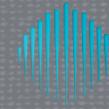


“We believe that it is the mission of the new generation to leap toward the future, and we have witnessed their capacity for innovation and excellence in drafting an attainable vision of future governments”

His Highness Sheikh Mohammed bin Rashid Al Maktoum
Vice President & Prime Minister of the UAE, Ruler of Dubai



WORLD GOVERNMENT SUMMIT

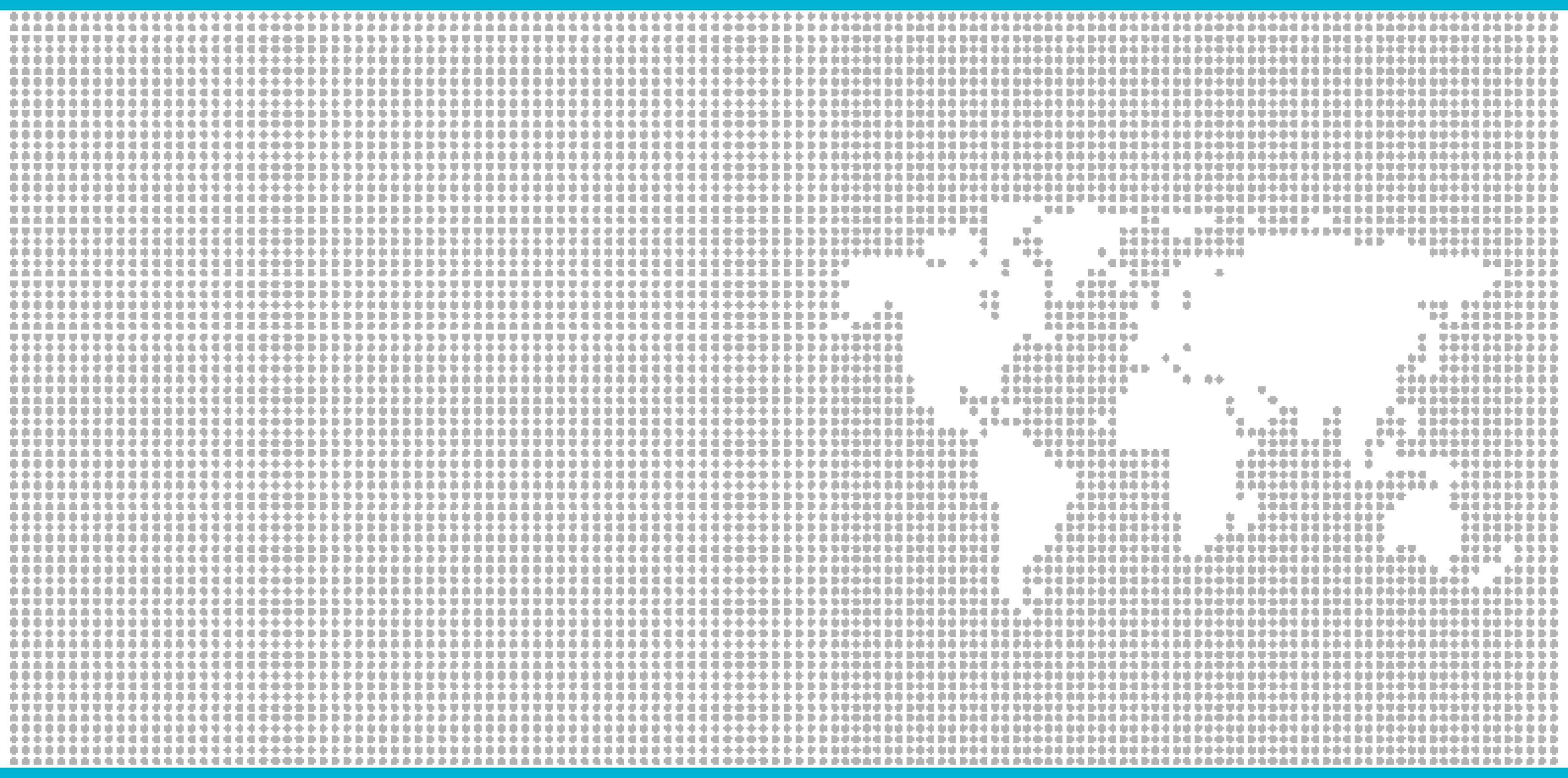
Overview

2018



2018









His Highness Sheikh Khalifa bin Zayed Al Nahyan

President of the United Arab Emirates



His Highness Sheikh Mohammed bin Rashid Al Maktoum

Vice President & Prime Minister of the United Arab Emirates, Ruler of Dubai



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July 2018
Dubai, United Arab Emirates

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Featured Partners



Edge Of Government Partner



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Media Partners





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World Government Summit 2018

The sixth edition of the World Government Summit was held in Dubai, United Arab Emirates (UAE), in February 2018, under the patronage of His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President & Prime Minister of the UAE, Ruler of Dubai.

Attracting more than 4,000 participants in 2018, including global political leaders, international policy-makers, researchers, innovators and academic experts from 139 countries, the World Government Summit cemented its place as an internationally renowned platform dedicated to shaping the future of governments worldwide.

The World Government Summit 2018 featured more than 280 thought leaders speaking across 130 sessions to share their knowledge and experiences,

and present research findings and best practice. In addition to the main programme, the sidelines of the World Government Summit form a stage for international cooperation, a meeting place for nations and organisations to come together, for governments to sign agreements and for visionaries to launch novel initiatives and showcase embryonic technologies.

The World Government Summit has established the UAE as a centre for international cooperation, thanks to the vision and guidance of the nation's leadership, and plays a significant role in formulating global trends. It sets the agenda for leaders and policy-makers to debate how the next generation of governments can harness innovation and technology to solve the challenges facing humanity today and in the future.

The Summit In **Numbers**



280+
Speakers



139
Participating countries



1.2m+
YouTube views



130+
Interactive sessions & activities



17,000+
Articles, reports & media exposures



\$16.2bn+
Value of deals announced



4,000+
Participants



13+
Media partners



440,000+
Social media followers

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Main Agenda

Global political leaders, international policy-makers, innovators and academic experts proposed solutions to the world's most pressing challenges in order to **build a prosperous future for humankind**

Inaugural Address Of The **Guest Country**

Hon Narendra Modi
Prime Minister of India

“Empowering the common man to be the source of constructive change is another vital component of the technological revolution”

During his inaugural address to the World Government Summit 2018, the Honourable Narendra Modi, Prime Minister of India, emphasised the importance of technology in overcoming today's problems. He commended advancements in the medical and scientific spheres for increasing life expectancy and

quality of life, and hailed Dubai for being at the leading edge of global innovation.

Modi emphasised that while technology has sometimes been manipulated to cause destruction, it is an overwhelmingly positive force of change and should be brought out of laboratories and into the real world to allow the general population to benefit from its power.

The Prime Minister concluded by hailing advances in space technology, and urging humankind to unite in order to address collective challenges of the future.



Main Address: Progressive Policies For A **Successful Future**

HE Édouard Philippe
Prime Minister of France

"The vision of one man has the ability to change the future of the country, and in turn, the world"

His Excellency Édouard Philippe, Prime Minister of France, stressed the need for all countries to adapt to a changing world and to implement and embrace progressive policies to ensure a more successful future.

He highlighted the UAE's rapid, forward-looking development. He cited the late His Highness Sheikh Zayed bin Sultan Al Nahyan, Founding Father of the UAE, to illustrate that the vision of one man had the

ability to change the future of the country, and in turn, the world. World leaders must follow such an example and embrace change, Philippe asserted.

France went through a transformational period in 2017, he explained. His home country had to decide to leave behind old traditions and embrace new ideas, which began with the election of Emmanuel Macron as President.

He stressed that no country can work in isolation. People can only transform the world and create a sustainable tomorrow by working together, the Prime Minister concluded.



The Land Of **Inspiration & Opportunities**

Lt Gen HH Sheikh Saif bin Zayed Al Nahyan

Deputy Prime Minister & Minister of Interior of the United Arab Emirates

“Sheikh Zayed was a visionary leader who thrived on overcoming obstacles, no matter how hard, and was – and will forever remain – a source of inspiration”

Lieutenant General His Highness Sheikh Saif bin Zayed Al Nahyan, Deputy Prime Minister and Minister of Interior of the UAE, launched the global inspiration platform 'Zayed The Inspirer' during his session at the World Government Summit 2018. The platform is dedicated to the legacy of the late Sheikh Zayed bin Sultan Al Nahyan, Founding Father of the UAE.

The website, zayedtheinspirer.ae, was inaugurated to mark the 100 year anniversary of Sheikh Zayed's birth. It is intended to be a database for inspirational stories from all over the world, and a source of motivation and insight for all mankind.

Announcing the launch of the inspiration platform, Sheikh Saif highlighted how the UAE has achieved great progress and prosperity by transforming challenges – no matter how difficult – into opportunities. He pointed to the visionary leadership of Sheikh Zayed and the groundwork he laid for the success and growth of the nation.



Using The Global Recovery To Create **A Fairer World**

HE Christine Lagarde

Managing Director of the International Monetary Fund

Richard Quest

Anchor & Correspondent for CNN, Moderator

“The major reforms are all composed of multiple small things that all need to move as well. You don't solve the huge problem with huge reforms, you reform it by dissecting it into small pieces and then addressing each segment of the problem”

Her Excellency Christine Lagarde, Managing Director of the International Monetary Fund, addressed the recent turbulence in global financial markets in a conversation with CNN's Richard Quest. She said the stock market fall was more of a necessary correction than a crash.

Lagarde highlighted the need to redirect regulation away from entities – such as banks and insurers – and towards activities in order to predict the next crisis, citing shadow banking and rising cryptocurrency values as potential market pitfalls.

She highlighted the UAE as a country that successfully recognised imminent changes to its economy, such as tumbling oil prices, and took measures to change its business model to weather any potential fallout.

Lagarde also touched on the importance of acknowledging changes stemming from the digital age, citing the #MeToo movement as an example of how cultural shifts, as well as economic shifts, were vital to protect the economies of the future.



The Importance For Governments To Invest In Human Capital

HE Dr Jim Yong Kim

President of the World Bank Group

“Everyone’s aspirations are going up, but low-skilled jobs are going down and we have to address that”

In a main address to the Summit, His Excellency Dr Jim Yong Kim, President of the World Bank Group, said it is essential for countries in the developing world to work to improve their human capital – the collective skills and knowledge of the populace – in preparation for the future state of the job market.

Dr Kim highlighted that by 2050, 150 million older people will vacate their jobs. In that same period, 450

million new people will be ready to join the workforce, he said, leaving a gap of about 300 million jobs that must be bridged.

He pointed out that technology will further exacerbate this shortage, as it increasingly takes over certain positions. At the same time, billions more people around the world will get access to the internet, which will in turn raise their aspirations and expectations.

Preparing for this reality, Dr Kim said, means improving education and ensuring children are healthy. These two factors will be essential to giving future generations the best chance of achieving a successful future.



One On One With **Angel Gurría**

HE Angel Gurría

Secretary General of the Organisation for Economic Co-operation & Development

Richard Quest

Anchor & Correspondent for CNN, Moderator

"Better policies for better lives – if it's not about better lives then it's not worth it"

In a one-on-one session with CNN anchor and correspondent Richard Quest, His Excellency Angel Gurría, Secretary General of the Organisation for Economic Co-operation and Development, asserted that the way in which the financial crisis of 2008 was managed has led to slow economic growth, high unemployment and increased distrust in political leaders and parties.

In the immediate aftermath of the crash, nearly all the focus was on increasing growth and productivity, while the social impact of the catastrophe was largely ignored, Gurría said. He added that many people around the world are disillusioned with the democratic process and feel like they have been left behind.

While damage has been done, it's not too late to rectify the situation. Multilateralism must return as the cornerstone of international cooperation, and there should be a link between social needs and developing policies to equip people with the skills required for the job markets of the future, Gurría advised.



Collective Intelligence In Action: UNESCO's Vision For A Better Future

HE Audrey Azoulay

Director General of the United Nations Educational, Scientific & Cultural Organization

“Education is not just about teaching children skills, but about passing on shared values and helping the youth become global citizens”

The world's top thinkers and decision-makers have a collective responsibility to create international dialogue and renew the commitment to find a solution to the world's most pressing problems, said Her Excellency Audrey Azoulay, Director General of the United Nations Educational, Scientific & Cultural Organization (UNESCO).

Because of the unique challenges society is facing today, intercultural dialogue is more important than ever, Azoulay asserted. Government leaders around the world must ask: 'What are the major forces that will shape the future?' and 'what world do we want to give to our children, and based on what values?'

Azoulay identified the world's most compelling problems as changes to technology, climate and demographics. An essential part of finding solutions to these challenges is investing in quality education, as well as free speech and the exchange of ideas, she concluded.



An Education System That Serves **Future Jobs**

HH Sheikh Abdullah bin Zayed Al Nahyan

Minister of Foreign Affairs & International Cooperation & Chairman of the Education & Human Resources Council of the United Arab Emirates

“Human capital is the main pillar of the Fourth Industrial Revolution”

Every child in the UAE's education system needs to be equipped with a changing skillset to prepare them for the jobs of tomorrow and enable them to be competitive on the global stage, asserted His Highness Sheikh Abdullah bin Zayed Al Nahyan, Chairman of the Education and Human Resources Council of the UAE.

More must be done to ensure the UAE becomes one of the most important global hubs for education, he said. While the UAE is making great strides in closing the gap between its education system – which is

ranked first in the region – and the education systems of the developed world, it only comes in at number 45 globally.

The UAE needs to 'break the mould', Sheikh Abdullah said, to change the way children are taught and re-evaluate the skills they need, with a particular focus on science, technology, engineering and mathematics, known as STEM subjects.

Sheikh Abdullah urged parents to encourage their children to embrace future careers in STEM industries, rather than traditional occupations in economy or business management for job security in the public sector.



Main Address: Using Data For **The Greater Good**

HRH Princess Haya bint Al Hussein

Chairperson of International Humanitarian City

"The lives of millions of people depend on the global humanitarian community and we believe that this much needed platform will dramatically help improve international aid and emergency response"

In her main address at the World Government Summit, Her Royal Highness Princess Haya bint Al Hussein, Chairperson of International Humanitarian City, announced the completion and official launch of the Humanitarian Logistics Databank.

HRH Princess Haya explained that the database will use technology to provide information that will

improve the delivery of aid to people in need worldwide, while emphasising the need for humanitarian organisations across the globe to collaborate to deliver faster and more effective relief to people in crisis. She also applauded the efforts of key figures in the UAE and more than 70 international humanitarian organisations whose cooperation and efforts helped gather the information required for the Humanitarian Logistics Databank.

HRH Princess Haya expressed her aspiration that the databank would serve as a cornerstone for information and would be a game-changing platform for sharing data. The Humanitarian Logistics Databank will be replicated by 10 additional philanthropic hubs by 2019, she announced.



Government Of The Future – Innovation & Technology

HE Achim Steiner

Administrator of the United Nations Development Programme

“Nations that are most successful in the long term are those that recognise economics may be a foundation, and not the destination in itself”

According to His Excellency Achim Steiner, Administrator of the United Nations Development Programme (UNDP), the innovations of today’s digital age – from the internet and advanced connectivity to live automation and artificial intelligence – have profoundly changed lives across the world.

Because of the extraordinary developments humanity will witness over the coming decades, which will be driven by innovation in this century, governments and governance will become critically important, he said.

If advances in technology allow governments to develop platforms that increase citizen participation to the extent that those living in rural areas – about half of the world’s total population – become as connected as the rest of the world, society will see an unprecedented level of innovation in governance, Steiner concluded.



Opening Address: Key **Global Challenges 2018**

Prof Klaus Schwab

Founder & Executive Chairman of World Economic Forum

HE Mohammad Abdulla Al Gergawi

Minister of Cabinet Affairs & The Future of the United Arab Emirates,
Chairman of the World Government Summit, Moderator

"Artificial intelligence is as important for humankind as the discovery of fire"

The opening address of the World Government Summit 2018 was delivered by Professor Klaus Schwab, Founder and Executive Chairman of the World Economic Forum in Davos, with an introduction by His Excellency Mohammad Abdulla Al Gergawi, Minister of Cabinet Affairs and The Future of the UAE, Chairman of the World Government Summit.

Al Gergawi explained data was the 'oil of the future' and programmers were the new excavators, adding that governments must equip themselves with the right

tools moving forward. The minister also singled out India as a 'driving force of the world's economy'.

Prof Schwab spoke about advances in technology and the crucial role artificial intelligence will play in everyone's future. After the financial and social crisis of the past decade governments must be accountable for the state of the world economy, he said, as the coming decades will bring risks and challenges in the form of politics, income disparity and cyber security.

Gender parity must also be high on the list of issues to tackle, Prof Schwab added, and a change of mindset must be integrated into all business and government entities.



Can We Create A Pandemic-free World?

HE Dr Tedros Adhanom Ghebreyesus

Director General of the World Health Organization

"It is not enough to respond to outbreaks; they must be prevented. The greatest current threat to health security is the absence of universal health coverage for 3.5 billion of the world's people"

The most shocking outbreak of recent years was the spread of Ebola out of West Africa in 2014. This exposed fault lines in global security by showing how a fragile health system could expose the world to a catastrophe, asserted His Excellency Dr Tedros Adhanom Ghebreyesus, Director General of the World Health Organization (WHO).

Since assuming his role at WHO in 2017, Dr Ghebreyesus has introduced measures for monitoring and reporting potential disease outbreaks. He emphasised that it is not enough to respond to outbreaks – they must be prevented.

Nations must implement universal health coverage, Dr Ghebreyesus said, which is something within the reach even for underdeveloped countries. The benefits of improved medical coverage go beyond physical health, he asserted, highlighting that it also helps economies grow and provides a large number of jobs.

In terms of the next pandemic, Dr Ghebreyesus advised governments to increase spending on preventing outbreaks as contingency funding is cheaper than meeting the full cost of an epidemic.



How To Tame A Volatile Market

Adena Friedman

President & CEO of Nasdaq

Hadley Gamble

Reporter & Anchor for CNBC, Moderator

“We are seeing a rapid advancement of the capital markets in Dubai and Abu Dhabi, as well as in Saudi Arabia – and I think that’s hugely beneficial, not only to local investors but to international investors looking to get more involved in the stocks and instruments that are traded there”

It is vital for governments to ensure markets are fair and transparent, said Nasdaq CEO Adena Friedman.

Governments must look at wages and growth percentages, as well as other data before choosing whether to raise interest rates, she advised.

Friedman also touched on the hot topic of cryptocurrency, pointing out that although the United States Securities and Exchange Commission thinks it’s too soon to introduce exchange rate notes for bitcoin regulation, some Nordic nations have already done so.

Friedman praised the work that Saudi Arabia and the UAE have done to develop fair and transparent markets. Investors have to be confident they are working in a fair environment, she explained, and companies listed on these markets provide open and honest information.

A government’s job should not be to cut off supply and demand, but should instead work to facilitate it, Friedman concluded.



Data: The Gene Of Intelligent Governments

Bill McDermott

CEO of SAP SE

John Defterios

Emerging Markets Editor & Anchor for CNN

"To me technology, unless it serves humanity, is without purpose. Our purpose is to help the world run better and to improve people's lives"

Bill McDermott, CEO of the software company SAP SE, told the audience that data is not like oil or gold. Instead, it should be compared to steel, because "you build everything from data".

The world is experiencing a 'customer-driven growth revolution' in which data and the ability to quickly process large amounts of it are pivotal, he explained.

McDermott highlighted that current figures indicate technology will be a 'force multiplier for growth', resulting in a \$30 trillion boost to the global economy by 2030. According to him, artificial intelligence and data will be central to this massive boom. Within this environment, improved training is vital, he said, because right now young people are not graduating from university equipped with the skills needed to succeed in the digital world.

McDermott also pointed out that there is significant tension between having a broad education system that teaches people a range of skills and allows them to keep their career options open and a specialist system which offers the very detailed training required by specific sectors.



The Outlook For **Global Trade** In A Hyperconnected World

HE Roberto Azevêdo

Director General of the World Trade Organization

John Defterios

Emerging Markets Editor & Anchor for CNN

“Developing effective policies to support people to adjust and to gain new skills is essential. But while we respond to the challenges created by economic change, we must also seek to embrace the opportunities – and that means continuing to embrace trade”

The World Trade Organization (WTO) will continue to play a fundamental role in the facilitation and regulation of international trade, asserted the organisation’s director general, His Excellency Roberto Azevêdo.

Responding to recent headlines, he said this was the first time the organisation has been the target of commentary. With 164 member countries, it is only natural that the WTO would face different political cycles, Azevêdo pointed out.

Even with the evolving landscape of world trade – one in which major players such as the United States and United Kingdom are leaning towards bilateral relations instead of globalisation – the WTO will continue to be the platform that provides common ground and mutual understanding.

Governments around the world must also better prepare their populations for the incredible transformation that will be brought about by emerging technologies, Azevêdo advised.



The Third **Women's Revolution**

Arianna Huffington

Founder & CEO of Thrive Global

"Stress and burnout are directly linked to productivity. By addressing this we can not only improve the wellbeing of people, but also how engaged they are at work"

According to Arianna Huffington, whose company Thrive Global is dedicated to improving wellbeing in the workplace, there is a need to move away from the idea that one must always be focused on work. People should instead spend more time concentrating on happiness, she said.

The modern workplace is not working for anyone, Huffington asserted. People are entrenched in the

belief that being successful means they must always be stressed and busy. Studies have shown, however, that many people are unhappy at work, which negatively impacts their productivity, she explained.

Women need to lead the way in redesigning the workplace, as well as the world of the future. She urged women to spearhead an 'augmented humanity' revolution to go hand in hand with the technological revolution currently taking place. The world's major problems do not stem from a lack of data, she said, but from a lack of wisdom.

It is essential for people to 'disconnect' from their busy, stressful lives and recharge by taking time to connect with themselves and their loved ones, Huffington concluded.



How To Brand A Nation

Maurice Lévy

Chairman of the Supervisory Board of Publicis Groupe

Becky Anderson

Managing Editor & Anchor of Connect The World for CNN Abu Dhabi, Moderator

“Technology and social media should be used judiciously, because as much as they can lift the image of a nation, they can also damage it”

Leaders are integral to the branding of a nation and should always strive to ‘walk the talk’, Maurice Lévy, Chairman of the Supervisory Board of Publicis Groupe, told the Summit audience. Leaders are often the personification of a country, and so the onus falls on them to act, not just speak.

Nation-branding has evolved significantly in recent years, Lévy explained. In the past, a country’s brand

was simply a flag or an anthem. Today, with increasing globalisation and the dawn of the digital revolution, building an enduring national brand that truly represents both the politics and the social fabric of a country has become more complicated.

According to Lévy, building a brand for a new nation is a paradox of both complexity and simplicity. On one hand, new nations do not have the support of a long history. On the other, they are starting with a blank canvas, which gives them endless possibilities.

The UAE was an impressive example of this, he said, because of the country’s determination to not just build something for today, but for the future.



Overwriting History: The Future Of Global Governance & Net States

Francis Fukuyama

Olivier Nomellini Senior Fellow at the Freeman Spogli Institute for International Studies & Mosbacher Director of the Center on Democracy, Development & the Rule of Law at Stanford University

HE Dr Anwar bin Mohammed Gargash

Minister of State for Foreign Affairs of the United Arab Emirates, Moderator

“The underlying social reality has been moving ahead at a very fast pace while institutions have been struggling to keep up. This shifting reality includes the rise of populism, migration and technology: tackling these challenges will be decisive for the advent of a global governance”

As the world is facing a variety of serious challenges, the demands for global governance are tremendous, said the renowned economist and political scientist Francis Fukuyama. Many international institutions, however, are not agile enough to keep up with changing social realities.

Technology is also posing new and important challenges for international governance, he said,

ranging from cyber warfare to the spread of fake news, and even biotechnology.

Fukuyama asserted that creating a better system of governance requires consensus among the world's largest nations. According to him, however, this is unlikely to be achieved.

Instead, Fukuyama predicted that the world will remain 'multi-multilateral', meaning no single organisation or nation will be pre-eminent, which is still a favourable outcome.

In a discussion with His Excellency Dr Anwar bin Mohammed Gargash, Minister of State for Foreign Affairs of the UAE, Fukuyama said the Gulf region offers an example the rest of the Arab world can follow. The Gulf nations have provided economic prosperity for their citizens, are largely stable and apply the rule of law.



Are Governments Ready For A Dynamic Future?

Prof Michio Kaku

Theoretical Physicist & Futurist, Henry Semat Professor of Physics & American Physical Society Fellow at The City College of New York

“Today I am going to bring you the future”

The world is heralding a technological revolution which involves science at the molecular level and encompasses artificial intelligence, nanotechnology and biotechnology, said the theoretical physicist and futurist Professor Michio Kaku. Computers will soon be so ubiquitous that the word ‘computer’ will disappear from the English language entirely, he predicted.

Prof Kaku described a future where contact lenses offer a biography of anyone the wearer meets, cars have the ability to help plan one’s itinerary, and

hypersonic jets cut travel time from Dubai to New York down to only two hours.

At home, people will be able to consult intelligent wallpaper when they are feeling ill, and a ‘robo-doc’ will appear to diagnose the problem as their body is scanned by an object no larger than a mobile phone.

The world is building to ‘perfect capitalism’, he said, in which digitisation removes the middleman and makes goods cheaper.

Ultimately even the most complex human organ – the brain – will be digitised. The internet of the future, Prof Kaku concluded, will be the ‘brain-net’.



Hope In Times Of Uncertainty

Deepak Chopra

Author, Founder of The Chopra Foundation

HE Ohood bint Khalfan Al Roumi

Minister of State for Happiness & Wellbeing of the United Arab Emirates, Vice Chairman of the World Government Summit, Moderator

“Technology by itself is neutral, but what we do with it depends on our evolution as a human species”

What makes people happy was a key theme of author Deepak Chopra’s presentation, which included a discussion moderated by Her Excellency Ohood bint Khalfan Al Roumi, Minister of State for Happiness and Wellbeing of the UAE, Vice Chairman of the World Government Summit.

An individual must perceive the world positively and have empathy and compassion, Chopra advised.

Material success is important, he added, but having a purpose and meaning in life is crucial to happiness.

In his talk, Chopra praised Dubai as a ‘microcosm of the future’ and said if its model was replicated around the world “we would have less to worry about”.

The world, he said, is blighted by ethnocentrism, racism, ecological devastation, climate change and – thanks to technology – the risk of mechanised death from weapons of mass destruction. He added, however, that technology could also be harnessed to engender wellbeing. For this, everyone must recognise their status as a citizen of the world and the cosmos.



Redesigning **Longevity**

Dr Craig Venter

Co-founder, Chairman & CEO of Human Longevity, Inc

Mina Al-Oraibi

Editor in Chief of *The National*, Moderator

“This is a whole new preventive medicine paradigm that turns medicine on its head and we’ll save countries billions if not trillions of dollars”

Advances in genetic medicine are enabling scientists to extend the healthy human life, biotechnologist, biochemist and geneticist Dr Craig Venter told delegates in his talk on longevity.

By digitising the human genome and analysing its traits through a sophisticated set of algorithms, scientists

can predict and improve human health with a high degree of accuracy, Dr Venter explained. Cells can now be ‘designed’ on a computer and sent around the world – a major step forward that could have huge impacts on the development of vaccines.

Developments in biotechnology and genetic medicine also mean magnetic resonance imaging (MRI) can be used to detect abnormal cells as well as elevated levels of organ fat. This information can see precancerous cells detected at very early stages, and disease like Alzheimer’s predicted with considerable accuracy.

Together these advances represent a new paradigm which could revolutionise medicine, Dr Venter concluded.



The Future Of **Humanity**

Malcolm Gladwell

World-renowned Author

“Today’s world requires individualised solutions to problems, rather than the group solutions that would have sufficed in the past”

According to best-selling author Malcolm Gladwell, the world has changed fundamentally from one in which problems are puzzles to one in which they are instead mysteries.

Using terminology developed by United States intelligence officials, Gladwell said this distinction centres on the amount of information available. In the past, the issue was often that there was too little data –

a puzzle. In today’s world, however, too much data is more likely to be the concern – a mystery.

Gladwell cited education as an example. Today, a wealth of data on teachers’ performances is available, down to how a particular teacher’s methods interact with the skills of an individual student. The relevance of these vast amounts of information to increasing student performance or wellbeing is the mystery. Similar issues affect fields like defence and healthcare, he said.

This places challenges on governments which developed their methods in the 18th or 19th century. They are still equipped to solve puzzles, not mysteries. Gladwell asserted, which must be addressed urgently.



Why Evolution Leads To **Mars**

Bjarke Ingels

Founder & Creative Partner of Bjarke Ingels Group

Joe Brown

Editor in Chief of *Popular Science*, Moderator

"If we want to go to Mars, we have to live off the resources that are available there; in a way we have to become Martian"

Sending people on a one-way mission into the solar system is rapidly becoming a reality. Architect Bjarke Ingels explained to the audience of global leaders, experts and policy-makers that Mars Science City – a first-of-its-kind project in Dubai that will simulate life on the Red Planet – will help determine how human survival can be sustained in the cosmos.

The purpose-built city will encompass laboratories for food, energy and water, as well as agricultural testing and studies about food security in the future. This project, Ingels pointed out, will not only create a prototype of what it might be like to live on Mars, but will also help find answers to challenges facing humanity here on Earth.

Within the next 99 years, he said, a sustainable, self-supporting ecosystem and cities consisting of tubular, interconnected networking environments will be built on Mars.



Can We Govern AI?

Sebastian Thrun

Founder & President of Udacity

HE Omar Sultan Al Olama

Minister of State for Artificial Intelligence of the United Arab Emirates,
Managing Director of the World Government Summit, Moderator

"I honestly believe only 1% of interesting things have already been invented and 99% will be invented in the future"

In a conversation with His Excellency Omar Sultan Al Olama, Minister of State for Artificial Intelligence of the UAE, Sebastian Thrun, founder of the online education platform Udacity, asserted that artificial intelligence (AI) will never fully replace humanity's unique capacity to create. As the technology advances, however, it may allow people to become immortal to a certain degree.

Machines can make people superhuman by taking over repetitive work and freeing humanity to create more jobs and opportunities, he said. To illustrate this point, Thrun explained that AI could flourish in the medical field by providing new forms of diagnostics to help doctors with early detection. In the future, it might even be possible to turn the brain into a machine, he hypothesised, thus achieving a certain level of immortality.

The next major step forward will be when one AI system begins to interact with another AI system in a meaningful way, Thrun concluded, which will allow for intelligent progress.



State Of Abundance: **Infinite Resources** To Shape The Future

Ramez Naam

Author & Futurist, Co-chair of Energy & Environmental Systems at Singularity University

Arjun Kharpal

Technology Correspondent for CNBC, Moderator

"A climate in which people are free to innovate and help to develop technologies is important"

Science fiction has been terrible at making predictions, said author and futurist Ramez Naam. It missed the advent of the drone and failed to see that technology would become increasingly cheaper and decentralised.

Experts often exhibit 'status-quo bias', or a preference for the current state of affairs, Naam said, and so they expect the future to look much like the present. While this may be true for many aspects of

humanity, when it comes to technology, the future looks vastly different.

Technologies such as self-driving cars and solar power are spreading exponentially – much faster than anticipated – and becoming accessible to more people as their costs fall. To become 'exponential nations' which are able to leverage the rapid expansion of these technologies, countries must foster innovation from the bottom up, rather than the top down, to allow people the freedom to fail. They should also enact light-touch regulation that gives innovators room to experiment, and ensure the required data infrastructure is in place, Naam advised.



The Evolution Of Humans In The Next Century

Juan Enriquez

Managing Director of Excel Venture Management

Joe Brown

Editor in Chief of *Popular Science*, Moderator

"We need to redesign the human to be able to cope with space travel"

Thanks to the genetics revolution, life can now be thought of as a code, said the futurist and genomics expert Juan Enriquez. Understanding this code would give humanity the capability to 'rewrite the sentences of life'.

Vaccines could be produced faster, transplant organs could be grown on demand and one would be able to edit their own genetic make-up. We are also 'beginning

to decode the brain', he said, which will eventually lead to a system that would enable people to alter, insert and even delete memories.

According to Enriquez, the pinnacle of humanity's use of genetic technology would be in designing an interplanetary species. To settle other planets, however, humans must be redesigned to mitigate the myriad health problems that result from travelling in space.

If one believes in human rights, Enriquez concluded, these efforts must be pursued to ensure humankind's long-term survival.



Teaching For **Adaptability**

Dr Richard Davidson

Professor of Psychology & Psychiatry & Founder & Director of the Center for Healthy Minds at the University of Wisconsin – Madison

Rebecca McLaughlin-Duane

Broadcast Journalist for Euronews, Moderator

“According to research, our minds are wandering, and therefore not paying attention, for 47% of our waking hours”

If a child is not emotionally balanced, he or she will not be able to digest and act on new information with which they are presented, which results in poor learning, said psychology professor Dr Richard Davidson. Wellbeing can be taught and learned, just like any other skill, he stated.

Dr Davidson identified four crucial components of wellbeing – awareness, connection, insight and

purpose. Only when these have been taken into consideration can anyone unlock their full learning potential, he said.

Quoting William James’ pivotal work *The Principles of Psychology*, Dr Davidson reiterated the importance of nurturing one’s attention span. The education of attention is fundamental to all other forms of learning and it can be influenced by experience and improved with training, he explained.

Having a strong sense of purpose is also critical to one’s ability to learn. “Research shows those with a stronger sense of purpose live longer,” he concluded.



The Mandela I Knew

Graça Machel

Founder & Chair of the Graça Machel Trust

Zeina Yazigi

Moderator

“We have to learn to listen to children to understand not only their needs, but their insights on how they want to be part of the discourse”

Graça Machel, wife of the late South African president Nelson Mandela, addressed the Summit, describing what her life was like with the anti-apartheid leader.

Away from the public spotlight, he was a devoted father and grandfather, she said. Although the couple met and married late in life, Machel explained, they were soulmates throughout their relationship.

She recalled how her late husband treated everyone he encountered with dignity and respect, regardless of their social standing.

Modern societies are too hierarchical, she said, and they must be redesigned to ensure men and women are treated equally. Machel also urged the older generation to work harder to understand young people’s needs.

Leaders around the globe must humanise their opponents – political or otherwise – in order to effectively tackle the challenges facing the world today, she concluded.



Redesigning Governments

Paul Bennett

Chief Creative Officer of IDEO

“Countries that place importance on listening to every adult and child will be able to successfully redesign a better country and a better world”

According to Paul Bennett, Chief Creative Officer of design and innovation firm IDEO, governments and design are 'natural bedfellows', and giving people the tools to unlock their own human potential is the key to crafting a better future.

Bennett stressed the importance of embracing a design-led movement to create solutions for

governments and organisations. This will develop creative capabilities in the people of the UAE and beyond, he said. It will also open up conversations about what is possible through design with a view to finding the best resolutions for the greater good.

Bennett highlighted Palmwood, a new platform launched in collaboration with the UAE Government and His Excellency Mohammad Abdulla Al Gergawi, Minister of Cabinet Affairs and The Future of the UAE. Palmwood is a creative organisation which works to improve people's lives by exploring ideas and designing imaginative solutions to the most pressing global problems.



The Microbiome: Bidding Farewell To Medication

Dr Robynne Chutkan

Founder & CEO of the Digestive Center for Wellness

Jolene Creighton

Founding Editor & Host of Futurism, Moderator

"A healthy microbiome leads to a stronger immune system and resistance to disease, so improving an individual's microbiome could be used as an alternative to antibiotics"

The microbiome is made up of trillions of organisms like bacteria, fungi and viruses that cover the human body and live in the gut, explained Dr Robynne Chutkan. As a result of its presence in every human, it has a vital role to play in whole-body health.

The overuse of antibiotics and poor diet, however, play a significant role in weakening the microbiome's effectiveness, she asserted, which causes an increase in non-communicable diseases such as diabetes. Further, an imbalanced gut biome could radically increase a person's chance of being obese.

Dr Chutkan also revealed that people born by caesarean section, not exposed to illness from siblings, or not breastfed are more likely to contract diseases affecting the immune system.

In conclusion, she advised the audience to spend more time in nature, eat healthier food and cut back on the use of antibiotics for minor ailments.



The Future Of **Culture**

Amit Sood

Director of Google Cultural Institute

HE Noura Al Kaabi

Minister of Culture & Knowledge Development of the United Arab Emirates

Dr Sarah Kenderdine

Director & Lead Curator of ArtLab & Director of the Laboratory for Experimental Museology at École Polytechnique Fédérale de Lausanne

Becky Anderson

Managing Editor & Anchor of Connect The World for CNN Abu Dhabi, Moderator

Culture and the way in which it is produced and consumed will be revolutionised in the 21st century, with artificial intelligence (AI) at the forefront of that transformation, asserted a panel of experts convened at the Summit.

Her Excellency Noura Al Kaabi, Minister of Culture & Knowledge of the UAE, revealed that AI's impact on creative and cultural industries will lead to an increasing shift towards areas such as 'createch', which is the use of technology-enabled creativity to produce new value-added products, services and experiences.

Engaging the public – especially the youth – and cross-sector collaboration are necessary to build an ecosystem that supports this transition, she asserted.

Amit Sood, Director of Google Cultural Institute, explained that technology can level the playing field when it comes to the accessibility of fine art. The institute's online platform, Google Arts & Culture, gives users access to 1,500 museums from around the world. Sood pointed out, however, that accessibility alone is meaningless. It must be paired with context and – perhaps most importantly – fun.



Young Minds To Governments: Solutions **Driven By Youth**

Dr Charity Wayua

Research Manager at IBM Research Africa

Cynthia Johnson

Moderator

“Placing youth in positions of leadership is one way to prepare them, while also arming them with the skills and competencies necessary to contribute and find success in the workplace”

Young people are the leaders of tomorrow, but they remain severely under-represented in governments and parliaments across the world, said Dr Charity Wayua, who was a 2017 World Bank top reformer.

Governments, she said, play a critical role in creating and maintaining an enabling environment for young people to start and operate businesses. Providing them with work experience so they can build on their education and develop their skills is one important way to engage youth and get them to the table, Dr Wayua explained.

She urged the government leaders and policy-makers in attendance to develop specific policies aimed at encouraging civic participation and engagement among young generations.



Fast Forward To **The Future**

Jim Carroll

Futurist, Trends & Innovation Expert

“Scientific development has become exponential, which means we are witnessing the era of “hyperscience””

Futurist and innovation expert Jim Carroll said technological change has consistently been faster than people have anticipated. He predicted that technology will advance further in the next 10 years than it has over the past 100.

Humanity cannot succeed based on what has been done in the past, Carroll pointed out. Instead, success in the future will depend on speed. Change occurs so quickly because numerous trends are

being brought together and are affecting multiple fields, he said.

The world is witnessing the era of ‘hyperscience’, Carroll said, with fields such as chemistry, battery technology, software and genetics all developing rapidly. He also highlighted examples like the proliferation of self-driving cars, the plummeting cost of renewable energy and the scaling up of drone technology to create flying vehicles.

This accelerated pace of change, he explained, is creating a wealth of new careers, and people will have to be equipped with increasingly sophisticated skills in order to fill these positions.



Dreams Of Arab Youth

HE Shamma bint Suhail Al Mazroui

Minister of State for Youth Affairs of the United Arab Emirates

"Arabs share a common goal and should strive to achieve it together"

Her Excellency Shamma bint Suhail Al Mazroui, Minister of State for Youth Affairs of the UAE, presented the results of the Arab Youth Strategy, which was launched at the 2017 Summit by His Highness Sheikh Mansour bin Zayed Al Nahyan, Deputy Prime Minister and Minister of Presidential Affairs of the UAE.

Since then, more than 150 young people from across the Arab world have met at the Arab Youth Centre in

Dubai to discuss the unique problems they face and investigate possible solutions. Al Mazroui praised the work they have done and the progress they have made over the past 12 months.

Some of the participating young people spoke about their experience and desire to encourage more of their peers to become active in their communities.

Al Mazroui also announced the launch of the Young Arab Pioneers programme to foster support for talented young people in the region to allow them to reach their potential.



Malnutrition In The Age Of Abundance

Kees Aarts

Co-founder & CEO of Protix

Claire Zillman

Moderator

“Governments play an extremely important role in food systems in that they are the key deciders when it comes to what a consumer has access to”

Kees Aarts, founder of Protix, presented his work on bringing food systems back into balance with nature by converting end-of-life organic waste into valuable proteins for animals.

The pioneering company has found a way to use insects as sustainable protein for chicken and fish. Chickens that eat insect-feed produce highly nutritious

eggs, and salmon grown on insect-feed rather than marine life are healthy, with no difference in taste for human consumers, Aarts asserted.

Using insects in this way provides a sustainable alternative source of protein, he said, and it uses up the leftovers of the food system to grow insects before they are harvested and transformed into protein meals to be sold to the agricultural industry.

Governments, said Aarts, play an important role in this diversification by allowing these solutions to come to the market, while consumers should ask where their food comes from, how it is made and whether it is truly healthy.



Co-creating Government Services With Citizens

HE Hessa bint Essa Bhumaid

Minister of Community Development of the United Arab Emirates

"It is our responsibility to benefit from the older generation's experiences and implement their best practices"

Citizens who are aged 60 and older are a blessed and highly respected segment of society, said Her Excellency Hessa bint Essa Bhumaid, Minister of Community Development of the UAE. She promised that her office will continue to facilitate open discussions, workshops, one-on-one interactions and 'intergenerational meetings' with the older generation to design government services from which they can benefit.

Meeting with the aged in their homes gives them the opportunity to share their experiences, Bhumaid said. She identified six focus areas that have emerged from these visits: financial sustainability, education, social relationships, productivity, cultures and traditions, and health and lifestyle.

Gathering this information is a holistic, social effort to engage the country's older citizens and ensure they are integrated into society, she explained. It also enables government leaders to strategise and launch well-informed national policies and laws that directly serve the aged population.



Living In A **Wireless World**

Eric Giler

Chairman & CEO of Speedy Packets

Cynthia Johnson

Moderator

“Wireless power is where governments need to get involved to bring greater opportunity to the larger world”

It is essential for underprivileged countries to have access to high-speed internet so they can make the most of rapid technological changes, Eric Giler told delegates to the World Government Summit.

Currently, the internet available in many of these countries is slow and expensive, he said. One way to solve this problem is to use technology like that developed by Giler’s company Speedy Packets, which

uses software to increase connection speeds. This can work together with wireless power, particularly with wireless recharging.

To illustrate, Giler described a project in South Korea which uses lines installed in the roads to wirelessly recharge electric buses. These lines can provide power for up to 24 kilometres.

He urged governments to assume a more active role in bringing connectivity to their populations by helping develop the infrastructure and regulation required to make high-speed internet and wireless power a reality for all.



Biotechnology: Driving The Future Of Health

Ellen Jorgensen

Co-founder of Biotech Without Borders, Co-founder & President Emeritus of Genspace

Mina Al-Oraibi

Editor in Chief of *The National*, Moderator

“For the first time, we are facing science fiction-like scenarios with one of the most recent advances in science being the ability to edit the human embryo”

With the rapid development of biotechnology comes the imminent need and responsibility for governments to support and raise awareness about the field, said Ellen Jorgensen.

A biotechnologist and science literacy advocate, Jorgensen described biotechnology as the “most advanced manufacturing system on earth” which has

witnessed a significant transformation over the past 50 years. Scientists are now able to not only modify DNA, she said, but in some cases even create it.

Reading and writing the genetic code has become more cost-efficient than ever before, she said, which allows doctors to personalise medicine and design advanced therapies tailored to individual patients. Jorgensen also revealed that the technology to edit a person’s genome – their complete genetic make-up – is rapidly becoming a reality.

Such remarkable scientific discoveries present both significant opportunities and risks, said Jorgensen, and create lively debates about how the technology should be regulated and who can access it.



Reinventing Urban Environments

Prof Omar Yaghi

Director of the Berkeley Global Science Institute, James & Neeltje Tretter Chair Professor of Chemistry at the University of California, Berkeley

Dr Ian Pearson

Futurist at Futurizon

Arjun Kharpal

Technology Correspondent for CNBC, Moderator

According to futurist Dr Ian Pearson, the rate at which construction techniques are evolving means there could be buildings that are 30 kilometres tall by 2050.

Advances in the industry will allow almost any type of building to be produced very quickly via 3D printing, and cities will be cheaper and more efficient. A structure's digital architecture could even be personalised for whoever is inside, he said, with electronics on a person's skin transmitting information which allows the building to adapt to the individual. Augmented reality will be indistinguishable from real life, Dr Pearson predicted.

The materials from which buildings are constructed will also change, said Professor Omar Yaghi, Director of the Berkeley Global Science Institute and Professor of Chemistry at the University of California, Berkeley. Advances in chemistry will enable different substances to be melded together for use in construction, and sensors will be able to trap harmful chemicals.

While materials today typically only have a single function, Prof Yaghi said, this 'new chemistry' will lead to the creation of materials that can be used in a variety of ways.



Technology & The Future Of Smart Living

Osman Sultan

CEO of du

Karuna Gopal

President of the Foundation for Futuristic Cities

Richard Quest

Anchor & Correspondent for CNN, Moderator

In a panel discussion moderated by CNN's Richard Quest, Osman Sultan, CEO of du, and Karuna Gopal, President of the Foundation for Futuristic Cities, agreed that technology should be used to unite humanity rather than divide it.

Gopal stressed that improving the quality of life for underprivileged people and infusing dignity into their lives is paramount. Smart technologies, she said, can be used to maximise the potential of marginalised populations, not just those at the top of the socio-economic ladder. Technology's threats are real, she

said, but it also has the power to unite humanity all over the world.

She also described the 'cognitive cloud' or 'mind fog' that can result from having access to technologies without fully understanding their impact.

Sultan acknowledged that there is a significant amount of fear about the current pace of change, but as long as key stakeholders ask the right questions, he said, potential problems can be addressed before new technologies enter the market.



Designing Personalised Learning & The **Future Of Education**

Max Ventilla

Founder & CEO of AltSchool

Rebecca McLaughlin-Duane

Broadcast Journalist for Euronews, Moderator

“The purpose of school is to prepare children for the future that’s coming, so we must have a sense of what we want and what will happen”

Educators, technologists and policy-makers must collaborate and work with urgency to improve the classroom experience, said Max Ventilla, founder and CEO of AltSchool. Advancing the progress of education must be prioritised, as it is responsible for cultivating the leaders and thinkers of tomorrow.

Technology should be used carefully as an enabler of post-industrial, student-centred learning, and not merely passed on to students with the hopes of achieving quick gains, Ventilla advised. Unlike other sectors such as healthcare, however, education has not benefitted from the promise of integrated technology.

AltSchool is trying to change the status quo, Ventilla explained, by creating a platform that supports a diversity of educational standards, pedagogies and models and makes them accessible to teachers on a single system.



Is The Future Of Cryptocurrencies Gold Or Dust?

Jesse Powell

Co-founder & CEO of Kraken Bitcoin Exchange

Lon Wong

President of the NEM.io Foundation, Founder & CEO of Dragonfly Fintech

Nick Spanos

Founder of Bitcoin Center NYC, Founder & CEO of Blockchain Technologies Corporation

Lawrence Wintermeyer

Principal of Capstone, Co-founder & Principal of Elipsis

Arjun Kharpal

Technology Correspondent for CNBC, Moderator

A panel of experts discussed what the future may hold for cryptocurrencies, agreeing that authorities must be careful when attempting to regulate the market.

Nick Spanos, Founder of the Bitcoin Center in New York City, advised governments to take a hands-off approach, as it is not possible to regulate digital currencies in the same way as physical ones.

The rise in value of cryptocurrencies has been due in part to greater awareness among investors who see an

increased opportunity to make a profit, the four panellists agreed.

Jesse Powell, Co-founder and CEO of Kraken Bitcoin Exchange, cautioned that regulators must strike a balance between creating a safe environment for trading while not becoming so stringent that exchanges move to less-regulated markets.

The panellists concurred that cryptocurrencies will continue to thrive in the coming years.



Building The Future Of Creative Cities

HE Eng Hussain Nasser Lootah

Director General of Dubai Municipality

“Our future will focus on information and data analysis, which will be the cornerstone in creating a more sustainable environment and a happier society”

When planning for the future, the happiness of the people must be the first priority, said His Excellency Engineer Hussain Nasser Lootah, Director General of Dubai Municipality. Before anything else, this is the real outlook for cities and their success, he said.

Lootah explained that the UAE's strategy for the future has been set forth in a detailed and inclusive road map developed by His Highness Sheikh

Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE, Ruler of Dubai. He revealed that many key developments are already in the pipeline, highlighting in particular DM-SAT1, a satellite which aims to help address climate change in Dubai.

The UAE is also moving forward with plans to benefit the environment by introducing aquatic plants, vertical farming – due to limited arable land – and taps that reduce water usage by up to 90%.

Finally, Lootah touched on the importance of promoting synergy between the economic and information-gathering sectors, and emphasised that the two industries are equally significant.



CRISPR: Rewiring **Life's Software**

Jennifer Kahn

Science Writer, Lecturer at the UC Berkeley Graduate School of Journalism

Mina Al-Oraibi

Editor in Chief of *The National*, Moderator

"Before CRISPR, engineering a mouse with a single mutation took a dedicated lab almost two years. With CRISPR, it takes two days"

Jennifer Kahn, a science journalist who writes for the New York Times Magazine and National Geographic, shared with the Summit the rapid advances in genetic engineering that a technology called CRISPR – clustered regularly interspersed short palindromic repeats – is offering.

The first hints of CRISPR's potential date back to the 1970s. It was then that researchers discovered bacteria containing repeated sections of what

appeared to be junk, or non-coding, DNA. Kahn explained these stretches of genetic material were, in fact, anything but junk. They were actually sections of viral DNA that had been integrated into the bacteria's genome to immunise them against infections from those viruses.

Researchers discovered the system which bacteria uses to incorporate this material could be harnessed in the laboratory to genetically engineer a wide range of organisms, she said. Kahn emphasised that this discovery presents a step change in the effectiveness of gene editing. Instead of taking two years to edit a gene, with CRISPR it only takes two days; rather than needing a million cells to create the perfect mutation, now only 10 can do the job.



What Science Can Learn From Science Fiction

Ty Franck

Author & Producer, Co-author of *The Expanse Series*

Daniel Abraham

Author & Producer, Co-author of *The Expanse Series*

Joe Brown

Editor in Chief of *Popular Science*, Moderator

Acclaimed science fiction writers Ty Franck and Daniel Abraham sat down with *Popular Science*'s Joe Brown to discuss the contributions this creative genre can make to science.

The authors asserted that science fiction can be a conduit through which society can imagine the future it would like to see manifest and consider how that visualisation might be achieved.

The role of science fiction writers, Franck and Abraham agreed, was not to tell scientists what the future holds, but to start an open debate about the opportunities

that advances in technology could have for forthcoming generations.

Authors' predictions often prove to be wrong, they said, but science fiction has made some accurate premonitions. For example, the original *Star Trek* series, which debuted in 1966, featured a device similar to the flip mobile phones used until just a few years ago.

Fiction writers, the authors concluded, can open up conversations about technology – such as the possibility of robots or artificial intelligence – and then examine the consequences of such change.



The Role Of The Private Sector In Shaping The Future Of Transportation

HE Mattar Al Tayer

Director General & Chairman of the Board of Executive Directors of the Roads & Transport Authority – Dubai

“The difference between Dubai and other global cities is that the government of Dubai is the one driving the future of transportation”

Achieving Dubai’s vision for the future of transportation will require the combined efforts of the public and private sectors, said His Excellency Mattar Al Tayer, Director General of Dubai’s Roads & Transport Authority.

Al Tayer explained that each new form of transportation – flying taxis, autonomous vehicles and the hyperloop – will require its own infrastructure,

legislation, data collection and artificial intelligence capabilities to make the transition from conventional to future transport successful.

He pointed out, however, that this endeavour is not without its challenges. Systems have to be developed in accordance with the environment within which they will be operating, and their impact on urban planning must be understood. The cost of service for end users is also an important consideration.

While the government will provide the guidance and regulatory framework for these projects, he asserted, it will also need to collaborate with the private sector to conduct research, gather information, and ensure safety and reliability when deploying the latest technologies.



How Innovation Is Shaping The Future

HE Saeed Mohammed Al Tayer

CEO & Managing Director of Dubai Electricity & Water Authority

“The UAE leads global efforts in clean and renewable energy because of its strategies, investments and innovative high-quality projects to diversify its energy mix. DEWA is disrupting the business model of public utilities to become the world’s first digital utility, by using autonomous systems for renewable-energy and storage, and increasing the use of Artificial Intelligence to deliver digital services”

Dubai Electricity & Water Authority (DEWA) has shaped the future of the energy sector by innovating a model for the production, transmission and distribution of electricity and water.

His Excellency Saeed Mohammed Al Tayer, DEWA’s CEO and Managing Director, explained that the authority’s holistic view of the energy sector in Dubai encompasses three main themes – the utilisation of solar energy, water desalination by solar power, and disrupting and transforming the role utilities play through digitisation.

The UAE, represented by DEWA, was ranked first worldwide for access to electricity by the World Bank’s Doing Business 2018 report, Al Tayer said. The country has achieved 90% fuel utilisation efficiency, and saved Dhs.1.5 billion while augmenting existing power plants by 861 megawatts.

Smart technology has been adopted at a rate of 90% in the UAE, which is 10% higher than predicted for 2018. The objective, according to Al Tayer, is to have 75% of the country powered by clean energy by 2050 – an endeavour which is well on its way.



Good Food For **Good Health**

Adam Melonas

Founder & CEO of Chew

Jolene Creighton

Founding Editor & Host of Futurism, Moderator

“When we think of educating people about food, we need to substitute the word ‘diet’ with ‘lifestyle’. We need to encourage people to start listening to their bodies again”

Adam Melonas, whose company Chew is dedicated to creating products that are both delicious and nutritious, told the Summit that there needs to be a shift in thinking about what constitutes healthy food.

From a young age, people are conditioned to think of unhealthy food like chocolate or pizza as a reward, and this is something that continues into adulthood,

Melonas explained. In addition, there is the commonly held belief that healthy food doesn’t taste good. He asserted that these misconceptions can be changed by encouraging children to view nutritious snacks as a reward.

He also urged the public to do more research when reading reports claiming a particular food is healthier than others. In many cases, the studies these are based on were funded by the producers of those foods.

Finally, packaging also has an important role to play. Simply making healthy food look more attractive by giving it an artfully designed wrapper can influence a person’s choice to eat it, Melonas concluded.



Insights & Reflections From **The *Global Happiness Policy Report***

Martine Durand

Chief Statistician & Director of the Statistics & Data Directorate of the Organisation for Economic Co-operation & Development

Prof Jeffrey Sachs

University Professor of Health Policy & Management & Director of the Center for Sustainable Development at Columbia University

Prof John Helliwell

Senior Fellow of the Canadian Institute for Advanced Research, Professor Emeritus of Economics at the University of British Columbia

Dr Martin Seligman

Director of the Positive Psychology Center & Zellerbach Family Professor of Psychology at the University of Pennsylvania

Prof Richard Layard

Director of the Wellbeing Programme of the Centre for Economic Performance & Emeritus Professor of Economics at the London School of Economics

Dr Robert Biswas-Diener

Founder & Managing Director of Positive Acorn

Dr Jan-Emmanuel De Neve

Associate Professor of Economics & Strategy at the University of Oxford

HE Dr Aisha Bint Butti Bin Bishr

Director General of the Smart Dubai Office

Hadley Gamble

Reporter & Anchor for CNBC. Moderator

During a double-panel discussion moderated by CNBC's Hadley Gamble, eight experts presented and discussed the findings of the *Global Happiness Policy Report 2018*, a 260 page document produced by the Global Happiness Council. The council was established in 2017 on the directions of His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE, Ruler of Dubai.

The panels examined a variety of issues addressed in the report, such as what conditions are required for creating and increasing happiness and wellbeing in

societies; why policy-makers pay so little attention and allocate hardly any resources to understanding happiness and wellbeing metrics; how important interpersonal relationships and workplace dynamics are for individual happiness; and whether individual happiness can be sustained without a collective sense of wellbeing.

The report revealed that war and mental illness are among the main factors driving misery around the world, while spreading values of giving and altruism make people happier.



Smart Trade, Transport & Logistics Solutions

HE Sultan Ahmed bin Sulayem

Group Chairman & CEO of DP World

Ramesh Abhishek

Secretary of the Department of Industrial Policy & Promotion of India

Sujoy Bose

CEO of the National Investment & Infrastructure Fund

Richard Quest

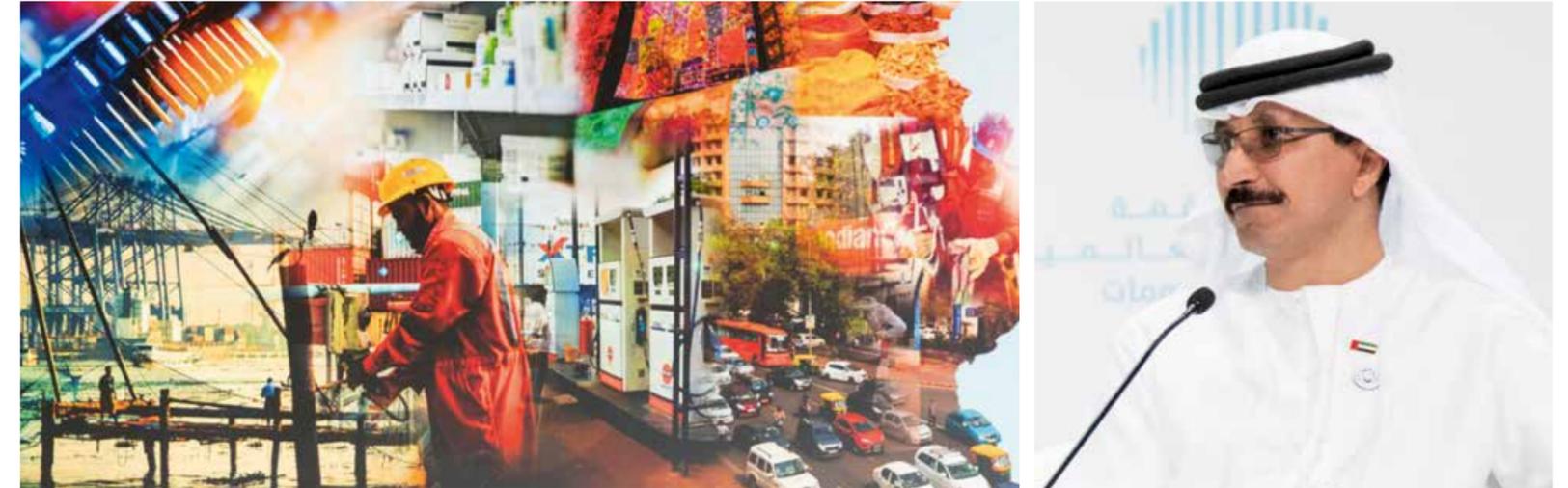
Anchor & Correspondent for CNN, Moderator

In a discussion focused on the challenges facing India's transportation sector, His Excellency Sultan Ahmed bin Sulayem, Ramesh Abhishek and Sujoy Bose highlighted the need to improve end-to-end supply chains and infrastructure to increase speed and efficiency.

Each speaker emphasised the significant role of ports in improving foreign trade in a growing economy, as well as the further potential of the sector. They also raised common issues such as the lack of 21st century connectivity, poor air and sea port capacities and a lack of development in railways and roads.

Positive changes have been made, however, due to investment by India's government. Abhishek, India's Secretary of the Department of Industrial Policy & Promotion, said reform and regulatory policy changes are helping tackle problems in the transportation sector. He pointed out that key figures are working to make India's 2030 vision a reality.

Bose, CEO of the National Investment & Infrastructure Fund (NIIF), said DP World and the NIIF will create a platform to invest up to \$3 billion (Dhs.11 billion) in India's transportation industry.



The Next Generation Of Coders

Sebastian Thrun

Founder & President of Udacity

Magnus Olsson

Co-founder & Managing Director of Careem

Joel Kaplan

Vice President for United States Public Policy of Facebook

Lynn Chouman

Writer, Reporter & Presenter for Al Arabiya, Moderator

Coding will have a tremendous impact on humanity's present and future, as well as on economic reforms, asserted a panel of specialists convened at the Summit. Major transitions are needed in education systems to ensure such technologies are an integral part of the curriculum and instil in today's youth the knowledge that will guarantee them the jobs of tomorrow.

The panellists asserted that coding is at the core of future technologies like artificial intelligence, 3D printing and virtual reality, and the skill presents vast

opportunities for the younger generation, especially in the Arab world which has high unemployment.

The UAE's One Million Arab Coders training programme is a pioneering example that governments around the globe should follow to present youth with the opportunities needed for future industries, the panellists agreed. Sebastian Thrun, founder and president of the online learning platform Udacity, asserted that the UAE is the only place in the world offering young people these immense opportunities.



Showcase Of The Edge Of Government

Kevin Lee

Co-founder of Mobilized Construction

Sam Cossman

Co-founder & Head of Innovation of Qwake Technologies

Vijay Kandy

Co-founder of Decibel.LIVE

Daphne Guerrero

Free Agent for Canada's Free Agents

Tanya Beckett

Broadcaster for BBC World News, Moderator

This session opened with a video of Neil Harbisson, who is a living embodiment of cyborg technology. The British artist and 'transpecies' activist explained that he became the world's first legally recognised cyborg after authorities in the United Kingdom allowed him to keep a colour-detection antennae, which is implanted in his forehead, for his passport photo.

In the remainder of the showcase, representatives from four different international companies highlighted their disruptive technologies that were being exhibited as part of the World Government Summit's Edge of Government experience.

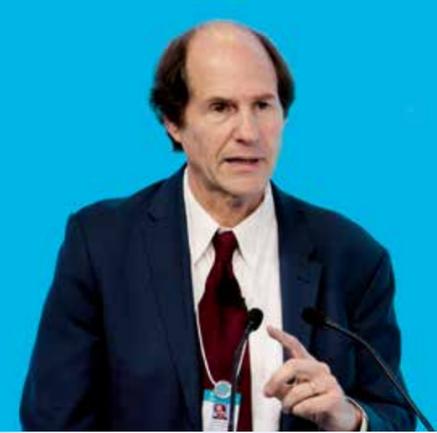
Vijay Kandy explained Decibel.LIVE's blockchain-based sensor technology that detects pollution at the source.

Sam Cossman revealed Qwake Technologies' device that helps first responders see through thick smoke.

Kevin Lee highlighted Mobilized Construction's crowd-sourced system for detecting and fixing potholes.

Daphne Guerrero presented a human resources management model whereby employees can move between departments depending on need, compatibility and preference.





Global Dialogue For Happiness

Experts from around the globe discussed the primary factors impacting happiness and wellbeing and shared recommendations for how governments can **put these principles at the heart of policy-making**

Life, Liberty & The Pursuit Of Scandinavian Happiness

HE Alexander Stubb

Vice President of the European Investment Bank, Former Prime Minister of Finland

“We have a danger of detaching ourselves from humanity, empathy, loving and caring”

Despite the region's harsh climate, five out of the world's 10 happiest countries are in Scandinavia. His Excellency Alexander Stubb, Vice President of the European Investment Bank and Former Prime Minister of Finland, announced at the start of his session.

He identified three 'axes of happiness' that are necessary for living a joyful life – the mind, the body and relationships. Learning something new every day,

getting plenty of sleep, eating a healthy diet and building real friendships in a world of virtual connectivity, Stubb said, are crucial to ensuring one's happiness.

Governments cannot create happiness, he asserted, and the Scandinavian model cannot be adopted by every nation. Governments can, however, 'nudge' their societies forward by creating a welfare state that supports everyone equally.

Finally, Stubb explained that how one structures their day impacts their happiness. He prescribed the 8+8+8 approach, which allows for eight hours of sleep, eight hours of work and eight hours of play.



Discovering Indonesia's Happiness Pyramid

HE Dr Bambang Brodjonegoro

Minister for National Development Planning & Head of the National Development Planning Agency of Indonesia

"By 2030, we want our world to be free of poverty and hunger – a world which can reduce inequality"

His Excellency Dr Bambang Brodjonegoro, Indonesia's Minister for National Development Planning, told the Summit's audience that the way to translate happiness into achieving the United Nations' Sustainable Development Goals (SDGs) was through the 'SDG Pyramid of Happiness'.

Comprised of spiritual, ecological and social objectives, this pyramid has been adopted in Dr Brodjonegoro's home country, which is currently listed as one of the happiest nations on the planet. Within the pyramid, the

17 SDGs are arranged into three tiers, with the higher-level needs resting upon the lower-level needs.

The foundational tier focuses on inclusiveness, humanitarian needs and social issues, while the middle tier is concerned with sustainability and nature. Finally, the top tier concentrates on spiritual needs such as peace and cooperation. The key to the pyramid's success, Dr Brodjonegoro asserted, lies in creating harmony between these three tiers.

Dr Brodjonegoro advised governments to work together with the private sector, academia, organisations and the public to ensure sustainable development and enhance the happiness and wellbeing of their people.



The Global **Happiness Outlook**

HE Ohood bint Khalfan Al Roumi

Minister of State for Happiness & Wellbeing of the United Arab Emirates,
Vice Chairman of the World Government Summit

“A noble goal can't be achieved by ambition and hope alone; it requires a shared vision at the highest level, coupled with practical steps to change government policies”

“My wealth is the happiness of my people”. With these inspirational words originally spoken by the late Sheikh Zayed bin Sultan Al Nahyan, founding father of the UAE, Her Excellency Ohood bint Khalfan Al Roumi, Minister of State for Happiness & Wellbeing, demonstrated how aspiring for happiness in the UAE

was a value which existed long before the establishment of the country in 1971. Speaking at her inaugural session at the Global Dialogue for Happiness, she said the concept was a fundamental element of Sheikh Zayed's vision for society and humanity.

Al Roumi noted the importance of the Global Dialogue for Happiness as a holistic approach to happiness, bringing together governments, scientists, experts and international organisations to design a better future for the world, especially when facing the challenges of today. Governments must rely on insight and determination to achieve their goals of bringing about radical and sustainable change, she said.



Enriching Lives Through Saudi's General Entertainment Authority

HE Eng Faisal bin Saeed Bafarat

CEO of the General Entertainment Authority of Saudi Arabia

"2017 was Saudi's year of entertainment, and this is just the beginning"

Saudi Arabia has put the happiness of its citizen at the centre of its Vision 2030 plan, while considering both sustainability and the progress of society and economy, said His Excellency Engineer Faisal bin Saeed Bafarat, CEO of Saudi's General Entertainment Authority (GEA).

The mission of the GEA is to develop and enable the emerging entertainment sector in Saudi Arabia, which

includes building theme parks, water parks, family entertainment centres, cinemas, theatre and live events, and developing culture and the arts.

In 2016, at the launch of the GEA, Saudi Arabia hosted only 52 events entertaining 100,000 people across the country. A year later, there were more than 2,200 events held across 48 cities with a collective participation that surpassed 8 million people.

Bafarat emphasised that 2017 was just the beginning for his country's burgeoning entertainment industry, and that it will continue to grow and expand.



Mind Up & **Be Happy!**

Goldie Hawn

Actor, Founder & President of The Hawn Foundation

Hala Badri

Moderator

"At the end of the day, everything starts and finishes with our neurobiology"

Goldie Hawn, a world-famous actress and founder of The Hawn Foundation, explained that children are prone to anxiety, and that traumatic moments retained in their psyche might affect a healthy upbringing.

After observing a life-altering tragedy, Hawn realised there was a need for teaching young people gratitude, empathy-building, understanding and mindfulness from an early age. She decided to create a programme tailored towards increasing the happiness and wellbeing of children. Hawn gathered neuroscientists, teachers, positive psychologists and practitioners

together to develop a holistic curriculum that is based on a firm understanding of the human brain and incorporates experiential acts of kindness and gratitude to help kids become independent thinkers and decision-makers.

The programme has proved successful, with 83% of the participating children gaining the skills to enhance their own happiness. Hawn asserted that giving the kids themselves the experience and tools to allow them to be in the driver's seat was the key.

"I love children so much because they are going to be the leaders of tomorrow, the parents of tomorrow," she concluded. "If we don't focus on their wellbeing, health and mental stability, we are not doing our job as the adults of today."



The *Global Happiness Policy Report*: Practical Guidelines For **Increasing Happiness**

Prof Jeffrey Sachs

University Professor of Health Policy & Management & Director of the Center for Sustainable Development at Columbia University

Prof John Helliwell

Senior Fellow of the Canadian Institute for Advanced Research, Professor Emeritus of Economics at the University of British Columbia

Richard Quest

Anchor & Correspondent for CNN, Moderator

Working hard to find the right recipe for happiness was the central theme of the joint session held by Professor John Helliwell and Professor Jeffrey Sachs.

Speaking at the Global Dialogue for Happiness, the two professors launched the first *Global Happiness Policy Report*, which is the World Happiness Council's first effort to assemble global evidence about the policies expected to be most effective in enabling better lives. The document, produced in parallel with the *World Happiness Report*, was compiled by experts in health, education and personal wellbeing. It distils ideas and

experiments from around the world, highlights global best practice and celebrates the best government achievements in this arena, providing advice on the execution, measurement and troubleshooting of happiness policies.

"The report aims to fill the gap between the emerging science of happiness and the wish of people across the world to lead happier lives," said Prof Helliwell.

Prof Sachs also praised the UAE for being at the vanguard of creating happiness policies.



A Nudge Towards Wellbeing

Prof Cass Sunstein

Robert Walmsley University Professor at Harvard University

“Humans tend to be unrealistically optimistic, which can cause trouble”

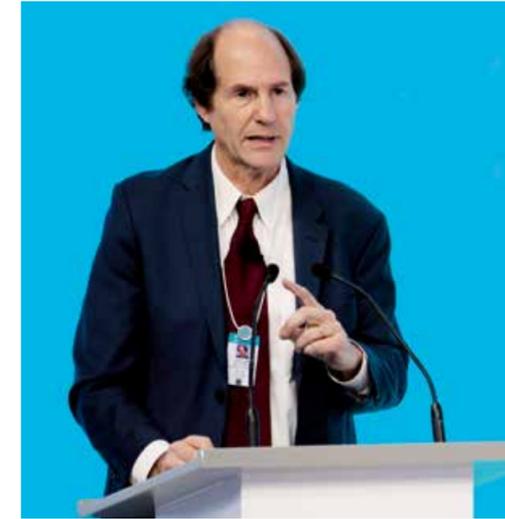
Governments need to use behavioural science applied policies known as ‘nudge strategies’ to help citizens to make better choices for themselves and improve their happiness and wellbeing, Professor Cass Sunstein told Summit delegates.

The American legal and behavioural economics scholar, who co-authored *Nudge: Improving Decisions About Health, Wealth, and Happiness* and wrote *Why Nudge?*, said people often need a ‘nudge’ to make better decisions.

A nudge is not an instrument of force because it preserves freedom of choice, he said, but it helps people get on the right road, much like a GPS system giving directions.

Recent studies show ‘nudges’ are more effective than aggressive strategies like fines or subsidies, and they can include things like calorie labelling on food to help people make healthier diet choices.

The United Kingdom started a landmark ‘Nudge Unit’, which applies nudge theory to try to improve policies and services as well as save money. This is an example for other governments to follow, Prof Sunstein advised.



Altruism: The Heart Of Happiness

Matthieu Ricard

Author, Founder of Karuna-Shechen

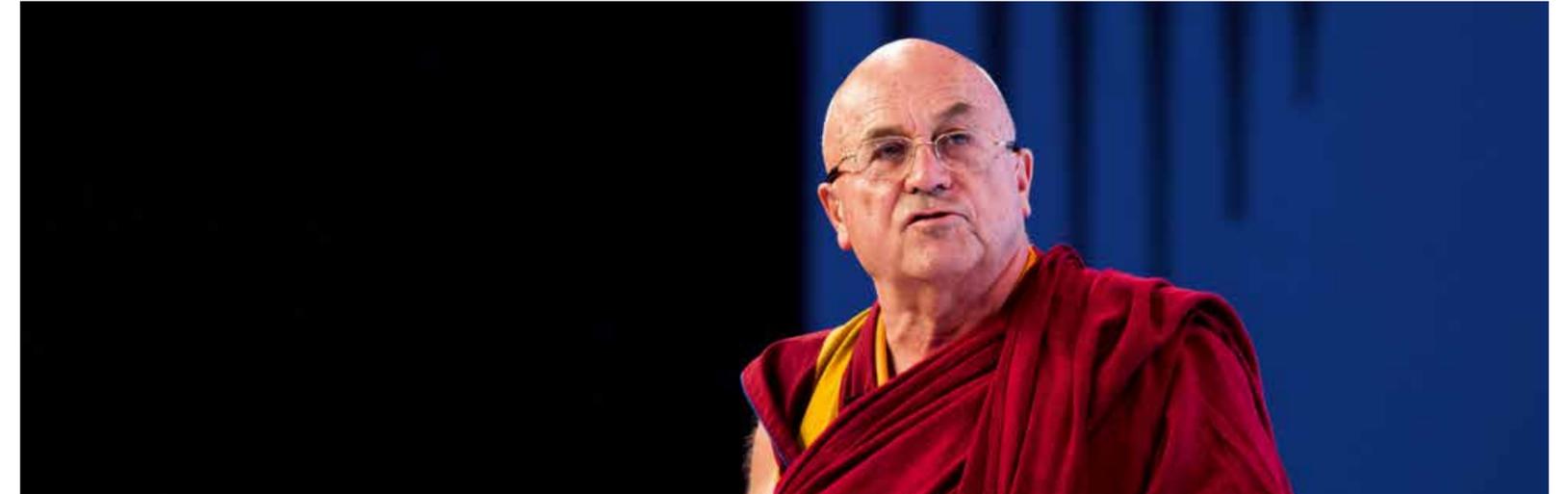
"Happiness is a wonderful pursuit, but unless we connect it to altruism, we will not succeed"

Trying to address the happiness of everyone on Earth seems like a much more daunting task than striving towards one's own, which is why many people focus their efforts on the latter, asserted Matthieu Ricard.

The search for selfish happiness, however, leads to arrogance, vanity and suffering, he explained. While people should strive to become better human beings, this is a goal which one can't achieve alone.

The major factors influencing a person's wellbeing and helping them avoid suffering are love, tenderness, generosity, connection, friendship and personal relationships. Ricard argued, however, that compassion, loving kindness and altruism, which all imply an unselfish concern for other people, must also be added to this list if one is to be successful in their quest for happiness.

To build a better world, he advised, people from all different disciplines must come together and find a conceptual thread that will allow humanity to work towards this goal. According to Ricard, selfishness has not been, and will never be, the answer.



Mindfulness

In A Digital Era

Prof Saki Santorelli

Professor of Medicine & Former Executive Director of the Center for Mindfulness in Medicine, Health Care & Society at the University of Massachusetts Medical School

"Lots of definitions of mindfulness exist but ultimately it's about relationality with ourselves, with our own bodies, with our own minds, and with what is happening in the world"

Professor Saki Santorelli asserted that the importance of mindfulness – the awareness of becoming more present in the moment – is an ever-growing challenge in a world that is increasingly digitally driven.

While technology has allowed society to advance, people need to learn how to use it without letting it dominate their lives. According to Prof Santorelli, the

digital age has three primary challenges – disattention, disconnection and forgetfulness. Data reveals that across the globe attention levels are decreasing, and while smartphones increase connectivity, feelings of loneliness are actually on the rise, he pointed out.

Connectivity can be 'intoxicating', Prof Santorelli admitted, but people need to 'sober up' and become more present in the current moment.

The challenge is to be in the here and now, he said – to stop, see, understand and choose wisely. Prof Santorelli pointed out that people tend to either contemplate the past or worry about the future, and that one way to remember to live in the present is through simple breathing exercises.



Building Wellbeing At Scale

Gabrielle Kelly

Director of the Wellbeing & Resilience Centre at South Australian Health & Medical Research Institute

"It's not just about the wellbeing of the individual, but rather the wellbeing of the whole community"

It is one thing to know the science and policy of wellbeing, but building it at scale is another issue entirely, asserted Gabrielle Kelly.

Kelly and her team were tasked with addressing that very matter to transform South Australia into a 'state of wellbeing' which places the wellbeing of its citizens at the heart of its policy-making. Two key challenges that were emerging when they began this undertaking were the rise of mental illness and problems with productivity. Kelly hypothesised that bolstering

wellbeing in South Australia might address both of these concerns.

Kelly explained to the audience that the key was to create an approach that would stick and ensure long-term change. The system Kelly's team devised is named 'Limber', which is derived from the plan's six central tenants – lead, initiative, measure, build, embed and research. To date, thousands of people in South Australia have been trained to implement wellbeing and resilience programmes.

In conclusion, Kelly reminded the Summit's audience of government leaders and policy-makers that the science of wellbeing already exists; it is the implementation side that must now be addressed



The Return On **Happiness**

Nisha Jagtiani

Group Director of Landmark Group

Jenn Lim

Co-founder, CEO & Chief Happiness Officer of Delivering Happiness, Moderator

“Whether you’re a small or large organisation, you have an obligation to make a difference in the community – it all starts with purpose”

The private sector should play a role in unlocking human happiness and promoting wellbeing within communities by investing in happiness programmes, said Nisha Jagtiani. It always results in a positive outcome, she explained, because aside from being an obligation to society, ensuring happiness – especially within the workplace – creates a more productive, creative and innovative environment. Active players in promoting employee wellbeing are also better able to

stay relevant in competitive global markets. It is vital to create an environment where ordinary people can do extraordinary things, she emphasised.

Jagtiani discussed the achievements and challenges of the Landmark Group’s Happiness Movement, which aims to increase engagement, education, connectivity, health and wellbeing among the company’s tens of thousands of staff across the Middle East.

One of the main challenges facing larger companies, like Landmark Group, is the sustainability of happiness programmes. While the belief is often there, companies need to work to keep their happiness ecosystems alive and thriving, she said.



Searching The World For Happiness

Meik Wiking

CEO of the Happiness Research Institute

"I, together with nine out of ten Danes, are happily paying our taxes and we do that because we feel we get a lot in return. We don't see them as taxes; we see them as private investments in the public good"

Meik Wiking, CEO of the Happiness Research Institute in Denmark, explained his quest to answer three questions: how do we measure happiness, why are some people happier than others, and how do you improve quality of life?

He addressed the reason that people living in Scandinavia – despite high taxes and extremely

cold weather – are so often happier than in other countries, explaining that they feel they get a lot in return. They view taxes as a private investment in the public good – investments in education, quality of life, social security and equal opportunities for men and women, for rich and poor. They lift up the bottom to improve the average, he said, and as a result they come out on top as the happiest, or the least unhappy, people in the world.

Wiking told the stories of happy people who embody six essential factors cited in the World Happiness Report: freedom, GDP per capita, generosity, health, social support and trust. He also urged others to share what makes them happy in his #look4lykke social media campaign.



What Makes People Happy?

Prof Paul Dolan

Professor of Behavioural Science at the London School of Economics & Political Science

“We should all be paying more attention and be much more serious about understanding the scarcest resource we all have – which is time”

Professor Paul Dolan, a London-based expert on happiness, spoke for 20 minutes – time that he promised would be full of ‘humour, intelligence and everything else’ but would still leave listeners 20 minutes closer to death.

Because lost time can never be retrieved, Prof Dolan argued that individuals, government leaders and

policy-makers need to look more closely at how people spend their time.

To be happy people need to experience pleasure and purpose, he said, and individuals need to find the right balance between those two things.

Prof Dolan emphasised that to be happy, one must change their actions instead of their thoughts. Policy-makers, he added, should find ways to help people use their time in ways that bring them pleasure, purpose and a balance between the two. Governments can achieve this by creating environments that enable people to use their time in this manner, he concluded.



Can Happiness Measure Progress In Society?

Prof Ruut Veenhoven

Emeritus Professor of Social Conditions for Human Happiness at Erasmus University Rotterdam, Director of the World Database of Happiness

“Poor nations focus on alleviating misery, while modern nations focus on introducing more happiness because they know it is possible”

As the ‘godfather of happiness studies’, Professor Ruut Veenhoven has made it his life’s work to find the secret to lifelong joy. As the study of happiness continues to develop, it has become difficult to manage all of the data collected on the subject, he explained.

With this in mind, he founded the World Database of Happiness, a web-based archive to gather the available

research on happiness and present it in an easily accessible format.

The data compiled in the World Database of Happiness points to a positive trend. “Gradually, in most countries, people are getting happier,” Prof Veenhoven said. “Also, surprisingly, in spite of widening differences in income, the difference in happiness is getting smaller.”

The World Database of Happiness contains information on the happiness of individuals in a range of circumstances across 165 different nations. According to Prof Veenhoven, the database offers everything governments need to form sensible policies.



School Kids Can Be Happier & We Can Prove It

Prof Lea Waters

Gerry Higgins Chair in Positive Psychology of the Centre for Positive Psychology at the University of Melbourne, President of the International Positive Psychology Association

“We know wellbeing programmes in schools are something we need because World Health Organization statistics show young people are struggling”

Schools should be playing a prominent role in delivering mental health solutions to their students, Professor Lea Waters announced to the Summit.

Prof Waters has spent 22 years researching psychology, which has prompted her to look closer at wellbeing programmes in educational institutions. She stressed that there is obviously a need for this, as

statistics show that between 10 and 20% of young people worldwide experience mental disorders.

She explained that school is where young people spend the bulk of their time, so it makes sense for them to adopt a dual purpose – to provide academic instruction and teach skills to enhance wellbeing.

The mental processes used to learn traditional school subjects, Prof Waters said, are the same ones required to learn wellbeing skills, resilience, cognitive reframing, mindful acceptance, character strength and social skills.

She concluded by highlighting several peer-reviewed studies that emphasised the positive impact teaching wellbeing can have on students' mental health.



A Gut Feeling About **Happiness**

Dr John Cryan

Professor & Chair of the Department of Anatomy & Neuroscience at the University College Cork

"You are what you eat, and you feel what you eat"

Neurobiologist Dr John Cryan explained to the Summit's audience that the trillions of microbes residing in one's gastrointestinal tract influence all aspects of physical wellbeing, including brain health.

Over the last decade, Dr Cryan and his research group have been focused on understanding how the gut and the microorganisms that call it home, known collectively as the 'microbiome', speak to the brain and impact mental health and emotional issues.

Dr Cryan's research has revealed that having the right microbes in one's gut, which is heavily influenced by one's diet, is imperative to normal neurodevelopment, and that lacking the appropriate microorganisms can lead to negative behaviours and conditions such as anxiety, autism and an elevated stress response. This means, Dr Cryan asserted, that targeting one's microbiome may help alleviate some effects of stress, a concept known as psychobiotics.

This research is just the beginning of an exciting journey, Dr Cryan said, as he expressed his enthusiasm about a new way to treat mental illness and enhance wellbeing.



Solving Mysteries Of The Brain & Secrets Of The Heart

Dr James Doty

Clinical Professor of Neurosurgery at Stanford University School of Medicine

"Compassion is extraordinarily powerful"

Dr James Doty created the Center for Compassion and Altruism Research and Education at Stanford University School of Medicine to find out what motivates people to care. He shared his personal story of being brought up in poverty, with an alcoholic father and a sick mother, to explain why. When he was 12 years old, he met someone who invested their time in giving him valuable life lessons. She taught him that much of his suffering was the manifestation of stress and reacting to events and that the negative voices in his head were

adding to his unhappiness. He learned that compassion, self-acceptance and self-affirmation were powerful forces for good.

After he turned his life around, finished medical school and began researching compassion, he found students were being told there was no career to be had in the subject. Ten years later, Dr Doty has worked on entire textbooks dedicated to academic research on compassion, which includes discovering how people can even be trained to maximise their genetic potential for compassion, resulting in profound physiological effects such as lower blood pressure, a stronger immune system and increased longevity.



Gamifying **Happiness**

Dr Acacia Parks

Chief Scientist at Happify

“People always want to express gratitude in the least personalised way, but going out of your comfort zone is more valuable”

The latest innovations in the science of happiness can be transformed into exercises, activities and games to help people lead more fulfilling lives. Dr Acacia Parks explained to the international leaders, policy-makers and experts in attendance.

Simply articulating gratitude is one activity that can improve wellbeing, Dr Parks said, and delivering that

gratitude to a person in a personalised way makes the practice even more beneficial. Another activity she described was ‘savouring’, or enjoying an experience to its fullest. Merely being kind to someone can also boost happiness.

These simple tools form the basis of Happify, an application that combines technology, self-help coaching and interactive games to improve wellbeing and personal happiness, she said. Based on scientific research from the brightest neuroscientists and psychologists at top institutions, the app features activities and games meant to teach and reinforce the skills necessary to reach one’s goals, Dr Parks explained.



The Power Of Meaning: Crafting **A Life That Matters**

Emily Esfahani Smith

Author, Editor for the Hoover Institution at Stanford University

"We can get preoccupied with happiness, but research has shown that finding meaning in life is actually the more fulfilling path"

The world is getting better by every metric, however, people feel more hopeless, depressed and alone than ever before according to Emily Esfahani Smith.

The journalist and author spent five years uncovering what brings people fulfilment. Through those years of research and 100 interviews from around the world,

she has determined that this despair is not a lack of happiness but a lack of a meaning in life.

Her book, *The Power of Meaning: Crafting A Life That Matters*, identifies four pillars of pursuing a meaningful life: belonging, purpose, storytelling and transcendence. Without something worthwhile to do, people flounder. A lack of purpose is actually a hazard to one's health.

Smith explained to the audience that one can look to transformational experiences, purpose and adversity to answer life's most basic question – "How do I find meaning in life?"



Building Generation H: **Hope & Happiness** In The Arab World

Shaymaa Aleidi

Founder of the 'I Can' Campaign

Hisham Al Dahabi

Founder of The Iraqi Safe House for Creativity

Zeina Yazigi

Moderator

Part of the Global Dialogue for Happiness, this inspirational session hosted Hisham Al Dahabi and Shaymaa Aleidi – two people who have succeeded in giving hope to children who desperately need it.

Al Dahabi told the audience how his life changed when he gave a homeless child a place to live. He soon realised he could help more than just one child.

Now known as 'The Father of Orphans', Al Dahabi established The Iraqi Safe House for Creativity to provide education and life skills to underprivileged kids

– an endeavour which has been recognised by the UAE's Arab Hope Makers initiative.

Shaymaa Aleidi then told her inspiring story. While recovering from cancer, she overcame her own pain by helping children with the same disease. She started a website to match stem cell donors from around the world with children suffering from leukaemia free of charge. Her programme has helped more than 200,000 children to date. "Cancer was my blessing," Aleidi said. "I didn't let myself be brought down by illness; instead, I used it to serve others, especially children."



AI: The New Measurement Of Happiness

Kazuo Yano

Corporate Chief Scientist at Hitachi

“Every outcome provided to the AI needs to be related to the happiness of people”

Most people never consider that automated technologies and wellbeing can work hand-in-hand, asserted Kazuo Yano, Corporate Chief Scientist at Hitachi during his address at the World Government Summit. Artificial intelligence (AI) systems, according to Yano’s research, can help improve business performance by advising companies and workers. Wellbeing in the workplace leads to greater worker productivity and gains for employers and employees alike.

Unlike traditional technologies which have more rigid outcomes, AI has the benefit of producing more flexible, personalised results. Only by utilising AI can the world move away from fixed, standardised processes, Yano explained. This change, he asserted, will lead to increased happiness and productivity in the workplace.

“A happy organisation is a productive organisation,” he said. Small interventions that improve happiness in the workplace have been proven to increase productivity by up to 30%. Technology depends on happiness, and happiness depends on technology, Yano concluded.



Measuring What We Treasure: **Student Wellbeing** In Dubai

Dr Abdulla Al Karam

Chairman & Director General of the Knowledge & Human Development Authority of the Government of Dubai

“Wellbeing isn’t just about the trees and grass – it’s about the whole ecosystem”

Wellbeing is what supports a good life, and Dubai’s Knowledge and Human Development Authority (KHDA) has made a commitment to putting wellbeing at the centre of its conversation with schools, teachers, parents and, most importantly, students.

The authority’s director general Dr Abdulla Al Karam explained how KHDA launched the first-ever Dubai Student Wellbeing Census last year to assess and address the wellbeing of its student populations. The

inaugural study showed that 84% of children attending private schools in Dubai were happy most of the time. It also found that students in more senior grades feel less happy than their younger schoolmates. This information has offered KHDA a baseline to compare student levels of wellbeing year on year.

The census showed that the happiest students were those who eat well, sleep well, have close friends and feel connected to adults at home and at school. With this information at hand, developing successful wellbeing policies now depends on all stakeholders in the education community working in tandem, Dr Al Karam asserted.



The Human Values Of Happiness

Dr Sonja Lyubomirsky

Professor of Psychology at the University of California, Riverside

“Variety is really good to spice up the pursuit of happiness, but when you don't have the right amount of variety, you can undermine your wellbeing”

Psychology professor Dr Sonja Lyubomirsky explained to the Summit audience that she and her students have been conducting 'happiness interventions' since 1999. These studies have shown that people can become happier when they deliberately practice positive activities, such as expressing gratitude, savouring the

good things in life, and through generous gestures or acting positively.

As part of her first research study, she asked a volunteer group to count their blessings either three times or one time per week for six weeks. Subjects who counted their blessings once per week became more grateful and happy. Surprisingly, those who counted three times per week experienced no benefit at all.

“If you count your blessings too many times, you might become bored,” she said. Too much investment in the pursuit of happiness can backfire, she concluded.



Social Media: The Happiness Vault

Andrew Schwartz

Principal Investigator for the World Well-Being Project at the Positive Psychology Center of University of Pennsylvania

“People are sharing feelings, social relations and daily real-world experiences every day”

Social media posts can be a useful indicator of a person's happiness and life satisfaction levels, as well as give in-depth insight into the wellbeing of wider communities. Andrew Schwartz explained how Google Flu Trends, which tracked symptom-related search queries against location data to predict the spread of influenza, demonstrated to him the potential of this vast resource. Imagine if the same could be done for the happiness and wellbeing of whole communities, he said.

Organisations spend millions of dollars each year surveying the happiness of nations, he pointed out, yet it is often debated whether surveys are the optimal way to assess wellbeing, as people may not be fully self-aware or may show bias when answering questions. Social media, on the other hand, is a tool integral to everyday life, which could be used to monitor a more genuine expression of the state of their wellbeing.

It could help governments design policies and measures which are not only in the best economic interests of their people or businesses, but which also truly improve wellbeing.





Climate Change Forum

International leaders and advocates highlighted the near-term solutions necessary to address the **growing humanitarian dimension of climate change**

Climate Change: A Threat Multiplier

HE Elhadj As Sy

Secretary General of the International Federation of Red Cross & Red Crescent Societies

HRH Princess Sarah Zeid

Chair of Every Woman Every Child EveryWhere

HE Adnan Amin

Director General of the International Renewable Energy Agency, Moderator

His Excellency Elhadj As Sy was joined by Her Royal Highness Princess Sarah Zeid of Jordan for a heartfelt discussion about environmental global solidarity, investment for the future and resilience, moderated by His Excellency Adnan Amin.

As Sy said the most concerning statistics were of those who suffer most, yet are already living a sustainable life. Islands around the world contribute the least to the world's environmental issues but are often hit the hardest, he asserted.

Amin emphasised that climate change is altering civilisation as we know it, giving Cape Town as an example of a beautiful city under serious long-term threat as its water supply dwindles.

Princess Sarah concluded the session by urging people to tap into the passion and knowledge of women wherever possible. To emphasise this point, she highlighted that the probability of a peace agreement lasting more than 15 years increases by 35% if women are included in the process.



Rising Tides: Preparing For **The New Normal**

HE Gaston Browne

Prime Minister of Antigua & Barbuda

Robert De Niro

Actor, Producer & Director

HE Dr Thani Ahmed Al Zeyoudi

Minister of Climate Change & Environment of the United Arab Emirates

Hon John Silk

Minister of Foreign Affairs & Trade of the Marshall Islands

Peyman Al Awadhi

Founder & Managing Director of Barza New Media, Moderator

In an intriguing panel discussion on dealing with the reality of climate change, Oscar-winning actor Robert De Niro said it was time to confront the challenges of global climate change, calling for his home nation of the United States to reclaim its leading role. De Niro talked about his work to rebuild sustainable communities on a 'human scale' on the Caribbean island of Barbuda, but expressed the need to do it by way of an example to other small islands.

His Excellency Gaston Browne, Prime Minister of Antigua and Barbuda, said being prepared was a priority

and that a future model focused on sustainable living was a must.

The UAE's Minister of Climate Change and Environment, His Excellency Dr Thani Al Zeyoudi, highlighted the work the UAE has done with some Pacific Islands since 2010 to mitigate the effects of climate change.

As the session came to a close, the panellists agreed there are viable solutions as long as there is a will and support from other nations.



Women & Youth: The Catalyst To Solve Global Challenges

Forest Whitaker

Actor, Founder & CEO of Whitaker Peace & Development Initiative, UNESCO Special Envoy for Peace & Reconciliation

HE Hessa bint Essa Bhumaid

Minister of Community Development of the United Arab Emirates

HE Adnan Amin

Director General of the International Renewable Energy Agency, Moderator

Forest Whitaker, world-renowned actor and UNESCO Special Envoy for Peace and Reconciliation, and Her Excellency Hessa bint Essa Bhumaid, Minister of Community Development of the UAE, sat down with His Excellency Adnan Amin to discuss the importance of empowering women and children.

Both panellists agreed that young people and women were the most vulnerable groups and the most negatively affected by climate change and natural disasters, yet they also hold the key to solve global

challenges. By equipping them with the right skills and resources, solutions can be found.

Amin posed an important question to the panellists: "How do we prepare ourselves for a future where we will see more disasters and heightened levels of conflict spurred by a lack of natural resources?" Whitaker responded, saying that young people should be seen as part of the solution, not part of the problem. Young people can effect great change as long as they are allowed to do so, he said.



Climate Change & Its Impact On **Global Prosperity**

HE Dr Thani Ahmed Al Zeyoudi

Minister of Climate Change & Environment of the United Arab Emirates

"Climate change is the biggest threat we have ever faced, but it is also our greatest opportunity"

His Excellency Dr Thani Al Zeyoudi, Minister of Climate Change and Environment of the UAE, warned of unprecedented numbers of environmental disasters set to blight the future if humanity fails to take action against climate change now.

In his address to the Summit entitled 'Climate Change & Its Impact On Global Prosperity', Dr Al Zeyoudi stressed that every person has a role to play in this global fight.

"Climate change is the biggest threat we have ever faced, but it is also our greatest opportunity," he said. "We have proven that climate action leads to more jobs, more growth and more resilience and prosperity, including for women and youth."





Global Governance Of AI Forum

Through a series of sessions and workshops, technology experts and government leaders worked together to identify the best approaches for **managing the rise of artificial intelligence**

Access To Technology & Development

will.i.am

Founder & CEO of i.am+

HE Omar Sultan Al Olama

Minister of State for Artificial Intelligence of the United Arab Emirates,
Managing Director of the World Government Summit, Moderator

“Nine-year-olds need to be equipped with skillsets so that when they are 29 they are able to solve the problems that we can’t even foresee right now”

Acclaimed musician and tech entrepreneur will.i.am sat down with His Excellency Omar Sultan Al Olama, Minister of State for Artificial Intelligence of the UAE, to discuss how governments should incorporate technology to better serve their citizens.

will.i.am asserted that human intelligence is just as important as artificial intelligence (AI), because if shaping the future of government means embracing

AI, then humans are the ones who will build, control and understand this new world. Investing in and educating youth is particularly important, he stressed, because they are the ones who will create the jobs and governments of tomorrow.

AI is a tool to help solve bigger, newer problems, because humans cannot solve the problems of today with yesterday’s antiquated tools, will.i.am asserted.

Humanity is at an intersection where it has never been before, he said. We have created something that gives the illusion of independent thought, but humans are still AI’s creators and so there is nothing to fear as long as humanity has the right intentions, he concluded.



The Paradox Of Choice & Morality: How Intelligent Is **Artificial Intelligence?**

Prof Nick Bostrom

Founding Director of the Future of Humanity Institute & Director of the Governance of AI Program at the University of Oxford

Alex Klokus

Co-founder & CEO of Futurism, Moderator

“The arrival of superintelligence is not just a big advance in AI, but it is a kind of jump forward in all technical, scientific and economic areas to something close to the final state”

The prospect of humans developing a super-intelligent system – that is, a system smarter than the most intelligent human brain – is now inevitable, asserted Professor Nick Bostrom, Founding Director of the Future of Humanity Institute and Director of the Governance of AI Program at the University of Oxford.

The artificial intelligence (AI) expert and author told the Summit that scientists are moving closer to creating superintelligence – something which is achievable as long as humans do not destroy themselves by some other means before it is realised.

Prof Bostrom cautioned, however, that with the dawn of superintelligence comes two serious considerations, namely how to guarantee an AI system will work exactly as intended and how to ensure the system is used for the greater good.

While superintelligence poses great opportunities for humanity, its risks could be just as great, he said.



AI 101

Kevin Kelly

Founding Executive Editor of *WIRED* Magazine

Alex Klokus

Co-founder & CEO of Futurism, Moderator

"A lot of the jobs we fight over as artificial intelligence advances are jobs that no humans should actually be doing"

Kevin Kelly, Founding Executive Editor of *WIRED* magazine and best-selling author of *The Inevitable*, told the audience of international leaders and policy-makers that he is optimistic about the impact artificial intelligence (AI) will have on jobs in the future.

The greatest products of the next 25 years have not been invented yet, and there has never been a better time to get started, he said. Although the world is

aware that AI is coming and recognises its benefits, there are currently few experts in the subject, meaning less competition and cheap entry.

Assuaging a common fear surrounding AI, Kelly explained that robots will not take over every job on the planet because AI will simply complement human existence. He predicted that more jobs will actually be created with the evolution of the technology than will be replaced by machines.

According to Kelly, the next 10,000 most successful start-ups will be those which take something – an idea, product, experience, etc – and then enhance it using AI.



Why Governments Need To Invest In **Robotics & AI**

Jürgen Schmidhuber

Co-founder & Chief Scientist of NNaisense

Carol Reiley

Co-founder & President of drive.ai

Anima Anandkumar

Principal Scientist at Amazon AI

Alex Klokus

Co-founder & CEO of Futurism, Moderator

In a panel discussion moderated by Futurism's Alex Klokus, three industry experts examined why governments should invest in artificial intelligence (AI) and robotics, and their role in regulating these technologies.

Anima Anandkumar, Principal Scientist at Amazon AI, said there is a need for coordination across all government departments within an administration because AI is a horizontally expanding industry which will affect all sectors. She also pointed out that AI has the potential to recognise human intent and therefore provide services without people having to ask.

Carol Reiley, whose company drive.ai creates self-driving systems, explained there must be a balance between people working to develop the technology and the government's role in creating a framework for its standards and regulations.

Jürgen Schmidhuber, Chief Scientist of AI firm NNaisense, highlighted that education is crucially important to maximising the potential of AI. Machines, he added, will eventually have the desire to problem-solve and invent their own experiments, and humanity must be prepared for that.



AI & The **Future Of Work**

Prof Daniela Rus

Andrew & Erna Viterbi Professor of Electrical Engineering & Computer Science & Director of the Computer Science & Artificial Intelligence Laboratory at Massachusetts Institute of Technology

Alex Klokus

Co-founder & CEO of Futurism, Moderator

"AI machines today can read more radiology scans in a day than doctors will see in a lifetime"

Community stakeholders must work together to promote lifelong learning and retraining to safeguard societies against the threat of automation, advised Professor Daniela Rus, Director of the Computer Science & Artificial Intelligence Laboratory at Massachusetts Institute of Technology.

Although intelligent systems are becoming increasingly capable of performing a variety of tasks, humans still

outperform machines considerably on critical functions like perception, reasoning and creativity, Prof Rus explained. Industries and organisations must therefore consider automating individual tasks, not entire professions. Machines, she said, can increase productivity by taking on routine assignments, allowing people to focus on the responsibilities they find exciting.

According to Prof Rus, when a new technology is introduced there is always the chance it will compromise both the quality of work and wages. The solution is to provide people with the skills they need to adapt and meet the requirements of today's rapidly evolving job market, she advised.



Future Cities & AI In Partnership With Dubai Municipality

Prof Stuart Russell

Professor of Computer Science & Smith-Zadeh Professor in Engineering at the University of California, Berkeley

Alex Klokus

Co-founder & CEO of Futurism, Moderator

"Intelligent cities are not synonymous with happy cities; the quality of interactions with a city is not equal to quality of life in the city"

Professor Stuart Russell explained that artificial intelligence (AI) will have a multi-layer impact on future cities, from everyday application to infrastructure development.

In an era where many routine tasks can be automated, and in which the visual systems of computers have a better object-recognition rate than humans, the possibilities are endless, he asserted.

From transportation and manufacturing to services and employment, AI systems will enable future cities to run more efficiently. For example, autonomous cars will feed into other modes of mass transit, allowing people to move in larger volumes and at almost no cost.

According to Prof Russell, technology such as 3D printing will make it possible to manufacture objects in one's own home, possibly creating shifts in production, distribution and warehousing.

Through an intelligent system of sensors, actuators and performance measures, future cities will change the way residents interact with the communities within which live, and vice versa.



Is A **Machine-driven World** A Better World?

Dr Gregory Curtin

Founder & CEO of CivicConnect

Ajit Jaokar

Founder of futuretext, Course Director & Lead Tutor of Data Science for the Internet of Things at the University of Oxford, Advisor to The AI Initiative at the Harvard Kennedy School

Elizabeth Linder

Founder & CEO of The Conversational Century

Richard Stirling

CEO of Oxford Insights

Leanne Fry

Chief Innovation Officer of the Australian Transaction Reports & Analysis Centre

According to a panel of industry experts, the accelerating rise of artificial intelligence (AI) is accompanied by optimistic promises that it will vastly improve quality of life, and the potential that it may jeopardise the very existence of human civilisation.

In between these two extreme ends of the spectrum, governments and societies are faced with the challenge of understanding the constantly changing state of AI and advanced technology, they said.

The panellists highlighted Brave Conversations, a conference about the shifting relationship between humans and technology. One of the event's outcomes has been the Future Worlds Challenge. This multi-platform game presents secondary school students with the opportunity to design potential future worlds. The game aims to challenge and engage tomorrow's leaders to work with all the resources available to them, while testing scenarios and exploring the consequences of their decisions.



What We Need To Know About AI

Dr Roman Yampolskiy

Associate Professor of Computer Engineering & Computer Science at the University of Louisville

Alex Klokus

Co-founder & CEO of Futurism, Moderator

"I will argue that the next step is something beyond human capacity. Super intelligent systems are more capable than all of us combined in every domain"

Dr Roman Yampolskiy, Associate Professor of Computer Engineering and Computer Science at the University of Louisville in the United States, predicted that the demand for cybersecurity experts will rise to unfathomable levels over the next few decades in response to issues the world may face with the introduction of more competent artificial intelligence (AI).

It is imperative that humans understand the implications of this as the arrival of

'superintelligence' – the moment when machine intelligence outstrips that of the most intelligent human brains – is coming more swiftly than one can imagine due to unprecedented levels of funding, he explained.

Dr Yampolskiy cautioned that with the rise of superintelligence comes super-complex issues, superviruses, supersoldiers and super-concerns. The world is already witnessing an increase in cyberattacks, he said, and that only stands to get worse.

Eventually, the battle for cybersecurity will see AI fighting against AI, as these systems become faster and more accurate. Governments must work together to ensure such threats are kept to a minimum, Dr Yampolskiy advised.





Space Settlement Forum

Astronauts, academics, scientists and researchers explored humanity's future in the cosmos and the **implications of colonising space**

The Future Of Colonising Space

Neil deGrasse Tyson

Astrophysicist & Frederick P Rose Director of the Hayden Planetarium at the American Museum of Natural History

Saeed Al Gergawi

Director of the Mars 2117 Programme at the Mohammed bin Rashid Space Centre, Moderator

"You want to avoid stagnation. If you're actually advancing a space frontier, make advancement the natural state of everything"

History shows that forecasting the future of space travel is difficult, said astrophysicist Neil deGrasse Tyson. Predictions have been too conservative at times, and then too ambitious at others.

Tyson highlighted that space missions need to have a defensive component or economic benefit to get off the ground. With financial returns often uncertain, space programmes tend to be spearheaded by governments, he said, because only they can invest in

projects with such long-term economic and geopolitical pay-offs.

Practical solutions should not be overlooked while pursuing grand ambitions, Tyson advised. To illustrate, he explained that many people argue humans should become a multi-planet species in the instance that an asteroid strikes and decimates the Earth. It would be simpler and more cost-efficient, he said, to develop a solution that keeps the asteroid from hitting Earth in the first place.

To conclude, Tyson praised the UAE's space programme, saying it echoed the technological advances seen in the Middle East during the golden age of science a millennium ago.



Why Do Governments Invest In Astronauts? In Partnership With *Popular Science*

Chris Hadfield

Former Astronaut for the Canadian Space Agency

Dr Mae Jemison

Former Astronaut for NASA

Cady Coleman

Former Astronaut for NASA

Rachel Feltman

Science Editor of *Popular Science*, Moderator

In an enlightening joint session, former astronauts Chris Hadfield, Cady Coleman and Dr Mae Jemison examined why it is important for governments to invest in space exploration.

Astronauts are the first modern explorers who see the Earth in a way the rest of humanity cannot. From the earliest days, people have always had a drive and determination to discover the unknown, said Hadfield. Humans have now transitioned from exploring space to colonising it – a move which marks a significant change in history and an amazing accomplishment for humankind.

Cady Coleman said space compels humans to think differently about scientific processes that are vitally important on Earth, such as combustion and the behaviours and physical properties of liquids. She emphasised that living and working in microgravity takes teamwork, and requires people from all different backgrounds and cultures to come together in pursuit of a common goal.

Dr Mae Jemison stressed that for space exploration to reach its full potential of improving life on Earth, it must be generated by a diverse range of people and accessible across generations.



Space Exploration In The Heart Of Earth

HE Sarah bint Yousif Al Amiri

Minister of State for Advanced Sciences of the United Arab Emirates

“Investment in our intellectual capital using science and technology to find solutions to our challenges and drive our economy is the essence of our science strategy”

The UAE has been driving innovation worldwide through its demand for advanced technologies to improve its government, economy and – most importantly – the lives of its people, said Her Excellency Sarah bint Yousif Al Amiri, Minister of State for Advanced Sciences of the UAE.

Historically, advancement has been driven by a need for dominance, not exploration. Governments today should instead drive change through science and technology, the minister asserted.

Space exploration offers an opportunity for people who study physics and mathematics to pursue careers outside of academia, Al Amiri said. In particular, the UAE is opening doors for atmospheric scientists, climatologists and statisticians, as well as others.

The country is investing in intellectual capital using science and technology to find solutions to its challenges and drive its economy.



The Next Gold Mine: Selecting Resource-rich Targets In Space In Partnership With *Popular Science*

Prof Tanja Masson-Zwaan

Assistant Professor & Deputy Director of the International Institute of Air & Space Law at Leiden University

Prof Lindy Elkins-Tanton

Director of the School of Earth & Space Exploration at Arizona State University

Angel Abbud-Madrid

Director of the Center for Space Resources at the Colorado School of Mines

Mary Beth Griggs

Assistant Editor of *Popular Science*, Moderator

As a species, humanity tends to work full force when it comes to resources – from gold rushes and oil booms to prospecting for rare-earth minerals – speeding towards the next big thing that society can use. Space is no different.

Professor Lindy Elkins-Tanton explained that NASA is sending a robotic mission to the outer asteroid belt to examine an asteroid whose surface is believed to be 90% comprised of nickel-iron alloy. It will be the first 'metal world' visited by humans, she said.

Angel Abbud-Madrid said it is important to understand what kinds of resources space can offer. He highlighted water as a crucial asset, as it will be needed for humans to drink and to produce oxygen for growing plants. Its molecules can even be split to create fuel for rockets.

Professor Tanja Masson-Zwaan highlighted a set of treaties ratified by more than 100 countries which already lay out guidelines for states' cooperation in space. The next step, she said, is enacting legislation to govern space exploration and resource ownership.



Are Humans Necessary For Exploration? In Partnership With *Popular Science*

Dr Mae Jemison

Former Astronaut for NASA

Dr Bidushi Bhattacharya

Rocket Scientist, Founder & CEO of Bhattacharya Space Enterprises,
Co-founder & CEO of Astropreneurs HUB

Dan Lester

Senior Scientist at Exinetics

Rachel Feltman

Science Editor of *Popular Science*, Moderator

A panel of space exploration experts convened at the Summit to discuss the likelihood that robots will be an essential component for missions to distant planets in the future. Robots are more efficient for certain kinds of science, particularly space exploration – they don't need to be fed with anything other than energy, can tolerate a one-way trip without complaint and their use removes any risk to human life.

Humans, however, are able to adapt as space missions develop, explained former astronaut Dr Mae Jemison, allowing for more rapid research during the mission

itself. Furthermore, humans tend to push the limits of the scientific equipment at their disposal.

Scientist Dan Lester asserted that the cooperation of humans and robots would allow humans to reinvent human space exploration.

Technical innovations and economic benefits are gained from space exploration but there were also social and emotional benefits, said rocket scientist Dr Bidushi Bhattacharya. These, together with the social capital acquired from exploring, cannot be gained from robots.



The Case For **Space**

Prof Alan Duffy

Lead Scientist at The Royal Institution of Australia

John Mankins

Founder & President of Mankins Space Technology, Inc

Dr Henry Hertzfeld

Research Professor of Space Policy & International Affairs at The George Washington University

Marit Undseth

Senior Policy Analyst at the Organisation for Economic Co-operation & Development

In an enlightening joint session, experts and innovators in space technology gathered to discuss the opportunities and challenges the cosmos hold for humanity.

Space promises new skills, techniques and talent as generations of the best and brightest are focused on a quest that spans engineering, science and technology, said Professor Alan Duffy. The benefits stemming from a vision to colonise Mars a century from now can be enjoyed on Earth today, he added.

Marit Undseth highlighted that the value of space activity is growing significantly, and is now worth

between \$200 billion and \$300 billion. The growing number of actors in the sector, she added, also leads to more international cooperation.

John Mankins cautioned that settling Mars will be difficult from a technical point of view, with things like basic life support posing a real challenge.

Concluding the session, Dr Henry Hertzfeld explained that Mars will still be an expensive investment in 100 years from now. The use of space for terrestrial applications, however, could be valuable and should not be overlooked.



In Situ Resources: **Water**

Richard Davis

Assistant Director for Science & Exploration of the Science Mission Directorate of NASA

"A thousand years from now, people will look back on this moment in time and say: 'This is when humans became a multi-planetary species'"

Water is the essence of life, asserted Richard Davis, Assistant Director for Science and Exploration of NASA's Science Mission Directorate, and substantial amounts have now been discovered on Mars.

About three years ago, Davis explained, an effort was launched to find the best location for a base camp on Mars. The entire history of exploration has proven that

choosing a site sets the stage for success going forward, he said, and to make a well-informed decision scientists needed to know more about the availability of water on the Red Planet.

Water is so vitally important, he said, because it can be used to create rocket fuel and help generate power for space rovers – not to mention that it is essential for life.

According to Davis, producing water on Mars would be challenging, but this will push innovation forward. No one has all the answers, he concluded, but by working together we can address the issues.



Farming In Space: The Opportunities & Challenges Of Space

Christophe Lasseur

Head of the MELiSSA Project at the European Space Agency

Dr Julio Valdivia-Silva

Postdoctoral Researcher at the NASA Ames Research Center

A six-member crew on a mission to Mars would need more than 100 tonnes of oxygen, food and water to reach their objective. The challenge facing Christophe Lasseur, head of the MELiSSA Project at the European Space Agency, and Dr Julio Valdivia-Silva, a postdoctoral researcher at the NASA Ames Research Center, is to find a way to convert the mission's waste into more resources, creating a miniature sustainable ecosystem.

The MELiSSA Project tested cutting-edge recycling methods on lakes and found a loop system,

progressively transforming waste into nutrients to be able to produce plants and algae. However, producing food is only the first step.

Human physiology changes in microgravity, so recipes that are enjoyed on Earth can taste completely different in orbit. Lasseur and Dr Valdivia-Silva highlighted that finding vegetables that can adapt to the extreme conditions on the Red Planet and understanding the limits of plant growth are vital for space exploration.



International Cooperation In Deep Space

Franco Fenoglio

Head of the Human Spaceflight & Transportation Unit at Thales Alenia Space

“The global aspirational road map reminds us of the importance of international cooperation”

The world is aspiring to establish a permanent settlement on Mars by 2117. A global road map to guide these efforts has been developed, but its success hinges on cooperation and international effort, argued Franco Fenoglio, Head of the Human Spaceflight and Transportation Unit at Thales Alenia Space.

The first step of this journey is to create a deep-space gateway which orbits the moon, Fenoglio said. It would be an outpost for relatively short missions and a

technology testing centre. The gateway would be used to support the preparation of the second phase, he pointed out, which is deep-space transport.

The same team that conceived the International Space Station has devised the NextSTEP programme, Fenoglio explained, which is based on a public-private partnership model. So far, NextSTEP has six contracted companies, including Lockheed Martin, Orbital and Boeing, to carry out the mission.

Thales Alenia Space is supporting the general deep-space gateway architecture, with a primary focus on habitation, but each partner in the programme will contribute based on their field of expertise, he said.





From India To The World

A special delegation from the WGS18 Guest Country showcased India's developmental experience, highlighting **innovation in vital sectors**



"Technology has empowered the common man by facilitating maximum governance with minimum government"

Hon Narendra Modi

Prime Minister of India

Will India Lead The **Global Economy** In The Future?

Shobana Kamineni

President of the Confederation of Indian Industry

Sunil Kant Munjal

Chairman of Hero Enterprise

CP Gurnani

Managing Director & CEO of Tech Mahindra

Richard Quest

Anchor & Correspondent for CNN, Moderator

In a panel discussion examining the outlook for India's role in the future global economy, Shobana Kamineni, Sunil Kant Munjal and CP Gurnani told Summit delegates that while the country is already a leader with an open economy, there is still much work to be done in terms of infrastructure, education and healthcare.

The panellists agreed that supporting small and medium enterprises (SMEs) should be higher on policy-makers' agendas. Bolstering start-ups and SMEs, they said, is the only way to address the

challenge of finding jobs and opportunities for their country's citizens. India must also focus on rural and urban development – perhaps more urgently than anywhere else in the world – if it wishes to take an even more prominent position on the global stage.

The nation is determined to become international in its outlook and foster a more stable business community. The panellists asserted that creating jobs for India's younger generations means encouraging entrepreneurship and making it easier to launch start-ups.



100 Million Meals A Month: The Story Of **Zomato**

Deepinder Goyal

Founder & CEO of Zomato

Jolene Creighton

Founding Editor & Host of Futurism, Moderator

"We can actually make the industry better in a lot of ways – be it food safety or fire safety"

Deepinder Goyal, founder and CEO of online restaurant search-and-review website Zomato, explained the platform's humble beginnings. It began simply, with Goyal and his partner scanning and uploading menus into a centralised portal with the goal of streamlining his company's lunch hour.

Zomato has now grown to have presence in 23 countries. What started small now provides customer reviews, and has aims of improving the health and safety of the restaurant industry with voluntary hygiene inspections and incentives for restaurateurs to include healthy options in their outlets, Goyal said.

He encouraged people to start their own businesses but warned that they must be prepared for the long journey and to push through the challenges they will certainly face.



55 Billion Messages A Day: The Story Of **WhatsApp**

Neeraj Arora

Vice President of WhatsApp

Lubna Bouza

Moderator

“The future of communication is becoming more real-time and more immersive”

Neeraj Arora has always been inspired by the power of technology and its ability to transcend borders. When he met WhatsApp founders Brian Acton and Jan Koum, he fell in love with their vision to build a communication platform for the world.

Today, WhatsApp connects 1.5 billion users across the globe. But what made WhatsApp – a free application – a feasible \$19 billion investment for technology giant Facebook?

That question would be answered in time, said Arora. “Any app that touches billions of people every day is a valuable investment,” he explained.

WhatsApp would continue to be free for its general user base, with accessibility driving the company as its top priority. Now, the company is expanding its platform for businesses. This, Arora asserted, has serious revenue-making potential. WhatsApp Business has been launched for Android and pilot companies are quickly learning how the application can streamline their communications.

WhatsApp’s challenge is to continue enhancing its features without compromising the simple interface.



Personalising The Tech Industry

Deep Kalra

Founder, Chairman & Group CEO of MakeMyTrip

Jolene Creighton

Founding Editor & Host of Futurism, Moderator

"Thinking in an innovative way means thinking outside the scope of any boundaries"

Deep Kalra, Founder and Chairman of India's leading online travel company MakeMyTrip, shared the story of his business's growth during a conversation with Futurism's Jolene Creighton.

Innovation, he said, is the key to success. Among other things, this entails non-linear thinking and

non-linear action in problem solving. Kalra advised budding entrepreneurs against looking back for the first four or five years after launching a business. He stressed that some of the best companies in the world, including his own, may never have seen the light of day if they had given up too soon.

For those hoping to scale their business up, Kalra offered four pieces of advice: listen to the customer, build for scale, avoid gathering and analysing too much data as that often leads to paralysis, and remain flexible so the company can evolve.



India's Mission To **Mars**

Dr K Radhakrishnan

Former Chairman of the Indian Space Research Organisation, Chairman of the Indian Institute of Engineering Science & Technology, Shibpur

"Self-reliance is not just an objective; it's an obsession"

A strong foundation of grit and determination is what enabled India to make its first successful venture to Mars, scientist and space exploration expert Dr K Radhakrishnan emphasised.

The Indian space programme has made major strides since it launched its first single-stage rocket, weighing just 32 kilogrammes, into orbit in

1967, he said. Decades later, in 2009, an Indian space mission discovered water on the moon, a discovery which Dr Radhakrishnan said only emboldened the country's resolve to continue pushing the boundaries of space exploration.

In 2012, India's mission to Mars was announced by the country's prime minister, with the objective of launching in November 2013 – a goal India was able to achieve with the support of NASA, becoming the first Asian nation to reach Mars' orbit, and the first nation in the world to do so on its first attempt.



Using EdTech To Globalise Prosperity

Byju Raveendran

Founder of BYJU's

Claire Zillman

Moderator

"We can reach hundreds of thousands of students by using technology as an enabler"

Byju Raveendran explained the drive behind creating his eponymous business BYJU's – he wanted to help students fall in love with learning and ultimately to change the way India learns.

He realised first that to improve the situation, he must establish what were the main challenges in creating a generation of lifelong learners. These obstacles included lack of access, an absence of personalisation and classrooms which employed antiquated one-size-fits-all and memory-based

learning models, which did not foster a love of learning among the students.

Today, Raveendran reaches hundreds of thousands of students by using technology as an enabler to solve these challenges. He saw the increase in ownership of smartphones – 70% of students have access to a smartphone and 37% of people in emerging countries have their own smartphones – as a solution to the problem of access. And the numbers will only improve. Contextualising the resources to ensure students enjoy learning, by providing movie-quality videos and game-like interactions, makes learning immersive, effective and addictive, he concluded.



The Indian Model In Designing The Learning Experience

Kiran Bir Sethi

Founder & Director of The Riverside School

Cynthia Johnson

Moderator

"If we have to graduate a generation of change-makers it will not happen by chance, it has to happen by design"

A mother, educator, and change-maker, Kiran Bir Sethi shared at the Summit her formula for creating educational environments that not only nurture children's knowledge and skills, but also develop their emotional intelligence and their wellbeing.

Also the founder of Design For Change, a movement which empowers children to be change-makers through an initiative called 'I Can', Sethi bases her

approach on a formula she calls 'FIDS' – 'Feel, Imagine, Do, Share' – a concept she said was a leap away from the 'sit down and listen' school model.

About 48,000 schools in 60 countries have adopted the 'I Can' framework, and Kiran wants the model to spread further. 'I Can' children get involved in issues from tackling bullying and converting rubbish dumps into playgrounds, to caring for the elderly and stopping child marriages – all while doing well at school. Now, Sethi is looking to take 8,000 'I Can superheroes' from 100 countries to the Vatican by November 2019, to send out their universal message.



Personalised Healthcare & The Future Of Medicine

Dr Shamsheer Vayalil

Founder, Chairman & Managing Director of VPS Healthcare

Prof Soumitra Dutta

Professor of Operations, Technology & Information Management at the Cornell SC Johnson College of Business

Anuradha Acharya

CEO of Mapmygenome India

Madeline Bell

President & CEO of Children's Hospital of Philadelphia, Moderator

The future of medicine and healthcare was put under the microscope by Professor Soumitra Dutta, Dr Shamsheer Vayalil and Anuradha Acharya in a panel discussion moderated by Madeline Bell. The dialogue covered the changing face of health education as well as data collection from schools and work environments. This wealth of data could, in the future, help to pinpoint health issues using technology that provides self-diagnosis.

Prof Dutta, who teaches courses on operations, technology and information management at Cornell University, noted that health has become too complex for a government to handle alone and

believed the only sensible way forward was to build private-sector partnerships.

Acharya, CEO of molecular diagnostics company Mapmygenome, explained that tracking what children were eating for lunch and how those lunches are prepared could have a significant impact on the way healthcare is delivered. Dr Vayalil, chairman and managing director of VPS Healthcare, outlined the cutting-edge concepts behind virtual healthcare and modern hospitals. The company that finally 'cracks the code' by developing the first 'Google of healthcare', he said, would enjoy much success.





Sheikh Zayed: Through The Lens Of An Indian

Several never-before-seen photographs of Sheikh Zayed bin Sultan al Nahyan, Founding Father of the UAE, were on display in an exhibition entitled *Sheikh Zayed: Through the Lens of an Indian*. The images were captured by award-winning photographer Ramesh Shukla, an Indian national who began his photography career in the UAE six decades ago.





SDGs In Action @ WGS

Stakeholders from across the globe reported on the current status of the Sustainable Development Goals and highlighted **innovative means to advance their implementation**

On The Way To **2030**

HE Angel Gurría

Secretary General of the Organisation for Economic Co-operation & Development

HE Reem bint Ebrahim Al Hashimy

Minister of State for International Cooperation & Chair of the National Committee on Sustainable Development Goals of the United Arab Emirates

Prof Jeffrey Sachs

University Professor of Health Policy & Management & Director of the Center for Sustainable Development at Columbia University

John Defterios

Emerging Markets Editor & Anchor for CNN, Moderator

There has been significant progress towards integrating the Sustainable Development Goals (SDGs) into national planning strategies, but coordinating and implementing action in many countries is still in its initial stages.

His Excellency Angel Gurría, Secretary General of the Organisation for Economic Co-operation and Development, said now that many countries have reached the implementation stage they must deal with institutional and statistical limitations, as well political constraints.

Her Excellency Reem bint Ebrahim Al Hashimy, Chair of the UAE's National Committee on SDGs, urged governments to go beyond two-sided relationships and instead develop trilateral agreements based on the United Nations' 2030 Agenda between the public and private sectors and international organisations.

The panellists agreed that realising the SDGs requires a radical change in mindset and a more holistic approach which integrates social, environmental and economic objectives.



Reporting Back On Outcomes: Can We **Achieve The SDGs?**

HE Peter Thomson

United Nations Special Envoy for the Ocean

HE Adnan Amin

Director General of the International Renewable Energy Agency

Helen Clark

Former Prime Minister of New Zealand, Former Administrator of the United Nations Development Programme

Irina Bokova

Former Director General of the United Nations Educational, Scientific & Cultural Organization

HE Imad Fakhoury

Minister of Planning & International Cooperation of Jordan

HE Dr Thani Ahmed Al Zeyoudi

Minister of Climate Change & Environment of the United Arab Emirates

Marcos Bonturi

Director for Public Governance of the Organisation for Economic Co-operation & Development

Dr Mahmoud Mohieldin

Senior Vice President for the 2030 Development Agenda, United Nations Relations & Partnerships of the World Bank Group

Claire Melamed

Executive Director of the Global Partnership for Sustainable Development Data

Dr Miriam Dalmas

Consultant for Public Health Medicine to the Ministry for Health of Malta

Mary Flanagan

Inventor, Writer, Artist & Designer

HE Dr Aisha Bint Butti Bin Bishr

Director General of the Smart Dubai Office

Maya Hojeij

Senior Bulletin Editor & Presenter for Dubai Media Inc, Moderator

International policy-makers came together for a session reflecting on the advances being made in the United Nation's Sustainable Development Goals (SDGs). Leaders representing various disciplines covered by the SDGs highlighted the importance of partnerships and platforms, such as the World Government Summit, for exchanging experiences.

His Excellency Dr Thani Ahmed Al Zeyoudi, the UAE's Minister of Climate Change & Environment, pointed out the worrying lack of engagement of financial institutions and finance ministers in climate change discussions. He said bringing them on-board from the beginning was crucial.

His Excellency Adnan Amin, Director General of the International Renewable Energy Agency, stated that he, however, was optimistic about progress. The cost of renewable energy technology is coming down rapidly, and the industry is on track in the development of renewable energy and energy efficiency to keep carbon emissions to a level below a two-degree change in temperature by 2050, he said.

Former UNDP administrator Helen Clark concluded that it was essential to engage with a wide range of stakeholders including executive, legislative and judicial bodies, the media and civil society.



Building Partnerships For Effective Governance: **The SDGs, A Reality**

HE Dr Bambang Brodjonegoro

Minister for National Development Planning & Head of the National Development Planning Agency of Indonesia

HE Alenka Smerkolj

Minister for Development, Strategic Projects & Cohesion of Slovenia

HE Dr Hala Al-Saeed

Minister of Planning, Follow-up & Administrative Reform of Egypt

Maya Hojeij

Senior Bulletin Editor & Presenter for Dubai Media Inc, Moderator

While Slovenia, Egypt and Indonesia are different in many ways, the three countries face similar challenges when implementing the Sustainable Development Goals (SDGs), agreed a panel comprised of ministers from each nation.

Ministries must coordinate and ensure the entire government is aware of the strategy, they said. Political commitment starting from the highest level is the key.

When it comes to implementation, the panel highlighted financing as the biggest issue, particularly for countries with limited resources and competing priorities.

Her Excellency Dr Hala Al-Saeed, Egypt's Minister of Planning, Follow-up and Administrative Reform, said implementing the SDGs requires a holistic approach. Economic development can no longer be pursued in

isolation from social and environmental objectives. While poverty reduction remains at the heart of the 2030 Agenda, she said, areas such as health, education, human capacity, information and communications technology, and infrastructure all contribute in important ways.

His Excellency Dr Bambang Brodjonegoro, Minister for National Development Planning of Indonesia, said public-private partnerships and leveraging corporate social responsibility are important complements to government funding.

Her Excellency Alenka Smerkolj, Slovenia's Minister for Development, Strategic Projects and Cohesion, noted the importance of partnerships for sharing resources and best practice, and learning from the experiences of others.





Global Policy Platform

The Summit's top speakers gathered on the sidelines of the event to debate the latest **opportunities and challenges related to policy-making**

Towards Innovative **Gender Budgeting** In Governments

HE Christine Lagarde

Managing Director of the International Monetary Fund

HE Angel Gurría

Secretary General of the Organisation for Economic Co-operation & Development

Mona Al Marri

Vice President of the UAE Gender Balance Council

Hadley Gamble

Reporter & Anchor for CNBC, Moderator

In an informative group session, the policy of gender budgeting – a strategy which aims to achieve equality between women and men by focusing on how public resources are allocated and spent – was examined as a means to increase economic growth worldwide.

Her Excellency Christine Lagarde, Managing Director of the International Monetary Fund (IMF), emphasised that gender budgeting could deliver great financial benefits. She cited the IMF's first global review of the practice, conducted in 2016, which revealed that closing the gap between men and women in the workplace contributes to increased growth.

She also applauded the UAE for bringing gender budgeting into the limelight and championing the 'staggering' progress of women in the education and government sectors.

His Excellency Angel Gurría, Secretary General of the Organisation for Economic Co-operation and Development (OECD), underlined the moral and political imperatives for making gender equality a mainstream discussion. To illustrate, he highlighted a 2017 OECD report that showed young women are less likely than men to enrol in science, technology, engineering and maths subjects, and mothers are 23% less likely than fathers to have paid employment.



Women Entrepreneurs Rising Worldwide

HE Dr Jim Yong Kim

President of the World Bank Group

Fadi Ghandour

Founder & Vice Chairman of Aramex, Chairman & CEO of Wamda Capital

HE Reem bint Ebrahim Al Hashimy

Minister of State for International Cooperation & Chair of the National Committee on Sustainable Development Goals of the United Arab Emirates

According to a panel of acclaimed experts, promoting women entrepreneurs is vital to achieving gender equality and empowerment.

In the Middle East, only 5.5% of formal companies are led by women, but initiatives such as the Women Entrepreneurs Finance Initiative Fund are providing the impetus to change this trend.

His Excellency Dr Jim Yong Kim cautioned that there are signs that many jobs will be taken over by automation, which makes entrepreneurship critical.

Zeina Khoury Daoud

Founder of Le Potager

Azza Fahmy

Founder of Azza Fahmy Jewellery

Flora Mutahi

Founder & CEO of Melvin Marsh International

Mina Al-Oraibi

Editor in Chief of *The National*, Moderator

Her Excellency Reem bint Ebrahim Al Hashimy said policy-making must be backed by a real conviction that a community or economy will only reach its full potential if women are an integral part of the equation.

The panel recommended that flexibly structured funds for women should be created, and courses and programmes focused on financial literacy and entrepreneurship skills should be introduced in schools. They also suggested that mechanisms for mentoring and sharing success stories in order to inspire others need to be developed.



Innovative Partnerships To Support The Implementation Of The SDGs In Partnership With The World Bank

HE Achim Steiner

Administrator of the United Nations Development Programme

HE Sri Mulyani Indrawati

Minister of Finance of Indonesia

HE Imad Fakhoury

Minister of Planning & International Cooperation of Jordan

Liu Zhenmin

Under Secretary General for Economic & Social Affairs of the United Nations

Dr Mahmoud Mohieldin

Senior Vice President for the 2030 Development Agenda, United Nations Relations & Partnerships of the World Bank Group

Claire Melamed

Executive Director of the Global Partnership for Sustainable Development Data

Sunny Varghese

Co-founder & Group CEO of Olam

Andrew Barden

Managing Editor for International Government in Europe, the Middle East & Africa at Bloomberg LP, Moderator

The 2018 Summit convened a panel of seven experts to investigate how innovative partnerships can support the implementation of the Sustainable Development Goals (SDGs).

All participants agreed that financing is the biggest challenge when it comes to realising these goals. His Excellency Imad Fakhoury, Minister of Planning and International Cooperation of Jordan, said his country is currently working with the International Monetary Fund and United Nations to develop fiscal plans to achieve the SDGs despite economic issues brought on by conflicts in the region.

The panellists agreed that establishing good relationships with international financing organisations is vital, and must be combined with government resources and global expertise to address challenges such as poverty, inequality and health reform.

Data can also help deliver on those priorities. For example, mobile phone data can be used to track displaced persons to streamline aid provision.

The panel concluded that securing financing is key, and leveraging the private sector by building partnerships would be an effective way to address this challenge.



Disruption: The Next Big Things In Partnership With The Organisation For Economic Co-operation & Development

HE Angel Gurría

Secretary General of the Organisation for Economic Co-operation & Development

HE Sapar Isakov

Prime Minister of Kyrgyzstan

HE Boris Koprivnikar

Deputy Prime Minister & Minister of Public Administration of Slovenia

HE Patrick O'Donovan

Minister of State for Public Procurement, Open Government & eGovernment of Ireland

HE Eng Suhail Mohamed Faraj Al Mazrouei

Minister of Energy & Industry of the United Arab Emirates

Riad Hamade

Executive Editor for the Middle East & Africa at Bloomberg LP, Moderator

A group of international government leaders came together on the sidelines of the Summit to investigate the latest disruptive trends and their implications.

As digitalisation profoundly transforms economies, governments and societies, new technologies have the potential to spark innovation, but may also bring disruption, cautioned His Excellency Angel Gurría, Secretary General of the Organisation for Economic Co-operation and Development. This presents concerns such as the automation of jobs and unemployment, and governments must develop policies to tackle these challenges and embrace a future of unknowns and uncertainties, he said.

The panel asserted that digitalisation has the potential to be a powerful tool for governments, but its ability to support predictive decision-making relies heavily on having the correct data.

Ireland is moving its government services online, said His Excellency Patrick O'Donovan, with the aim of building trust between the administration and the country's citizens.

His Excellency Boris Koprivnikar said the biggest change in his home country of Slovenia was that everyone is now using the same online systems, which facilitates collaboration and cooperation.



Public-Private Partnerships

For Better Healthcare In Partnership With The World Health Organization

HE Dr Tedros Adhanom Ghebreyesus
 Director General of the World Health Organization

HE Ghassan Hasbani
 Deputy Prime Minister & Minister of Public Health of Lebanon

Hartwig Schafer
 Vice President for Global Themes of the World Bank Group

Dr Shamsheer Vayalil
 Founder, Chairman & Managing Director of VPS Healthcare

Madeline Bell
 President & CEO of Children's Hospital of Philadelphia

Yousef Gamal El-Din
 Anchor for Bloomberg Television, Moderator

There is a clear consensus that partnerships between the public and private sectors are vital now that governments are committed to implementing the Sustainable Development Goals, argued a panel of international specialists. Hartwig Schafer, Vice President for Global Themes of the World Bank Group, asserted that funding for the 2030 Agenda needs to increase from billions to trillions, and this can only be achieved with the private sector's help.

According to the panellists, the public sector's resources are increasingly constrained, while populations are demanding better services and

healthcare. Room should be made for the private sector to step in and help bridge this gap, they advised, as long as it is done in a way that is affordable and environmentally and socially sustainable.

Partnerships with the private sector are also key to ensuring technological innovation, the speakers agreed, particularly in terms of ongoing investment.

In conclusion, the panel emphasised that developing relationships with the private sector requires a careful alignment of incentives to ensure a balance between financial viability and outcomes.



The Future Of **Trade & Globalisation** In Partnership With The World Trade Organization

HE Roberto Azevêdo

Director General of the World Trade Organization

HE Sultan bin Saeed Al Mansoori

Minister of Economy of the United Arab Emirates

Dr Mukhisa Kituyi

Secretary General of the United Nations Conference on Trade & Development

Arancha González

Executive Director of the International Trade Centre

Yousef Gamal El-Din

Anchor for Bloomberg Television, Moderator

In a joint discussion on the sidelines of the World Government Summit 2018, a panel of international experts looked at the growing opposition to globalisation and free trade across the globe, and explored free trade's ability to deliver inclusive economic growth.

His Excellency Roberto Azevêdo, Director General of the World Trade Organization, highlighted that voters across the globe are increasingly expressing antiglobalisation sentiments and speaking out against unrestricted trade.

Echoing Azevêdo's concerns, Dr Mukhisa Kituyi, Secretary General of the United Nations Conference on Trade and Development, said many people are mistakenly blaming free trade for a multitude of problems, including the retreat of the welfare state and the rise of multinational corporations at the cost of small and medium-sized enterprises.

His Excellency Sultan bin Saeed Al Mansoori, Minister of Economy of the UAE, said politicians should have a keen interest in free trade, but unfortunately some are working against it to gain political standing.



Science, Technology & Innovation: Catalysing Regional Development

In Partnership With The Islamic Development Bank

HE Alexander Stubb

Vice President of the European Investment Bank, Former Prime Minister of Finland

Sir Danny Alexander

Vice President & Corporate Secretary of the Asian Infrastructure Investment Bank

HE Dr Bandar Hajjar

President & Chairman of the Islamic Development Bank Group

HE Sayed Aqa

Vice President of Cooperation & Capacity Development of the Islamic Development Bank Group

Sergei Guriev

Chief Economist at the European Bank for Reconstruction & Development

Alexandre Meira da Rosa

Vice President for Countries of the Inter-American Development Bank

Maya Hojeij

Senior Bulletin Editor & Presenter for Dubai Media Inc, Moderator

Six representatives from development banks around the world gathered on the sidelines of the Summit to discuss the importance of international financial institutions to the success of the Sustainable Development Goals (SDGs).

According to the panellists, the role of banks is primarily as catalysts, bringing together policy-makers and the private sector to collaborate on investigating and identifying innovative solutions that enable science and technology to facilitate development for the underprivileged.

To address the challenges of Agenda 2030, the speakers stressed that the private sector must be brought to the table. The key, they said, is to create incentives for companies to invest in innovation, research and development.

The representatives concurred that the role of international financial institutions is to look for investment. The age of subsidies, grants and direct financing is not necessarily over, they said, but they are not enough to meet the aims of the SDGs, which have an estimated expenditure gap of about \$2.3 trillion.



World Expos: Global Partnerships Inspiring Government & Transforming People

Joe Kaeser

President & CEO of Siemens AG

HE Reem bint Ebrahim Al Hashimy

Minister of State for International Cooperation & Chair of the National Committee on Sustainable Development Goals of the United Arab Emirates

HE Wang Jinzhen

Chief Delegate of China to the Bureau International des Expositions, Commissioner General of the International Horticultural Exhibition 2019, Beijing

Richard Dean

Presenter for Dubai Eye 103.8, Moderator

In a high-level discussion convened on the Summit's sidelines, Joe Kaeser, Her Excellency Reem bint Ebrahim Al Hashimy and His Excellency Wang Jinzhen examined the role of world expos.

These international showcases, the panel said, can deliver enormous benefits by providing a platform for governments and citizens to connect, collaborate and drive change. These events, however, are not without their challenges, and it is vital to maximise their potential for host and participating countries to ensure they continue to 'create the future'.

Al Hashimy, the UAE's Minister of State for International Cooperation, pointed out that technology could never replace the interactions of face-to-face communication to solve the world's larger issues. She pointed out that international expositions continue to be forums where countries and companies can gather to share innovations and ambitions.

Wang emphasised that world's fairs have an important role to play in promoting social, economic, political, scientific and technological development, and that their popularity continues to grow.



The Cyber Dimension Of Humanitarian Action In Cities

Peter Maurer

President of the International Committee of the Red Cross

HE Reem bint Ebrahim Al Hashimy

Minister of State for International Cooperation & Chair of the National Committee on Sustainable Development Goals of the United Arab Emirates

Mark Lowcock

Under Secretary General for Humanitarian Affairs & Emergency Relief Coordinator of the United Nations

Prof Kristin Bergtora Sandvik

Research Professor in Humanitarian Studies at the Peace Research Institute Oslo

Clare Dalton

Head of Humanitarian Diplomacy at the International Committee of the Red Cross, Moderator

A multi-stakeholder approach is the key to adapting and implementing new technologies which will enable faster responses to humanitarian issues. This group discussion, involving local and international humanitarian agencies, envisioned the world in 2030 when two-thirds of the planet's population is predicted to inhabit cities and live in an increasingly digital age. Urbanisation and digitalisation are converging, and violence and conflict are moving into both spaces, creating legal and practical challenges.

The question for humanitarian agencies is now how they respond to the new challenges and opportunities.

Advances in technology could provide a more effective humanitarian response, showing great potential to identify beneficiaries and effectively target services to them.

On the other hand, the panel mentioned that there is a temptation to use technology to try to solve complex political problems, and the global community needs to review and rethink the way it approaches crises in general, not only in terms of technology. They said it was important not to lose sight of the longer-term development angle and to recognise that there is a human component which should never be overlooked.



The Next Wave Of Disruptions In Education

Irina Bokova

Former Director General of the United Nations Educational, Scientific & Cultural Organization

HE Dr Omar Al Razzaz

Minister of Education of Jordan

John Vamvakitis

Director International of Google for Education

Graham Brown-Martin

Author, Founder of Learning Without Frontiers

Becky Anderson

Managing Editor & Anchor of Connect The World for CNN Abu Dhabi, Moderator

In an informative group session, a panel of distinguished industry experts debated how the Fourth Industrial Revolution, artificial intelligence and automation will affect education, and agreed that there needs to be a fundamental re-examination of the sector's purpose. The panel emphasised that educational centres and institutions must be equipped with the facilities and technology to teach 21st century skills. There should also be a shift towards critical, creative thinking about subjects including the values of citizenship and wellbeing alongside traditional skills-based subjects.

The educators discussed how technological innovation was likely to have a significant impact, particularly in terms of widening access and facilitating lifelong learning. Even more important than investment in technology, however, is greater investment in teachers and the creation of an ecosystem involving families, communities and the public sector.

In conclusion, the experts advised governments that there is a need to design a flexible and adaptive education system that can keep pace with today's rapid rate of change.



FinTech & RegTech: Revolutionising Compliance & Promoting Financial Inclusion In Partnership With The International Monetary Fund

Julie Monaco

Global Head of the Public Sector Group in the Corporate & Investment Banking Division of Citibank

HE Essa Kazim

Governor of Dubai International Financial Centre

Marco Santori

Partner at Cooley LLP

Ross Leckow

Deputy General Counsel of the International Monetary Fund

Greg Medcraft

Director of the Directorate for Financial & Enterprise Affairs of the Organisation for Economic Co-operation & Development

Nick Cook

Head of RegTech & Advanced Analytics at the Financial Conduct Authority

Sopnendu Mohanty

Chief Fintech Officer of the Monetary Authority of Singapore

Michael Gronager

Co-founder & CEO of Chainalysis

HE Ahmed Ali Al Sayegh

Chairman of Abu Dhabi Global Market

HE Mubarak Rashed Khamis Al Mansoori

Governor of the Central Bank of the United Arab Emirates

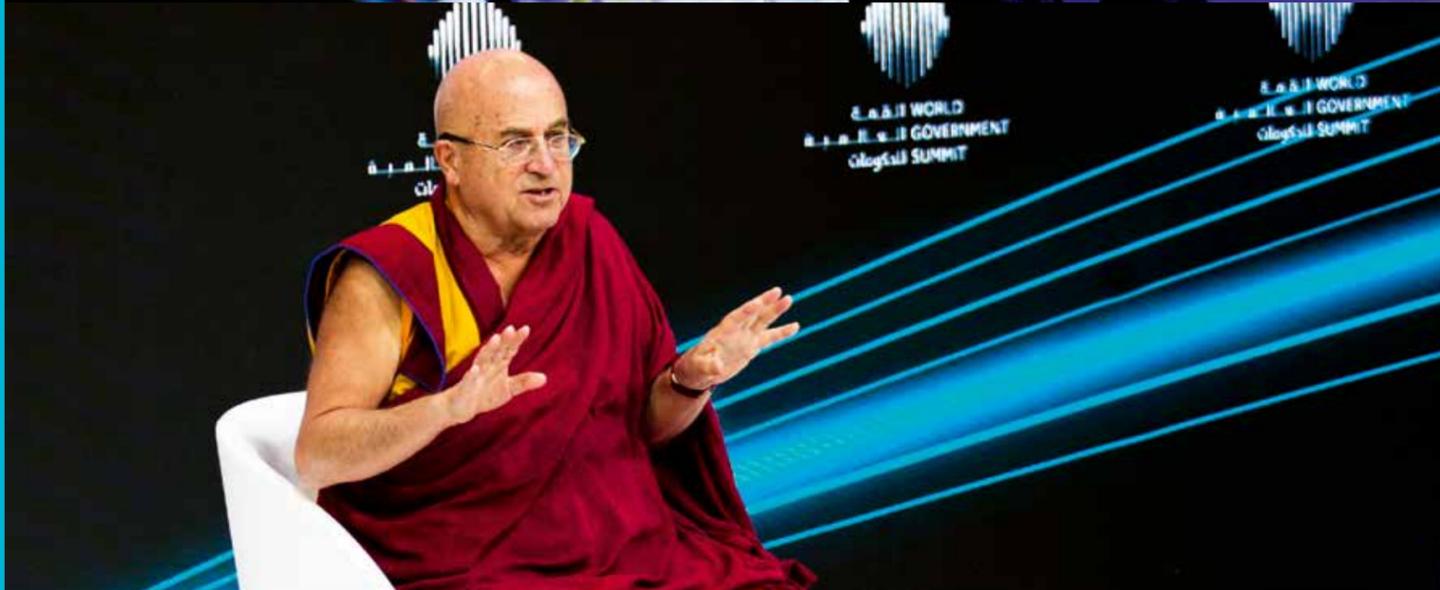
New technologies can help overcome the numerous challenges obstructing the achievement of financial inclusion, His Excellency Mubarak Rashed Khamis Al Mansoori, Governor of the UAE Central Bank, said during a joint session. The speakers discussed how the high level of regulation imposed on banks as a result of the financial crisis had led to complexity, but new technologies could help make transactions faster and cheaper. It is the role of service providers to disrupt the system and provide new solutions.

Greg Medcraft, a director in the Organisation for Economic Co-operation & Development, claimed inclusive growth

could be achieved through two overriding principles: promoting investor trust and confidence and ensuring markets are fair and efficient.

His Excellency Ahmed Ali Al Sayegh, Chairman of Abu Dhabi Global Market (ADGM), spoke about ADGM's policy for enabling companies to experiment in a safe environment without putting their clients at risk, while His Excellency Essa Kazim, Governor of Dubai International Financial Centre (DIFC), highlighted the launch of DIFC's hive tech, a collaborative accelerator that works with banks and has attracted more than 200 start-ups.





Wake-up Calls

Two of the world's top mindfulness experts shared the importance of this practice and demonstrated techniques to **help one live in the present moment**

Mind-full Or **Mindful?**

Prof Saki Santorelli

Professor of Medicine & Former Executive Director of the Center for Mindfulness in Medicine, Health Care & Society at the University of Massachusetts Medical School

"Our capacity to survive whatever we're heading into requires us to be present and incredibly awake, then maybe carry it with you from moment to moment"

The mind is easily distracted by thoughts and emotions, explained Professor Saki Santorelli, Former Executive Director of the Center for Mindfulness at the University of Massachusetts Medical School. However, the very act of focusing on breathing is enough to train

people how to live more in the present. This concept of being present in the moment is called 'mindfulness', and the discipline looks at how brains can be trained through regular practice.

Once learned, this capacity to bring oneself back to a state of presence can be practised at any time, such as while having breakfast or answering a phone call. One of the benefits, said Prof Santorelli, is that it allows practitioners to stabilise themselves and become more aware. Being more cognizant of what is happening around them allows people to use more of their resources.



Altruism & Mindfulness: The **Peak of Happiness**

Matthieu Ricard

Author, Founder of Karuna-Shechen

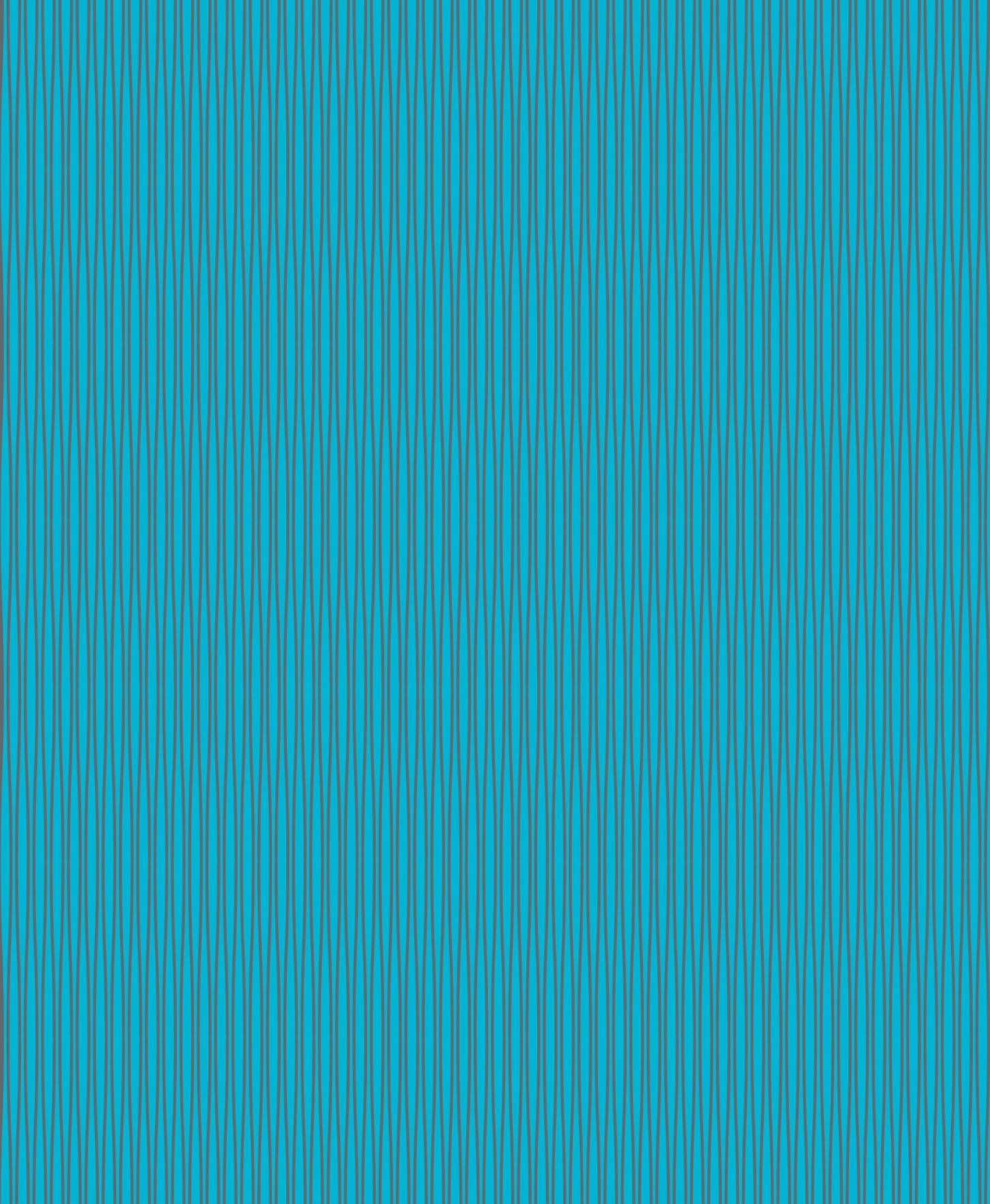
"Compassion is about removing every cause of suffering – in whatever form it takes and wherever it is"

It is tempting to think that it is easier to care for one's own happiness than to take care of the happiness of everyone on Earth, said Matthieu Ricard, who founded the humanitarian organisation Karuna-Shechen. People who only think about themselves, however, will become miserable. They must try their best to become better human beings — although he recognised that cannot be done alone.

Ricard explained the intricacies of happiness, and how all people have the same longing for wellbeing. While love, tenderness, generosity, connection, friends and quality human relationships are major factors in flourishing as a person, he said, compassion, kindness and altruism not only relieve suffering but also contribute to happiness, leading ultimately to a win-win situation.

"If we want a better world, we need to sit together — scientists, policy-makers, social workers and those that deal with the economy — and find a conceptual thread that will allow us to work towards a better world," Ricard concluded.





Experiences

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EXPERIENCES

Dubai 10X

"The success of governments is determined by their ability and flexibility to reinvent themselves"

HH Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum

Crown Prince of Dubai, Chairman of the Dubai Executive Council, Chairman of Dubai Future Foundation

His Highness Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum, Crown Prince of Dubai and Chairman of the Dubai Executive Council and Chairman of Dubai Future Foundation (DFF) launched the second phase of Dubai 10X, which will see a number of government entities working together to implement innovative solutions across a wide range of sectors under the supervision of DFF.

During the 2017 Summit, His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and

Prime Minister of the UAE, Ruler of Dubai, unveiled the Dubai 10X initiative, which seeks to propel the emirate 10 years ahead of the rest of the world. In line with this vision, government departments worked vigorously throughout the year to devise disruptive projects that would transform Dubai into a city of the future. A total of 163 ideas from 36 different government entities were submitted to a committee of reputed global experts and specialists for review, and 26 were approved for implementation.

The approved projects made their debut at the 2018 Summit, where they were featured in a state-of-the-art interactive platform that allowed visitors to explore how these government entities will use disruptive technologies to revolutionise their services.

Sheikh Hamdan described the impact that these projects, and the Dubai 10X initiative as a whole, will have on the city in the near future: "The projects we have launched will transform government operations and enhance their flexibility to adapt to changes and future needs in an accelerated time frame of 24 months."

"We are ushering in a new phase of development for government services by transforming a whole host of innovative ideas into reality"

HH Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum

Crown Prince of Dubai, Chairman of the Dubai Executive Council,
Chairman of Dubai Future Foundation



EXPERIENCES



The cutting-edge solutions launched at the Summit span a wide range of sectors, including tourism, healthcare, education, justice, sports, charity, culture, security and energy.





EXPERIENCES

Edge Of **Government**

"We, in the UAE, believe in innovation. Therefore, we have transformed our beloved country into a global incubator for innovation, solution development and partnerships"

HH Sheikh Mohammed bin Rashid Al Maktoum
Vice President and Prime Minister of the United Arab Emirates, Ruler of Dubai

In 2018, the Edge of Government had the theme 'You Are Light', and stated its aim to shed light on the unusual and unexpected, identify bright ideas and move from the dark into the light.

The Edge of Government is an immersive experience which invites visitors on a journey through a landscape

of rapidly emerging and continuously evolving solutions to the most pressing public challenges of our time.

Organised and curated by the Mohammed bin Rashid Centre for Government Innovation, the Edge of Government presented leaders with the chance to take a closer look at innovations happening at the fringes of central governments and connect with the innovators behind the projects. It exhibited new methods enabling authorities to make a real impact on citizens' lives and change the world for the better.

The experience urged visitors to think in new and counter-intuitive ways about how to solve current key challenges and encouraged them to experiment with novel approaches. The interactive showcase focused on the issues around health and wellbeing, safety and trust, identity and adaptive regulation, and showed how human ingenuity can craft new solutions and shape technology.

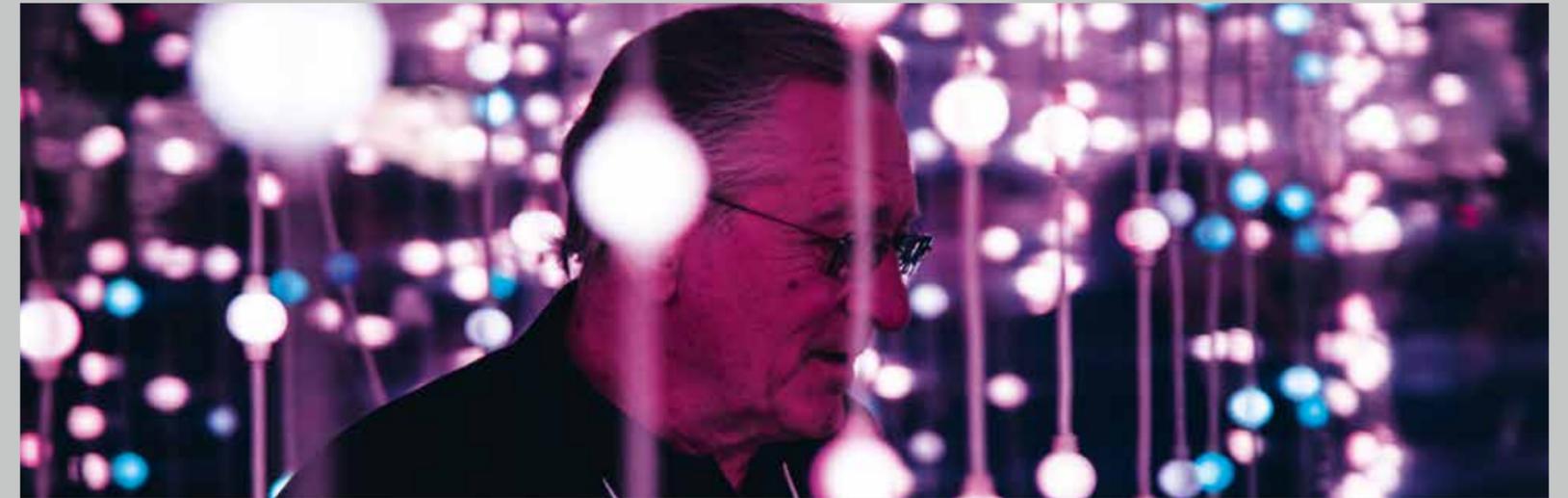


His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE, Ruler of Dubai, unveiled the Edge of Government innovation experience on the sidelines of the Summit. He highlighted the importance of governments taking innovative approaches to solving key issues and developing sustainable solutions for the wellbeing of their citizens.

Talent Cloud Canada

Canada's Free Agents: How the government has redefined the meaning of being a public servant

The Government of Canada's pioneering resource for flexible talent enables people to work as 'free agents' on government projects and receive public sector benefits, but with the freedom to continue pursuing careers in the private sector.



Cyborg United Kingdom

Why governments are recognising new 'identities' and 'abilities'

Neil Harbisson is legally recognised as the world's first cyborg after implanting an antenna into his skull to address colour blindness. Harbisson's case raises important questions for governments on what it means to be human, from administrative issues such as getting a passport to more substantial ethical and regulatory questions.



Mobilizing Construction Kenya

How infrastructure maintenance can be redesigned to empower citizens and deliver better results

The Kenyan government is improving its response to road maintenance by fitting smart devices to vehicles to measure conditions in real time and identify hazards. Micro contracts are created to assign repairs to pre-registered local labourers who bid for work via mobile phone.



Shaping New Regulation

The Netherlands

How to rethink enforcement of regulation using algorithms

Where the noise of an event or construction work exceeds legal limits, affected citizens in the Netherlands receive an instant micropayment thanks to sensors in their homes. This automatic system facilitates regulation of air and noise pollution, for which compliance is notoriously difficult for governments to manage.



Shaping Wellbeing

Norway

How the municipality reframed welfare from a cost to an investment

Disadvantaged citizens, who previously received municipal funding in response to adversity, are now being presented with proactive long-term investment plans. Turning the traditional model on its head, front-line municipal staff can affect real change in people's welfare.



Shaping New Government Services

Sweden

Ticketing Redefined: When governments are early adopters of citizens' requests

In response to citizens' requests, the Swedish government-run railway SJ introduced a 'pay-by-implant' system. Passengers simply get a tiny chip implanted under their skin, which is then scanned to pay their train fare.



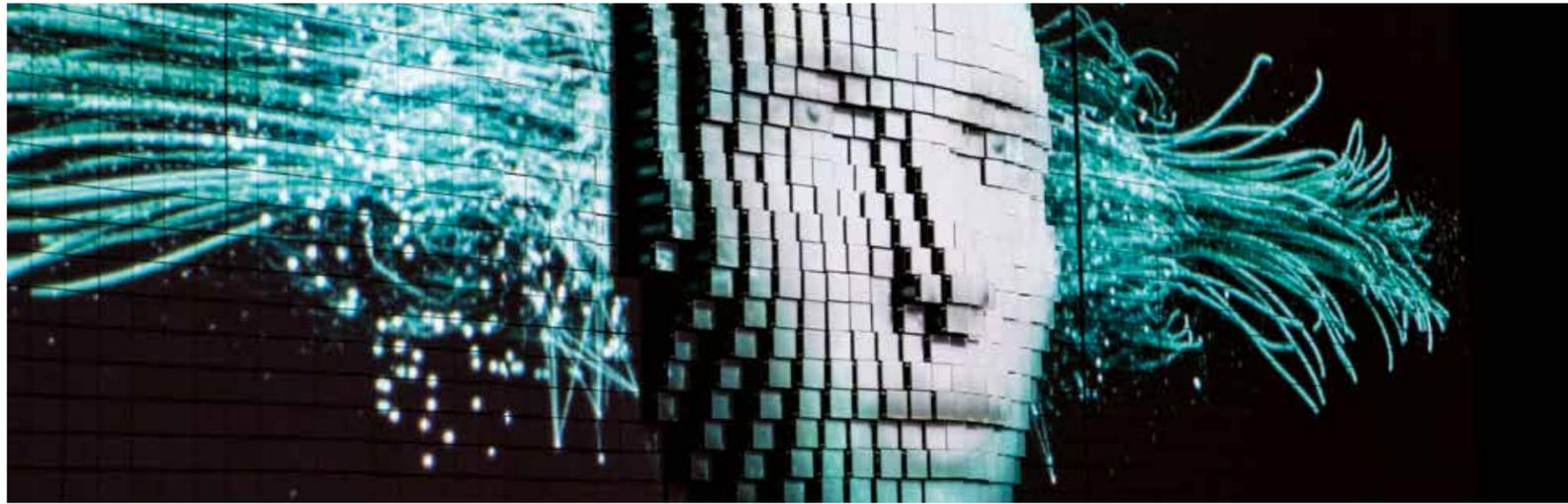
Shaping Technology To Save Lives

United States

How firefighters can now 'C-Thru' hazardous environments

The 'C-Thru' system advances traditional thermal imaging technology which enables firefighters to see in zero visibility. Co-developed with end users, the system allows firefighters to get in and out of the fire five times faster.





EXPERIENCES

Museum Of The Future

The museum experience took visitors on a journey into the future – to the year 2035

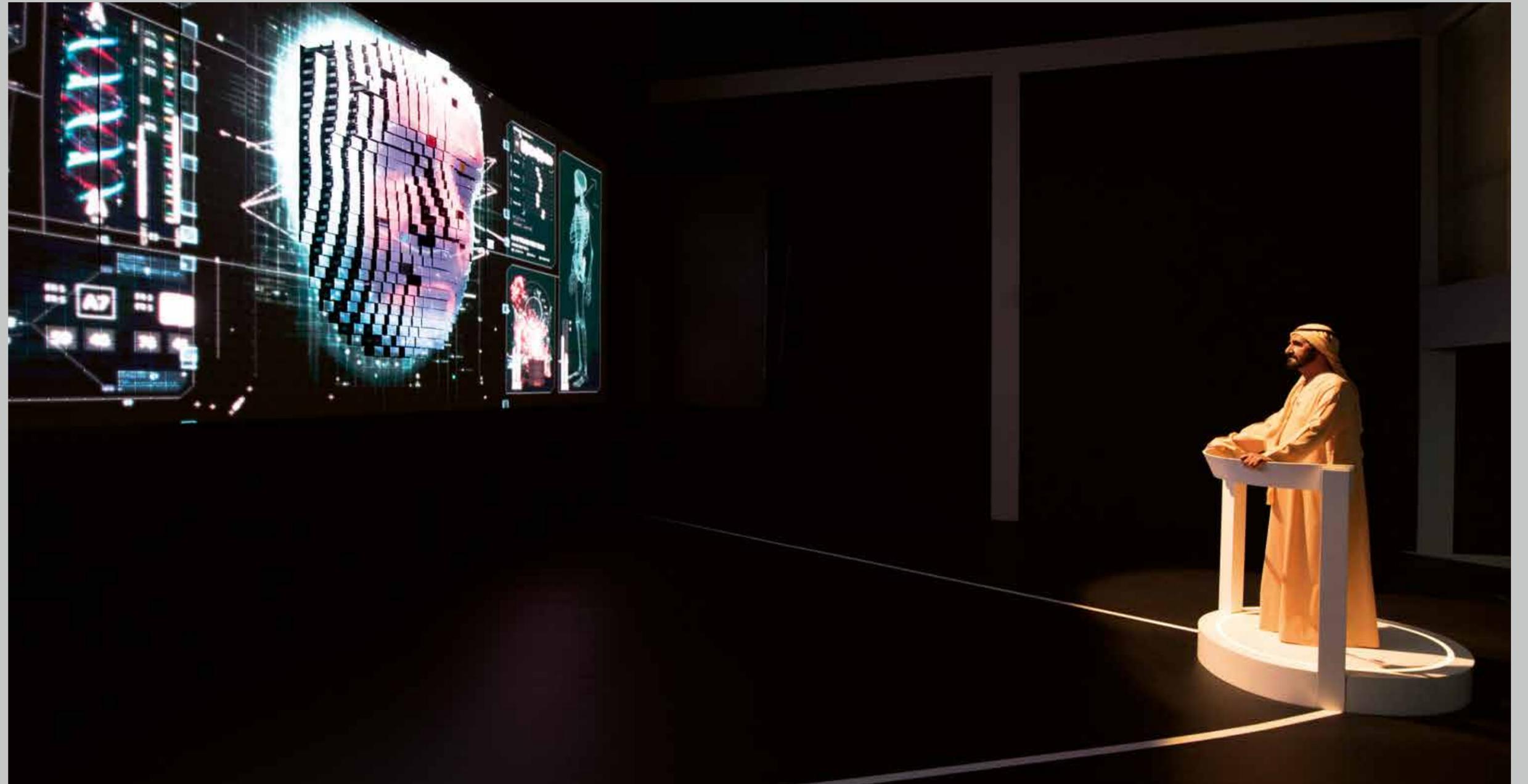
The fifth installation of the Museum of the Future was on show during the World Government Summit 2018. This year's exhibition used interactive experiences to introduce visitors to artificial intelligence (AI) and how it could affect life in the future. Each room explored a different aspect of current debates: Can AI be creative? Can it be helpful? Can it go wrong? What is our future together?

His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the United Arab Emirates, Ruler of Dubai, opened the

exhibition. He highlighted the fact that AI will add \$15 trillion to global GDP within 12 years.

"The Museum of the Future is a unique incubator for futuristic innovations and design," he said. "We are determined to make the UAE a major contributor to future development. The UAE government sets an example to the governments of the world in adopting technological advancements as a driver for development. AI is key when we speak about tackling future challenges."

The permanent Museum of the Future will open in Dubai in 2019. The museum will become the world's largest and most exciting way to discover tomorrow's trends and opportunities. An initiative of the Dubai Future Foundation, it aims to be an incubator for ideas, a driver of innovation, and a destination for inventors and entrepreneurs from around the world.



His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President & Prime Minister of the United Arab Emirates, Ruler of Dubai, opened the Museum of the Future as part of the 2018 World Government Summit.

EXPERIENCES



Lt Gen His Highness Sheikh Saif bin Zayed Al Nahyan, Deputy Prime Minister & Minister of Interior of the United Arab Emirates, visited the Museum of the Future and was briefed about the nature and history of establishing the museum to explore the future of science, technology and innovation.



EXPERIENCES

The interactive experiences invited visitors to explore what a future with AI and robotics might look like

This year's exhibition explored three aspects of artificial intelligence. In the first room, impressive art works created either entirely by AI or through collaboration between AI and humans were showcased. Visitors were able to 'teach' an AI system how to compose music and create art, exploring how humans and AI will work together in creative ways.

Visitors could also put themselves in the shoes of ministers of state, trialling decision-modelling software which could in future be used by government leaders and organisations to preview the outcomes of their choices.

The Museum of the Future explored questions related to ethics through installations that challenged visitors to ask themselves how they would view a future with robots, including how confident would they be to let AI systems manage their money or select their careers for them, and how would they feel about having robots care for the elderly. It even examined ways in which the technology might make mistakes and touched on the challenges that AI systems could potentially perpetuate, including selection and systematic bias.

The various demonstrations within the experience focused on three main themes:

1. How robots and AI could improve human mental and physical capabilities
2. The relationship between humans and robots
3. How the development of AI will affect management and decision-making processes





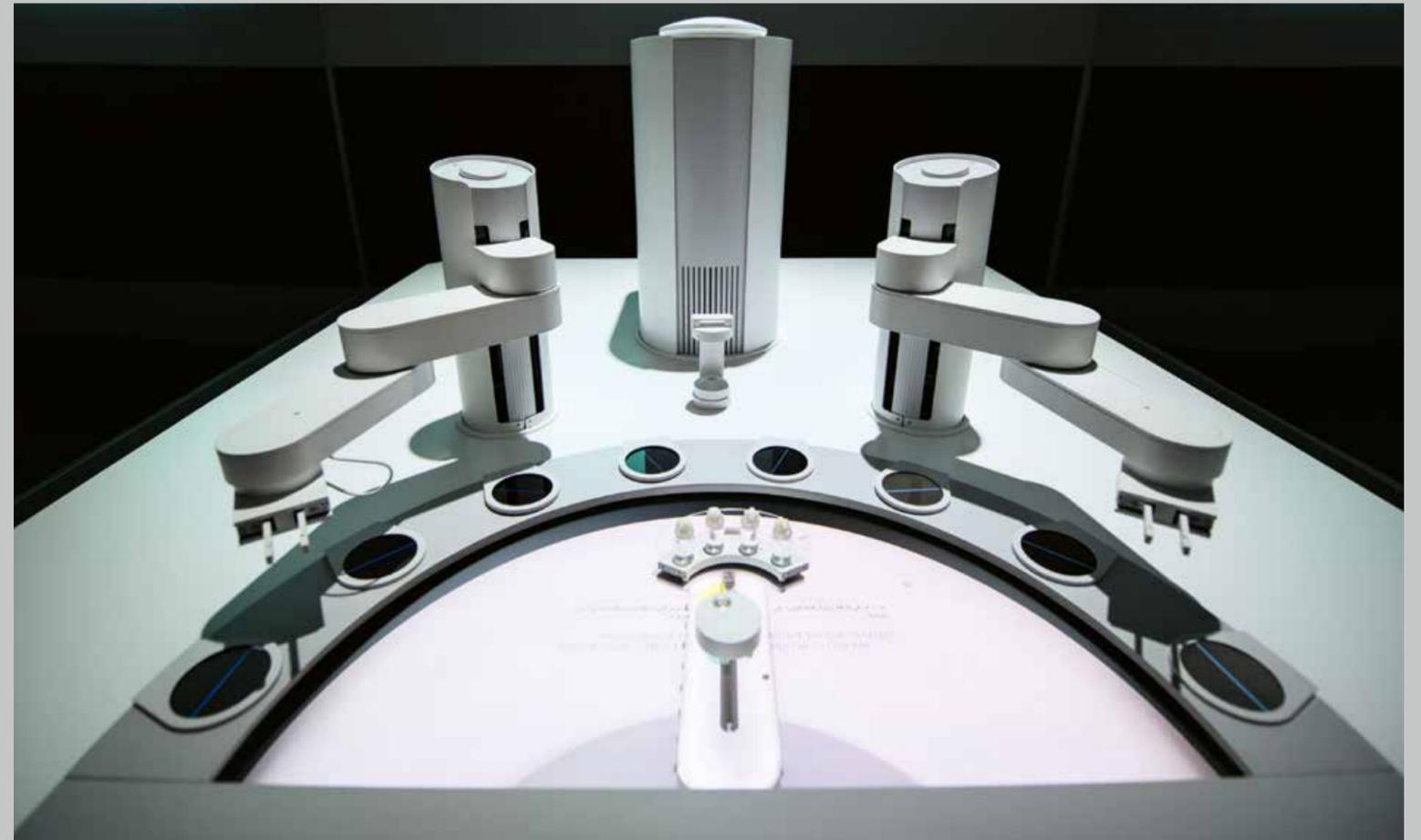
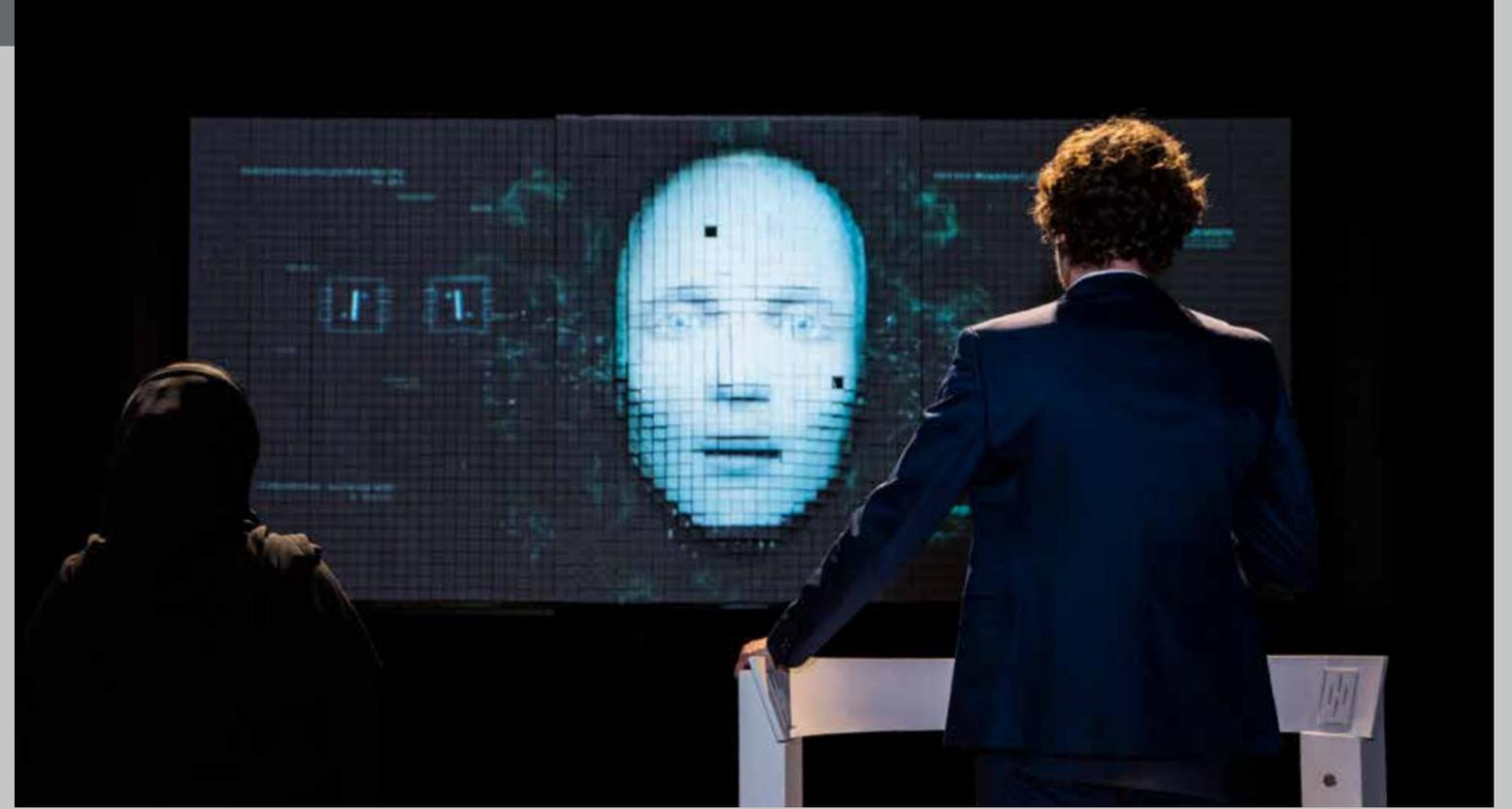
Throughout the experience, questions posted on the walls prompted visitors to seriously consider the impacts – both positive and negative – that AI and robotics will have on the future of humanity.



EXPERIENCES

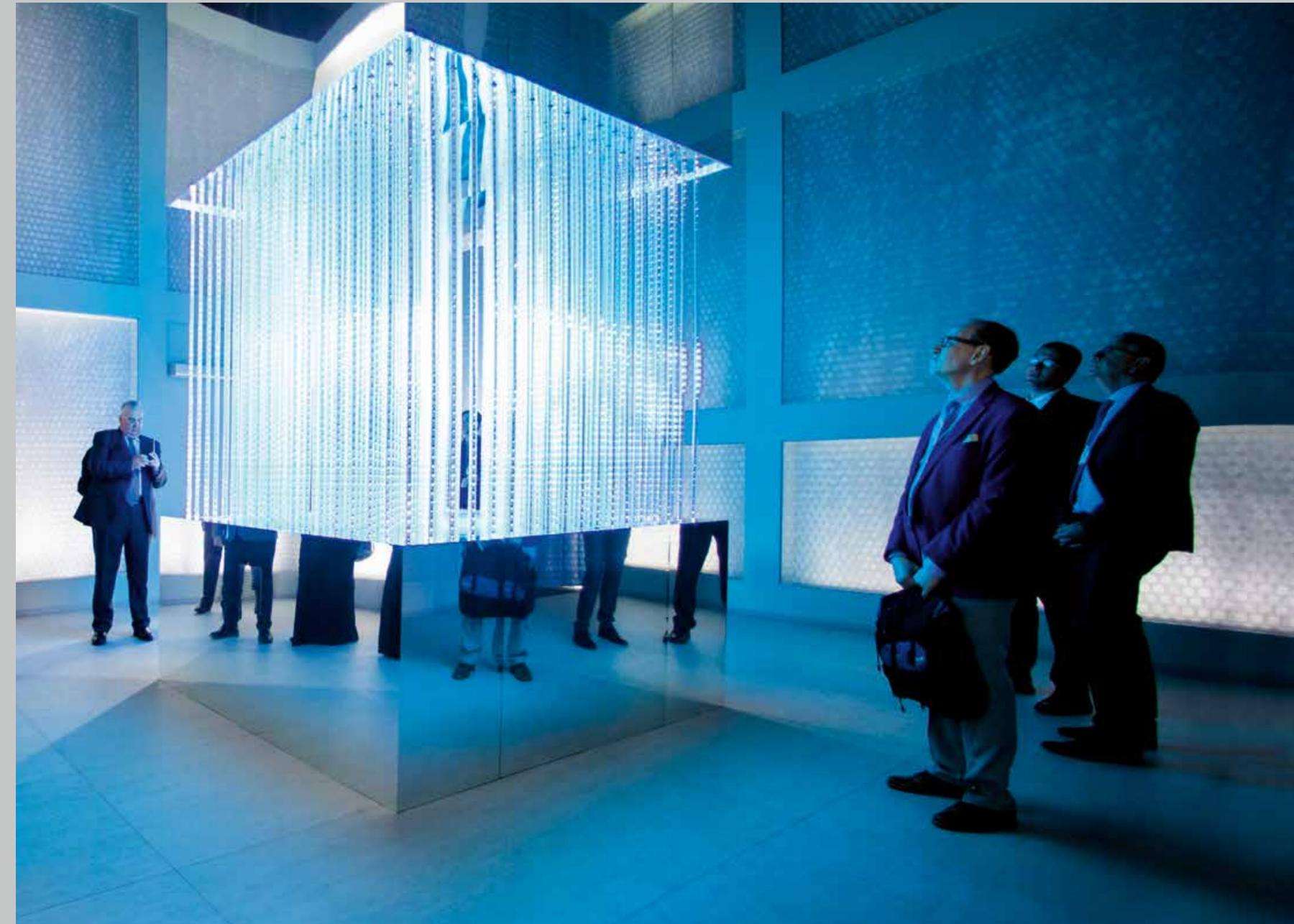


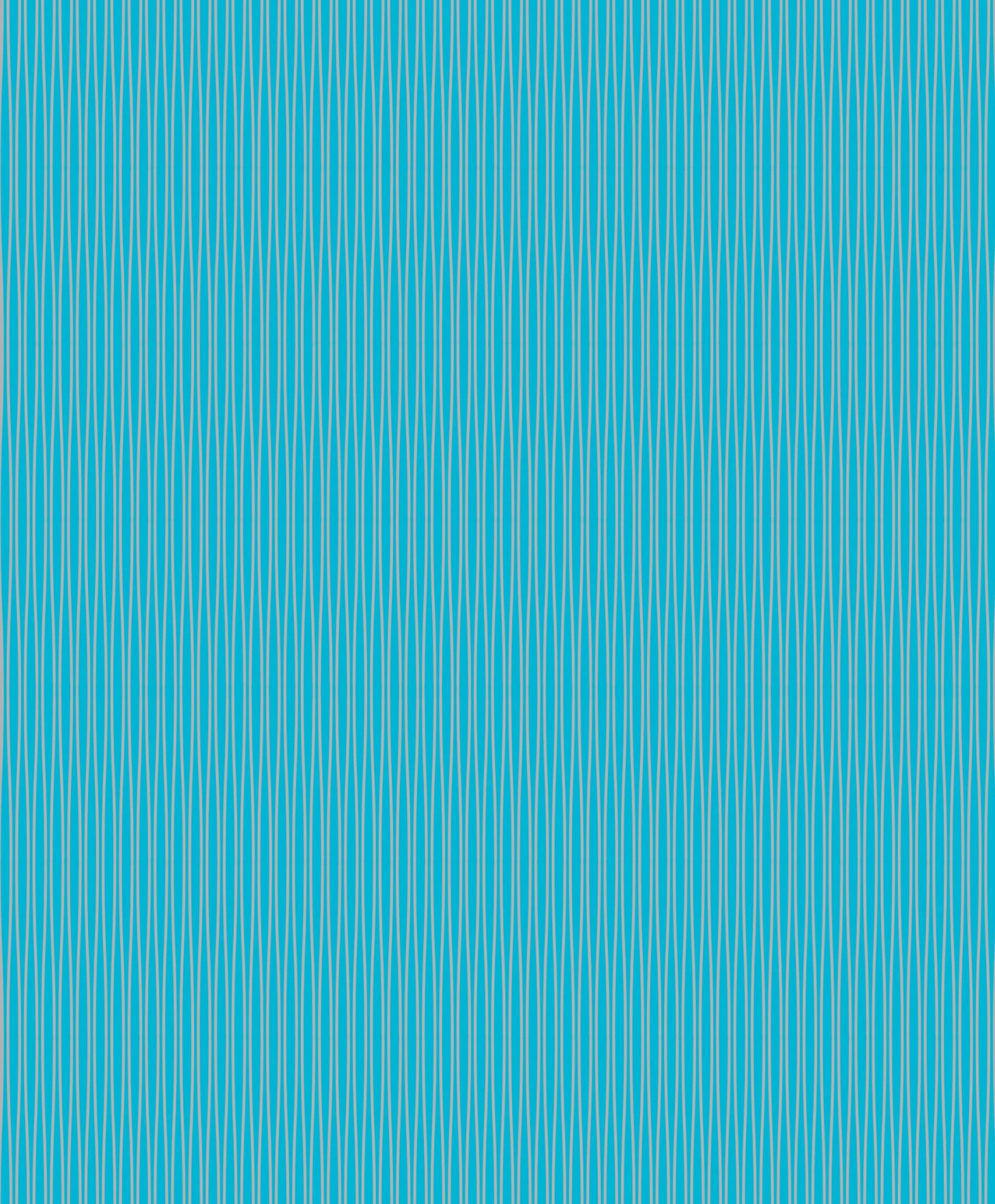
The museum's experiences sought to explore how the best of mankind can work in collaboration with the best of AI to create a successful future.



EXPERIENCES

The Museum of the Future opened with an introduction to AI. The technology spoke to visitors, welcoming them to the experience and providing context so they could better understand the installations that followed.



A decorative graphic on the left side of the page consisting of numerous vertical lines of varying heights and widths, all in a light blue color, creating a textured, curtain-like effect.

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Global Dialogue For Happiness

“Successful governments have a responsibility to achieve happiness and wellbeing for their people by putting these principles at the heart of their policies”

HE Ohood bint Khalfan Al Roumi

Minister of State for Happiness and Wellbeing of the United Arab Emirates, Vice Chairman of the World Government Summit

Following the success of the inaugural Global Dialogue for Happiness at the 2017 World Government Summit, the 2018 edition saw yet another full-day event dedicated to the advancement of human happiness and wellbeing around the world.

More than 500 global leaders, experts and decision-makers from governments, international organisations and the private sector convened to discuss the primary factors impacting happiness and wellbeing and the ways in which governments can put

these principles at the heart of policy-making. The day's sessions examined themes including global practices, advances in technology, policy design, scientific evidence, education and the hope for a better future.

Her Excellency Ohood bint Khalfan Al Roumi, Minister of State for Happiness and Wellbeing of the UAE and Vice Chair of the World Government Summit, opened the dialogue with remarks on the global happiness outlook. The agenda that followed featured an impressive lineup of renowned happiness and wellbeing experts – from government representatives to university professors and acclaimed authors.

The 2018 event also witnessed the launch of the first-ever *Global Happiness Policy Report*. Produced by the Global Happiness Council, the report comprises academic research and global case studies and experiences by specialist working groups on happiness for good governance and provides evidence and policy recommendations on best practices to promote happiness and wellbeing.



INITIATIVES

The second annual dialogue built on the success of the previous year, with experts, academics and policy-makers convening to share their ideas about how to advance happiness.





INITIATIVES

Young Arab Pioneers Forum

“Young Arab Pioneers are great role models that represent educated and engaged Arab youth. The World Government Summit empowers youth to share and exchange thoughts to innovate solutions that help them create their own future”

HE Shamma bint Suhail Al Mazroui
Minister of State for Youth Affairs of the United Arab Emirates

These ambitious young scientists, entrepreneurs, educators, social workers, medical practitioners and students came together in Dubai during the Summit to engage in discussions vital for the enrichment of Arab societies. The workshops focused on five main themes stemming from the Arab Youth Strategy, which was launched at the 2017 Summit:

1. Building capacity through education and knowledge
2. Health and safety
3. Community building
4. Entrepreneurship
5. Identity and social progress

Strategic factors that drove the discussions about challenges facing youth today included slow economic growth, intelligent machines and their effect on the job market, new financial structures, and climate change and environmental challenges.

Leaving the Summit feeling determined and inspired by its forward-thinking approach, the Young Arab Pioneers will develop a database and a community that leverages synergies between youth to launch initiatives as outcomes of the 2018 forum.

Under the patronage of His Highness Sheikh Mansour bin Zayed Al Nahyan, Deputy Prime Minister and Minister of Presidential Affairs of the UAE, the Young Arab Pioneers initiative was launched at the 2018 World Government Summit. The programme presents the first platform of its kind that recognises and commemorates 100 exceptional young Arabs under 35 years old whose contributions and achievements to society have made the world a better place.

The Arab Youth Pioneers initiative builds upon the existing Arab Youth Strategy, addressing key challenges facing today's youth and exploring possible solutions.



INITIATIVES

"We are proud of the Young Arab Pioneers and their spirit of giving. Their creative ideas turned into inspiring projects that spread the message of hope across the region"

HH Sheikh Mansour bin Zayed Al Nahyan

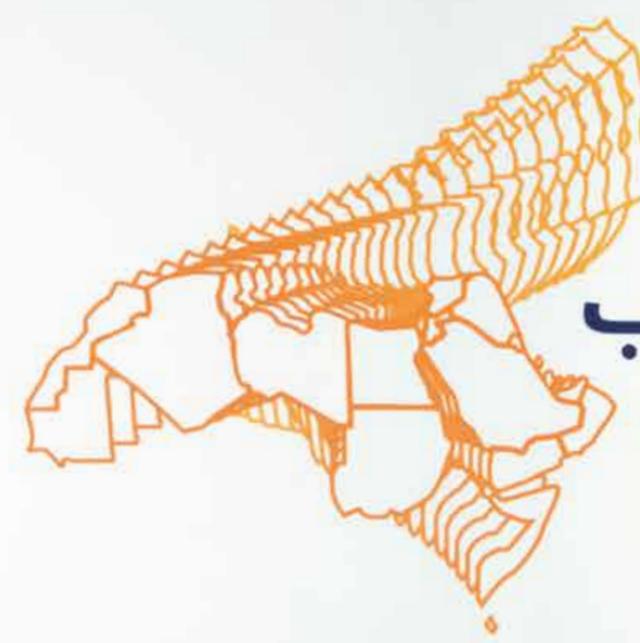
Deputy Prime Minister & Minister of Presidential Affairs of the United Arab Emirates



INITIATIVES



Young Arab innovators, entrepreneurs and thought leaders came together to participate in discussions and workshops to help shape future governments.



رؤاد الشباب العربي

YOUNG
ARAB
PIONEERS

Her Excellency Shamma bint Suhail Al Mazroui announced the launch of the Young Arab Pioneers initiative during a session entitled 'Dreams of Arab Youth'.





INITIATIVES

Climate Change Forum

"The UAE's initiative to raise awareness, fund sustainable energy and protect resources is a model for how to prevent humanitarian need in the face of climate change, and a template for what a responsible future will look like"

Robert De Niro
Actor, Producer & Director

Climate change is now considered to be a primary driver and intensifier of humanitarian crises. In 2016 alone, weather-related events accounted for 23.5 million displaced persons, and the majority of refugees originate from and live in 'climate change hotspots' – areas where the strong ecological effects of climate change intersect with large vulnerable populations. These humanitarian impacts are likely to worsen in

coming years, and women and children, who are already five to 14 times more likely to die in a natural disaster, will bear the brunt.

In a series of sessions during the 2018 World Government Summit, Academy Award winners Robert De Niro and Forest Whitaker joined international leaders and global thinkers to identify the highest-priority near-term solutions to address the growing humanitarian dimension of climate change, as well as its disproportionate impact on women and children.

As a key outcome of the forum, the UAE's Ministry of Climate Change and Environment and Ministry of Foreign Affairs and International Cooperation together launched The Climate Project. This two-year initiative will create products and resources to disseminate knowledge about coping with climate change. It will also focus on promoting 'financeable' climate resilience projects in developing countries. The project aims to deliver climate initiatives and products that reach 10 million people by 2020.

Global leaders, experts and advocates came together in four sessions to identify solutions to the humanitarian challenges posed by climate change.



INITIATIVES

"Climate change is one of the biggest risks to our property, our business and our humanity. It has alarmingly disproportionate impacts on women and young people. So when we see a risk, what do we do? We act. And here in the UAE, we have proven that climate action leads to more jobs, more growth, more resilience and prosperity – including for women and youth"

HE Dr Thani Ahmed Al Zeyoudi

Minister of Climate Change & Environment of the United Arab Emirates



INITIATIVES

"My country has committed to moving towards net-zero carbon emissions by 2050, despite being responsible for only the tiniest proportion of global emissions today. In that context, I would like to thank the UAE for the support it has given my country towards transitioning to 100% renewable energy"

HE Hilda Heine
President of the Marshall Islands



The speakers highlighted climate change as a factor in global conflict, and discussed its disproportionate impact on women, children and island nations.





INITIATIVES

Global Governance Of AI Forum

“The AI revolution is a global phenomenon which calls for ever-greater global cooperation to govern it effectively”

HE Omar Sultan Al Olama

Minister of State for Artificial Intelligence of the United Arab Emirates, Managing Director of the World Government Summit

The inaugural Global Governance of AI Forum convened nearly 100 technology experts from government, the private sector, academia and non-governmental organisations in round-table workshops with the goal of laying the foundation for an ethical framework to manage the rise of artificially intelligent systems across all industries and help shape the future of society.

A lead-in event to the World Government Summit, the 2018 forum was the largest cross-sector, government-sponsored gathering focused squarely on global governance issues surrounding the implementation of

artificial intelligence (AI). While institutions and government entities seek to address the challenges and opportunities that AI brings, there is a general lack of cohesion and understanding – a reality the round table seeks to change.

A long-term project in the making, the Global Governance of AI Forum is a pivotal landmark in the world's collective governance of AI, which has rapidly captured the popular imagination. The 2018 event featured five working groups:

1. AI Governance
2. AI for Good
3. Mapping AI
4. Risks & Potential
5. Cross-sectoral Dynamics

In order to advance AI's safe evolution and impact, the UAE is aiming to create a Global Strategy for the Governance for AI. The Global Governance of AI Forum is key to that aspiration, as it seeks to facilitate dynamic policy recommendations and create a roadmap for all nations to adopt.

INITIATIVES



The Global Governance of AI Forum featured a full day of discussions and workshops, where international technology experts gathered to debate the opportunities and challenges of AI.



INITIATIVES

"AI is the new wave after the Smart Government upon which all our services, sectors and future infrastructure will rely on"

HH Sheikh Mohammed bin Rashid Al Maktoum
 Vice President & Prime Minister of the United Arab Emirates, Ruler of Dubai



Held on the sidelines of the World Government Summit, the round table aims to establish an ethical framework to guide the implementation of AI around the globe.

Space Settlement Forum

“The UAE has become part of dynamic human scientific efforts to explore space and to making scientific contributions to human knowledge”

HH Sheikh Mohamed bin Zayed Al Nahyan
 Crown Prince of Abu Dhabi, Deputy Supreme Commander of the Armed Forces of the United Arab Emirates

As human ambitions in space increase, so does the need to plan effectively and ensure that Earth’s inhabitants and governments share the benefits of space exploration. The inaugural Space Settlement Forum (SSF), held during the World Government Summit 2018, sought to address this topic.

The forum brought together astronauts, academics, scientists and researchers to examine how governments around the world can apply an ‘off Earth,

for Earth’ approach as they craft policies and legislation that will impact humanity’s future in the cosmos.

The forum’s speakers provided recommendations to the international space community and policy-makers for how humankind can build sustainable communities in space. Sessions highlighted current achievements in the sector, as well as cutting-edge studies on human space flight. Planetary research was also a pivotal topic on the agenda, including an in-depth look into Mars exploration.

Speakers raised a wide range of relevant issues during the forum’s sessions, from agriculture and water resource utilisation on Mars to educational and policy initiatives necessary for developing a generation capable of exploring the universe.

One of the SSF’s key outcomes was the issuance of white papers examining challenges common to both Earth and Mars – the security of resources such as food, water and energy – which set the agenda for The Humans To Mars Summit in the United States.



INITIATIVES

"The UAE seeks to establish international efforts to develop technologies that benefit humankind, and that establish the foundation of a better future for more generations to come"

HH Sheikh Mohammed bin Rashid Al Maktoum

Vice President & Prime Minister of the United Arab Emirates, Ruler of Dubai



Leading experts in the field of space settlement convened at the Summit to share recent breakthroughs, cutting-edge research and possible challenges associated with colonising the cosmos.





INITIATIVES

Global Policy Platform

The Global Policy Platform brings together the Summit's top speakers to debate opportunities and challenges related to policy-making

Set to become an international hub for high-level policy-making discussions, the Global Policy Platform is an initiative of the World Government Summit that aims to capitalise on the unique opportunities the event presents.

The platform expands the conversation by bringing together the Summit's top speakers, from senior politicians to heads of international organisations, in multilateral panels to address the newest challenges and opportunities in policy-making. The discussions are moderated by acclaimed media personalities and open for audience engagement.

The Global Policy Platform is coordinated in collaboration with the world's leading international organisations, including the United Nations, the International Monetary Fund, the World Bank, the Organisation for Economic Co-operation and Development, the World Trade Organization and the World Health Organization, among others.

The 2018 edition convened seven high-level panels and two ministerial round-table discussions. More than 40 prominent speakers participated in the platform, including 15 ministers of state, 16 leaders of regional and international organisations, and representatives from the private sector and academia.

The panels held this year focused on a broad range of important topics, including trade and globalisation, government innovation, the Fourth Industrial Revolution, education, economic policies and financial technology, or 'Fintech'.

Discussion panels and round tables engaged top speakers on the sidelines of the Summit to debate topics ranging from government innovation and gender equality to trade and economics.



SDGs In Action @ WGS



“We now have an innovative global platform that is conducive to exchanging views and experiences, and identifying best practices that can be translated into practical realistic applications”

HE Reem bint Ebrahim Al Hashimy
Minister of State for International Cooperation & Chair of the National Committee on Sustainable Development Goals of the United Arab Emirates

Following the adoption of the Sustainable Development Goals (SDGs) in 2015 and in line with the UAE’s commitment to their implementation, the World Government Summit introduced a special initiative focused on these goals. The SDGs in Action @ WGS, organised in collaboration with the United Nations, the World Bank and the Organisation for Economic Co-operation and Development, brings together stakeholders from around the world to break

down silos and find innovative means to advance the 2030 Agenda.

Every year, some 200 participants from governments, international organisations, foundations, academia, the private sector and the media, as well as social influencers and young people gather to take part in the SDGs in Action @ WGS. The 2018 edition focused on innovation in partnerships to support the implementation of the SDGs and included four high-level panels and 10 breakout sessions. It also witnessed the launch of the SDGs Global Councils, a new international initiative which aims to increase the worldwide impact and sustainability of the SDGs in Action programme.

The SDGs Global Councils comprise a unique interdisciplinary network of decision-makers from the public and private sectors who work together to share cutting-edge practices, discuss the creative implementation of the SDGs and build new partnerships between countries and organisations. The councils set forth an action plan that outlines the tangible outcomes and impact of the initiative.





INITIATIVES

"We have to reflect on the SDGs and admit that it is not business as usual for governments; it is something different and harder"

Prof Jeffrey Sachs

University Professor of Health Policy & Management &
Director of the Center for Sustainable Development at Columbia University



International leaders and officials from the public and private sectors participated in panel discussions and breakout sessions to assess the current status of the SDGs and determine what work is yet to be done by 2030.

Government In 2071: Guidebook

"At the World Government Summit, we see that 'human will', led by successful global and national leadership, can preserve and strengthen humanity's promise, and successfully explore the developing megatrends"

HE Mohammed Abdulla Al Gergawi
Minister of Cabinet Affairs & The Future of the United Arab Emirates, Chairman of the World Government Summit

Powerful megatrends led by artificial intelligence, robotics and climate change pose huge challenges for humanity, but they also offer incredible opportunities. If governments are to tackle the obstacles and glean the benefits of these massive shifts in the long term, preparations must begin now.

The *Government in 2071: Guidebook*, which was unveiled at the 2018 World Government Summit,

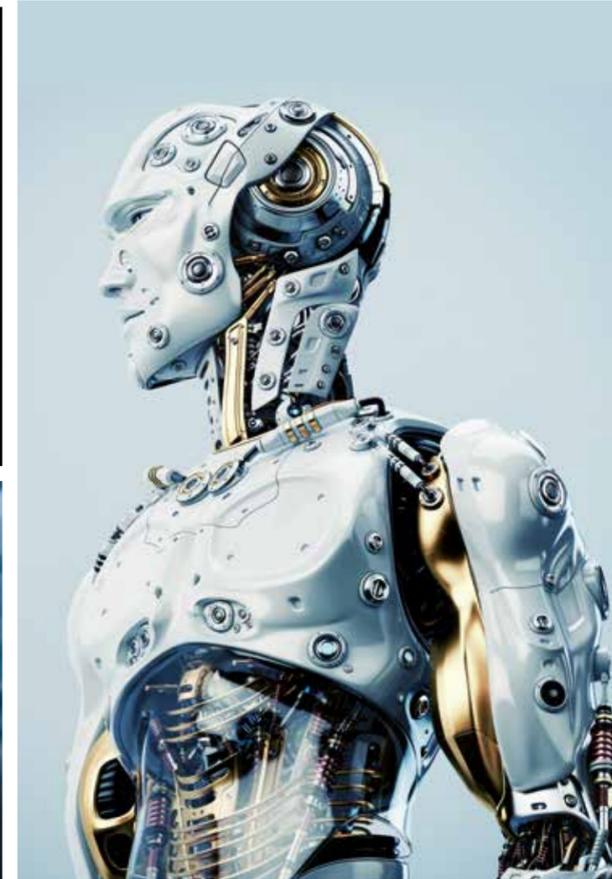
offers an introductory evaluation of global megatrends and their impact on the future of government over the next 50 years. It aims to be an indispensable tool for policy-makers, government strategists, private sector leaders and civil society worldwide as they begin planning for the dramatic changes that are imminent in the coming decades.

The guidebook sets out plausible innovation outcomes for the future, analysing best-case scenarios for megatrend developments across scientific, technological, environmental, economic, political and social factors. The impact that these scenarios could have on government functions, stakeholder interactions and key performance indicators is then assessed. Finally, the guidebook presents recommendations for governments to begin planning for the future.

The analysis set forth in the guidebook will be complemented by additional resources to create a complete toolkit aimed at helping governments become more resilient as they journey into a transformational future.



The purpose of the guidebook's in-depth analysis is not to predict the future, but to help governments prepare for it.



Connections

A Platform For Exchange

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CONNECTIONS

A Platform For **Exchange**

“The World Government Summit has become one of the most important platforms for establishing the UAE’s global diplomacy with various governments and international organisations”

HE Mohammad Abdulla Al Gergawi
Minister of Cabinet Affairs & The Future of the United Arab Emirates, Chairman of the World Government Summit

During the six years since the first World Government Summit was launched in Dubai, the event has become the largest gathering of its kind to explore emerging ideas. The Summit serves as a forum where international governments and organisations can convene to build relationships and foster cooperation.

In 2018, more international agreements and specialised forums took place than at any previous Summit, confirmed His Excellency Mohammad Abdulla Al Gergawi, Minister of Cabinet Affairs & The Future of the UAE, Chairman of the World Government Summit.

“The Summit served as a critical knowledge platform for reviewing and benefitting from outstanding government experiences, discussing cooperation with international and private institutions and organisations, and building global partnerships and alliances that seek to promote government work and find sustainable solutions to intractable problems,” he said.

On the sidelines of the Summit, governments signed memorandums of understanding (MOUs), nations and international organisations held high-level discussions on major aspects of policy and innovative initiatives and collaborative working groups were launched to ensure global cooperation in shaping the future of the world.

Meetings & Round Tables

Global Happiness Council

The Global Happiness Council, a network of academic experts in happiness from the fields of psychology, economics, urban planning, civil society, business and government, was established by His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE, Ruler of Dubai, in 2017.



At a meeting held during the Global Dialogue for Happiness at the World Government Summit 2018, the council discussed its achievements and way forward one year after its formation, as well as additional efforts to promote happiness and wellbeing in the development agendas of national governments and international organisations.

The council, which launched the first *Global Happiness Policy Report* during the Summit, also discussed plans for a second edition to be launched in February 2019.

CONNECTIONS

New Socio-economic Models In Partnership With IMF

In a high-level round table discussion, jointly organised by the UAE Government and the Fiscal and Middle East and Central Asia Departments of the International Monetary Fund (IMF), policy-makers from different countries discussed the changes required in socio-economic models in the face of technological and demographic changes, globalisation, and the new environment of 'lower for longer' oil prices.



CEO Forum

On the sidelines of the World Government Summit, the Honourable Narendra Modi, Prime Minister of India, met with a group of the most prominent CEOs from his home country who are living in the UAE.

CONNECTIONS



e-Government Round Table In Partnership With ESCWA

The creation of a level digital playing field in the Arab world was the focus of a round table discussion on e-Government, held in partnership with the United Nations' Economic & Social Commission for Western Asia (ESCWA). Participants explored the scale of the region's digital economy, considered the regulatory frameworks for new technology and deliberated the themes of big data and cybersecurity.



MENA-OECD Working Group On Open & Innovative Government

Leading policy practitioners from the Organisation for Economic Co-operation & Development (OECD) and nations in the Middle East & North Africa (MENA) region held their annual working group meeting at the Summit to promote open government and an inclusive approach to policy-making and implementation.

Memorandums Of Understanding

The UAE and Egypt agreed to strengthen cooperation, share common experiences and knowledge in governance, and develop the quality and efficiency of public services.



DEWA, Expo 2020 and Siemens signed an agreement to launch a pilot project for the region's first solar-driven hydrogen electrolysis facility at the Mohammed bin Rashid Al Maktoum Solar Park.



The UAE and Portugal signed an MOU pledging to enhance collaboration and knowledge sharing in the fields of public governance, digitisation and e-government.

Partners signed up to support the One Million Arab Coders initiative, launched by His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE, Ruler of Dubai.



Launches & Announcements

Autonomous Transport Pods

His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE, Ruler of Dubai, attended initial tests of the world's first autonomous transport pods. The pods, designed to accommodate up to 10 passengers for short to medium distances, will travel in dedicated lanes at about 20 kilometres per hour. They have been developed by Dubai's Roads and Transport Authority (RTA), in cooperation with Next Future Transportation, as part of RTA's efforts under the Dubai Future Accelerators initiative to propel innovation in government through partnership with private sector start-ups.





Global Inspiration Platform – Zayed The Inspirer

Lieutenant General His Highness Sheikh Saif bin Zayed Al Nahyan, Deputy Prime Minister & Minister of Interior of the UAE, launched the 'Global Inspiration Platform – Zayed the Inspirer' to coincide with the Year of Zayed. The online database of stories remembering the late Sheikh Zayed, the founding father of the UAE, celebrates the anniversary of his birth in 1918 and chronicles his legacy.



The Climate Project

The UAE's Ministry of Climate Change and Environment and Ministry of Foreign Affairs and International Cooperation launched The Climate Project, a two-year effort which aims to deliver climate initiatives that will touch the lives of 10 million people by 2020.

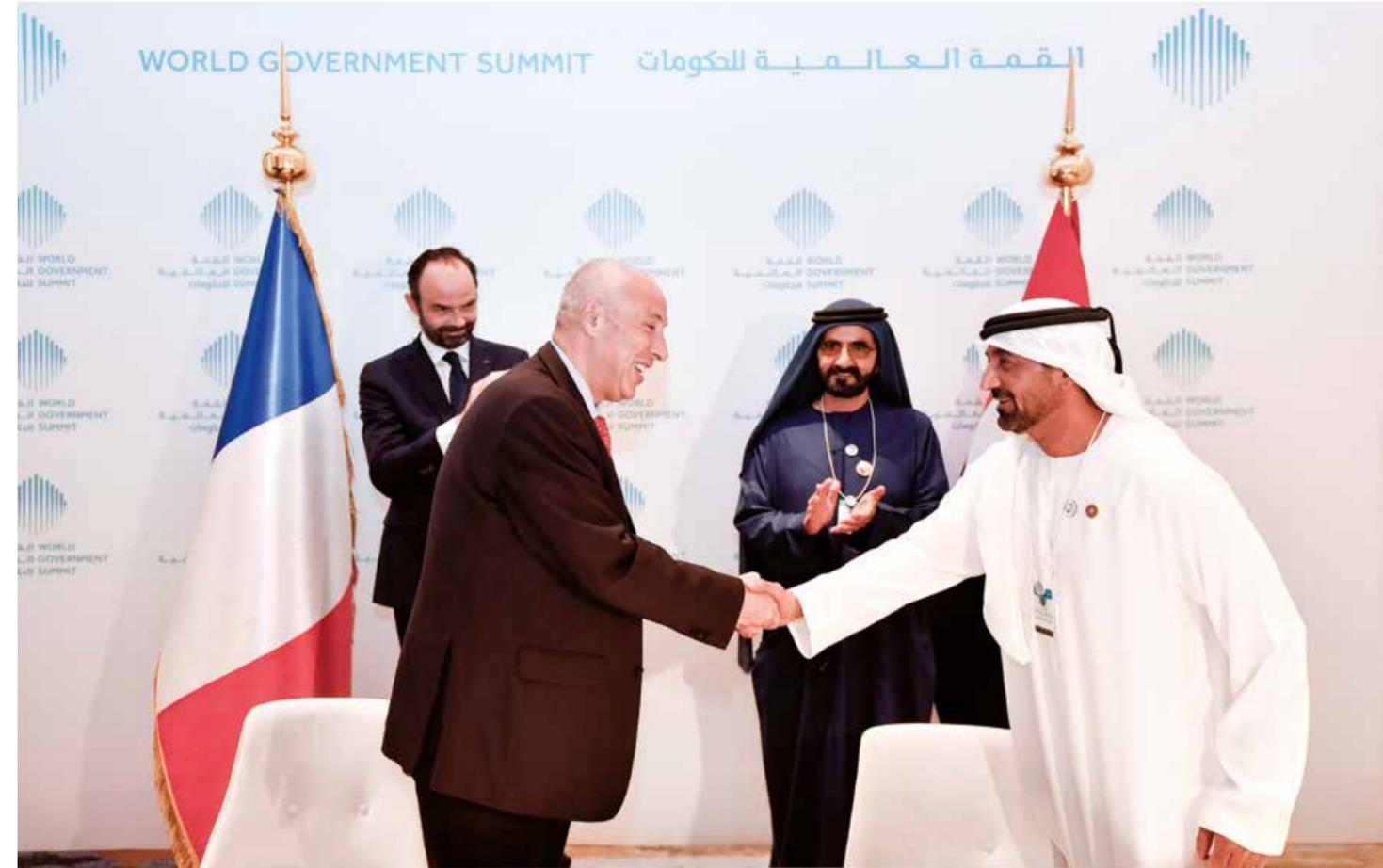
CONNECTIONS

Global Happiness Coalition

His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE, Ruler of Dubai, and His Highness Sheikh Hamdan bin Mohammed bin Rashid Al Maktoum, Crown Prince of Dubai, Chairman of the Dubai Executive Council, attended the launch of the Global Happiness Coalition.

The new coalition comprises ministers of six countries including the UAE, Costa Rica, Kazakhstan, Mexico, Portugal and Slovenia.

The alliance, which will hold an annual meeting on the sidelines of future World Government Summits, aims to ensure effective international dialogue and knowledge exchange about achieving happiness on a global level and the implementation of happiness-related policies.



Emirates Signs Contract

Emirates signed a contract for 20 additional A380 aircraft and 16 options, firming up an MOU that was announced in January. The total agreement is for 36 aircraft and deliveries are expected to start as early as 2020.

Awards

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Best Minister Award

HE Sri Mulyani Indrawati

Minister of Finance of Indonesia

"This award is dedicated to Indonesia and the 257 million Indonesians aspiring to make our nation thrive: more competitive economically, prosperous socially, and responsible geopolitically"

Her Excellency Sri Mulyani Indrawati, Minister of Finance of Indonesia, received the 2018 Best Minister Award from Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the United Arab Emirates, Ruler of Dubai.

Indrawati was honoured for her significant contributions to increasing Indonesia's macroeconomic stability, fighting corruption and promoting transparency in government. Under her mandate, the country has also seen tangible results in reducing poverty, improving the standard of living,

lowering public debt and boosting transparency of public transactions.

The World Government Summit Best Minister Award recognises the exceptional efforts of government ministers who demonstrate excellence in the public sector, implement successful initiatives and inspire other government leaders and service providers to promote innovation within their domain to better serve their citizens. The award is given to one government official each year to distinguish his or her efforts in enacting effective reforms in their home country.

After a comprehensive review conducted by Ernst & Young, which also takes public opinion into account, eight ministers are nominated. A jury of international experts and representatives from international organisations and the private sector then select the winner based on social and economic impact, scalability, innovation and leadership.



Edge Of Government Award

Mobilizing Construction Kenya

His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE, Ruler of Dubai, presented the Government of Kenya with the 2018 Edge of Government Award for their project entitled 'Mobilizing Construction'.

Kenya's innovative programme, in partnership with the Mobilized Construction start-up, addresses one of the country's key issues – maintaining the quality of its roads. A smart device mounted on vehicles records road conditions in real time and identifies hazards that require repair. Micro-contracts for the maintenance work are generated, and local labourers can bid for these jobs through their mobile phones. The initial pilot produced astounding results, with lead times often reduced from two years to a mere two weeks.

The Edge of Government Award invites administrations from all over the world to submit their cutting-edge solutions to current and future challenges their countries face.

The 2018 edition attracted more than 200 innovative experiences, which were reviewed and evaluated by the Mohammed Bin Rashid Centre for Government Innovation and its Global Advisory Council, as well as the Organisation for Economic Co-operation and Development. The best projects, which earned the honour of exhibiting at the World Government Summit, were selected based on their level of innovation and novelty, impact and scope of improvement, and replicability of innovation in other countries and regions.



Shaping Future Governments

Global Universities Challenge

London Business School

United Kingdom

“Bright young minds with bright ambitions are always an added value”

HE Dr Ahmad bin Abdullah Humaid Belhoul Al Falasi

Minister of State for Higher Education & Advanced Skills of the United Arab Emirates

London Business School was honoured by His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE, Ruler of Dubai, as the winning team in the 2018 World Government Summit Shaping Future Governments Global Universities Challenge.

The challenge is a unique initiative designed to bring together tomorrow’s leaders with today’s policy-makers. Some of the brightest young minds from top

graduate schools of public policy and business administration come to the UAE from across the world to help shape the future of government.

This year, the challenge design was based on the UAE Centennial 2071 Vision, which includes a set of bold, long-term aspirations that could similarly be deployed in any country aiming to build a better nation. More than 100 students from 17 internationally renowned universities and graduate schools devised multi-phase implementation plans outlining how the vision could be achieved.

A team from each participating school presented their ideas to a panel of high-profile judges, and were evaluated based on how innovative and comprehensive their proposal was, the viability and feasibility of the concepts being pitched, and the way the students presented their ideas.



GovTech Prize

Acknowledging government technology pioneers for providing global solutions to global challenges

World Virtual GovHack

1st Prize: Clean Water AI

Using microscopic cameras, Clean Water AI assesses water safety by detecting harmful bacteria and particulates. The data is plotted on a map and provides users real-time information about their water quality.



2nd Prize: Cycle

Cycle is an electronic platform which allows users to purchase the excess electricity produced by suppliers using digital currencies.



3rd Prize: Smart Tenders

A highly transparent bidding platform that uses blockchain technology, Smart Tenders documents the government procurement procedure. It allows citizens to participate in the evaluation process and informs all concerned parties of every transaction detail.

Best Government Emerging Technologies Award

National Cities Performance Framework

Australia

This online dashboard tracks the performance of two dozen of Australia's biggest cities. The data can then be used to inform policy-making, investment decisions and urban liveability.



Aadhaar India

The world's largest biometric-enabled identification programme, Aadhaar gives Indian citizens access to all government services using their unique ID.



Portable DNA Sequencing Device Tanzania

This portable device analyses crop DNA to detect disease. Results are returned within two days, allowing farmers to take swift action to stop an infection from devastating their harvest.



Best m-Government Service Award

Protecting Human Life Dubai Police, United Arab Emirates

Mobile App **Dubai Police**

Equipped with the latest technologies, this mobile app puts a full range of Dubai Police smart services right at users' fingertips, including minor accident reporting, document requests and much more.



Building Knowledge Queen Rania Foundation, Jordan

Mobile App **Edraak**

Edraak is a massive open online course (MOOC) platform that gives users free access to classes in Arabic that have been taught and developed at some of the world's leading institutions, like HarvardX, MITx and UC BerkeleyX.



Sustainable Living Réseau de Transport D'électricité, France

Mobile App **éCO2mix**

The éCO2mix mobile app was developed to help reduce energy consumption in France. Users have access to live electricity data, such as carbon dioxide emissions and prices, to help them understand their own usage and compare it to average consumption.

AWARDS



Enhancing Cultural & Social Awareness

Hong Kong Tourism Board, Hong Kong

Mobile App **My Hong Kong Guide**

This all-in-one trip-planning app contains a wealth of information about thousands of Hong Kong's cultural attractions and events. It also incentivises travellers to explore new places in the city by offering chances to win special deals and rewards.



Enabling Business

Ministry of Human Resources & Emiratisation, United Arab Emirates

Mobile App **MOHRE**

Using the MOHRE application, employers and employees in the emirates can access a variety of frequently requested Ministry of Human Resources & Emiratisation (MOHRE) services directly from their mobiles.



Effective Mobility

Transport for London, United Kingdom

Mobile App **Citymapper**

Billed as the ultimate transport app, Citymapper integrates multiple modes of public transportation to help users reach their destination more efficiently. It offers real-time departures and location-based services including step-by-step directions.

Accessible Government

Ministry of Electronics & Information Technology, India

Mobile App **UMANG**

India's Unified Mobile Application for New Age Governance, or UMANG, aggregates services from all government departments on a single digital platform to streamline access for citizens.



"There is no true leader who does not thank the people, and any leader who does not thank their team is not worthy of his or her position"

HH Sheikh Mohammed bin Rashid Al Maktoum

Vice President & Prime Minister of the United Arab Emirates,
Ruler of Dubai





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