

Seoul Initiative on the 4th Industrial Revolution

Presented by Korea

1. Background

The global economy faces unprecedented changes with the advent of disruptive technologies such as artificial intelligence (AI), the internet of things (IoT), big data, advanced robotics, augmented/virtual reality (AR/VR), and 3D printing. These new technologies are expected to bring fundamental changes in production, distribution and consumption, while transforming current modes of trade and investment among countries. Against this backdrop, the resumption of the ASEM EMM serves as a great opportunity for stimulating in-depth discussions on how to respond to such changes in the era of the 4th Industrial Revolution (4IR)¹.

The 4IR has triggered the emergence of new industries and new business models. As such, it has been identified as an important driver of economic growth. This latest industrial revolution is expected to deliver far-reaching effects across all industries and the entire world economy by bringing changes to trade, investment, and employment patterns. Furthermore, the speed and scope of these changes are also unprecedented. In recent years, the 4IR has emerged as a key topic of policy discussions at international venues.

The 4IR presents both opportunities and challenges for the ASEM economies, arising from its unpredictable and dynamic nature. In light of the comparative advantages and different levels of development across the ASEM partners, ASEM-wide cooperation is necessary in order to fully understand the implications of the 4IR, to realize maximum mutual benefits for the ASEM partners, and to achieve sustainable and inclusive prosperity. Building on the efforts of various international organizations, the ASEM EMM contributes to consensus-building on ASEM-wide policy responses.

2. Opportunities and Challenges of the 4IR for ASEM Economies

The ASEM economies have grown to occupy a prominent place in the world economy, together accounting for 57.0% of global production and 66.4% of global trade in 2016. The benefits of trade and investment liberalization have played a crucial role in the growth of ASEM economies. From 1996 to 2016, the trade-to-GDP ratio in ASEM countries amounted to 53.5%, compared to 32.0% in non-ASEM countries. During the same period, the accumulated FDI flow into the ASEM economies accounted for 55.2% of the global FDI inflow.

¹ There are various terms to describe the phenomenon such as Next Production Revolution (OECD), New Industrial Revolution (G20), and 4th Industrial Revolution (WEF). We adopt the term “4th Industrial Revolution (4IR)” to emphasize the revolutionary impact the disruptive technologies are expected to bring.

Given the ASEM economies' high dependency on international trade and investment, the 4IR will bring both opportunities and challenges for the ASEM economies. The core benefits of the 4IR include improvement of productivity and creation of innovative business models. On the other hand, since global value chains (GVCs) are based on comparative advantages such as competitive wages in developing countries, changes in production may reshape the existing GVCs in the ASEM region, and may affect the current growth models of developing countries.

Rapid digitalization and convergence of new technologies will eventually lead to the data economy influenced by network effects that highlight the need to bridge the digital divide between developed and developing ASEM economies.

The 4IR will also expedite the “servitization” of industry, as new service models are created through the application of smart technologies and great changes driven by data flows are expected in aspects of service trade such as cross-border supply. However, statistics on trade in services are limited in both quantity and quality. Collaborative research at the ASEM-level is needed for accurate analyses and development of a cooperative mechanism that will respond to the changes in trade in services.

Furthermore, there are public concerns on economic inequality and infringement of privacy in the 4IR era. For example, there are growing concerns that AI and automation might result in large-scale job displacement, although the rate of displacement may differ across countries.

Against this backdrop, ASEM partners need to collaborate to develop effective policy responses that will address the impacts of the 4IR. Our collaboration, such as sharing of best practices will be valuable in identifying and analyzing the 4IR's effect on trade and investment.

Therefore, we propose to launch “Innovative Partnership for Inclusive Prosperity” to serve as a starting point for realizing a new growth model in an era of technological and economic complexity.

3. Recommended Policy Responses

3.1. Common Principles

Four principles to promote sustainable and inclusive growth in the era of the 4IR

Sustainable growth through inclusiveness

Sustainable growth can be achieved in ASEM economies through inclusiveness by bridging gaps in capacity among countries and fostering support for MSMEs and start-ups.

Diffusion of creativity and innovation

Strive to nurture an innovative and creative economic environment to enable ASEM economies to fully benefit from the 4IR.

Collaboration based on openness

Protectionism and raising barriers cannot be solutions to capitalize on opportunities in the era of the

4IR, in which connectivity and convergence are becoming more important than ever. Thus, we need to lower barriers to trade and investment, and refrain from raising new forms of barriers.

Fairness and transparency in competition

Foster fair and transparent competition through policy responses to reduce the risk of monopolization of technology and data.

3.2. Policy Responses

3.2.1 Cooperation for an innovation-friendly regulatory framework

We need to transform the regulatory framework into a more adaptive, innovation-friendly, predictable and transparent one in order to foster new industries in the 4IR.

(Policy Responses)

- Share best practices for the formulation of a new regulatory framework suited to new industries.
- Enhance cooperation in developing international standards for new technologies and encourage participation of stakeholders, including enterprises, research institutes and regulatory authorities, throughout these processes.
- Encourage regulatory authorities to share best practices and discuss regulatory frameworks best suited to fostering new technologies including effective implementation of intellectual property protection policy.

3.2.2 Fostering favorable conditions for digital transformation

To further facilitate the digital transformation in ASEM economies, it is necessary to bridge the digital divide among ASEM countries in such areas as IT infrastructure development. Data is also an essential element for digital innovation. In order to promote the transfer and utilization of data resources, there is a need to disseminate ICT, alleviate barriers against data utilization, and reinforce cyber security.

(Policy Responses)

- Share best practices and lessons regarding the impact of digitalization and related policies.
- Welcome investments from public-private partnerships as well as commercial and social funds in digital infrastructure and ICT applications.
- Encourage research institutes in the ASEM region to conduct in-depth studies on issues associated with production, transfer, and utilization of data resources.
- Stimulate discussion among partners on publicizing data owned by government and public institutions to encourage the private sector to make the best use of public data.
- Encourage the development of secure information infrastructure for protecting privacy and strengthen security in the use of ICT.

- Support and encourage investment in efficient, competitive digital infrastructure that enhances the connectivity of international telecommunication and facilitates communication between Asia and Europe.

3.2.3 Capacity building for MSMEs

MSMEs are the main source of innovation and job creation, and are the key contributor to sustainable and inclusive growth. MSMEs need to make the best use of the opportunities to develop into strong competitors in the era of the 4IR.

(Policy Responses)

- Promote efforts to help MSMEs build capacity for the adoption of new and innovative technologies.
- Encourage dialogue on MSME policies to share best practices and related knowledge.
- Strengthen industry-academe-government cooperation towards supporting tech start-ups and MSMEs through incubator and accelerator programs, mentorship, access to capital, matchmaking and entrepreneurial skills improvement.
- Encourage exchange of best practices for adapting to the 4IR among MSMEs as well as between MSMEs and large enterprises.
- Enhance the accessibility of venture capital networks in the ASEM economies for MSMEs.
- Encourage relevant institutions such as the ASEM SMEs Eco-Innovation Center (ASEIC) to devise new cooperative methods for eco-innovation of MSMEs.
- Cooperate on enhancing the environment to foster a new cadre of entrepreneurs with greater mobility, for example, by facilitating business travel in the ASEM region.
- Encourage ASEM partners to discuss ways to ensure MSMEs' access to digital infrastructure and participation in digital platforms.
- Encourage relevant institutions to carry out research on the impact of the 4IR, such as changes in GVCs and “servitization” of industries and MSMEs; and to discuss policy responses accordingly.

3.2.4 Facilitating R&D collaboration

The 4IR is driven by disruptive technologies. Gaps in technology and capital lead to disparities in the capacity to adopt new technologies among developed and developing ASEM economies. In order to reduce technological gaps, there is a need to promote open innovation, especially in technology cooperation through R&D collaboration.

(Policy Responses)

- Strengthen international R&D networks in the field of new technologies by supporting academia, the private sector and national research in developing countries to join such R&D networks.
- Enhance collaboration between and among industry, academe and government through the creation of an inclusive innovation ecosystem.
- Share best practices of R&D policies for spreading the 4IR across the ASEM region.

- Enhance sharing of information on technologies of new industries within the ASEM region through the ASEM Trans-Eurasia Information Network (TEIN).
- Share information on the technology needs or skills demands of each ASEM partner to help realize effective cooperation.
- Encourage R&D policy that focuses on innovative MSMEs to expand employment opportunities and promote inclusive economic growth.
- Promote awareness of environment-friendly technologies, enabled by 4IR and support the capacity building of environment protection for developing countries.

3.2.5 Improving human capital and workplaces

The 4IR is expected to generate both opportunities such as creation of new high-value jobs, and challenges such as displacement of low-skilled jobs by technology. In order to address the risk of unemployment, it is necessary to work toward enhancing workforce skills and creating high-value jobs.

(Policy Responses)

- Encourage research institutes to carry out studies on the effects of the 4IR on employment and social systems.
- Reinforce vocational re-education systems for vulnerable groups such as low-skilled workers, in preparation for future job prospects.
- Recognize the importance of science, technology, engineering and math (STEM) at all levels of education and share best practices and curricula on STEM.
- Strengthen industry-academe-government linkages and dialogues aimed at identifying and crafting human resource development and skills training programs.
- Welcome efforts to further facilitate talent exchange and global training in the field of new technologies.
- Promote discussions on ways in which the roles of humans and robots can coexist in future workplaces.

4. Way Forward

The 7th ASEM EMM is a pathway to inclusive prosperity amid the monumental advances of the 4IR. The 4IR is a pivotal point in the journey toward economic and social growth. Collective efforts to alleviate bipolarization are indispensable in the new era of the 4IR. At the EMM, the ASEM partners welcomed the proposal made by Korea to hold an ASEM conference for comprehensive discussion on the economic impacts of the 4IR on the ASEM economies in Seoul in 2018. Participation of interested ASEM partners and international organizations is strongly encouraged.

Furthermore, Korea proposes to address 4IR issues as standing items on future EMM agenda to review progress made in related areas.