNP Europa GmbH*	Sale of printed materials and decorative materials	(Euro 1,000) 100.0
		92
Dai Nippon Printing Co. (Australia) Pty. Ltd.*	Sale of printed materials	(A\$1,000) 100.0
		70

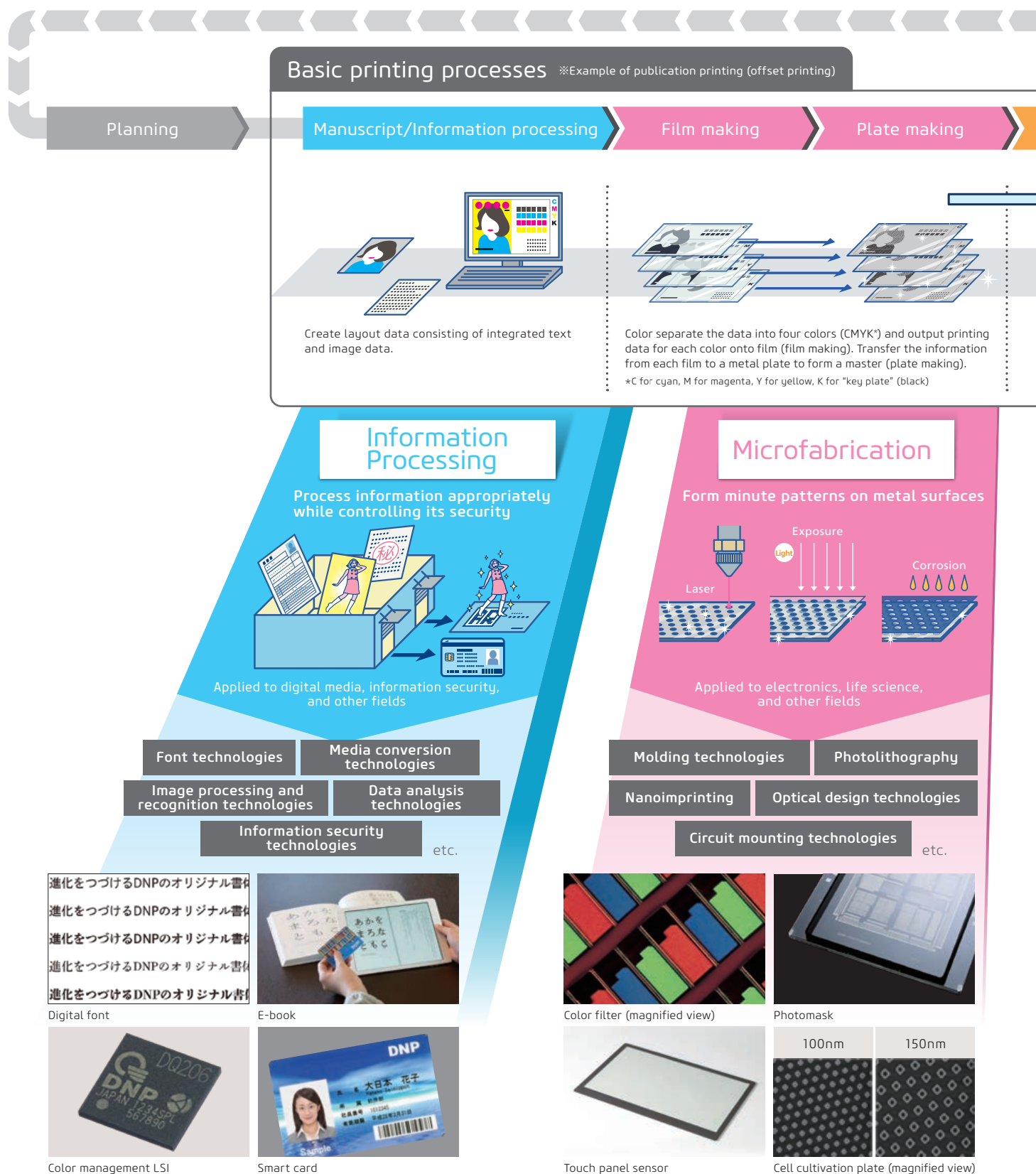
## Beverages

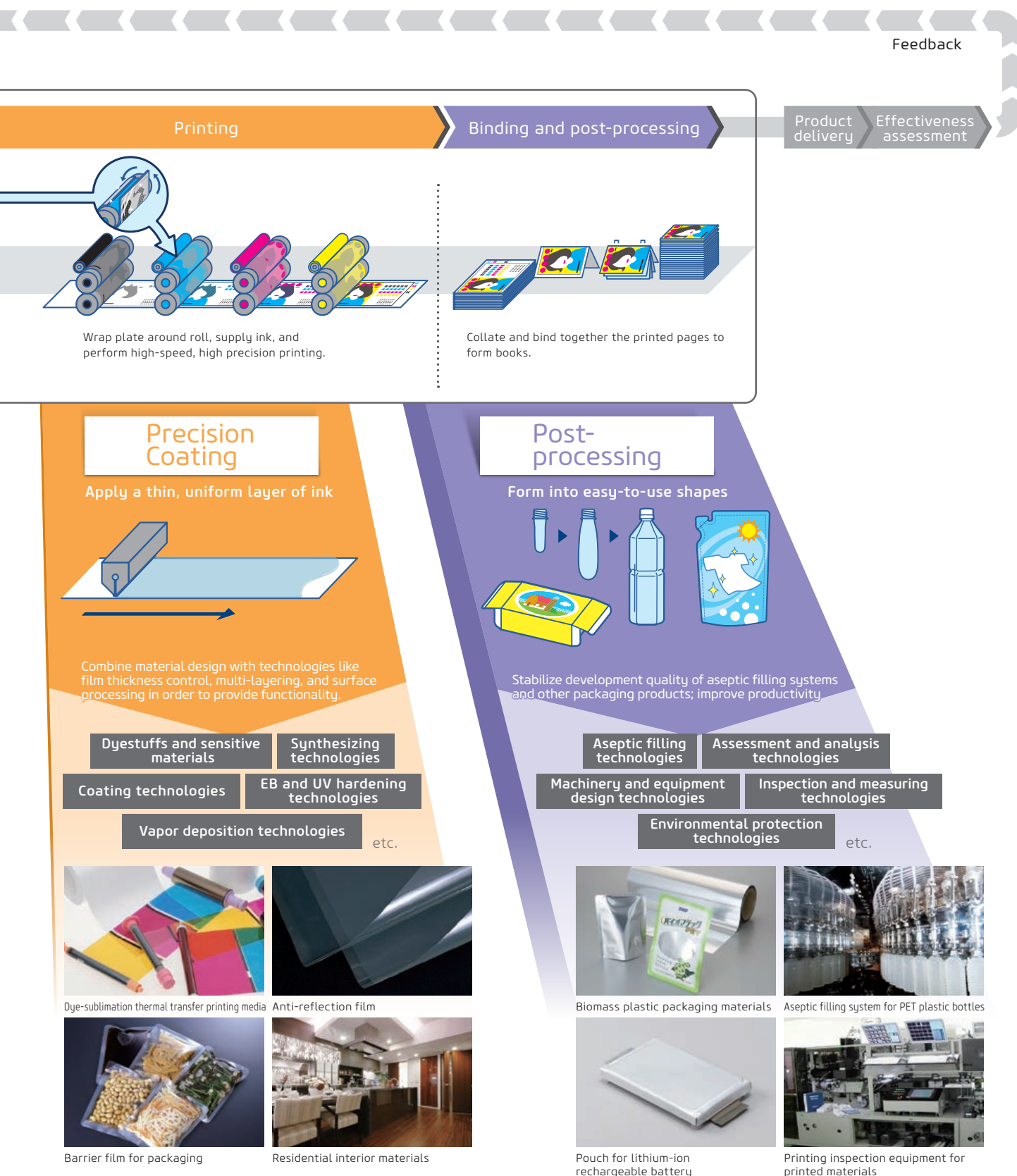
Beverages		
Hokkaido Coca-Cola Bottling Co., Ltd.	Production and sale of soft drinks	2,935 59.9 (6.4)

Notes: 1. Voting rights ownership ratios (in brackets) indicate the percentage of shares owned through DNP's subsidiaries or affiliates.  
2. Companies with an asterisk are neither consolidated nor accounted for by the equity method.

# Business Expansion through Application and Development of Printing Technologies

In order to meet the needs of businesses, consumers and society and provide new value, DNP has evolved its printing technologies. We take knowledge and expertise accumulated through performing each step of the printing process and expand it in multiple directions to develop new technologies.





With the digitization of printing, DNP has been developing a wide range of original information processing technologies including image processing, language processing, information security and networking technologies. We are also pursuing research and development in fields like computer vision, regenerative medicine, and artificial intelligence.

## Image Processing and Recognition Technologies

### TECHNOLOGIES

Image processing and recognition technologies apply appropriate information processing techniques to still or moving images in order to extract useful information. They enable information media to perform sophisticated information processing tasks that only humans were able to accomplish in the past. Sometimes these technologies even make it possible to see information that humans cannot recognize without help. Since DNP began digitizing the text and image data that we handle in our printing businesses, we began research and development in fields such as color reproduction, in which we have continued to develop related technologies. We are now developing applications in a wide range of fields including security, energy conservation, education, medical care, and entertainment. We are working at a variety of levels from developing our own algorithms to developing architecture.

### PRODUCTS & SERVICES

#### Real-time image analysis system

We developed a system for perceiving the danger of a potential accident or disaster by analyzing images from surveillance cameras in real time and quickly discovering anomalies. As an example, the system can help prevent people from being accidentally trapped in automated parking lots by detecting the presence of someone still inside at closing time. To supplement the use of motion detectors, DNP has developed a new technology that we call "stationary object detection," for perceiving a person who has fallen. In order to capture the movement of people and objects, DNP's original algorithm makes distinctions according to changes in lighting, shadows and reflections, and initiates follow-up processing based on information about colors and shapes. Parameters for this processing can be set according to the requirements of each environment. One important feature of this system is the ability to configure it very specifically in order to derive the most useful analysis.

● Motion Detection



● Stationary object detection



## Information Security Technologies

### TECHNOLOGIES

DNP has three core types of technologies related to this area: smart card OS and application development technologies; smart card issuing technologies; and network server system development and operation technologies. In addition to manufacturing and issuing smart cards, we can develop a variety of products and services such as IC software and peripheral smart card-based systems by refining these three types of technologies.

### PRODUCTS & SERVICES

#### Smart cards

A smart card contains a microchip with non-volatile memory capable of storing a large amount of data, and a CPU. Smart cards may be contact-type cards, contactless, or dual interface cards that combine contact-type and contactless functions. DNP maintains one of the leading shares of the Japanese smart card market, supplying every type of card—from credit cards, cash cards and transportation cards to electronic money cards—used by a variety of business types and business formats.





In the process of making masters (plate making) for printing, DNP has cultivated highly precise processing technologies. By applying those technologies to electronics, we have created a large number of micro-processed products including semiconductor photomasks and color filters for liquid crystal displays. We continue to explore the limits of the microscopic world through our cutting-edge technologies.

## Photolithography

### TECHNOLOGIES

Photolithography is a technology for forming patterns by shining light on the surface of a substrate coated with photosensitive material. The pattern forms because some areas are exposed and some are not. DNP has honed its photolithography technologies through the production of masters used for printing. We apply these technologies to the manufacture of products like photomasks and color filters.

### PRODUCTS & SERVICES

#### Photomasks

A photomask is a master used for forming semiconductor circuits. In order to make cutting-edge semiconductors, we need to use various special techniques in order to make photomasks that can produce circuits whose lines have the necessary resolution of 14 to 28nm\*. DNP contributes to the miniaturization of semiconductor product line widths by providing photomasks that control not only the intensity but also the phase and polarity of the light that passes through them.

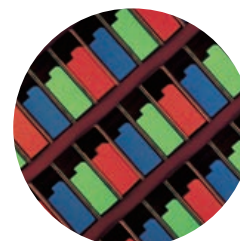
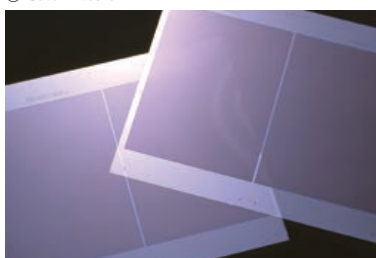
\* nm (nanometer): one billionth of a meter



#### Color filters

We have developed high quality color filters—an important component of liquid crystal displays—by developing new coloring materials and using pigment miniaturization and dispersion techniques along with photolithography technologies for patterning of colored layers. In response to the trend toward multi-colored layers, we have also developed multicolor filters with expanded color reproduction ranges of four or five colors.

● Color filters



Close-up photograph of a color filter

## Nanoimprinting

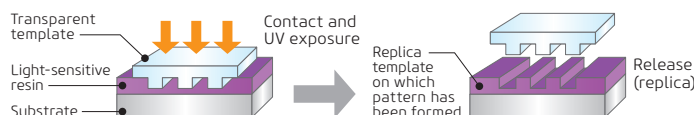
### TECHNOLOGIES

Nanoimprinting is a method that enables the transfer of patterns with line width of 20nm or less by pressing a template against a resin-coated substrate. The development of nanoimprinting makes use of knowledge and skills from a wide range of fields, including clarification of the mechanisms by which polymers react when exposed to light or to an electron beam, a good grasp of a material's behavior at its interface, and simulation technologies in addition to microfabrication and precision measuring techniques. Based on the technologies we have cultivated through our photomask business, we have been pursuing development in collaboration with materials and equipment manufacturers.

### PRODUCTS & SERVICES

#### Development of various products

Nanoimprinting is being studied for its potential use in fields like next-generation semiconductor lithography, ultrahigh density HDD media manufacturing, and optical elements. Quartz or silicon is generally used for making master templates (dies), and dry etching is used for forming a concavo-convex shape on the template surface. DNP has developed a replica template by using nanoimprinting lithography and a master template made with electron beam lithography. We plan to supply this next-generation technology to a wide variety of corporate clients.



## Precision Coating

Precision coating refers to processing that covers a surface by causing a film to adhere to it uniformly.

By combining material design technologies with film thickness control, multi-layering, surface processing and other technologies, we can bestow diverse functions such as optical properties, barrier properties, and heat resistance.

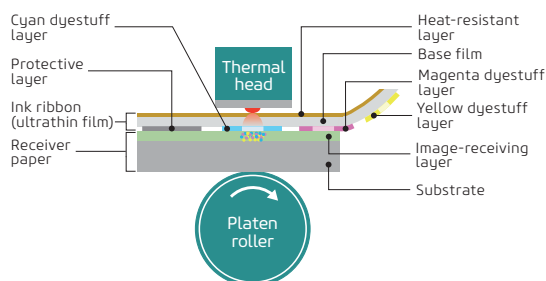
With extremely broad possibilities for application, this is one of DNP's core technologies and we make use of it across business unit boundaries.

### High-speed Thin Film Coating Technology

#### TECHNOLOGIES

DNP has coating technologies that we employ in the manufacture of ink ribbons for dye-sublimation thermal transfer printers that print digital images, which enable us to apply various functional materials in a uniform layer about  $1\mu\text{m}^*$  thick onto ultrathin film only about  $5\mu\text{m}$  thick, at a speed of several hundred meters per minute. We have also developed materials such as coloring agents that are exceptionally well-suited for thin film coating and overcoat materials, enabling us to succeed at high-speed thin-film coating in terms of both processing and materials. \*  $\mu\text{m}$  (micrometer): one millionth of a meter

#### ● Dye-sublimation thermal transfer



#### PRODUCTS & SERVICES

#### Dye-sublimation thermal transfer printing media

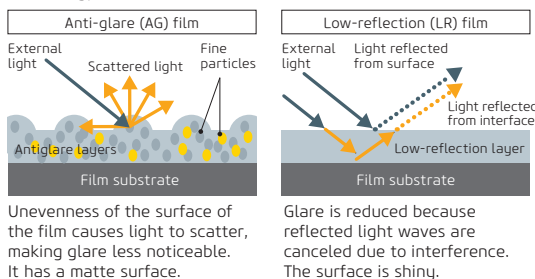
Printers that use dye-sublimation thermal transfer printing media form images by transferring dyestuffs from ink ribbons to receiver paper. Controlling heat energy in the printer's thermal head makes it possible to adjust the concentration of dyestuffs in each dot. Because they can reproduce some 16,700,000 colors in a single dot, these printers can produce high quality images. In addition to manufacturing and selling ink ribbons and receiver paper, DNP is further expanding and evolving its photo print business by developing new printing systems and providing a variety of solutions that make use of its systems.

### Precision Thin-Film Clean Coating

#### TECHNOLOGIES

This technology is based on a printing technique that involves applying a film of liquefied polymeric material while very precisely controlling film thickness. The manufacturing processes that allow sub-micron film thickness control and simultaneous application of multiple layers are performed in a high-level clean environment. By combining material design and optical design technologies that DNP has accumulated through years of printing experience, we will continue to supply functional optical films with both desirable optical characteristics and high-quality appearance.

#### ● Main types of anti-reflection films



#### PRODUCTS & SERVICES

#### Anti-reflection films

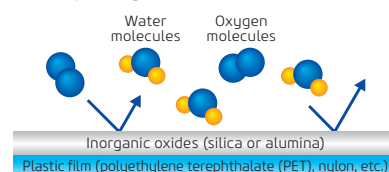
Anti-reflection films for displays—used to suppress glare from fluorescent or other types of light—were developed as a result of applying DNP's precision thin film clean coating technology. DNP's anti-reflection films hold one of the top shares in the world market for anti-reflection films used on liquid crystal displays. One of the reasons for the films' popularity is the multi-layer thin film coating used in DNP's films, which makes more effective use of optical interference compared to single-layer coatings.

### Vapor Deposition

#### TECHNOLOGIES

Vapor deposition is a coating technology whereby a gasified substance forms a coating on a plastic film within a vacuum. Alumina and silica are used in vapor deposition, with silica being used particularly in a method called "chemical vapor deposition." In chemical vapor deposition, because silica is deposited on the film surface at the molecular level, it is possible to form a minute layer with strong barrier properties despite its thinness. DNP creates a variety of products by continuously performing chemical vapor deposition on flexible plastic film.

#### ● Transparent gas barrier film



#### PRODUCTS & SERVICES

#### Barrier films

Barrier films are used to package goods such as foods and medical supplies in order to prevent oxidation or drying, and to keep out moisture. Unlike aluminum foil and aluminum-based vapor deposition films, DNP's transparent vapor deposition IB\* film can be used in a microwave oven and is amenable to detection of metallic impurities. Also, IB film is an environmentally friendly product whose production consumes less energy than that of aluminum foil.

\* Innovative Barrier



Starting with bookbinding and processing of paper products and moving on to film packaging, plastic forming and aseptic bottle filling systems, DNP has developed one post-printing processing technology after another.

We have also acquired advanced technologies through testing, measuring, and analyzing a variety of products.

## Aseptic Filling

### TECHNOLOGIES

DNP has developed aseptic systems for filling sterilized packaging materials with food or beverages in a sterile environment, thereby contributing to improving food safety and decreasing the burden placed by packaging materials on the environment. In addition to food preservation and sterilization technologies, we make use of a wide variety of technologies in the development of these systems, including filling machinery design, control, sensing technologies, and packaging materials design technologies.

### PRODUCTS & SERVICES

#### Aseptic filling systems

DNP's aseptic filling systems can be adapted for various packaging formats and filling volumes and can be used for high-quality filling. One aseptic filling system for pasta sauce, noodle broth or other liquid foods can be used to fill any amount from 10 to 1,000mL; in other words, it can manufacture anything from a single-portion package to a commercial use product. Furthermore, DNP's system allows the supply of products that were difficult to process by conventional retort methods because those methods required heating for longer time periods, which tended to break down the contents. Because DNP's aseptic PET plastic bottle filling systems enable filling at room temperature, unlike conventional systems that required filling at high temperatures, it is possible to use lighter, thinner bottles that are good for reducing the burden placed on the environment.

● Aseptic filling system for PET (polyethylene terephthalate) bottles



## Assessment and Analysis Technologies

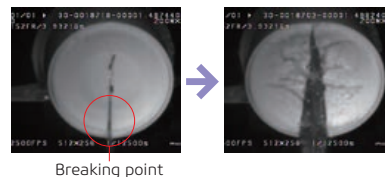
### TECHNOLOGIES

Assessment and analysis technologies are indispensable to strengthening and developing manufacturing in today's changing market environment. In our product development, DNP combines the latest analysis and measuring equipment and theories, identifies materials that can form product value, and explicates the mechanisms by which those materials express their functionality. We bring visualizing and sensing technologies into each factory and analyze its production processes in order to stabilize quality and boost productivity. We endeavor to improve working environments so as to add further protection to workers and solve all types of problems that arise on the factory floor.

### PRODUCTS & SERVICES

#### Analyzing breaking strength based on drop test of packaging cup

The market wants packaging cups made of thinner resin in order to minimize weight and cost, but without sacrificing strength. In conventional strength testing, cups are actually dropped and their strength is evaluated based on observation of broken cups, but by this method it is difficult to determine the specific point at which breakage was triggered. Therefore, we began using a high-speed camera to enable detailed analysis of breakdown behavior. By capturing the breaking point, we were able to select the most suitable resin and design optimal manufacturing processes.



## Machinery and Equipment Design Technologies

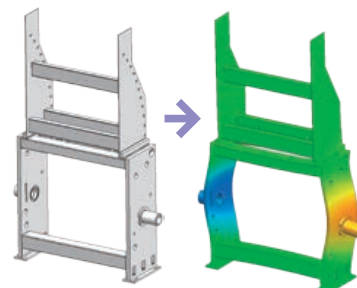
### TECHNOLOGIES

Some of DNP's equipment requires a high level of precision and quality that existing equipment manufacturers cannot provide. In addition to making use of mechatronics, for the past 20 years DNP has been using structural analysis technologies in its design processes rather than relying exclusively on the experience and intuition of veteran designers. Moreover, we continually work to make our equipment more reliable based on vibration analysis and equipment maintenance information generated in house.

### PRODUCTS & SERVICES

#### Printer frame deformation analyzer

Because the printers that make books, packaging materials and other products have precision-processed cylindrical plates that rotate with a high degree of precision, they must be assembled to a highly accurate margin of error of less than 50μm. Also, because the paper or other print stock that gets pushed onto the plate can weigh more than 500kg, it is important that the machine be designed to prevent deformation of its frame and reduce resulting effects on printed matter. DNP uses a scaled-down model for experimentation as well as strength and vibration analysis in order to predict characteristic number of vibrations and amount of frame deformation.





## 1. DNP-related Terms

### DNP Group Vision 2015

The DNP Group's basic management policies. A revised version of the "DNP Group Vision for the 21st Century" that was drawn up in 2001, DNP Group Vision 2015 was officially adopted in October 2015. The vision is comprised of three main elements, the first of which is central: Corporate Philosophy, Business Vision, and Guiding Principles.

### Corporate Philosophy

The DNP Group connects individuals and society, and provides new value.

### Business Vision

Use P&I innovations to expand business, primarily around four growth areas.

- "P&I innovations" means the creation of new value—something that did not exist before—in the form of innovative concepts, products, or services etc. made by combining DNP's strengths (in printing (P) and information (I), in technology, sales, project planning, etc.) with the strengths of our many partners.
- The four growth areas are Knowledge and Communication, Food and Healthcare, Lifestyle and Mobility, and Environment and Energy. Of the social issues that DNP analyzed, we designated as growth areas those areas where we can likely solve problems by applying new value generated through P&I innovations, and where we can increase DNP's corporate value and contribute to society by solving those problems.

### Guiding Principles:

*Taiwa* (dialogue) and cooperation

- Each and every DNP employee should become a professional in his or her field and generate innovative products and services as a result of actively engaging in "taiwa and cooperation" within and outside of DNP.

### The DNP Group Code of Conduct

A set of codes underlying all types of activities aimed at achieving our Group Vision. All DNP employees must obey these codes.

- Contributing to the development of society
- Social contribution as a good corporate citizen
- Compliance with the laws and social ethics
- Respect for human dignity and diversity
- Environmental conservation and the realization of a sustainable society
- Realization of a 'universal society'
- Ensuring the safety and quality of our products and services
- Ensuring information security
- Proper disclosure of information
- Realization of a safe and vibrant workplace

## 2. Information Communication

### Augmented reality (AR)

A technology for displaying text, images, or other virtual information superimposed on or otherwise integrated into the scene or objects found in a person's actual physical environment, enabling the expression of an enhanced or augmented experience of reality. For example, when someone uses a webcam or mobile phone-mounted camera to photograph an actual scene together with an identifying symbol or image, the photograph will appear as a synthesis, with a 3D computer-generated image or other pre-registered information integrated into the surrounding environment.



A picture book using augmented reality

### Big data

A general term for massive amounts of data of various types. Big data is attracting attention for providing indicators that are affecting how companies do business. For example, companies may refer to information service usage trends or product purchasing histories when predicting consumers' preferences or buying patterns.

### Business Process Outsourcing (BPO)

Commissioning of some or all of the processes that make up a business's various activities to be performed by an outside company that has specialized expertise, an advanced information security environment, and operational infrastructure.

A special feature of DNP's BPO business is its comprehensive nature. Rather than simply performing secretarial functions, we start from scratch and design optimal business processes, prepare an operational framework, build systems and/or operate them according to each business's characteristics and needs.

### Card-linked offers (CLOs)

CLOs use knowledge of individual credit card holder's personal attributes and purchasing history to select card holders who are likely to buy a particular product. Information about relevant special offers is distributed directly by smartphone or email, etc., directing customer traffic to participating merchants and promoting use of the credit card.

### Digital signage

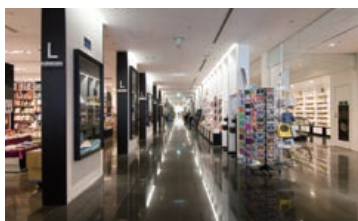
An information medium that usually uses large, flat-panel displays linked to an information network in order to deliver advertisements or other information tailored to a particular time and place. It is installed in stores, public institutions, train stations, airports and other public spaces, and may have a variety of built-in functions. For example, it may enable consumers to obtain specific information by using a touch panel or mobile terminal, etc.

### Electronic library

A service that lends electronic books to libraries and provides the content to readers via the Internet after the publisher or other rights holder has authorized distribution. The system is expected to provide new opportunities for making use of published content. Many Japanese libraries are already participating.

### Hybrid bookstore network “honto”

A service offered by DNP that sells both paper and electronic books by integrating DNP's e-book sales service, online mail-order bookstore, and physical bookstores operated by Maruzen, Junkudo and Bunkyo-do. The service provides such features as a “recommend function” that suggests books a customer might like based on previous purchasing history, a “point service” program that allows customers to combine loyalty points regardless of which formats they use, and an “electronic bookshelf function” that can display a single list of all of a customer's paper and electronic book purchases together. Full-fledged operation of “honto” began in June 2012.



Maruzen's main bookstore in Tokyo's Marunouchi district

### Information Processing Services (IPS)

DNP's own term for our uniquely broad menu of services including inputting and safely transmitting massive amounts of personal information and other data, editing and processing, printing, producing, mailing and/or transmitting invoices, statements, and other forms of personalized mail—all in environments protected by advanced information security systems.



Personalized mail

### International brand prepaid cards

An electronic settlement method that allows customers who do not have a credit card to use settlement terminals that belong to international credit card brands like Visa or MasterCard. The prepaid cards can generally be used by customers of any age, at businesses that accept major credit cards. Because they are prepaid, there are no worries about overspending. DNP is also offering international brand debit cards, whereby payments are immediately deducted from the customer's bank account, as part of its focus on electronic settlement services involving international credit card brands.

### Lippmann hologram

A type of hologram, which is a three-dimensional image recorded using a split laser beam. Lippmann holograms are excellent for expressing vertical and horizontal three dimensionality and a sense of depth. They are extremely hard to counterfeit because their production requires special equipment. These holograms have garnered praise around the world for providing a high level of security and potential for outstanding designs.



### Shueitai

DNP's original font, which we have been developing since the Meiji Era that began in the late 1860s. The sleek and graceful font elicits high praise from book publishers and readers for being beautiful as well as easy to read. From 2005 to 2012 we carried out a major project involving renewal of our existing font

and development of new fonts. We created a digital version in the 1970s and have been licensing its use since 2001.



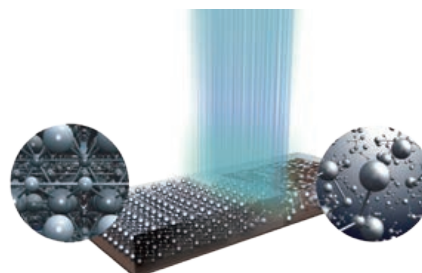
## 3. Lifestyle and Industrial Supplies

### Biomass material

“Biomass” may refer to the total quantity of organisms living in a particular area, or it may mean organic resources derived from living things other than petroleum or other fossil resources. Biomass material is made from resources of biological origin, such as vegetable resins or natural fibers. Biomass material has attracted attention as a material that puts relatively little strain on the environment due to the idea that CO<sub>2</sub> absorbed by plants during their growing process cancels out the CO<sub>2</sub> emitted when the material is burned. Since biomass material is a renewable resource, supplies are expected to be stable.

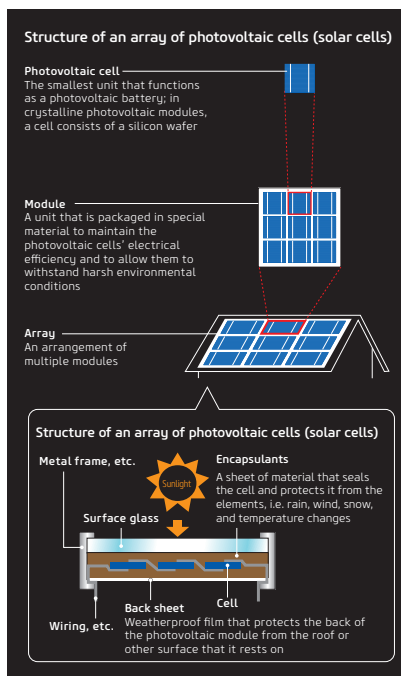
### Electron Beam (EB) technologies

EB technologies use electron beam exposure to instantly provide advanced functionality to resins and coating films. Depending on the type of resin and EB exposure conditions, some materials may take on extra functionality not exhibited by normal resins. The technology is environmentally friendly since production processes do not require the use of solvents, and consume less energy and generate less CO<sub>2</sub> than conventional coating methods.



#### Photovoltaic module components

- Back sheets are weatherproof films that protect photovoltaic modules from external elements. They prevent precipitation from entering modules, making it possible to use them outdoors for a long period of time. Back sheets must be very durable and moisture proof, and have good electrical insulating properties.
- Encapsulants are protective sheets used to secure photovoltaic cells and their peripheral wiring in place, and to form photovoltaic modules. An encapsulant forms a strong bond between a module's back sheet and its front glass.
- Bus line sheet is a sheet configured with electrode circuit patterns used in photovoltaic cells. DNP's bus line sheet configures electrodes by attaching them to the back of a (back-contact) photovoltaic cell. Since electrodes positioned at the back of the cell do not block sunlight exposure, "shadow loss" is reduced and power generation efficiency is increased.



#### Regenerative medicine

A therapeutic method using artificially cultivated cells or tissues to restore or recover the function of tissue or organs lost through disease or accident.

#### Universal design (UD)

The term "universal design" is said to have been coined by North Carolina State University professor Ronald Mace, who defined it as "the design of products and environments to be usable by all people, to the greatest extent possible." Unlike the term "barrier-free," which refers to removing obstacles for people with physical disabilities, UD proposes that products, services, all types of facilities and living environments should be designed so that most people can enjoy them not only whether or not they have a disability, but also regardless of differences in age, gender, nationality or personal abilities.

## 4. Electronics

#### Lead frame

A metal component inside a semiconductor package that supports the semiconductor chip or chips and transmits electric signals.

#### MEMS (Micro Electro Mechanical System)

An electronic device that integrates components like IC chips, sensors and electronic circuits into a three-dimensional structure mounted on a base, which is usually a silicon wafer.

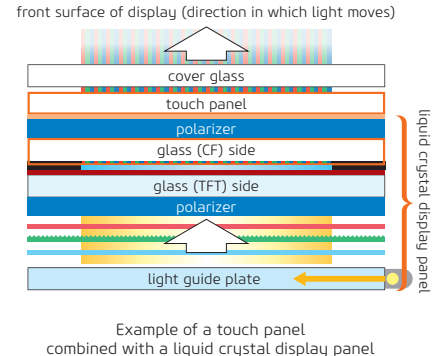
#### Organic EL (electroluminescent) display

Organic electroluminescence is a phenomenon that occurs when a voltage is applied to certain organic compounds, whereby the compound emits light while producing almost no heat. An organic light-emitting diode (OLED) is a product that takes advantage of this phenomenon. Unlike liquid crystal displays (LCDs), organic EL displays do not require a backlight because they use self-luminescent

OLEDs. This means they can be thinner, lighter and consume less electric power. Since they also offer the possibility of using substrates made of plastic or other flexible materials that can withstand bending and curling, organic EL displays are attracting attention as a next-generation alternative to LCDs.

#### Touch panel sensor

A component of a touchscreen display that receives, in the form of a signal, the location where a user's finger has touched a display. Touchscreens allow intuitive operation of devices like smartphones, tablets, and digital signage, making it possible to enlarge or shrink images, to turn pages or select information etc. by touching the screen with one or more fingers. In order to supply touch panel manufacturers with sensors, DNP uses its patterning technologies to give sensory function to glass or film by forming a minute electrode pattern along its length and breadth.



# Sources of Information about DNP

## Web Site (English: <http://www.dnp.co.jp/eng/>)

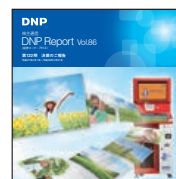
Our web site introduces our operations in a format that is easy to understand. In addition to disclosing information at appropriate times and in appropriate ways, we are continuously improving the site. The following publications and reports are also available as PDF files that can be downloaded from the web site.



DNP English Web Site  
(<http://www.dnp.co.jp/eng/>)

## Publications

- **Annual Report (Japanese and English versions)**  
Each year around the end of July, we release Japanese and English versions simultaneously. This comprehensive report contains various types of information, including reports about business activities based on our Group Vision, financial information and non-financial information, all pertaining to a particular fiscal year.
- **Data Book**  
(Bilingual: Japanese/English; available only as PDF file for download from web site)  
Issued near the end of July every year, the Data Book contains values from financial statements of the past 10 years, and financial analysis values in the form of tables and graphs, etc. Financial statement values are taken from securities reports.
- **“DNP Report” Report to Shareholders (in Japanese)**  
This report is delivered quarterly to shareholders. Aimed mainly at individual investors, its contents include summaries of financial results, special features about business activities, and introductions to various technologies.
- **DNP Group CSR Report**  
(Japanese and English versions; available only as PDF file for download from web site)  
We report about DNP's role in society from the standpoint of its business activities and relevant processes. We release the Japanese version at the end of June, and the English version at the end of August.
- **DNP Group Environmental Report**  
(Japanese and English versions; available only as PDF files for download from web site)  
This report explores in detail the environmental management activities that are among DNP's CSR initiatives. We release the Japanese version at the end of June, and the English version at the end of August.
- **DNP Corporate Profile (Corporate Brochure: Japanese and English versions)**  
This publication introduces each segment's products and services, operating locations in Japan and around the world, company history, a summary of our activities, and other basic information about DNP.



“DNP Report” to shareholders



DNP Group CSR Report

## Reports

- **“Yuhu” Annual Securities Report, etc. (in Japanese)**  
In accordance with Article 24 of the Securities Exchange Law, DNP submits quarterly reports to the Finance Ministry in August, November, and February. In June, DNP submits a quarterly report combined with a “Yuhu” annual securities report. These are broad-ranging reports that include consolidated financial statements with auditing reports attached, non-consolidated financial statements, performance reviews, information about shares and corporate directors, etc.
- **“Tanshin” Earnings Release (Japanese and English versions)**  
In accordance with Tokyo Stock Exchange rules, we prepare earnings releases for each quarter. In addition to consolidated financial statements, we report on the status of sales, etc.

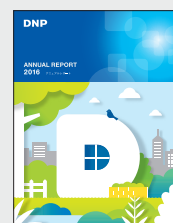
Note: Trademarks mentioned in this annual report in connection with DNP products or services are used or registered in Japan.

## About the Cover Illustration

“DNP Group Vision 2015” contains DNP's corporate philosophy: “The DNP Group connects individuals and society, and provides new value.” Our design is based on this concept: it shows how DNP supports society in a variety of ways, encourages society's development, and contributes to the development of a sustainable society.

### Design by groovisions

Design studio established in 1993. Primarily focused on graphics and video, groovisions works in a wide variety of media including music, print, product and interior design, fashion and the web. Main projects include stage visuals for PIZZICATO FIVE, editorial design for Metro Min. magazine and other publications, motion graphics for EXPO 2005 AICHI JAPAN, Maison Hermès shop window direction, and ggg's (Ginza Graphic Gallery's) 301st exhibition.



Annual Report 2016



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