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Outcome Document

GMIS Breakfast Session at the 73rd Session of the United Nations General Assembly

"Leveraging advanced manufacturing technologies for the future of the global economy, environment and society"



25th September 2018 08:00 – 09:30 a.m. South Dining Room, 4th Floor United Nations Headquarters New York

Hosted by:

The United Arab Emirates, the Russian Federation, the United Nations Industrial Development Organization (UNIDO) and the Global Manufacturing and Industrialisation Summit (GMIS)











Background to the Joint Breakfast Session

The joint breakfast session took place at the margins of the high-level General Debate of the 73rd session of the United Nations General Assembly (UNGA), co-organised by UNIDO, the GMIS Organising Committee, the Permanent Mission of the United Arab Emirates to the United Nations and the Permanent Mission of the Russian Federation to the United Nations.

The session sought to stimulate a reflective and nuanced debate on the opportunities and challenges offered by the Fourth Industrial Revolution (4IR). Moreover, it discussed related technologies for realising the Sustainable Development Goals (SDGs), reaching influential constituencies such as government ministers, international and national policymakers, globally-oriented entrepreneurs, and representatives of United Nations permanent missions in New York.

Collaborative approaches are especially critical in light of the adoption of SDG 9, "Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation". Advances in technology are central to the achievement of this Goal, especially given the opportunities offered by technological upgrading and dissemination to increase economic growth, improve the efficiency of public services and to safeguard the environment.

However, a considerable gap continues to exist between high-income countries and their developing counterparts with respect to their capacity to develop and absorb advanced manufacturing technologies. By holding a GMIS event at the United Nations General Assembly, it was anticipated that the widest possible number of perspectives could be reached regarding technology acquisition, dissemination, transfer and absorption.

Given the multilateral nature of discussions taking place at the United Nations General Assembly, one major objective of the session was to advance knowledge and understanding of how multi-stakehold-er partnerships could aid 4IR to achieve maximum developmental impact. This dovetails with SDG 17, "strengthen the means of implementation and revitalize the global partnership for sustainable development", which stipulates a number of approaches and targets to this end.

It was further intended that the session will build momentum for GMIS in Yekaterinburg, the Russian Federation, in July 2019, with the main takeaways being collated and brought forward to inform the Summit. Finally, it was also intended to make participants of the session aware of the Mohammed bin Rashid Initiative for Global Prosperity, a GMIS initiative (a text box below provides additional information about the initiative). The session also included a networking session after the panel debate, at which participants could discuss possible future collaborations and cooperation opportunities.











Global Manufacturing and Industrialisation Summit (GMIS)

A joint initiative of the United Arab Emirates (UAE) and the United Nations Industrial Development Organization (UNIDO), GMIS aims to harness the trajectory of the Fourth Industrial Revolution (4IR) through multi-stakeholder dialogue and collaborations for sustainable development, fully aligned with the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals

The inaugural Summit, which took place in Abu Dhabi in March 2017, attracted over 3,000 participants, drawn from the global private sector, national and international policymakers, academia and research institutions, development finance institutions, and civil society organisations. The discussions identified five pathway technologies bearing particular promise for a sustainable 4IR, notably 3D printing, advanced robotics, artificial intelligence, wearable technologies, and the Industrial Internet of Things (IIoT).

The next GMIS will be held on July 9 to 11, 2019 in Yekaterinburg, Russian Federation, on the sidelines of the 10th International Industrial Trade Fair "INNOPROM" under the theme of "nature-inspired technologies". It is anticipated that the discussions shall yield a framework document, outlining the best practices to achieve a sustainable 4IR, across three dimensions of development – economic, environmental and social.

GMIS Connect

A series of GMIS Connect Roadshows, held in both developed and developing countries, has gathered local insights, experiences and knowledge that will inform the 2019 Summit. These roadshows gather stakeholders from the local private sector, national and international policymakers, academia and research institutes, and civil society organisations in order to discuss the opportunities for, and challenges to, the 4IR at national or regional level.

The roadshows often include high-level panel discussions, addressing themes specific to the local context, the unveiling of a PwC country report, outlining the 4IR issues facing local development, and a field trip for participants, demonstrating how local practitioners are implementing 4IR technologies on the ground. The sessions are also typically accompanied by a networking session, at which participants can engage and foster new opportunities and collaborations.

The Mohammed bin Rashid Initiative for Global Prosperity

The Mohammed bin Rashid (MBR) Initiative for Global Prosperity unites the world's leading manufacturers, start-ups and entrepreneurs, governments, UN agencies and philanthropists, academia and researchers, to form a community dedicated to spreading global prosperity through the art of 'making'.











The MBR Initiative has two streams:

- The Global Maker Challenge: An online open-innovation platform that offers an opportunity for 'makers'
 and innovators to connect and collaborate, wherever they are in the world, to solve real-world problems
 affecting people's lives.
- The Global Prosperity Award: The Global Prosperity Award will honour the global manufacturer who
 adopts a Global Maker Challenge that has the potential of making the greatest positive impact on
 society, and with the greatest alignment to the Sustainable Development Goals. Every manufacturer
 who adopts a Global Maker Challenger will be shortlisted for the Global Prosperity Award.

The challenges were refined through three creative design workshops, facilitated by MIT Solve, and inputs from several United Nations entities, including UNIDO, United Nations Human Settlement Programme (UN- Habitat), Food and Agriculture Organization (FAO), World Food Programme (WFP), International Fund for Agricultural Development (IFAD), UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training, the office of the United Nations High Commissioner for Refugees (UNHCR), and the International Telecommunication Union (ITU). The challenges include:

- Zero Hunger and Rural Transformation;
- Digital Literacy and the Digital Divide;
- Sustainable Energy;
- Sustainable Cities.

All of the challenges identified under the MBR initiative are anchored within the 2030 Agenda for Sustainable Development, corresponding respectively with SDG 2 (zero hunger), SDG 4 (quality education), SDG 7 (sustainable energy), and SDG 11 (sustainable cities).

The next phase of the MBR Initiative is the Global Maker Challenge, which was launched during the event at UNGA. Its purpose will be to refine the prototype solutions through an online collaborative process. The winning innovation for each challenge will be announced at GMIS2019.









Purposes and Goals of the Event

Following opening addresses by **Mr. Mohammed Sharaf Al Hashemi**, Assistant Minister for Economic Affairs and Trade, United Arab Emirates; **Mr. Vasiliy Sergeevich Osmakov**, Deputy Minister of Industry and Trade of the Russian Federation; and the UNIDO Director General, **Mr. LI Yong**, a panel discussion was convened in order to address "leveraging advanced manufacturing technologies for the future of the global economy, environment and society".

The panel sought to reflect upon the following issues for 4IR, inter alia:

- What are the opportunities and challenges presented by 4IR?
- What can be done to bridge the digital divide and foster inclusion, preventing developing countries from being left behind?
- What are the best examples of driving a culture of innovation at the national level?
- What is being done to engage women and young people fully within 4IR?
- Which policies would the panel recommend in terms of embracing 4IR?

The discussion helped to inform the audience as to the various challenges and opportunities for a sustainable 4IR in various national, regional and global contexts, as well as elaborating a number of consensus points for mobilising 4IR in support of the 2030 Agenda for Sustainable Development.

Opening Addresses



Mohammed Sharaf Al Hashemi. Assistant Minister for Economic Affairs and Trade, United Arab Emirates began proceedings by stating that "the advent of the Fourth Industrial Revolution has shaken the world's economic kaleidoscope", adding that greater understanding was required concerning the 4IR disruptive changes that would bring, and that solutions would be required to "support the Sustainable Development Goals, and safeguard economies, jobs, communities and global prosperity".











Mr. Al Hashemi argued that global partnerships will be crucial to these ends and that partnerships are central to the UAE's model of development. International and cross-sectoral partnerships exhibit tremendous potential to move things forward, he added.

"This is where the Global Manufacturing and Industrialisation Summit comes in, as a global effort, initiated by the UAE and UNIDO, to redefine the manufacturing sector, bringing it in line with Agenda 2030. The Summit brings together stakeholders from across the global value chain, in order to drive sustainability in this crucial industry; one that has underpinned economies and livelihoods for generations," said Mr. Al Hashemi.

On behalf of UNIDO, **Director General LI Yong** stressed the importance of technological upscaling for development, "given its potential for creating greater value added and productivity, in addition to allowing for diversification of productive activities and creation of greater incomes, jobs and business ventures — outcomes that have a positive impact on poverty eradication".

Mr. LI noted that efforts to implement the 2030 Agenda for Sustainable Development were taking place amidst a backdrop of growing convergence of

manufacturing and digital technologies - 4IR.



"Innovative production processes such as 3D printing, artificial intelligence, wearable technologies, the Internet of Things, green technologies, etc. are enhancing sustainable economic growth. However, we must be conscious that this growth is combined with shared prosperity in society, particularly for developing countries with the deficit in technology," he stressed.

While some 30 countries globally have established national strategies to harness 4IR, these tend to focus on a limited number of sectors, he observed. A global forum, addressing all aspects of the advanced manufacturing technology revolution, would thus be required. GMIS aims to address this need through convening all technology stakeholders in pursuit of sustainable development, concluded Mr. LI.











Mr. Vasiliy Sergeevich Osmakov, Deputy Minister of Industry and Trade, Russian Federation concluded the opening addresses. He stated that GMIS2019 would be one of the key events taking place in the Russian Federation next year.

Mr. Osmakov noted that the theme of the 2019 Summit would be naturally-based technologies and stated the event would mark the first attempt to convene a large-scale discussion on rapprochement

between the biosphere and technosphere.

"Naturally-based technologies should help us create new methods for preventing, diagnosing and treating complex diseases (including those that are still incurable), advance in the development and implementation of artificial intelligence systems, [and] develop effective and environmentally neutral solutions in the field of energy generation and waste disposal," he stated.

The Deputy Minister further noted the need for international cooperation in developing a nature-based economy and acknowledged the promise of GMIS in this regard.

"I would like to note that the Russian Federation considers GMIS2019 and the Global Forum on Naturally-Based and Convergent Technologies to be promising platforms for global actions to develop and transfer technologies of the Fourth Industrial Revolution and believes that these platforms will enable production to take the lead in achieving Sustainable Development Goals," he said.









Panel Discussion

The discussion panel consisted of the following delegates: **His Excellency (H.E.) Mr. Ibrahima Guimba-Saïdou**, Minister and Special Advisor to the President, and Director General, National Agency for the Information Society, Niger; **Ms. Ann Rosenberg**, Senior Vice President & Global Head of SAP Next-Gen; **Mr. Hongjoo Hahm**, Officer-in-Charge, United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP); and **Mr. Philippe Scholtès**, Managing Director, UNIDO.

Mr. Badr Al-Olama, Head of the Organising Committee of the Global Manufacturing and Industrialisation Summit, moderated the high-level panel discussion. He posed the opening question to H.E. Mr. Guimba-Saïdou, asking what opportunities the 4IR presents.

The Government has decided to combine technology and human capital in addressing the SDGs, he responded. He stated that a strategic plan, "Niger 2.0" has been established to bring technology services to the remote areas of the country, adding that collaborations would be essential to this aim.

To this end, H.E. Mr. Guimba-Saïdou mentioned the Smart Village programme, through which the Ministry is attempting to connect over 15,000 villages within Niger, which is:

"...looking at technology such as Internet of Things, artificial intelligence, specifically in healthcare and agriculture, and also big data. What we need to do is to be smart about the way we address it, how we can collect enough data from across the country, [and] use technology to plan accordingly to focus and bring in the right partners," he said.



"3D printing could help us in making devices accessible...to our farmers, our breeders etc. That, in a nutshell, is what we are trying to do: bring in partners to bring the technological focus, mostly on Internet of Things, artificial intelligence...[harnessing] the youth, bringing those partners and then delivering on those partnerships," stressed the Minister.

Turning to Ms. Ann Rosenberg, Senior Vice President & Global Head of SAP Next-Gen, which is a purpose-driven innovation











university and community for the SAP ecosystem, enabling companies, partners and universities to connect and innovate in alignment with the UN Global Goals, Mr. Al-Olama asked what the initiative was doing to harness the potential of technological change, and what efforts were being made to ensure gender balance in the workforce.

She concentrated her first response on the implications of technological "leapfrogging", especially on the continent of Africa, in which SAP-Next Gen is active.

"What is happening in... the continent of Africa and around the world, is that they are actually going to tell the more mature markets about how to use the new technology," stated Ms. Rosenberg.

Mr. Hongjoo Hahm, Officer-in-Charge, United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), focused his intervention largely on the social equity dimension of the 4lR. He acknowledged that in Asia, most of the "one per cent" had become wealthy through acquiring technological knowledge.

"I believe that there is a duty on...the one per cent to do more to share, not just their wealth, but their knowledge and especially the technological application to those that are in the bottom 90 per cent. This, I think, is the role that UN ESCAP plays; this cooperation between and within countries, I think this is the essence of how we forge forward," underlined Mr. Hahm.

Elaborating on the digital divide, Mr. Al-Olama asked Mr. Philippe Scholtès, Managing Director, UNI-DO, what the Organisation was doing to ensure that 4IR technology can contribute, not just to the achievement of the UN SDGs, but also to make sure that other countries are not left behind.

Mr. Scholtès explained that development cooperation was taking place in a very different way to that of 10-15 years previously, moving predominantly from bilateral cooperation to a partner-ship-based model.



"And this is where events such as GMIS...take all of their significance. We see ourselves as a conveyor belt in a sense, that great ideas are discussed here, there are experts around the table that have their own











experience that are willing to share it with the broader community. And yet it needs to reach out to the developing countries, to the field, to the people that need this information," he said.

Regarding UNIDO's activities with respect to the 4IR, Mr. Scholtès cited blockchain technology for harnessing renewable energy at a decentralised level, the promotion of e-trading platforms for SMEs and small farmers in developing countries, and the promotion of biosimilars in the pharmaceuticals sector as possibilities for harnessing the 4IR for sustainable development.

"We feel that in every segment, there is room for bringing some of the innovations that come along with Industry 4.0. But this innovation and a way for us to stay at the cutting edge of innovation is precisely [the reason for] events such as GMIS".

"This is why we are so grateful to the United Arab Emirates, the Russian Federation [for hosting such events]...this is a chance for us of playing a role to bring North and South together, from a strictly business point of view, bringing scientific advancements in one part of the world to bear on the development constraints of another part of the world," underlined Mr. Scholtès.

Mr. Al-Olama then asked Ms. Rosenberg which efforts were being made to bridge the digital divide, and also to cite the top three endeavours being made by SAP-Next Gen to achieve this. She identified the accessibility of STEM education for all, support for SMEs and start-ups, and the all-embracing nature of the 4IR as crucial elements of social inclusion efforts, as well as ensuring youth engagement.

"The 17 global goals are much bigger than me or you, it is something that is all around us, and we come together by placing industry, government, the public sector, private sector and we talk about youth [engagement]. This is something we need to accelerate and to learn from each other," she said.

Mr. Hahm was then asked to stipulate the best examples of driving a culture of innovation he had seen at the national level, given his broad experience in various national contexts.

He mentioned Thailand 4.0 as promising for utilising the Internet of Things, and also similar programmes in the Republic of Korea and China. However, he also expressed concern for smaller developing countries that would face difficulties in replicating such approaches.

"Many of the poorer countries like the small island countries, landlocked countries have such a low tax base or revenue base that the government's ability to start investing in technology, or broadband, is far, far too limited," acknowledged Mr. Hahm.

"They also have huge issues with water sanitation, education, health, basic stuff. Their ability to get into the information superhighway is very much constrained. All of the countries where innovation is happening are countries with fiscal space, countries that [do not have it] are the countries being left behind," he observed. Noting that 75 per cent of the Nigerien population is classified as "youth", H.E. Mr. Guimba-Saïdou was











asked how Niger 2.0 would address youth inclusion.

The Minister gave special mention to the country's youth workshops, which run on a monthly basis, and also their national innovation competition, for which the Government is considering opening up to competitors from other African countries, as well as training for female entrepreneurs. The Smart Village programme also seeks to connect villages across 60 communes in the country through advanced technologies. Concerning policies for embracing 4IR technology, Mr. Phillippe Scholtès recommended strong governance and policies in order to address concerns over cybersecurity, personal data protections and "fake news" dissemination. He also cited connectivity as a key concern for addressing inclusion in the 4IR era.

"When you look at the Human Development Index [prepared by UNDP], and also at the list produced by Huawei... who produce a Global Connectivity Index...You will see that there is a very high correlation [between] the HDI scale and also scoring well in terms of connectivity. While at the other end of the scale, you have countries that are not scoring well in terms of development that also have a problem in terms of their connectivity," observed Scholtès.

He concluded the panel session with an observation regarding the possibilities of wireless technology for 4IR in developing countries.

"Another [idea] that we are discussing with our colleagues from the International Centre for Theoretical Physics...is wireless technology. They have tested wireless technology that can have two wires, 50 to 100 kilometres apart that can communicate in a safe, reliable and cheap way.

"Sensors are the easy part of it...Processing centres are relatively easy to find as well. But again, how do you find reliable and safe communications between them? And if wireless technology can be proven to offer safe communications between two points 100 kilometres apart, it solves quite a number of problems in developing countries," claimed Mr. Scholtès.

"We want to work along these lines to ensure that Industry 4.0 doesn't remain a dream but can be put into concrete action on the ground," he underlined.









MBR Initiative for Global Prosperity

Mr. Badr Al-Olama then introduced the MBR Initiative for Global Prosperity through a short video presentation. He impressed upon participants that the overarching aim of the Initiative is to advance "global prosperity", "eradicate poverty and hunger" and to promote "education and environment" through advanced technologies and the harnessing of the 'maker' movement.



He announced that one million dollars (USD) would be allocated for the successful innovations within the Initiative, with additional support to be provided through mentoring, coaching and gaining access to international markets.

"We want to do this because we want to eliminate inequality, we want to do this because we want to enhance prosperity, and we want to do this because we want to empower everyone to make a change, no matter how small it is. It all matters!" he exclaimed.

Further information on the Initiative is available at https://www.makingprosperity.com/













Key Messages

MULTI-STAKEHOLDER PARTNERSHIPS ARE KEY

In order to unlock the potential of the 4IR, the respective strengths of various segments of society – including the global private sector, national and international policymakers, the research community and development finance institutions – must be brought to bear. This feeds into SDG 17 of the 2030 Agenda, "strengthen the means of implementation and revitalise the global partnership for sustainable development".

• EMBRACING LOCAL SPECIFICITIES FOR THE 4IR

Each developing country has its own specific features which drive innovation locally. While North-South cooperation is welcome, local leadership of the process is crucial to its success, as there is no "one size fits all model".

SOCIAL INCLUSION

Developing countries are the most vulnerable to being left behind by the rapidly-advancing digital manufacturing landscape. Within developing countries, it is essential to target various groups such as women, young people and rural dwellers who are often structurally disadvantaged in accessing new technologies and an increasingly technical labour market. Such actions correspond to SDGs 4 and 5, "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all" and "achieve gender equality and empower all women and girls" respectively.

ENERGY AND ENVIRONMENT

The 4IR already offers considerable potential in terms of safeguarding the environment, resource and energy efficiency. New materials, biodegradable plastics and biosimilars possess rich promise in terms of protecting biodiversity and the ecosystem. Blockchain technology can also be utilised for renewable energy, so that we see a large number of emerging, independent power producers who can act both as producers and consumers of energy. Such actions address SDG 7, "ensure access to affordable, reliable, sustainable and modern energy for all" SDG 12, "ensure sustainable consumption and production patterns" and SDG 13 "take urgent action to combat climate change and its impacts".

ACCESSING NEW MARKETS

E-commerce trading platforms can be especially helpful to SMEs/small farmers in developing countries, as they provide a global outlet for their manufacturers/produce, connecting small firms to larger regional and international markets. This can contribute to the achievement of SDG 8, "Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all".











GMIS AS A GLOBAL CONVENER

GMIS represents a chance for the 4IR to aid North-South cooperation and new forms of innovation, drawing on wide-ranging expertise, experiences and insights. This is especially so given the various national strategies in play, typically focusing on a small number of industrial sectors.

DISCUSSED POTENTIAL 4IR ADAPTATION MEASURES INCLUDE

- 1. Accessibility of STEM education for all
- 2. Support for SMEs and start-ups
- 3. Ensuring youth engagement
- 4. Policies in order to address concerns over cybersecurity, personal data protections, connectivity and "fake news" dissemination.

A FAST-CHANGING INTERNATIONAL DEVELOPMENT ARENA

The traditional modes of technical assistance development cooperation are increasingly being superseded by collective methods. Development practitioners must adapt to these new demands within the 4IR era.









Outcomes

The GMIS Breakfast Session welcomed approximately 100 participants, drawn from across national and international policymaking, the global private sector, and academia and research institutes. A number of key conclusions and takeaways were discussed during the session, pertaining to the economic, environmental and social dimensions of the 4IR, as outlined in the previous section.

Summing up the session, Ms. Cecilia Ugaz Estrada, Director, Department of Policy Research and Statistics, UNIDO, identified four key takeaways drawn from participants, namely:

A people-centric
 approach: Investments
 in human capital will be
 very important in the 4IR
 era, especially concerning
 training and upskilling,
 empowerment of women,
 and interventions to
 increase human wellbeing.



- Leadership by national governments: It is clear that the traditional rules of engagement are rapidly changing with respect to international development cooperation. International organisations are there to support the efforts of Member States in successfully navigating the 4IR era, but in order for the necessary adjustments to take place, governments must remain in the driving seat.
- Research and strategy: Thus far, relatively few countries have devised their own processes for
 engaging with the 4IR. Many UNIDO Member States seek advice concerning their policy orientations,
 best practices and so on for the 4IR, and UNIDO is orienting the 2020 edition of its flagship Industrial
 Development Report towards this theme.
- Partnerships: Governments have a very important role in steering the 4IR, but they cannot carry
 the burden alone. In order for the necessary transformations to take place, we need to involve all
 segments of society.









The second edition of the Global Manufacturing and Industrialisation Summit will be held in the city of Yekaterinburg, Russia - one of the world's largest manufacturing heartlands.









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