

SECTION 2: The Digital Economy and 5G

OVERVIEW

In recent years, the Digital Development (DD) Global Practice (GP) has worked closely with the Republic of Korea. This work has enabled the World Bank's client countries to learn from Korea's best practices and, as a result, improve their capacity and strengthen their markets for the digital economy. DD is planning two separate thematic workshop on February 18 and 19 to share the achievements of Korea-funded DD projects and to explore future opportunities for collaboration by discussing Korea's recent 5G initiatives, as well the Korean startup ecosystem.

The first thematic workshop, "Harnessing the Potential of the Digital Economy for Our Client Countries: Lessons from Korea," will showcase projects funded by the Korea-World Bank Partnership Facility (KWPF) in an effort to harness the potential of the digital economy for our client countries through sharing lessons learned in Korea. The workshop will discuss past and ongoing collaborations between DD and Korean development partners that have helped DD provide resources to client countries to help those countries build capacity, raise awareness of cybersecurity, and adopt cutting-edge digital solutions for governments and citizens.

The second thematic workshop, which will be more future oriented, encompasses two halves - "Korean 5G, from First to Best" and "Korea's Startup Ecosystem and Future Collaboration Opportunities." During the first half, "Korean 5G, from First to Best," the workshop will closely examine

Korea's policy on 5G and industry leaders' technologies and strategies related to 5G. This session will discuss Korea's experience with carrying out a nationwide 5G deployment and impart lessons learned, along with suggestions for how client countries might benefit from those lessons. Industry leaders such as SK Telecom; KT Corporation; LG U+; and Samsung Electronics Co., Ltd., will share their experience and vision for the 5G era.

The second half of the workshop, "Korea's Startup Ecosystem and Future Collaboration Opportunities," will introduce Korea's startup ecosystem and successful deployment of public-private partnerships as well as government-initiated entrepreneurship promotion programs. Representatives from innovative Korean startups will be invited to the stage, where they can apply their technological solutions directly in the context of the Sustainable Development Goals and can seek collaborative opportunities with multilateral development banks.

ACTIVITIES

A. Thematic Workshops

This workshop will introduce digital economy projects funded by Korea. Topics will range from cybersecurity to e-government to people-centric digital solutions in Myanmar. Digital Development Task Team Leaders who led the projects

KOREA INNOVATION WEEK, DAY 1

DD Thematic Workshop at Preston Auditorium

Harnessing the potential of the digital economy for our client countries: Lessons from Korea

TIME	ACTIVITY
1:45-2:00pm	<p>Welcoming Speech: Boutheina Guerhazi, Director of Digital Development, WBG</p> <p>Moderator: Nicole Klingen, Practice Manager, Digital Development, WB</p> <p>Keynote Speech: Jeong Won Kim, Deputy Minister, MSIT</p>
2:00-2:50pm	<p>Lightning Talks on DD Projects and Korean Partners' Experience Sharing Cybersecurity</p> <ul style="list-style-type: none"> • Global Cybersecurity Capacity Program: Progress and Lessons Learned: Natalija Gelvanovska, Senior Digital Development Specialist, WB • Korean Cybersecurity Framework: Dae-Kyu Shin, Vice President, Korea Internet and Security Agency • Discussion: Moderator & Speakers <p>Smart Nation</p> <ul style="list-style-type: none"> • Smart Nation Program as a Platform to Catalyze Digital Economy Strategies and Lending Projects in Central Asia: Oleg Petrov, Senior Digital Development Specialist, WB • Collaboration and Cooperation for Global Digital Inclusion: Kangtak Oh, Vice President, National Information Society Agency (NIA) • Discussion: Moderator & Speakers



2:50-3:15pm	<p>Ongoing and Future Collaboration Opportunity</p> <ul style="list-style-type: none"> • People-Centric Digital Services for Peace and Inclusion in Myanmar: Kaoru Kimura, Digital Development Specialist, WB • Q&A: Moderator • Closing Remarks: Boutheina Guermazi, Director of Digital Development, WBG
-------------	---

and Korean development partners who collaborated on the projects will share project outcomes, their engagement experience, and ideas for future collaboration.

This workshop will focus on the recent event of the world's first nationwide 5G deployment and share ideas for future collaboration. Industry leaders from such corporations as SK

Telecom, Korea Telecom (KT), LG U+, and Samsung Electronics as well as a state-funded research institute (ETRI) will share their experience with 5G deployment, Korea's state-of-the-art 5G technology and services, and ideas for how low- and middle-income countries might take advantage of 5G in the future in the context of development.

KOREA INNOVATION WEEK, DAY 2	
DD Thematic workshop II at MC 2-800 Korean 5G, from First to Best	
TIME	ACTIVITY
2:00-2:10pm	<p>Opening Remarks: Jeong Won Kim, Deputy Minister, MSIT</p> <p>Opening Remarks: Boutheina Guermazi, Director of Digital Development, WBG</p> <p>Moderator: Je Myung Ryu, Senior Digital Development Specialist, WB</p>
2:10-2:20pm	<p>5G+ Strategy of Republic of Korea: Doo Won Jang, Artificial Intelligence Industry Team Director, MSIT</p>
2:20-3:10pm	<p>Industry Trends on 5G</p> <ul style="list-style-type: none"> • 5G to Boost Digital Economic Development: John Godfrey, Senior Vice President in Public Policy, Samsung Electronics America • Leading the Age of 5G Hyper-Innovation: Jong Min Lee, SVP and Head of Tech Innovation Group, SK Telecom • KT 5G: Opening Up New Opportunities: Hee-Su Kim, Executive Vice President, KT Economics and Management Research Institute • Seeing What Is Possible with 5G: Jun Young Shin, Vice President, U.S. Representative of LG U+ • 5G Technology and R&D in Korea: Young-Jo Ko, Director of 6G Wireless Transmission Research Section in Future Mobile Communication Research Division, Electronics and Telecommunications Research Institute (ETRI)
3:10-3:30pm	<p>Panel Discussion: Implications for 5G on Developing Countries: Moderator and Speakers</p>
3:30-3:50pm	<p>Q&A and Wrap-up</p>

Korea has successfully leveraged public-private partnerships for startups and has implemented strategies to establish a healthy entrepreneurship ecosystem. This workshop will share Korea's experience with promoting entrepreneurship

and will introduce five Korean startups with innovative technological solutions that can be applied directly to development issues.





KOREA INNOVATION WEEK, DAY 2

DD Thematic Workshop II at MC 2-800 Korea's Startup Ecosystem and Future Collaboration Opportunities

TIME	ACTIVITY
4:00-4:20pm	<p>Opening Remarks & Moderator: Samia Melhem, Lead Digital Development Specialist, WB KIC Silicon Valley's Korea Startup Promotion Platform and Strategy: Heonsoo Rhee, President, National IT Promotion Agency KIC Silicon Valley</p> <p>Introduction on Korea Startup Ecosystem and Collaboration Opportunities with MDBs: Jongkap Kim, Chief Executive Director, Born2Global Centre</p>
4:20-4:55pm	<p>Innovative Technology-Based Solutions in the Field of Development</p> <ul style="list-style-type: none"> • How to Promote WBG's "Goodwill" by GSIL's Technology: Victory Ji, Manager, Great Safety Information Laboratory (GSIL) • LH2, the Solution for Sustainable Energy and Transport: Joshua Kim, Manager, Hylum Industries • Make the Future Brighter through Robotics Education: Younghoon Son, North America and Middle East and North Africa Sales Representative, LUXROBO • VisualCamp: Advanced Eye-Tracking: Yeon Ho Kim, General Manager, Visual Camp • Deep-Tech Based Livestock Health Care, farmsplan: Nohkyum Kyeong, CEO, Animal Industry Data Korea (AIDK)
4:55-5:00pm	Q&A & Closing Remarks

B. Informational Booth

The Digital Development (DD) Exhibition Zone comprises an exhibition area and a booth demonstration area. The exhibition will showcase Korea's digital development history from the telegram to 5G and how it led to innovation in Korean daily life.

In the atrium, participating booths will demonstrate big data, AI, and IoT-based solutions to tackle diverse development challenges ranging from health and education to energy and safety management.

Digital Development Exhibition Booth at MC Lobby

BOOTH	AGENCY
IoT-Based Safety Management System	GSIL
Smart coding education platform	LUXROBO
Compact hydrogen liquefaction and Ultralight Liquid Hydrogen Storage Technologies	Hylum Industries
Eye-Tracking Technology for VR	Visual Camp
Big Data-Based infectious disease prevention platform	KT
Big Data-Based animal health management solution	AIDK



KEY PARTICIPANTS

A. Korean Institutions



Ministry of Science and ICT

The Ministry of Science and ICT (MSIT) focuses its efforts on accelerating innovation across society by building an environment that promotes autonomous and audacious research, securing source technologies and growth engines, and converging science and technology with ICT. MSIT works to reform regulations and adapt systems for new industries involving artificial intelligence and biotechnology. It also works to make mobile phone service more affordable so that everyone can enjoy the benefits of quality mobile communication.



Korea Internet and Security Agency

Korea Internet and Security Agency (KISA) specializes in promoting Internet and information security in Korea's private sector. With "Internet promotion for the future" and "information security for our safety" as its two primary tasks, KISA focuses on enhancing the information security capacity of Korea's ICT industry and on encouraging global competitiveness in a harmoniously balanced manner.



National Information Society Agency

National Information Society Agency (NIA), established in 1987, is a statutory agency of Korea. It is responsible for the overall implementation and support of the informatization of the nation and society.

Building on its knowledge and expertise, NIA promotes new opportunities made possible by emerging disruptive information technologies in the Fourth Industrial Revolution (4IR) era. In addition, NIA has actively engaged in global ICT cooperation for digital inclusion through joint TA for developing countries, information access centers (IACs), ICT cooperation centers (ITCCs), WFK ICT volunteers, e-government cooperation centers, and global ICT education programs for public officials in partner countries.



National IT Industry Promotion Agency

National IT Industry Promotion Agency (NIPA) is expanding Korea's future through ICT and software. It engages in a variety of initiatives to raise national competitiveness and secure growth engines for the future through convergence of software (including AI, VR/AR, 5G, and cloud computing) in conventional industries. The agency also leads efforts to help competitive small and medium enterprises and startups become unicorn companies through entry into global markets, including the "New Southern" countries such as ASEAN and India. Drawing on its extensive experience and knowledge, NIPA will continue to create new markets, support innovation, represent and advocate for Korea's ICT industry, and serve as a steppingstone for national economic growth.



Electronics and Telecommunications Research Institute

Electronics and Telecommunications Research Institute (ETRI) is a state-funded research institute in Korea. Since its founding in 1976, ETRI has made significant contributions to the nation's economic and social development through research, development, and distribution of industrial core technologies in the fields of information, communications, electronics, broadcasting, and convergence.



Born2Global Centre

Since its inception in September 2013, the Born2Global (B2G) Centre has set the standard for successful global startup ecosystems as MSIT's main government agency. Born2Global's mission is to establish a global startup hub where major actors (startups, private investors, accelerators, startup support institutions, and so on) of the global startup scene can interact and collaborate. Born2Global has developed strategies as a global startup accelerator and an ICT innovation business developer while fostering sustainable and virtuous circulation in the startup ecosystem.





SK Telecom

SK Telecom is the largest mobile operator in Korea with nearly 50 percent of the market share. As the pioneer of all generations of mobile networks, the company commercialized the fifth generation (5G) network on December 1, 2018, and announced the first 5G smartphone subscribers on April 3, 2019. With the world's best 5G, SK Telecom is set to realize the Age of Hyper-Innovation by transforming the way customers work, live, and play.

Building on its strength in mobile services, the company is also creating unprecedented value in diverse ICT-related markets, including media, security, and commerce.



Korea Telecom

Korea Telecom (KT) is the nation's largest general telecom carrier, leading 4IR with the world's first 5G service and intelligent network platform. Since the takeover of its mobile telecommunications subsidiary, KTF, in 2009, KT introduced smartphones for the first time in Korea and has developed and nurtured diverse ICT convergence services using 5G infrastructures and state-of-the-art ICT technology. Beginning with its 5G pilot service during the 2018 Winter Olympic Games in PyeongChang, KT opened its 5G commercial networks in December of that same year to broadcast 3.5GHz 5G commercial radio throughout the country. It is also leading the introduction of next-generation ICT service, such as 10G Internet.



LG Uplus

LG Uplus (U+) was established on July 11, 1996, and has been transforming the lives of customers ever since. The company strives to develop telecommunications services, high-speed Internet, VoIP, and IPTV services, as well as other data services. In fact, LG U+ is the first in the world to establish a nationwide LTE network with super high-speed services of the highest quality. Continuing into the era of 5G and IoT, LG U+ continues to create higher standards of service to keep customers happy.



Samsung Electronics

Samsung Electronics manufactures a wide range of consumer and industrial electronic equipment and products, such as semiconductors, personal computers, peripherals, monitors, televisions, and home appliances.

Samsung Electronics also produces Internet access network systems and telecommunications equipment, including mobile phones.

Samsung Electronics is the only company that can deliver the entire 5G ecosystem—from chips and network equipment to endpoint devices—all with cutting-edge security solutions.



Great Safety Information Laboratory

Great Safety Information Laboratory (GSIL) is a construction IT company that provides safety and management solutions. GSIL integrates cutting-edge technologies (IoT, ICT, and AI) with a smart safety platform to improve safety at construction and industrial worksites. The System offers effective risk management solution for large scale infrastructures construction and maintenance of various project areas.



LUXROBO

Coding education leader LUXROBO has successfully attracted investment and grown into a robotics edutech firm that is recognized around the world. LUXROBO's innovative smart block, MODI, provides creative software education in the 4IR era. With 60 employees, LUXROBO also provides a software curriculum at its professional education institutions and through education projects in Korea and abroad. LUXROBO also has its own research center, where it continues to expand the business and develop technologies.



Hylum Industries

Recent trends are moving toward renewable energy, and hydrogen will be a key fuel source in the future. Existing analyses show liquid hydrogen to be the most efficient hydrogen fuel. To promote the hydrogen infrastructure, Hylum Industries, Inc., is a leader in total solutions for liquid hydrogen—from production, to storage and transportation, to end-use fuel applications.





Visual Camp

VisualCamp is an eye-tracking technology company that provides eye-tracking software applications for mobile, VR, and AR for various UI/UX developments and user-gaze analysis. VisualCamp's eye-tracking technology incorporates functions of mobile devices to collect and analyze gaze data that can be used in a range of fields, including education, health care, research, and more.



AID Korea

AID Korea has provided domestic farms with its livestock health care service, farmsplan, since 2017. The first health care service for livestock, farmsplan is based on deep technology (technological convergence of artificial intelligence, biotechnology, genetic engineering, and even veterinary technology). Globally, animal diseases are becoming more difficult to control, and the issue poses a serious threat to humans' stable animal protein supply. The livestock industry so far has focused on the treatment(care) after a disease has occurred with vaccines or antibiotics. However, with farmsplan, the domestic livestock industry is moving to preventive health care-focused farm management. Users of farmsplan have seen reductions in monthly antibiotic usage and total medical costs of up to 80 percent and 40 percent, respectively. In making livestock and farms healthier, farmsplan helps to ensure a healthy protein source for humans. We believe that farmsplan's livestock health care service will be a solution for the current animal disease and protein crisis.

B. Key Figures



Jeong Won Kim

*Deputy Minister
Ministry of Science and ICT*

Jeong Won Kim is the Deputy Minister of the Office of ICT Policy at the Ministry of Science and ICT (MSIT). Prior to his current post, he served as Director General of MSIT's Internet Convergence Policy Bureau (2018–19); Director General of MSIT's R&D Police Bureau (2017–18); Director General of MSIT's Intelligent Information Society Bureau (2016–17); and Chief of the Seoul Radio Management Office at the Ministry of Science, ICT and Future Planning (2016). He received an MS from Harvard's Kennedy School (2000), an MS in public administration from Seoul National University (1993), and a BA in political science and international relations from Seoul National University (1990).



Boutheina Guermazi

*Director of Digital Development
World Bank Group*

Dr. Boutheina Guermazi is the Director of Digital Development Department of the Infrastructure Practice Group of the World Bank. She heads a global team working on building digital economies in developing countries, to drive shared prosperity and reduced poverty. The team advises policymakers and regulators, works in collaboration with leading firms and partners, and designs investment and technical assistance programs to improve broadband connectivity and use of digital technology to address development challenges of client countries. Prior to her role as Director, Dr. Guermazi was Practice Manager of Digital Development covering Africa and the Middle East regions of the World Bank. She also served as Lead Operations Officer in the Regional Integration Unit of the Africa region of the World Bank.

Dr. Guermazi holds a Ph.D. in Telecommunications Law and Policy from the Faculty of Law at McGill University, Canada; an L.L.M. in International Law from Indiana University, USA; and a Bachelor's Degree in Public Law from the University of Tunis, Tunisia. She held a Fulbright Scholarship and was a research scholar at the University of Michigan (USA), the Social Science Research Council (USA), and the Center of Studies for Regulated Industries (Canada).

