

# Digital Transformation by NRI



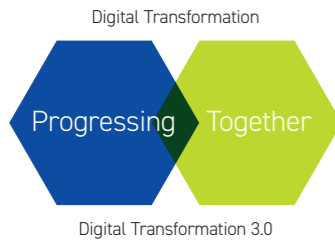


It's coming.  
Information Technology is not only improving business process efficiency,  
it is transforming business models.  
We at NRI envision a future built on digital transformation in all industries.  
Business model transformation through  
digital transformation requires not only speed,  
but a medium- to long-term vision and management strategy.  
Furthermore, digital transformation initiatives must be company-wide.

The time to build that  
future is now.

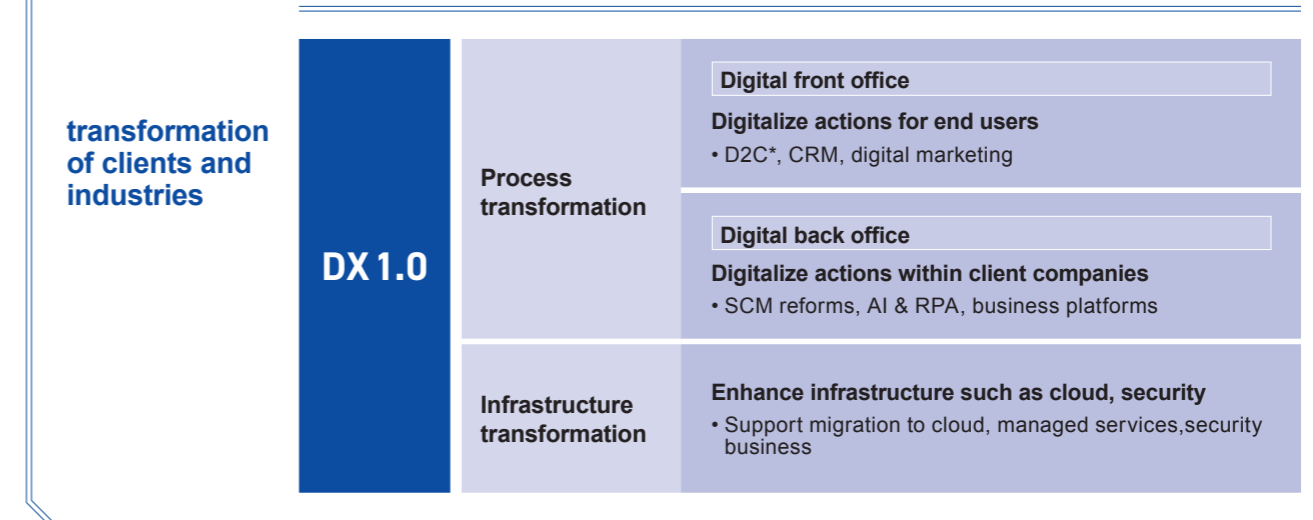
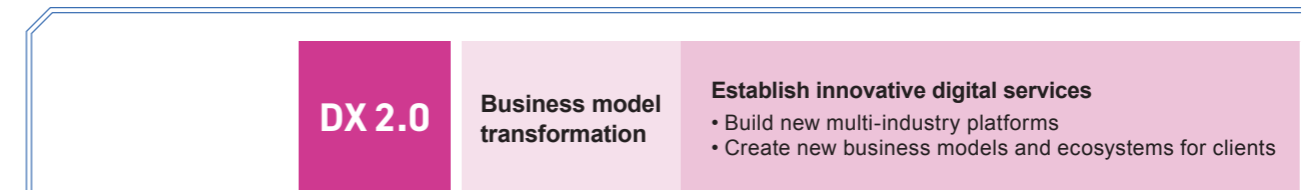
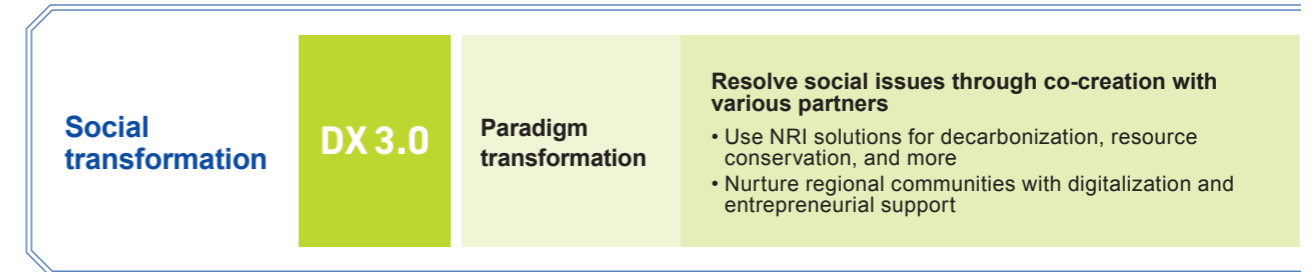






# Our New Challenge is Digital Transformation 3.0.

**Shingo Konomoto**  
President & CEO,  
Nomura Research Institute



\* D2C (Direct to Consumer): Selling directly to consumers through e-commerce, etc.

NRI has been promoting DX strategies that transform clients and industries. While DX 1.0 primarily reforms work processes and infrastructures, the DX 2.0 strategy helps to create new business models and ecosystems via digital technologies. With increasing demand for decarbonization, the revival of regional communities, and solutions to other social issues in recent years, we believe that digital technologies are set to play an even greater role. To that end, NRI intends to undertake DX 3.0, co-creating with various partners on new problems at the source of social issues - carbon neutrality the major one.

Triggered by the move toward carbon neutrality, various matters will be made into services and

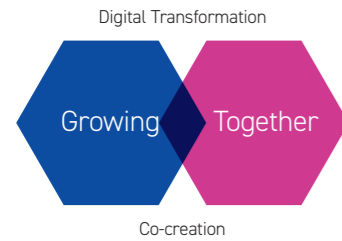
shared over platforms, while reducing the amounts of resources used and greenhouse gas emissions. We expect that such structural changes, through which our world will optimize into an affluent society, will progress rapidly over the next 10 years. The new economic systems represented by this kind of sharing economy are the very essence of the digital capitalism that we have been proposing through the NRI Dream Up the Future Forum, books, and other media as part of making social recommendations and system proposals.

Industrial capitalism was premised on population growth, and economic activities were centered around production and consumption. As populations decline and digitalization progresses rapidly in

leading industrialized countries, a shift is occurring to a new economic system – digital capitalism in which data becomes the source of added value. In it, the main actors have transitioned from industrial capitalists and laborers to digital platforms and users. The definition of value has also moved from possession and use to utility. It is a vision of a society in which XaaS (anything as a service) on digital platforms cuts across various industries and expands the sharing of nonoperating assets. To achieve this, there is a need for the public and private sectors to work as one and accelerate the evolution of the digital social capital. This includes the promotion of a digital government, preparation of a shared digital infrastructure, the redesigning of the social and

industrial structure toward a rich and secure life, and the improvement of productivity.

With an eye on the progress of digital capitalism, NRI is attempting the evolution of business models that go beyond conventional frameworks, including a platform-based business in which various players provide X as a service. There may be a chance that NRI itself provides a platform. Co-creation with stakeholders becomes indispensable in the development of such mechanisms and their implementation in society. We will contribute to the achievement of a sustainable future society by co-creating with clients and partners social value that is distinctive of NRI.



## Co-creation of new value for the future beyond corporate boundaries

Corporate digital transformation strategy has shifted from the “Introducing IT to Business” era to “Creating Business through IT” era. To accelerate this trend, NRI is partnering with a variety of companies.

Through leveraging each other’s strengths such as the collective strength of diverse human resources and open collaboration, we are creating new value that overturns conventional wisdom.



### Bringing together NRI’s comprehensive capabilities in digital transformation

The contents are as of October 2021.



bitREALTY



<https://www.bit-realty.com/>

We support asset management for a wide range of investors through bitREALTY, an online real estate investment platform developed by real estate asset management company Kenedix and NRI. With our combined expert judgment, high transparency, and IT prowess, we provide genuine means of alternative investment for equity and bond investments.

**DMG MORI**

Technium

**TECHNIUM**

<https://www.technium.net/>

Technium specializes in leveraging digital technology to offer systems and services to maximize output at production facilities. DMG Mori Seiki and NRI have combined their expertise to provide new services to support the versatile use of machine tools and contribute to the development of the manufacturing industry.

**DENSO**

NDIAS



<https://ndias.jp>

NDIAS is a joint venture between global automotive parts manufacturer Denso and NRI Secure Technologies, Ltd., NRI’s Managed Security Services Provider (MSSP) subsidiary. Leveraging both companies’ strengths, we provide integrated security diagnosis and consulting services for in-vehicle electronic products from the development stage to after-launch support.



KDDI Digital Design



<https://www.k-digitaldesign.com/>

Building on the strengths created by synergies between KDDI and NRI, KDDI Digital Design provides consistent support for development of corporate side digital transformation from strategy planning to business feasibility verification and system development. As corporate IT investment shifts toward business IT, which leads to sales growth and new services, we are contributing to the development of society and industry by focusing on early business realization and expansion.

**NOMURA**



BOOSTRY

**BOOSTRY**

<https://boostry.co.jp/>

BOOSTRY was established by Nomura Holdings and NRI, with SBI Holdings contributing additional funding thereafter. Using the knowledge of each company, we’re building a new platform enabling corporations to issue marketable securities and other privileges using blockchain technology, thereby providing a new and improved financial system for society.

**Quick**

Financial Digital Solutions



<https://www.financial-ds.jp/>

QUICK and NRI came together to found Financial Digital Solutions to respond to future changes in the financial environment, as well as the diversifying needs of financial institutions. We will introduce more efficient solutions through maximizing the development capabilities and expertise of both companies.

**Komatsu Ltd.  
NTT DOCOMO, INC.**

**Sony Semiconductor Solutions Corporation**

EARTHRAIN



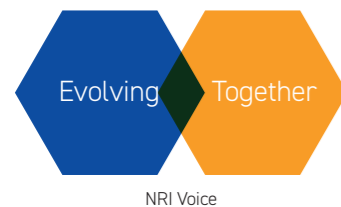
<https://www.earthbrain.com/>

EARTHRAIN was launched to bring DX to the construction industry, enabling massive improvements in safety, productivity, and environmental impact. NRI supports the construction industry with solutions, services, and knowledge leveraging expertise from transformational digitalization-based business models.



# NRI Voice

Digital Transformation



## NRI Voice — New audio content sharing the knowledge of NRI Group experts

We launched our owned media audio content, NRI Voice, in December 2020. In an industry overflowing with visual content, NRI Group experts deliver topics relevant to businesspeople via a novel communication medium.

As of September 2021, we've produced over 50 episodes covering a variety of topics, including

Post corona, Personnel management in the digital age, The current and future state of mobile phones, The front lines of data-based marketing, Purpose,

There's also plenty of DX coverage.



You can listen to all NRI Voice episodes here:  
<https://www.nri.com/jp/voice>  
\* Content is Japanese only. Unfortunately, no English version is available.



Management DX Consulting Department  
Group Manager

**Eiko Ibuki**

### Purpose

Episode 1: What is purpose?



Use the link below to listen now.  
[https://www.nri.com/jp/voice/lst/2021/0720\\_1](https://www.nri.com/jp/voice/lst/2021/0720_1)



Consulting Division  
Partner

**Shunichi Kita**

### The current and future state of mobile phones

~How will mobile phones change this decade?~  
Episode 1: The risks and benefits of lowering mobile phone charges



Use the link below to listen now.  
[https://www.nri.com/jp/voice/lst/2021/0302\\_1](https://www.nri.com/jp/voice/lst/2021/0302_1)



Deputy Division Manager of the Consulting Division,  
Division Manager of the Center for Strategic  
Management & Innovation, Research Director

**Kotaro Kuwazu**

### Post-Corona

~How will Japan's industries, society, and  
management change?~  
Episode 1: With corona and post corona



Use the link below to listen now.  
[https://www.nri.com/jp/voice/lst/2020/1215\\_2](https://www.nri.com/jp/voice/lst/2020/1215_2)



Health Care & Service Business Consulting  
Department  
Group Manager

**Mia Matsuo**

### Value-based healthcare

Episode 1: A look at value-based healthcare



Use the link below to listen now.  
[https://www.nri.com/jp/voice/lst/2021/0202\\_1](https://www.nri.com/jp/voice/lst/2021/0202_1)

Innovation magazine that generates hints for the future

# NRI JOURNAL

## Co-creating value with DX

NRI Journal offers a platform for experts from the NRI Group to discuss the latest topics and the future of society in a collection of web articles. Content covers many fields, including management strategies such as macroeconomics and DX, and technological trends like AI, IoT, and information security.

The next few pages feature four DX-themed articles from the collection.



All NRI Journal articles  
can be found on NRI's  
official website.





## Three Steps to Developing Digital Talent: In-House Talent Essential to Successfully Compete in the Digital Age

To achieve a successful digital transformation (DX), companies must do more than just having digital-technology-savvy talent onboard. The key is having “digital leaders” who are knowledgeable of company businesses and rules and capable of engaging various internal stakeholders to promote DX measures in day-to-day operations. We asked Hiroki Nakagawa and Mari Kinooka how to develop such talent.



Article URL <https://www.nri.com/en/journal/2021/0125>



IT Management Consulting Department,  
Hiroki Nakagawa (left), Mari Kinooka (right)

### Identify prospective digital leaders in-house

**When promoting DX, do many companies feel they have challenges with human resources?**

**Kinooka:** Over the past year or two, companies have been paying more attention to digital talent. The “2020 Survey on Digitalization Initiatives” that NRI conducted jointly with the Japan Users Association of Information Systems (JUAS) also

found that, when asked to name “factors considered important in promoting digitalization”, many respondents said “reaching a decision/agreement and/or leadership to take action when the resulting effect is uncertain” (73.8%) and “securing a new type of digital talent” (54.4%).

When thinking of digital talent, some companies focus on data scientists with data analysis skills, full-stack engineers who can build systems swiftly, and other tech specialists, seeking to procure external talent by paying hefty fees. Such efforts are important, naturally, but merely bringing in tech talent does not equate to successfully promoting DX.

**Nakagawa:** In the first place, without understanding the businesses and operating processes at your company, you cannot generate ideas for leveraging digital technology that will be beneficial for the company. It is critical to develop “digital leaders”—who can engage senior management and relevant divisions, serve as a bridge connecting them and build consensus, and implement digital strategies straightforwardly—from among internal personnel who are well-versed in company rules and culture.

### Three-step development: “ignition”, “experience”, and “execution”

**Is there a good way to develop such talent?**

**Kinooka:** We at NRI are proposing a three-step talent development process of “ignition”, “experience”, and “execution”.

Digital leader candidates tend to have experience succeeding in an existing business and a low level of interest in or motivation for engaging in new digitalization efforts, with some even having negative

thoughts about it. This is why, at the “ignition” stage, we will ensure that they understand what would happen if they don’t pursue digitalization and turn on their “digital mindset” to spur interest and motivation.

The “experience” stage offers off-the-job training, where prospects will master necessary knowledge and skills. NRI has established 11 traits that digital leaders must have in the three categorized fields of “business”, “technology”, and “human”. This means that they need quite a broad scope of knowledge and skills. Companies need to provide an effective training program, where prospects learn basic knowledge in a short period of time and gain simulated experience in planning and execution, for example.

In the “execution” stage, they will participate in a real project for on-the-job training to promote growth through execution. Companies also need to assign mentors and take other steps to create a support structure so that this will be a meaningful place for growth.

### All-online training incorporating knowledge from day-to-day operations offered

**What type of support does NRI provide?**

**Nakagawa:** We carried out a trial program of “Digital Leader Development Training (Introduction)”, which covered the “ignition” and “experience” stages, over a period of four half-days in September 2020. To ensure that the program covers the broad scope of the traits that a digital leader must have, we not only mobilized the knowledge of the NRI group but also tapped the expertise of external specialists. However, coronavirus restrictions suddenly forced us to switch to all-online training.

The trial program was attended by

nearly 30 people from companies in a wide range of industries, and used the workshop tool Mural, various Zoom functions, and on-demand streaming. This also allowed us to learn key points of virtual meetings, such as time allocation and assigning breaks, and a social hour.

**Kinooka:** Based on our self-assessment of the trial and feedback from participants, we created an introductory training package. And in August 2021, we began offering an intermediate-level training program that chiefly covers the experience stage. We’ll continue to leverage NRI’s signature style in our training, like having lecturers with practical experience discussing real-world situations or covering tricky points. We’d also like to provide post-training support in various ways, such as development of actual products and concept proposal.

**Lastly, what advice do you give to companies facing a digital talent challenge?**

**Kinooka:** Organizations and companies are human creations. Discussing with senior management what digital talent your company needs—in terms of what skills, knowledge and experience they need to have—will be the first step in hammering out a human resources strategy in the digital era. Upon doing so, it is important to think outside the box and overhaul areas such as hiring, talent development, and workplace environment one by one patiently.

**Nakagawa:** Personnel issues are not easy to deal with because they include pay, promotion and other sensitive matters. But for companies that keep using the same hiring and talent development methodology, it’s becoming more difficult to acquire skilled talent. It’s critical to tackle this issue now especially if you don’t want to fall behind digitally advanced companies.





## Why Have China's Digital Society Initiatives Been Successful?

In the barely 20 years since China embarked on creating an information infrastructure, the country has managed to build a digital society operating at the top level globally. In 2019, the scale of China's digital economy accounted for 36.2% of GDP and had become an economic growth engine. We spoke with Zhihui Li, author of the book "Innovation: China's Digital Powerhouse Strategy" and an expert on China's digital activities, to discuss the current state of digital society implementation in China.



Article URL <https://www.nri.com/en/journal/2021/0413>



Center for Strategic Management & Innovation  
Zhihui Li

### Digital society initiatives contributed to China's rapid containment of Covid-19

In China, an integrated public-private program of "digital/social governance" supported both the prevention of the spread of Covid-19 and the subsequent economic reopening.

The Wuhan lockdown initiated on January 23, 2020 was lifted on April 8. This quick containment was made possible by the successful

implementation of strict policies through a nationwide system. Experts believe that transparent information disclosure and rapid deployment of various digital technologies were immensely effective.

### The digital economy is accelerating in post-corona China

One innovation that played a major role in the post-corona resumption of economic activity after the decline

in Covid-19 infections was the Health QR Code digital certificates issued by local governments via smartphone apps. By making infection risk severity visible through color differences in QR codes, these certificates have enabled China's economy to reopen safely.

At the same time, to reignite consumption, local governments issued digital coupons that utilize payment apps and life service apps. These coupons can be delivered in a short time and make it simple to set the number of receivable coupons per person etc. They also make it possible to induce expanded consumption in particular industries by creating leverage (requiring consumption in amounts greater than those supplied) and limiting venues of use. Finally, the coupons made it possible to gather all this consumer behavior in the form of data and quickly analyze the extent of digital coupon usage and other effects, thus spurring new consumption while authorities assessed policy effectiveness.

However, digital technology applications in post-corona China have not been limited to consumer life, and are in fact accelerating in many fields, including remote work and online learning. These services are generally constructed in cloud systems to ensure that they can handle high-volume access by hundreds of millions of people – a practice so widespread in China that it has led to the birth of the term "cloud economy".

### China's digital powerhouse strategy shifts focus from quantity to quality

The reason China's digital society initiatives have progressed to this level so quickly is, first and foremost, the Chinese government's top-down advancement of clear

policies. The digital strategies that are formulated every few years have exhibited a shift from an initial quantity-centered catch-up strategy to a more recent quality focus driven by innovation.

The "National Informatization Development Strategy 2006-2020" announced in 2006 can be considered China's first national strategy aimed at becoming a digital nation. Under this strategy, China introduced a plan for fundamentally expanding information infrastructures, reducing the digital divide, driving e-commerce, and promoting e-government, rapidly increasing its number of internet users in pursuit of these aims. The gargantuan market created by this influx of new users drove the growth of e-commerce and other digital lifestyle services at this time.

Under this long-term strategy, China's telecommunications infrastructure showed dramatic "quantitative" advances. The number of internet users rose from 137 million in 2006 to 940 million in 2020; mobile users grew from 17 million in 2006 to 932 million in 2020; and the disparity in urban-rural internet penetration rates fell from 650% to 140%. The percentage of basic government services available online, which had been 57% when the plan was formulated in 2006, ultimately posted achievement rate of 100%, which was 125% of the original 2020 target of 80%.

### Innovation promotion has been pursued based on a clear grand design

Of course, in the process of these developments, China has faced the same challenges as other nations, including the feasibility of new market entry regulations, hierarchical segmentation,

innovation dilemmas, and a shortage of cutting-edge talent. However, the government has resolved these problems by, for example, introducing follow-up regulations, creating innovation environments, taking the initiative in promoting digitalization of public services, and recruiting top talent from overseas. One example of the government's innovation environment creation policy is the establishment of hi-tech industrial cluster zones modeled on Silicon Valley in the United States, which are intended to foster the growth of companies involved in emerging industries such as AI.

The rapid penetration of digital technology in China has been heavily influenced by the remarkably swift advances of the Chinese tech companies spearheading the change. Every successful Chinese tech company invests energy into research and development and superior talent acquisition. Other initiatives include unconventional incentive systems, headhunting top talent, and the facilitation of frameworks to assist long-term strategies.

The "DX Report" released by Japan's Ministry of Economy, Trade and Industry warns of a "2025 cliff", predicting that DX promotion will be essential for Japanese companies to survive in the marketplace, and that if Japan fails at DX, it stands to lose 12 trillion yen per year beginning in 2025, approximately three times its current economic losses. Moreover, it appears that Japan will need to encourage the utilization of China's wealth of IT talent and innovative companies in forms beneficial to both Japan and China, while learning from case studies on China taking the lead in implementing a digital society, and drawing on the successes and failures China has experienced.





## Unclogging Japanese logistics with DX

The Covid-19 pandemic has caused the use of e-commerce and delivery services to surge, with demand also skyrocketing across the logistics industry. Meanwhile, companies at the forefront are struggling to cope with granular quantity adjustments, deadlines, and sudden changes to plans. We ask Akiyoshi Tsuchiya, Teruyoshi Takei, and Natsuho Iseki about the current crisis in the logistics industry and why digital transformation (DX) is urgently needed to help the industry fulfill its role as essential infrastructure for a functional economy.



YH Project Division  
Group Managers **Akiyoshi Tsuchiya** (center), **Teruyoshi Takei** (left), and **Natsuho Iseki** (right)

### The logistics industry's complex structure and numerous players

#### What is the current state of DX in the logistics industry?

**Takei:** The media often reports on major EC enterprises and logistics companies using the latest technology, but that's not the entire story. It's easy to deploy fresh technology at new companies and warehouses, but even the giants of the industry have difficulty upgrading existing

locations. Many of the SMBs which make up over 99% of the industry are being left behind in DX.

**Iseki:** Many logistics companies still use paper slips, telephone conversations, and faxes, with plenty of businesses still analog focused. When SMBs run out of warehouse space, they contract other companies. When multiple subcontracts are involved, the scope of work out of the original company's hands expands and things become difficult to fix.

**Tsuchiya:** Data is easy to manage if a company performs all operations from production to delivery, but in logistics, products are passed like batons, so multiple contractors are involved at each step. Companies have multiple trading partners, each running different systems, so the entire industry is out of sync.



#### Advancing and expanding visibility

#### So, structural factors are blocking digitalization?

**Takei:** There are other reasons too. Originally, logistics companies performed well, even without IT. Experienced drivers knew roads and shortcuts through intuition and experience, so companies didn't feel the need to deploy route optimization software. However, with today's aging workforce, IT literacy has become a problem.

#### So how can we promote DX in the industry?

**Takei:** You can't suddenly introduce sophisticated technology such as AI for automation and optimization. You have to start by digitalizing front line operations and data to assess the situation. The first step is to gather, digitalize, and visualize data on reception, storage, picking, packing, and shipping

Next, you grasp the flow of operations for all locations and operations, not just some. Creating a portal screen using the collected data and visualizing the entire flow can often slash the time between reception and shipping.

**Iseki:** While many vendors are trying to solve the industry's problems with new software and devices, they tend to be biased toward their specialties and only improve some sites. The support of NRI identifies issues from a neutral standpoint according to the greater goal and provides flexible and optimal solutions.



#### Prioritizing front line workers—the backbone of logistics

#### What is the key to success for DX in logistics?

**Takei:** You have to gain the trust and cooperation of front line workers. The core business is transport, storage, loading, and unloading. In the previous example of digitalization, inputting data

with machinery might increase the burden of busy companies. Technical support is essential, whether it's automating data collection via sensors or minimizing human-based data entry to the extent possible. And analog work has produced many ingenuities and improvements, so a top-down approach ignoring all that is wasteful. The workforce must feel the benefits of digitalization at an early stage, like not having to create reports or shortening work hours. Prioritizing the workforce is the key to DX in logistics.



**Tsuchiya:** The essence of logistics DX is digitalizing work for dynamic, real-time response to sweeping changes in logistics. Managers and executives will feel the direct benefits of using digital technology to reveal hidden insights and optimize operations. It's important to include a set of elements that make logistics workers feel their work is easier. The Western world is currently researching the Physical Internet: a next-gen logistics system to break down corporate- and work-related barriers to share resources such as warehouses and transport while improving operating rates and connectivity. It aims to solve logistics problems by innovating the operations of both logistics companies and cargo owners.

NRI balances front line perspectives with the intrinsic goals of using advanced digital technology to help solve industry-wide problems with our knowledge and experience.





## Basic Accounts: Popularizing securities investment with accounts for everyone

Japan's financial industry has been urging a shift from saving accounts—the dominant form of personal assets—to investment for over 20 years. The concept of Basic Accounts (BA) is geared to assist this transition. With Covid-19 affecting all aspects of socioeconomics, we asked Katsutoshi Takehata about Basic Accounts as momentum for the transition increases.



Digital Financial Business Research Division  
Katsutoshi Takehata

### The trend toward investment began five years ago, but savings accounts still dominate

The proportion of investment in household financial assets (mainly stocks, bonds, and trusts) is only 14% in Japan, versus about 50% in the US. Cash deposits account for more than half of household financial assets. Households could enjoy the fruits of global corporate and economic

growth by diverting this cash to stocks and trusts. We must urgently shift from savings to investment and enable individuals to enjoy the benefits of economic growth more easily by properly leveraging financial assets.

The breakdown of household financial assets in Japan over the past five years shows cash deposits have increased, while money tied up in stocks and trusts has decreased. Investment

is gathering steam with recent developments like the push for asset formation through NISA and iDeCo, fintec services aimed at inexperienced investors, and higher stock values due to the so called “Abenomics” policies implemented by former Prime Minister Abe’s government. However, looking at current trends, the lack of progress moving from savings to investment suggests that it’s a difficult problem to solve.

But with Covid-19 causing disjointed changes in all aspects of socioeconomics, I think we’re in an environment where new ideas and philosophies are easily accepted. If this is true, it’s a good opportunity to try a different approach to policy issues that have been worked on through trial and error for many years but haven’t yet had the opportunity to progress. This is how we arrived at the BA concept.

### Using BA to develop an environment where individuals can easily access investment services

There are many hurdles to investment growth, including the difficulty of acquiring investment knowledge and the complexities of opening investment accounts. While we must overcome these barriers one by one, the BA concept automatically provides an account to every citizen, which enables everyone to invest without complicated steps just by owning securities and broadens the base of people at the start line.

However, the BA accounts we envision are limited to receiving marketable securities, so they differ slightly from general securities accounts. General

securities accounts have buying, selling, and holding functions: buying and selling functions carry the risk of loss and money laundering, so they need various means to protect investors and prevent crime. However, risk is limited if you’re only receiving free securities and holding them, which makes it possible for everyone to have an account.

BA accounts don’t require any special procedures, not even an application process, so we foresee them being automatically assigned at birth and given to all living people. Therefore, it would be best to link them to social security numbers and manage them through a highly transparent organization. In the event you wish to sell your marketable securities, you transfer them to your securities account. This way, people without a securities account must open one.

### Once established, BA will be used for education as well as public services

So, what can we use BA for? Experts have exchanged

views and presented several specific scenarios. For example, schools could allocate stocks and trusts to the BAs of all students, creating supplementary materials for financial education; municipalities could issue local bonds as gifts for birth of a child, or child support, or distribute them to migrants. In the future, the government could relinquish ETFs held by the Bank of Japan by distributing them to everyone for free. We expect marketable securities to become an everyday thing for everyone as BA makes investment in securities more common.

However, establishing BA will require investigation of numerous issues. In the case of shares, for instance, we’d need to discuss how people would receive dividends and notifications of general meetings of shareholders.

We’re still at the conceptual stage of BA and there are many rough parts that need refining, but the financial industry is already responding, and debate is likely to increase.







## Using DX to attract visitors to cities ~Adding convenience and a richer array of experiences to urban development~

NRI Digital is leveraging its DX knowledge and joining forces with Mitsubishi Estate and Plaid to develop advanced cities filled with fresh experiences fusing the digital and physical world by combining Mitsubishi Estate-operated offices, homes, commercial facilities, hotels, and airports with Plaid's CX platform, Karte.



Manager of DX Promotion Department, Mitsubishi Estate **Keiichi Kasuga (center)**,  
CX Designer, Plaid **Atsushi Ohata (right)**,  
NRI Digital **Takuya Hagimura (left)**,

### Creating meaningful visits

The Covid-19 pandemic has overturned the presuppositions of urban development by entrenching remote work and changing the purpose of offices. "We used to presume that people would be in the city and considered what to provide them, but now we have to examine the meaning of why they came," says Mitsubishi Estate's Keiichi Kasuga. "As lifestyles diversify, we can't create appropriate

products unless we identify the needs of people using buildings and facilities. Even in B2B businesses, it's important to use digital technology to create relationships directly with individuals, reflect those bonds in products, increase speed, and adapt to change."

The Mitsubishi Ichigokan Museum Stamp Rally held in the "Daimaruyu" business area near Tokyo Station in spring 2021 fused the real and digital world, creating a reason for people to visit local museums and bookstores to collect stamps using their smartphones.



### Replacing whitespace at the city level

According to NRI Digital's Takuya Hagimura, the event revealed actions typically hidden in traditional paper-based stamp rallies: "Data showed a greater percentage of people from other areas completed the goals than local office workers, which was a surprise. Numerous insights emerged, such as there being room for people who didn't complete the event to encounter more art."

"I think it's possible to capture a person's behavior using a city as

the unit, not individual products or stores," said Plaid's Atsushi Ohata. For example, we can increase the attractiveness of shops and towns and conduct large-scale marketing activities by using data to identify white space like a shop which local workers pass by without stopping. We think of ways to fill it and advise the owner on attractive products to display.



But to make this happen, we must create relationships in which users can benefit by voluntarily disclosing information about themselves. While the cloud has enabled high speed processing for back-end mechanisms like databases, there are hardware-related issues, such as installing IoT devices to digitalize the real world.

### Experiences that can only be made with apps integrated with cities

The three companies plan to continue their efforts to enhance CX by blending real and digital touch points while building a reliable data platform. In addition to providing shopping information, the recently released Marunouchi Points App aims to create novel experiences

by enabling users to enter real facilities, matching people and services, and providing functions for purchase and delivery services from local stores.

The 30th of June 2021 saw the opening of Tokiwabashi Tokyo Torch Tower, a new landmark situated in front of Tokyo Station. "There's been a focus on creating user experiences with digital technology, but initiatives like Tokiwabashi Tower are refreshing customer experience by incorporating the real world too. I want everyone to pool their expertise and work hard to create new experiences," says Ohata.

"Mitsubishi Estate Local Open Network (MELON) is another exciting concept - a system where customers voluntarily provide new data from real-world touchpoints owned by Mitsubishi Estate and digital touchpoints for the city like apps, so businesses operating in the city will be able to access analytics and customer touchpoints in the future," explains Kasuga. "With work styles and forms of entertainment becoming more diverse, we want businesses to create a cycle of new and exciting ideas by cooperating in various areas and surpassing previous frameworks. That's the sort of urban development that we need."







## “Zero Trust” Supports Remote Work

The number of companies making use of remote work has been on the rise during the coronavirus pandemic, but the realization and spread of this practice demands security environments that allows business to be conducted safely and comfortably regardless of location. It is now clear that the increase in remote work introduces many problems, including greater risk of exposure to information leaks and cyberattacks, and reduced communication speeds due to high-volume traffic. We discussed the “zero trust” security concept, which is attracting attention as a solution to these problems, with Shinya Ishii of NRI SecureTechnologies and Isao Eguchi and Go Oono of Nomura Research Institute (NRI), all of whom are experts with a wealth of practical knowledge and experience about these issues.



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### Why zero trust now?

The internet is a system based on the view that human beings are inherently good. As a result, any malicious person with technical skill can put together a cyberattack without much trouble. This means that when companies connect to the internet, they must protect their internal information assets by creating a barrier, called a firewall, between



NRI SecureTechnologies General Manager of Digital Security Consulting Department and Consulting Business Strategy Department **Shinya Ishii (center)**, Group Manager, Cloud & Network Service Management Department **Isao Eguchi (right)**, Digital Workplace Business Department **Go Oono (left)**

their internal networks and the outside internet. Under this mentality, which seeks to protect the barrier between inside and outside because inside is safe and outside is dangerous, any access to internal networks that is permitted will be trusted regardless of circumstances. This is the foundation of conventional network security. However, this approach introduces the risk that if malware-infected mobile PCs, USBs, etc. are brought into a company, the infection will spread throughout internal networks easily. The same thing can happen if even one internal device is infected by malware in an email attachment. With the expansion of remote work, external access to internal resources is increasing, but this trend creates various problems, including the impossibility of responding when weaknesses in the VPN gateways used for internal access are exploited to infiltrate internal networks. Therefore attention has begun to focus on security policies premised on the idea of “trust no one (zero trust)”, regardless of whether the connection is internal or external.

The term “zero trust” was coined in 2010 by John Kindervag of Forrester Research, an investigation firm in the United States. The idea has reentered the spotlight in recent years as remote work has expanded and the boundary between internal and external has become increasingly vague. More and more companies today are storing more and more of their data and applications in the cloud, causing a proliferation of areas that may be vulnerable to attack. With the spread of

remote work, there has been an extreme increase in traffic that passes over networks from external to internal sources and then back outside again, and the construction of security rooted in zero trust thinking is becoming a common objective from the standpoint of suppressing this phenomenon as well.

### The Three Types of Security Achieved with Zero Trust

A zero trust security policy constantly evaluates all access without differentiating internal from external. More specifically, suspicious access that would not be caught by a firewall alone is detected and regulated. There are three key locations in this process: an “endpoint” such as a PC or mobile device; a “cloud” where applications and data are stored; and a “network” that connects the other two. By utilizing solutions etc. that can simultaneously realize device regulation/control for malware and cyberattacks at the endpoints, regulation/control of access conditions and multifactor authentication in the cloud, and comfortable connection environments and security on the network, this approach creates optimal and safe environments for the companies that adopt it. The purpose of zero trust is to eliminate excessive trust and exorbitant risk in companies while ensuring convenience and security. Therefore, depending on a company’s business and characteristics, if strengthening IT infrastructure is not currently an objective, it is also possible to incorporate zero trust concepts by, for example, revising existing network policies and rules to

reduce the risk and impact of cyberattacks. Likewise, for companies that anticipate an expansion of telework or cloud utilization going forward, it is necessary to combine various solutions, including zero trust network access (ZTNA), and consider the optimal solution for the organization.

### Towards the introduction of zero trust

When introducing zero trust, it is essential to review both hard aspects of security such as infrastructure, and soft aspects of security such as governance and rules. If you can create a zero-trust-based IT infrastructure, the convenience of your work environment will be significantly enhanced for the users, including by allowing them to engage in remote work and utilize the cloud. At the same time, however, these advances always go hand in hand with risks and threats from the company perspective. It is essential that, while providing IT infrastructure environments, companies also establish rules, stipulate acceptable modes of use, and otherwise cooperate with divisions in charge of governance.

As a home to security experts in the endpoint, cloud, network, and security fields, NRI Group prides itself on offering, realizing, and supporting solutions tailored to the work styles of its clients. NRI also offers security consulting, including for the establishment of governance structures. Through these activities, we also hope that we can contribute, however slightly, to the enhancement of social infrastructures for safety and reliability.





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The NRI Group publishes DX-themed books covering various areas, including the industry as a whole, management, and human resources. Here are a few of them.

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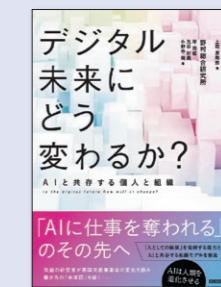
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