

# #GMIS2021 OUTCOMES BOOK

**GMIS**

Global Manufacturing & Industrialisation Summit

Co-chair



UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION

Co-chair and Co-host



UNITED ARAB EMIRATES  
MINISTRY OF INDUSTRY  
& ADVANCED TECHNOLOGY

Co-host



اقتصاد دبي  
DUBAI ECONOMY

[www.gmisummit.com](http://www.gmisummit.com)

# CONTENTS

## INTRODUCTION

- 03 About the Global Manufacturing and Industrialisation Summit (GMIS)
- 04 GMIS Exhibition
- 05 Thank You to Our Co-chairs and Co-hosts
- 06 Thank You to Our Partners
- 07 The Mind-Machine Relationship
- 08 Statistics: Attendance & Participation

## SUMMIT DAY ONE

- 10 Opening Remarks - H.E. Eng. Saed Al Awadi, CEO, Dubai Industries & Exports
- 11 Panel Discussion - Technology and partnerships driving 21st century growth
- 12 Keynote - H.E. Bandar Al Khorayef, Minister of Industry and Mineral Resources, Saudi Arabia
- 13 Keynote - H.E. Bruno Le Maire, Minister of Economy, Finance and Recovery, France
- 14 Fireside Chat - Investing in the leading edge of innovation H.E. Khaldoon Al Mubarak, Managing Director and Group CEO, Mubadala
- 15 Panel Discussion - Connect to collaborate: Revolutionising supply networks
- 16 Fireside Chat - COP26 and beyond - Sustaining momentum John Kerry, Special Presidential Envoy for Climate, USA
- 17 **Opening Ceremony**
- 18 Welcome Remarks - Badr Al Olama, Head of the Organising Committee, GMISS
- 19 Special Address - António Guterres, Secretary General, United Nations
- 20 Co-Chairs Keynote - H.E. Dr. Sultan Al Jaber, Minister of Industry and Advanced Technology, UAE
- 21 Co-Chairs Keynote - H.E. Li Yong, Director General, UNIDO
- 22 Honorary Guest Keynote - H.E. Mohamed Ould Cheikh El Ghazouani, President, Mauritania
- 23 Keynote - H.E. Mattar Al Tayer, DG and Chairman of the Board, Dubai Roads and Transport Authority
- 24 Panel Discussion - Society 5.0: Building super smart societies
- 26 Panel Discussion - Energy as a Service (EaaS) -

- Digitalisation of the power sector
- 28 Panel Discussion - The experiential era: From outputs to outcomes
- 29 Keynote - Khalifa Al Shamsi, Group Chief Strategy and Governance Officer, Etisalat
- 30 Panel Discussion - Digitalisation - The 5G wave accelerates the future
- 31 **Strategy Theatre**
- 32 Keynote - H.E. Mohammed Al Hammadi, Managing Director and CEO, ENEC
- 33 Panel Discussion - "Greening" industry to scale up climate action
- 34 Panel Discussion - Has digital transformation served as a springboard to prosperity?
- 35 Keynote - H.E. Dr. Ahmed Belhouel, Minister of State for Entrepreneurship and SMEs, UAE
- 36 Panel Discussion - Bridging the SME finance gap
- 37 Panel Discussion - Industrialising in a post-pandemic world - Challenges, opportunities, and the role of digital technologies
- 39 **Innovation Theatre**
- 40 Keynote - Dr. Thani Al Zeyoudi, Minister of State for Foreign Trade, UAE
- 41 Panel Discussion - Saving planet Earth - Optimising supply chains for a net zero carbon future
- 42 Panel Discussion - Additive manufacturing - A blueprint of the future
- 43 Panel Discussion - Immersive technologies - Unlocking a mixed reality
- 44 Panel Discussion - The economic impact of cyber security

## SUMMIT DAY TWO

- 46 Opening Remarks - H.E. Omar Al Suwaidi, Undersecretary, Ministry of Industry and Advanced Technology, UAE
- 47 Keynote - H.E. Dr. Alexander Van der Bellen, Federal President, Austria (virtual)
- 48 Keynote - H.E. Cham Prasidh, Representative of Prime Minister of the Kingdom of Cambodia, Minister of Industry, Science, Technology and Innovation
- 49 Keynote - H.E. Karine Elharrar, Minister of Energy and Water Resources, Israel

- 50 Panel Discussion - The Twin Transition: Where innovation, technology and sustainability meet
- 51 Keynote - H.E. Abdulla Shahid, President, UN General Assembly (virtual)
- 52 Panel Discussion - Government of the future: A new roadmap to global prosperity
- 53 Keynote - H.E. Mohamed Al Askar, Director General, Abu Dhabi Digital Authority
- 54 Panel Discussion - Artificial Intelligence & Robotics: Machine conquers human?
- 55 Keynote - H.E. Abdulkareem Taqi, Director-General, Public Authority for Industry (PAI), Kuwait
- 56 Panel Discussion - UNIDO and the Global Health Initiative: Utilising technology to enhance pandemic resilience
- 57 Keynote - H.E. Mohamed Ali Al Shorafa, Chairman, Abu Dhabi Department of Economic Development
- 58 Panel Discussion - Operation 300bn: Make it in the Emirates
- 60 Panel Discussion - Digital mobility: Work from home to work from anywhere
- 61 Panel Discussion - 5G and Cloud: The workhorse of the workforce
- 62 **Strategy Theatre**
- 63 Keynote - H.E. Hon. Dr. Sekai Nzenza, Minister of Industry and Commerce, Zimbabwe
- 64 Panel Discussion - Women in leadership: Levelling the field
- 65 Panel Discussion - Navigating health and safety in a cyber - physical environment
- 66 Panel Discussion - Harnessing digital technologies for powering the Blue Economy: Lessons learned from the UNIDO Investment and Technology Promotion Network
- 68 **Innovation Theatre**
- 69 Panel Discussion - Dark Factories vs. Smart Factories: Time to turn the lights out?
- 70 Panel Discussion - Digital blueprint: IIoT and Digital Twins
- 71 Panel Discussion - Quantum Machine Learning (QML): Will it optimise or revolutionise production?
- 72 Closing Ceremony - GMIS America
- 73 Keynote - Namir Hourani, Managing Director, GMIS
- 74 Keynote - Diane Farrell, Acting Undersecretary of Commerce for International Trade, Department of Commerce, USA (virtual)

- 75 Keynote - Thomas Wolf, Governor, Commonwealth of Pennsylvania, USA (virtual)
- 76 Panel Discussion - Closing Ceremony: GMIS America

## SUMMIT DAY THREE

### The Green Chain Conference

- 78 Fireside Chat - H.E. Sharif Al Olama, Undersecretary, Energy and Petroleum Affairs, Ministry of Energy and Infrastructure, UAE
- 79 Panel Discussion - Decarbonise now, electrify later: Is an all-electric economy realistic?
- 80 Panel Discussion - Investing in hydrogen: A roll of the dice or a lucrative opportunity?
- 82 Panel Discussion - Establishing a global green hydrogen export market: Turning the desert into a clean energy powerhouse
- 83 Panel Discussion - The carbon credit conundrum: Cleaning up carbon credit markets
- 84 Panel Discussion - From power to prosperity: Developing an inclusive and sustainable green hydrogen economy
- 85 Panel Discussion - Blockchain: The solution to a decentralised and 'prosumer' powered future?
- 86 Keynote - H.E. Ellen von Zitzewitz, Deputy Director, International Energy Relations, Federal Ministry for Economic Affairs and Energy, Germany (virtual)
- 87 Keynote - Namir Hourani, Managing Director, GMIS

### Global Prosperity Conference

- 89 Opening Remarks - H.E. Shamma Al Mazrui, Minister of State for Youth, UAE
- 90 Panel Discussion - Scaling impact investment: Prosperity at a price?
- 92 Panel Discussion - The decade of action: A countdown to prosperity
- 94 Panel Discussion - Solving the mentor-mentee equation: Is there a science to it?
- 96 Panel Discussion - Turning obligation into opportunity: Accelerating innovation for success

### GMIS Working Groups

- 98 Inclusive & Sustainable Industrial Development Index
- 99 The Global Initiative for Future Industrial Safety Workshop
- 100 Gender Equality and Future Industry



## ABOUT #GMIS2021

# The Global Manufacturing and Industrialisation Summit

Under the patronage of His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the United Arab Emirates, and Ruler of Dubai, the Global Manufacturing and Industrialisation Summit (#GMIS2021) hosted its fourth edition from 22-27 November at Dubai Exhibition Centre.

Inspired by the Expo 2020's theme, 'Connecting Minds, Creating the Future', #GMIS2021 was held under the theme 'Rewiring Societies: Repurposing Digitalisation for Prosperity', thus successfully positioning industrialisation at the centre of the global dialogue and reinforcing the sector's pivotal role in driving economic growth and global prosperity.

The Summit featured key global leaders from government, business, and civil society to emphasise the importance of data intelligence and connectivity, highlighting the evolving integration of humans and machines, reinventing businesses, repurposing capabilities, and rewiring societies across expert panel sessions, keynote addresses, workshops, and masterclasses. Discussions at #GMIS2021 offered key insights on topics including, dark and smart factories, health and safety in a cyber-physical environment, digital mobility and remote working, quantum machine learning (QML), 5G and cloud, Industrial Internet of Things (IIoT) and digital twins, and the blue economy.

In collaboration with GMIS' global network of partners, #GMIS2021 witnessed the launch of the Global Initiative for Industrial Safety (GIFIS), an unconventional platform to encourage and promote

industrial safety technology solutions. Moreover, The Global Biomedical Industrial Centre was announced in partnership with the UAE's Ministry of Industry and Advanced Technology and the United Nations Industrial Development Organization (UNIDO). The Global Biomedical Industrial Centre will act as a global knowledge hub in the biomedical sector attracting multistakeholder efforts to develop cutting-edge innovations, products, and solutions and to provide smart industrial services tailored to the needs of the health industry, with a focus on developing countries. Furthermore, at the closing ceremony of #GMIS2021, GMIS announced its intention to establish an annual event in the USA under the GMIS America brand, which will be hosted in the City of Pittsburgh every year and with its inaugural event scheduled to take place in September 2022.

#GMIS2021 was held during the six-day GMIS Week featuring over 250 global speakers including Heads of State, Prime Ministers, Heads of UN entities, government representatives and Chairs and CEOs of some of the world's largest organisations ■





ABOUT #GMIS2021

# GMIS Exhibition

The Global Manufacturing and Industrialisation Summit hosted the first-ever 'Make It In The Emirates' exhibition, a manufacturing and advanced technology exhibition that showcased some of the UAE's most innovative capabilities, attracting over 30 exhibitors, including the UAE Ministry of Industry and Advanced Technology, Mubadala, Abu Dhabi National Oil Company, Dubai Investments, Dubai Electricity and Water Authority and Dubai Industrial City. The six-day exhibition directly reflected the country's swift progress in developing an innovative industrial ecosystem underpinned by advanced technologies and Fourth Industrial Revolution solutions. It also reaffirmed the efforts taken by the Ministry of Industry and Advanced Technology to mobilise the UAE's industrial sector and drive dynamic and sustainable economic growth ■

Exhibition Show case





# THANK YOU TO OUR CO-CHAIRS AND CO-HOSTS

Co-chair



UNITED NATIONS  
INDUSTRIAL DEVELOPMENT ORGANIZATION



**H.E. LI Yong**  
Director General,  
UNIDO

Co-chair and Co-host



UNITED ARAB EMIRATES  
MINISTRY OF INDUSTRY  
& ADVANCED TECHNOLOGY



**H.E. Dr. Sultan Al Jaber**  
Minister of Industry and  
Advanced Technology,  
UAE

Co-host



اقتصاد دبي  
DUBAI ECONOMY



**H.E. Eng. Saed Al Awadi**  
CEO,  
Dubai Industries & Exports



# THANK YOU TO OUR PARTNERS

## Title Partners: #GMIS2021 Brought to you by



## Strategic Partners



## Industry Partners (Make It In The Emirates)



## Industry Partners (Global)



## Summit Partners





## The Mind-Machine Relationship

The global manufacturing sector has entered the Fourth Industrial Revolution (4IR) era. Driven by advancements in 5G technology, connectivity is powering our economy and restructuring the industrial value chain on a global scale.

Around the world, 5G is powering the manufacturing sector in various stages of maturity, starting with its capacity to harness large quantities of data and culminating in its ability to enable digital intelligence.

This final frontier for 5G, its ability to harness digital intelligence, will have the greatest impact on the manufacturing sector, enabling intelligent automation of machines, remote working, smart factories and remote monitoring. Digital intelligence combined with the proliferation of data has the potential to transform supply chains, business models and the industrial value chain, enabling data to be stored, analysed and harnessed resulting in the ability to optimise every element of the supply chain in real time, from factory floor reconfigurations enabled by digital twins, to full scale digital supply network reconfigurations.

Supply chains characterised by flexibility and backed by data, have the potential to withstand societal shocks, future pandemics and unknown events. However, weaving together cyber-physical systems represents a challenge that goes beyond technology and has far reaching implications for the way in which we experience the world.

Beyond industrialisation, the fourth edition of GMIS (#GMIS2021) delivered an exploration of the human condition in the new digital age, throwing into question the boundaries between the physical and the digital and giving rise to new opportunities to leverage technologies for the greater good. From AI to immersive reality, digital intelligence is changing the way we interact with the world and has the potential not only to transform the manufacturing sector, but also to solve some of humanity's most critical challenges.

This new paradigm of digital intelligence is best described as industry 5.0, a world in which the connection between mind and machine becomes seamless and interfaces begin to fade away. While industry 4.0 has been focussed on operational intelligence brought about by automation, industry 5.0 seeks to turn this on its head, striking a new balance between human and machine, enabling new opportunities for collaboration and innovation ■





# STATISTICS

## ATTENDANCE & PARTICIPATION



**268**  
Speakers



**4**  
UN Heads



**6** Presidents  
& President  
Representatives



**9**  
Host Country  
Ministers



**15**  
International  
Ministers



**234**  
Private Sector  
& Civil Society



**5,311**  
Attendees



**3,173**  
Unique  
Attendees



**178**  
Nationalities



# GMIS DAY ONE

MONDAY, 22 NOVEMBER 2021



▶ WATCH FULL VIDEO

DAY ONE

## Opening Remarks



**H.E. Eng. Saed Al Awadi**  
CEO,  
Dubai Industries & Exports



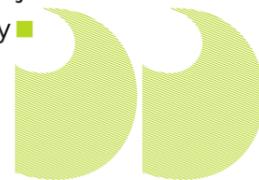
**Y**our Excellencies, honourable guests, ladies and gentlemen,

It gives me great pleasure to be here today at the Global Manufacturing and Industrialisation Summit. We have always believed that manufacturing is an important cornerstone of any economy. A strong manufacturing sector is important in helping to increase the wealth of a nation and increase the incomes of its people.

We strongly believe that there has never been a better time for investors to look at Dubai and the UAE for manufacturing investment. In recent years we have seen the implementation of several Dubai Government and

federal initiatives to support and enhance the nation's manufacturing sector. We believe that the manufacturing sector of tomorrow will be very different to that of yester-years.

The post-COVID manufacturing world brings about challenges, but we strongly believe that there are opportunities that will lead to innovation and creativity. Moreover, we are convinced that these opportunities will ensure that the nation's manufacturing sector continues to be a major contributor to the economy.



*At COP26 we saw that developing zero-carbon tech is vital for the manufacturing sector. The sector must be part of delivering the targets set out in Glasgow.*





WATCH FULL VIDEO

DAY ONE

## Panel Discussion



**H.E. Omar bin Sultan Al Olama**

Minister of State for Artificial Intelligence, Digital Economy and Remote Work Applications, UAE



**Lord Gerry Grimstone**

Minister for Investment, UK



**Ruth Porat**

CFO, Alphabet (virtual)

Moderator:



**John Deferios**

Professor of Business, NYU Abu Dhabi and World Economic Forum Energy Fellow

### Technology and partnerships driving 21<sup>st</sup> century growth

**GMIS 2021** opened with a panel about 21st century growth, most notably, growth driven by data and partnerships. The COVID-19 pandemic has disrupted supply chains across the globe prompting us to take a step back and ask ourselves how can we become more competitive in the digital age? Who are our partners of the future? And what role will data play in our future decision making?

**His Excellency Omar bin Sultan Al Olama** began the conversation by taking a look at the UAE's position as a neutral country who 'works with everyone'. The UAE's neutrality has enabled the country to attract talent from all over the world, boosting innovation and increasing the country's competitiveness in the global economy.

He also cited the agile nature of the UAE's public sector as a key factor in maintaining its competitiveness, and praised the willingness of the UAE government to collaborate with the private sector in order to keep pace with innovation and devise appropriate regulations to ensure technology is working toward the greater good. He later described this as the need to "build something meaningful".

**Lord Gerry Grimstone** highlighted how the pandemic has focused policymakers' attentions on digital trade policy in addition to the movement of goods. He noted that "when nations are talking about trade policy now, they absolutely have to focus on digital trade as well as the physical movement of goods. That is a real change." He warned against "making data sticky" and highlighted the importance of regulation and cyber security in enabling the flow of data.

**Ruth Porat**, joining virtually, described how the lessons learned during the COVID-19 crisis were similar to those learned during the financial crisis. Ultimately a lack of data and insight contributed to a world-wide catastrophe. She commented, "the key lesson and mantra I had since that day is that you should never drive a car with mud on the windshield. And in the same vein, you should never try and run a company with mud on the windshield. And the way to get rid of the mud is data and analytics. It clears it away, it gives you the transparency, the vision you need, so that you can make decisions, you can move with greater velocity. You can actually even take more risk because it's intelligent risk."

She then stressed the importance of the cloud in managing today's complex supply chains, and highlighted the role of the cloud in enabling partnerships, boosting operating efficiency, increasing access to data and enabling insights.

To conclude the panel, **Lord Gerry Grimstone**, announced the UK's ambitions to secure Free Trade Agreements (FTAs) with GCC countries in the next 12 months, highlighting the role of free trade in increasing the rate of adoption of new technologies. He added that investment is becoming more sustainable due to the fact that "money flows, but also technology flows, expertise flows and these flow two ways". He also added, "I think investment is becoming very sustainable and often driven by digitalisation because of the ease of communication. So, I think this new industrial revolution that we are living in, guided by the essential drive to eliminate carbon, I think is a really exciting time for us all ■"



**H.E. Omar bin Sultan Al Olama**  
Minister of State for Artificial Intelligence, Digital Economy and Remote Work Applications, UAE

*We are seeing a lot of talent coming to live in the UAE and the demographic mix here cannot be found anywhere else.*





WATCH FULL VIDEO

DAY ONE

# Keynote



**H.E. Bandar Al Khorayef**

Minister of Industry and Mineral Resources,  
Kingdom of Saudi Arabia



**W**e, as governments, have a responsibility to our people to ensure complete readiness and leadership towards digital transformation, the requirements of the Fourth Industrial Revolution, and artificial intelligence. Governments should focus on three important aspects, namely, regulations and legislation, infrastructure, and human capacity building. In doing so, governments must adopt a series of regulations and legislation to achieve digital change, deploy 4IR, and build systems that have the ability to keep pace with innovation. It's important to ensure that continued investments are made into technologies that support cybersecurity and infrastructure readiness, in order to ensure that this infrastructure is able to deal with growth, respond to changes, and embrace automation and new business models. One of the most important elements is ensuring human capacity building, as it is the only guarantee for business sustainability in order to achieve the

aspirations of societies in the medium and long-term. As for the private sector, especially global companies, it must work hard to create a culture that stimulates creativity and innovation and embraces competencies and capabilities that guarantee its permanent ability to adapt and build sustainable business models.

The Kingdom of Saudi Arabia pays great attention to the industrial sector, given the importance of this sector towards the development of the economy, our Kingdom's vision and towards the creation of investment and job opportunities for our sons and daughters. To this end, the "Ndaleb" program was launched, one of the most important programs under the Kingdom's Vision 2030 strategy, which targets four important sectors; industry, mining, energy and logistics





WATCH FULL VIDEO

DAY ONE

# Keynote



**H.E. Bruno Le Maire**

Minister of Economy, Finance and Recovery,  
France



Today, we are discussing the challenges of the Fourth Industrial Revolution, the so-called digital revolution. More than any other revolution, this technological revolution has radically changed the course of our lives and the competition between nations.

The question is quite clear. Do we want the digital giants with private interests to replace sovereign states with public interests? This is one of the key questions and one of the key consequences of the digital revolution.

It's time to commit. It's time to work together - people, government and private companies, so that we can draw the best from this digital revolution. For that there is a prerequisite. The prerequisite is to be economically strong. That's exactly what we have done with President Macron in transforming the French economy, in putting more competitiveness into

French companies, in facing the economic crisis, in having the best economic recovery amongst European countries, and finally, in defining a new investment plan for the future.

The results are quite clear. We will have a growth of more than 6% in 2021 and more than 4% in 2022. We are back to the level of economic development before the COVID-19 crisis. We have a level of unemployment which is better now than it was before the crisis, and we have become the most attractive country for foreign investments in Europe ■





WATCH FULL VIDEO

DAY ONE

## Fireside Chat



**H.E. Khaldoon Al Mubarak**  
Managing Director and Group CEO,  
Mubadala

Interviewer



**John Deferios**  
Professor of Business,  
NYU Abu Dhabi and World  
Economic Forum Energy  
Fellow

### Investing in the leading edge of innovation

Speaking during the ‘Investing in the leading edge of innovation’ session at #GMIS2021, His Excellency Khaldoon Al Mubarak elaborated on the investment themes of technology, life sciences and the energy transition, saying, “from a short-term perspective, there are challenges ahead with inflation creeping in and anticipated interest rate hikes, which will undoubtedly have implications. But Mubadala’s approach is that of the long-term, patient investor with convictions and thematic views. This has helped us to weather through difficult cyclical periods that would have challenged others.”

H.E. Khaldoon Al Mubarak added that the Abu Dhabi Future Energy Company (Masdar) is now a global renewables player, with investments and assets across thirty-three countries, representing investments of over \$20 billion (Dh73.4 billion) and eleven gigawatts of renewable power generation.

“Fifteen years ago, we had started investing in the renewable energy transition, before it became the popular subject it is today. We are now well-positioned in that sector, empowered with the ability to continue growing at scale.”

Commenting on the recent virtual summit between U.S. President Joe Biden and Chinese President Xi Jinping, Mubadala’s Chief Executive said: “The world wants, and needs, continued economic prosperity, and maintaining these open lines are in the best interest of stability.”

“As a global trade and economic hub, the UAE has acted as the transiting point between the East and the West, with substantial trade ties on both sides. Global stability is crucial, and only enhances our proposition in terms of trade, business and economic growth ■”





WATCH FULL VIDEO

DAY ONE

## Panel Discussion



**Peng Xiao**  
Group CEO,  
G42



**Vivek Chaand Sehgal**  
Chairman,  
Motherson Group



**Shadi Malak**  
CEO,  
Etihad Rail



**H.E. Osama Al Zamil**  
Deputy Minister of  
Industry and Mineral  
Resources,  
Kingdom of Saudi Arabia



**Luc Rémont**  
CEO, International  
Operations,  
Schneider Electric



## Connect to collaborate: Revolutionising supply networks

If the pandemic has taught us anything, it's that data should be a fundamental priority for any business looking to future proof their operations, post-pandemic. This was the key message delivered during an insightful discussion regarding the future of global supply chains.

Discussing the impact of COVID-19, **Vivek Chaand Sehgal**, said, “we’re in 44 countries, and we have around 178 manufacturing plants all over the world. We were thinking, how would we maintain the supply chain? The ability to merge and mix air, sea, and rail was the real genius aspect. You will have multiple challenges for people at the government and associate level – but do they understand the technology needs of customers?”

The pandemic has highlighted the importance of data and analytics in maintaining business operations during times of crises. In addition, the panel all stressed the importance of data and digital

supply chains in bringing manufacturers in closer proximity to the customer, enabling the creation of more tailored and bespoke products and services.

**Shadi Malak**, echoed this sentiment, stating that “the digital supply chain is enabling us to utilise e-commerce much more smoothly and provides opportunities for companies such as rail networks. Companies need to be able to shift to platforms to collect data to enhance their services to customers and end users”. Adding to this statement, **Luc Rémont**, described how Schneider Electric had focused the majority of its efforts during the pandemic on “the implementation of digitisation” and on helping its customers “extract the relevant data to make key decisions”.

**Peng Xiao**, commented on the role of technology in developing smarter societies adding: “Everybody was put to the test during the pandemic. We want to create a safer and smarter society for our

business. Smart technology is able to transform an older and slower business model. Our digital model of rapidly developing vaccine factories is being expanded, and soon, this factory will be able to come online and produce over 100 million vaccines. Smart technology, especially AI, is transforming the way we do business and making societies smarter.”

Providing a public sector perspective, **H.E. Osama Al Zamil**, stressed the country’s ambitions to “become the regional hub for manufacturing and to have a competitive advantage across the world”. In order to achieve this vision, His Excellency highlighted the need for “increased technology maturity across the supply chain and across 40 industrial cities being developed in the Kingdom of Saudi Arabia ■”





WATCH FULL VIDEO

DAY ONE

## Fireside Chat



**John Kerry**  
Special Presidential Envoy for  
Climate,  
USA

Interviewer



**John Deferios**  
Professor of Business,  
NYU Abu Dhabi and World  
Economic Forum Energy  
Fellow

### COP26 and beyond - Sustaining momentum

John Kerry, stressed the importance of achieving full buy-in from India, China, and Russia, if a global energy transition is to happen quickly enough to avoid the potentially disastrous impacts of climate change.

Speaking during a fireside chat moderated by John Deferios, John Kerry highlighted the need to engage India, Russia and China in the global decarbonisation race, stating that “today, we have countries that comprise 70% of the global GDP committed to reducing their emissions by half by 2030. So obviously we still need that 30%, we have to get them on board – and that’s India and Russia and China.”

Touching on the historic agreement that was struck by the US and China to collaborate on limiting global warming to 1.5°C above pre-industrial levels, he said: “China agreed to phase out coal beginning in 2026, which we think is farther than we’d like. But it’s a phasedown, and they did agree to it, and this was very hard fought over. We’re going to work together to accelerate that effort down the road.”

Kerry added: “Generally, we’re seeing incredible

movement from global players, and the industrial sector is stepping up for the first time. Trillions of dollars are definitely moving in the right direction towards climate action – and money is always going to change minds.”

Addressing the question whether the oil and gas sector was underrepresented during the 26th UN Climate Change Conference (COP26) in Glasgow, he said: “I don’t agree. The oil and gas industry has never had a hard time having its voice heard.”

He added: “The challenge of oil and gas is not the industry itself. It’s the by-product of what happens to it. What will govern it is the cost of energy in the market.”

Kerry went on to point out that transitions are part and parcel of human evolution. The real issue, he said, is the pace at which we can affect the transition to the energy system of tomorrow.

“We’re in a transition right now because the market is demanding it. Today, solar is cheaper than coal. We need to phase coal out faster because you can’t sufficiently abate it – it’s creating the greatest warming on the planet.



Now, the question is: Will we transition fast enough to overcome the most devastating effects of climate change? Because, believe me, this is existential.”

Kerry praised the United Nations’ decision to host COP27 in Egypt and COP28 in the UAE in 2022 and 2023, respectively, noting that Africa and the Middle East are critical to the challenge of climate change ■



# OPENING CEREMONY

## Opening Remarks



**Badr Al Olama**  
Head of the Organising  
Committee,  
GMS

## Special Address



**António Guterres**  
Secretary General,  
United Nations  
(virtual)

## Co-Chairs Keynotes



**H.E. Dr. Sultan Al Jaber**  
Minister of Industry and  
Advanced Technology,  
UAE



**H.E. LI Yong**  
Director General,  
UNIDO  
(virtual)

## Honorary Guest Keynote



**H.E. Mohamed Ould  
Cheikh El Ghazouani**  
President,  
Mauritania



▶ WATCH FULL VIDEO

DAY ONE

# Opening Ceremony Welcome Remarks



**Badr Al Olama**  
Head of the Organising Committee,  
GMIS



**Y**our Highness, Your Excellencies, ladies and gentlemen. Salam Alaikum, good afternoon and a very warm welcome to you all here in the United Arab Emirates. It has been more than two years since we last held an in person gathering. We have now realised that our world has come to a critical juncture: one where the decisions we make today will have a vital bearing on what our future will look like tomorrow. Many factors have brought us to this point: technology is just one of them.

Technology's progress has brought its own set of complexities, not least in the work place. None of the challenges have stood out more starkly before us as the one presented by COVID-19. The first priority for all of us has been to get control over the virus and put an end to this disruption of our daily lives, but, it also poses a bigger question: so drastic has the impact of the pandemic been, that we may well wonder what lesson it is going to leave behind. Ladies and gentlemen, we are at the advent of a new world order.

The fearsome spectre of climate change is expressing itself ever more destructively in the form of extreme weather events. The negotiations at COP 26 have established a greater sense of urgency but this consensus has not fully transpired into a fully effective global plan of action.

The path away from danger and towards a better future is, of course, marked out by the United Nations sustainability goals. Humanity simply has to gather the will to enact change for a new world order that is more sustainable, inherently inclusive and relentlessly resilient to unpredictable black swan events. In doing so, we have to weigh in powerful means like digital technologies to assist us with the transformation. We have to resort to new forms of collaboration and cooperation, removing the barriers that exist in our minds and embracing technology as we move towards a connected society where everyone and everything work in tandem ■





▶ WATCH FULL VIDEO

DAY ONE

# Opening Ceremony Special Address



**António Guterres**  
Secretary General,  
United Nations  
(virtual)



**E**xcellencies, ladies and gentlemen. I am pleased to convey my greetings to this Global Manufacturing and Industrialisation Summit. My thanks to the Co-Chairs, UNIDO and the Ministry of Industry and Advanced Technology of the UAE.

The COVID-19 pandemic has highlighted the importance of digitalisation in increasing business resilience and competitiveness and safeguarding essential value chains. UNIDO has found that just ten economies account for about 90 per cent of advanced innovation patents worldwide, while 88 developing countries have failed to utilize advanced technologies and digital production in a significant way. Women also continue to be marginalized,

comprising just 30 per cent of STEM researchers.

Digital technologies can propel the circular economy and help address the climate crisis. But making the most of this potential, particularly to help the most vulnerable, requires strength and partnerships for climate finance, more robust commitments to decarbonise, support for innovation ecosystems and greater investments in digital infrastructure. Thank you for coming together to force solutions, and to promote inclusive and sustainable industrialisation, as we accelerate progress towards the 2030 agenda and the Sustainable Development Goals ■





▶ WATCH FULL VIDEO

DAY ONE

# Opening Ceremony Co-Chairs Keynote



**H.E. Dr. Sultan Al Jaber**  
Minister of Industry and Advanced  
Technology,  
UAE



Throughout history, industries and manufacturing have transformed the world. During the 1st three industrial revolutions, life expectancy doubled and global average incomes increase by a factor of 15. Today we are at the beginning of the 4th industrial age and 4IR technologies are pushing the boundaries of the possible.

As the global economy comes back to life, this uneven recovery is causing supply chain bottle necks and backlogs. If not carefully addressed, this dynamic could potentially slow future growth. Ladies and gentlemen, for industry leaders, the lessons of the post post-pandemic recovery are very visible and in fact, very clear. Real recovery requires resilience and agility. We need to reinforce industrial capacity, strengthen supply chains, and control and reduce cost. We need to operate more flexible business models in response to new challenges and opportunities and we need to strengthen balance sheets and financial statements with the mix of cash reserve and sensible

debt financing. In addition, we should build public-private partnerships to manage risk collectively so that we can better deal with potential future disruptions. All these efforts and cutting edge technologies can give us the edge and the differentiator we all need. This is where GMIS has a critical, and then important role to play.

Here in the United Arab Emirates, we are doing both: adopting new technologies across our manufacturing and industrial landscape and prioritising sectors that will deliver the highest value-add. Ultimately, our goal is to more than double the industrial sector's contribution to our GDP in less than 10 years. To do this, we are growing sectors where we have existing strength, including energy, chemicals, petrochemicals, metals and heavy industrial manufacturing. We are investing in sectors of vital importance including healthcare, agri-tech and advanced manufacturing. We are expanding into sectors of the future like life sciences, biotech & space





▶ WATCH FULL VIDEO

DAY ONE

# Opening Ceremony Co-Chairs Keynote



**H.E. Li Yong**

Director General,  
UNIDO  
(virtual)



The digital divide continues to grow, with the risk of a small number of digital ‘haves’ being outnumbered by a much a greater number of ‘have nots’. We have less than 10 years to achieve the internationally adopted 2030 agenda for sustainable development. This statistic gives us reason to pause and reflect. This is why inclusive and sustainable industrialisation is included as part of the goldmine of the 2030 agenda for sustainable development.

We are addressing sustainability through our global call for innovative solutions in clean tech and sustainable land management. In terms of digital policies, we are promoting several normative frameworks. At this Summit we’ll launch several normative papers addressing technical recommendations for AI

adoption by SMEs in developing countries, as well as digital standards in science and technology parks. UNIDO’s flagship 2022 Industrial Development Report will also be launched next week, focusing on industrial resilience and recovery, and on the future of industrialisation.

Together we have watched GMIS grow into a hugely important forum for addressing the diverse opportunities and challenges of advanced manufacturing. The Abu Dhabi declaration continues to be our strategic guide on how to pursue inclusive and sustainable industrial development in the age of digital transformation. It is clear that multi-stakeholder partnerships are key to unlocking the challenges that lie before us ■





▶ WATCH FULL VIDEO

DAY ONE

# Opening Ceremony Honorary Guest Keynote



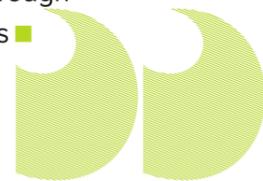
**H.E. Mohamed Ould Cheikh El Ghazouani**

President,  
Mauritania



African countries have incorporated industrialisation and manufacturing into their main priorities for the 2063 agenda, and are currently exerting tremendous efforts towards establishing diversified, competitive and effective industries through ambitious programmes, in order to; improve infrastructures; upgrade to new technologies; encourage private sector participation, and create a continental free exchange zone. The industrial sector in Mauritania relies on extractive industries and on small and medium industrial units based on local products. The sector was affected by the COVID-19 pandemic, as were all industrial sectors in the world, with its contribution to the GDP decreasing by 2.9% to reach about 9.4%, compared to 10.7% before the pandemic.

We're therefore working tirelessly to improve it through an extensive programme that targets diversification to enhance its resilience and productivity to achieve the envisioned sustainable development through 4IR technologies ■





▶ WATCH FULL VIDEO

DAY ONE

# Keynote



**H.E. Mattar Al Tayer**

DG and Chairman of the Board,  
Dubai Roads and Transport Authority

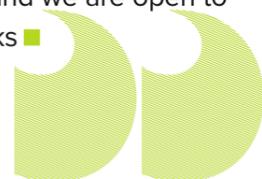


**RTA** is currently updating the Strategic Transportation Master Plan for the next 20 years to align with the Dubai 2040 Urban Master Plan. This is supported by our leadership who believe that investing in infrastructure is the main driver of economic growth and innovation, and the realisation of smart societies. We also revised the RTA's vision to become the world leader in seamless and sustainable mobility."

His Excellency outlined several steps the RTA is taking to develop Dubai's super smart society, including investing in R&D, utilising big data and creating a legislative framework that supports innovation and public-private participation.

Commenting on the UAE's transition to a smart society, His Excellency said: "We believe our success story is based on key factors, and I will mention only six. Number one: leadership. His Highness, Sheikh Mohammed bin Rashid Al Maktoum has a clear vision

for Dubai's future and entrusted a dedicated team headed by myself to ensure the vision and plans are achieved. Number two: non-traditional organisational structure. Adopting a structure that challenges the traditional hierarchy is the secret for determining business functionality. Number three: agile policies and regulation. New technology required a new legislative environment which Dubai is agile enough to take on board. Number four: innovation partnership models. We need a different way of thinking and operating new mobility modes as they become safe for public use. Number five: world class infrastructure. We have comprehensive and flexible plans to support public needs and meet the changing requirement for the future. And six, last but not least, calculated risks. There are clear directions from the government towards innovation and we are open to taking calculated risks ■





▶ WATCH FULL VIDEO

DAY ONE

## Panel Discussion



**H.E. Sarah Al Amiri**  
Minister of State for  
Advanced Technology,  
UAE



**Patrice Caine**  
Chairman and CEO,  
Thales  
(virtual)



**Martin Wezowski**  
Chief Futurist,  
SAP



**Dr. Peter Gassmann**  
Global Leader,  
Strategy&



**H.E. Dr. Amr Talaat**  
Minister of  
Communications and  
Information Technology,  
Egypt

## Society 5.0: Building super smart societies

**D**isruptive citywide transformations are redefining societal interactions with infrastructure and mobility on a global scale. The biggest challenge ahead, lies in enabling equal access to public services. That was the key message from a panel discussion on the concept of Society 5.0 – which places humans at the centre of technological advancement across smart solutions.

Ministers from the UAE and Egypt contributed to the discussion, alongside CXOs from global organisations. Together, they shared their perspectives on the progressive role of automation for services in the future of industrialisation.

H.E. Sarah Al Amiri, highlighted the issues of inequality and ownership surrounding technology, “it is important to ensure societies benefit from the

output of technology. We must tackle the ethics of who owns the knowledge and the by-products of the data that goes into impacting our lives.”

H.E. Dr. Amr Talaat, described the ethical and privacy challenges that will be brought about by the sudden proliferation of data enabled by 5G infrastructure and connectivity, “by 2030, around 3.3 billion cells are expected to hold and exchange data through 5G. Such numbers bring to question notions of ownership and privacy within a larger ethical paradigm of data generation for the benefit of the entire globe. We need to strike a very delicate balance between data extractions, value chains, and knowledge transfers, to stay weary of privacy and guarantee secure and safe ownership.”





# Panel Discussion

## Society 5.0: Building super smart societies

Egypt plans to build seventeen smart cities. Managed by emerging technologies, the upcoming cities are designed to increase access for Egyptian citizens to a growing cyber world under the umbrella of the nationwide project entitled 'Decent Life'. The latter will extend the fibre optic network, availing high speed internet across a total of 4,500 villages in Egypt, catering to fifty-eight million inhabitants.

**Dr. Peter Gassmann**, gave the opinion that inclusiveness is reached through greater alliances between government, business, and academic sectors, "only through inclusiveness can we bridge the cyber world with the real world and bring the S and the G of the ESG discussion to the forefront of innovation more explicitly than ever before."

In turn, **Martin Wezowski**, stressed that the relationship between man and machine should be

one of empathetic symbiosis, "information can be sourced out of data if designed properly. It holds potential for knowledge extraction, furthering wisdom and collective knowledge. Such extractions are then translated as features to serve and upgrade products at hand, reaching populations to begin a relationship of use."

**Patrice Caine**, added that it was important to restore trust in science and technology and that the transparency of artificial intelligence is key to this. He said, "AI emerged as a technology prescribed under 4IR standards which inevitably lead to issues in trust, next to other quantum technologies. Trust was restored instantly through three core conditions that Thales inserted in its development scheme; these are: transparency, intelligibility and ethics ■"





▶ WATCH FULL VIDEO

DAY ONE

# Panel Discussion



**H.E. Dr. Amani Abou Zeid**  
Commissioner of Infrastructure and Energy, African Union



**H.E. Peter Bobylev**  
Deputy Minister of Energy, Russian Federation



**Dr. Wang Jiye**  
Deputy CIO, State Grid Corporation of China (virtual)



**Jasim Thabet**  
Group CEO and Managing Director, TAQA



**Dr. Barbara Frei**  
EVP, Industrial Automation, Schneider Electric (virtual)



**Leonardo Benítez**  
Chief Phygital Officer, Indra

## Energy as a Service (EaaS): Digitalisation of the power sector

**H.E. Dr. Amani Abou-Zeid**, said: “Africa comprises a massive conglomeration of fifty-four countries and over 1.3 billion people. 55% of the population does not have access to electricity, which presents a huge opportunity to cater to half of the continent through new business models and the development of cutting-edge technologies.”

**Jasim Thabet**, commented, “customers, whether commercial or industrial, expect affordable, reliable and predictable power supplies. In parallel, the demand for conscious consumption is rising, underlining diverse sustainable investment opportunities in the sector. Moreover, energy solutions are now more sophisticated and designed within the prism of reduced consumption. The resulting facet runs in favour of investors and is tackled by implementing certain capex,

instrumentation, and retrofit, to guarantee positive outcomes from energy audits.”

TAQA, the National Abu Dhabi Energy Company is one of the largest utility companies in Africa, the Middle East and Europe, with a market cap of \$40 billion. TAQA operates across eleven countries in the oil and gas industry and in the generation, distribution and supply of power and water. The latter is a growth strategy designed to set targets in renewables and commit to energy as a service.

**H.E. Peter Bobylev**, said: “the consumption of energy will continue to expand as a result of the ground-breaking disruptions that followed the outbreak of COVID-19 across all of our economies. According to 2050 analytics, the global consumption of energy will grow by one third. That’s in only thirty years”





## Panel Discussion

### Energy as a Service (EaaS): Digitalisation of the power sector

**Leonardo Benitez**, said, “companies worldwide face the challenge of maintaining momentum alongside rapid technology advancements. Only by nurturing partnerships can enterprises collect sustainable KPIs and reduce the initial capex to build the necessary infrastructure to accommodate innovative technologies designed for energy efficiency, distribution and storage.”

**Dr. Wang Jiye**, concluded by saying that, “compared to the traditional energy system, the one we are facing today includes higher consumptions and diversity of clean energy, smart devices, and open-access platforms to encourage knowledge transfers and boost the energy infrastructure in its entirety for the benefit of all ■”





▶ WATCH FULL VIDEO

DAY ONE

## Panel Discussion



**Petra Mitchell**  
President and CEO, Catalyst  
Connection and Board Member,  
Advanced Robotics for  
Manufacturing



**Andrea Riposati**  
Chairman and CEO,  
Dante Labs



**Dr. Ron Tomer**  
President,  
Manufacturers  
Association of Israel

### The experiential era: From outputs to outcomes

**P**etra Mitchell, said: “Catalyst Connection currently operates across 300,000 small manufacturing establishments, employing over eleven million people in the United States. SMEs are rapidly adopting advanced technologies, responding to customer needs and enacting positive impact on communities, workers and families. Technologies such as AI and 3D printing are enabling predictive maintenance, overall accelerating the pace of customisation.”

**Andrea Riposati**, said: “4IR technologies facilitate non-invasive access to successfully deliver personalised products or services to the end consumer. Relationships with end user companies are key to tailoring consumer experiences.”

**Dr. Ron Tomer**, added that “while 25% of Israeli manufacturing industries are high-tech, traditional industries still enable largely across the state. The future of traditional industries relies on innovating the manufacturing process. Currently, we operate multiple schemes to operate knowledge transfers to encourage innovative ventures, such as the start-up forum, the innovative forum for innovation of products, and the advanced manufacturing forum ■”





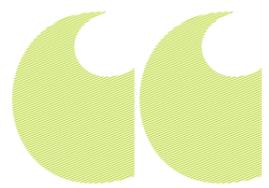
▶ WATCH FULL VIDEO

DAY ONE  
**Keynote**

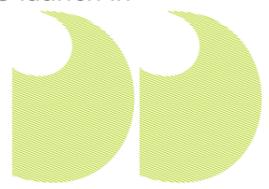


**Khalifa Al Shamsi**  
Group Chief Strategy and  
Governance Officer,  
Etisalat

Khalifa Al Shamsi, said the era of 5G connectivity will open a new world of economic growth for early adopters of the technology, especially in the industrial sector.



**5** G blue energy can transform and accelerate the growth of industries. In terms of speed, 5G runs ten times faster than 4Gs. In terms of connected devices, 5G holds the capability to connect a million devices within a square kilometre, compared to a mere 100,000 devices in previous generations. As a result, 5G technology will have a major impact on the manufacturing and industrial sectors, especially when it comes to industrial use cases like remote connectivity to cranes and drones, robotics, and autonomous vehicles. The UAE is proud to act as an innovative leader in the sector and provide insight from its early 5G launch in May 2018, the first in the region ■





[WATCH FULL VIDEO](#)

DAY ONE

# Panel Discussion



**Mohammed Kande**  
Vice Chair and Global Advisory Leader, PwC (virtual)



**Tariq Al Awadhi**  
Executive Director, Spectrum Affairs Department, Telecommunications and Digital Government Regulatory Authority (TDRA), UAE



**Ankur Bhan**  
Creator and Global Head, Nokia Worldwide IoT Network Grid



**Dr. Steven Walker**  
CTO, Lockheed Martin



**Åsa Tamsons**  
SVP and Head of Business Area Technologies, Ericsson

## Digitalisation: The 5G wave accelerates the future

The increased introduction of 5G networks across global sectors, including industry and supply chains, will support a rapid expansion in associated technologies like cloud solutions and AI.

**Mohamed Kande**, said: “the COVID-19 pandemic accelerated digital transformation, redefining how companies operate whilst cultivating resilience competitiveness and consumer experiences. 5G is a great enabler for innovative opportunities to take shape across enterprises, facilitating high speed wireless solutions and connecting more people”

**Tariq Al Awadhi**, said that to accelerate 5G adoption, there must be “collaboration between government, regulators, use cases, technology companies, and network providers. As a regulator in the UAE, we are facilitating and supporting our industry and the

mobile operator and mobile industry, to adopt 4IR technologies as part of our 2020 -2025 strategy to reach 100% 5G coverage across the country.”

**Ankur Bhan**, said: “there is potential to leverage 5G and other combinatorial technologies to profoundly alter the value proposition across physical heavy industries, eventually driving productivity, safety, and sustainability. 5G is a fundamental enabler insofar that without connectivity, many of these technologies will lack compatibility.”

**Dr. Steven Walker**, echoed: “the concept of joint all-domain operations across downstream and upstream domains, including cyber space, can build a powerful deterrent capability from within. Resilient communication systems are thus essential to enact information transfers from one domain to the next in

a secure manner, with low latency and high bandwidth, using AI and machine learning, such as EDGE computing.”

**Åsa Tamsons**, said: “in 2026, 60% of the world’s population will be covered by 5G and collaboration will be very key to its success. As a result, Ericsson has divulged its intent to acquire the communication specialist Vonage Holdings comprising an ecosystem of one million developers, as a further step towards creating an open innovation system for enterprises, operators and developers to benefit from the capabilities of 5G ■ ”





# DAY ONE STRATEGY THEATRE



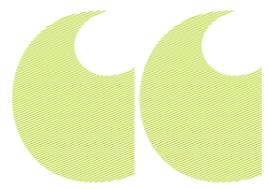
▶ WATCH FULL VIDEO

DAY ONE  
STRATEGY THEATRE

# Keynote



**H.E. Mohammed Al Hammadi**  
Managing Director and CEO,  
ENEC



Today's topic of discussion is of immense importance for the industrial industry as we continue to pursue the net-zero target. Our path is clear, and the world will be able to see the first project in the UAE when we host COP28 in 2023. Today, we are here to discuss the industry's role in climate change - the challenge will continue, and we must make major changes. The threat of climate change is just around the corner, and we need to act now. We will see aspects of our life change to electrification all the way from your phone, to cloud computing, and we want to make sure electric power comes from clean sources. We need to radically change our approach and using technology will ensure this.

Today, there are only two clean energy sources – hydro power and nuclear energy – and we want to decarbonise the industrial sector without comprising growth. Earlier this year, the Department of Energy announced the Clean Energy Certificate Scheme to verify uses of clean sources in the UAE. This recognises the clear effort from the UAE and is a pioneering step to accelerate the growth of the nation's net-zero target. The UAE is quickly becoming a global success story for the climate space, and we have opened up a world of opportunities for sustainable growth ■



Manufacturing & Realisation Summit



GMIS

Manufacturing & Realisation Summit





WATCH FULL VIDEO

DAY ONE  
STRATEGY THEATRE

# Panel Discussion



**Marta Blanco**  
President,  
Confederation of  
Employers'  
Organizations (CEOE),  
Spain



**Harald Kayser**  
Chairman and  
Senior Partner,  
PwC Europe



**Stephen Moss**  
CEO (MENAT),  
HSBC



**Demosthenis Pafitis**  
CTO,  
Schlumberger

## “Greening” industry to scale up climate action

Trillions of dollars are required to achieve the net-zero objectives, but finances need to be steered in the right direction. New methods of collaboration must be incorporated to achieve carbon targets. Industry leaders debated strategies to tackle cost efficiency, increase collaboration and accelerate climate action during a panel discussion dedicated to ‘greening industry’.

**Marta Blanco**, said: “Spain’s GDP represents around 14-15% of the manufacturing sector. This is a good opportunity to reaffirm our commitment to climate action by transitioning altogether to sustainable operations and we have an ambitious plan of achieving neutrality by 2050.”

**Harald Kayser**, offered a resourceful contribution in so far that, “carbon neutrality is always possible, but will it be viable from a cost perspective? Innovation will be key to adapting strategies and providing

solutions as companies begin to generate profit from becoming sustainable. I see huge risk in the slowing down of carbon neutral initiatives if we don't collaborate, which will lead to competitive disadvantage and less societal wealth”

**Stephen Moss**, added: “finance has a huge role to play in this transition and at HSBC, we plan to be net-zero by 2030. We committed to be a fundamental part of the transition and we will help our clients as part of this transition. In terms of technology capabilities, 50% of the technology needed to get to net-zero is not currently scalable, so we need significant investment to get to this net-zero target.”

**Demosthenis Pafitis**, said: “firstly, there are many opportunities for transforming the industrial sector along net-carbon neutral measures to successfully move towards sustainable energy sources.

Secondly, climate action can be mitigated by adapting the entire workflow pattern of production. Today, the challenge is for companies to have access to strategic partnerships to scale up and reduce their carbon footprint, and access to a sustainable market place ■”





[WATCH FULL VIDEO](#)

DAY ONE  
STRATEGY THEATRE

## Panel Discussion



**H.E. Dr. Tariq Al Gurg**  
CEO and Vice Chairman,  
Dubai Cares



**Robson Braga de Andrade**  
President, National Confederation of Industry (CNI),  
Brazil



**Kurai Matsheza**  
President,  
Confederation of Zimbabwe Industries (CZI)



**Fred Rio**  
Director,  
Technology and Manufacturing,  
Caterpillar  
(virtual)

### Has digital transformation served as a springboard to prosperity?

For digital transformation to be successful and an enabler of prosperity, there needs to be collaboration between governments and the private sector to address the fundamental challenges faced by societies worldwide across education, labour, literacy and more – ahead of digital transformation.

H.E. Dr. Tariq Al Gurg, said, “our biggest challenge is the lack of scientific evidence demonstrating that education can eliminate poverty. As a result, the education sector is suffering from investment shortages. Yet in recent years, global coalitions have shown tremendous promise in handling knowledge sharing initiatives, such as Giga, a partnership between ITU and UNICEF. The Giga initiative is set to connect every single school and the world with the internet. Such alliances hold exciting potential for attracting the private sector and developing a new cross-industry model of cooperation involving governments, enterprises, civil society and community members.”

Robson Braga de Andrade, said, “we feel that growth must be inclusive, and it needs to uplift the lives of people. But in many developing countries we cannot

just talk about industrialisation, as there are other issues in terms of access to clean water, access to health - even the access to electricity - which are key enablers of industrialisation itself. So, these are some fundamental issues that we are still struggling with.”

Kurai Matsheza, added, “digitalisation presents a huge opportunity for developing countries to facilitate the democratisation of labour. A low investment is needed to create a digital job or digital infrastructure, as opposed to a brick-and-mortar infrastructure that may require roads, bridges, and airports - the same goes for he same goes for education.”

Fred Rio, added, “as a private sector, we are looking at digitalisation to create new forms of value and experiences for our customers. A primary investment from Caterpillar was made recently to connect every single machine that led our factories, in order to extract data to predict when a machine might need a service so that I can call the customer before the machine fails ■”





▶ WATCH FULL VIDEO

DAY ONE  
STRATEGY THEATRE

## Keynote



**H.E. Dr. Ahmed Belhoul**

Minister of State for  
Entrepreneurship and SMEs,  
UAE



The future of our nations relies on maintaining competitive standards to safeguard the future. The UAE has led emancipative initiatives for SMEs, to give momentum to the potential laid down by the Fourth Industrial Revolution, to guarantee successful economic regeneration and prosperity, and to provide leadership in innovative ventures.”

“The current challenges facing SMEs is the lack of available assets to apply for loans and maintain momentum with rapid technological advancements. However, the growing Fintech industry is now well established in the UAE, and is acting as a hub to fund that gap sustainably.

The country has also witnessed the introduction of sophisticated financial tools such as venture debt, to complement equity. The result is a sustainable and sophisticated ecosystem where each and every requirement of SMEs are met ■





[WATCH FULL VIDEO](#)

DAY ONE  
STRATEGY THEATRE

## Panel Discussion



**H.E. Arkady Dvorkovich**  
Chairman, Skolkovo Foundation and Former Deputy Prime Minister, Russia



**H.E. Abdel Aziz Ould Dahi**  
Minister of Digital Transition, Innovation and Modernization, Mauritania



**H.E. Cham Prasidh**  
Minister of Industry, Science, Technology and Innovation, Cambodia



**H.E. Redha Al Saleh**  
Chairman, Oman Chamber of Commerce and Industry

### Bridging the SME finance gap

All panellists representing leading nation-states agreed that more work needs to be done to provide financing for SMEs with appropriate and supportive conditions. SMEs must embrace digital transformation in order to stay competitive, but development of a country's ICT infrastructure must also be developed in tandem to support growth.

**H.E. Arkady Dvorkovich**, said: "larger banks need to create solutions in their ecosystem for SMEs and partner with start-ups to create innovative solutions, such as standard digital documentation for SME financing. During the pandemic, the Russian government stepped in to provide funding for SMEs to bridge the gap. Credit for SMEs is a critical issue but improving access to market is a better tool to improve SMEs' competitiveness."

Governments have stepped in to provide support to SMEs during the pandemic, through repayment schemes, lowering of taxes, and halting bankruptcy procedures against SMEs, among others. Capacity building, financial education, and training &

development for SMEs is critical. In developing countries, the challenge for SME financing is that a large majority of the SMEs operate in the informal sector.

**H.E. Abdel Aziz Ould Dahi**, added: "in Africa, including Mauritania, the challenge is first and foremost the access to finance. SMEs in Mauritania are predominantly in the informal sector, and loans are granted for the short-term and at high interest rates. In Africa, it is not a matter about financing the gap for SMEs but financing the development as the continent presently holds only fourteen stock exchanges."

**H.E. Cham Prasidh**, added: "Cambodia's SMEs represent around 95% of GDP, but only about 5% are in the formal sector. The pandemic has forced many SMEs to adopt technologies faster, tackling cybersecurity threats that have risen through technology adoption, and combining traditional methods of cash transactions with digital sales channels. Yet, because of the country's lack of financial records, further access to credit is rendered

difficult. Innovative development plans may take the form of training, credit bureau support and more."

**H.E. Redha Al Saleh**, said: "the country is developing major plans to diversify its industrial sector and decarbonise its economy. Vision 2040 is an initiative that will facilitate sustainable investments across mining, industry, food, tourism and manufacturing. This initiative will empower SMEs by design and guarantee long term growth, ultimately cultivating competitiveness against established global players ■"





WATCH FULL VIDEO

DAY ONE  
STRATEGY THEATRE

## Panel Discussion



**H.E. Osama Fadhel**  
Assistant  
Undersecretary, Ministry  
of Industry and  
Advanced Technology,  
UAE



**Dr. Tilman Altenburg**  
Head of Transformation of  
Economic and Social Systems,  
German Development Institute  
(virtual)



**Prof. Dr. Svenja Falk**  
Managing Director,  
Accenture Research  
(virtual)



**Dr. Nobuya Haraguchi**  
Senior Research and  
Industrial Policy Officer,  
Department of Policy,  
Research and Statistics,  
UNIDO



**Mark Johnson**  
Prof. of Materials Science  
and Engineering,  
Clemson University



**Katherine Olivia Lacey**  
Co-Founder and Chief  
Product Officer,  
Quincus

## Industrialising in a post-pandemic world: Challenges, opportunities, and the role of digital technologies

**H**is Excellency Osama Fadhel, opened the discussion by describing the host country's response to the COVID-19 pandemic: "the UAE was able to deal with the COVID-19 pandemic at various levels, including industry, due to the flexibility of its industrial structures, which led to the strengthening of production lines, specifically in sectors related to crisis relief, with protective instruments, sterilisers, and other anti-epidemic and personal protection products. The UAE was also able to help the countries of the world, which cemented the country as a leader in crisis care, and greater healthcare."

Dr. Nobuya Haraguchi followed with a global perspective on the role of digital readiness in response to the pandemic, he referenced UNIDO's latest report on the subject, adding that "not all regions were effected [by the pandemic] equally:

industrialised economies were less impacted compared with developing and emerging industrialised economies. Developing economies, small island development states and India, were especially hit hard. Countries with strong industrial sectors fared better". He sought to answer the question, "why is industrialisation important in a crisis such as COVID-19?". He explained that, "fast manufacturing can provide the important goods which help people to survive, such as food, textiles and construction materials, as well as personal protection equipment and vaccines", he further added that "manufacturing's recovery can affect other sectors through key linkages and is a key driver of sustainability".

Dr. Tilman Altenberg further referenced UNIDO's report, focusing on the long-term impacts of the pandemic and questioned whether the pandemic-

has acted as a turning point for industrialisation. He added, "the pandemic has shifted things to a pre-recession normal, we don't see clear signs of building back better - although we would like to – we do not see decarbonisation trends accelerating much, and we do not see much reshoring of foreign investments. However, we do see a few trends accelerate: in the field of digitalisation two trends are likely to become stronger as a result of the pandemic; one is the trend towards online trading - the market is being increasingly dominated by international trading platforms, which in turn may trigger the concentration of upstream activity such as manufacturing, and this may crowd out weaker market actors." He added that, "we also see supply chain disruptions but most of them are not directly related to the pandemic. For example, the underinvestment we currently see worldwide in

2021  
REWIRING SOCIETIES  
Repurposing Digitalisation  
for Prosperity





## Panel Discussion

### Industrialising in a post-pandemic world: Challenges, opportunities, and the role of digital technologies

semi-conductors, but we do see more supply chain disruptions, and firms are now considering hedging against supply chain risks more than they have done in the past, by reducing their just-in-time logistics, increasing long stocks, and diversifying sources of supply, but there is no major trends towards reshoring.”

**Prof. Dr. Svenja Falk** contributed to the discussion by giving her thoughts on the impact of the pandemic on the organisation of global value chains. She explained, “we are seeing an increasing return of industrial policy off the back of an increasing convergence of the physical and digital world.” She revealed the findings of a joint study carried out in partnership with UNIDO and the Kiel Institute For the Global Economy, and explained that, “we have seen an increasing shift of value creation from products to services and we have an increased digitisation of products and services - they are ‘sugar-coated’ if you will, with digital services and the whole manufacturing system is increasingly upgraded”. Elaborating on the findings of the study, she added that there was an “increase in data sharing and value creation across company and industry borders”.

**Mark Johnson** gave the opinion that the manufacturing sector was entering a third wave of response to the pandemic, involving “sustainable development goals and working together to

continue to grow our economies”. He also cited digitalisation and workforce capabilities as key to pandemic recovery, adding, “students that are going to be entering the workforce after the pandemic are also the first generation that are born in the 21st century. They are digitally native; we do not have to train them digital - they know it as a first language. In the developing world this is a generation that does not know a time before mobile phones in almost every economy out there – that’s a complete transformation in how they react to the world around them. The challenge isn’t how are we going to prepare the students to respond post-pandemic, the challenge is how is the manufacturing sector going to respond to these people coming into the work environment - this isn’t the millennial generation, this is the children of the millennial generation.” Touching on the supply chain issues previously raised in the discussion, he added that there is a need to share “information across competitive environments” and posed the question, “how do firms that are direct competitors, share information with each other without overloading the supply chain as a result?”

Adding to the discussion around supply chain challenges, **Katherine Olivia Lacey** added, “technology now needs to be clear, not over complicated to the point where you don’t understand what your using, and the new

generation need to be able to understand what they see and know exactly what they are doing, without complications. This is the issue we are seeing in markets where there is a shortage of job labours within the supply chain, and in the end, technology can only do so many of the jobs ■”





# DAY ONE INNOVATION THEATRE



▶ WATCH FULL VIDEO

DAY ONE  
INNOVATION THEATRE

# Keynote



**H.E. Dr. Thani Al Zeyoudi**  
Minister of State for Foreign Trade,  
UAE



We launched the projects of the 50 as a series of economic projects that will accelerate the UAE's development, increase global competitiveness, attract foreign investments, and global talent, and accelerate trade. Countries in our region and beyond will gain easier access to global markets through safe, secure and reliable supply chains. Technology growth and sustainability must go hand in hand, not just the logistics but across all industry sectors. As we build an economy for the next 50 years, the UAE will continue to seek partnerships, investments and talents that develop and deliver the best of these ideas and make our nation a hub for innovation and ambition.

The UAE's development of state-of-the-art industrial facilities is well underway: DP World launched the world logistic passwords, a digital trade solution that fast tracks cargo movement, reduces administration cost and facilitates movements between ports and air. Moreover, Jebel Ali is home to the UAE's first green warehouse with cold store facilities run on nothing but solar energy





[WATCH FULL VIDEO](#)

DAY ONE  
INNOVATION THEATRE

## Panel Discussion



**H.E. Zayed Al Zayani**  
Minister of Industry, Commerce and Tourism,  
Bahrain



**Jim Mellon**  
Chairman,  
New Agrarian



**Abed Benaichouche**  
Chief Technology Officer,  
AIQ



**Brian Tippens**  
Chief Sustainability Officer,  
Hewlett Packard  
Enterprises



**David Rosenberg**  
CEO,  
Aerofarms



## Saving planet Earth: Optimising supply chains for a net zero carbon future

**H**is Excellency **Zayed Al Zayani**, noted that the consumer plays a pivotal role in driving change within food supply chains, he said, “the biggest influencer is the consumer, not the government or the manufacturers. Consumers must be aware of their impact, how they spend their money, what products they use and how much of the products they use. Manufacturers must also be incentivised to make changes and make capital investment. It’s an ecosystem that has to be developed, and supply will follow demand.”

**Jim Mellon** called for a reduction and eventual cessation of animal farming as technology advances, “this pandemic resulted in the fragility of supply chains related to animal husbandry. Around 80% of antibiotics used globally goes to farmed animals. If we were to get a bacterial pandemic due to the overuse of antibiotics in farmed animals, it would be much worse than the pandemic we see today. Substitute meats do not use any antibiotics. We mustn’t take another

pandemic risk as a result of the faulty food supply chain today,” he said.

**Abed Benaichouche** said: “Few products are able to provide information about emissions and waste associated with every single step. There is a lot of good intention, people want to contribute, but we are not offering them a way of contributing. We need to help the citizen to make choices and then act to create changes.” He added, “we need to enhance the resilience of supply chains and build a new system that is more open, more collaborative but also more transparent”.

Elaborating on the topic of collaboration, **Brian Tippens** said, “while there are benefits to collaboration, certainly there are also incentives for not collaborating on some level, this creates a race and some level of competition; the extent to which my products and solutions are more energy efficient than my competitors becomes a competitive advantage. We

just have to be transparent where we can, and use our power to influence other levels of the supply chain”.

**David Rosenberg** presented a possible solution for achieving supply chain resiliency, he explained, “one way to have more resilience is to push manufacturing to the edges... which is really the retailers – how do you incentivise the whole value chain to be better actors? Using waste as an example, we grow fresh food, so waste is very important. It’s not about how much you grow but about how much is consumed. The best way to incentivise is through the retail chains - the Walmarts’ of the world ■”

*Ministers call for increased uptake of alternative meats to avoid “pandemic worse than COVID-19”*



[WATCH FULL VIDEO](#)

DAY ONE  
INNOVATION THEATRE

## Panel Discussion



**Markus Glasser**  
SVP EMEA,  
EOS GmbH



**Abdulaziz Al Jaziri**  
Deputy CEO and  
Chief Operation Officer,  
Dubai Future Foundation



**Dr. Johannes Homa**  
CEO,  
Lithoz GmbH  
(virtual)



**Dr. Bernhard Langefeld**  
Partner,  
Roland Berger



**Richard MacCowan**  
Founder and BioFuturist,  
Biomimicry Innovation Lab

### Additive manufacturing: A blueprint of the future

**R**eadiness of industry is creating a bottleneck for a global roll-out of additive manufacturing; some industries are not yet ready. Yet, the potential of additive manufacturing is effectively limitless, as we are entering an era of automated intelligence, where robots are building robots and reacting to feedback on previous designs. Cross-border collaboration will be crucial to the development of regulatory frameworks that inspire innovation.

**Markus Glasser**, said: “carbon neutral power tools are key for mass customisation in the manufacturing sector. EOS responsive manufacturing in particular has the potential to secure our planet and improve our lives. For instance, the optimisation of aero engines builds long term solutions and contributes to a circular economy. Alternative lightweight structures can produce a higher

performance whilst also reducing kerosene consumptions and CO<sub>2</sub> emissions. Anything is possible.”

**Abdulaziz Al Jaziri**, added: “our biggest challenge with advanced technologies is also our greatest opportunity. The launch of the Dubai 3D printing strategy sets to assist industries in Dubai by utilising 3D printing technologies for their infrastructure. So far, it has already achieved an outstanding milestone by 3D printing a commercial office, the first in the world. For technology and industry to grow, governments, the private sector, academia, start-ups, regulators and more, must collaborate to design the success of technology in the future.”

**Dr. Johannes Homa**, CEO at Lithoz said: “medicine manufacturing operates under strict regulations and

protocols to meet safety standards. This is still lacking in additive manufacturing. You would never put an unqualified worker into a real workhouse. It must be the same for the additive manufacturing industry and the digital warehouse. This is not the case yet.”

In turn, **Dr. Bernhard Langefeld**, said: “there is a lack of education around manufacturing generally – additive manufacturing needs an education drive to update the engineering sector and upskill youth to drive it forward. We, as a consultancy, are helping companies to manage the entire complexity around 3D printing.”

**Richard MacCowan**, concluded with: “what does industry need? Innovation, collaboration and education. We need to embed a love of manufacturing in young people. Let us rip up the manufacturing education book and start again - it’s a new world that requires new skills ■”





WATCH FULL VIDEO

DAY ONE  
INNOVATION THEATRE

## Panel Discussion



**Maria Pace**  
Technology Leader in  
Mixed Reality,  
Microsoft Hololens



**Amy Peck**  
Founder and  
CEO,  
EndeavorVR



**Dr. Bernard  
Kress**  
Director of XR  
Hardware,  
Google



**Nils Berger**  
CEO and Owner,  
ViewpointSystem

### Immersive technologies: Unlocking a mixed reality

With the current global circumstance accelerating the need for immersive tools such as augmented reality and virtual reality, businesses across the UAE must invest in technologies to stay ahead of the digital curve.

This came from leading stakeholders in the tech industry, during a panel discussion entitled “Immersive Technologies: Unlocking a Mixed Reality.”

Addressing a crowd comprised of business leaders from the technology and industrial manufacturing sectors, **Maria Pace**, said, “as the world becomes increasingly digitalised, immersive technology needs to be rapidly integrated into all platforms. By developing pioneering innovations, mixed reality can continue to cater to the need for businesses to strengthen operations worldwide.”

**Amy Peck**, introduced the audience to the concept of the metaverse and explained how it should be viewed as “as an opportunity to not just mirror and make a digital version of the real world but to rethink

how we do everything.”

**Dr. Bernard Kress**, addressed the divide between enterprise and commercial use cases for XR. He used the example of Google Glass, stating that, “we developed Google Glass version two and version three, only for enterprise and really, we got a very good resonance with enterprise. Now, what is the use case for enterprise? Well, it’s different for every single enterprise. This is the real quality of MR experience in an enterprise. For consumer, you need to find a generic use case.”

**Nils Berger**, echoed this opinion, adding: “If you want to make it (XR) a success in the b2b area, it needs to be frontline worker accepted because you’re not always going to control light environment and you’re not sitting at a desk collaborating, awesome, brilliant use cases. And, I just believe that there is not a one size fits all approach.”

Commenting on the consumer wearables market, **Amy Peck** added, “even though we’re quite a long way out from a consumer wearable, we have to

keep an eye on the consumer wearables market because that is actually going to impact the utility at work”.

**Maria Pace** concluded the conversation, adding that the true value of XR will be dependent on its ability to connect to other technologies, particularly the cloud, IIoT and sensor technologies, in order for “companies to increase profits, increase yields and make a safer environment ■”





WATCH FULL VIDEO

DAY ONE  
INNOVATION THEATRE

## Panel Discussion



**Hoda Al Khzaimi**  
Research Assistant  
Professor and  
Director, Center of  
Cyber Security,  
NYU Abu Dhabi



**Andrey Suvorov**  
CEO,  
Aprotec



**Ali Carl Gülerman**  
CEO,  
Radar Cyber Security

### The economic impact of cyber security

Over the last 15 years, cyber security has seen a major shift from ‘basement to boardroom’ as governments and the private sector embrace digital transformation and the inherent cyber threats that come with technology adoption.

**Hoda Al Khzaimi**, set the scene for the discussion by addressing a fundamental disparity between the way we develop technology and the way we develop cyber security. She explained, “the way we develop cyber security is not in the same kind of elite level with the way we develop technology. You shouldn’t develop cyber security as an afterthought, an adhoc level when you develop a technology, it should be immersed in the same development cycle with the developing technology, because you don’t want to deal with the issues as an afterthought.”

**Andrey Suvorov**, stressed that companies need to reframe how they view cyber security, stating that it needs to be viewed as a risk factor across departments rather than just an IT problem. Hoda later elaborated on this topic, adding that cyber security needs to be seen in terms of economic

value, in order to increase investor confidence. She presented blockchain and cryptocurrency as key examples of cyber security technologies that have added significant value to global economies.

**Ali Carl Gülerman**, stressed the need for all companies to have a cyber security plan in place and warned, “all companies should be prepared for the coming event of a cyber-attack. You should be prepared for what you should do after an attack or during an attack because this will happen”.

As technology develops, so too does the risk of cyber-attacks. **Andrey Suvorov** provided some context to this statement, adding that “in 2017, we had about 30 unique incidents in this area because it was new, and business people did not adopt a lot of use cases. So, 2020 showed about 300,000 unique IT incidents. My suggestion is, accept the risk, transfer the risk, and mitigate ■”





# GMIS DAY TWO

TUESDAY, 23 NOVEMBER 2021



▶ WATCH FULL VIDEO

DAY TWO

## Opening Remarks



**H.E. Omar Al Suwaidi**  
Undersecretary, Ministry of Industry  
and Advanced Technology,  
UAE



The tools of the Fourth Industrial Revolution are reshaping our societies in profound ways. The global pandemic accelerated many trends; how we communicate, how we consume, how we create, how we contribute to our work places and communities, all fundamentally changed - perhaps permanently.

We have solid foundations to build on in the UAE. Our ICT infrastructure is ranked second in the world according to the latest global competitiveness report. The UAE has ranked 1st in the Arab region in the world digital competitiveness ranking of 2020, and we can see how we are already rewiring societies here in the UAE. Our smart cities initiatives have increased the access to and the efficiency of government services - 200 million people use the world's longest driverless metro every year. Our health care is being revolutionised by artificial

intelligence as we saw during the clinical trials to develop the COVID-19 vaccine, and we have pioneered the genome project that will help prevent and treat chronic diseases. New digital platforms are also driving the retail and hospitality sectors, enhancing education delivery and improving supply chains.

Today I'm pleased to announce that the Ministry of Industry and Advanced Technology is adopting the Smart Industrial Readiness Index, the global standard endorsed by the World Economic Forum as a methodology for Industry 4.0 transformation. The Smart Industrial Readiness Index will provide companies in the UAE with a benchmark for 4IR adoption, equip them with the framework and tools to facilitate integration, and highlight the tangible benefits of digital transformation ■





▶ WATCH FULL VIDEO

DAY TWO

# Keynote



**H.E. Dr. Alexander Van der Bellen**

Federal President,  
Austria  
(virtual)



**G**reening our industry and production processes continues to be a key element in reaching our shared climate goals. The technology is needed to reduce emissions and combat the climate crisis are the very technologies that are in demand all over the world. Especially in the fields of green technologies and digital solutions, Austria has numerous innovative and globally successful companies that are happy to offer their expertise. The United Arab Emirates have long been Austria's most important economic partner in the Arab world. Austrian companies support the diversifications of the United Arab Emirates economy away from fossil fuels and towards carbon neutrality

within the mobility production and services sectors.

The Austria-UAE comprehensive strategic partnership signed last July offers a stable framework to further strengthen our relations. At the Expo 2020 Dubai, Austria presents the most advanced Austrian innovations, including green tech. The Austrian Pavilion combines traditional Arabian construction techniques and modern insulation, achieving a 70% reduction in energy consumption. I invite all of you to visit it in the coming weeks and months. It is my pleasure to wish both the organisers and participants all the best and fruitful exchanges at the Global Manufacturing and Industrialisation Summit





▶ WATCH FULL VIDEO

DAY TWO

# Keynote



**H.E. Cham Prasidh**

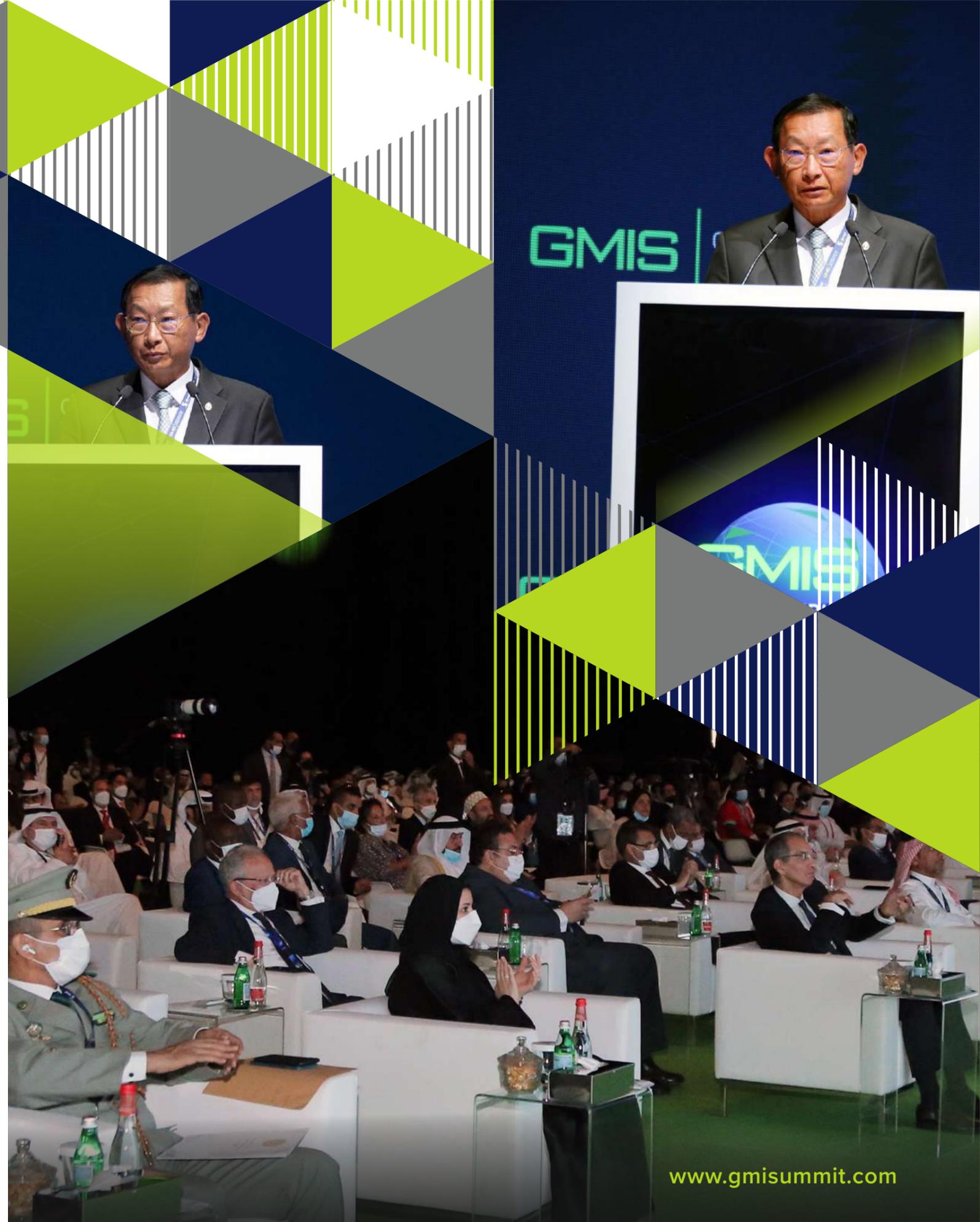
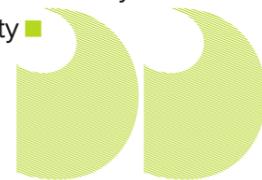
Representative of Prime Minister of the Kingdom of Cambodia, Minister of Industry, Science, Technology and Innovation



The continued threat of the COVID-19 pandemic, regional political tensions, and trade and tech wars among the super powers, has been affecting, complicating, and further raising the level of uncertainty in the development of the region and the world. Against this backdrop, the world is preparing to recover from the turbulence and disruption caused by the COVID-19 pandemic and other serious global issues and is aiming to build a better tomorrow, both economically and socially.

Under the wise and prudent leadership of H.E. Hun Sen, Prime Minister of the Kingdom of Cambodia, our government has regarded vaccination as a key strategic measure to control COVID-19 and to reduce cases of infection, severe illness and death, and achieve herd immunity.

Excellencies, ladies, and gentleman, in our data driven society, each country must accelerate a digital transformation. The most effective way to achieve the highest level of digitalisation of social economic systems is to adopt the triple helix model that closely links government, industry and academia together. Effective implementation of industrial policy will accelerate innovation processes, strengthen future economic growth and social development, and ultimately lead to a prosperous society ■





WATCH FULL VIDEO

DAY TWO

# Keynote



**H.E. Karine Elharrar**  
Minister of Energy and Water Resources,  
Israel



The climate crisis and the need to find immediate solutions to fight it leaves countries around the world facing a double challenge; on the one hand, the human desire to break through and innovate, and on the other hand, the need to do so as sustainably as possible to ensure a greener planet. Only yesterday I signed a historic declaration of intent alongside my colleagues from Jordan, the UAE and the United States. We needed a huge step, and we made a huge step forward to a greener future by creating a cross broader partnership against climate crisis. In the DOI framework, the tremendous technological capacity of the State of Israel in the field of water desalination, will help our neighbour country Jordan, overcome the severe water shortage that they are dealing with.

Jordan is the second most water scarred country in the world with annual

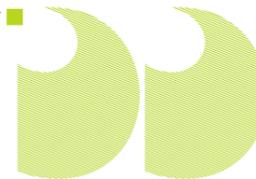
renewable water sources of just 80 cubic meter per person, significantly below the threshold of 500 cubic meters per person, which defines severe water shortage. As a close neighbour and one of the most advanced countries in the world in terms of water desalination, Israel will examine solutions to export water to the Hashemite Kingdom of Jordan.

Jordan enjoys open fields and lots of sun, which will assist the State of Israel in mitigating the climate crisis through the construction of solar fields and energy storage solutions. This will help Israel overcome many obstacles in the solar field, and will bring Israel's electricity sector closer to the goal of producing 30% of all electricity through renewable energy by 2030, and will advance Israel's net zero 2050 goal.

Cross-boarder cooperation of this kind for a common internal struggle in fighting



climate change, is precisely the exact example of a twin transition, in which both innovation and sustainability meet and create a holistic solution for tackling the climate crisis that threatens countries and communities. This is our planet, our future, and it is our mission to save it together





[WATCH FULL VIDEO](#)

DAY TWO

# Panel Discussion



**Saideep Raj**  
Global Head of Innovation,  
Accenture



**Musabbeh Al Kaabi**  
CEO,  
UAE Investments,  
Mubadala



**Prof. Alice Gast**  
President,  
Imperial College  
London



**Steven A. Kiefer**  
SVP and President,  
General Motors  
International



## The Twin Transition: Where innovation, technology and sustainability meet

**A**cross the globe, governments are looking for new solutions to tackle climate change and realise a net zero future. At the same time, the world is currently experiencing a rapid technology transformation driven by the proliferation of data. Innovations that used to take years to bring to market, now take weeks. The COVID-19 pandemic has only fuelled the pace of innovation, putting AI and analytics at the centre of business operations, helping to develop new business models and new products at lightning speeds.

**Saideep Raj**, defined the twin transition as representative of “a complex system where every action and event is integrated with a range of others. And added that “we really need to drive increased collaboration across those ecosystems.”

The Twin Transition is a potential catalyst for the realisation of a circular economy, however making the transition will require a shift to an ecosystem model. In a circular economy, ecosystem wide orchestration is necessary to reduce waste and realise shared value.

Addressing the ecosystem model, **Musabbeh Al Kaabi**, gave an insight into Mubadala’s plans for future investments. He recognised, energy transition, life sciences and advanced manufacturing and technology as key ecosystems primed for future investment and also stressed the importance of forging partnerships within these ecosystems to diversify the UAE economy.

Adding to the theme of collaboration that ran throughout the discussion, **Prof. Alice Gast**, stressed the need for academia to collaborate with corporations to realise innovation. She declared “the best product we have is our graduates” and discussed the crucial role academia plays in the innovation race.

**Steve Kiefer**, highlighted General Motors’ plans to transition from a traditional automaker to “a platform innovator”, signalling the importance of data and AI as a key enabler of transformation and collaboration. He also gave an example of how the private sector can scale digital technologies to realise an all-electric future, by announcing General Motor’s plans to spend

\$35 billion between now and 2025 on autonomous vehicle technology.

**Saideep Raj**, addressed the link between data and collaboration and explained that we need to stop viewing data as a competitive asset but rather as a resource for shared value creation and insight generation. Once data is viewed in this way, it will ignite collaboration and we will be able to better interact with customers to help change consumption preferences.

In his summary of the discussion, he also echoed Alice Gast’s earlier comments, posing the question, “how do we cultivate talent to be driving experimentation?” He also added that in order for humanity to realise “rapid innovation at speed”, we need to stop viewing sustainability as a bolt-on and collaborate to realise “end to end industry solutions that actually have sustainably baked in ■”





[WATCH FULL VIDEO](#)

DAY TWO

## Keynote



**H.E. Abdulla Shahid**

President,  
UN General Assembly  
(virtual)

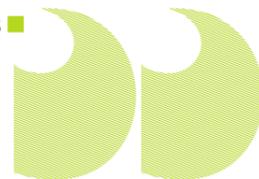


Recovering better from the pandemic through sustainable rebuilding is a key element of my presidency of hope. Tangibly, this requires not only broader access to vaccines, adequate financing and reinvigorating global trade, but also investing in innovation and technology, particularly green technology. Investing in climate friendly technologies is vital to ensure that we recover in an equitable manner while preserving our planet's resources.

COVID-19 caused massive disruption in manufacturing and supply chains. However, this was on the horizon before the pandemic and was mainly driven by the Fourth Industrial Revolution, climate change, and the reconfiguration of globalisation. The combination of these issues was already forcing companies to rethink their global manufacturing and supply chain strategies and COVID-19 accelerated this. With regards to sustainability, companies are facing new

concerns about the environment with pressure coming from both consumers and regulatory bodies. Manufacturing companies now need to make the transition to net zero emissions.

I call upon countries to invest in climate friendly technologies that will spur recovery efforts while respecting our planet's health and to share these technologies with developing countries. And I also call upon countries with the means to invest in digital infrastructure in poorer countries. This will enhance their connectivity and capacity to innovate, while helping them to transition to a greener and bluer economy of their own accord. In that same spirit, it is vital to ensure that the global stimulus funds allocated for pandemic recovery, which have now reached up to \$3.5 trillion, are divided more equally among global communities





WATCH FULL VIDEO

DAY TWO

# Panel Discussion



**H.E. Saara Kuugongelwa-Amadhila**  
Prime Minister, Namibia



**H.E. Matteo Renzi**  
Former Prime Minister, Italy



**H.E. Dominique de Villepin**  
Former Prime Minister, France



## Government of the future: A new roadmap to global prosperity

Developed nations have a responsibility to assist the technological advancement of more vulnerable nations to enhance their connectivity and capacity to innovate, while also helping them transition to greener economies.

The call came from world leaders at the outset of the panel discussion titled “Government of the future: A new roadmap to global prosperity,” which highlighted the stark discrepancies in technological capacity between the global north and south, that has exacerbated the challenges faced by developing nations in their attempts to recover from the pandemic.

In the panel discussion, the themes of equitable development and the role of technology was picked up by **Her Excellency Dr. Saara Kuugongelwa-Amadhila**, Prime Minister of Namibia. She highlighted the challenge of delivering government services in a vast country of just 2.5 million people and how technology can provide a solution, “for Namibia, the need to use digital platforms didn’t only come with the COVID-19 pandemic, maybe it was amplified by it because we went into lockdown, so we needed to provide services

online. But it’s a huge country of 824,000 sq. km and quite expensive to reach out to communities wherever they are with government services. We had already decided to automate government services to improve government administration”.

For **His Excellency Matteo Renzi**, the COVID-19 pandemic provided a stress-test for governments and for health systems, and he noted that in many countries across the world, especially those considered liberal democracies, they were found wanting, “with good leadership, you have very good answers to the pandemic, with bad leadership you risk too much. It is important we use new technology with a different approach. Manufacturing 5.0, new technology, these new ideas are the future of my country, and they could be helped by COVID.”

Finally, **His Excellency Dominique de Villepin**, touched upon how technology has immense potential for governments, but in Western societies, trust and consensus is a huge component that needs to be respected, “the citizens in liberal democracies do have a say, and they must be a part of the decision-making

process. That’s where technology must always deal with the question of trust. We cannot impose technology on people without their consent. They need to understand why it is being applied. You need to be able to discuss and convince ■”





▶ WATCH FULL VIDEO

DAY TWO

## Keynote



**H.E. Mohamed Al Askar**

Director General,  
Abu Dhabi Digital Authority



The global pandemic has reinforced the need to leverage AI and robotics in order to keep operations on track. Many companies and especially manufacturing companies, learnt the hard way that AI and robotics can be a safer means of maintaining business continuity especially on the factory floor. However, there are several areas that will not be impacted by robotics, areas that face engineering bottlenecks, representing certain jobs that are difficult to automate, such as those requiring creative intelligence or social intelligence.

There is no consensus yet on the net effect of workforce displacement, nor on which segment of society will be impacted most. However, the majority agree that low-income countries and countries with reduced access to education, will be impacted on a much

larger scale than others, which will create many social, political and economic challenges for policy makers. This is the new reality being created. We need to think, discuss and collaborate to share this reality. We need to be productive in our policy making, planning a future workforce, changing our education system and perhaps change the very fabric of society ■





WATCH FULL VIDEO

DAY TWO

# Panel Discussion



**Behshad Behzadi**  
VP Engineering,  
Google



**Dr. Susanne Bieller**  
General Secretary,  
International  
Federation of Robotics



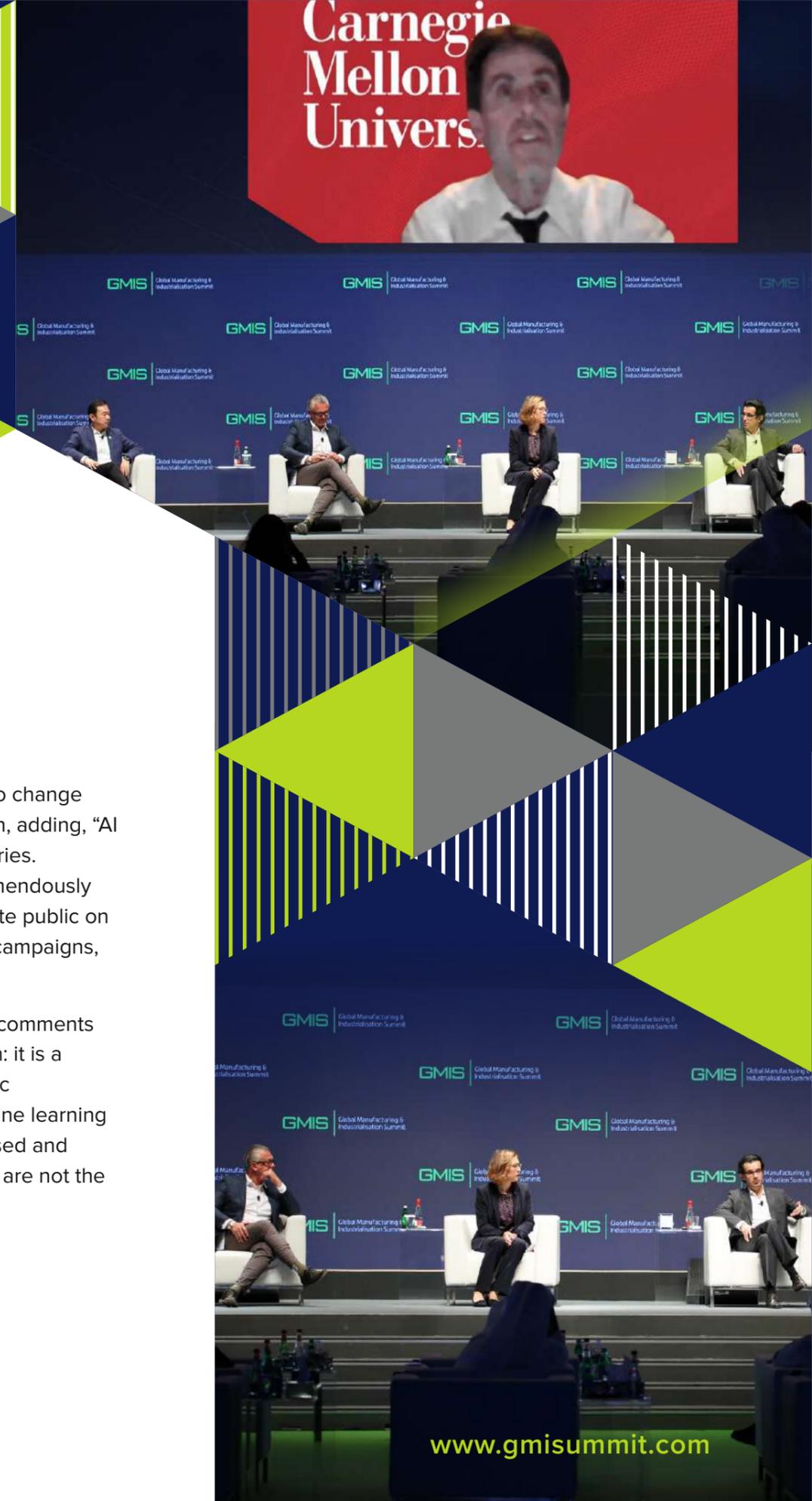
**Dr. Howie Choset**  
Professor Robotics,  
Biomedical Engineering,  
Electrical and Computer  
Engineering,  
Carnegie Mellon  
University  
(virtual)



**Chip Pankow**  
Chief Championship  
Officer,  
Roborace



**Prof. Eric Xing**  
President,  
Mohamed bin Zayed  
University of Artificial  
Intelligence



## Artificial Intelligence & Robotics: Machine conquers human?

Robotics is pervading almost all human led tasks, yet how do we keep a balance between business needs and social systems along ethical lines? That was the key question being discussed during the panel session on artificial intelligence (AI) and robotics.

**Behshad Behzadi**, said, “the future of AI is in manufacturing, use cases like visual inspection to detect defects in manufacturing and quality control, are AI based. AI and machinery need to be used in a responsible way with individuals and industry leaders alike. We need to determine the principles within which we can use this technology and publish best practices to learn from each other.”

**Dr. Susanne Bieller**, made a case for co-bot applications, she said, “we use a lot of AI today and physical robots to do tasks but, a physical robot does have its limitations. Co-bot applications are

smaller in terms of usage (only 6%) than traditional robots. Traditional robots are always going to be the choice, but we need to also understand that co-bots are faster, easy to set-up, programme and repurpose.

A balance between human and machine starts from the time the machine is created. The functional imbalance occurs when the user and the policy maker change the function of the technology. Maintaining balance is outside the scope of technology alone.”

**Dr. Howie Choset**, stressed the need to create functional balance between human and machine, he added that, “the practicality of robotics is high-functioning capacity to operate alongside humans. We need to develop robots that improve human workspace and workflows. Robotics can be used largely across sciences, but also marketing, medicine, and more.”

**Chip Pankow**, commented on the need to change public perception of AI through education, adding, “AI is becoming commonplace across industries. Notably, AI and robotics are growing tremendously within the automobile sector. If we educate public on autonomous driving and run awareness campaigns, we save 1.3 million lives per year.”

**Prof. Eric Xing**, echoed Pankow’s earlier comments by concluding “AI needs public education: it is a young science, so we need to build public awareness. I see a need for AI and machine learning to slow down and become more centralised and more cost effective. Speed and accuracy are not the only goals in robotics ■”



▶ WATCH FULL VIDEO

DAY TWO

# Keynote



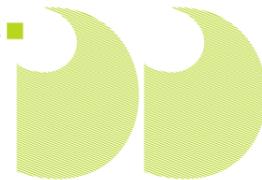
**H.E. Abdulkareem Taqi**  
Director-General,  
Public Authority for Industry (PAI)  
Kuwait



One of the main challenges we face today is creating virtual bridges and achieving harmony between the technology, industry, and the human being. This challenge will open the horizons of science fiction, in all its aspects, just as these bridges will serve as a tool to close the gap between the world's scattered parties. It will create an integrated virtual world that does not differ in its elements from the outside world as it simulates human senses and holds interactive functions.

The State of Kuwait, represented by the Public Authority for Industry, is working on preparing a new and ambitious industrial strategy based on the concept of interactive industry, whereby the country will establish the first industrial and technological complex that aims to build bridges between the industrial and technological sectors, and create harmony between them. Moreover, this strategy will

be based mainly on the techniques of the Fourth Industrial Revolution and will use them as a tool to service the society and all other industries, as it contributes to creating a product and an industry that serves all economic and human sectors in cooperation with the United Nations Industrial Development Organization (UNIDO) and other economic organisations ■





WATCH FULL VIDEO

DAY TWO

## Panel Discussion



**Dr. Bernardo Calzadilla-Sarmiento**

Managing Director,  
Directorate of Digitalization,  
Technology and  
Agri-Business,  
UNIDO



**Teresa Minero**

Founder & CEO,  
LifeBee



**Joshua Phoho Setipa**

Managing Director,  
UN Technology  
Bank for the Least  
Developed  
Countries



**Amna Al Saleh**

Head of Technology  
Development,  
Ministry of Industry  
and Advanced  
Technology, UAE



### UNIDO and the Global Health Initiative: Utilising technology to enhance pandemic resilience

It is very clear that manufacturing has played a major role in combatting COVID-19; from guaranteeing access to healthcare and biomedical goods, to circumventing medical waste and improving resilience and recovery rates, manufacturing has proven crucial to providing crisis aid on a global scale.

That was the key consensus from the panel discussion led by UNIDO which focused on its Global Health Initiative, titled, “Utilising Cyber-Physical Technology to enhance pandemic resilience and improve health outcomes”.

Upon introducing the key motivations of the Global Health Initiative, **Dr. Bernardo Calzadilla-Sarmiento**, said, “UNIDO already answers to individual healthcare initiatives set alongside targets of medical assistance and quality assurance and infrastructure improvements. The Global Health Initiative is a natural step towards guaranteeing that services are met, and transparent support is made readily available for members states in a strategic and systematic manner.

Further commenting on UNIDO’s Global Health Initiative, **Teresa Minero**, explained, “our mission rests upon connecting pharma knowledge globally. We do so by connecting over 52 territories through effective surveys, gathering close to 400 respondents, thus providing an opportunity to gather viewpoints and milestones necessary to approach legacy organisations for partnered initiatives, to assist in the adoption of 4.0 technologies.”

**Joshua Phoho Setipa**, added, “our mandate relies on mobilising support toward least developed countries across South-East Asia, the Pacific, Africa and the Caribbeans. We guarantee this through partnerships with the private sector, academia and government. Therefore, without deliberate support, our mandate cannot be met.”

**Amna Al Saleh**, gave an insight into the Ministry’s priorities with regards to the health sector, adding, “biomedical sciences represent a key priority for the Ministry. Regulation is a must to guarantee state-of-

the-art medical assistance, especially when it comes to emerging technologies. We must be able to accommodate them accordingly. The government launched initiatives very early on to sustain this priority, one of which is the Reglab Platform which provides a space for companies to test their technologies in a relaxed environment to ensure that best practices are met ■”





▶ WATCH FULL VIDEO

DAY TWO

## Keynote



**H.E. Mohamed Ali Al Shorafa**

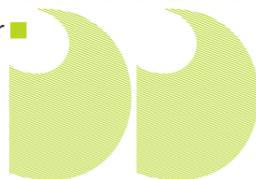
Chairman,  
Abu Dhabi Department of Economic  
Development



As we look into the future, ensuring that our economy is able to harness new technologies, new waves of technological development driven by things like artificial intelligence, robotics and automation, is key to maintaining an edge over other countries competing for investment.

Abu Dhabi's economy has remained steadfast in the face of global challenges. We owe this to the diversification strategy that has allowed us to stay competitive in all economic sectors. Non-oil GDP has grown despite the global financial downturn and the health service industry is seeking an impressive 14.2% growth rate. In addition, the manufacturing sector grew by almost 5%. We are fortunate to have world class infrastructure at our finger tips, which is vital for maintaining continued economic success for years to come. Abu Dhabi's non-oil trade surplus increased by 97% in 2020 to the value of AED 4.3 billion. In fact, the growth of non-oil exports from Abu Dhabi increased by 27% to more than AED20 billion.

Last March the UAE Federal Government launched Operation 300 Billion to position the UAE as a global industrial hub by 2031. The 10-year comprehensive strategy aims to increase the industrial sector's contribution to the country's GDP from the current AED133 billion to AED300 billion, which will improve the UAE's ranking on the Competitive Industrial Performance Index from 33rd place globally to 25th in the next 10 years. The strategy includes enhancing the attractiveness of the industrial sectors for investors by updating legislation, including allowing 100% foreign ownership of projects and making dedicated financing available. In addition, the launch of the In-Country Value Programme at the federal level and local level, will facilitate the redirection of procurement and contract expenses for the local economy, which will boost the global competitiveness of UAE's vibrant industrial sector.





▶ WATCH FULL VIDEO

DAY TWO

## Panel Discussion



**H.E. Eng. Saeed Al Remeithi**  
CEO,  
Emirates Steel



**H.E. Abdulla Al Shamsi**  
Assistant Undersecretary,  
Ministry of Industry &  
Advanced Technology,  
UAE



**Ahmed Al Naqbi**  
CEO,  
Emirates Development Bank



**Abdunasser Bin Kalban**  
CEO,  
Emirates Global  
Aluminium



**Khaleefa Al Mheiri**  
Acting CEO,  
TAZIZ



**Saud Abu Al Shawareb**  
Managing Director,  
Dubai Industrial City

## Operation 300bn: Make it in the Emirates

During a conversation featuring CEOs and senior leaders, from the UAE's industrial, finance and technology sectors, it was agreed that the UAE's ambitious Operation 300 billion strategy, which aims to raise the UAE's industrial sector's contribution to GDP from AED 133 billion to AED 300 billion, was a stretch but nevertheless, obtainable.

H.E. Eng. Saeed Al Remeithi, highlighted the fundamental strategies that will be used to reach the ambitious target, which included PPP models and FDIs, "the private sector as a key partner is very important because they will bring efficiency to the system. Of course, we can get, and will inject FDIs into the economy, but the private sector will release government funding, and of course, will create innovation because we can attract international companies to partner with."

Commenting on the In-Country Value Program, which aims to facilitate the redirection of procurement and contract expenses for the local economy, H.E. Abdulla Al Shamsi, said, "the National ICV Program will focus on coordinating efforts among government entities, and industrial national champions such Emirates Steel, EGA, ADNOC, as well as SMEs. The Program has more than 5,000 suppliers serving our participating entities, 90% of which are SMEs."

Speaking about Emirates Development Bank's planned investment into the Operation 300 Billion strategy, CEO, Ahmed Al Naqbi said, "we are looking to deploy AED300 billion into the market by 2025 to support this ecosystem and to support this accelerated development in the industrial sector, we want to support the creation of 25,000 jobs and promote the support for 13,500

companies here in the country." He supported the panel's overall view of the strategy by adding, "I wouldn't call it overly ambitious, I would call it achievable."

The Operation 300 Billion strategy is fully aligned with national goals and international commitments relating to advancing economic growth and sustainability. Commenting on the importance of sustainability and responsible production, Abdunasser Bin Kalban, CEO, Emirates Global Aluminium, stressed, "sustainability is top of our agenda. We have already started a green agenda by improving our aluminium production technology. Our technology is considered to be the best in the world in terms of efficiency and also environmental emissions." His Excellency, also commented on EGA's recent completion of an AED 1 billion state-of-the-art power plant, calling it, "the world's most





## Panel Discussion

### Operation 300bn: Make it in the Emirates

efficient power plant”. The plant will help reduce EGAs CO2 emissions by 10%, an important step towards enhancing environmental sustainability in the industrial sector.

**Khaleefa Al Mheiri**, commenting on the chemicals sector, said, “the chemical sector facilitates job creation, which represents direct employment. In addition offers multiple opportunities down the value chain as enterprises commit to the production of chemicals for the very first time in the UAE.”

**Saud Abu Al Shawareb**, concluded with, “there is a big demand within the industrial sector in Dubai Industrial City: we signed more than 8,000,000 square feet of land for new industries in Dubai, of which 3,000,000 represent expansions of existing business partners. The private sector is playing a vital role in complementing government projects and participating in economic growth, with a GDP contribution from 133 billion to 300 billion ■”





[WATCH FULL VIDEO](#)

DAY TWO

# Panel Discussion



**H.E. Hussain Al Hammadi**  
Minister of Education,  
UAE



**Mark East**  
General Manager,  
Microsoft Education



**Darren Grasby**  
EVP and Chief Sales Officer,  
AMD



**Michael Moe**  
Founder and CEO,  
GSV Holdings



**Robert E. Moritz**  
Chairman and Senior  
Partner,  
PwC  
(virtual)



## Digital mobility: Work from home to work from anywhere

**D**igital learning will be a trillion-dollar market in five years, and with hybrid workplaces becoming normalised, the existing workforce will need to reskill in order to adapt. In the UAE, constant investments are being made to upskill, yet as more people embrace remote working, a skills gap is emerging as workers attempt to manage the digital and physical worlds, simultaneously.

Commenting on the UAE's education system and how it prepares children for the future of work, **H.E. Hussain Al Hammadi**, said, "connectivity must be affordable and accessible: COVID-19 pushed us to connect even the most remote schools in the UAE. There is a need to build the resilience and tenacity of our children. In the UAE we have overhauled the education system, we focus on core but now largely also on soft skills. Higher education is also being tailor made for the future-preparedness of our student population. We achieve this by smart collaboration. Education is the backbone for growth

from early childhood to higher education. Innovation is the key to the future of the world. We need to create responsible global citizens."

**Mark East**, added, "21<sup>st</sup> century skills focus on problem solving, at Microsoft we have a lot of training through LinkedIn for all the information technology schools of the future. Starting with the pandemic, Microsoft helped schools in the UAE connect to the cloud to continue learning in a span of just two weeks. In the days to come, the virtual meetings platform from Microsoft Teams, will feature avatars and automatic translation, this will humanise tech."

"The evolution of digital technology will be staggering in 5 to 10 years. There has never been a better time for mobile offices and visionary workflows. Cloud and hybrid cloud will soon become the norm, for the better. My advice to CTOs would be to be, open minded and embrace the change ahead," said **Darren Grasby**.

**Michael Moe**, added, "cloud technology is fuelling knowledge-based economies for people to connect globally. Digital learning will represent a trillion-dollar market by 2027. This is the future of society, and it is exciting because it will shape novel entrepreneurship, start-ups and new businesses."

**Robert E. Moritz**, concluded the conversation, he stated, "unfortunately, nearly 75% of CEOs believe they lack the necessary skills to achieve strategic initiatives. For employers, it is always about data and cyber risks, they are not giving employees the time to upskill. We must redefine the brand of our organisations so that they will have a positive impact on the future of work in our changing world. One size will not fit all ■"





▶ WATCH FULL VIDEO

DAY TWO

## Panel Discussion



**Ali Al Hashimi**  
Director,  
Ministry of Industry  
& Advanced  
Technology,  
UAE



**Rukmini Glanard**  
EVP Global Sales  
Services and  
Marketing,  
Alcatel Lucent  
Enterprise



**Sayed Hashish**  
General Manager,  
Microsoft UAE



**Evgeny Kolbin**  
CEO, Sbercloud



**Andy Purdy**  
Chief Security Officer,  
Huawei Technologies  
(virtual)

### 5G and Cloud: The workhorse of the workforce

**5**G and Cloud forms the infrastructure for the UAE's next industrial era, that was the key message from the session entitled '5G and Cloud: The Workhorse of the Workforce' which featured key insights from the UAE Ministry of Industry and Advanced Technology, Alcatel Lucent Enterprise, Microsoft UAE, and Huawei.

**Ali Al Hashmi**, stated that 5G and the Cloud will be a catalyst and enabler for the UAE's next industrial era and the national strategy, Operation 300 Billion. He said, "5G and the cloud forms the infrastructure, the ethereal fabric of what we are trying to achieve with Operation 300 Billion. The potential for 5G to shift our interaction from reduced latency to greater agility and resilience is immense and will facilitate new avenues for technology and industrial development."

Echoing Ali Al Hashmi's comments regarding the importance of cloud infrastructure for the future of

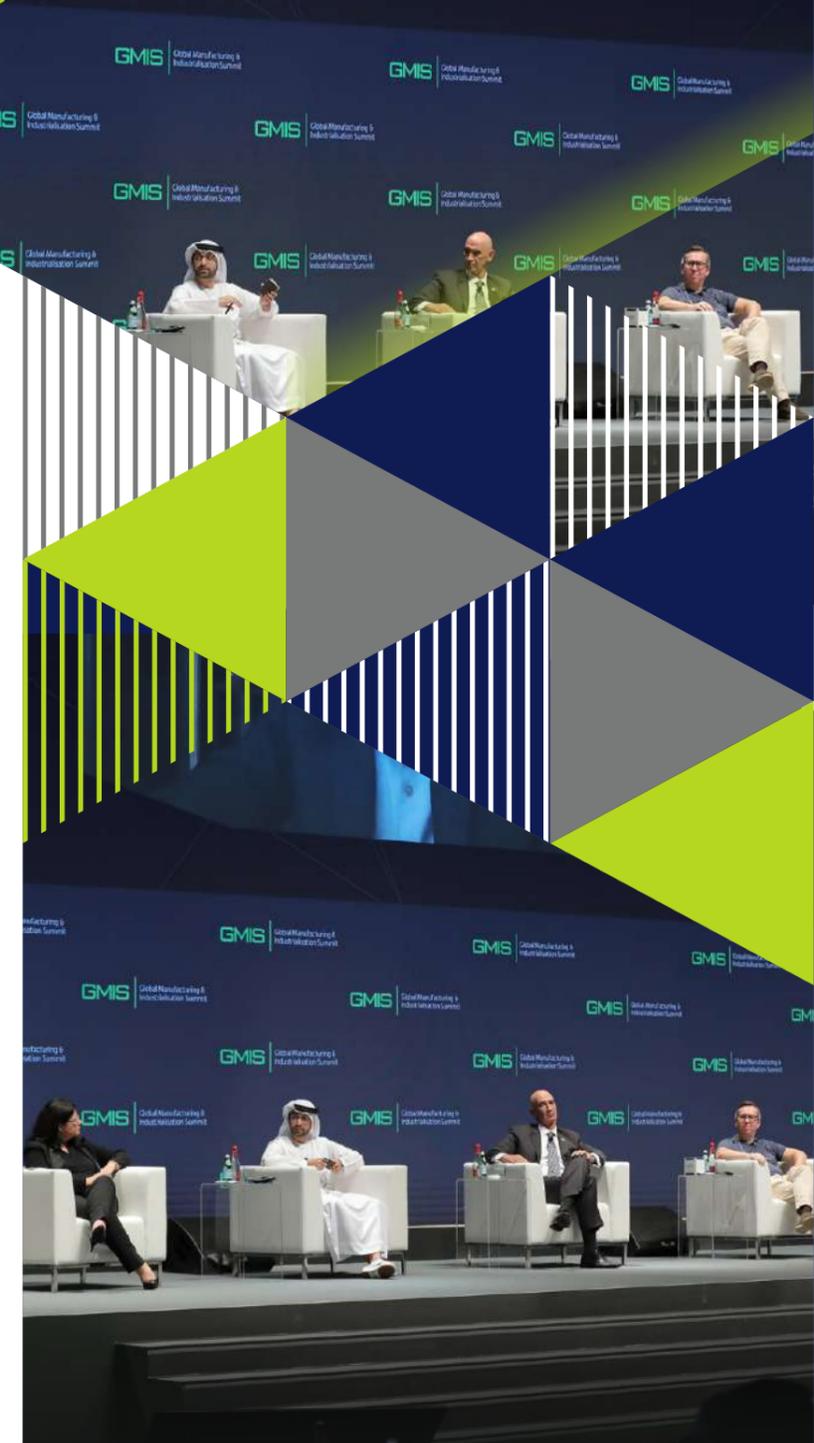
work, **Rukmini Glanard**, added, "it is crucial for a workforce to operate under succinct growth strategies driven by spotless communication, in order to establish workforce readiness in a cloud-enabled manner."

**Sayed Hashish**, provided an insight into how technology and cloud solutions are helping to advance Microsoft's future workplace strategy, he explained, "Microsoft relies on a growth mindset. We developed a well-being support analytics platform called VIVA which inevitably, will help towards the emancipation of our transition into flexible working conditions, in line with our aims to sustain transparent relationships with employees."

**Evgeny Kolbin**, added, "high-productivity rates are increasing as most companies shift towards agile solutions and fast-development cycles, which require

employees to adapt task management operations and improve soft skills, against increasing demand for multi-tasking and problem-solving."

**Andy Purdy**, concluded by addressing the importance of open innovation, "the critical importance of innovation lies in facilitating it in an open-sourced foundation for developers to easily protract creative ventures. As a result, innovation not only inspires new technologies to shine through but also enables small and medium enterprises to create new technologies and thus a workforce. Innovators are indeed the disruptors of our time ■."





# DAY TWO STRATEGY THEATRE



WATCH FULL VIDEO

DAY TWO  
STRATEGY THEATRE

# Keynote



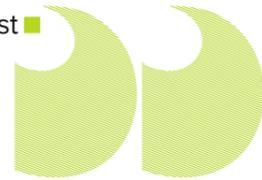
**H.E. Hon. Dr. Sekai Nzenza**  
Minister of Industry and Commerce,  
Zimbabwe



I speak as an African woman, and often when we talk about African women in leadership, or in industry, or in food production, often you get statistics. There are many statistics, and I will give you some of them. African women contribute to 80% of food production in Sub-Saharan Africa. African women contribute to 50% of household income. African women earn about less than \$1/day. There are many statistics about African women. But ladies and gentlemen, statistics often blur or do not reflect the reality of the everyday experience of African women.

Speaking of the Zimbabwean experience, we gained our independence in 1980, and we are blessed to be the country with the highest literacy rate in Africa. Not only that, but we also have the natural resources. However, there have been

some challenges in Zimbabwe and some of the challenges that we've had to endure are the sanctions against Zimbabwe and the perception and misperceptions of what Zimbabwe is as a country. We have also experienced periods of de-industrialisation and lack of the right technology. But ladies and gentlemen that is in the past. That is now in the past





[WATCH FULL VIDEO](#)

DAY TWO  
STRATEGY THEATRE

## Panel Discussion



**Chiara Corazza**  
French Representative  
in EMPOWER  
ALLIANCE for the  
Private Sector for the  
G20



**Fatema Al Nuaimi**  
CEO,  
ADNOC LNG



**Ayumi Moore Aoki**  
Founder and CEO,  
Women in Tech



**Tiffany Kelly**  
Founder and CEO,  
Beyond Bamboo



**Jan Ward**  
CEO,  
Corrotherm International

### Women in leadership: Levelling the field

Access to STEM education is key to levelling the gender player field. This was the key message delivered during the “Women in leadership: Levelling the field” panel discussion, which saw celebrated women leaders in business and multilateral organisations, emphasise the importance of science, technology, engineering, and mathematics (STEM) education towards levelling the playing field for gender equality in a future workforce.

Emphasising the positive impact of technology on increasing womens’ inclusion in male-dominated sectors, such as oil and gas, **Fatema Al Nuaimi**, said: “technology is going to play a key role in enabling the integration of more and more women into the LNG sector, which has traditionally had challenging workplace conditions for women to operate in. As we explore remote field operations and integrating

AI for automation, these industry transformations will require talent regardless of background.”

Speaking on emancipating the job market, Chiara Corazza, said: “85% of jobs in 2030 do not exist yet, but STEM education will offer the same opportunities for our young boys and girls, because talent has no gender.”

“There is a leaky pipeline for women talent in STEM. Women need to be encouraged into leadership from a young age, from classroom to boardroom, we need to teach women to become leaders,” said **Ayumi Moore Aoki**, Founder and CEO of the global NGO Women in Tech, as she commented on the small minority of women who receive STEM education before entering the STEM workforce, and the loss of interest in STEM subjects amongst teenage girls.

For her part, **Tiffany Kelly**, said: “we need to look at a culture change, and move away from the parasitic view of leadership and towards inclusive leadership standards that encourage collaboration and partnership.”

**Jan Ward**, said: “ultimately, if you don’t have diversity, you don’t get diversity of creativity and understanding ■”





WATCH FULL VIDEO

DAY TWO  
STRATEGY THEATRE

## Panel Discussion



**Dr. Ruth Boumphrey**  
Director of Research, Lloyd's Register Foundation (virtual)



**Douglas Ramsey**  
Partner, The Robotics Hub



**Sergey Korotkov**  
Director, UNIDO ITPO, Russia



**H.E. Farah Al Zarooni**  
Acting Assistant Undersecretary, Ministry of Industry and Advanced Technology, UAE



**Ismat Gul Khattak**  
Director General, National Accreditation Council, Pakistan (virtual)

### Navigating health and safety in a cyber-physical environment

COVID-19 provided a stark lesson in the importance of workplace safety and more needs to be done to bring regulation and today's workforce up to speed on the latest workplace safety tech. This was the prevailing sentiment during a panel discussing the role of cyber physical technology in developing pandemic resilience.

**Dr. Ruth Boumphrey**, said, "technology is a huge opportunity for safety and we shouldn't see this as a risk; we have to rethink our approach to regulation, move with the speed technology in terms of adoption, and encourage international cooperation to develop frameworks. We will have to do this in the industrial workplace and we have to make it more accessible."

**Douglas Ramsey**, addressed the need for humanity to keep pace with innovation and warned the audience that "digitalisation can be detrimental to

workers and we're going to have to run as fast as we can in order to stay afloat at this current rate." He questioned, "are we ready to run twice as fast with these technologies?"

In the same vein, **Sergey Korotkov**, addressed the need for regulation to keep pace with innovation, adding "there are new challenges for the processes of technology and we need an international organisation to regulate the new wave of digital applications and solutions." He continued, "we need to teach workers that robots are here to assist them and make comfortable situations for them – they need to understand this through knowledge across institutions and academies."

For her part, **Farah Al Zarooni**, highlighted what effect the pandemic - and the subsequent dependency on remote technology - has had on traditional views of health and safety in the workplace, "post pandemic, we have a different

vision of mental health. Today, you can have better performance and a better production output, by monitoring your own workers. Today, you can have a smart watch, for example. Smart watches can monitor your blood pressure and the oxygen levels in your blood, so coupled with AI, you can understand the psychology of your workforce and of individual employees. You can predict when your employees are going to be at their most productive. These are different elements that were not there from before."

**Ismat Khattak**, summarised the key messages from the conversation, saying "anything and everything is possible today through the use of technology. Even applications such as Whatsapp are becoming key forms of communication for business purposes, which we never thought would happen. However, it is important to maintain a balance of human and technological aspects ■"





[WATCH FULL VIDEO](#)

DAY TWO  
STRATEGY THEATRE

## Panel Discussion



**Eva Canevarolo**  
EU Financial Manager,  
Polo Tecnologico Alto  
Adriatico



**Salvatore Dore**  
Start-up Support  
Innovation Office,  
University of Trieste



**Lorenzo Giombini**  
Executive Director of  
Strategy,  
Vault Investments LLC and  
CEO, Vault Management  
Consultants



**Maria Cristina  
Pedicchio**  
President, Cluster  
MareFVG



**Dr. Nobuyuki Yagi**  
Professor,  
University of Tokyo  
(virtual)



## Harnessing digital technologies for powering the Blue Economy: Lessons learned from the UNIDO Investment and Technology Promotion Network

Ocean pollution is a major concern and needs to be prioritised to meet the UN’s Sustainable Development Goals. Several strategies for advancing the blue economy were discussed during a panel discussion led by UNIDO, including public private partnerships, harnessing data, upskilling the younger generation and incentivising start-ups towards the protection of the ocean.

Speaking about the data revolution and its importance to the blue economy, **Eva Canevarolo**, said, “the data revolution will solve multiple industrial problems and will give insights for the development of a blue economy. New technologies can be utilised as drivers for the blue economy and facilitate solutions against illegal fishing, extraction of marine sources and water temperature monitoring.”

**Salvatore Dore**, gave examples of corporations that were leading the way in sustainable product development, he explained that “when you change a business model, you need to collaborate with big enterprises and external companies. We are witnessing huge establishments such as Adidas making shoes made from plastic from the ocean. This is just one of the many unique ways to resolve this global problem.”

**Lorenzo Giombini**, said more awareness and education surrounding the blue economy was needed to, “help society understand how technology can play a part in developing the blue economy”, he went on to stress the size of the issue and the challenges that need to be overcome, adding, “this is not a small project and we need to find ways to strategise this issue properly and to achieve sufficient financing. We need to remove the





▶ WATCH FULL VIDEO

DAY TWO  
STRATEGY THEATRE

## Panel Discussion

### Harnessing digital technologies for powering the Blue Economy: Lessons learned from the UNIDO Investment and Technology Promotion Network

emotional part of a project and think about it as a straightforward investment to achieve benefits from a project. Public-private partnerships are something we need to look at for a blue economy.”

**Maria Cristina Pedicchio**, echoed Lorenzo’s comments by saying that “each of us has a responsibility to teach children about the pollution and exploitation of the maritime sector. We need to teach the next generation responsible and sustainable solutions for a blue economy. We are developing joint initiatives through sports and animation to teach kids and make them feel engaged about this topic.

**Dr. Nobuyuki Yagi**, summarised the issue on a macro scale adding that “the COVID-19 situation has created a separation of people who have resources and money. We need to narrow this gap

using technology and help build the trust of communities in order to thrive through the digital era. Japan has been a fish consuming country for many years and our history goes back 200 years ago. We need to communicate with global markets to help achieve sustainable utilisation and resources, and technology will help facilitate a mutual understanding regarding ocean resources ■”





# DAY TWO INNOVATION THEATRE



[WATCH FULL VIDEO](#)

DAY TWO  
INNOVATION THEATRE

## Panel Discussion



**Ismail Abdulla**  
CEO, Strata  
Manufacturing



**Dr. Anil Khurana**  
Global Industrial  
Manufacturing and  
Automotive Leader,  
PwC



**Michael Lordi, Esq.**  
CEO,  
Elliott Group



**Laksh Vaaman  
Sehgal**  
Vice Chairman,  
Motherson Group



**Mike Wade**  
Head of Digital  
Supply Chain, South  
Europe, Middle East &  
Africa,  
SAP

## Dark Factories vs. Smart Factories: Time to turn the lights out?

Just 10% of factories worldwide can be considered smart, in addition, 70% of data generated in factories is currently unused. The reasons for a lack of smart factories include a fundamental skills shortage, significant capital costs and the availability of cheap labour in developing countries. Italy is considered a frontrunner in smart factory development and in 2017 introduced a multi-billion dollar stimulus around Industry 4.0 adoption.

**Ismail Abdulla**, gave the opinion that, “dark factories, smart factories and traditional factories will all exist in the future. It depends on the bottom line and the business case. I don’t believe there is one solution to override the others.” He explained that, “the major challenge with dark factories is to find the right business case. You have to find opportunities where the requirement is not for a lot of low skilled labour and does not require active engineering support on-site.”

**Dr. Anil Khurana**, went one step further to say that “dark factories are a vision that may never be achieved”, he offered an explanation for his opinion by saying, “one challenge for complete automation is that products will inevitably change because we will redesign them to be more sustainable. This may mean smart factories are the next step. Dark factories may remain an end goal we may not even want to achieve.”

Commenting on factories of the future, **Michael Lordi**, said that “with new technologies you can almost have factories on demand. Small batch, on-demand production shortens supply chains and reduces energy costs. To me, that is the future. Giant factories have their place, but I think factories will evolve in the future.”

Further commenting on the challenges facing smart factories, **Laksh Sehgal**, explained, “today, we’re

living in fear of cybersecurity, so you can imagine the havoc that can be created if someone is able to break into your systems. We have seen from COVID-19 that those threats were up 200 times and you saw companies where manufacturing just stopped because hackers were able to get into these systems.”

**Mike Wade**, sought to challenge common opinion surrounding the use of automation amongst today’s workforce, adding that “the concept of smart factories creates a concern among the workforce around automation. But when you deploy technology in the right way, you are empowering people. It enables people to make better operational decisions to manage the operation in a better way. That means people are becoming more highly skilled ■”





WATCH FULL VIDEO

DAY TWO  
INNOVATION THEATRE

## Panel Discussion



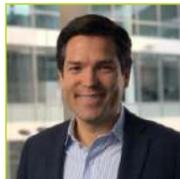
**Dr. Will Cavendish**  
Global Head of Digital Services, Arup



**Mark Enzer**  
Head of the National Digital Twin Programme, Centre for Digital Built Britain (virtual)



**Mansoor Al Janahi**  
Deputy CEO, Sanad Group



**Aymeric Sarrazin**  
CEO, Siemens Advanta



**Pastora Valero**  
SVP, Public Policy and Government Affairs, Cisco

## Digital blueprint: IIoT and Digital Twins

Digital twins offer supply chain flexibility, enabling manufacturers to simulate and test different options before committing to a final design. A number of automotive companies are now mandating digital twins in their manufacturing processes to maintain competitive advantage and there is a growing willingness amongst governments, businesses, and academia, to enhance private-public sector collaboration by leveraging digital twins. However, human factors must also be considered when developing digital twins such as regulations, legislation and the inherent skills gap.

**Dr. Will Cavendish**, spoke about the adoption rate of digital twins across sectors, stating that “many sectors aren’t yet seeing the benefits of digital twins. But in some more advanced sectors we are beginning to see the benefit, particularly in the automotive sector. By using digital twins in the

factory design process, we can ensure the right things are in the right place.”

**Mark Enzer**, explained how digital twins can be used to create value across ecosystems, adding that, “we can imagine many different digital twins for many different purposes. That means we can federate those digital twins and make connections between them.”

**Mansoor Al Janahi**, went on to praise the technology and its ability to enhance workplace safety, adding that “the beauty of digital twins is that you can evaluate in a safe environment and quickly. That is particularly valuable in a safety critical sector like aerospace. But digital twins need to be substantiated to a point where you can apply them to a real environment.”

**Aymeric Sarrazin**, commented on the key benefit of digital twins – the ability to optimise supply chains

and make informed decisions in real time, he explained, “we are shifting from a complicated to a complex world. In a complicated world you have problems you know you can solve. Complex by definition will not be solved by models. That is where digital twins come in. You need a model that can change direction as the world changes.”

**Pastora Valero**, concluded the conversation by citing a real-world use case for digital twins, she added, “the technology exists. Digital twins allow you to evaluate what does, and does not work. In Rotterdam we’ve been able to make a digital port and see how we can make efficiencies ■”





WATCH FULL VIDEO

DAY TWO  
INNOVATION THEATRE

## Panel Discussion



**Dr. Jeremy Levy**  
Director,  
Pittsburgh Quantum  
Institute  
(virtual)



**Dr. Sama Mbang**  
Founder and Executive  
President,  
Digital-Transformation  
Alliance



## Quantum Machine Learning (QML): Will it optimise or revolutionise production?

Quantum mechanics is the most fundamental theory of the whole Universe. It holds enormous potential in terms of accelerating problem solving. But the hardware is lagging, and it will be a considerable amount of time before the necessary hardware can be developed to meet the demand from industries for certain capabilities. This is creating fears of ‘a quantum winter’ where momentum will be lost in terms of interest and investment. Collaboration between academia and the industrial sector is essential if manufacturers are to ever realise the enormous potential of quantum computing for supply chains.

Dr. Jeremy Levy, highlighted a fundamental issue with today’s quantum computers, explaining that, “quantum computers that exist now are not error corrected, so they run like a spinning top. They start coherently but eventually they can fail. Once we reach that error correction threshold it will start to grow exponentially.” Addressing the issue of a lack of cross-sector and cross-industry collaboration, he stressed that, “we all have to work together rather than try and compete. There is a lot of collaboration

but there’s always room for more. We need to have more communication so we can optimise hardware for specific applications.”

Prof. Dr. Sama Mbang, spoke of the current limitations of quantum computing for the manufacturing sector, he told the audience, “what we need is a multi-parameter computation capability. When you design a product, you have a lot of manufacturing operations, most of the time concurrent. The design has to deal with different aspects and today there is no tool that can take all these parameters into account.” He went on to explain that, “in manufacturing, we still have a lot of very intensive processes - you need days for feedback on simulations. Quantum manufacturing is a fantastic opportunity to speed up these processes.”

He concluded the conversation by stating that, “we are still in an observation phase in the context of quantum manufacturing, where we are still waiting for the first big step ■”





# CLOSING CEREMONY GMIS AMERICA



▶ WATCH FULL VIDEO

DAY TWO

## Keynote



**Namir Hourani**  
Managing Director,  
Global Manufacturing and  
Industrialisation Summit

The Global Manufacturing and Industrialisation Summit is set to launch the inaugural GMIS America in 2022 in the City of Pittsburgh. The announcement came at the close of the fourth edition of #GMIS2021 featuring over 250 global speakers, including Heads of State, Prime Ministers, Ministers and CEOs, from some of the world's largest organisations. The announcement was made by Namir Hourani, Managing Director of the GMIS Organising Committee.

There is a clear understanding that manufacturing is important, that manufacturing matters, and this is what the Global and Manufacturing and Industrialisation Summit is all about. We convene world leaders, policymakers, governments, and experts from the private sector to address world challenges and launch initiatives that have a lasting impact. Earlier today, we announced the Global Biomedical Industrial Centre, a joint initiative between our co-chairs, the Ministry of Industry and Advanced technology of the United Arab Emirates, UNIDO, the United Nations Industrial Development Organization and GMIS. The initiatives will serve as a platform that utilises

technologies like artificial intelligence and predictive analytics to identify future crises or pandemics and prepare manufacturers to ramp up production.

We all saw manufacturers step up their game during the pandemic and they played a key role in helping us overcome it - be it ramping up production of personal protective equipment, medical devices or vaccines. And so, the message here is loud and clear, collaboration coupled with resilience are key tools to addressing world challenges.

This brings me to the city of Pittsburgh. A city that was once a manufacturing powerhouse and then went through an extremely difficult time during the great

depression. But they didn't let that break them. They were resilient, they innovated, and reinvented themselves. Today, Pittsburgh is home to some of the world's most advanced and innovative technologies. They have an amazing story to tell, one that would resonate very well with manufacturers all over the world, and a story that we at GMIS want to help spread. I'm therefore extremely excited to announce the launch of GMIS America.

GMIS America will host its inaugural edition in 2022 and will see an annual event take place in the United States of America every year in the city of Pittsburgh





▶ WATCH FULL VIDEO

DAY TWO

# Keynote



**Diane Farrell**

Acting Undersecretary of Commerce for International Trade, Department of Commerce, USA (virtual)



We are thrilled that the Global Manufacturing and Industrialisation Summit will be coming to Pittsburgh, Pennsylvania, next year as the inaugural U.S. site. Given Pittsburgh's status as a burgeoning hub for advanced manufacturing and innovation, the city is an ideal setting for the focus of GMIS. Pittsburgh has truly become a hub of advanced manufacturing, robotics, and AI and created a region full of makers, creators, and innovators. The city was also home to the inaugural U.S.-EU Trade and Technology Council last September, where our secretary of commerce, Gina Raimondo, saw first-hand Pittsburgh's role in shaping the future of these advanced technologies sectors.

At the U.S. Department of Commerce, we are committed to creating the conditions for continued business and job growth by supporting advanced manufacturing, fostering innovation,

increasing trade and investment. Given this mission, we would like to recognise the vision of the U.A.E Ministry of Industry and Advanced Technology and the United Nations Industrial Development Organization had to create the Global Manufacturing and Industrialisation Summit. Their focus on bringing together and creating collaborative dialogue was some of the world's largest global organisations, manufacturing associations, academia, and United Nations entities benefit us all.

We invite all of you to join us for this important event. We are thrilled to have the next GIMS Summit in the United States in 2022, and we look forward to further cooperative efforts with GMIS and a successful 2022 Summit ■





▶ WATCH FULL VIDEO

DAY TWO  
**Keynote**



**Thomas Wolf**  
Governor,  
Commonwealth of Pennsylvania,  
USA  
(virtual)



Pennsylvania has always been home to innovators. Today, we are pioneering the latest technological and manufacturing advances, and we are pursuing smart, creative approaches to community development and workforce training. We share the mission of the Global Manufacturing and Industrialisation Summit, and the belief that only by working together can we truly build the global manufacturing sector. That's why I am so pleased that the inaugural GMIS America will be hosted in the city of Pittsburgh, Pennsylvania, in 2022. Pittsburgh is known as the steel city for its historic strength in steel manufacturing and production, but today the city has

reinvented itself and become a global hub for the advanced manufacturing sector. It's a region in which the private sector, government, non-profits, and academia have all come together with a shared vision for the future of its innovation economy, and the world has taken notice. GMIS is charting a path forward for global manufacturing. And we are honoured to welcome the Summit to the commonwealth of Pennsylvania ■



#GMIS2021  
OUBA - NOVEMBER 2021



GMIS | International Institute for Manufacturing Excellence



[WATCH FULL VIDEO](#)

DAY TWO

# Panel Discussion

Moderator:



**Simin Curtis**  
President,  
American Middle East  
Institute



**Michael Lordi, Esq.**  
CEO,  
Elliott Group



**Petra Mitchell**  
President and CEO,  
Catalyst Connection and  
Board Member,  
Advanced Robotics for  
Manufacturing



**Audrey Russo**  
President and CEO,  
Pittsburgh  
Technology Council  
(virtual)



**Danny Sebright**  
President,  
US-UAE Business  
Council



**Bill Flanagan**  
Chief Corporate Relations  
Officer,  
Allegheny Conference on  
Community Development  
(virtual)



## CLOSING CEREMONY: GMIS America 2022

Set to take place in 2022, the inaugural edition of GMIS America will take place in the City of Pittsburgh, home to some of the manufacturing sector's most advanced and sustainable innovations in robotics, artificial intelligence, and 3D printing.

**Simin Yazdgerdi Curtis**, said, "GMIS couldn't have picked a more exciting host than Pittsburgh, a city that has reinvigorated its economy repeatedly with a unique brand of grit and innovation. I am delighted that the bridge-building mission of AMEI has brought GMIS to our city."

**Michael Lordi**, spoke of Pittsburgh's strong relationship with the UAE, adding, "we do a tremendous amount of business in the region, as do other Pittsburgh manufacturers, and it's only natural that we should connect even more. We're already partners. We're already working together, so, we might as well take that next step."

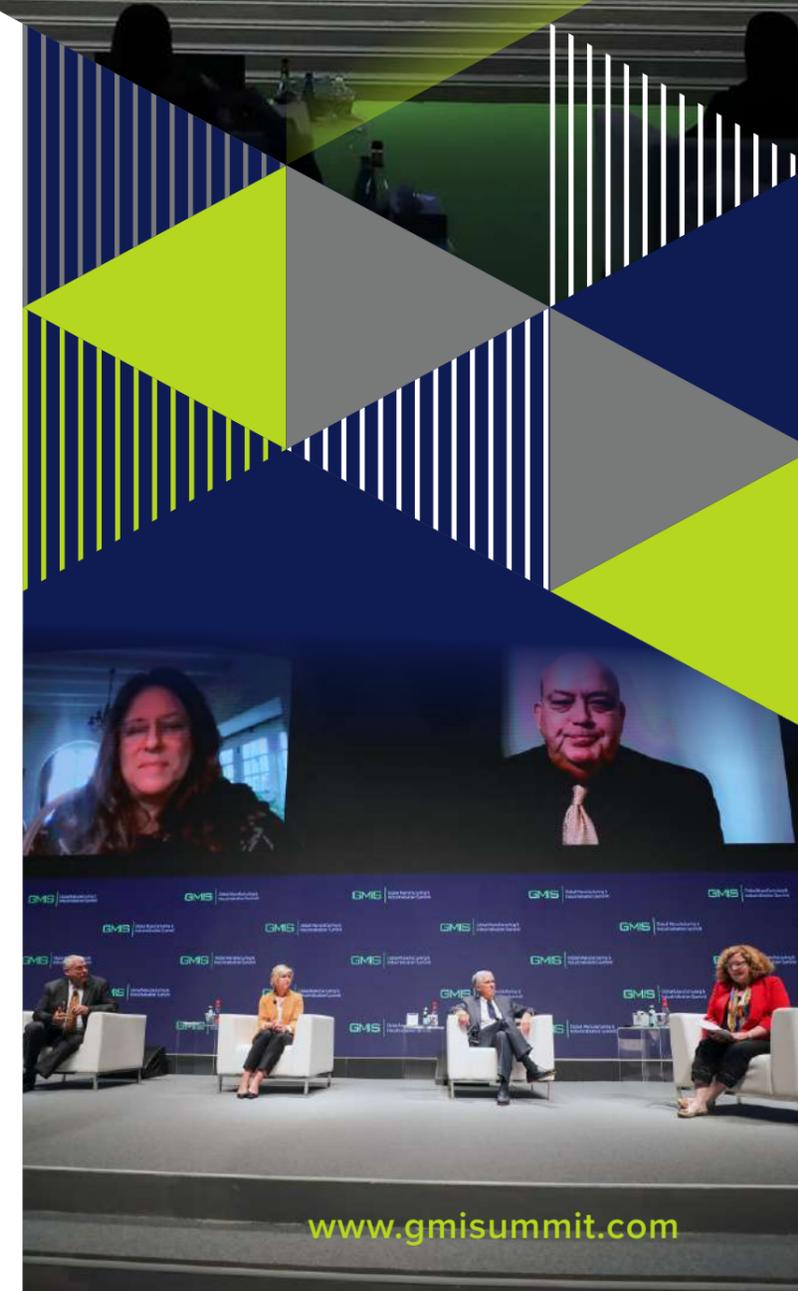
**Petra Mitchell**, highlighted Pittsburgh's status as a leading innovator and adopter of 4IR technology, explaining to the audience that, "our manufacturers are well aware they have to bring 4IR technologies in house to improve customer experiences, quality delivery, their company ROI and better position themselves in the global marketplace. I think we also have a very strong entrepreneurial and start-up community that is on the leading edge of developing new technology and one of the things that we're really focused on is, how do we connect the two? How do we bring those local start-ups coming out of the universities and help them really grow and accelerate the business with customers right at home? I think that's an exciting prospect for us in Pittsburgh."

**Danny Sebright**, highlighted the vision for GMIS America, to "bring the global community to Pittsburgh" in order to expand understanding on a global scale

and strengthen UAE -USA partnerships across the manufacturing sector.

**Audrey Russo**, echoed Petra's earlier comments as she cemented Pittsburgh's status as an industrial technology pioneer. Commenting on the Pittsburgh Technology Council, she said, "we are the oldest and still the largest technology trade association in North America, if you want to know anything about autonomous vehicles, definitely Pittsburgh is the epicentre, but it's not just autonomy, it is the work around artificial intelligence, its machine learning, it's medical devices, it's health technology, and there are solutions in security. This year alone, we've had four IPOs in our region."

The announcement reflects the Summit's commitment to delivering strategic outcomes and value to its global network of partners, through collaborative efforts and ongoing opportunities for growth ■





# GMIS DAY THREE



**THE GREEN CHAIN**  
A GMIS INITIATIVE

WEDNESDAY, 24 NOVEMBER 2021



▶ WATCH FULL VIDEO

DAY THREE

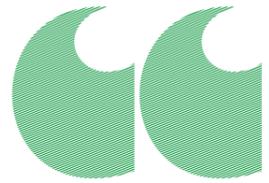
## The Green Chain Conference

# Fireside Chat



**H.E. Sharif Al Olama**

Undersecretary, Energy and Petroleum Affairs, Ministry of Energy and Infrastructure, UAE



**W**e really need to come up with practical, achievable climate actions that take into account both an economical perspective and at the same time, eliminate emissions to the maximum extent. We anticipate that there will be a good presence from all the main stakeholders on the table. So, we will have the private-public sector available, we will have the scientific society available, the civil society, and definitely all the major energy players.

There has to be a proper and right energy mix. Hydrocarbons will be playing a part in that energy mix. In fact, I see no such scenario where there will be zero requirement for hydrocarbons in the energy mix.

We are in a very strong position, the UAE has one of the lowest extraction rates in the world and that is why, as part of the 2030 strategy for ADNOC, we are expanding in terms of our production capacity, and we plan to go to five million barrels per day.

Natural gas will definitely play a major role in the energy mix. When we look at our energy strategy in the country, it is really based on 50% of our energy mix coming from clean energy, the other 50% will be coming from fossil fuels - 38% of that is natural gas. Because of these situations where we are seeing these hikes in prices, the investment in the oil and gas industry needs to continue. This is really very important in order to keep pace with the growth that we are seeing globally.

One aspect of our strategy, which I believe not many people are paying attention to, is energy efficiency. Energy efficiency – if we do actually control and manage our consumption and are more efficient – can have a similar impact in terms of diversification as going into renewables. I believe the impact of being more efficient might be more favourable in terms of reducing emissions. We have done quite a lot on that front ■





▶ WATCH FULL VIDEO

## DAY THREE The Green Chain Conference Panel Discussion



**Caspar Herzberg**  
Chief Revenue Officer,  
AVEVA



**Prof. Dr. Jürgen Peterseim**  
Partner,  
PwC



**Salman Abdulla**  
EVP,  
Emirates Global  
Aluminium



**Maria Strandesen**  
Head of Future  
Fuels,  
Maersk  
(virtual)

### Decarbonise now, electrify later: Is an all-electric economy realistic?

**C**aspar Herzberg, cited the rise in digitalisation as a key challenge preventing widespread electrification in the region, “the big challenge is the electricity demand of digitisation and the data overall that is generated as a result. We have heard a lot about renewables and about feeding new forms of energy, or newly generated forms of energy, into the grid. These are some of the challenges we all need to overcome as we move towards electricity.

The region will continue to invest in infrastructure, in electrification, and now, not just the Gulf but the Middle East and Africa. We still have 600 million unconnected people who do not have any access to electricity in large parts of Africa, so we are going to see a lot of focus on electrification, on more sustainable generation. Overall, we expect in the next 20 years the electricity consumption to double.”

Contributing to the discussion virtually, **Jurgen Petersiem**, said, “there are certain areas where we will see direct electrifications, for example, the mobility sector and passenger cars, but then if you

look at sectors where you need high temperature or where you need a chemical reaction, that is really where we are going to see the world of hydrogen play out, because at the end of the day, we really have to think about it as two sides of a coin.”

He made reference to the high green hydrogen production costs and suggested that industries could potentially reduce production costs by finding niche applications for green hydrogen in the short term, until economies of scale can be realised, “so, where are the niches and the energy cost? or where are the products where the energy costs are not the main driver? The one thing I would wish for, to be honest, is that we see all these commitments and enthusiasm about decarbonising in the industry, actually translating to a reduction in overall global annual emissions, because at the end of the day, that is what counts.”

**Salman Dawood Abdulla**, offered an industry perspective: “COP26 is not looking at things from a commercial perspective. For commercial organisations, the three considerations you have to take into account are; secure supply, operational

safety, and economic viability. Now, if you look at the top three, which are solar, nuclear, and hydrogen - hydrogen has some way to go before it can be industrially and commercially implemented. We should not only produce with low carbon, but we should produce in a more responsible manner, not just in terms of the environment but taking into account the social and the governance aspects of the business.”

**Maria Strandesen**, gave a unique insight into potential low carbon fuel options for decarbonisation of the shipping industry, she explained, “we have investigated a lot of fuel options and purely, we have landed on green methanol as our favourite fuel. We are still investigating other options. The world is going to need so much green hydrogen ■”





WATCH FULL VIDEO

DAY THREE

## The Green Chain Conference Panel Discussion



**Katarina Uherova Hasbani**  
Partner and Global Director, Strategy and Advisory, AESG



**Andrea Lovato**  
EVP and Head, Renewable Development and Green Hydrogen, ACWA Power



**Bart Cornelissen**  
Partner, Energy, Resources and Industrials Leader, Deloitte



**Prof. Dr. Gerhard Thonhauser**  
Chairman, TDE GROUP

### Investing in hydrogen: A roll of the dice or a lucrative opportunity?

Setting the scene for the discussion, **Katarina Uherova Hasbani**, said, “the International Energy Agency has some numbers that might be controversial but seem directional: at the moment, the world is using less than 100 million tonnes of hydrogen per year. In 2030, we will need to double this amount if we are to get on our net zero trajectory. By 2050, that’s 500 million tonnes. There is another number that is quite interesting, currently, we are investing US\$1.5 trillion in net zero globally – in order to hit the target, we need to invest US\$5 trillion by 2030 and we need to sustain that effort.

When I think of where governments can intervene, there are three challenges that the hydrogen market is facing today; one is cost of technology and cost of the energy sources; the second is complexity, hydrogen itself has very complex physical properties – it explodes, it’s light, and the ammonia form is very toxic; and the third area is the cultural aspect in terms of company culture. It is a new topic that requires a lot of agility, it requires companies that can change course very quickly. So,

we need subsidies – a hydrogen project cannot happen without some form of government support.”

**Andrea Lovato**, added, “green hydrogen has a demand already. But there is no production. If we could produce green hydrogen tomorrow, there will be a queue outside. We need to do what we did with renewables, look at large volumes, reduce costs and do it in a region where there are the three important components; one is a combination of solar and wind, and we are blessed in that respect; second is to have the land; and the third is the low cost of finance.

Today, the most economical way to transport hydrogen is green ammonia. In the future it might be by pipeline. This region is close to Europe, pipelines already exist, and this would be a very good competitive way to transport it from this part of the world or from North Africa to Europe.”

Commenting further on the cost of hydrogen production, **Bart Cornelissen**, said, “there is still a big distinction between blue versus green when you think about total cost. And the costs have to





▶ WATCH FULL VIDEO

DAY THREE  
The Green Chain Conference  
Panel Discussion

## Investing in hydrogen: A roll of the dice or a lucrative opportunity?

come down for green – this will take time. We can learn lessons from how we’ve done this before. Take for example, the wind sector, which in my home country, the Netherlands, and in Denmark, is a very strong sector, but it didn’t start strong, it started at a very expensive price point and people didn’t want to invest in it, and that’s where the government came in: they created a subsidy scheme that created an environment in which people could invest in the projects and make strong commitments to cost reduction.”

**Prof. Dr. Gerhard Thonhauser**, stressed the importance of understanding the current and future energy needs of potential off takers, in order to generate sustainable supply and demand for green hydrogen, “we have to talk to customers. At the end of the day, we’re only going to sell hydrogen sustainably if customers purchase it. I think we are all clear that green hydrogen is at the end of this process, but it will be delayed if we cannot create the customer that needs hydrogen.”

Commenting on his company’s own experience, he added, “as engineers, you see what is possible. We asked ‘what can we do and what can we do fast? What can I make with the existing infrastructure?’ In Austria, we are a gas hub, so, how can we convert that gas into something clean and sustainable, and how can I do this cost-effectively? We can only go for processes that need much less energy than electricity uses, use existing infrastructure and create the market that will slowly be taken over by green hydrogen, but we can play a significant role in getting it started ■”





▶ WATCH FULL VIDEO

## DAY THREE The Green Chain Conference Panel Discussion



**Uwe Weichenhain**  
Partner,  
Roland Berger



**Jonathan Carpenter**  
VP, New Energy  
Services, Petrofac  
(virtual)



**Sally Prickett**  
VP, Hydrogen  
Market  
Development, BP



**Dr. Faye Al Hersh**  
Technology  
Specialist,  
Masdar

### Establishing a global green hydrogen export market: Turning the desert into a clean energy powerhouse

**Uwe Weichenhain**, firmly believes that hydrogen transportation technologies are the key to unlocking the export potential for the GCC region, “so, if we look at the investment landscape today, there is a focus on upstream technologies, there is also a strong focus on applications, but, the hydrogen transportation space is actually quite overlooked and this is really key when we look at the development of global supply chains, or we view things from a demand perspective, this is a huge opportunity for the region. What is really needed is a transport option at scale.”

Further commenting on the issue of scalability, **Jonathan Carpenter**, added, “one of the challenges we have today is how do we create the market for hydrogen, such that we can start producing at scale, which obviously makes everything more economic over time. We certainly see huge potential in the Middle East, it has natural resources but also the technical capability and infrastructure. You’ve got many of the pieces already in place from the oil and gas sector to actually transfer those skills and

support that transition into a green energy and hydrogen based economy in the future. So, we are pretty positive about the potential for this.”

**Sally Prickett**, gave emphasis to the fact that “hydrogen is not the answer for absolutely everything and everyone”, she explained, “this is about providing the lowest cost decarbonisation solution for our customers and however we do that is the right answer and what we are doing is leaning into finding those solutions. Ammonia is incredibly interesting because it is potentially an end use fuel in itself, which avoids some of those costs of cracking, which makes it perhaps more competitive. But, the challenge is huge and it is not just about the distribution of molecules. It is about that full value chain. So, we have to work and coordinate on supply, on distribution, on storage and in end, use applications to build out all of that infrastructure that is needed to create a hydrogen economy. It is not necessarily a cheap decarbonisation solution, but it is the cheapest decarbonisation solution for some parts of our economy.”

**Dr. Faye Al Hersh**, spoke of the importance of renewable energy as a key driver in advancing the hydrogen economy, “a single country cannot achieve this alone and a single industry as well cannot achieve this alone. The Middle East, including the UAE and Saudi Arabia, Spain and Australia, are all well positioned to become, or to play a leading role in green hydrogen production, and this is specifically attributed to the fact that they have high renewable energy resources, they have huge land space to deploy these renewable energy plants, and they have access to sea water. The point specifically about the low-cost renewable electricity is especially important, because currently at least 60% of the cost of producing green hydrogen is the cost of the electricity ■”





▶ WATCH FULL VIDEO

## DAY THREE The Green Chain Conference Panel Discussion



**Carsten Stoecker**  
CEO,  
Spherity



**James Veale**  
Co-Founder,  
GreenToken by  
SAP  
(virtual)



**Ana Haurie**  
Co-Founder and  
CEO, Respira

### The carbon credit conundrum: Cleaning up carbon credit markets

**C**arsten Stoecker, said: “When we think of all the energy demands, this is a very big problem and the amount of entities and policies is incredible. We must consider how we can enforce policies for a scalable world. We must work together to define the minimum standard, and if we don’t do this, then nothing will be comparable with other markets around the world. We need to think about the scalability of automation and how digital tools can be implemented across policies.”

**James Veale**, said, “we have to make this a habit, we have to get people across all industries, and the consumers, to question when I use this product, or buy this product, or consume this product, what is the impact? At the moment, there is a lot of reporting incentives, but there is a huge social and KPI impact. We need to figure out how to address the exponential curve of carbon standards. We need legislation at scale and there is nothing stopping us from implementing this now. The youth want to live in a world that is ethical, and they are passionate to be part of the solution. We need to not prioritise profits over greening the society. I see a future

where we might have quite a complex market but everybody understands the instruments and the landscape. So, in the same way, if you’re a hedge fund or financial company, you can see your exposure and you can hedge with the cracks. I see that parallel developing within the carbon markets, within a short space of time.”

**Ana Haurie**, added, “although the methodology for issuing carbon credits is getting better all the time, we have to build a lot of trust in the system and enhance integrity. We need a good solid base line to measure, and avoid increasing emissions. We have to place importance on biodiversity and there is a lot of bodies working towards the agreement of carbon principles. We all must take action on decarbonisation - this has to be a combined effort and you need to look to your supply chain. It is very difficult to do this overnight, it is a long process that takes place over time. Using carbon credits is a way to mitigate these issues and create nature-based solutions and there is a lot of work going on at the moment surrounding the decisions that corporates can make: the private sector can make a big

contribution to take action, and we should be encouraging and applauding positive action. There is a huge opportunity to do something positive, support other markets, and to make this a truly international marketplace. We need to act now and keep developing the infrastructure to develop authenticity and integrity in the market. Let's put a price on carbon because that's what we need to do in order to keep the drive towards decarbonisation ■”





▶ WATCH FULL VIDEO

## DAY THREE The Green Chain Conference Panel Discussion



**Khalid Al-Muhaidib**  
SVP, Hydrogen  
Business,  
ADNOC



**Mauricio Vargas**  
CEO,  
Bayotech  
(virtual)



**Dr. Carsten Borchers**  
VP, Strategy Energy  
Networks, E.ON



**Dr. Malcolm Cook**  
Head of  
Business  
Development,  
ThyssenKrupp

### From power to prosperity: Developing an inclusive and sustainable green hydrogen economy

Commenting on ADNOC's contribution to the global hydrogen economy, **Khalid Al Muhaidib**, said, "I see the UAE being a natural leader in the space and particularly ADNOC, I believe, is very well positioned to decarbonise our own operations - we already have one of the lowest carbon footprints with regards to our portfolio of products and we are also helping the world and our customers, reduce their own carbon footprints. The pressure is on all stakeholders to really act with regards to the climate challenge, and we are very excited to work with our partners to do that together because we cannot do it alone. All the stakeholders from production to supply chain all the way to the end user, have to cooperate and collaborate. The government and the key markets which have more pressure to move, have to put in an enabling regulation. We do not have a unified hydrogen code. We do not have unified regulations."

He addressed the need for industries to establish key applications for green hydrogen in order to accelerate hydrogen production, technology adoption and supply chain optimisation, "now, in the hydrogen and ammonia market today, applications are limited. What

is needed is many more new applications for hydrogen and for the derivatives of hydrogen, such as ammonia. Today with the technological limitations that the hydrogen industry is facing, I see ammonia as one of the most exciting transport vectors: it is easy to manage, it is easy to move and creating the new applications by using ammonia, makes a lot of sense from a cost competitive position. We have to be pragmatic about our approach with regards to hydrogen, so the cost competitiveness is key during the transition."

**Mauricio Vargas**, said, "there is a tremendous opportunity for distributing hydrogen. But it is going to be a portfolio of solutions to solve this. We have to build the infrastructure for hydrogen to be able to solve the problem - the chicken and the egg problem - that we are trying to solve, both on the application side and also on the fuel side."

Speaking about the importance of collaboration, **Dr. Carsten Borchers**, added, "we need to establish and re-establish the international trading routes because it's smarter to work together and because it is best for our customers as well. And so, it is a journey and

there are challenges on each part of the journey; the first challenge is building the customer demand, finding the right funding mechanisms and then building the bridge into the supply side as well, and that includes transport. We need to get from PowerPoint to action somehow, that is something I take with me but that also somehow partly neglects the effort that we are doing already. So, we are doing the right things already - I hope we all have the energy to continue doing that. The hype will be over at some point in time and we need to continue at the pace we are developing at the moment, to make sure that we meet 2030. We need a lot of energy for the next years to execute all the plans."

**Malcolm Cook**, said, "we get close to the customer to understand what the customers need and what the customers' requirements are, and then we have to look at the chain and how we take the cost out of every step. Ultimately there are two targets here, there is the holistic target which is decarbonisation, but then it is driving the cost down which makes it happen quicker ■"





▶ WATCH FULL VIDEO

## DAY THREE The Green Chain Conference Panel Discussion



**Pierre Samaties**  
Senior Advisor,  
Roland Berger



**Carsten Stoecker**  
CEO,  
Spherity



**Demetri Lomilin**  
Principal Program  
Manager,  
Microsoft



**Martin Nagell**  
Advisor, Office of  
the CEO,  
Masdar

### Blockchain: The solution to a decentralised and ‘prosumer’ powered future?

This session discussed whether blockchain technology offers a solution to a more efficient, responsive and inclusive energy market to the mutual benefit of both consumers and producers and ultimately, whether the prosumer market, underpinned by distributed ledger technology, can be effectively scaled, secured, and regulated.

**Pierre Samaties**, opened the discussion by citing the key barriers to the realisation of a decentralised energy market, “obviously, the main challenges of a decentralised system will be about cyber security and data protection. So, if you commit your energy data towards the decentralised system, as a prosumer, you want to be sure that it is not tampered with, that is the main concern there.” He added that regulation was a key challenge due to the fact that the grid provider will need to act as both a producer and an off-taker, “if you look at the regulatory complexity of this topic, then I would say it makes up 80% of the entire solution because the technology is there already. The technology also has been tested.

You need to have data privacy and you need to be able - as a prosumer - to give consent to what data you

are sharing with which application. Because ultimately, there is much more that you can do with energy data than just billing: energy data will give you a lot of intelligence if you have the right applications about living patterns, about consumption patterns, and so on.”

He explained the crucial role that smart meters will play in accelerating digitalisation of the grid network, “the key to the distribution grid being capable of managing a decentral energy system is basically the highest level of digitalisation and modification you can get - smart meters are an absolute prerequisite for that, but you also need to have substation automation as much as you can, because ultimately, in a decentralised energy world - or in a more decentralised energy world - the central distribution grid needs to be able to react really fast in order to balance supply and demand as well.”

**Carsten Stoecker**, said, “the peer-to-peer energy market is the perfect approach to include inclusivity because everyone can participate, everyone can be their own producer/consumer, and for that reason, P2P is an excellent approach, enabled by blockchain.”

**Dmitry Lomilin**, explained that blockchain provides the ability for everyone to build applications on top of the common infrastructure which makes collaboration more efficient, he said that, “once you have created this, you also then create the ability for cross organisational workflows to be dramatically simplified. But we need to go through all the steps and explore new ground to be the winner, invent shared business models, build shared applications, sell to the main players and compete with the old approach to get the best results. The reason why cryptocurrency is booming while B2B is waiting, to me, the main reason is this change barrier side. All of us believe in the future of this technology, we believe that blockchain will be successful, and in time, it will become unstoppable.”

**Martin Nagel**, added, “blockchain has the potential to completely disrupt the way the energy industry works; it changes the way contributors get compensated, it can change the way consumers are procuring electricity and it can change the authentication of the sources of electricity ■”





▶ WATCH FULL VIDEO

# DAY THREE The Green Chain Conference Keynote



**H.E. Ellen von Zitzewitz**  
Deputy Director,  
International Energy Relations, Federal  
Ministry for Economic Affairs and Energy,  
Germany  
(virtual)



As an energy importer and a strong supporter of the global energy transition, Germany is developing, and attempting to find energy cooperation, with key partners such as the UAE.

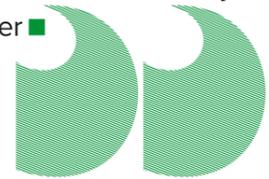
The launch of the Emirati-German hydrogen task force beginning this month led by His Excellency Suhail Al Mazrouei and our State Secretary Andreas Feicht in Dubai, was another important milestone in our cooperation.

Where energy efficiency and direct use of renewable electricity are not sufficient for decarbonisation, such as in heavy industry or air transport, we will rely on hydrogen and synthetic fuels produced in a climate friendly way. It is now necessary to bring the available hydrogen technologies in which German companies are amongst the global technology leaders, to scale. We know that we cannot cover our national demand for clean hydrogen from domestic production alone. We therefore need

reliable partners such as the UAE to achieve our national hydrogen and energy transition target.

Our joint objective through the hydrogen task force within the energy partnership, is to support the market uptake through knowledge exchange on policies, regulations, and technologies.

The UAE is an ideal partner for Germany to move closer to ambitious decarbonisation goals. We strongly believe that further exchange and collaboration will be beneficial for both parties and we are proud of the steps we have already achieved together ■





▶ WATCH FULL VIDEO

## DAY THREE The Green Chain Conference Keynote



**Namir Hourani**  
Managing Director,  
Global Manufacturing and  
Industrialisation Summit



**M**anufacturing is important. Manufacturing has one of the largest multiplier effects on economies: manufacturers create jobs, they pay taxes to government, they encourage R&D and they boost innovation. It is fair to say that manufacturing is an enabler for prosperity, but all of the new jobs, the innovation, the boosted economies, none of that matters when the manufacturing industry is also one of the largest contributors to greenhouse gas emissions worldwide. Manufacturers must accept this fact; they must accept the responsibility and they must understand the important role that they have to play in advancing the climate agenda.

They need to be more aggressive in their efforts to decarbonise their facilities. One way of doing this, is through deploying renewable energy technology solutions, which are currently very expensive to produce. These high costs are also why it is a challenge for developing countries and

least developed countries, to adopt technologies that are essential to maximise the potential of their abundant renewable energy resources.

We launched the Green Chain Initiative. It is an unconventional impact investment platform that aims to accelerate the global decarbonisation of the manufacturing sector, by curating sustainable investment projects and utilising blockchain and crypto technologies, to offer an online platform to encourage environmental impact investments in developing countries.

The Green Chain platform was developed as a tool for inspiration, one that future investors can utilise to take up the task and become actors in the circular economy of our planet. The platform will accelerate the global green agenda, democratise investments, and drive the adoption of more renewable energy projects ■





# GMS DAY THREE



Mohammed Bin Rashid  
Initiative for  
Global Prosperity

a GMS initiative

WEDNESDAY, 24 NOVEMBER 2021



▶ WATCH FULL VIDEO

DAY THREE

Global Prosperity Conference

# Opening Remarks

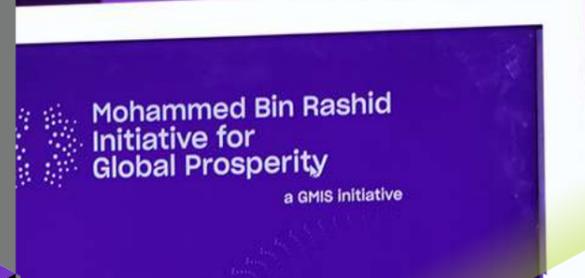
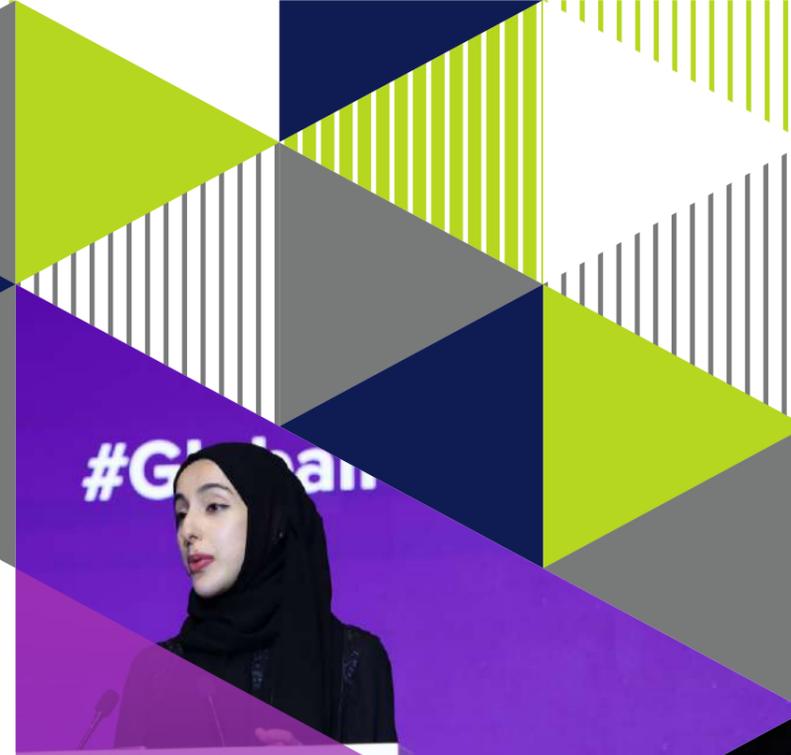
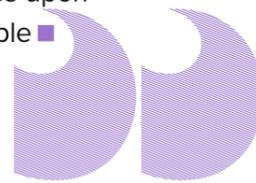


**H.E. Shamma Al Mazrui**  
Minister of State for Youth,  
UAE



Prosperity depends on youth. Youth empowerment is not a mere virtue; it is not about filling a political void. Youth empowerment is another term for achieving prosperity. Investing in all youth leads to unlimited compound interest and true prosperity. The Global Prosperity Conference is about serving humanity for the long term and investing in the young people who will carry our torches the farthest. The UAE's model for investing in youth, is a living case study on the path to real 21st-century prosperity. We listen to youth, act on their ideas, and put them front and centre alongside policy and decision makers. We make youth the innovators and creators of our tomorrow.

If you look at the data of the recent Arab Youth Survey, it shows that Arab and young people in the region, are filled with hope and optimism, and it's the government's duty to take that hope and fuel it with action. If you have a hope map, youth are the GPS. Youth, if they despair, then we regress. If they hope, we move forward. If they prosper, humanity will profit. Looking at the data, 1.8 billion people between the ages of 10 and 24 in the EMENA region, it's 60% of our population. In the UAE, 50% of our population are under the age of 35, the data is clear. The United Arab Emirates believes that the dividends of all aspects of our world hinges upon the investment in young people ■





[WATCH FULL VIDEO](#)

DAY THREE

## Global Prosperity Conference Panel Discussion



**H.E. Ahmed Al Shamsi**  
CEO,  
Emirates Foundation



**Beau Seil**  
Partner,  
Patamar Capital



**Sarah Pirzada**  
Managing Director,  
Global Head of  
Sustainable, Asset  
and Project Finance,  
FAB



**Dr. Raphael Nagel**  
Chairman of the  
Board,  
The Abrahamic  
Business Circle

### Scaling impact investment: Prosperity at a price?

Impact investing attempts to increase alignment between the public and private sectors by offering opportunities for investors to materially advance progress towards meaningful social and environmental goals. However, as this form of investing gains popularity, questions over scalability, intention and integrity, have been raised.

**Ahmed Al Shamsi**, said the challenges of the future are quite complex, potentially more complex than what we are facing now. He added that “the youth of the next generation need to be equipped properly with the knowledge and the mindset in order to approach some of these issues. Today, it is no longer just one actor, or one sector. The issues, the range and the scale that we are facing, need to be addressed from all parties and the youth will play a big role at the forefront of tackling some of these global issues.”

For **Beau Seil**, technology is a key factor that will alter the way financial gains are shared with stakeholders and will increase access to critical products and services for the youth, the emerging middle class, and low and middle-income people all across the world.

He referred back to the initial concept of the internet and the potential democratisation that will be brought about by web 3.0, “now we are thinking through blockchain and what web 3.0 looks like, and really democratising access in a potentially revolutionary way, that was the hallmark of the initial concept of the internet. From our perspective, we still fundamentally believe that technology platforms will reshape industries, change the way that economies function, and change the way that economic gains are shared with all stakeholders.”

**Sarah Pirzada**, spoke of ESG as absolutely fundamental, “what we have seen is a huge shift from Green towards sustainability. Prior to the pandemic, perhaps the focus was very much on Green, but now the shift is also towards social impact, as well as impact through governance.”

She added that today’s youth will be key in advancing the global good agenda and will be more inclined to invest based on environmental, social and governance principles. She also highlighted the role financial institutions play in advancing sustainable investing, “the governments are playing their role in





▶ WATCH FULL VIDEO

DAY THREE  
Global Prosperity Conference  
Panel Discussion

Scaling impact investment: Prosperity at a price?

terms of pushing the sustainability agenda, but at the same time, the corporates need to do their fair share as well in terms of giving those ESG disclosures, and as financiers, we feel that we can actually shape the industry, by encouraging and financing those practices which are more sustainable.” Pirzada emphasised the critical importance of private-public partnerships in this space, as well as, towards education, healthcare, and waste-to-energy projects.

Dr. Raphael Nagel, echoed similar thoughts, citing public-private partnerships as fundamental to our future prosperity, “the governments play a very fundamental role in the future, especially in the quickest growing continent, Africa. By 2050, the population of Africa will be more or less double what it is now. On one side, technology is amazing, because we get a lot of advances, on the other side, we could introduce more technology – many old jobs

of the old industry will not exist anymore. We really have to think about how we are developing this; we need to try to avoid migration, to promote foreign direct investment and to promote education in the country, so that people can stay in their natural environment with their families and keep to some of these structures ■ ”





[WATCH FULL VIDEO](#)

DAY THREE

Global Prosperity Conference

## Panel Discussion



**Erfan Ali**  
Regional Director, Arab  
Region,  
UN HABITAT



**Fadi Ghandour**  
Founder and  
Executive Chairman,  
Wamda



**Ibrahima Guimba  
Saidu**  
Chief Futurist,  
CEO, ANSI and Board  
Advisor,  
SDG Lab



**Vilas Dhar**  
President,  
Patrick J. McGovern  
Foundation



**Busi Mabuza**  
Chair,  
Industrial Development  
Corporation,  
South Africa

### The decade of action: A countdown to prosperity

**D**r. Erfan Ali, spoke of the decade of action as a call by the Secretary General last year, to accelerate sustainable solutions for our global challenges: for gender, for poverty, for climate change, for the finance gap, and for inequalities.

He highlighted the urgency of the 2030 agenda by saying, “unfortunately, we are lagging behind on all 17 SDGs on the 2030 agenda, and to make it worse, we had COVID last year and unfortunately we still cannot talk about post-COVID because we are still witnessing more waves. So, as the Secretary General announced, to recover or to achieve sustainable recovery from the pandemic, we only have the SDG agenda, it’s still valid and it will continue to be valid and we must focus, we must concentrate all our efforts to achieve the SDGs.”

He mentioned the need to capitalise on partnerships between the private sector, the public sector, civil society, philanthropists, and youth groups, adding that partnerships will be a key enabler to achieving the

SDGs and the Agenda 2030, “it is the only way. Engaging all - women, men, youth, children, everyone, government, philanthropists, private sectors, cities, local governments, everyone.”

According to **Fadi Ghandour**, there needs to be an institutional process for engaging the private sector, he added that “there is quite frankly total mistrust between the public sector and the private sector specifically in emerging markets, and it needs to be recognised. It is just not working.”

**Dr. Ibrahim Saidou Guimba**, proposed a possible solution to the issue of mistrust between the public and private sector, “if governments actually create the platform to discuss how to change the situation for peoples’ lives, there will be a meeting point between the government and private sector. The government needs to do more to build trust but it can only do so by focusing on the end goal, which is people.





[WATCH FULL VIDEO](#)

DAY THREE

Global Prosperity Conference

## Panel Discussion

### The decade of action: A countdown to prosperity

For **Vilas Dhar**, technology companies are made up of scientists and engineers who aspire to break the boundaries of what is possible in order to build products to advance humanity, “let us also acknowledge that technologies are human institutions, they are driven by motivations and incentives and market behaviours. To say that they are only driven by profit is quite unfair. But let us also acknowledge that there are behaviours and motivations there that are complex. Let us instead start a conversation about the palace we want to build for all of humanity to live in, and make sure that each room is fit for purpose.”

**Busi Mabuza**, said, “it is us who have to stand up, and by us, we do not mean women. I mean everybody that is sitting here because we have recognised that the challenge is that the SDGs are actually interconnected; you cannot leave women behind and hope to achieve no poverty, you cannot leave women behind and hope to do away with hunger. It is therefore important at every single point that we test whether we are addressing the SDG requirements or not, and recognise that there is interconnectedness in this challenge ■”





▶ WATCH FULL VIDEO

DAY THREE

Global Prosperity Conference

## Panel Discussion



**Roberto Croci**  
Managing Director,  
Microsoft for Startups,  
MENAT and Pakistan



**David Rosenberg**  
CEO,  
Aerofarms



**Jida Itani**  
COO,  
Hub71



**Bruna Braga**  
Head of Partnerships,  
MIT Solve



**Moody Soliman**  
Co-Founder,  
RYP Labs

### Solving the mentor-mentee equation: Is there a science to it?

**R**oberto Croci, spoke of the diversity of Microsoft’s mentorship programme, adding that mentors are either internal employees from Microsoft, external mentors from the region, or mentors from outside the region, “what we try to do is to facilitate the process for founders and mentors to find each other in a meaningful way, meaning we encourage the people on both sides to define what their objectives are in the relationship, to be clear on that from the very beginning - we believe that is extremely important. It is not just a pure relationship, there should be objectives and there should be moments during the relationship to remind each other - mentor and mentee - why they chose each other. When you are setting up, you need some more concrete experience from people that have done it, especially in a specific region, and when you are scaling up, you need someone who has been growing a business, so typically, you might need different people and there is nothing wrong with that - it does

not have to be one mentor only. I believe that there are, and there should be, courses and empowerment in skilling for both mentors and mentees.”

**David Rosenberg**, added that “it is really important for people to develop their networks based on common problems that they might experience as an entrepreneur as they scale their business. It is about building a relationship of trust and confidence so you can have that interaction; trust is key and the next is intellectual honesty.”

According to **Jida Itani**, a focus on community is important, she added, “so, the more you bring in the key elements, the more you bring in people that are likeminded individuals, passionate people that share the same mission as you. We believe the element of community – and a community that shows the same values, the same passion, the same objectives overall at a higher level – is critical for a founder’s wellbeing, a founder’s success and it could actually accelerate





▶ WATCH FULL VIDEO

DAY THREE

Global Prosperity Conference

## Panel Discussion

### Solving the mentor-mentee equation: Is there a science to it?

their growth not only as an individual but also as a business.”

She highlighted diversity as key to the process, believing that, at every stage of the start-up journey, multiple mentors can help guide mentees through various issues or questions they have, “the good thing about founders is that they are very curious in nature, so asking a lot of questions and finding the path to the answer comes naturally to them - the availability of mentors is very important through that journey. On both sides, there should be some element of trust, openness, and willingness to give and provide feedback, but just like any relationship, it requires time, nurturing, commitment, and preparation.”

For her part, **Bruno Braga**, said, “the way we are structured, we call ourselves a marketplace, so on one side of it, we have the entrepreneur that we select for our global innovation challenges and on the other side, we have what we call members - they are cross sector leaders who join this community because they want to give back. One of the ways in

which they do that is by signing up to mentor one of the solver teams, which is what they call the entrepreneur we select. So, they already come to this community with the mentality of wanting to give their time, give back or pay forward to social impact entrepreneurs. It is important to align the expectations on both sides so that the mentee is not expecting the mentor to do all of the work.”

For **Moody Soliman**, one piece of advice he gives to start-ups looking for a mentor, is to avoid partnering with someone who is just going to give their opinion, “give a man a fish, he eats for a day, teach him how to fish, he eats for a lifetime. And this is really what you will look for in mentors. You really want the mentor to develop the mentee, to help him evolve and to help him be able to solve problems on his own eventually so he can go off and potentially mentor other mentees as well. Fundamentally, you just have to remember that people generally want help, and so, you always have to keep that in mind, as well as the fact that it's a two-way road ■”





WATCH FULL VIDEO

DAY THREE

## Global Prosperity Conference Panel Discussion



**Sukhmeet Singh**  
Founder,  
A2P Energy Solution  
Private Limited



**Michael Cottle**  
Global VP,  
NextBillion.ai



**Bernhard Kowatsch**  
Head of Innovation  
Accelerator,  
United Nations World  
Food Programme



**Dr. Sama Mbang**  
Founder and  
Executive President,  
Digital-Transformation  
Alliance

### Turning obligation into opportunity: Accelerating innovation for success

**Sukhmeet Singh**, commented on his experience with an industry specific accelerator, run by French multinational, Veolia, “with that accelerator, we were actually able to partner under their carbon neutrality programme to help supply them with green fuel and replace coal through them. If that was not part of the acceleration programme, it could have been almost impossible to work with them at that scale. So I guess specifically to our domain, the industry focus has helped a lot.”

**Michael Cottle**, said, “there is a value in the infrastructure that accelerators provide. There are also networking opportunities they create within their portfolio for companies, and then third, it is access to organisations and decision makers that you would not necessarily have access to. It has to be a balanced portfolio of services and resources that are available to the entrepreneur or to the start-up. So, if you are more experienced, you might not need much pitch help but it is not just about funding, you need other services to help provide a balance.”

Commenting on the importance of pitch training, **Bernhard Kowatsch**, said, “a lot of start-up founders just say that is unnecessary but if you do not have in your elevator pitch, your 30 second version of what your start-up is, you will not be successful, you will not raise funds, you will not find other partners. Everybody hates pitch training but it is very useful.”

**Sama Mbang**, said, “when we talk about global prosperity, I would like us to focus on that which is really missing, this path to drive innovations that can drive industrialisation at scale. We maybe need to re-think how we drive accelerators. You must have a great mindset, what I call a transformational leadership mindset, so always try to create your own future, do not focus on rules. ■ ”





# GMIS WORKING GROUPS



GMIS WORKING GROUP

## Inclusive and Sustainable Industrial Development (ISID) Index

**G**lobal industry leaders at #GMIS2021 met once again in the capacity of an expert working group to develop an Inclusive and Sustainable Industrial Development (ISID) Index designed to measure both country-level industrialization trends, and economic, social and corporate governance (ESG) performance for the public and private sectors. The ISID index will ultimately complement UNIDO's Competitive Industrial Performance (CIP) Index, providing a complete framework for measuring manufacturing performance, sustainability and economic inclusion, and advancing social impact.

An initial policy brief was discussed to provide an outline for the implementation of key action points to best guide world-leading corporates, enterprise groups and government entities on industrial development and ESG deliverables and attract sustainable impact investments.

Moderating the session was Fernando Cantu Bazaldua, Chief Statistician, UNIDO. He said: "UNIDO is currently revisiting its industrial competitive metrics to better align them with the ISID paradigm, including changes brought about by digitalisation and other enablers of modern industrial progress in order to provide a full picture of ISID trends and their impacts on the Sustainable Development Goals (SDGs)."

Participants in the working group included Roberto Alvarez, Executive Director of the Global Federation of Competitiveness Councils (GFCC); Ramez Danan, Regional Chief Technology Officer at Microsoft; Ayman Ismail, Vice President of Industrial Automation and

Business Development at Schneider Electric; and Christos Cabolis, Chief Economist and Head of Operations at the World Competitiveness Center.

### Action Points:

- UNIDO, as the custodian of the SDG 9 indicators on ISID, and GMIS are committed to deliver an index built on ESG performance and account for ISID results to be inclusive of emerging 4IR technologies and impact investment to develop a robust and transferrable framework.
- The index will complement UNIDO's Competitive Industrial Performance (CIP) Index by measuring a country's contribution to the development of the manufacturing sector at a local and global level and address their interaction with key enablers, such as the adoption of 4IR and new industrial technologies. The CIP Index assesses industrial competitiveness across three dimensions such as capacity to produce and export manufactured goods; technological deepening and upgrading; world impact and benchmarks it against the country's direct competitors or regional neighbours.
- The emerging concept of economic, social and governance (ESG) performance ensures there are no adverse impacts on the environment or societies. Its integration into the ISID Index will provide crucial to reconcile policymakers, regional bodies, entrepreneurs, innovators, businesses and the people that are directly and indirectly involved in industrial production through a general framework.
- As such, the ISID Index will serve and advance the manufacturing sector by capturing the social and environmental facets of industrial development in the context of accelerating a smooth transition to 4IR by shaping sectoral specialisation and consequent structural change to determine the contribution of industry to overall prosperity and long-run sustainable growth while promoting impact investment.
- The ISID index shall be built upon five main principles: (i) the index shall cover all dimensions of Inclusive and Sustainable Industrial Development: economic, social and environmental; (ii) the index should extend beyond outcome indicators and also link to input or processes leading to ISID; (iii) the index must be actionable and able to be linked to policy programmes; (iv) the index should be disaggregated and used for the analysis of subnational trends; and (v) the index shall accommodate the analysis of the individual contribution of firms and enterprise groups towards ISID.
- The working group endorses the five-step approach for the development of the index, which includes (i) the development, testing and validation of the methodology; (ii) identification of data sources with sufficient coverage and calculation of the index; (iii) designing of reporting guidance, including on the contribution of firms; (iv) implementation of pilot studies; and (v) official launch of the index during the second half of 2022.





GMIS WORKING GROUP



## The Global Initiative for Future Industrial Safety

The GMIS Working Group gathered senior representatives from industry, academia, international organisations, and regulatory bodies from around the world as part of the GMIS Week’s mandate to develop the Global Initiative for Future Industrial Safety (GIFIS). Together, they discussed new safety risks and solutions associated with adopting emerging technologies such as IoT, Big Data analytics, and advanced robotics. Discussions also centred on the current lack of global information-sharing mechanisms to promote safety best practices globally across firms, supply chains, and sectors. The Working Group informs the Initiative’s programme of work as it moves into its implementation phase in 2022.

The moderator of the session, Farrukh Alimdjano, Industrial Development Officer at UNIDO, said: “Safety is not always the main priority, which may lead to an increase in workplace-related accidents and maybe even disease if not properly addressed. The discussions today offered an opportunity to design and develop initial delivery for the inspiring initiative with the Lloyd’s Register Foundation and GMIS Organising Committee, showing promise for international collaboration that will advance safety in the future of industry.”

Participants included Oliver Authried, Project Administrator at UNIDO; Michael Tooma, Managing Partner at Australia Clyde & Co; Evgeny Goncharov, Head of Kaspersky Lab ICS CERT; Jc Sekar, CEO at Acuzen Technologies; Farrukh Alimdjano, Industrial

Development Officer at UNIDO; Kate Field, Global Head Health, Safety and Wellbeing at British Standards Institution; Rashid Almulla, Director of Technical Coordination Department at Etihad Rail; Issa Khalfan Nasser AlRawahi, Advisor Health and Safety at Mubadala Sanad; Prof. Mark Johnson, Professor of Materials Science and Engineering and Director of the Center for Advanced Manufacturing Clemson University; Charanjeet Singh, SVP & Head of Fraud Risk and Investigations at First Abu Dhabi Bank; Georges El Mir, Industry Vice President Middle East and Africa at Schneider Electric; Maxim Krayushkin, Strategic Business Analyst at AIQ; Douglas Ramsey, Partner at HYT Advisors; Abdulla Al Zaabi, Health and Safety Director at Emirates Nuclear Energy Corporation.

El Mir said, “Facilitating global cross-sectoral cooperation offers a maximum flow and exchange of information needed to achieve more widespread industrial safety. The dynamic exchanges that occurred during the working group have invaluable refined key areas of action that will positively contribute to the development of safety standards in the workplace.”

**Action Points:**

- GMIS, UNIDO, and the Lloyd’s Register Foundation to spearhead the Global Initiative for Future Industrial Safety (GIFIS) to accelerate global workforce skill development across 4IR technologies and encourage knowledge-sharing of safety practices.

- GIFIS will bring safety and technology experts together and provide access to resources for practitioners, including accessible information and self-assessment guidance.
- The Working Group shall raise awareness and establish a prized competition to encourage safety to run globally across firms, supply chains, and sectors to bring forward key actions they are taking to enhance safety. It shall also establish projects on workplace safety in less developed countries.
- The Working Group will generate knowledge products on the technologies of tomorrow and their safety implications for women and men, such as horizon scanning, in addition to developing safety performance metrics and encouraging global benchmarking practices for safety performance.
- The Working Group will advance mechanisms and safe spaces to gather communities of organisations seeking leadership in the industrial safety field, defining a clear value proposition for organisations to cooperate in an open, pre-competitive manner.





GMIS WORKING GROUP

## Gender Equality and Future Industry

The GMIS Working Group on Gender Equality and Future Industry gathered senior industry leaders, policymakers, and innovators from around the world at #GMIS2021 to improve women's representation in the workforce, tackle (un)conscious biases, and drive inclusive economic progress. Participants discussed the deliberate inclusion of gender considerations in investments, known as gender lens investing (GLI) to develop a gender-responsive and inclusive manufacturing sector. Discussions centred around the heightened gender gap experienced in the manufacturing sector at the turn of the Fourth Industrial Revolution (4IR). Participants focused on the benefits of GLI and its growth potential to supplement a gender-smart digital transformation at cross-industry and cross-sector levels in preparation for the launch of the free, open-access GLI course developed by UNIDO.

Moderating the session, Jessica Neumann, Investment and Technology Promotion Expert at the United Nations Industrial Development Organization, said: "We would really like people at GMIS and UNIDO to join forces and share knowledge. At the UN we sometimes speak a different language than the private sector and there is need for translation. The GMIS WG could help in spreading the word".

- Joining Jessica Neumann as moderator, participants at the session included Nicolas

Schmidt, Gender Associate at UNIDO; Fernando Cantu Bazaldua, Chief Statistician at UNIDO; Yvonne Chebib, Executive Senior Director and Commercial Partner Organization leader at Microsoft UAE; Leena Abu-Mukh Zoabi, Head of International Cooperation at Skolkovo Foundation; Dr Chitra Rajan, Managing Director at Radix Group; Ismail Ali Abdulla, CEO at Strata Manufacturing PJSC; Marita Mitschein, Co-founder and CEO at Phoenix Rising; Tiffany Kelly, Co-Founder and CEO at Phoenix Rising; Chiara Corazza, Managing Director of the Women's Forum for the Economy; Katherina-Olivia Lacey, Co-Founder & Chief Product Officer at Quincus; Beau Seil, Partner at Patamar Capital; and Natascia Radice, Owner/Founder of Equilibrium/Zero

**Action Points:**

- The future of inclusive industries will depend on how 4IR addresses gender inequalities to reap the full benefits of future industrial activities.
- Targeted gender-responsive actions, policies, and investments are crucial to tackling challenges the industrial sector faces across digitisation, automation of production, technological advances, and innovation. These include the perpetuation of gender-biased products and technologies, the high percentage of (soon likely to be) automated roles held by women, thereby rendering them more

vulnerable to job loss, and the overarching unequal participation of women in 4IR advancements.

- The UNIDO Gender Lens Investing (GLI) training is a free, open-access and self-paced course designed to raise awareness of how gender can be integrated into all stages of investment practices. The training will provide tools on establishing structures and strategies in a view to support women entrepreneurs, advance gender-responsive products, and promote more diverse and inclusive work environments.
- The GLI training can help inform future industrial policies and development programmes as they shape, operationalise, and define inclusive industrial standards and investment practices. The training aims to increase the understanding of how to use finance as a tool for social change and empowerment, and can assist in addressing the gender digital divide by promoting technology-driven, innovative solutions that allow women to lead, participate in and benefit from industrial development.
- By employing a deliberate and comprehensive gender analysis framework across the investment process, GLI can play an important role in achieving improved gender equality goals globally across market, sector and supply chain levels, and





## GMIS WORKING GROUP

# Gender Equality and Future Industry

in promoting inclusive economic growth. This includes investing in businesses, initiatives, or programmes that: are led by women/majority women-operated; promote gender equality in their internal practices and workplace policies; or offer products or services that positively impact women. There is a significant business case for advancing gender equality, hence applying a gender lens to internal procedures and decision making within day-to-day investment processes will be a considerable changemaker for investors and women entrepreneurs alike.

- Gender lens investing and the 4IR reinforce each other by way of unlocking investment capital to help close the gender financing gap and the gender digital divide, as well as to harness women's full potential as leaders, innovators and agents of sustainable growth. Gender-responsive investments within the manufacturing sector will support an inclusive digital transformation and the reduction of socioeconomic inequalities.
- The Working Group will promote UNIDO's e-learning course on Gender Lens Investing to interested stakeholders as well as produce additional educational and promotional materials to be included in the course.
- After collecting feedback, the Working Group will issue a quality assurance certificate for the e-learning course.



# Join GMIS America in 2022

**GMIS** | AMERICA  
PITTSBURGH

#GMISAmerica  
2022 | Pittsburgh, USA

[www.gmisummit.com](http://www.gmisummit.com)

REGISTER HERE

