Materiality 1

Promotion of Innovation Centered on Telecommunications

Values we embrace (1) Molding Future Society

Our power to make connections will support new technologies and create excitement beyond customers' expectations and a thrilling future experience.

Executive Officer
Executive Director, Corporate Strategy Planning Division and
Executive Director, Business Exploration & Development Division

Hiromichi Matsuda

Our power to make connections will bring about innovation in people's lives, experiences and actions.

KDDI aims to push ahead with innovation that customers will really feel in their daily life and to create a thrilling future society using our power to make connections. We express this aim as life transformation (LX)* in the Mid-Term Management Strategy. In the domain of LX, we focus on the metaverse, outer space and drones.

First, the metaverse will bring overwhelming innovation in customers' experiences and behaviors. It will provide new experiences beyond geographical and social constraints. The metaverse allows you to have a personality that is different from your real personality using an avatar. It is expected to be a gateway to next-generation communication. KDDI will be offering an urban-linked metaverse. There is hope for the metaverse from the perspective of regional revitalization. For example, using the metaverse, we can be in the virtual space that simulates a real city in a digital form. Users can experience the attractions of the region from their homes. A large number of local governments have shown interest in it as a new tool for advertising regional attractions.

Next, we will work on space communication in collaboration with Space Exploration Technologies Corp., better known as SpaceX. That will make high speed telecommunication equivalent to the services in urban areas available anywhere. It will ensure that au's communication services can be enjoyed in mountainous areas and on remote islands where communication used to be slow and unstable and help increase the social value of provincial regions. In addition, actions of viewing the Earth from space will increase. We expect these actions to create value in many different ways, such as the monitoring of greenhouse gas distribution, studies on the proper positioning for the installation of solar power generation equipment and the improved safety of workers on remote construction sites.

Drones have achieved labor reduction and the automation of logistics, inspection, monitoring, measurement and other processes conventionally dependent on human workers and they have replaced humans in dangerous work. Drones will bring about innovation in people's lives and businesses. Linking mobility devices, such as robots on the ground and drones in the sky to communications services will create a new experience.

They will all require high speed telecommunications. KDDI will combine our power to make connections with cutting-edge technologies to provide excitement beyond customers' expectation and build a thrilling future society.

Co-Creation Based on Partnering Will Be the Key to Accelerating Sustainability in the 5G Era

KDDI's strengths include its technologies and knowledge for establishing connections which we have untiringly pursued for a long time. This also includes partnering that transcends the boundaries between businesses and industries. KDDI has been working to improve services, create new businesses and address social issues through co-creation with partner companies. We believe that co-creation with partner companies will be necessary to surmount the big wave of changes caused by 5G in particular. We have long been involved in partnering in a very natural form, in which KDDI supports telecommunications while partner companies that are professionals support the technologies and knowledge in the domains that we are not specialize with.

We aspire to create environmental, social and economic value through business and accelerate the creation of value through partnering. This idea underlies the sustainability management stated in our Mid-Term Management Strategy. We will continue to work to realize this. We hope you will look forward to the sustainable future created by KDDI.

*LX: Life Transformation (a business model that transforms diversifying consumption, life experience and behaviors with an eye to the future)

Values we embrace (1)

Molding Future Society

Mid-Term Sustainability Targets (FY23.3-FY25.3)

| Providing virtual cities in collaboration with local governments | Number of business creation and research and development projects based on the Satellite Growth Strategy (Mid-Term cumulative total): **60** | Patents owned in areas related to 5G, beyond 5G and satellite growth: Grew **20**% year on year |

Concrete Actions

Metaverse	Space communications	Drones
Develop urban-linked metaverses, such as Virtual Shibuya and Virtual Osaka, which allows users to experience new communications and content in virtual spaces	Provide mountainous and insular regions with high speed communication services comparable with services in urban areas using Starlink satellite communication services in collaboration with SpaceX	Expand the use of smart drones using mobile telecommunications, and create applications for them, such as inspection and delivery, and cultivate new areas after lifting the ban on flights beyond the sight of human operators

Strengths

Power to Connect

Metaverse	Space communications	Drones
Support for start-ups that have advanced technologies and collaborating with different companies	More than 50 years of history, achievements and technical expertise in satellite telecommunications	Use of radio waves for mobile communications in the sky using the expertise and knowledge in the telecommunications business

Risks
- Loss of business opportunities due to competitors' innovation activities

Opportunities
- Co-creation of new businesses in collaboration with various partner companies

Social Issue

Discuss how to create a society in which lifestyles are totally different and richer with unseen items and where anyone can fulfill their wishes, instead of thinking from the perspective of current social issues

1 Promotion of Innovation Centered on Telecommunications
▶ Values we embrace (1) Molding Future Society

Regional Revitalization Through Urban-Linked Metaverse

KDDI launched "Virtual Shibuya" in May 2020 as a distribution platform authorized by Shibuya City. In February 2022, KDDI expanded this development by adding "Virtual Osaka" to create opportunities to sustain and expand the city's cultural creation activities through the provision of new entertainment.

So far, in collaboration with diverse companies, artists, and users, including start-ups, KDDI has hosted live performances, public viewings, and other virtual events. With a total attendance of approximately 1 million people, the platform provides a place where people can gather and create valuable experiences from

their own homes with content that utilizes cutting-edge technology. The platform has also contributed to the development of Shibuya by selling special goods at events and giving all profits from the sales back to Shibuya City.

KDDI will continue to promote the expansion of culture and economy in Japan and abroad in cooperation with local governments, various companies, users, and society as a whole.

The borderless society brought about by the urban-linked metaverse overcomes divisions and connects people.

©Shibuya 5G Entertainment Project

Virtual Shibuya (Japanese only)

©Virtual Osaka

Virtual Osaka

Using SpaceX's Starlink Satellite Telecommunication Service for Backhaul Lines at KDDI Base Stations

In September 2021, KDDI finalized a contract to introduce the Starlink satellite telecommunication service to the backhaul* lines of its base stations. Using Starlink technology to replace backhaul lines at base stations, which were previously connected by existing satellite lines as optical fiber could not be installed, KDDI will deliver high-speed telecommunications to

mountainous areas and remote islands. We will continue to provide security by utilizing Starlink to ensure people can stay connected at all times and to work to eliminate the digital divide.

*Backhaul: A relay line connecting a cell phone base station and the backbone telecommunication network (core network).

From the Space Realization of "Connecting More and Always" Satellite Telecommunications Project Launched.

KDDI selects SpaceX's Starlink for cellular backhaul

Credits: SpaceX

Ensuring Comfortable Lifestyles Through the Use of Drones in Social Infrastructure

Expectations for the use of drones as social infrastructure are growing even higher with the impending enforcement of the "unassisted out-of-sight flight in manned areas (Level 4 flight)" law. KDDI has developed smart drones equipped with mobile telecommunications and UAV Traffic Management System and accumulated advanced demonstration tests and case studies. In April 2022, it launched full-scale operations of KDDI SmartDrone Inc.

KDDI SmartDrone collaborates with various companies, local governments, and start-ups to solve social issues with the use of drones. In hilly and mountainous regions, we are providing a drone delivery service to support residents and the elderly who face difficulties shopping. We have also started demonstration tests of drone transportation of food and medical supplies in urban zones to create a society where drones can fly autonomously and make people's personal and working lives easier.

Solving Social Issues and Ensuring Comfortable Lifestyles with Smart Drones Equipped with Mobile Communications Technology
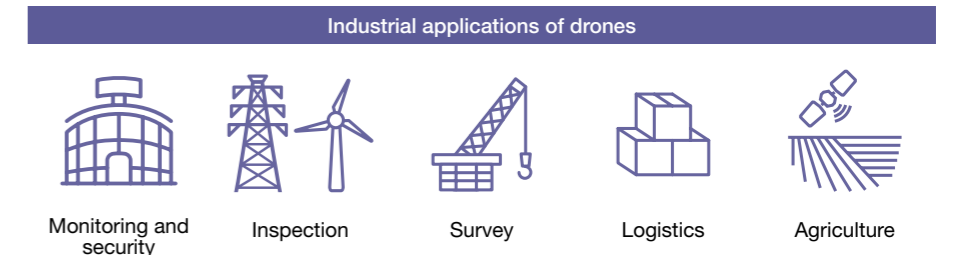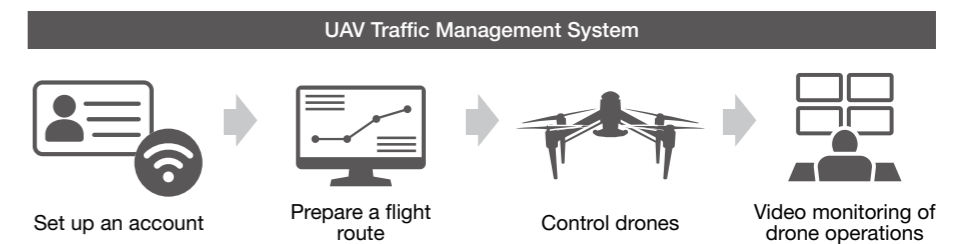
KDDI SmartDrone Inc. (Japanese only)

A Case Study of Smart Drone Innovations

To manage safe drone flights, KDDI has been developing UAV Traffic Management System to apply to overflight airwaves, flight permission, airspace control, and flight control.
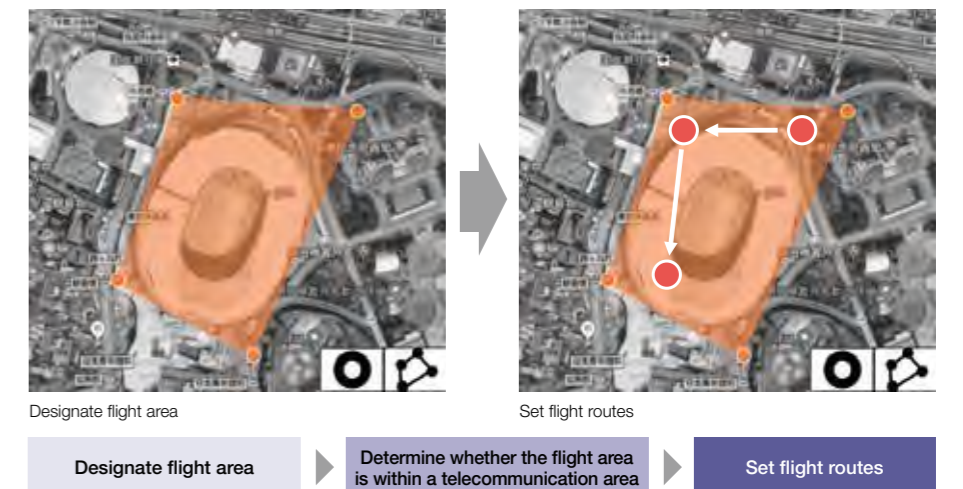
Since this flight-control system is the foundation supporting various drone usage scenarios, such as surveillance, security, inspection, monitoring, logistics, and agriculture, we are placing particular emphasis on innovation.

We hold 89 patents (53% of 169 drone patents) (as of December 2021) related to the Traffic Management System and will continue to promote innovation with the aim of turning drones into social infrastructure.

UAV Traffic Management System

Set up an account → Prepare a flight route → Control drones → Video monitoring of drone operations

Industrial applications of drones

Monitoring and security   Inspection   Survey   Logistics   Agriculture

A Case Study of a Patent for the UAV Traffic Management System

In "set flight routes" function, customers can specify the drone's flight route. To ensure that the flight area is correctly set within the telecommunication area, we have introduced a mechanism to determine whether or not the flight route is within the telecommunication area. This mechanism has been registered as our patent. Many of these patented technologies are implemented in the UAV Traffic Management System.

Designate flight area

Set flight routes

Designate flight area → Determine whether the flight area is within a telecommunication area → Set flight routes

Materiality 1

Promotion of Innovation Centered on Telecommunications

Values we embrace (2) Realization of Sustainable Industrial/Infrastructure Environment

Our customer-centric DX will provide innovative solutions to communities and industries, contributing to the realization of a sustainable platform for industry and infrastructure

Executive Vice President, Director
Executive Director, Solution Business Sector

Keiichi Mori

Opportunities to Solve Challenges through Corporate DX

The coronavirus pandemic has dramatically transformed the ways that people live and work. I believe that the new normal will reshape our established values and accelerate efforts to solve the challenges facing society. KDDI is advancing the digital transformation (DX) of its customers' work styles with the aim of redesigning the work environment into one that enables people to work more productively by freeing them from the constraints of time and location. DX enhancements such as 5G and zero-trust solutions will make it possible to confidently and securely work in any remote location, while staying up to date on the latest information. And, it will be possible for teams to virtually carry out projects and development without falling behind schedule. This environment will empower workers to make effective use of their commuting time and will help to solve various social challenges, such as the need to balance work with parenting and family care responsibilities. Moreover, the new work styles can help society to address the excessive concentration of economic activity and consumers in large urban areas. By promoting telework based in smaller communities, particularly those with shrinking populations, we can energize those areas and their industries, thus attracting more workers and creating a virtuous circle.

Knowledge & Expertise in DX/IoT, Collaboration with Partners

KDDI is endowed with three strengths in the sustainable advancement of DX. The first is our capabilities. We have a large pool of talent possessing knowledge, expertise, and sophisticated skills in DX. In July 2022 we launched the KDDI Digital Divergence Group as a DX-focused organization that merges the DX insights and know-how of KDDI Group companies to support the DX of customers. The establishment of a company with capabilities in cloud computing, agile development, and

other essentials for driving DX forward bolsters our DX support and development. Our second strength is our wealth of insights in IoT. These insights have been built up through our 20 years of experience in selecting the best sensors for their application, collecting and analyzing data, and implementing other processes. The third is partnering. We have forged robust collaborative ties with over 600 telecommunications firms around the world. Our collaboration with partners with expertise in specialties such as cloud computing, distribution, and marketing is driving force for our efforts to tackle social challenges and transform business. At the same time, DX takes more than technology to succeed; it also requires visionary thinking for transforming business models. To this end, we are further cultivating DX talent through the KDDI DX University, which we launched in 2020 as an internal initiative.

DX Will Empower People to Focus More on Tasks with Higher Value Added

IoT is at the heart of business DX for supporting industry. AI-driven inspection and analysis of IoT data collected from sensors and terminals enables people to put more energy into high value-added tasks such as decision-making and long-term planning. Let's consider an example from agriculture. Rice farmers might spend some three hours a day making the rounds of their scattered paddies to check the water level and temperature. However, IoT is now being used to allow farmers to instantly check weather and paddy conditions from their home, which helps them to boost their efficiency and earnings. This is a key role for KDDI—leveraging IoT to transform local and primary industries. We are working to strengthen remote communication by digitally supporting diverse "connections." In doing so, we seek to realize a sustainable platform for industry and infrastructure that benefits society and the environment, and thus contributes to our goal for KDDI VISION 2030: The creation of a society in which anyone can make their dreams a reality.

Values we embrace (2)

Realization of Sustainable Industrial/Infrastructure Environment

〔 Mid-Term Sustainability Targets (FY23.3-FY25.3) 〕

Number of IoT lines contributing to industry/infrastructure DX	Zero-trust solution deployment	5G population coverage governmental target	Number of serious accidents[1]
44 million	**35** %	**95** % by FY2024.3	**0**

*1 Based on the Ministry of Internal Affairs and Communications' accident reporting guidelines.

〔 Concrete Actions 〕

► **Corporate DX to support diverse work styles**
► **Business DX to transform business through 5G & IoT**
► **Cultivation of DX talent with innovative ideas**

〔 Strengths 〕

● Diverse capabilities: Telecom infrastructure, DX insights, know-how, talent, and more
● Achievements and experience built up as a leader in IoT
● Business co-creation with partners in many different specialty areas

〔 Risks 〕

● Increase in costs (R&D, procurement, etc.) due to business expansion
● Destabilization of the international community

〔 Opportunities 〕

● Co-creation of new enterprises through collaboration with diverse partners
● Resolution of shortages in working population and successors through work process streamlining/automation, remote operations, etc.

〔 Social Issue 〕

Responding to rural flight, declining birthrate, population aging, shrinking workforce, as well as lifestyle changes and work style reforms precipitated by the coronavirus pandemic

1 **Promotion of Innovation Centered on Telecommunications**
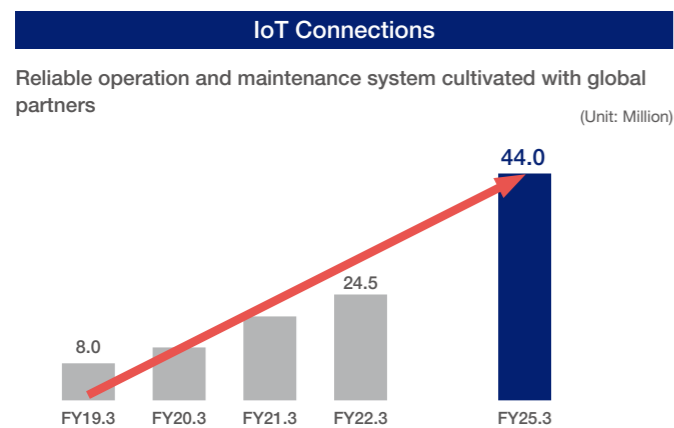▶ **Values we embrace (2) Realization of Sustainable Industrial/Infrastructure Environment**

Increase in IoT Connections

Our IoT connections are strong in the social infrastructure and global domains, such as connected cars, electricity, gas, and smart meters. KDDI's strength lies in its approximately 20 years of operational experience and maintenance of management systems used in such critical infrastructures. Our IoT connections are steadily expanding, with KDDI (non-consolidated) surpassing 26 million lines in June 2022, giving it the top market share in Japan. In the mid-term, we will contribute to the realization of a sustainable industrial and infrastructural environment by providing innovative solutions for telecommunications, other social infrastructure, and connected cars, aiming for 44 million lines in FY25.3. Overseas, through an optimal combination of localization and global standards, our support is not limited to connected cars but is undergoing massive expansion to include the DX of our customers' overseas locations and the provision of platforms for a wide range of industries.

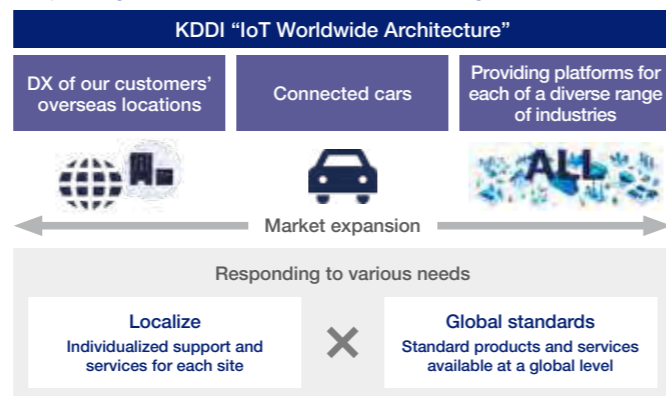In the future, we will accelerate the DX of our customers'

companies by providing platforms for each of a diverse range of industries to further create new added value.

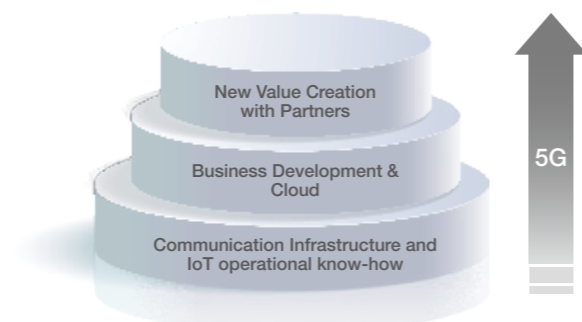▌ KDDI "IoT Worldwide Architecture"

Responding to various needs from localization to global standards

KDDI "IoT Worldwide Architecture"		
DX of our customers' overseas locations	Connected cars	Providing platforms for each of a diverse range of industries

← Market expansion →

Responding to various needs

Localize Individualized support and services for each site	×	Global standards Standard products and services available at a global level

▌ Outlook of DX leveraging our strengths

Further evolution of operational management know-how optimized for an era of blended communications

IoT Connections

Reliable operation and maintenance system cultivated with global partners

(Unit: Million)

- FY19.3: 8.0
- FY20.3
- FY21.3
- FY22.3: 24.5
- FY25.3: **44.0**

New Value Creation

Co-creating new value through DX in addition to the sense of security provided by constant connection

New Value Creation with Partners

Business Development & Cloud

Communication Infrastructure and IoT operational know-how

5G

Jointly with J-POWER (Electric Power Development Co., Ltd.), Conducted Drone Inspection Verification of Approximately 40 Electric Power Facilities Nationwide

Electric Power Development Co., Ltd. (hereafter referred to as "J-POWER") and KDDI have been conducting a series of drone inspection verification tests of J-POWER facilities scattered across Japan since November 1, 2021, starting with about 40 hydroelectric power generation facilities. The project uses drone photography and 3D modeling of dams, distribution lines, buildings, and other electric power-related facilities to verify work efficiency, compare accuracy with existing inspection work, and identify possible alternatives, using technologies such as automatic detection of equipment abnormali-

ties and analysis of aging and deterioration conditions.

J-POWER has been promoting the use of drones to improve the safety of power facility inspections and reduce work time and costs, including the development of technology for power facility inspection drones that use autonomous imaging technology for power lines and overhead ground wires. As part of these efforts, in September 2020, J-POWER and KDDI jointly conducted a blade (blade parts of wind turbines) inspection demonstration using the drone's auto-flight function at a wind power facility and succeeded in reducing the inspection time to about one tenth of the conventional time. Since May 2021, we have completed the inspection of the blades of 67 wind power facilities using drones with an auto-flight function, and we are expanding the scope of inspections further in FY23.3.

KDDI has been developing and providing a smart drone

platform that enables drones to be remotely controlled via mobile telecommunications such as 4G LTE for safe long-distance flights, with the aim of creating a society in which drones are used as infrastructure to support daily life in fields such as logistics, agriculture, and monitoring.

After this nationwide drone inspection verification, KDDI will continue to promote drone inspections of hydroelectric, thermal, wind, and other electric power facilities by combining J-POWER's electric power facility inspection technology with KDDI's drone flight and operation technology.

🔗 Jointly with J-POWER, conducted drone inspection verification of approximately 40 electric power facilities nationwide (Japanese only)

Example of 3D modeling from drone-captured data: Nukabira Power Plant

Smart Fishery and Agriculture Initiatives Using IoT

Fishery and agriculture operations are often based on long years of experience and intuition. In addition, there have been issues such as the burden of workers having to go directly to the seashore or rice paddies to check changes in their conditions. The use of IoT contributes to solving various issues, such as improving work efficiency, reducing costs, and stabilizing and improving the quality of harvests, by making it possible to check the current condition of the sea and paddy fields with a smartphone or tablet without having to visit the site. Also, by visualizing experience and intuition with data, we expect to expand employment opportunities in the fishing and farming industry for novices and young people.

Smart buoy installed off the coast of Keshima, Maizuru City, Kyoto Prefecture (Photo provided by KDDI Research, Inc.)

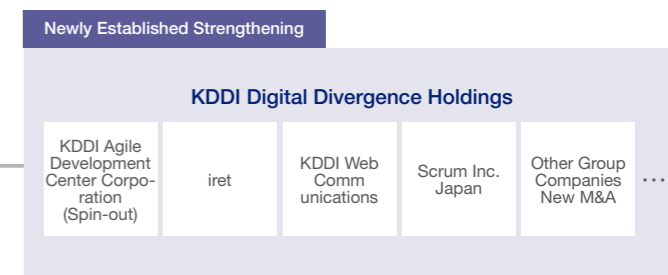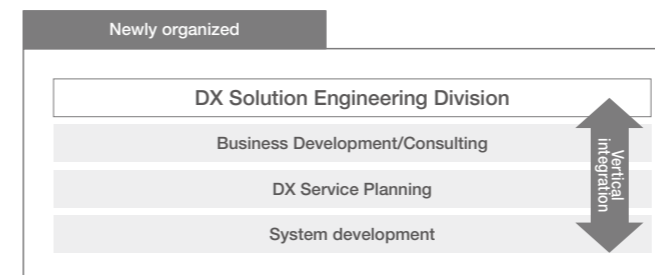Agricultural sensors installed in rice paddies in Toyooka City, Hyogo Prefecture

🔗 Solutions for agriculture, forestry, and fisheries (for corporations and businesses) (Japanese only)

Strengthening Systems and Expanding Resources to Create New Value

In April 2022, KDDI established the DX Solution Engineering Division by integrating business, DX and system development divisions to establish a system that can provide all DX solutions at once. On May 12, 2022, KDDI also established an intermediary shareholder company, "KDDI Digital Divergence Holdings Corporation." By developing a designated digital transformation

(DX) structure, KDDI will provide speedy support for DX of our customers, achieve effective collaboration within the group, and expand business alliances with external DX support companies, aiming to maximize the value of the group's DX business.

🔗 KDDI Digital Divergence Holdings Launched

Newly organized		Newly Established Strengthening

DX Solution Engineering Division		Vertical integration	KDDI Digital Divergence Holdings
Business Development/Consulting			KDDI Agile Development Center Corporation (Spin-out) / iret / KDDI Web Communications / Scrum Inc. Japan / Other Group Companies New M&A / ...
DX Service Planning			
System development			

Structure as of July 1, 2022