

Global Agenda

Annual Meeting of the New Champions 2019

Leadership 4.0: Succeeding in a New Era of Globalization

Dalian, People's Republic of China 1-3 July



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Foreword



W. Lee Howell
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Member of the Executive Committee

Globalization 4.0 represents a series of fundamental changes in the global economy occurring at an unprecedented speed and scale. As these changes transform the world around us, a new form of leadership and collaboration is emerging as companies, governments and individuals adapt to this new era of globalization.

To navigate this new era, leaders must acquire a deep understanding of how the new champions that are gaining economic influence are disrupting and transforming industry models. In this context, impartial and independent platforms have never been more needed than today, particularly as the world faces increasing tensions and conflicts.

In Dalian, more than 1,800 participants explored how the face of leadership is morphing into a more

agile form to ensure that the companies, people and nations for which they are responsible are able to survive and thrive in a world of artificial intelligence and other new technologies that are altering the very fabric of society and business.

While innovation, entrepreneurship, science and technology are essential for creating new opportunities for economic, social and individual development, the human element has never been more important. In this regard, more than 200 panels, hub sessions, workshops and hands-on installations enabled participants to gain insight into the evolving role of leaders and the meaning of leadership in the face of the Fourth Industrial Revolution.

During the course of the meeting, it became clear that there are different approaches and concepts for dealing

with Globalization 4.0 – each organization and nation has to determine its own approach. But, through open dialogue and sincere efforts to understand and to bridge the gaps between approaches, we can better solve the problems of the global commons.

We would like to thank the Co-Chairs of the meeting for their valuable contribution to the programme.

The World Economic Forum is grateful to its members and constituents for their active participation in the Annual Meeting of the New Champions and continued commitment to improving the state of the world. We look forward to welcoming you to next year's gathering in Tianjin.



Meeting highlights

The following are the key outcomes achieved over the three-day meeting.



- The Government of the United Arab Emirates joined the Forum’s Closing the Skills Gap initiative, launching an accelerator programme that will be stewarded by the country’s Minister of State for Higher Education and Advanced Skills.
- Leaders in the health and information technologies sectors shaped and committed to developing EPI-BRAIN, a first-of-its-kind data innovation platform to predict and forecast epidemics.
- The World Economic Forum announced it will open a branch of the Tropical Forest Alliance in China. The Alliance is an initiative led by the Forum that aims to remove deforestation from commodity supply chains.



- The Inter-American Development Bank (IDB) will use the newly launched Blockchain Single Trade Window framework, developed by IDB and the Forum, to pilot blockchain projects that improve border clearance, and will share lessons and best practices.

- Fahad Almubarak, State Minister, Member of the Saudi Council of Ministers, Saudi G20 Sherpa and Secretary-General of the G20 Saudi Secretariat, chaired a consultation session with Asian stakeholders to gather input for the agenda of its G20 presidency, starting in December.



- **Business for Nature**, a global coalition to elevate the business call for comprehensive action to reverse nature loss and restore the planet’s vital natural systems, was launched on 2 July.



- A first advisory meeting took place to provide strategic direction to the 28 financial institutions that have signed up to a set of **Green Investment Principles**. The principles, drafted by a coalition including the Forum, the Green Finance Committee of China, the Society for Finance and Banking and the Green Finance Initiative of the City of London, aim to serve as a voluntary standard for investment in the Belt and Road Initiative.

- As part of a wide-ranging memorandum of understanding between China’s Ministry of Ecology and the Environment (MEE), the two partners announced:
- A collaboration in support of the 2020 Biodiversity Conference of Parties in Kunming, China; the agreement will see the formation of a new community and the publication of a report, *The New Nature Economy*.
- The Forum also joined the Green Belt and Road Coalition, which will see collaboration with MEE on a number of thematic partnerships, including Environmental Information Sharing and Big Data; Biodiversity and Ecosystem Management; Green Finance and Investment; and Green Technology Innovation.



- South Korea joined the Forum’s Centres for the Fourth Industrial Revolution Network.
- Bahrain will pilot a set of guidelines for the ethical procurement of artificial intelligence developed by the UK and the Centres for the Fourth Industrial Revolution Network (announced at last year’s Annual Meeting of the New Champions).



- The Forum’s Global Future Council on Agile Governance piloted a new tool, endorsed by the Government of the United Arab Emirates, to help policy-makers and regulators avoid being left behind by rapid technological change.



- The Infrastructure and Urban Development community formed a task force on Risk Allocation and Mitigation to make infrastructure collaborations between the public and private sectors more equitable, future-proof, socially endorsed and immune to political cycles.

For session highlights, blogs, videos and meeting-related documents, plus Forum insights, visit <https://toplink.weforum.org>

Expert insight

Top emerging technologies of 2019

DNA-based data storage, safer nuclear reactors and a novel way to rein in rogue proteins

The World Economic Forum announced its annual list of breakthrough technologies with the greatest potential to make a positive impact on our world.

The technologies on the list, which is curated by members of the Forum's Expert Network, are selected against strict criteria. In addition to promising major benefits to societies and economies, they must also be disruptive, attractive to investors and researchers, and expected to have achieved considerable scale within five years.

This year's top 10 emerging technologies are:

Bioplastics for a circular economy:

Only 15% of plastics today are recycled. Meanwhile, biodegradable plastic lacks the strength of conventional materials. This year's breakthrough comes through using cellulose or lignin from plant waste, which increases mechanical strength and doesn't use crops that could otherwise be used for food production.

Social robots: Robots today are able to recognize voices, faces and emotions, interpret speech and gestures, respond to verbal and non-verbal cues, and even make eye contact. They're increasingly being used to care for the elderly, educate children and do all sorts of tasks in between.

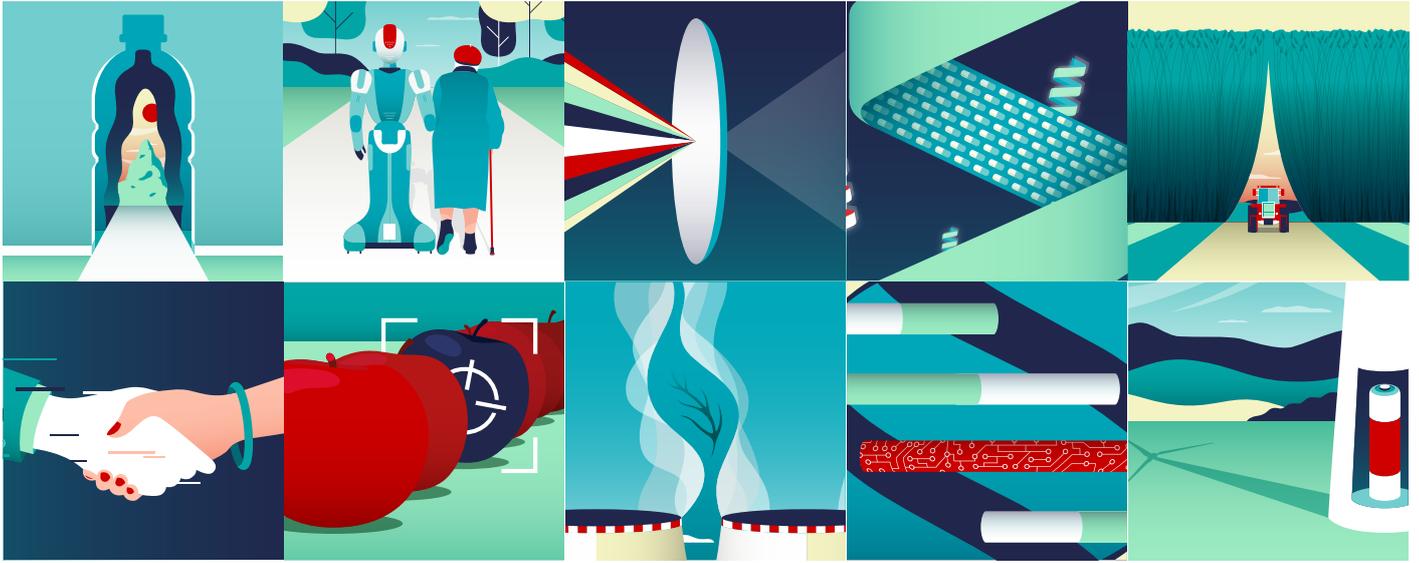
Metalenses: These lenses so small that, up until now, it has been impossible to make them through traditional glass-cutting and glass-curving

techniques. A breakthrough in the way lenses are produced will allow further miniaturization in sensors and medical imaging devices.

Disordered proteins as drug targets:

"Intrinsically disordered proteins" are proteins that can cause cancer and other diseases. Unlike conventional proteins, they lack a rigid structure, which makes them difficult to treat. Now, scientists have found a way to prevent their shape-shifting long enough for treatment to have an effect.

Collaborative telepresence: Imagine video conferences where you can not only feel as if you're in the same room as your correspondents but can actually feel one another's touch.



Smarter fertilizers: Much of the improvement in fertilizers over the years has been in enhancing their ability to slowly release nutrients as and when they are needed. The drawback is that they still contain ammonia, urea and potash. The latest versions use more environmentally friendly sources of nitrogen, plus microorganisms that improve take-up by plants.

Advanced food tracking and packaging: Locating the source of food contamination can now take minutes rather than days as a result of a novel blockchain approach to monitoring food's progress through the supply chain. Meanwhile, sensors in packaging can tell us when food is about to spoil, reducing the need to trash whole batches once an expiry date is reached.

Safer nuclear reactors: The great risk with nuclear power is that the fuel rods can overheat and, when mixed with water, produce hydrogen, which can then explode. New fuels are coming online that are much less likely to overheat and, if they do, produce very little or no hydrogen. These new configurations can replace existing fuel rods with little modification.

DNA data storage: At the rate we are producing data, we probably have less than 100 years before the magnetic or optical storage systems we use at the moment will reach maximum capacity. These systems also consume huge amounts of energy. DNA, life's storage material, has no such limitations. According to one estimate, all the world's current storage needs for a year could be met by a cube of DNA measuring about one metre on a side.

Utility-scale storage of renewable energy: Lithium-ion batteries will likely be the dominant technology for the next five to 10 years and continuing improvements will result in batteries that can store four to eight hours of energy – long enough, for example, to shift solar-generated power to the evening peak of demand.

These technologies were discussed in panel discussions and working sessions throughout the Annual Meeting of the New Champions.

"Technologies that are emerging today will soon be shaping the world tomorrow and well into the future – with impacts to economies and to society at large. Now that we are well into the Fourth Industrial Revolution, it's critical that we discuss and ensure that humanity is served by these new innovations so that we can continue to prosper," said Mariette DiChristina, Editor-in-Chief of Scientific American, and chair of the Emerging Technologies Steering Committee.

"From income inequality to climate change, technology will play a critical role in finding solutions to all the challenges our world faces today. This year's emerging technologies demonstrate the rapid pace of human innovation and offer a glimpse into what a sustainable, inclusive future will look like," said Jeremy Jurgens, Chief Technology Officer at the World Economic Forum.

Download the full report: http://www3.weforum.org/docs/WEF_Top_10_Emerging_Technologies_2019_Report.pdf

Expert insight

Global Lighthouse Network: Scaling intelligent manufacturing



The World Economic Forum has added 10 new factories to its global Lighthouse Network, a community of manufacturers that are showing leadership in applying Fourth Industrial Revolution technologies to drive financial and operational impact.

The factories join a network of 16 other Lighthouses across multiple geographies and industries that serve as beacons to guide others to overcome challenges in upgrading systems and applying cutting-edge technologies such as artificial intelligence, big data analytics and 3D printing. The factories were selected based on their success in integrating these technologies to increase efficiency and drive innovation.

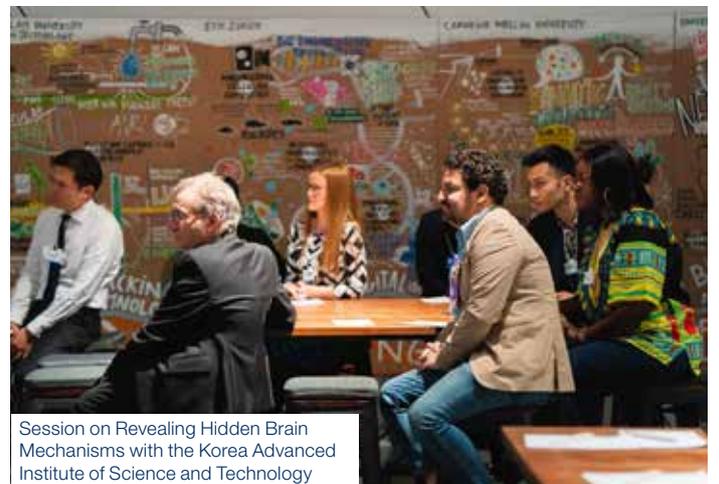
One of the key elements of the Lighthouse Network is its commitment to discovering and elevating solutions that can be scaled up in cost-effective ways across companies and industries. The Lighthouses have also agreed to share their knowledge with other manufacturing businesses, helping them successfully adopt the technologies of the future.

“The global Lighthouse Network offers an unrivalled opportunity not only to highlight the transformational efforts of the world’s most advanced manufacturers but also, more importantly, to create a shared learning journey that will help manufacturers around the world, across value chains and of all sizes to access and capitalize on the positive potential of the Fourth Industrial Revolution,” said Francisco Betti, Head of Advanced Manufacturing Industry at the World Economic Forum.

The Lighthouse programme is conducted in collaboration with McKinsey & Company. Learn more about the Lighthouses announced in January, the Lighthouses announced last September and read the white paper, *Fourth Industrial Revolution: Beacons of Technology and Innovation in Manufacturing*.



Li Keqiang, Premier of the People's Republic of China, and Klaus Schwab, Founder and Executive Chairman, World Economic Forum, in the session Opening Plenary



Session on Revealing Hidden Brain Mechanisms with the Korea Advanced Institute of Science and Technology



Juan Pedro Ochoa Ricoux in the session Neutrinos for Peace

Peering at an uncertain economic horizon

New drivers and models of growth will be needed to sustain development within an altered architecture of the world economy.

At the World Economic Forum's 13th Annual Meeting of the New Champions, in Dalian, the view from Asia helped to sink in new realities about the world economy, with a mixed economic outlook that will require a candid response from all stakeholders if they are to keep up.

Uncertainty was the keyword on the lips of panellists across sectors. Despite a temporary truce in the US-China trade war, announced at the G20 in Osaka days before the opening of the Annual Meeting of the New Champions, markets are still nervous and projections indicate slowing global economic growth across the board.

"The business community is very pleased that [the US and China] are going back to the negotiating table," said Timothy P. Stratford, Managing Partner, Beijing, Covington & Burling, a sentiment echoed by Yi Xiaozhun, Deputy Director-General of the World Trade Organization: "What we are most concerned about is all the remaining uncertainty."

In the opening plenary, Chinese Premier Li Keqiang doubled down on China's commitments to financial globalization, underlining that "fundamental principles, such as free trade, must be upheld." He pledged to lift some foreign ownership caps, and reduce restrictions on foreign investment in the technology sector.

"The world economy stands to benefit from a more open China," he said.

"We cannot simplistically make a scapegoat of economic globalization," Premier Li added, but instead must "guide globalization in the direction of ... inclusive growth."



Mariette DiChristina in the session Sustaining the Space Economy



Jennifer Lyn Morone in the session Rethinking Capitalism

Not everyone was so sanguine. Other participants highlighted the risk of global stagflation – inflation combined with unemployment and stagnant demand – catalysed by the attempted bifurcation of tech supply chains and a new “tech cold war” between the US and China.

“Truce does not mean progress,” warned Jin Keyu, Professor of Economics at the London School of Economics and Political Science, in a Bloomberg debate.

But as the apocryphal Chinese etymology of “crisis” goes, there is opportunity within the danger. “The trade war is pushing China to strive for self-sufficiency and greater independence,” commented Jin. “And that’s not bad for China, as it wants to enter a new phase of economic growth.”

New drivers of growth will be essential if China’s economy is to thrive, which in turn will lift the global economy. The transition to a consumption- and

services-led economy is underway but will take time, while the advent of 5G technologies is another potential booster.

In an interconnected world, these transformations are not true just of China or of Asia, but globally. There are a number of key transitions for business leaders and governments to embrace, and pitfalls to avoid, if the world economy is to keep pace with rapidly changing architectures.

One of the biggest risks, hidden in plain sight, is debt. Global debt is now double global GDP. Rollovers and low interest have mitigated the effects so far, but, should another financial crisis hit, there will be a reckoning. Monetary policy reform, in the model of the EU’s in the wake of the 2010 debt crisis, can help – as well as responsibly structured debts and honest appraisals of risk not just for individual projects, but for the countries they are in.

The digital economy will be a linchpin



“
In the face of slowing economic growth we must live the spirit of partnership, as we are passengers in the same boat.
”

Li Keqiang, Premier of the People's Republic of China

of future growth. Data in particular is a key driver, and should be allowed to flow across borders with the right data regulation – for example, allowing aggregate data but not individual, to protect privacy – and updates to industrial policy to reflect its critical function.

This priority is an especial focus of ASEAN, the fastest-growing internet market in the world but poses a thorny regulation challenge for such a diverse region, which needs more communication between governments and the private sector to seek out points of common interest.

“We used to talk about data and digital as the ‘new oil,’” said Jayajyoti Sengupta, Senior Vice-President of Cognizant Technology Solutions in Singapore. “Now we call it the ‘new air’. The question is how we make that air pollution free and accessible for all.”

New architectures for the global economy are already under construction. Trust is wavering in some financial institutions, while emerging economies are challenging existing structures and partnerships. New trade deals such as the CPTPP and RCEP are repivoting the centre of the world economy to Asia and the Pacific, while in other economies, such as digital, borders are more porous than ever.

The Belt and Road Initiative (BRI) is ever more a vein that connects the limbs of Eurasian economies, although the risks of environmental and climate change damage, as well as debt-trap diplomacy, grow in proportion to its ambitions. A focus of discussions this year, in the wake of the second BRI summit in April, was on “greening the Belt and Road”.

Bruno Maçães, Senior Fellow at Renmin University, also pointed out a sea change in its scope: “In the first five years, we used to think of the Belt and Road as being focused on developing countries. At the moment Italy joined, a G7 country and NATO member, it changed the nature of the BRI.”

With all of these challengers and disruptors of the existing economic world order, nations and businesses will have to step carefully to negotiate the year ahead. The bears and the

bulls must both be nimble so as not to trip up in such a bumpy economic landscape.

As Kevin Sneader, of McKinsey & Company, warned: “The one thing that we can be certain of is that uncertainty will continue.”



Kevin Sneader, Min Zhu, Jing Ulrich and Joachim von Amsberg in the session China Economic Outlook

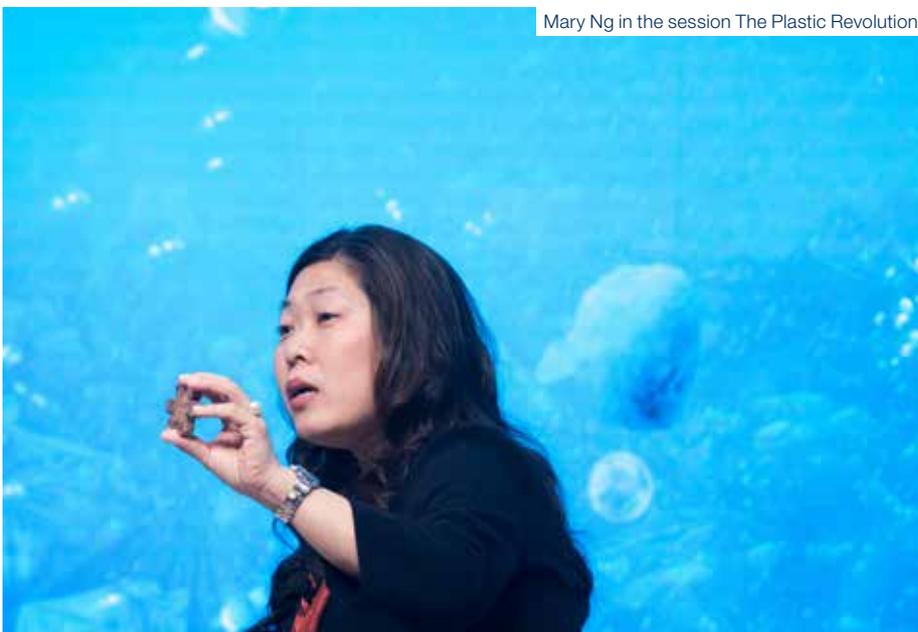
Trade deals beyond ‘The Big One’

Despite a ceasefire, the ongoing US-China trade war is the slow-boiling cassoulet of geopolitical friction on everyone’s lips. Yet, other new and prospective trade deals are already transforming trade and shifting the global economy’s centre of gravity to the Pacific.

The first is the CPTPP, or Comprehensive and Progressive Agreement for Trans-Pacific Partnership. This unwieldy acronym is in fact little more than a reinvention of the TPP, in which 11 partners pushed ahead regardless after the US, architect of the deal under President Obama, pulled out under President Trump. The deal was signed in March 2018 and has diversified trade for all members.

The second, still in negotiation, comes out of the Regional Comprehensive Economic Partnership (RCEP), and would include the 10 members of ASEAN plus six Indo-Pacific states (China, Japan, South Korea, India, Australia and New Zealand). They hope to reach an agreement by the end of the year.

As Mary Ng, Minister of Small Business and Export Promotion of Canada, commented: “Trade agreements should not just be documents, but tools that enable our companies to get into these markets.”



Mary Ng in the session The Plastic Revolution



Morning Tai Chi



Digital Mimic Experience





Qiu Zhijie in the session Mapping the World



Sang Ah Lee in the session Revealing Hidden Brain Mechanisms with the Korea Advanced Institute of Science and Technology



Douglas McCauley in the session The Big Picture on Sustainable Sourcing



Abdulla Bin Touq in the session Governing the Fourth Industrial Revolution



Biometric Mirror Experience



Nicole Schwab in the session Defending Nature's Last Frontiers



Peter Lochbihler in the session How to Tax Global Business



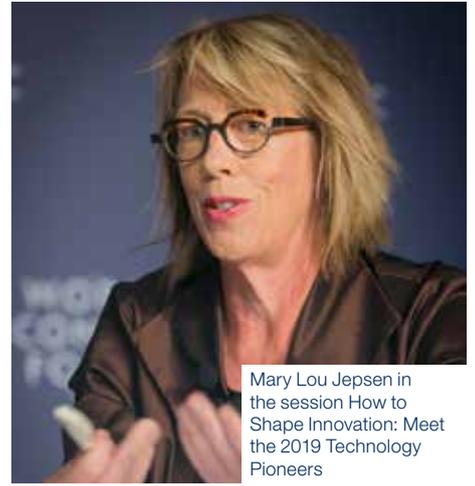
Cesar A. Hidalgo in the session The Big Picture on Soft Power



Yang Yanqing, Li Zhengqiang, Min Zhu, Jan Metzger, Zhang Lu and Huang Yi in the session How China Shapes the Future of Finance



Keith Bradsher, Sheikh Hasina, Mary Ng, Tak Niinam and Sushant Palakurthi Rao in the session Cooperation in the Pacific Rim



Mary Lou Jepsen in the session How to Shape Innovation: Meet the 2019 Technology Pioneers



Hospital of the Future Experience



Serey Chea in the session In Crypto We Trust



The critical juncture at the heart of transformative tech

From genomics to 3D-printed prosthetics, the possibilities of taking control of food, disease and human reproduction are today available in a way unprecedented in human history. At once awe-inspiring and unnerving, as these game-changing technologies are rolled out they bring us to a critical juncture – one where key decisions about ethics, governance and leadership will define the blueprint of our future.

Once dwelling exclusively in the realm of the imagination, or in the pages of sci-fi novels, scientific advances have in the past year seen scientists push the boundaries of technological innovation like never before.

Last November, a Chinese researcher controversially claimed that he helped create the world's first gene-edited humans, twin baby girls born the same month. On the other side of the globe, scientists in Africa were releasing the first-ever genetically engineered mosquitos, a malaria-resistant strain made possible by CRISPR technology, in an attempt to wipe out an infectious disease that each year kills hundreds of thousands of people.

Advances in genomics are also allowing for new visions of food security and environmental sustainability. At the meeting in Dalian, geneticists discussed the possibility of fungicide-free wheat, or more productive varieties of soybean –

bio-edits that could potentially save hectares of virgin rainforest. The genetic editing of seeds, noted one expert, could enable a “focus on feeding the world without starving the planet.”

In other examples of cutting-edge biotech, 3D-printed prosthetics that sync with brain signals in children, and grow as their young bones develop, are being produced at INSERM, the French National Institute for Health and Medical Research, while wearables that can detect diseases such as Parkinson's could soon be on the market.

In major cities in Japan, artificial intelligence is being used to provide emergency services to its ageing population, and sophisticated geophysical data is helping to better detect earthquakes. So fast is the wheel of technological advancement spinning that scientists are even talking about the possibility of humans living to 150 – and beyond.





“

We are clearly living in challenging times where we need the wisdom and experience of different stakeholders to come together for the common good.

”

Klaus Schwab, Founder and Executive Chairman, World Economic Forum



Embracing this climate of innovation, China has experienced a meteoric rise on the global scientific stage in recent years. In the past decade, the country has doubled its spending on scientific research and, in 2018, surpassed the US with the largest number of scientific researchers.

“I believe the next Google-level company in healthcare could come from China,” reckoned Jackson Zhu Weiyan, Chief Executive Officer and Founder of Bio-Med. “China is truly embracing innovation.”

On the back of President Xi Jinping’s vision of a knowledge-driven economy, healthcare innovation has rapidly accelerated in China, with the use of AI, digital pathology and genomics, as well as numerous start-ups and crossovers between biotech and IT.

Given the borderless nature of science, industry experts and policy-makers at the Dalian meeting praised

China's open approach and commitment to deeper international collaboration, which they see as having powerful potential to push forward the boundaries of scientific discovery for the benefit of humanity.

"All around the world, we have a surging increase in chronic diseases, from diabetes to obesity, infectious diseases, cancer, mental health – and these are really big problems," noted Melinda Richter, Global Head of JLABS at Johnson & Johnson, which has recently developed research laboratories for Chinese scientists in Shanghai. "It takes eight to twelve years to get a drug to market and billions of dollars," continued Richter. "So the only way these local entrepreneurs have a shot at making a difference is if we come together and invest."

There is much to celebrate about the way science can positively transform our world, yet with these incredible technological innovations come ethical grey zones and critical considerations about the shape of our future – of where the lines should be drawn. In the wake of the world's first genetically edited babies, for example, many scientists expressed fears about "off-target" genomic editing, the unintended consequences of genetic modifications, which in the aforementioned case remain unknown.

In their efforts to eradicate malaria in Burkina Faso, scientists proceeded with caution by making changes that could not be passed onto the next generation, to reduce the possibility of causing unintended, irreversible damage. In Dalian, scientists and policy-makers alike called for

continued innovation coupled with a strong sense of responsibility, and accountability.

The same mood characterized discussions on AI, a term that for some encapsulates our nebulous anxieties about globalization, data privacy and trust. Is it time, asked one participant, for a Hippocratic Oath for technologists?

In a world where big tech companies are starting to act like nation states – Facebook for example recently unveiled plans for its own internal "Supreme Court" and constitution – there is pressure on governments to adopt a more agile style of governance, or run the risk of being rendered obsolete.

If we want to live in a world where tech works for good, experts at the meeting surmised, then transparency needs to be engineered into our systems, through machine and algorithmic accountability, and more agile regulatory oversight.

Besides, argued Joanna Bryson, an Associate Professor in the Department of Computer Sciences at the University of Bath, the more skilled we become at AI, the less it makes sense to differentiate between us and the technology we create.

"When we talk about AI for good, are we really talking about generating good, or are we displacing responsibility onto the technology or onto the engineers?" asked Bryson, "We cannot hold machines themselves responsible. Justice itself is a human invention."



Stephen Engle, Jin Keyu, Zhu Wei, Paul Yang and Jeffrey Lu Minfang in the session The Global Economic Outlook: View from Asia

What if: You could live to 150?

Advances in molecular science and the genetics of ageing suggest that a future where humans live until the age of 150 – and perhaps beyond – is close. Last year, the World Health Organization even defined ageing as a treatable condition. Yet before we start stockpiling birthday candles, is the prospect of such extended longevity desirable?

The idea was met by a full gamut of responses in Dalian. Bob Kain, Chief Executive Officer and Co-Founder of Lunadna, suggested that, if we live to 150, there would be an opportunity to “have multiple lives” and careers. Simone Schuerle-Finke, an Assistant Professor at the Institute of Translational Medicine in Switzerland, said it’s happening whether we like or not and “we have to get prepared now for how to deal with it.”

Others, such as Jerry Muller, Author and Professor of History at the Catholic University of America, were unconvinced. “If you think about ageing as a disease, you have a misconception about life,” he said. “The ageing of the mind and the body is a natural process, and it’s about how we come to terms with it accordingly.”

For now, it seems, the jury on post-centenarian life is still out.



Nadia Ikumi in the session Ask About: Tackling Infectious Diseases



Jeffrey M. Drazen in the session Reducing China's Stroke Burden through Artificial Intelligence



Liu Qian in the session Voice for the Planet



Frances Balkwill in the session Tackling Cancer from Within – New Perspectives



Jin Xiangjun, Vice-Mayor of Tianjin, People's Republic of China, delivering his closing remarks



Daphne Cheng in the session Future Frontiers of Food: A Plant-Based Diet



Marieme Eve Jamme in the session The Promise of Tech in Education



Magdalena Skipper, Randall Platt, Beat Christen and Simone Schuerle-Finke in the session Converging Biological and Digital Worlds with ETH Zurich



Session on Big Data Visualization: A New Era in Mapping with the University of Tokyo



Jackson Zhu Weiyan in the session China's Biotech Revolution





Carol Yu Ying in the session Drone Delivery: Transforming Logistics and Lives



Ask About: Mental Health

Simone Schuerle-Finck in the session
Converging Biological and Digital
Worlds with ETH Zurich



Leadership 4.0: Only the agile will survive

Sweeping technological changes from the Fourth Industrial Revolution will profoundly impact how leaders and organizations thrive in the digital economy. More than ever before, they have to stay agile and be adaptable or risk being disrupted.

The Fourth Industrial Revolution, characterized by a fusion of technologies that blurs the lines between the physical, digital and biological spheres, will profoundly change the way people live, work and play. In the business world, disruptive technologies such as e-commerce and ride-sharing are already bringing about transformative changes, reshaping organizational structure and behaviour, redefining work processes and rewriting the rules on competitive economic disadvantage.

The speed of change will only increase when technologies such as artificial intelligence and 5G mobile go mainstream. Many of these changes are difficult to predict. While they are expected to have a serious impact on life and work as we know them today, the shape and specificities of the changes are far from clear.

On the job front, for example, the future is in flux. As Ahmad bin Abdullah Humaid Belhoul Al Falasi, Minister of State for Higher Education and Advanced Skills of the United Arab Emirates, asked: Who would have predicted 10 years ago that there would be a new category of jobs

called Uber drivers? His government, he quipped, finds it easier to predict the price of oil than the future of jobs.

5G will prove even more revolutionary for many industries, from retail to transport to healthcare. It will set the stage for large-scale disruptions



Jessica Tan and Charles Li in the session Conversations on Leadership 4.0



Pedro Ferreira in the session Rethinking Trust and Improving Decisions with Carnegie Mellon University

because of its much faster speed – it will be so fast, it will make real time seem too late, said Hera Siu, Chief Executive Officer for the Greater China Region, Cisco. Its lower network latency allows rapid data management and responsiveness, giving gamers a more immersive and exhilarating experience and making autonomous vehicles safer, to name just two early beneficiaries.

Equally exciting is the network support for massive volumes of data traffic, which will finally usher in the internet of things (IoT), where many physical devices and ordinary objects can be connected with one another over the internet, and monitored and controlled remotely.

So, how do industries and organizations thrive in such a volatile, unpredictable environment and what changes are needed to leadership style, organizational structure and

culture if anyone is to have any hope of going head-on with today's corporate titans such as the so-called FANG (Facebook, Amazon, Netflix and Google) companies and their Chinese counterparts, Alibaba, Ten Cent and Baidu?

"These companies," observed Andrew Dowell, Wall Street Journal's Asia Editor, "mediate a lot of economic activity. Whether it's getting cabs or finding your way around the internet or connecting with friends, these companies have a tight lock on users' time and attention."

And they and their ilk have no qualms about "digging the graves" of the established players, according to Charles Li, Chief Executive of Hong Kong Exchanges and Clearing, who said that companies will have to constantly reinvent themselves or become irrelevant.



Data is the prized asset in today's digital economy and corporations will have to develop capabilities to harness, analyse and manage them while sifting out the bias in the algorithms. Quantitative skills honed from the pursuit of STEM (science, technology, engineering and mathematics) disciplines are an advantage, but so too are soft skills like creativity, strategic thinking and communications, since these attributes cannot be imparted to machines, at least for now.

Agility and adaptability are two crucial leadership traits in the face of the sweeping changes ahead. Leaders will have to develop new mindsets and capabilities to transform their organizations and inspire their workers, particularly those of the millennial generation, the world's first generation to have largely grown up with internet and mobile phones. "This is one of the challenges of this world," said Alain Dehaze, Chief Executive Officer of HR services company Adecco Group.

Millennials are in many ways a different breed from their parents. They do not crave job security – they tend to take on freelance work, preferring to identify with a purpose rather than to belong to a company – and they certainly owe no loyalty to the employer. In the United States, young workers are estimated to be changing jobs 11 times between the ages of 18 and 25.

Enass Abo-Hamed, Fellow at the Royal Academy of Engineering, Imperial College London, called for leaders of industry 4.0 to think like scientists and act like entrepreneurs. They would do well to integrate evidenced-based facts in their decision-making before striking out in search of solutions that can be monetized. She pointed out that today's climate-change problems were highlighted by scientists in the 1950s. "If we had dealt with it at the right time when the evidence was there, we would have been dealing with other problems now."

While data greases the wheels of the digital economy, it is not the be-all and end-all. "The Fourth Industrial Revolution is not only about data," said Suphachai Chearavanont, Chief Executive Officer of CP Group. "We are talking about how to make the world more sustainable because we are entering an era whereby there is an exponential speed of change that not only impacts our business but our social environment."

As such, leaders should build sustainability, values and governance into the fabric of their business so that they are not creating problems that future generations have to deal with, Suphachai added.



Session Leading without Leaders



Ahmad bin Abdullah Humaid Belhoul Al Falasi and Alain Dehaze in the Session Conversations on Leadership 4.0

Going leaderless, or rudderless?

A large part of today’s digital world is being driven by start-ups founded by passionate millennials with a freewheeling leadership style that encourages fast growth, scalability and an inclusive culture. These fresh-faced digital kingpins eschew the traditional pyramidal and hierarchical structure, preferring a flat organization where power depends less on one’s position but more on one’s persuasive skills.

Is leading without a leader the new model for 21st-century enterprises as they face unprecedented challenges brought about by advanced technologies?

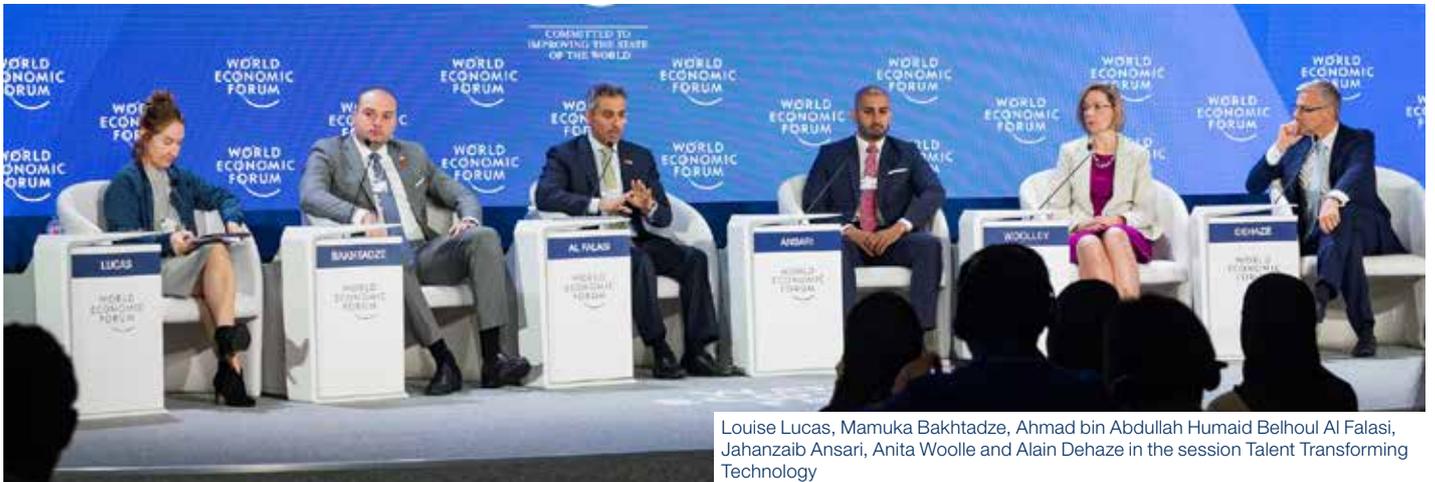
Michelle Zatlyn, Co-Founder and Chief Operating Officer of Cloudflare, expressed scepticism and said she sees a leaderless organization ending up being rudderless. “Ultimately, it doesn’t work. As a CEO, I want to make sure ideas come from everyone across the organization, so we are aware of risks we don’t think about. The organization should be open enough to allow all ideas to flourish, but you need enough structure to get things done and to deliver results – which is ultimately what matters,” she said.



Li Keqiang, Premier of the People's Republic of China, and Klaus Schwab, Founder and Executive Chairman, World Economic Forum, in the session Opening Plenary

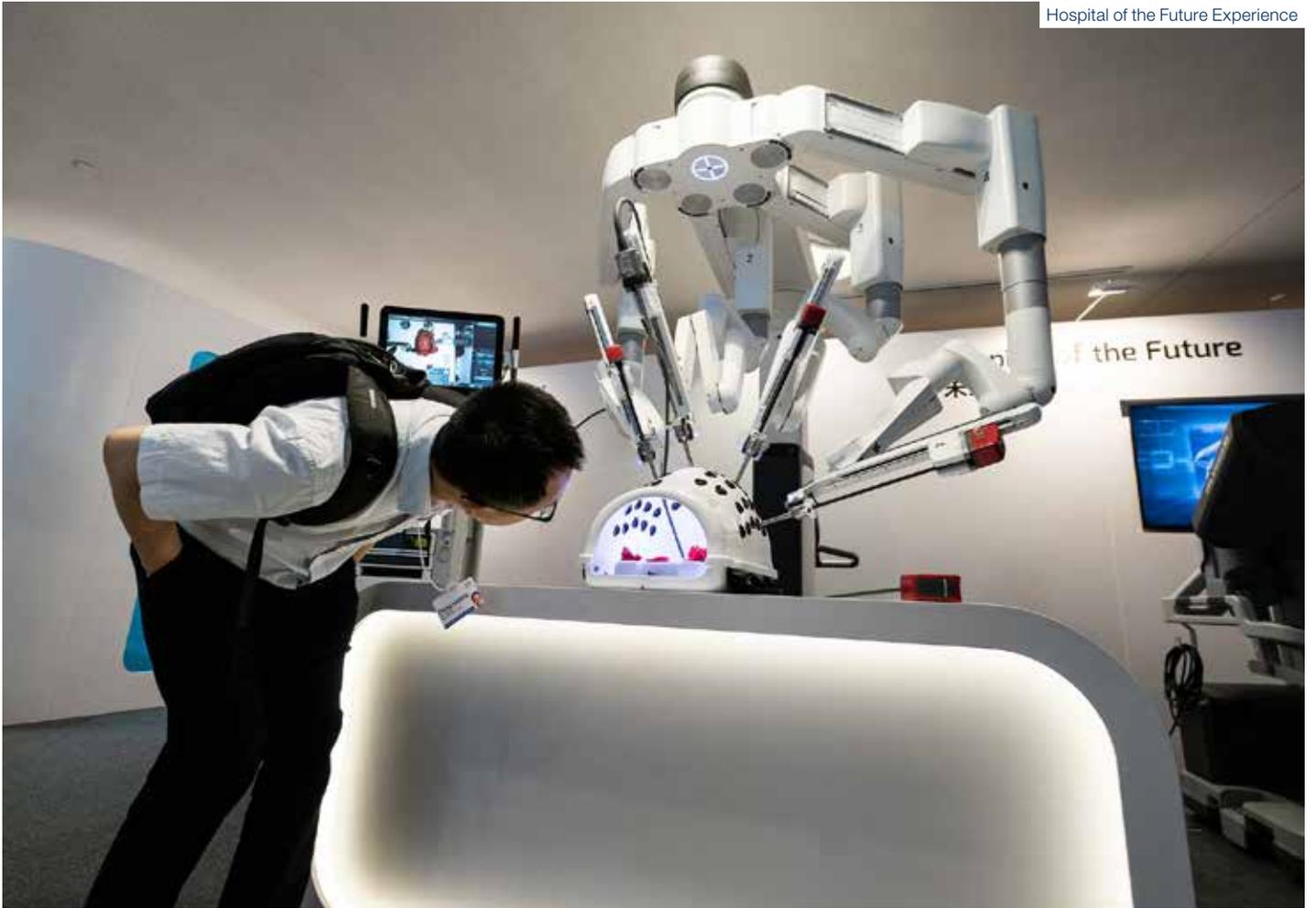


Annie Koh in the session Have Platforms Peaked?



Louise Lucas, Mamuka Bakhtadze, Ahmad bin Abdullah Humaid Belhoul Al Falasi, Jahanzaib Ansari, Anita Woolle and Alain Dehaze in the session Talent Transforming Technology





Anita Woolley in the session Rethinking Trust and Improving Decisions with Carnegie Mellon University



Jessica Indah Vovers exploring the Digital Mirror exhibition



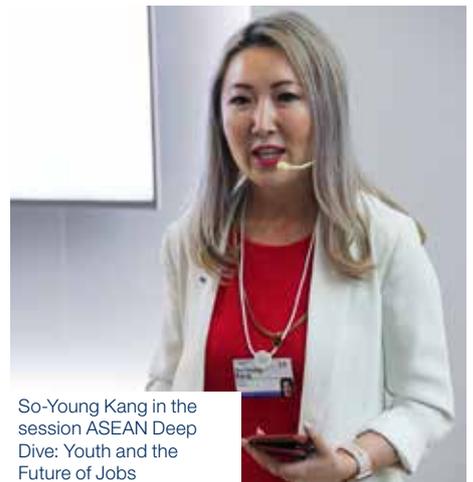
Smilla Yuan in the session China's New Business Leaders



Rubana Huq in the session ASEAN Deep Dive: Manufacturing



Andrew Dowell, Jessica Tan, Chen Xiaohua, Fatoumata Ba and Arun Sundararajan in the session Technology Power Play



So-Young Kang in the session ASEAN Deep Dive: Youth and the Future of Jobs



Biometric Mirror Experience



John Meacock in the session The Quest for Leadership 4.0



Wu Changhua in the session Future of Work: Energy



Lin Xueling, Mikael Bäck, Hera Siu, Zhou Bowen and Sihan Bo Chen in the session Why 5G Matters

Transcending the false binaries of responsible leadership

Never has there been a time when responsible leadership has been more urgently needed, and yet never has there been a time when we've asked so much of leaders. Indeed, it can seem sometimes that we ask the impossible.

Whether in government or in enterprise, we expect our leaders to possess the perspicacity – indeed, even the clairvoyance – to identify and correctly size up challenges still over the horizon. We expect them to have both grand vision and the practical ability to execute. We want them to rise above mere politics, but we also demand that they demonstrate political cunning and acumen.

We want our leaders to possess both deep expertise and a common touch, to be blessed with humility enough to recognize their shortcomings, gravitas enough to be taken seriously, charisma enough to inspire, and wisdom enough to somehow pull it all off. They must be decisive but inclusive, endowed with both flexibility and resolve, both open-mindedness and fixity of purpose.

We insist that they lead in a way that keeps humanity squarely at the centre, but that they make decisions grounded in the unsentimental analysis of hard data. We increasingly demand they commit to being greener and more sustainable, while continuing to deliver growth.

All of this – with all the apparent contradictions neatly resolved, all the needles deftly threaded, short-term interests balanced against long – adds up, ideally, to “responsible leadership”. It's a tall order, to be sure. But it is not impossible. Framing its attainment in terms of stark, irreconcilable binaries is defeatist, and is, ultimately, an abdication of responsibility.



Henry Motte-Muñoz in the session Promoting Responsible Leadership



Mandë Holford in the session The Secret Life of Whales

This is not to say that leaders never need to make tough choices. But one crucial role of responsible leaders is to light the way by showing instances where disparate exigencies that appear at first to conflict turn out – with the right leadership – to align, or even to reinforce one another.

Nothing succeeds like success so, in order to promote responsible leadership, it is incumbent that leaders be armed with relevant, factually unassailable case studies, as self-evident, straightforward and sensible to legislators and investors as they are to voters and consumers – success stories where wise leadership yields tangible fruit.

Happily, such stories are accumulating fast, and helping to put to rest such false binaries that pitted green against growth, and human-centred against data-driven.

At the enterprise level, Target and numerous other retail chains are seeing substantial increases in profits from organic and sustainably grown product lines. Impossible Foods, maker of a popular and quite convincing plant-based beef substitute, saw its stock price soar after its IPO and, at the time of writing, trades at 600% of its IPO price.

At the national level, polities as varied as Germany and the United Arab Emirates are on a clear path to 100% renewable energy, and the Middle East as a region will surpass the US and catch up with world leader Germany by 2025 at current rates of growth. Governments are recognizing that, by organizing the oceanic amounts of data they collect and making it accessible to civil society, private enterprise and academia, the returns are manifold: more efficient, personalized delivery of government services, increased productivity and output, and ample fodder for innovation.

Of course, contradictions – or what people too often think of as contradictions – between competing goals do not resolve neatly of and by themselves – not without a shift in framing. Moral authority is a key function of leadership, and responsible leaders need to seize the reins and work deliberately to push all stakeholders to embrace measures of success that go beyond just profits.

In the modern global economy, few actors wield more power for potential transformation than investors. Investment decisions are a critical chokepoint, where each year trillions of dollars in capital are allocated by only a few thousand institutions, and it's one place where changing a few minds – whether through moral suasion, financial incentive or regulation – can make an enormous difference.

Encouraging more investors to take up the principles and practices of impact investing, where returns are measured not strictly in terms of dollars but in terms of social and environmental good, can go far. Already, long-sighted financial institutions like Swiss Re have taken bold decisions, like ruling out investment in any coal-related thermal projects.

In a time defined by accelerating technological change, responsible leaders must proactively take up new, critical missions. They must work to demystify technologies like artificial intelligence that, being poorly understood, are understandably seen as threatening.

Just as importantly, they must reckon with the potential downside of the technologies of the Fourth Industrial Revolution, even as they harness their disruptive potential, and take seriously the development of ethical guardrails around the deployment of the technologies of the Fourth Industrial Revolution, addressing algorithmic bias, data privacy, unemployment and income inequality.

It is well that successful leaders have in recent years come to think not in terms of workers, subjects and consumers – mere passive objects of policy or of market campaigns – but increasingly in terms of stakeholders. These stakeholders, after all, have a growing number of potent tools available to them to air demands and grievances, and to organize. And this gives rise to perhaps the most difficult obstacle in moving towards truly responsible leadership: how to lead inclusively without giving in to base populism.

True responsibility is, above all else, marked by the courage and fortitude to hew always to values-based leadership. What rises from the crowd is not, regrettably, always wisdom.



Robert Muggah in the session Future Shocks: Urban-Rural Divide

Public-sector AI

Like it or not, governments are inevitably becoming technology platforms. And they'll either make that transition ably, or they'll lose their capacity to govern effectively. With equal inevitability, artificial intelligence will be a necessary – if not indeed central – component in the technology of governance.

Lamentably, governments have not always been the quickest studies when it comes to tech adoption. Faced with the daunting task of integrating AI and data science into their operation, what's plain is they will have to work closely with other sectors of society: with research institutions and private enterprises (especially large technology companies), where so much of the capacity in big data and AI now resides.

The path towards this transformation in governance is strewn with a dispiritingly long list of obstacles and problems. While more and more data is being collected by cities, states, provinces and countries – ranging from work to healthcare to taxes, and from transport to recreation to education – much of it remains fragmented, inconsistently labelled and illegible. Trained data scientists are scarce and command premium salaries that Silicon Valley companies can pay but governments aren't always able to.

And yet, some governments have already made significant strides towards that bright promise.



Hao Li in the session Designing a Human-Centred Future

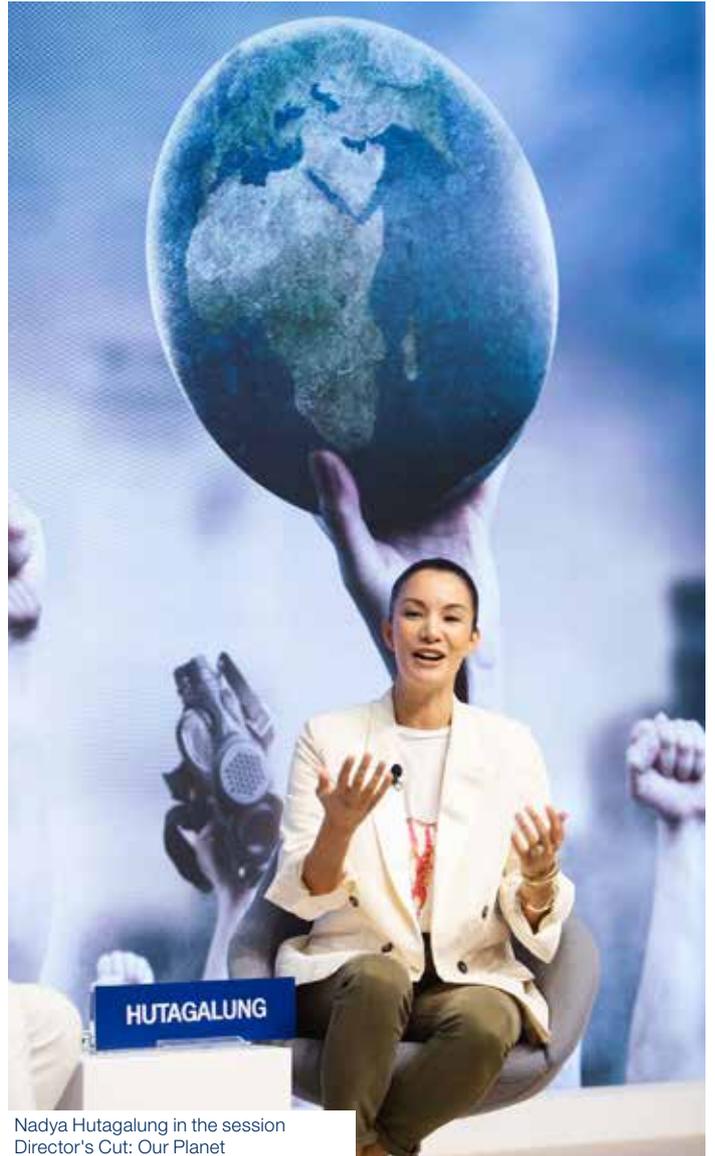
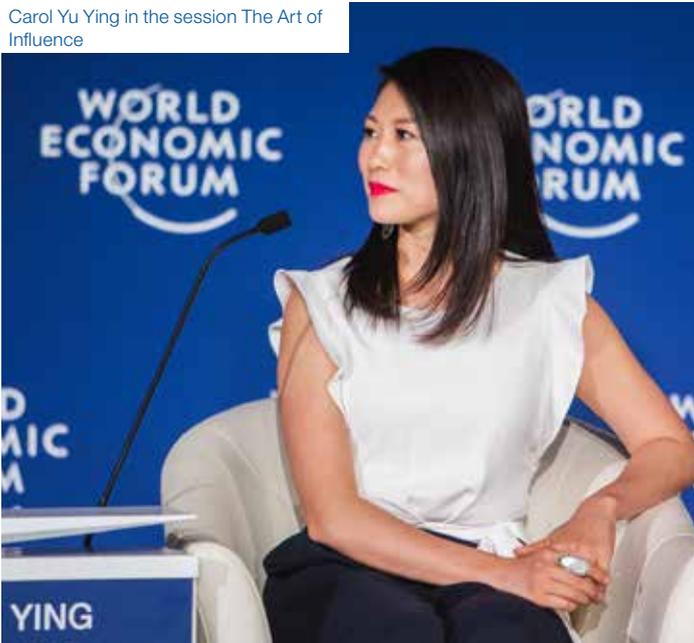
Biometric Mirror Experience



Nikhil Malhotra in the session The Internet of Toys: AI and the Next Generation



Carol Yu Ying in the session The Art of Influence





Eric Sala in the session Defending Nature's Last Frontiers

The Creativity Lab



Adriana De Palma in the session Promoting Responsible Leadership



Jennifer Schenker, Masao Uchibori, François Provost, Zhang Lei, Charlotte Roule and Freeman Shen Hui in the session Racing towards Electric Mobility



Isabel Wijsen in the session Promoting Responsible Leadership



Daan Roosegaarde in the session Sustaining the Space Economy



Hospital of the Future Experience



Jim Leape in the session Smart Solutions: Saving Fisheries



Juliana Chan in the session A New Wave of Ocean Solutions with Nanyang Technological University



Shoukei Matsumoto leads the Evening Meditation



Ma Jun, Jérôme Haegeli and Sun Chanthol in the session Greening China's Belt and Road Initiative

The Human Element

Designing a human-centred future

Throughout history, understanding and mimicking nature has been a fundamental element in solving complex human problems. With advances in artificial intelligence, technology is now learning how to interpret and mimic human behaviour in sophisticated ways. Are we confident that human-mimicking technologies will always serve in humanity's best interest? This exhibition explores questions of trust and unintended consequences in our new techno-society and was created in collaboration with innovators, artists and scientists working at the frontier of the Fourth Industrial Revolution.



Biometric Mirror

Reflecting the limitations of AI

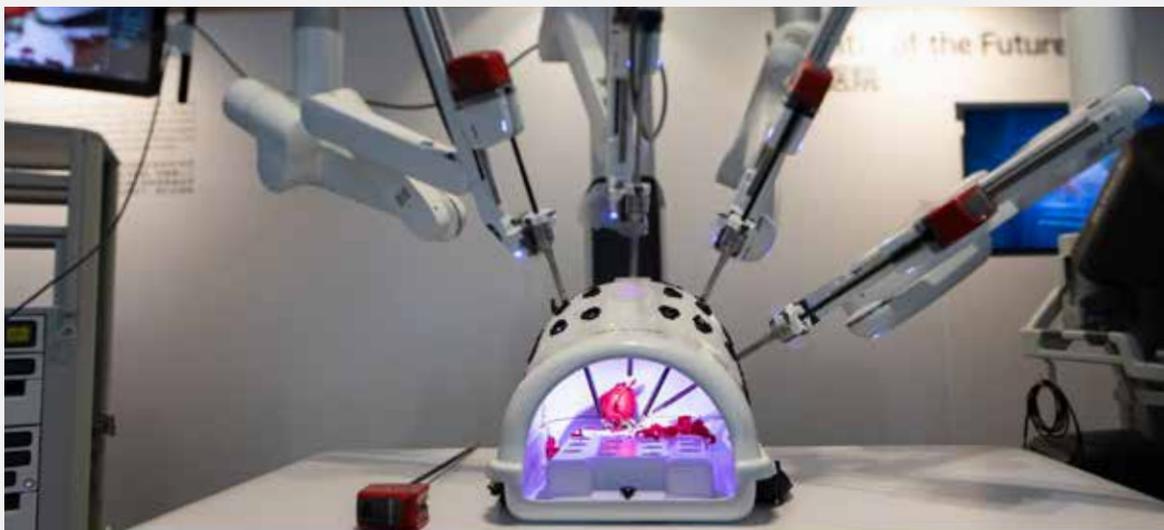
Artificial intelligence models can analyse people's faces and recognize demographic and psychometric information, ranging from gender and attractiveness to responsibility and "strangeness". What are the unintended consequences when computers, algorithms and artificial intelligence make assumptions and decisions about an individual's personality? And what happens when the wrong conclusions are drawn?



Digital Mimic

Losing control of your digital persona

The art of deception is one of nature's most widely used tools for survival. In the human context, digitalization has enabled new forms of deception at a societal level. What happens when it becomes easy for anyone to make convincing fake videos, spreading online what seems like undeniable proof of things that were never said or never happened? How will people know truth from falsehood, and what protections are there against the misuse of our own likeness?



Hospital of the Future

When your surgeon is a robot

One in 10 surgeries are performed with the assistance of a robot, and this percentage is expected to more than double in the next five years. Today's surgical robots are controlled by human surgeons but, with the pace at which AI's deployment in healthcare is advancing, a future with self-controlled surgical robots is coming. Discover the state of the art and explore the challenges and opportunities presented by a future in which your surgeon could be a robot.

Co-Chairs



“

In this era, responsible leadership is the X-factor needed to navigate the challenges that threaten us.

”

Enass Abo-Hamed, Fellow, Royal Academy of Engineering, Imperial College London, United Kingdom, Young Scientist

“

To continue to inspire a new generation, you constantly need to be in a self-learning mode. In a new era of leadership you never graduate ... getting a degree is only a part of the road.

”

Ahmad bin Abdullah Humaid Belhoul Al Falasi, Minister of State for Higher Education and Advanced Skills of the United Arab Emirates



“

You cannot run a business today if you aren't looking into the world and taking responsibility for the world.

”

Flemming Besenbacher, Chairman of the Supervisory Board, Carlsberg Group, Denmark

“

The young generation does not want to belong to a company; they want to identify with a purpose. And if they're no longer interested, they leave.

”

Alain Dehaze, Chief Executive Officer, Adecco Group, Switzerland



“

The implication of the trade war is going to be so much broader than whatever impact it may have on business in the US and China. This will be a long, long process before it's over.

”

Charles Li, Chief Executive, Hong Kong Exchanges and Clearing (HKEX), Hong Kong SAR, China



“

Trade difficulties still exist but companies are prepared ... I'm quite optimistic. The momentum of China's economic growth is very strong.

”

Ning Gaoning, Chairman, Sinochem Group, People's Republic of China

“

We are talking about how to make the world more sustainable because we are entering an era whereby there is an exponential speed of change that not only impacts our business but our social environment.

”

Suphachai Chearavanont, Chief Executive Officer, CP Group, Thailand



“

Business transformation has become necessary. The key, then, is technology, so we need to do better in providing users efficiency through unwavering investment in technology.

”

Jessica Tan, Co-Chief Executive Officer, Ping An Group, People's Republic of China

Programme in brief

Fostering
agile industry
leadership

Achieving
technology
leadership

Sustaining
economic
leadership

Promoting
responsible
leadership

Monday 1 July

08.00 - 08.45 Workshop

Morning Tai Chi

Join this early-morning session to experience the benefits of Tai Chi.

Zhang Yuxuan, Principal, Beijing Milun Traditional Kungfu, People's Republic of China

09.00 - 10.00 Panel

Reaching the Next Level of Global Cybersecurity

From data breaches and identity theft to the disruption of operations and critical infrastructure, cyberattacks are among the top risks listed in the Global Risks Report 2019. How can public- and private-sector leaders ensure global cybersecurity keeps up?

Belisario Contreras, Manager, Cyber Security Programme, Organization of American States (OAS), Washington DC

Thomas Kropp, Group Chief Information Technology (IT) Services Officer, Zurich Insurance Group, Switzerland

Katheryn Rosen, Adjunct Senior Research Scholar of International and Public Affairs, School of International and Public Affairs (SIPA), Columbia University, USA

Haiyan Song, Senior Vice-President and General Manager, Security Markets, Splunk, USA

Ludwig Siegele, US Technology Editor, The Economist, USA



09.00 - 10.00 Media Session

How China Shapes the Future of Finance

With a banking sector twice that of the US and capital markets stimulated by reform, China's financial sector is shifting. As regulators crack down on shadow banking and banks reinvent themselves as tech companies, how are old and new actors transforming the future of China's financial industry?

Huang Yi, Executive Vice-President, China Construction Bank, People's Republic of China

Li Zhengqiang, Chairman, Dalian Commodity Exchange, People's Republic of China

Jan Metzger, Head of Banking, Capital Markets and Advisory, Asia-Pacific, Citi, Hong Kong SAR, China

Min Zhu, Chairman, National Institute of Financial Research, People's Republic of China; Member of Board of Trustees of the World Economic Forum

Zhang Lu, Founding and Managing Partner, Fusion Fund, USA; Young Global Leader

Yang Yanqing, Deputy Editor-in-Chief, Yicai Media Group, People's Republic of China





Sessions with this icon can be watched online

<https://www.weforum.org/events/annual-meeting-of-the-new-champions-2019>

09.15 - 09.45 Hub

The Evolution of Executive Leadership

From speaking out on climate change to taking a stand on gender, the remit of the CEO role today goes beyond responding to shareholders on the bottom line. What is the evolving responsibility of the CEO under Globalization 4.0?

David Gann, Professor of Technology and Innovation Management, Imperial College Business School, United Kingdom

Girish P. Ramachandran, President, Asia-Pacific, Tata Consultancy Services, Singapore

09.15 - 09.45 Hub

China's Environmentalism and the World

China has surpassed its 2020 emission reduction goals and is making great strides on other environmental indicators of its 13th Five-Year Plan. How is China's vision for sustainable, low-carbon growth affecting global industries and markets?

Wen Bo, Member, Scientific Committee, Air and Water Conservation Fund, National Geographic Society, People's Republic of China; Young Global Leader

Rashid Aleem Qureshi, Chairman; Chief Executive Officer, Greater China Region, Nestlé, People's Republic of China

Daan Roosegaarde, Artist and Innovator, Studio Roosegaarde, Netherlands; Young Global Leader, Cultural Leader

09.15 - 09.45 Hub

The Promise of Tech in Education

With booming investments in tech-empowered learning, the global edtech market value is expected to reach almost \$252 billion by 2020. What technologies are reshaping education?

Marieme Eve Jamme, Founder and Chief Executive Officer, iamtheCODE, United Kingdom; Young Global Leader

Xiao Dun, Founder, 17zuoye.com, People's Republic of China

Saadia Zahidi, Managing Director; Head of the Centre for the New Economy and Society, World Economic Forum

09.15 - 10.00 Workshop

The Creativity Lab

According to the Forum's Future of Jobs report, one of the top skills in demand is creativity. But, in organizational settings, traditional brainstorming sessions rarely inspire ingenuity. How can we foster more creative collaboration at work?

Jesse Appell, Intercultural Comedian, US-China Comedy Center, People's Republic of China; Cultural Leader

09.15 - 10.15 xChange

Unlocking the Value of Data for Future Urbanization

China will accumulate more than 800 billion petabytes of data by 2020, with a growing share of this data collected from connected sensors in urban areas. How can big data be used to make cities safe and sustainable?

Bernise Ang, Principal and Methodology Lead, Zeroth Labs, Singapore; Young Global Leader

Jean-Michel Puiatti, Senior Vice-President, Internet of Things (IoT) Security, Kudelski Group, Switzerland

Norihiro Suzuki, Vice-President and Executive Officer; Chief Technology Officer, Hitachi, Japan

Zheng Lei, Professor, Fudan University, People's Republic of China

Fan Ling, Founder and Chief Executive Officer, Tezign, People's Republic of China; Young Global Leader, Cultural Leader

Charlotte Roule, Chief Executive Officer, China, ENGIE Group, France

Tien Yue Wu, Director and Chief Executive Officer, Advanced Semiconductor Engineering (ASE), Taiwan, China

Zhou Jianguo, Vice-President, Envision Group, People's Republic of China

Laurent Haug, Swiss Correspondent, Wired UK, United Kingdom

09.15 - 10.30 IdeasLab

A New Wave of Ocean Solutions with Nanyang Technological University

Discover new ideas and insights with leading researchers in the IdeasLab.

Nathalie Goodkin, Associate Professor, Asian School of the Environment, Nanyang Technological University (NTU), Singapore

Stephen Summers, Research Fellow, Singapore Centre for Environmental Life Sciences Engineering, Nanyang Technological University (NTU), Singapore

Adam Switzer, Associate Professor, Asian School of the Environment, Nanyang Technological University (NTU), Singapore

Juliana Chan, Chief Executive Officer, Wildtype Media Group, Singapore; Young Global Leader



Monday 1 July

Fostering
agile industry
leadership

Achieving
technology
leadership

Sustaining
economic
leadership

Promoting
responsible
leadership

09.45 - 10.15 Hub

Reducing China's Stroke Burden through Artificial Intelligence

Stroke is the leading cause of death in China, accounting for roughly one-third of worldwide stroke mortality. How are technologies such as artificial intelligence helping the country to reduce the rate of stroke and improve care?

Jeffrey M. Drazen, Editor-in-Chief, New England Journal of Medicine, USA

Wang Yong-Jun, Professor, Capital Medical University, Beijing, People's Republic of China

09.45 - 10.15 Hub

The Big Picture on Sustainable Sourcing

From a rising demand for electronics to emerging threats to ocean biodiversity, explore the causes and consequences of mineral mining now and through time.

Douglas McCauley, Professor, University of California, Santa Barbara, USA

Gabriel O'Donnell, Principal Research Programmer, CMU CREATE Lab, Carnegie Mellon University, USA

09.45 - 10.15 Hub

Chemistry's Sustainable Future

Demand for safer ingredients is driving significant growth in the market for sustainable chemistry, which is projected to be worth \$100 billion by 2020. How can business leaders leverage the potential of this growing market?

Martin Vollmer, Chief Technology Officer, Clariant, Switzerland

Wang Wen, Food Scientist, Nestlé R&D Centre, Singapore; Young Global Leader

09.45 - 10.30 Hub

Ask About: Tackling Cancer

Despite progress in diagnostic and therapeutic capabilities, cancer remains a leading cause of death worldwide, and one that is expected to rise in coming decades. Come to the hub to explore the latest research in cancer treatment therapies.

Frances Balkwill, Centre Lead, Centre for Cancer and Inflammation, Queen Mary University of London, United Kingdom

Núria Montserrat, Catalan Institution for Research and Advanced Studies (ICREA) Research Professor, Institute for Bioengineering of Catalonia, Spain

Vered Padler-Karavani, Assistant Professor, George S. Wise Faculty of Life Sciences, Department of Cell Research and Immunology, Tel Aviv University, Israel

10.00 - 10.30 Experience

Meet the Creators: The Human Element

The Human Element exhibition explores the question of trust and the unintended consequences of technology as it learns to interpret and mimic human behaviour.

10.15 - 10.45 Hub

The Internet of Toys: AI and the Next Generation

Smart toys powered by AI offer promising educational tools while raising ethical questions about privacy, bias and surveillance. With the smart toy market expected to reach \$54 billion by 2024, how can we responsibly empower the next generation with AI?

Nikhil Malhotra, Global Head, Innovation, TechMahindra, India

Cristina Pozzi, Chief Executive Officer and Co-Founder, Impactscool, Italy; Young Global Leader

10.15 - 10.45 Hub

Turning Back the Tide of Trash

Following China's recent ban on waste imports, municipalities and waste companies around the world are faced with an unmanageable volume of trash. As global waste starts piling up, what are the solutions to our throwaway culture?

Flemming Besenbacher, Chairman of the Supervisory Board, Carlsberg Group, Denmark

Chicko Sousa, Founder and Chief Executive Officer, Plataforma Verde, Brazil

10.15 - 10.45 Hub

Future Shocks: Urban-Rural Divide

Around 68% of the world population is projected to live in urban areas by 2050, but diverging values and economic prospects between urban and rural areas are fuelling polarization and electoral volatility in many countries. How can cities and rural communities prevent further division?

Cyrus Habib, Lieutenant Governor of Washington, USA; Young Global Leader

Robert Muggah, Director, Igarapé Institute, Brazil

10.30 - 11.00 - Issue Briefing

Can AI Be Trusted?

Artificial intelligence has the potential to unlock a massive wave of economic growth and opportunity. Yet, the public remains unconvinced that its benefits outweigh the risks. Is the public right, or are governments and businesses simply not doing enough to deliver the value to society it promises?

Zvika Krieger, Head of Technology Policy and Partnerships; Member of the Executive Committee, World Economic Forum

Liu Lifeng, Chairman and Chief Executive Officer, Ipsos, France



10.30 - 11.30 Media Session

China Economic Outlook

From industrial output to investment to retail, China's economic growth has begun to slow. How does this change from the world's second-largest economy affect other countries?

Min Zhu, Chairman, National Institute of Financial Research, People's Republic of China; Member of Board of Trustees of the World Economic Forum

Ning Gaoning, Chairman, Sinochem Group, People's Republic of China

Kevin Sneader, Global Managing Partner, McKinsey & Company, Hong Kong SAR, China; International Business Council

Jing Ulrich, Vice-Chairman, Global Banking and Asia-Pacific, JPMorgan Chase & Co., Hong Kong SAR, China

Joachim von Amsberg, Vice-President, Policy and Strategy, Asian Infrastructure Investment Bank, Beijing

Li Sixuan, Anchor, China Central Television (CCTV), People's Republic of China; Young Global Leader



10.30 - 11.30 Panel

Racing towards Electric Mobility

In China, the new electric-vehicle market is expected to achieve a 46% growth rate by 2020. What strategies and policies are enabling the accelerated adoption and deployment of electric vehicles and how can the rest of the world keep up?

François Provost, Senior Vice-President; Chairman, China, Groupe Renault, France

Charlotte Roule, Chief Executive Officer, China, ENGIE Group, France

Freeman Shen Hui, Founder, Chairman and Chief Executive Officer, WM Motor, People's Republic of China

Masao Uchibori, Governor of Fukushima, Japan

Zhang Lei, Founder and Chief Executive Officer, Envision Group, People's Republic of China

Jennifer Schenker, Founder and Editor-in-Chief, The Innovator, France



10.45 - 11.15 Hub

China in Depth: A History of Innovation

How have China's earliest entrepreneurs successfully weathered the market's ups and downs for more than three decades?

Join a biology teacher-turned-entrepreneur who built a biotech empire, part of the China in Depth hub series, which shares authentic stories from inside China.

Wang Feng, Editor-in-Chief, FTChinese.com, United Kingdom

Zhao Yan, President, Bloomage International Investment Group, People's Republic of China

10.45 - 11.15 Betazone

Mapping the World

From climate change to the future of work, leadership today requires an understanding of complex and dynamic systems, as well as the interdependency of issues. Join artist Qiu Zhijie to explore lost meanings and hidden connections that lie outside common knowledge.

Qiu Zhijie, Artist; Dean, School of Experimental Art, China Central Academy for Fine Arts, People's Republic of China; Cultural Leader

Stephan Mergenthaler, Head of Strategic Intelligence; Member of the Executive Committee, World Economic Forum



10.45 - 11.15 Hub

The Big Picture on Urban Fragility

Explore the causes and consequences of urbanization – from choking smog to record-breaking heatwaves – now and through time.

Angel Hsu, Assistant Professor, Yale-NUS College, Singapore

Gabriel O'Donnell, Principal Research Programmer, CMU CREATE Lab, Carnegie Mellon University, USA

10.45 - 11.15 Hub

The Future of Work: Healthcare

Global health spending is projected to rise by 4.2% per year from by 2020, spurring the invention and adoption of efficiency-enhancing technologies. From doctors to caregivers, how is technology disrupting health work?

Till Leopold, Head, Inclusive Economies Practice, World Economic Forum

Glen Moriarty, Founder and Chief Executive Officer, 7 Cups, USA

Bryony Winn, Senior Vice-President, Chief Strategy and Innovation Officer, Blue Cross and Blue Shield of North Carolina, USA; Young Global Leader

10.45 - 11.15 Hub

The Packaging Problem in E-Commerce

The 23% annual growth of e-commerce means more packaging and returns. What are the eco-friendly solutions to cut down on packaging waste produced by online retail?

Yesha Pabari, Co-Founder, Samagribazaar.com, India

Monday 1 July

Fostering
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Achieving
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Sustaining
economic
leadership

Promoting
responsible
leadership

10.45 - 11.45 xChange

Designing Your AI Strategy

While AI promises to solve some of society's most pressing issues, it also presents risks, such as opaque "black box" algorithms, unethical use of data and potential job displacement. How can leaders deploy AI technology effectively and responsibly?

Olga Fink, Professor of Intelligent Maintenance Systems, ETH Zurich, Switzerland; Young Scientist

Jesus Mantas, Managing Partner, Global Strategy, Offerings and Innovation Platforms, IBM Global Business Services, IBM Corporation, USA

Sophie Sun, Vice-President, Strategy and Transformation, China; Managing Director, Innovation Hub, Merck, Germany

Sophia Velastegui, General Manager, Product, Artificial Intelligence, Microsoft Corp., USA

Will Knight, Senior Editor, MIT - Technology Review, USA

11.00 - 12.15 IdeasLab

Fast-Tracking Green Technology with King Abdullah University of Science and Technology

Discover new ideas and insights with leading researchers in the IdeasLab.

Tony F. Chan, President, King Abdullah University of Science and Technology (KAUST), Saudi Arabia

Derya Baran, Assistant Professor of Material Science and Engineering, King Abdullah University of Science and Technology (KAUST), Saudi Arabia

Mohamed Eddaoudi, Distinguished Professor of Chemical Science, King Abdullah University of Science and Technology (KAUST), Saudi Arabia

Hong Peiyong, Associate Professor of Environmental Science and Engineering, King Abdullah University of Science and Technology (KAUST), Saudi Arabia

Cliff Ransom, Executive Editor, Partnerships and Custom Media, Nature, USA



11.15 - 11.45 Hub

Future Frontiers of Food: Scaling Agritech

Investment in agriculture and food technology jumped by more than 40% in 2018, yet substantial challenges remain to bring new innovations to scale. How can government leadership and new models of financing unleash agritech's potential to create positive outcomes for people and the planet?

Mariam Mohammed Saeed Al Mheiri, Minister of State for Food Security of the United Arab Emirates

Justin Gong Jiaqin, Co-Founder and Vice-President, XAG, People's Republic of China

11.15 - 11.45 Hub

Smart Solutions: Saving Fisheries

More than 90% of global fish stocks are exhausted and efforts to address the depletion of wild fish populations are undermined by illegal, unreported and unregulated fishing. How can technological solutions be scaled up to save our fisheries?

Victoria Lee, Project Lead, 4IR for the Earth, World Economic Forum

Han Han, Founder and Executive Director, China Blue Sustainability Institute, People's Republic of China

Jim Leape, William and Eva Price Senior Fellow, Woods Institute; Co-Director, Center for Ocean Solutions, Stanford University, USA

11.15 - 11.45 Hub

Strengthening Chinese-Indian Ties

Relations between China and India are a complex mix of competition and cooperation. At a time of heightened trade tensions, what opportunities exist for the two giants to meet in the middle?

Bhairavi Jani, Executive Director, SCA Group of Companies, India; Young Global Leader

Wang Huiyao, President, Center for China & Globalization (CCG), People's Republic of China

11.45 - 12.15 One-on-One

Conversations on Leadership 4.0

Join Charles Li, Chief Executive of Hong Kong Exchanges and Clearing, and Jessica Tan, Co-Chief Executive Officer of Ping An Insurance Group, for a candid conversation on what it takes to succeed as a leader in this new era of globalization.

Olivier M. Schwab, Managing Director; Head of Business Engagement, World Economic Forum

Charles Li, Chief Executive, Hong Kong Exchanges and Clearing (HKEX), Hong Kong SAR, China

Jessica Tan, Co-Chief Executive Officer, Ping An Group, People's Republic of China



11.45 - 12.15 Hub

The Big Picture on Modern Slavery

From the digitization of forced labour recruitment to slavery in seafood supply chains, explore the causes and consequences of modern slavery now and through time.

James Cockayne, Director, Centre for Policy Research, United Nations University, New York

Gabriel O'Donnell, Principal Research Programmer, CMU CREATE Lab, Carnegie Mellon University, USA

11.45 - 12.15 Hub

The Potential of Technology in Mental Health

From smartphone apps to help people cope with depression to internet-based support groups for addicts, technology has already demonstrated its ability to improve access to and delivery of mental-health care. How can new technologies be ethically deployed at scale to ensure that anyone facing mental-health challenges can get help?

Shekhar Saxena, Visiting Professor, Harvard T. H. Chan School of Public Health, USA

David Weigelt, Vice-President, Innovation, Home Instead Senior Care, USA

11.45 - 12.15 Hub

China's Pivot to the Middle East

Partnerships between China and the Middle East are fast developing, with mutual economic interests extending beyond oil to energy, infrastructure, trade and investments. At a time of heightened trade tensions, what risks and opportunities for further collaboration are emerging?

James Crabtree, Associate Professor of Practice, Lee Kuan Yew School of Public Policy, National University of Singapore, Singapore

Wang Dong, Professor, Peking University, People's Republic of China

11.45 - 12.30 Hub

Ask About: Big Data Mapping

Approximately 90% of the world's data has been created in the past two years and most is not exploited. Come to the hub to explore the latest research on data mapping.

Ayumi Arai, Project Researcher, Centre for Spatial Information Science, University of Tokyo, Japan

Hiroe Miyake, Associate Professor, University of Tokyo, Japan

Ryosuke Shibasaki, Professor, Centre for Spatial Information Science, University of Tokyo, Japan

12.15 - 13.15 xChange

Healthy Data

The volume of health data increases by 48% each year, and yet most of it remains inaccessible to patients and health systems. How can business and government unlock the potential of data in healthcare?

Richard "Dick" Daniels, Executive Vice-President; Chief Information Officer, Kaiser Permanente, USA

Hiroaki Miyata, Professor and Chair, Department of Health Policy Management, Faculty of Medicine, Keio University, Japan

Wang Wenya, Professor, Tsinghua University, People's Republic of China

Christina Waters, President and Chief Executive Officer, RARE Science, USA

Jeffrey M. Drazen, Editor-in-Chief, New England Journal of Medicine, USA

12.15 - 13.30 Panel

Promoting Responsible Leadership

Leaders today have the choice between leaving a legacy that tackles the imminent climate crisis and addresses unprecedented levels of inequality, or one that risks ecological and societal collapse. How can leaders pave the way to set up the next generation for success?

Flemming Besenbacher, Chairman of the Supervisory Board, Carlsberg Group, Denmark

Hao Jingfang, Founder, Fangjing Culture Studio, People's Republic of China; Young Global Leader, Cultural Leader

Isabel Wijzen, Founder, Bye Bye Plastic Bags, Indonesia

Nancie Zhu, Anchor, Phoenix Satellite Television, Hong Kong SAR, China

Jesse Appell, Intercultural Comedian, US-China Comedy Center, People's Republic of China; Cultural Leader

Adriana De Palma, Co-Investigator Researcher, Natural History Museum, United Kingdom; Young Scientist

Henry Motte-Muñoz, Chief Executive Officer and Founder, Edukasyon.ph, Philippines



12.30 - 13.30 One-on-One

Conversations on Leadership 4.0

Join Ahmad Belhoul Al Falasi, Minister of State for Higher Education and Scientific Research of the United Arab Emirates, and Alain Dehaze, Chief Executive Officer of the Adecco Group, for a candid conversation on what it takes to succeed as a leader in this new era of globalization.

Saadia Zahidi, Managing Director; Head of the Centre for the New Economy and Society, World Economic Forum

Ahmad bin Abdullah Humaid Belhoul Al Falasi, Minister of State for Higher Education and Advanced Skills of the United Arab Emirates

Alain Dehaze, Chief Executive Officer, Adecco Group, Switzerland



12.30 - 13.30 Media Session

China's Biotech Revolution

Last year, 30% of all investments into US biotech start-ups came from Chinese venture funds; the Hong Kong Stock Exchange issued its first pre-commercial biotech IPOs; and US regulators for the first time approved a new cancer drug developed by a Chinese company. How will the rise of China as a biotech powerhouse affect the global biotech industry?

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Cong Yali, Professor; Dean, Department of Medical Ethics and Health Law, Peking University, People's Republic of China
Jackson Zhu Weiyang, Chief Executive Officer and Founder, My Bio-Med, People's Republic of China
Mariette DiChristina, Editor-in-Chief, Scientific American, USA



12.45 - 13.15 Hub

Data Policy and Privacy: The View from Asia

More than 43% of businesses in Asia-Pacific are adopting internet-of-things technology for a hyperconnected future, and yet data security and protection continue to create barriers to implementation. How can businesses and governments build a culture of shared responsibility for protecting the IoT landscape?

Diana Paredes, Chief Executive Officer, Suade, United Kingdom
Arun Sharma, Member of the Board, Adani Abbot Point Terminal, Australia

12.45 - 13.15 Hub

New Champions of Disability Inclusion

From 3D-printed prosthetics to autonomous-car technology for the visually impaired, what new technologies could enhance the lives of all?

Adel Boseli, Chief Executive Officer, Amal Glass, United Arab Emirates
Gaëlle Offranc Piret, Researcher, Inserm, France; Young Scientist
Zhang Yan, Founder, Hands On, People's Republic of China

12.45 - 13.15 Hub

Voice for the Planet

People around the world are calling for a New Deal for Nature to set the planet on a path to recovery by 2030. Join the creators of Voice for the Planet to learn about a global movement designed to safeguard the world in which we live.

Liu Qian, Managing Director, Greater China, Economist Group, United Kingdom; Young Global Leader

Renard Siew, Unit Head, Corporate Sustainability, Sime Darby, Malaysia

12.45 - 13.15 Hub

The Road ahead for Self-Driving Cars

With accelerating investment in self-driving cars, what new AV technologies can improve a machine's prediction of human behaviour and the vagaries on the road?

Sid Misra, Chief Executive Officer and Co-Founder, Perceptive Automata, USA

13.15 - 13.45 Hub

Opening Up Science

Over 80% of published science is not freely available but momentum towards open access models is building quickly. How can the research ecosystem adapt to best manage this change and how can business learn from the aspirations it represents?

Nick Campbell, Vice-President, Funder Relations, Nature Research, Springer Nature, United Kingdom

13.15 - 13.45 Hub

What's the Return on Blockchain?

Three in four executives believe in the business case for blockchain but many struggle to articulate and measure its value. How can businesses effectively estimate and evaluate the return on blockchain investments?

Bhaskar Appacudal, Managing Director, Asia Pacific Center of Excellence, Vista Equity Partners, USA

Bernhard Kowatsch, Head, Innovation Accelerator, United Nations World Food Programme (WFP), Munich

Cynthia McCaffrey, Representative for China, United Nations Children's Fund (UNICEF), Beijing

13.15 - 13.45 Hub

Future of Work: Energy

The renewable energy sector is estimated to employ 10.3 million workers, with 60% of these jobs in Asia. As the global economy is set to more than double this number by 2050, how can leaders prepare for the next wave of job creation in the energy industry?

Till Leopold, Head, Inclusive Economies Practice, World Economic Forum

Wu Changhua, Chief Executive Officer, Beijing Future Innovation Center, People's Republic of China

Zhang Xinsheng, Executive Chairman, China, Royal Dutch Shell, Netherlands

13.15 - 13.45 - One-on-One

Conversations on Leadership 4.0

Join Suphachai Chearavanont, Chief Executive Officer of CP Group, and Flemming Besenbacher, Chairman of the Supervisory Board of Carlsberg, for a candid conversation on what it takes to succeed as a leader in this new era of globalization.

Anil Menon, Managing Director; Head, Centre for Global Industries, World Economic Forum

Suphachai Chearavanont, Chief Executive Officer, CP Group, Thailand



13.15 - 14.30 IdeasLab

Transforming Mental Health Research with University College London

Discover new ideas and insights with leading researchers in the IdeasLab.

Rick Adams, Medical Research Council (MRC) Skills Development Fellow, Department of Computer Science, University College London (UCL), United Kingdom

Joseph Hayes, Clinical Research Fellow Consultant, Faculty of Brain Sciences, University College London (UCL), United Kingdom

Susanne Schweizer, Sir Henry Wellcome Fellow, Institute of Cognitive Neuroscience, University College London (UCL), United Kingdom

Xiaohong Helena Yang, Scientific Director, Springer Nature, People's Republic of China



13.20 - 15.15 Experience

Dalian Cultural Tour 1: Hongji Peking Opera Theatre

Inscribed in 2010 on the Representative List of the Intangible Cultural Heritage of Humanity by UNESCO, Peking Opera has a history of more than 200 years. During this two-hour tour, participants can enjoy several Peking Opera excerpts, interact with the performers and pick up some stage fighting skills.

14.00 - 14.45 Betazone

No More Obscurity

With a revenue of \$36 billion in 2018, the global video surveillance market is growing exponentially, allowing for every mundane activity to be captured and made publicly accessible. Join artist Xu Bing on a journey through thousands of hours of online surveillance videos turned into a story about (in)visibility and today's culture of permanent exposure.

Niel Harper, Founder and Chairman, Octave Consulting Group, Barbados; Young Global Leader

Jennifer Lyn Morone, Chief Executive Officer, RadicalXChange Foundation, USA

Laurent Haug, Swiss Correspondent, Wired UK, United Kingdom

Xu Bing, Artist, Xu Bing Studio, People's Republic of China; Cultural Leader



14.00 - 15.00 Media Session

Technology Power Play

The rise of megafirms is prompting digital markets to shift towards a winner-takes-all dynamic. As tech titans continue to grow, how will the pace of innovation change?

Fatoumata Ba, Founder and Chief Executive Officer, Janngo, France; Young Global Leader

Chen Xiaohua, Chief Executive Officer, 58 Daojia, People's Republic of China

Arun Sundararajan, Harold Price Professor of Entrepreneurship and Technology, Stern School of Business, New York University, USA

Jessica Tan, Co-Chief Executive Officer, Ping An Group, People's Republic of China

Andrew Dowell, Asia Editor, Wall Street Journal, Hong Kong SAR, China



14.00 - 15.00 Panel

Green Leadership: Sustainability as Strategy

From addressing environmental risks to meeting green consumer demands, embracing sustainability is now a strategic imperative. How are industry leaders leveraging sustainable innovation to build competitive advantage?

Bernice Dapaah, Chief Executive Officer, Ghana Bamboo Bikes Initiative, Ghana; Young Global Leader

Shell Huang Xiaoyan, Vice-President, Research and Development, Asia-Pacific, The Coca-Cola Company, People's Republic of China

Liu Shijin, Vice-Chairman, China Development Research Foundation, People's Republic of China

Kjeld Stark, President, China, Danfoss Automatic Controls Management, People's Republic of China

Isabel Hilton, Editor, Chinadialogue, United Kingdom



14.15 - 14.45 Hub

How Dangerous Is Global Debt?

Global debt is now more than double the world economy's GDP but, thanks to low interest rates, debt rollovers and the issuance of new debt have so far caused little friction. How dangerous is swelling government debt to the global economy?

Kalin Anev Janse, Member of the Management Board; Secretary-General, European Stability Mechanism, Luxembourg; Young Global Leader

Joachim von Amsberg, Vice-President, Policy and Strategy, Asian Infrastructure Investment Bank, Beijing

14.15 - 14.45 Hub

China in Depth: Millennial Generation, Social Innovation

How can China's youngest entrepreneurs provide some of the best solutions to care for an ageing population?

David Aikman, Chief Representative Officer, China, Member of the Executive Committee, World Economic Forum

Yuan Shuai, Chief Executive Officer, Care Alliance Healthcare Management, People's Republic of China

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14.15 - 14.45 Hub

ASEAN Deep Dive: Youth and the Future of Jobs

More than 65% of ASEAN's population is under the age of 35, and its workforce is expanding by 11,000 people every day. What are the employment prospects for the region's expanding workforce as the Fourth Industrial Revolution disrupts economy and society?

Alain Dehaze, Chief Executive Officer, Adecco Group, Switzerland

So-Young Kang, Founder and Chief Executive Officer, Gnowbe, Singapore; Young Global Leader

14.30 - 15.15 Hub

Ask About: Biotechnology

Advances in biotechnology hold the promise of addressing many global challenges. Come to the hub to explore the latest research that is bringing together the biological and digital worlds.

Beat Christen, Assistant Professor of Experimental Systems Biology, ETH Zurich, Switzerland

Randall Platt, Assistant Professor of Biological Engineering, ETH Zurich, Switzerland

Simone Schuerle-Finke, Assistant Professor, Responsive Biomedical Systems Laboratory, Institute of Translational Medicine; Branco Weiss Fellow, ETH Zurich, Switzerland; Young Scientist

14.45 - 15.15 Hub

The Cost of Clothing

More than \$500 billion of value is lost every year due to underutilized clothing and a lack of recycling. How can new models of production and consumption transform the fashion industry to create better outcomes for the economy, the environment, and the 75 million people the sector employs?

Anshu Gupta, Founder and Director, Goonj, India; Schwab Foundation Social Entrepreneur

Asif Zahir, Deputy Managing Director, Ananta Apparels, Bangladesh; Young Global Leader

14.45 - 15.15 Hub

Getting Taxation Right

In a bid to increase disposable income while boosting consumption, China recently raised its tax-free threshold by more than 40%, liberating over 80 million people from income tax. With global income and wealth inequality at historic highs, how should taxation be reformed to promote more equity while unlocking growth?

Taimur Saleem Khan, Minister of Finance of Khyber Pakhtunkhwa, Pakistan

Zhu Ning, Professor, PBC School of Finance; Associate Dean, National Institute of Financial Research, Tsinghua University, People's Republic of China

15.00 - 15.30 Experience

Meet the Creators: The Human Element

The Human Element exhibition explores the question of trust and the unintended consequences of technology as it learns to interpret and mimic human behaviour.

15.00 - 16.15 IdeasLab

Smart Approaches to Fighting Infectious Disease with the University of Cape Town

Discover new ideas and insights with leading researchers in the IdeasLab.

Nadia Ikumi, AXA Research Fellow, University of Cape Town, South Africa

Elmi Muller, Professor of Surgery, University of Cape Town, South Africa

Sheetal Silal, Senior Lecturer, Department of Statistical Sciences, University of Cape Town, South Africa

Jeffrey M. Drazen, Editor-in-Chief, New England Journal of Medicine, USA



15.15 - 15.45 Hub

Cyber Debates: Been Hacked? Hack Back

Many countries have invested in developing not just cybercrime defences but also cyberwar capability. In the face of a cyberattack, should hacking back count as a fair option?

James Cockayne, Director, Centre for Policy Research, United Nations University, New York

Dmitry Samartsev, Chief Executive Officer, Bi.Zone, Russian Federation

15.15 - 15.45 Hub

Flipped Workplace: Rethinking the Eight-Hour Workday

The average worker is only productive for two hours and 53 minutes of an eight-hour workday. A flipped workplace encourages workers to do productive work outside of the office, at their own pace. Can such a model increase productivity and retain talent as the nature of work changes?

Jian Han, Associate Professor of Management; Co-Director, Centre on Digital Economy and Smart Enterprise and Centre on China Innovation, China Europe International Business School (CEIBS), People's Republic of China

Jim Fahima Jachja, Founder and Chief Executive Officer, Queenrides, Indonesia; Young Global Leader

15.15 - 15.45 Hub

Future Shocks: Populism and Monetary Policy

With quantitative easing, central banks grew more powerful after the financial crisis, but now economic and political forces are testing their influence. How

could this affect business during the next economic downturn?

Tomáš Holub, Vice-Governor of the Czech National Bank

Jerry Muller, Professor of History, The Catholic University of America, USA

15.15 - 16.00 Betazone

Navigating the Skies

What can leaders learn from an air force fighter pilot? Join squadron leader and pilot Samantha Freebairn who will discuss her leadership journey, and the need for resilience and quick decision-making, particularly when under pressure.

James Chau, Editor-at-Large, China-United States Exchange Foundation, Hong Kong SAR, China; Young Global Leader

Samantha Freebairn, Squadron Leader and Pilot, Royal Australian Air Force, Australia; Young Global Leader



15.30 - 16.30 Panel

Greening China's Belt and Road Initiative

China pledged to incorporate green strategies and objectives into the Belt and Road Initiative, of which the goods trade volume surpassed \$6 trillion between 2013 and 2018. How can the world's biggest infrastructure project become a global driver of green innovation and environmental reform?

Jérôme Haegeli, Group Chief Economist, Swiss Re Management, Switzerland

Elizabeth Knup, Country Director and Chief Representative, Ford Foundation, People's Republic of China

Sun Chanthol, Senior Minister; Minister of Public Works and Transport of Cambodia

Zhang Jianqiu, Chief Executive Officer, Inner Mongolia Yili Industrial Group, People's Republic of China

Zhao Yingmin, Vice-Minister, Ministry of Ecology and Environment of the People's Republic of China

Ma Jun, Chairman, Green Finance Committee of China Society for Finance and Banking, People's Republic of China



15.30 - 16.30 Media Session

Going beyond a Trade War

A global trade war could cost economies up to 5% of GDP, and yet the impact on the bottom-line of individual firms could be much higher. As businesses require a stable environment for growth, what changes to trade rules are needed for greater stability?

Charles Li, Chief Executive, Hong Kong Exchanges and Clearing (HKEX), Hong Kong SAR, China

Mari Elka Pangestu, Professor of International Economics, University of Indonesia, Indonesia

Timothy P. Stratford, Managing Partner, Beijing, Covington & Burling, People's Republic of China

Yi Xiaozhun, Deputy Director-General, World Trade Organization (WTO), Geneva

Geoff Cutmore, Anchor, CNBC, United Kingdom



15.45 - 16.15 Issue Briefing

Have Platforms Peaked?

The world's great platform businesses are larger than ever yet, in the US and Europe, the regulatory tide may be turning. From their bright beginnings, how can we be sure they are still serving the public good?

Annie Koh, V3 Group Professor of Family Entrepreneurship; Professor of Finance (Practice); Vice-President, Office of Business Development, Singapore Management University, Singapore

Henrik Naujoks, Director and Partner, Bain & Company, Hong Kong SAR, China; Young Global Leader

Alex Yung, Corporate Vice-President; Managing Director, Greater China, Amazon Web Services, People's Republic of China

Oliver Cann, Head of Strategic Communications; Member of the Executive Committee, World Economic Forum



15.45 - 16.15 Hub

The Curious Mind

New ideas and innovations begin with a curious mind. Where does our innate curiosity come from as the driving force behind humankind's never-ending quest for knowledge?

Andrea Bandelli, Executive Director, Science Gallery International, Ireland; Cultural Leader

Sabrina Sholts, Curator of Biological Anthropology, National Museum of Natural History, Smithsonian Institution, USA; Young Scientist

15.45 - 16.15 Hub

Energy Frontier Technologies

From hydrogen as a clean fuel source to second-life electric vehicle batteries, how can frontier technologies help decarbonize energy and transport systems?

Christina Lampe-Onnerud, Founder and Chief Executive Officer, Cadenza Innovation, USA

Lin Boqiang, Dean, China Institute for Studies in Energy Policy, Xiamen University, People's Republic of China

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15.45 - 16.15 Hub

Metavision for Machines

From autonomous vehicles to surveillance technologies, machine learning is built on static images. What are the new technologies that shift computer vision to movement beyond the frames of images?

Luca Verre, Chief Executive Officer and Co-Founder, Prophesee, France

16.00 - 17.50 Experience

Dalian Cultural Tour 2: Tongyuan Teahouse

The tea ceremony includes making tea, seeing and enjoying, smelling and drinking. On this tour, participants learn about tea and the etiquette of tea tasting and experience the inclusiveness, peace and depth of Chinese tea culture.

16.00 - 18.00 Experience

Dalian Cultural Tour 3: Traditional Chinese Medicine

This two-hour visit includes an exhibition of Chinese medicinal culture (antiques, precious medicinal herbs, plant specimens etc.), interaction with experienced Chinese medicine doctors, a therapy experience (pulse diagnosis, massage, acupuncture), food tasting (homemade herbal pastry, medicinal tea, Chinese herbal cuisine) and a souvenir gift.

16.15 - 16.45 Hub

Nudging Smart Cities towards Sustainable Mobility

By 2050, 70% of the world's population will live, commute and work in urban areas. Radical adoption and incentives are needed to drive high-occupancy, electrified and automated mobility. What are the city-based policies across the world?

Jerry Zhe Li, Deputy Director, Strategy, Innovation and Technology, MTR, Hong Kong SAR, China

Benny Liang Yongjie, Senior Vice-President, NavInfo, People's Republic of China

16.15 - 16.45 Hub

Future Shocks: Emotional Disruption

It is estimated that 700 million people have a mental disorder, with depression and anxiety in the top 10 of the Global Burden of Disease. As the intertwining of technology with human life deepens, what would a world look like in which computers manipulate emotions?

Chen Qiufan, Chief Creative Officer, Thema Mundi Studio, People's Republic of China; Cultural Leader

Susanne Schweizer, Sir Henry Wellcome Fellow, Institute of Cognitive Neuroscience, University College London (UCL), United Kingdom

16.15 - 16.45 Hub

Rewriting our Future

Gene editing offers the possibility of taking control of food, disease and human reproduction as never before. What are the possibilities of gene editing and what steps are needed to ensure that ethical guidelines and safety standards are established globally?

Ponsi Trivisvavet, Chief Executive Officer and Director, Inari Agriculture, USA

Angela Wu, Assistant Professor, Hong Kong University of Science and Technology, Hong Kong SAR, China; Young Scientist

16.30 - 17.00 Betazone

Defending Nature's Last Frontiers

With just under 15% of land and a mere 7% of the oceans currently protected, efforts to defend Earth's ecosystems must accelerate. Join National Geographic Explorer Enric Sala to discover how science and conservation can protect 30% of the planet by 2030 to save the last wild creatures and places.

Enric Sala, Explorer-in-Residence, National Geographic Society, USA; Young Global Leader

Nicole Schwab, Director, International Relations, Last Wild Places, National Geographic Society, USA; Young Global Leader, Cultural Leader



16.45 - 17.15 Hub

Reducing China's Stroke Burden through Telemedicine

Stroke is the leading cause of death in China, accounting for roughly one-third of stroke mortality worldwide. How are technologies such as telemedicine helping the country to reduce stroke rates and improve care?

Jeffrey M. Drazen, Editor-in-Chief, New England Journal of Medicine, USA

Thomas Leung Wai-Hong, Lee Quo Wei Associate Professor of Neurology, Chinese University of Hong Kong, Hong Kong SAR, China

16.45 - 17.15 Hub

The Big Picture on Sustainable Sourcing

From a rising demand for electronics to emerging threats to ocean biodiversity, explore the causes and consequences of mineral mining now and through time.

Douglas McCauley, Professor, University of California, Santa Barbara, USA

Gabriel O'Donnell, Principal Research Programmer, CMU CREATE Lab, Carnegie Mellon University, USA

16.45 - 17.15 Hub

Entering China's Greater Bay Area

The Greater Bay Area megaproject linking Hong Kong, Macau and nine other cities in southern China aims to turbo-charge China's most economically vibrant region and propel the country's fast transition to a knowledge economy. How will the Greater Bay Area impact businesses and markets in the region and beyond?

Yang Yanqing, Deputy Editor-in-Chief, Yicai Media Group, People's Republic of China

Frederic Lau, Vice-Chairman, AMTD, Hong Kong SAR, China

Zhu Ning, Professor, PBC School of Finance; Associate Dean, National Institute of Financial Research, Tsinghua University, People's Republic of China

13.45 - 14.15 Issue Briefing

Closing the Skills Gap

Every economy faces severe disruption from automation. While innovation can have a positive impact on workers' lives, what can be done to ensure that the necessary opportunities for success are presented?

Ali bin Masoud bin Ali Al Sunaidy, Minister of Commerce and Industry, Deputy Chairman of the Supreme Council for Planning and Special Envoy of Oman

Carlos Moreira, Chairman, Chief Executive Officer and Founder, WISEKey, Switzerland

Saadia Zahidi, Managing Director; Head of the Centre for the New Economy and Society, World Economic Forum



16.45 - 17.30 Hub

Ask About: Revolutions in Green Technology

There's no alternative to sustainable development. Come to the hub to explore the latest research on green technology.

Derya Baran, Assistant Professor of Material Science and Engineering, King Abdullah University of Science and Technology (KAUST), Saudi Arabia

Mohamed Eddaoudi, Distinguished Professor of Chemical Science, King Abdullah University of Science and Technology (KAUST), Saudi Arabia

Hong Peiyong, Associate Professor of Environmental Science and Engineering, King Abdullah University of Science and Technology (KAUST), Saudi Arabia

16.45 - 18.00 IdeasLab

Rethinking Trust and Improving Decisions with Carnegie Mellon University

Discover new ideas and insights with leading researchers in the IdeasLab.

Pedro Ferreira, Associate Professor of the Economics of Information Technology and Public Policy, Carnegie Mellon University, USA

Anita Woolley, Associate Professor of Organizational Behaviour and Theory, Carnegie Mellon University, USA

Will Knight, Senior Editor, MIT - Technology Review, USA



17.00 - 18.00 Media Session

The Art of Influence

The export of films, art and music from Asian nations has exploded in recent times, weaving rich tapestries of cultural connection across the world. How is Asia's growing influence in culture and entertainment shaping a new era of globalization?

Jesse Appell, Intercultural Comedian, US-China Comedy Center, People's Republic of China; Cultural Leader

Nadya Hutagalung, Goodwill Ambassador, United Nations Environment Programme (UNEP), Geneva; Cultural Leader

Kuek Yu Chuang, Managing Director, Asia-Pacific, Netflix, Singapore

Carol Yu Ying, Producer and Host, Phoenix Satellite Television, Hong Kong SAR, China; Young Global Leader

Chen Xiao, Vice-President, QIYI.com, People's Republic of China



17.00 - 18.00 Media Session

Why 5G Matters

5G could cover one-third of the world's population by 2025, ushering in a new era of connectivity. Why and how will 5G disrupt the way people work and live?

Mikael Bäck, Vice-President, Technology and Emerging Business, Ericsson, Sweden

Sihan Bo Chen, Head, Greater China, GSMA, United Kingdom

Hera Siu, Chief Executive Officer, Greater China Region, Cisco, People's Republic of China

Zhou Bowen, Vice-President; President, JD Artificial Intelligence, JD.com, People's Republic of China

Lin Xueling, Executive Producer, Channel NewsAsia, Singapore



17.15 - 17.45 Hub

China in Depth: The Smartest Generation?

How will the next generation of Chinese talent find a new balance between academic performance and mental well-being?

Chen Zhiyan, Professor, Institute of Psychology, Chinese Academy of Sciences, People's Republic of China

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17.15 - 17.45 Hub

Designing Multisensory Cities

By 2021, spending on technology for smart cities will increase to at least \$80 billion. Blending physical and digital entities, how are artificial intelligence technologies changing urban life and enhancing the liveability of cities?

Carlo Ratti, Director, SENSEable City Laboratory, MIT - Department of Urban Studies and Planning, USA; Cultural Leader

17.15 - 17.45 Hub

Green Logistics

Emission regulations and consumer demand for fast, on-demand delivery are both on the rise. Which business-model and technological innovations are making last-mile logistics faster and greener?

Spencer Deng, Chief Executive Officer and Co-Founder, Dorabot, People's Republic of China

Wang Hanlin, Deputy Manager, Shenyang Yimilantian, People's Republic of China

17.30 - 18.00 Workshop

Evening Meditation

Meditation is the art of paying attention in the present moment, intentionally and non-judgmentally. Experience the benefits of meditation at the end of your day.

Shoukei Matsumoto, Buddhist Monk, Komyoji Temple, Japan; Young Global Leader

17.45 - 18.15 Hub

Blockchain's Potential for Good

From cryptocurrency donations to blockchain-enabled tools to track resource flows, how can emerging technologies revolutionize the philanthropy industry that has long been plagued by a lack of transparency and trust?

Helen Hai, Goodwill Ambassador, United Nations Industrial Development Organization (UNIDO), Shanghai; Young Global Leader

17.45 - 18.15 Hub

The Science of the Human Microbiome

The human body contains more than 100 trillion microbial cells, which together exert a powerful influence on mind, body and disease. How can a better understanding of the microbiome unlock new diagnostic, treatment and prevention strategies for public health?

Ilana Brito, Assistant Professor, Mong Family Sesquicentennial Faculty Fellow in Biomedical Engineering, Cornell University, USA; Young Scientist

17.45 - 18.15 Hub

Smart Solutions: Sequencing Nature

While rapid biodiversity loss drives our planet towards a sixth mass extinction, technological advances make it possible to capture new value from nature's genetic code. How can DNA sequencing be leveraged to avert the collapse of natural ecosystems?

Juan Carlos Castilla-Rubio, Chairman, Space Time Ventures, Brazil

Xu Xun, President, Research, BGI, People's Republic of China

19.00 - 21.00 Reception

Cultural Soirée

The Dalian Municipal Government invited participants to enjoy performances in the beautiful summer night, taste typical Dalian cuisine, and experience unique high tech as well as exquisite traditional Chinese culture.

Wu Tong during the Closing Performance



Hospital of the Future Experience



Jan Piotrowski, Christian Hochfeld, Eva Scherer, Makoto Uchida and Guo Jifu in the session Moving 10 Billion



Enass Abo-Hamed and Jean-Pierre Bourguignon in the session Conversations on Leadership 4.0



David Aikman, Chief Representative Officer, China, Member of the Executive Committee, World Economic Forum, and Tang Yijun, Governor of Liaoning, People's Republic of China



Sarah bint Yousif Al-Amiri in the session Sustaining the Space Economy





Nick Pyenson in the session The Secret Life of Whales



Hessa Bint Eisa Buhmaid in the session Creating Inclusive Communities



Isabel Hilton in the session Green Leadership: Sustainability as Strategy



Session Rethinking Trust and Improving Decisions with Carnegie Mellon University

Tuesday 2 July

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leadership

Achieving
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leadership

Sustaining
economic
leadership

Promoting
responsible
leadership

08.00 - 08.45 Workshop

Morning Tai Chi

Tai Chi can improve health, increase mental clarity and maintain overall well-being. Join this early-morning session with Master Zhang Yuxuan to experience the benefits of Tai Chi.

Zhang Yuxuan, Principal, Beijing Milun Traditional Kungfu, People's Republic of China

09.00 - 09.30 Hub

China in Depth: Innovating Outward

How is a new generation of Chinese companies embedding outward-facing innovation and globalization into their DNA?

Wang Feng, Editor-in-Chief, FTChinese.com, United Kingdom

Peggy Choi, Chief Executive Officer, LYNK, Hong Kong SAR, China

09.00 - 09.30 Hub

Governing the Fourth Industrial Revolution

Technological innovation is speeding up, presenting a new world order and challenging current regulatory systems. What new approach is needed to enable innovation while protecting citizens?

Abdulla Bin Touq, Secretary-General, Cabinet of the United Arab Emirates

Ajit Manocha, President and Chief Executive Officer, SEMI, USA

09.00 - 09.30 Hub

The Future of Work: Manufacturing

One out of five workers globally is employed by the manufacturing industry, where technological change is rapidly transforming business models and supply chains. How will the future of manufacturing affect workers in the sector globally?

Francisco Betti, Head of Advanced Manufacturing Industry, World Economic Forum

Katy George, Senior Partner, McKinsey & Company, USA

Natan Linder, Chief Executive Officer, Tulip Interfaces, USA

09.00 - 10.00 Betazone

Sustaining the Space Economy

By 2040, the space industry could be valued at more than \$1 trillion with major investments coming from China, the US and Russia. Join artist Daan Roosegaarde on a visual journey about the vulnerabilities from orbital debris and ensuring a resilient space industry for generations to come.

Sarah bint Yousif Al-Amiri, Minister of State for Advanced Sciences of the United Arab Emirates; Young Global Leader

Dirk Carsten Hoke, Chief Executive Officer, Airbus Defence and Space, Germany; Young Global Leader

Roger Zhang Changwu, Founder and Chief Executive Officer, Landspace, People's Republic of China

Mariette DiChristina, Editor-in-Chief, Scientific American, USA

Daan Roosegaarde, Artist and Innovator, Studio Roosegaarde, Netherlands; Young Global Leader, Cultural Leader



09.00 - 10.00 Panel

Digital Health at a Tipping Point

Smart watches and AI are able to diagnose health conditions like irregular heartbeats, Parkinson's or sleep apnoea with a precision that is now gaining these technologies regulatory approval as medical devices. How should the healthcare industry adapt to the new reality of digital health?

Chen Kuan, Founder and Chief Executive Officer, Infervision, People's Republic of China



Sessions with this icon can be watched online
<https://www.weforum.org/events/annual-meeting-of-the-new-champions-2019>

Pius S. Hornstein, Country Chair, China; General Manager, Pharmaceuticals, Sanofi China, People's Republic of China

Liu Jiren, Chairman and Chief Executive Officer, Neusoft, People's Republic of China

Jessica Tan, Co-Chief Executive Officer, Ping An Group, People's Republic of China

Laurent Haug, Swiss Correspondent, Wired UK, United Kingdom



09.00 - 10.00 Media Session

Climate Change: The Next Financial Crisis?

Climate inaction risks \$23 trillion of global economic losses a year, amounting to permanent economic damage four times greater than the impact of the 2008 financial crisis. What does financial leadership entail as we stand at the brink of climate calamity?

Jean-Pierre Bourguignon, President, European Research Council, Brussels

Daphne Cheng, Founder, Chief Executive Officer and Chef, Superhuman, People's Republic of China; Cultural Leader

Paul Ellis, Executive Chairman, Electron, United Kingdom

Pradeep Kumar Gyawali, Minister of Foreign Affairs of Nepal

Veronica Scotti, Chairperson, Public Sector Solutions, Swiss Re Management, Switzerland

Isabelle Kumar, Journalist and Presenter, Euronews, France



09.00 - 10.00 Hub

Managing Cyber-Risks: Equipping CEOs

Increased connectivity and data-driven business models put cybersecurity on the agenda of C-suites and boards. How can business leaders integrate cybersecurity more effectively into their strategic planning?

Alois Zwinggi, Managing Director; Head of Compliance and Institutional Affairs, World Economic Forum

Jan Piotrowski, Business Editor, The Economist, United Kingdom

Stanislav Kuznetsov, Deputy Chairman of the Executive Board, Sberbank, Russian Federation

Ken Xie, Founder, Chairman of the Board and Chief Executive Officer, Fortinet, USA

Michelle Zatlyn, Co-Founder and Chief Operating Officer, Cloudflare, USA; Young Global Leader

09.00 - 10.15 IdeasLab

Converging Biological and Digital Worlds with ETH Zurich

Discover new ideas and insights with leading researchers in the IdeasLab.

Beat Christen, Assistant Professor of Experimental Systems Biology, ETH Zurich, Switzerland

Randall Platt, Assistant Professor of Biological Engineering, ETH Zurich, Switzerland

Simone Schuerle-Finke, Assistant Professor, Responsive Biomedical Systems Laboratory, Institute of Translational Medicine; Branco Weiss Fellow, ETH Zurich, Switzerland; Young Scientist

Magdalena Skipper, Editor-in-Chief, Nature, United Kingdom



09.30 - 10.00 Issue Briefing

Shadow Banking Today

China's informal banking sector has played an important role in helping the economy's transition towards a consumption-led model. With structural reforms aimed at de-risking the system and increasing private-sector access to capital, what role will the sector play in China's future economic success?

Angelica Anton, Founder and Managing Partner, SILK Ventures, United Kingdom

Huang Yiping, Deputy Dean, National School of Development, Peking University, People's Republic of China

Oliver Cann, Head of Strategic Communications; Member of the Executive Committee, World Economic Forum



09.30 - 10.15 Hub

Ask About: Climate Change in China

China has been the world's largest emitter of carbon dioxide since 2006 but ambitious national targets aim to slash emissions by 70% by 2030. Come to the hub to explore the latest research on climate change in China.

Tong Dan, Research Associate, Tsinghua University, People's Republic of China

Wang Binbin, Programme Director, Institute of Climate Change and Sustainable Development, Tsinghua University, People's Republic of China

Zhu Xufeng, Executive Director, Institute for Sustainable Development Goals, Tsinghua University, People's Republic of China

Tuesday

2 July

Fostering
agile industry
leadership

Achieving
technology
leadership

Sustaining
economic
leadership

Promoting
responsible
leadership

09.45 - 10.15 Hub

Vaccine Hesitancy: A Resurgent Risk

Diseases such as measles should belong in the history books thanks to vaccines but, instead, we're amid a global crisis. How can trust in vaccines be rebuilt at local, national and global levels to safeguard progress in saving lives?

Charlotte Haug, International Correspondent, New England Journal of Medicine, USA

09.45 - 10.15 Hub

Beyond Data Philanthropy

Around 2.5 quintillion bytes of data are created each day, but 40% of Sustainable Development Goal indicators lack clear methodology or data. What kind of partnerships are needed to scale up a comprehensive data framework for people and the planet?

Ryan Morhard, Project Lead, Global Health and Healthcare Industries, World Economic Forum

Andrew Alspach, Chief for Information Management, United Nations Office for the Coordination of Humanitarian Affairs (OCHA), New York

Ayumi Arai, Project Researcher, Centre for Spatial Information Science, University of Tokyo, Japan

09.45 - 10.15 Hub

The Big Picture on Modern Slavery

From the digitization of forced labour recruitment to slavery in seafood supply chains, explore the causes and consequences of modern slavery now and through time.

James Cockayne, Director, Centre for Policy Research, United Nations University, New York

Gabriel O'Donnell, Principal Research Programmer, CMU CREATE Lab, Carnegie Mellon University, USA

09.45 - 10.15 Hub

Bridging Divides with Digital Identities

Digital identities could help the 1.1 billion people globally with no formal identity gain access to financial services and unlock economic value between 3% and 14% of GDP by 2030. How can the technology be scaled up in ways that are trustworthy, safe and sustainable?

Matthew Guilford, Co-Founder and Chief Growth Officer, Telenor Health, Bangladesh; Young Global Leader

Rob Leslie, Chief Executive Officer, Sedicii, Ireland

10.30 - 10.40 - Opening Plenary

Welcome to the Annual Meeting of the New Champions 2019

David Aikman, Chief Representative Officer, China, Member of the Executive Committee, World Economic Forum

Tang Yijun, Governor of Liaoning, People's Republic of China



10.40 - 11.30 - Opening Plenary

Opening Plenary with Li Keqiang

Li Keqiang, Premier of the People's Republic of China

Klaus Schwab, Founder and Executive Chairman, World Economic Forum



11.45 - 12.15 Experience

Meet the Creators: The Human Element

The Human Element exhibition explores the question of trust and the unintended consequences raised by technology as it learns to interpret and mimic human behaviour.

12.30 - 13.00 Issue Briefing

The Rise of Chinese Philanthropy

China's economic transformation has brought with it a dramatic increase in charitable giving. How are China's rising ranks of philanthropists deploying their capital and what societal impact are they achieving?

Elizabeth Knup, Country Director and Chief Representative, Ford Foundation, People's Republic of China

Wang Bing, Founder, Ai You Foundation, People's Republic of China

Yuan Jiakai, Vice-President and Chief Representative, China, United Way Worldwide, USA; Young Global Leader

Oliver Cann, Head of Strategic Communications; Member of the Executive Committee, World Economic Forum



12.30 - 13.00 Hub

In Science We Trust?

From vaccine scepticism to climate-change denial, scientific consensus is easily rejected or opposed. How can the scientific world better engage those who dismiss its findings?

Frances Balkwill, Centre Lead, Centre for Cancer and Inflammation, Queen Mary University of London, United Kingdom

Andrea Bandelli, Executive Director, Science Gallery International, Ireland; Cultural Leader

12.30 - 13.00 Hub

Voice for the Planet

People around the world are calling for a New Deal for Nature to set the planet on a path to recovery by 2030. Join the creators of Voice for the Planet to learn about a global movement designed to safeguard the world in which we live.

Cai Luona, Researcher and Design Strategist, Xiaohongshu App, People's Republic of China

Mathieu Flamini, Founder, GFBiochemicals, United Kingdom; Young Global Leader

12.30 - 13.00 Hub

Paying for the Million-Dollar Cure

Cures for cancer, diabetes, blindness, Alzheimer's and other diseases may be within reach in the next few decades but some newly approved medicines carry price tags approaching or exceeding \$1 million. With costly miracle cures on the horizon, how can government and business join forces to realize the potential of such high-priced breakthroughs and deliver value to patients?

Haruhiko Hirate, Corporate Communications and Public Affairs Officer, Takeda Pharmaceutical, Japan

Gregory Poulsen, Senior Vice-President, Policy, Intermountain Healthcare, USA

12.30 - 13.00 Hub

Smart Solutions: Detecting Pollution

Machine learning has the potential to aid regulators in detecting up to seven times more infractions of environmental regulations than current monitoring practices. What are the opportunities and risks that cutting-edge technologies bring to protecting public health and the environment?

Angel Hsu, Assistant Professor, Yale-NUS College, Singapore

David Lehrer, Chief Executive Officer, Conatix, United Kingdom

12.30 - 13.00 Hub

Predicting and Forecasting Epidemics

From keeping tabs on sales of over-the-counter medicines to anticipate emergency room visits to leveraging mobile phone data to improve response to MERS in South Korea, insight from novel datasets has the potential to alert us to disease outbreaks before they become serious. How can governments and business unlock the full potential for public- and private-sector data to be combined to predict and forecast epidemics?

Ryan Morhard, Project Lead, Global Health and Healthcare Industries, World Economic Forum

Oliver Morgan, Director, Health Emergency Information and Risk Assessment, World Health Organization (WHO), Geneva

Tang Xiaoping, Director-General, Guangzhou Health and Family Planning Commission, People's Republic of China

12.30 - 13.00 Hub

Blockchain Is a Team Sport

As siloed blockchain solutions undermine the disruptive potential of the technology, businesses are forming groups to set standards and enable the development of shared infrastructures. What are the lessons learned from the success and failures of blockchain collaboration?

Gisbert Rühl, Chief Executive Officer, Klöckner & Co, Germany

Dorjee Sun, Chief Executive Officer, Perlin.net, Singapore; Young Global Leader

12.30 - 13.30 Media Session

Scaling Up Strategic Technologies

The resurgence of geo-economic competition and techno-nationalism in areas such as 5G, AI and the internet of things impedes R&D cooperation, risks market fragmentation, and could trigger incompatible standards and norms.

How can businesses and governments shift from strategic competition to strategic cooperation in scaling up critical technologies?

Mohammad Javad Azari Jahromi, Minister of Information and Communication Technology of the Islamic Republic of Iran

Jin Keyu, Professor of Economics, London School of Economics and Political Science, United Kingdom; Young Global Leader

Jayraj Nair, Vice-President; Global Head of Internet of Things (IoT); Chief Technology Officer, Industrial Engineering Services, Wipro, India

Pan Jiaofeng, President, Institutes of Science and Development, Chinese Academy of Sciences, People's Republic of China

Wang Boming, Editor-in-Chief, Caijing Magazine, People's Republic of China



12.45 - 13.15 One-on-One

Conversations on Leadership 4.0

Join Ning Gaoning, Chairman of Sinochem Group and ChemChina, and Hans-Paul Bürkner, Chairman of the Boston Consulting Group, for a candid conversation on what it takes to succeed as a leader in this new era of globalization.

Anil Menon, Managing Director; Head, Centre for Global Industries, World Economic Forum

Hans-Paul Bürkner, Chairman, Boston Consulting Group, Germany

Ning Gaoning, Chairman, Sinochem Group, People's Republic of China



Tuesday

2 July

Fostering
agile industry
leadership

Achieving
technology
leadership

Sustaining
economic
leadership

Promoting
responsible
leadership

13.00 - 14.00 Panel

Talent Transforming Technology

The rapid evolution of machines and algorithms in the workplace could create 133 million new roles over the next five years. How will business and government leaders need to rethink their approach to talent management and development to ensure a positive future for all?

Jahanzaib Ansari, Co-Founder and Chief Executive Officer, Knockri, Canada

Mamuka Bakhtadze, Prime Minister of Georgia; Young Global Leader

Ahmad bin Abdullah Humaid Belhoul

Al Falasi, Minister of State for Higher Education and Advanced Skills of the United Arab Emirates

Alain Dehaze, Chief Executive Officer, Adecco Group, Switzerland

Anita Woolley, Associate Professor of Organizational Behaviour and Theory, Carnegie Mellon University, USA

Louise Lucas, Asia Technology Correspondent, Financial Times, United Kingdom



13.15 - 13.45 Hub

Investing in Cybersecure Innovation

Investors are increasingly considering the maturity of start-ups' cybersecurity capabilities as a measure of investment readiness. How can global benchmarks inform investment decisions and shape start-up strategies?

Marc Barrachin, Managing Director, Product Research and Innovation, S&P Global, USA

Katheryn Rosen, Adjunct Senior Research Scholar of International and Public Affairs, School of International and Public Affairs (SIPA), Columbia University, USA

13.15 - 13.45 Hub

Future Frontiers of Food: Securing the Supply Chain

In China, 71% of the population believes food safety is a concern. How can new technology improve traceability to mitigate food safety risks, increase transparency and trigger demand for sustainable products?

Rona Chandrawati, Senior Lecturer and Scientia Fellow, University of New South Wales (UNSW), Australia; Young Scientist

Wu Hougang, Chairman and President, Zonoco Group, People's Republic of China

13.15 - 13.45 Hub

How Technology Is Transforming Trade

In the coming decade, technology will disrupt trade more than tariffs; 3D printing alone could decrease trade in goods by up to 40%, while blockchain could add \$3 trillion to international trade by 2030. How should enterprises and economies adapt their strategy to a shifting competitive environment?

Christian Lanng, Chief Executive Officer, Chairman and Co-Founder, Tradeshift.com, USA

Mary Ng, Minister of Small Business and Export Promotion of Canada

13.30 - 14.00 Betazone

The Secret Life of Whales

Travel 50 million years back in time with Nicholas Pyenson to uncover the secret life of today's largest and increasingly threatened mammals.

Mandë Holford, Associate Professor of Chemical Biology, Hunter College, City University of New York (CUNY), USA

Nick Pyenson, Curator of Fossil Marine Mammals, Smithsonian Institution, USA; Young Scientist



13.45 - 14.15 Hub

Chinese Capital Transformation

With the introduction of foreign majority ownership, the private market is poised to see an influx of capital into the market. How will this change global investment perceptions about Chinese business, regulatory frameworks and global asset allocation in the Chinese economy?

Christer Kjos, Chief Executive Officer, Canica International, Switzerland

Stephen Seelbach, Chief of Staff, Vista Equity Partners, USA

13.45 - 14.15 Issue Briefing

Geopolitical Shifts

The quest for an edge in the Fourth Industrial Revolution is increasingly having an impact on international relations. As we enter a new era of globalization, how will the world's great powers adjust to this changing landscape?

Pradeep Kumar Gyawali, Minister of Foreign Affairs of Nepal

V. Peter Harder, Senator from Ontario, Canada

Jiang Yuechun, Director, Department for World Economy and Development Studies, China Institute of International Studies (CIIS), People's Republic of China

Rebecca Ivey, Head of Governance and Policy, Global Programming Group, World Economic Forum, Switzerland



13.45 - 14.15 Hub

The Big Picture on Urban Fragility

Explore the causes and consequences of urbanization – from choking smog to record-breaking heatwaves – now and through time.

Angel Hsu, Assistant Professor, Yale-NUS College, Singapore

Gabriel O'Donnell, Principal Research Programmer, CMU CREATE Lab, Carnegie Mellon University, USA

13.45 - 14.30 Hub

Ask About: Mental Health

One in six people has experienced a common mental health problem in the past week. Come to the hub to explore the latest research into new solutions for mental healthcare.

Rick Adams, Medical Research Council (MRC) Skills Development Fellow, Department of Computer Science, University College London (UCL), United Kingdom

Joseph Hayes, Clinical Research Fellow Consultant, Faculty of Brain Sciences, University College London (UCL), United Kingdom

Susanne Schweizer, Sir Henry Wellcome Fellow, Institute of Cognitive Neuroscience, University College London (UCL), United Kingdom

14.00 - 14.45 Panel

Cities of Tomorrow

Every minute, the global urban population increases by 145 people, an equivalent of over 1.3 million people per week. How can government leaders leverage Fourth Industrial Revolution technologies to create healthy, sustainable and liveable cities?

Tatsuo Igarashi, Mayor of Tsukuba, Japan

Maria Soledad Nuñez Mendez, Minister of the National Secretariat for Housing and Habitat (2014-2018), United Kingdom; Young Global Leader

BG Srinivas, Executive Director and Group Managing Director, PCCW, Hong Kong SAR

Soichiro Takashima, Mayor of Fukuoka, Japan

Jennifer Schenker, Founder and Editor-in-Chief, The Innovator, France



14.00 - 15.00 Panel

Connecting with Digital ASEAN

ASEAN's internet population is growing by 125,000 citizens each day, making it the fastest-growing internet market in the world. How can business and government unlock the social and economic potential of ASEAN's digital age?

Annie Koh, V3 Group Professor of Family Entrepreneurship; Professor of Finance (Practice); Vice-President, Office of Business Development, Singapore Management University, Singapore

Jayajyoti Sengupta, Senior Vice-President; Head, Asia-Pacific, Cognizant Technology Solutions, Singapore

Serey Chea, Assistant Governor, National Bank of Cambodia; Young Global Leader

Angeline Tham, Founder and Chief Executive Officer, Angkas, Philippines

Arjun Kharpal, China Technology Correspondent, CNBC, United Kingdom



14.15 - 14.45 Hub

Human Enhancement

From extreme bionics to "smart" drugs that boost concentration, new technologies could transform what it means to be human. What does the future of human enhancement hold and is it desirable?

Simone Schuerle-Finke, Assistant Professor, Responsive Biomedical Systems Laboratory, Institute of Translational Medicine; Branco Weiss Fellow, ETH Zurich, Switzerland; Young Scientist

14.15 - 14.45 Hub

Designing a Human-Centred Future

Imagine being under the knife of a robot surgeon, or receiving psychoanalysis from a bathroom mirror. Automation could revolutionize access to high-quality services, but are there limits to where humans are ready to accept automation into their lives?

Hao Li, Associate Professor of Computer Science, University of Southern California (USC), USA

Frank Vetere, Professor, University of Melbourne, Australia

14.15 - 14.45 Hub

Reputation, Risk and Restoring Trust in Business

Reputational risk and lack of consumer trust are a systemic threat to business, on a par with commodity price fluctuation or natural disasters. What proactive strategy can business leaders pursue to mitigate downside risk and tap into opportunities of mutual trust?

Arun Sundararajan, Harold Price Professor of Entrepreneurship and Technology, Stern School of Business, New York University, USA

Gilly Wong, Chief Executive, Hong Kong Consumer Council, Hong Kong SAR, China

14.15 - 15.00 Betazone

Drone Delivery: Transforming Logistics and Lives

Flying overhead, drones are delivering blood supplies throughout Rwanda and consumer goods in China. Join Will Hetzler, co-founder of Zipline, to learn how drones are transforming logistics and lives.

Razat Gaurav, Chief Executive Officer, LLamasoft, USA

Zhang Lei, Founder and Chief Executive Officer, Antwork, People's Republic of China

Tuesday

2 July

Fostering
agile industry
leadership

Achieving
technology
leadership

Sustaining
economic
leadership

Promoting
responsible
leadership

Carol Yu Ying, Producer and Host, Phoenix Satellite Television, Hong Kong SAR, China; Young Global Leader
Will Hetzler, Co-Founder, Zipline, USA



14.30 - 15.30 Panel

Unlocking the Industrial Internet of Things

Smart factories achieve quality and efficiency gains by combining robots, AI and smart sensors. But algorithms and data need to be shared beyond the factory walls to reap the potential of smart manufacturing. How can business and technology leaders accelerate the creation of an industrial internet of things?

Deepak Krishnamurthy, Executive Vice-President and Chief Strategy Officer, SAP, USA

Jay Lee, Vice-Chairman, Foxconn Industrial Internet, Foxconn, Taiwan, China

Jun Ni, Shien-Ming Wu Collegiate Professor of Manufacturing Science; Honorary Dean, UM-SJTU Joint Institute, University of Michigan, USA

Ingeborg Rocker, Vice-President, Digital Transformation and Strategy, Cross-Industry Initiatives, Dassault Systèmes, France

Wang Zhenhui, Chief Executive Officer, JD Logistics, JD.COM, People's Republic of China

Lauren Rublin, Senior Managing Editor, Barron's Magazine, USA



14.45 - 15.15 Hub

Future Frontiers of Food: A Plant-Based Diet

China's new dietary guidelines aim to cut meat consumption by 50% by 2030 to improve health and reduce the food sector's impact on the planet. How can novel culinary approaches help to shift consumer preferences?

Daphne Cheng, Founder, Chief Executive Officer and Chef, Superhuman, People's Republic of China; Cultural Leader

David Yeung, Co-Founder and Chief Executive Officer, Green Monday Foundation, Hong Kong SAR, China; Schwab Foundation Social Entrepreneur

14.45 - 15.15 Hub

Future Cooperation between China and Africa

Africa has emerged as one of the strongest supporters of the Belt and Road Initiative, with most countries on the continent, as well as the African Union Commission, having signed cooperation agreements. At a time of heightened trade tensions, what risks and opportunities are emerging for future collaboration?

Jeremy Stevens, Chief Economist, Asia, Standard Bank Group, People's Republic of China

15.00 - 16.15 IdeasLab

Championing Climate Science in China with Tsinghua University

Discover new ideas and insights with leading researchers in the IdeasLab.

Tong Dan, Research Associate, Tsinghua University, People's Republic of China

Wang Binbin, Programme Director, Institute of Climate Change and Sustainable Development, Tsinghua University, People's Republic of China

Zhu Xufeng, Executive Director, Institute for Sustainable Development Goals, Tsinghua University, People's Republic of China

Isabel Hilton, Editor, Chinadialogue, United Kingdom



15.15 - 15.45 Hub

Impact of 3D Printing on Trade

From aerospace to hearing aids, 50% of manufactured goods could be 3D printed by 2060, potentially replacing the conventional export-centred manufacturing of goods. What impact would this have on global trade?

Natan Linder, Chief Executive Officer, Tulip Interfaces, USA

André Loesekrug-Pietri, Speaker, Joint European Disruptive Initiative (JEDI), Paris; Young Global Leader

15.15 - 15.45 Hub

China's and Latin America's Way Forward

From infrastructure to soybeans, China has poured \$141 billion into Latin America since 2005. At a time of heightened trade tensions, what risks and opportunities are emerging for future collaboration?

Diego R. Guelar, Ambassador of Argentina to the People's Republic of China

Wang Dong, Professor, Peking University, People's Republic of China

15.15 - 15.45 Hub

Empowering Responsible Consumers

The Global Consumer Confidence Survey indicates that more than 70% of millennials, the biggest global generation, are willing to pay more for sustainable products. How can retailers demonstrate the sustainability of their supply chain more effectively and meaningfully?

Li Sixuan, Anchor, China Central Television (CCTV), People's Republic of China; Young Global Leader

Kristin Rechberger, Chief Executive Officer, Dynamic Planet, USA; Young Global Leader

15.15 - 15.45 One-on-One

Eco-Activism Goes Global

This year, eco-activism hit the world stage, with young people in their millions campaigning for change. Join UN Environment Goodwill Ambassador, media personality and mother of three, Nadya Hutagalung, to talk about the rise of a generation of eco-warriors and the lessons she has learned in driving the transformation demanded by our children.

Renard Siew, Unit Head, Corporate Sustainability, Sime Darby, Malaysia
Nadya Hutagalung, Goodwill Ambassador, United Nations Environment Programme (UNEP), Geneva; Cultural Leader



15.15 - 15.45 Hub

A Woman's Right to Move

The risk of gender violence in public spaces affects the lives of women every day as it restricts their freedom of movement and rights as urban citizens. What actions are needed to make cities safer for women?

Lim Fahima Jachja, Founder and Chief Executive Officer, Queenrides, Indonesia; Young Global Leader

Carlo Ratti, Director, SENSEable City Laboratory, MIT - Department of Urban Studies and Planning, USA; Cultural Leader

15.30 - 16.15 Hub

Ask About: Tackling Infectious Diseases

One-half of all deaths in Africa are caused by infectious diseases, compared to 2% in Europe. Come to the hub to explore the latest research to address this problem.

Nadia Ikumi, AXA Research Fellow, University of Cape Town, South Africa
Elmi Muller, Professor of Surgery, University of Cape Town, South Africa
Sheetal Silal, Senior Lecturer, Department of Statistical Sciences, University of Cape Town, South Africa

15.30 - 16.30 Media Session

China, Science and the World

Between 2009 and 2013, China experienced a meteoric expansion in R&D, doubling its research spending and overtaking the US with the largest number of researchers in any single country. How is China redrawing the map of global science?

Sarah bint Yousif Al-Amiri, Minister of State for Advanced Sciences of the United Arab Emirates; Young Global Leader

Jean-Pierre Bourguignon, President, European Research Council, Brussels
Hu Zhijian, President, Chinese Academy of Science and Technology for Development, Ministry of Science and Technology of the People's Republic of China

Liu Ying, Assistant Professor, Peking University, People's Republic of China; Young Scientist

Melinda Richter, Global Head, JLABS, Johnson & Johnson, USA

Magdalena Skipper, Editor-in-Chief, Nature, United Kingdom



15.45 - 16.15 Hub

ASEAN Deep Dive: Manufacturing

With Viet Nam's inbound manufacturing increasing by 18% last year, supply chain shifts are sweeping the region. How can ASEAN countries adapt to keep up with the changes?

Yasu Ota, Editorial Writer, Columnist, Nikkei, Japan

Chng Kai Fong, Managing Director, Singapore Economic Development Board, Singapore

Rubana Huq, Chairperson, Mohammadi Group, Bangladesh

15.45 - 16.15 Issue Briefing

Service Disruption?

The services trade between the US and China has largely been overlooked in the wider narrative on tariffs on goods. What impact could a trade war have on this important and growing segment of bilateral trade?

Tatiana Prazeres, Senior Fellow, University of International Business and Economics (UIBE), People's Republic of China; Young Global Leader

Timothy P. Stratford, Managing Partner, Beijing, Covington & Burling, People's Republic of China

Oliver Cann, Head of Strategic Communications; Member of the Executive Committee, World Economic Forum



16.00 - 16.30 Hub

In Crypto We Trust?

There are more than 1,600 cryptocurrencies in existence, yet none have been widely adopted because of inherent volatility. How could new innovations, focused on creating stable and reliable crypto-assets, create a trusted means of exchange?

Laurent Haug, Swiss Correspondent, Wired UK, United Kingdom

Leemon Baird, Founder and Chief Scientist, Hedera, USA

Serey Chea, Assistant Governor, National Bank of Cambodia; Young Global Leader

16.00 - 16.45 Screening

Director's Cut: Our Planet

Embark on an up-close journey through nature's wonders and the threats facing it, in a special screening introduced by UN Environment Goodwill Ambassador, Nadya Hutagalung, and featuring footage from Sir David Attenborough's new series, Our Planet.

Nadya Hutagalung, Goodwill Ambassador, United Nations Environment Programme (UNEP), Geneva; Cultural Leader

Keith Scholey, Director, Silverback Films, United Kingdom; Cultural Leader

Tuesday

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Fostering
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Achieving
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Sustaining
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Promoting
responsible
leadership

16.00 - 17.00 Media Session

The Real Cost of User Data

The data-harvesting industry is expected to grow from \$80 billion today to nearly \$200 billion by 2022, but security breaches and privacy infringements have eroded consumer trust. With user data becoming the most valuable commodity of knowledge economies, how can it be harvested responsibly?

Joanna Bryson, Associate Professor, Department of Computer Science, University of Bath, United Kingdom

Chen Lei, Chief Executive Officer, Xunlei, People's Republic of China

Marsha Ma, Managing Director, China; Vice-President, Booking.com, People's Republic of China

Muhamad Fajrin Rasyid, Co-Founder and President, Bukalapak, Indonesia

Li Xin, Managing Director, Caixin Global, Caixin Media, People's Republic of China



16.15 - 16.45 Hub

The Pitfalls of Technology and Mental Health

Although digital mental-health care promises increased access to therapy and complements human interaction, research also links internet overuse to loneliness. What are the solutions to mitigate the risk of developing internet addiction and feelings of isolation?

Chen Zhiyan, Professor, Institute of Psychology, Chinese Academy of Sciences, People's Republic of China

16.15 - 16.45 Hub

A New Construction Era

While China's consumption of construction materials is stabilizing, demand for materials like cement and steel is expected to rise across emerging economies in Asia and Africa. How can new technologies help offset the carbon footprint of the construction sector?

Liu Xiao, Senior Vice-President, Beijing Vanke, People's Republic of China; Young Global Leader

Fergal Whyte, Director and Member of the Board, Arup Group, United Kingdom

16.15 - 16.45 Hub

Innovative Tech and the Chinese Capital Market

The Shanghai Stock Exchange has launched a Technology and Innovation Board, which once mature, has a potential value of \$2 trillion. What impact will this board have on the Chinese capital market and the global technology ecosystem?

Annie Koh, V3 Group Professor of Family Entrepreneurship; Professor of Finance (Practice); Vice-President, Office of Business Development, Singapore Management University, Singapore

Qian Jun, Professor of Finance and Executive Dean, Fanhai International School of Finance (FISF), Fudan University, People's Republic of China

16.30 - 17.00 Hub

Seeding Change through Impact Investment

With an estimated \$228 billion in assets, impact investing has gained significant global momentum. How can investors design future-proof inclusive and sustainable investment portfolios?

En Lee, Partner; Head, Asia-Pacific, LGT Impact, Singapore

16.45 - 17.15 Hub

The Big Picture on Sustainable Sourcing

From a rising demand for electronics to emerging threats to ocean biodiversity, explore the causes and consequences of mineral mining now and through time.

Douglas McCauley, Professor, University of California, Santa Barbara, USA

Gabriel O'Donnell, Principal Research Programmer, CMU CREATE Lab, Carnegie Mellon University, USA

16.45 - 17.15 Hub

Insuring the Fourth Industrial Revolution

Frontier technologies for risk prediction and case assessment are being tested in the insurance industry from mobility to healthcare. What actors, technologies and business will transform the industry, and what will change for the insured?

Pascal Millaire, Chief Executive Officer, CyberCube, USA

16.45 - 17.15 Hub

Future Shocks: Rising Urbanization in a Changing Climate

By 2050, more than 650 million people in 500 cities will experience a decreased water supply due to climate change. How can leaders accelerate action to make their cities more resilient to climate risks and vulnerabilities?

Dawood Abdulrahman AlHajiri, Director-General, Dubai Municipality, United Arab Emirates

Sandra Wu Wen-Hsiu, Chairperson and Chief Executive Officer, Kokusai Kogyo, Japan

16.45 - 17.30 Panel

Safeguarding Our Planet

One million plant and animal species face extinction due to human activity, threatening the health of ecosystems that underpin our economy and society. With climate, ocean, food and land systems increasingly under threat, how can leaders come together to protect our natural world?

Nadya Hutagalung, Goodwill Ambassador, United Nations Environment Programme (UNEP), Geneva; Cultural Leader

Keith Scholey, Director, Silverback Films, United Kingdom; Cultural Leader

Marcel Smits, Chairman and Chief Executive Officer, Asia-Pacific; Head, Corporate Strategy, Cargill, Singapore

Tian Wei, Host, World Insight with Tian Wei, China Global Television Network (CGTN), Kenya



16.45 - 18.00 IdeasLab

Tackling Cancer from the Inside with the European Research Council

Discover new ideas and insights with leading researchers in the IdeasLab.

Jean-Pierre Bourguignon, President, European Research Council, Brussels
Frances Balkwill, Centre Lead, Centre for Cancer and Inflammation, Queen Mary University of London, United Kingdom

Núria Montserrat, Catalan Institution for Research and Advanced Studies (ICREA) Research Professor, Institute for Bioengineering of Catalonia, Spain
Vered Padler-Karavani, Assistant Professor, George S. Wise Faculty of Life Sciences, Department of Cell Research and Immunology, Tel Aviv University, Israel
Nick Campbell, Vice-President, Funder Relations, Nature Research, Springer Nature, United Kingdom



17.00 - 17.30 Experience

Meet the Creators: The Human Element

The Human Element exhibition explores the question of trust and the unintended consequences raised by technology as it learns to interpret and mimic human behaviour.

17.00 - 18.00 Panel

China's New Pitch to Foreign Business

China's new foreign investment law signals further opening-up while attracting fresh capital to its slowing economy to boost market confidence. What will change for local and foreign enterprises?

Yasushi Akahoshi, President, Japan External Trade Organization (JETRO), Japan

Yuan Ding, Vice-President and Dean, China Europe International Business School (CEIBS), People's Republic of China

Lex Greensill, Co-Founder and Chief Executive Officer, Greensill, United Kingdom

Jennifer Susan "Sue" Kench, Global Chief Executive, King & Wood Mallesons, Hong Kong SAR, China

Li Pengyu, Secretary, CPC Working Committee; Director, Administrative Committee, Dalian Jinpu New Area, People's Republic of China
Michael Wang, Anchor, Global Business, China Global Television Network (CGTN)



17.15 - 17.45 Hub

The Key to Driverless Car Safety

The global autonomous vehicle market will grow by 40% in the next five years, but without transparent data practices, the industry cannot evolve safely. What are the mutual sharing obligations for business and cities to ensure a resilient driverless-car future?

Sid Misra, Chief Executive Officer and Co-Founder, Perceptive Automata, USA
Mohammad Musa, Founder and Chief Executive Officer, Deepen, USA

17.15 - 17.45 Hub

Forget It: No More Passwords

With "123456" among the most popular passwords globally, it is no wonder that the human factor remains the weakest link in cybersecurity. How can companies and individuals leverage new tools and technologies to revolutionize authentication and significantly increase their security levels?

Rob Leslie, Chief Executive Officer, Sedicii, Ireland

Carlos Moreira, Chairman, Chief Executive Officer and Founder, WISEKey, Switzerland

17.15 - 18.00 Hub

Ask About: Decision-Making and Trust

Only 3% of companies' data meet basic quality standards. Come to the hub to explore the latest research at the intersection of data, decision-making and trust.

Anita Woolley, Associate Professor of Organizational Behaviour and Theory, Carnegie Mellon University, USA

17.30 - 18.30 Panel

Cooperation in the Pacific Rim

The Comprehensive and Progressive Agreement for Trans-Pacific Partnership went into effect without the United States. Yet, trade cooperation across the Pacific could still integrate 39% of the world's GDP by 2030. How can businesses on both sides of the ocean prepare to reap the benefits of increased integration?

Sheikh Hasina, Prime Minister of Bangladesh

Mary Ng, Minister of Small Business and Export Promotion of Canada

Tak Niinami, Chief Executive Officer, Suntory Holdings, Japan; International Business Council

Sushant Palakurthi Rao, Head of Global Partnerships, Agility, Germany

Keith Bradsher, Senior Writer, Economics and Business, Asia, New York Times, USA

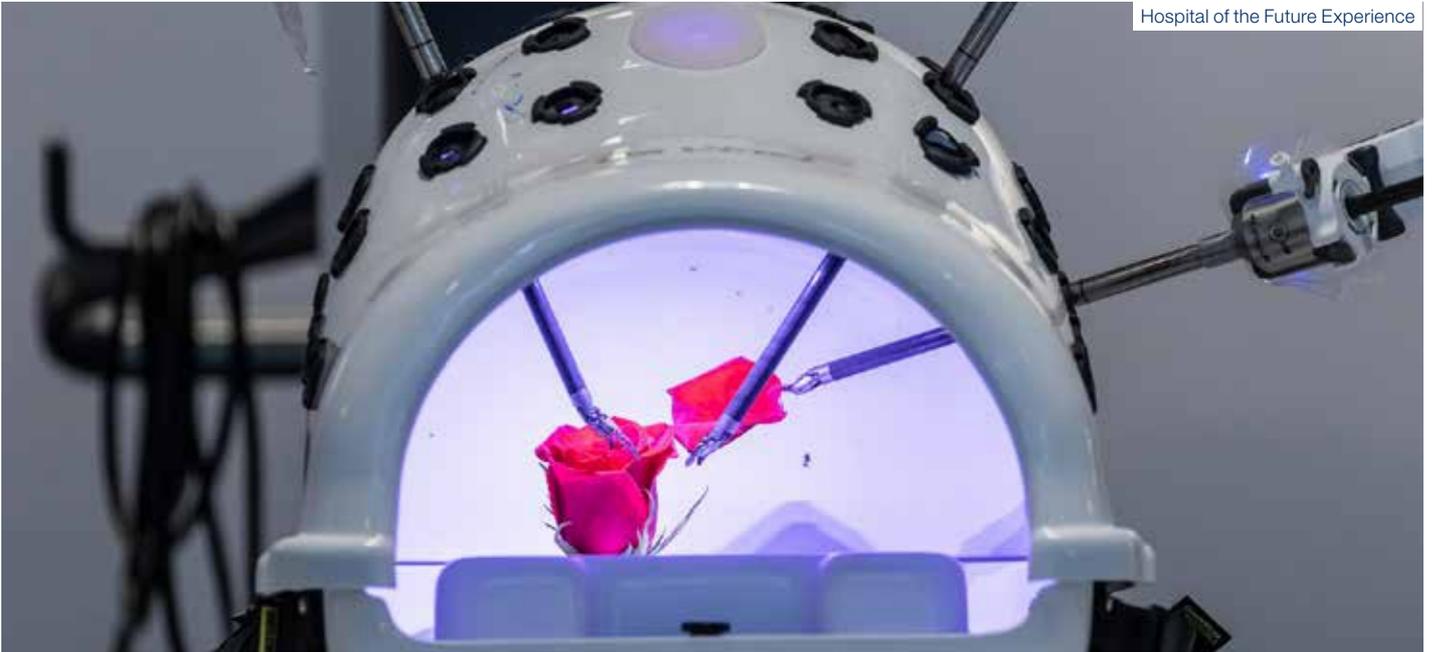


18.00 - 18.30 Workshop

Evening Meditation

Meditation is the art of paying attention in the present moment, intentionally and non-judgmentally. Experience the benefits of meditation at the end of the day.

Shoukei Matsumoto, Buddhist Monk, Komyoji Temple, Japan; Young Global Leader



Jesse Appell in the session The Creativity Lab



Jin Guowei, Vice-Mayor of Dalian, People's Republic of China, delivers his closing remarks

Session on Sustaining the Space Economy



Wednesday 3 July

Fostering
agile industry
leadership

Achieving
technology
leadership

Sustaining
economic
leadership

Promoting
responsible
leadership

08.15 - 09.00 Workshop

Morning Tai Chi

Tai Chi can improve health, increase mental clarity and maintain overall well-being. Join this early-morning session with Master Zhang Yuxuan to experience the benefits of Tai Chi.

Zhang Yuxuan, Principal, Beijing Milun Traditional Kungfu, People's Republic of China

09.00 - 09.30 - Hub Session

Voice for the Planet

People around the world are calling for a New Deal for Nature to set the planet on a path to recovery by 2030. Join the creators of Voice for the Planet to learn about a global movement designed to safeguard the world in which we live.

This social media installation was launched by the Global Shapers community, a network of 8,000 young people from around the world, to call for urgent action on climate change, sustainable development and nature.

Yesha Pabari, Co-Founder, Samagribazaar.com, India

Anjhula Mya Singh Bais, Chair, Amnesty International, Malaysia; Young Global Leader

09.00 - 10.00 Media Session

The Global Economic Outlook: View from Asia

While trade tensions between the US and China are putting pressure on global growth, regional integration is advancing, with over 60% of trade happening within Asia. What is the global economic outlook for Asia's leading economies?

Jin Keyu, Professor of Economics, London School of Economics and Political Science, United Kingdom; Young Global Leader

Jeffrey Lu Minfang, Chief Executive Officer, Mengniu Group, People's Republic of China

Paul Yang, Member and Chief Executive Officer, Greater China, Kohlberg Kravis Roberts & Co., Hong Kong SAR, China

Zhu Wei, Senior Managing Director; Chairman, Greater China, Accenture, People's Republic of China

Stephen Engle, Chief North Asia Correspondent, Bloomberg Television, Bloomberg News, Hong Kong SAR, China



09.00 - 10.00 xChange

Unlocking Public-Sector AI

From traffic management to healthcare delivery, AI can help governments solve complex problems but poses new challenges around bias, privacy and transparency. How can public institutions employ AI to serve citizens better and smarter?

Chen Yangqiu, President, Hitachi (China) Research & Development, People's Republic of China

Simon Galpin, Managing Director, Bahrain Economic Development Board, Bahrain

Oliver Morgan, Director, Health Emergency Information and Risk Assessment, World Health Organization (WHO), Geneva

Leonard Stein, Senior Vice-President, Global Affairs, Splunk, USA

Yuan Hui, Chairman, Shanghai Xiaoi Robot Technology, People's Republic of China

Ronaldo Lemos, Director, Institute for Technology & Society, Brazil; Young Global Leader



Sessions with this icon can be watched online
<https://www.weforum.org/events/annual-meeting-of-the-new-champions-2019>

09.00 - 10.00 Panel

What If: You Could Live to 150?

Advances in molecular science and the genetics of ageing could see those born today potentially living to 150. As the prospect of extended longevity comes within reach, clinicians and experts are debating what a meaningful life for 11 billion people would look like. What if living to 150 becomes the new norm?

Bob Kain, Chief Executive Officer and Co-Founder, LunaDNA, USA

Jerry Muller, Professor of History, The Catholic University of America, USA

Simone Schuerle-Finke, Assistant Professor, Responsive Biomedical Systems Laboratory, Institute of Translational Medicine; Branco Weiss Fellow, ETH Zurich, Switzerland; Young Scientist

Amy Bernstein, Editor, Harvard Business Review Magazine, Harvard Business Review Group, USA



09.15 - 09.45 Hub

Is Organic Growth Dead?

Before reaching a valuation of \$1 billion or more, the average unicorn company acquires 25 start-ups so it can develop market share and expertise. In industries increasingly shaped by “winner takes all” effects, is organic growth still a priority?

Diana Lace, Investment Manager, Overkill Ventures, Latvia

Jan Piotrowski, Business Editor, The Economist, United Kingdom

09.15 - 09.45 Hub

Adapting to the Precision Economy

The global genomics market will rise to nearly \$41.2 billion by 2025, and heralds an entirely new economy based on personalized consumption, health and wellness. How will business and society adapt to the transformation brought about by the precision economy?

Gong Rujing, Founder and Chairwoman, Happy Life Tech, People's Republic of China; Young Global Leader

Terry Young, Founder and Chief Executive Officer, sparks & honey, USA

09.15 - 10.30 IdeasLab

Big Data Visualization: A New Era in Mapping with the University of Tokyo

Discover new ideas and insights with leading researchers in the IdeasLab.

Kohei Miyazono, Executive Vice-President, University of Tokyo, Japan

Ayumi Arai, Project Researcher, Centre for Spatial Information Science, University of Tokyo, Japan

Hiroe Miyake, Associate Professor, University of Tokyo, Japan

Ryosuke Shibasaki, Professor, Centre for Spatial Information Science, University of Tokyo, Japan

Mariette DiChristina, Editor-in-Chief, Scientific American, USA



09.30 - 10.15 Betazone

The Plastic Revolution

Every year, 300 million tons of plastic are produced, an amount nearly equivalent to the weight of the entire human population. Join youth advocate Isabel Wijsen for a compelling story of grassroots leadership and innovation in revolutionizing plastic use in Asia and beyond.

Dimitri de Boer, Chief Representative, China, Client Earth, United Kingdom
Mary Ng, Minister of Small Business and Export Promotion of Canada

Jonathan Penrice, President, Asia-Pacific, Dow Chemical Company, Hong Kong SAR, China

Isabel Wijsen, Founder, Bye Bye Plastic Bags, Indonesia



09.45 - 10.15 Hub

Smarter Industrial Policy

More than 84 countries, representing 90% of global GDP, have adopted new industrial strategies in the past 10 years. In the Fourth Industrial Revolution, how can industrial policy use big data technology to address society's structural challenges?

Satsuki Katayama, Minister of State for Regional Revitalization of Japan

Till Leopold, Head, Inclusive Economies Practice, World Economic Forum

Frederic Pivetta, Chief Executive Officer, Dalberg Data Insights, Belgium

Heizo Takenaka, Professor Emeritus, Keio University, Japan; Member of Board of Trustees of the World Economic Forum

09.45 - 10.15 Hub

The Big Picture on Urban Fragility

Explore the causes and consequences of urbanization – from choking smog to record-breaking heatwaves – now and through time.

Angel Hsu, Assistant Professor, Yale-NUS College, Singapore

Gabriel O'Donnell, Principal Research Programmer, CMU CREATE Lab, Carnegie Mellon University, USA

Wednesday

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Fostering
agile industry
leadership

Achieving
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leadership

Sustaining
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Promoting
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leadership

09.45 - 10.15 Hub

How to Tax Global Business

Governments around the world are pushing for a reform of international corporate tax rules to raise revenue, reduce pressure from tax competition and restore faith in global capitalism. How should governments tax global corporations in the digital era?

Oliver Cann, Head of Strategic Communications; Member of the Executive Committee, World Economic Forum

Peter Lochbihler, Global Head of Public Affairs, Booking.com, Netherlands

09.45 - 10.15 Hub

Neutrinos for Peace

Known as “nature’s ghosts”, neutrinos are subatomic particles that make up the universe and can travel through matter. How can they be used for the benefit of society?

Juan Pedro Ochoa Ricoux, Assistant Professor, University of California, Irvine, USA; Young Scientist

10.00 - 10.30 Experience

Meet the Creators: The Human Element

The Human Element exhibition explores the question of trust and the unintended consequences raised by technology as it learns to interpret and mimic human behaviour.

10.15 - 10.45 Hub

Accelerating the Cleantech Transition

While the global market volume for clean technology exceeds \$3 trillion, significant barriers, including tariffs and shortages of skilled labour, inhibit its full deployment in emerging economies. How can government and business fast-track the cleantech transition?

Sebastian Groh, Managing Director, SOLshare, Bangladesh

Ayla Majid, Managing Director, Financial Advisory Services, Khalid Majid Rehman, Pakistan; Young Global Leader

10.15 - 10.45 Hub

Leading without Leaders

With an increased focus on equality and inclusion, organizations are relying less on traditional pyramid structures and more on circular models of collaboration and shared responsibility. What does leadership look like in a world where power is no longer tied to position?

Kris Naudts, Chief Executive Officer, Culture Trip, United Kingdom

Bernadette Wightman, Managing Director, Asia-Pacific, Middle East and Africa, BT Group, United Kingdom

10.30 - 11.30 Panel

China Energy Outlook

China’s energy-demand growth continues to outpace the West’s, yet the proportion of coal in China’s energy mix is on the decline as its renewable investments triple those of the US. How is the global energy sector being transformed as a function of China’s energy transition?

Atul Arya, Senior Vice-President and Chief Energy Strategist, IHS Markit, USA

Qian Jing, Vice-President, JinkoSolar, People’s Republic of China

Sun Xiansheng, Secretary-General, International Energy Forum (IEF), Riyadh

Xin Baoan, President, State Grid Corporation of China, People’s Republic of China

Yongping Zhai, Chief, Energy Sector Group, Asian Development Bank, Manila

Li Sixuan, Anchor, China Central Television (CCTV), People’s Republic of China; Young Global Leader



10.30 - 11.30 Media Session

Tech for Good: Empowering AI Leadership

AI holds the promise of making organizations 40% more efficient by 2035, potentially unlocking \$14 trillion in economic value. As AI enters more decision-making settings, how can we ensure algorithmic accountability and transparency?

Joanna Bryson, Associate Professor, Department of Computer Science, University of Bath, United Kingdom

Chen Liming, Chairman, Greater China Group, IBM Corporation, People’s Republic of China

Satsuki Katayama, Minister of State for Regional Revitalization of Japan

Anand S. Rao, Global Leader, Artificial Intelligence, PwC, USA

Will Knight, Senior Editor, MIT - Technology Review, USA



10.45 - 11.15 Hub

Age-Tech Solutions

There are now more people over 65 than under 5 years of age globally, making age-tech the next frontier market for technology. What new technologies hold the potential for ageing with dignity?

Timothy Ma Kam-Wah, Member of the Board; Member, Service Development Subcommittee, Senior Citizen Home Safety Association, Hong Kong SAR, China; Schwab Foundation Social Entrepreneur

10.45 - 11.15 Hub

Backer or Blocker? Market Concentration in Start-Up Funding

The deep pockets of the world's biggest tech firms are directly or indirectly funding start-ups and new technologies such as artificial intelligence. With growing global concern about market concentration in tech, what are the implications for access to funding for emerging and innovative firms?

Mary Ng, Minister of Small Business and Export Promotion of Canada

Zhang Lu, Founding and Managing Partner, Fusion Fund, USA; Young Global Leader

Qian Jun, Professor of Finance and Executive Dean, Fanhai International School of Finance (FISF), Fudan University, People's Republic of China

10.45 - 11.15 Hub

The Big Picture on Modern Slavery

From the digitization of forced labour recruitment to slavery in seafood supply chains, explore the causes and consequences of modern slavery now and through time.

James Cockayne, Director, Centre for Policy Research, United Nations University, New York

Gabriel O'Donnell, Principal Research Programmer, CMU CREATE Lab, Carnegie Mellon University, USA

10.45 - 11.15 Hub

ASEAN Deep Dive: Tourism

Flows of tourists between China and ASEAN are growing by 15% annually but major barriers linked to safety and security are holding back the region's potential. How can new technologies transform the movement of people to unlock a revolution in travel?

Rory Hunter, Chief Executive Officer and Co-Founder, Song Saa Collective, Cambodia; Young Global Leader

Cyrus Pun, Executive Director, Yoma Strategic Holdings, Singapore

10.45 - 11.45 xChange

Navigating the Urban Aerial Mobility Economy

Today, 55% of the world's population lives in urban areas, a proportion that is expected to increase to 68% by 2050. How could personal autonomous flight be part of the solution to congestion and provide mobility services to a growing population?

Dirk Carsten Hoke, Chief Executive Officer, Airbus Defence and Space, Germany; Young Global Leader

Kanika Tekriwal, Founder and Chief Executive Officer, JetSetGo, India; Young Global Leader

Xiong Yifang, Co-Founder and Chief Marketing Officer, Guangzhou EHang Intelligent Technology, People's Republic of China

Xiaohong Helena Yang, Scientific Director, Springer Nature, People's Republic of China

11.00 - 11.30 Betazone

Rethinking Capitalism

What would you do to change capitalism as we know it? Join Jennifer Lyn Morone to discover how we can push the boundaries of imagination to design a more equal world.

Jennifer Lyn Morone, Chief Executive Officer, RadicalXChange Foundation, USA
Bruno Maçães, Senior Fellow, Renmin University of China, People's Republic of China



11.00 - 12.15 - IdeasLab

Revealing Hidden Brain Mechanisms with the Korea Advanced Institute of Science and Technology

Discover new ideas and insights with leading researchers in the IdeasLab.

Kim Daesoo, Professor, Department of Biological Sciences, Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea

Sang Ah Lee, Assistant Professor, Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea; Young Scientist

Yoon Ki-Jun, Assistant Professor, Department of Biological Sciences, Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea

Cliff Ransom, Executive Editor, Partnerships and Custom Media, Nature, USA

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11.15 - 11.45 - Hub Session

Making Fintech Cybersecure

Fintech holds a large amount of sensitive data and frequently faces third-party risks, making it prone to cyberattacks. How can fintech become cybersecure, while its innovation and integration into the broader financial services system is fostered?

Michael Gorriz, Group Chief Information Officer, Standard Chartered Bank, Singapore

Jun Zhu, President, Greater China, Temenos, Hong Kong SAR, China

11.15 - 11.45 Hub

Mobile Game-Changers

Better smartphones and high-speed mobile internet connections are fuelling the mobile gaming industry, which counts 2.4 billion users and is expected to generate \$180 billion in revenue by 2021. How is mobile gaming transforming the future of media and entertainment?

Cathy Li, Head of Media, Entertainment and Information Industries, World Economic Forum

Yang Jun, Senior Vice-President, Co-Founder, 37 Interactive Entertainment, People's Republic of China

11.45 - 12.15 Hub

Sustaining a Cashless Society

From Sweden's e-krona to China's widespread QR code payment method, technology is redefining financial transactions around the world. How can business and government reap the benefits while responding to new technological, security and regulatory challenges?

Cheung Sik-Sze, Chief Executive Officer, Youxin Financial, People's Republic of China

Serey Chea, Assistant Governor, National Bank of Cambodia; Young Global Leader

Lin Yang, President, Innovation Ideas Institute, USA; Young Global Leader

11.45 - 12.15 Hub

Closing the Loop: Manufacturing

Employing circular business models can help manufacturers access a \$4.5 trillion opportunity, although new technologies and processes are needed. How can the sector scale up remanufacturing and leverage innovation for more resource-efficient and circular production?

Francisco Betti, Head of Advanced Manufacturing Industry, World Economic Forum

Jay Lee, Vice-Chairman, Foxconn Industrial Internet, Foxconn, Taiwan, China

Carl Vause, Chief Executive Officer, Soft Robotics, USA

11.45 - 12.15 Hub

Immune-Based Diagnostics

Antibiotic misuse and overprescription is a pressing public health concern, with devastating healthcare and economic consequences. How can better diagnostics address one of the biggest healthcare challenges of our time?

Eran Eden, Co-Founder and Chief Executive Officer, MeMed Diagnostics, Israel

12.00 - 13.00 Panel

The Future of the Belt and Road Initiative

Since the launch of the Belt and Road Initiative (BRI) in 2013, China has signed cooperation agreements with 126 countries and 29 international organizations, with the most recent round of agreements totalling more than \$64 billion. What does the future of the BRI look like for China and the world?

Olga Algayerova, Undersecretary-General; Executive Secretary, United Nations Economic Commission for Europe (UNECE), Geneva

Nasrul Hamid, Minister of State for Power, Energy and Mineral Resources of Bangladesh

Bruno Mações, Senior Fellow, Renmin University of China, People's Republic of China

Song Zhiping, Chairman of the Board, China National Building Material Group, People's Republic of China

Tian Wei, Host, World Insight with Tian Wei, China Global Television Network (CGTN), Kenya



12.00 - 13.00 xChange

Blockchain in the Supply Chain

Blockchain is used in a variety of ways, from fighting illicit diamond trading to tracking seafood from habitat to market. How can businesses operating complex supply chains design and deploy a winning blockchain strategy?

Khalfan Belhoul, Chief Executive Officer, Dubai Future Foundation, United Arab Emirates

Murat Seitnepesov, Managing Director, Integral Petroleum, Switzerland

Tushar Singhvi, Director, CE-Ventures, Crescent Enterprises, United Arab Emirates

Helen Hai, Goodwill Ambassador, United Nations Industrial Development Organization (UNIDO), Shanghai; Young Global Leader

12.00 - 13.00 Panel

China's New Business Leaders

Within only four decades, many Chinese business leaders have grown from self-taught factory managers to highly sophisticated international tycoons. What kind of skills allow business leaders to thrive and stay competitive in today's challenging market environment?

Gao Hao, Director, National Institute of Financial Research (NIFR) Global Family Business Research Center, Tsinghua University, People's Republic of China

Tang Ning, Founder and Chief Executive Officer, CreditEase, People's Republic of China

Smilla Yuan, Chief Executive Officer, Greater China, Willis Towers Watson, People's Republic of China

Zhang Jin, Chairman of the Board, Cedar Holdings Group, People's Republic of China

Min Zhu, Chairman, National Institute of Financial Research, People's Republic of China; Member of Board of Trustees of the World Economic Forum

Li Xin, Managing Director, Caixin Global, Caixin Media, People's Republic of China



12.15 - 12.45 Hub

Advancing Cyber-Resilience in the Electricity Industry

While IoT adoption can significantly benefit the electricity ecosystem, it increases its vulnerability to cyberattacks, which may compromise critical infrastructure with severe social and economic consequences. How can cyber-resilience be increased?

Pierre-Alain Graf, Senior Vice-President, ABB, Switzerland

Christophe Nicolas, Senior Vice-President and Founder, Kudelski Security; Group Chief Information Officer, Kudelski Group, Switzerland

12.15 - 12.45 Hub

The Future of Computing

As Moore's Law approaches its limit, technologists are searching for alternatives to sustain computing's pace of advancement. Could the resulting emerging technologies such as quantum, neurological and in-memory processing have as pivotal an impact on society as the microprocessor?

Kirk Bresniker, Fellow and Chief Architect, Hewlett Packard Labs, Hewlett Packard Enterprise, USA

Loh Huanqian, President's Assistant Professor, National University of Singapore, Singapore; Young Scientist

12.15 - 12.45 Hub

Reinventing Healthcare in China

China is home to one-fourth of all new cancer diagnoses and has the largest diabetic population in the world. How is China responding to mounting pressures on its healthcare system?

Visal Leng, Vice-President; President, Building Solutions, Asia-Pacific, Johnson Controls, USA

Rui-Ping Xiao, Associate Editor, New England Journal of Medicine, USA

Christine Zhou, Senior Vice-President and President, China, Novo Nordisk (China) Pharmaceuticals, People's Republic of China

12.30 - 13.00 One-on-One

Conversations on Leadership 4.0

Join Enass Abo-Hamed, Young Scientist and Co-Chair of the Annual Meeting of the New Champions, and Jean-Pierre Bourguignon, President of the European Research Council, for a candid conversation on what it takes to succeed as a leader in this new era of globalization.

Enass Abo-Hamed, Fellow, Royal Academy of Engineering, Imperial College London, United Kingdom; Young Scientist

Jean-Pierre Bourguignon, President, European Research Council, Brussels

W. Lee Howell, Managing Director; Head of Global Programming, World Economic Forum



12.30 - 13.15 Hub

Ask About: The Ocean

More than 3 billion people rely on the ocean for their livelihoods. Come to explore the latest research on new solutions for the ocean.

Nathalie Goodkin, Associate Professor, Asian School of the Environment, Nanyang Technological University (NTU), Singapore

Stephen Summers, Research Fellow, Singapore Centre for Environmental Life Sciences Engineering, Nanyang Technological University (NTU), Singapore

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Adam Switzer, Associate Professor, Asian School of the Environment, Nanyang Technological University (NTU), Singapore

12.30 - 13.15 Hub

Ask About: Mechanisms of the Brain

The human brain is the most complex object in the universe, with over 1 quadrillion connections, each activating roughly 10 times per second. Come to the hub to explore the latest research on the brain.

Kim Daesoo, Professor, Department of Biological Sciences, Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea

Sang Ah Lee, Assistant Professor, Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea; Young Scientist

Yoon Ki-Jun, Assistant Professor, Department of Biological Sciences, Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea

12.30 - 13.30 Panel

Moving 10 Billion

By 2050, the world's population will swell to 10 billion, predominantly coming from China and the developing world. In the face of this growth, megacities are suffocating and rural communities are falling further behind. How can sustainable and inclusive mobility be ensured?

Guo Jifu, Director, Beijing Transportation Institute, People's Republic of China

Christian Hochfeld, Executive Director, Agora Verkehrswende, Germany

Eva Scherer, Vice-President; Head, Business Administration, Mobility, Siemens, Germany; Young Global Leader

Makoto Uchida, Senior Vice-President; Chairman of the Management Committee, China, Nissan Motor Co., Japan

Jan Piotrowski, Business Editor, The Economist, United Kingdom



12.45 - 13.15 Hub

The Big Picture on Soft Power

Explore the causes and consequences of soft power now and through time.

Cesar A. Hidalgo, Director, Collective Learning Group, Massachusetts Institute of Technology (MIT) Media Laboratory, USA

12.45 - 13.15 Hub

Next-Generation Batteries

Batteries use scarce and geopolitically sensitive elements such as cobalt and lithium. What are the latest scientific breakthroughs in developing materials that are organic, metal-free and recyclable?

Jodie L. Lutkenhaus, Associate Professor of Chemical Engineering; William and Ruth Neely Faculty Fellow, Texas A&M University, USA; Young Scientist

13.15 - 13.45 Hub

Outsmarting Bias through Gender-Neutral AI

From the world's first gender-neutral voice assistant to the use of AI to remove bias in talent searches, technology provides an opportunity to advance gender equality. What are the latest technologies paving the way to more-inclusive societies?

Joanna Bryson, Associate Professor, Department of Computer Science, University of Bath, United Kingdom

Simon Greenman, Founding Partner, BestPractice.AI, United Kingdom

Saadia Zahidi, Managing Director; Head of the Centre for the New Economy and Society, World Economic Forum

13.15 - 13.45 Hub

Creating Inclusive Communities

About 3% of the global population live with an intellectual disability and often face isolation through cultural or systemic barriers. How can we build inclusive communities that allow all members to be active citizens?

Hessa Bint Eisa Buhumaid, Minister of Community Development of the United Arab Emirates

Kara Eusebio, Senior Manager, Strategic Partnerships, Bayview Yards, Canada

13.15 - 13.45 Hub

Urban Farming Solutions

By 2050, global food production will need to double to feed more than 9 billion people, but agricultural land areas are limited. With massive growth in cities, how is indoor urban farming providing a sustainable, local and precise farming solution?

Tsuyoshi Stuart Oda, Founder and Chief Executive Officer, Alesca Life, People's Republic of China

14.00 - 15.00 Panel

The Quest for Leadership 4.0

The sweeping technology changes of the Fourth Industrial Revolution are profoundly changing the ways governments and businesses operate. How can leadership become more responsive and responsible to confront the enormous scale, complexity and urgency of the world's current challenges?

Enass Abo-Hamed, Fellow, Royal Academy of Engineering, Imperial College London, United Kingdom; Young Scientist

Huang Yiping, Deputy Dean, National School of Development, Peking University, People's Republic of China

John Meacock, Global Chief Strategy Officer, Deloitte, USA

Suphachai Chearavanont, Chief Executive Officer, CP Group, Thailand

Michelle Zatlyn, Co-Founder and Chief Operating Officer, Cloudflare, USA; Young Global Leader

Amy Bernstein, Editor, Harvard Business Review Magazine, Harvard Business Review Group, USA



15.00 - 15.10 Plenary

Closing Remarks

Børge Brende, President, World Economic Forum

Jin Guowei, Vice-Mayor of Dalian, People's Republic of China

Jin Xiangjun, Vice-Mayor of Tianjin, People's Republic of China

15.10 - 15.25 Closing

Closing Performance

The meeting draws to a close with a multimedia experience led by world-class musician, Wu Tong, fusing the sounds of traditional Chinese instruments with electronic music and visual effects.

Sebastian Backup, Head of Programming, Global Programming Group; Member of the Executive Committee, World Economic Forum

Wu Tong, Musician, People's Republic of China; Cultural Leader



15.25 - 16.15 Reception

Farewell Reception

Co-hosted with the Municipal Government of Dalian, this reception will showcase the meeting's highlights and give participants the opportunity to explore cooperation and cement the working relationships they have developed during the event.

Jin Guowei, Vice-Mayor of Dalian, People's Republic of China

Yi Qingtao, Secretary-General, Dalian Municipal Government, People's Republic of China



Meet the next generation of scientists

Researchers at the cutting edge of their fields were recognized by the World Economic Forum as the Young Scientists Class of 2019. Each year, the Forum selects top scientists under the age of 40 for their contributions to advancing the frontiers of science and passion for integrating scientific knowledge into society for the public good.

The Young Scientists played an important role in this year's meeting. They took part in panels and working sessions alongside leaders from government, business and civil society and other stakeholders, contributing insight and generating ideas for solving some of the challenges within and outside their core areas of interest.

Class of 2019

Ilana Brito

Assistant Professor, Cornell University
Ilana Brito is pioneering new technologies to understand how the gut's microbiome impacts human health and the spread of antibiotic resistance.

[#systemsbiology](#) [#microbiome](#)

Christine Cheung

Provost's Chair in Medicine and Nanyang Assistant Professor, Nanyang Technological University

Christine Cheung studies the genetics of blood vessel ageing with vascular cells created from human stem cells to help prevent stroke and cardiovascular diseases.

[#cellularbiology](#) [#vasculardisease](#)

Camilla Colombo

Associate Professor, Politecnico di Milano

Camilla Colombo employs novel techniques for spacecraft orbit manoeuvring that has the potential impact to significantly reduce extremely high space mission costs.

[#universesciences](#) [#spaceexploration](#)

Olga Fink

Professor of Intelligent Maintenance Systems, ETH Zurich

Olga Fink develops intelligent algorithms to improve the performance, reliability and safety of complex industrial assets and to make their maintenance more cost efficient.

[#artificialintelligence](#)
[#maintenancesystems](#)

Thomas Hermans

Full Professor in Chemistry, University of Strasbourg

Thomas Hermans is developing self-healing and self-replicating lifelike materials that can respond to their surroundings and therefore improve performance in various applications, from sensors to biomaterials.

[#materialchemistry](#) [#novelmaterials](#)

Huang Rongqin

Deputy Director, Department of Pharmaceutics, School of Pharmacy; Professor, Fudan University

Huang Rongqin is designing and assessing the in vivo behaviour and biosafety of new nanomaterials for biomedical applications such as tumour imaging and targeted drug delivery.

[#nanomaterials](#) [#cancer](#)

Kim Sung-Yon

Assistant Professor, Seoul National University

Kim Sung-Yon studies precisely how neural circuits interconnect and signal to each other to control basic emotional and need states, such as anxiety and appetite.

[#neuroscience](#) [#obesity](#)

Kim Young-Min

Assistant Professor, Seoul National University

Kim Young-Min seeks to understand the 3D world by using 3D sensors for more effective augmented reality, robotic and ambient intelligence applications.

[#computerscience](#) [#3Dsensors](#)

Ashley King

Senior Postdoctoral Research Assistant, Natural History Museum

Ashley King aims to understand the origins of solar systems to answer society's big questions, including the origins and future of the Earth and life on it and the impacts of a changing environment.

[#universesciences](#) [#Earthorigins](#)

Daniel Lahr

Professor, University of São Paulo

Daniel Lahr is researching the planet's microbial evolution to help inform understanding of the world's ecological future.

[#environmentalbiology](#) [#microbes](#)

Liu Ying

Assistant Professor, Peking University

Liu Ying is decoding how cells respond to stress and nutrient levels, with therapeutic potential for the treatment of related diseases, such as neurodegeneration, metabolic disorders and cancer.

[#molecularcellbiology](#) [#diseases](#)

Loh Huanqian

President's Assistant Professor, National University of Singapore

Loh Huanqian seeks to use ultracold molecules as quantum building blocks to model materials at the microscopic level for next-generation electronics and renewable energy systems.

[#quantumtech](#) [#novelmaterials](#)

Nripan Mathews

Associate Professor; Provost's Chair in Materials Science and Engineering, Nanyang Technological University

Nripan Mathews is designing cheap and efficient solar cells that can easily be printed and that are accessible to a wide range of communities.

[#novelmaterials](#) [#energyefficiency](#)

Denise Morais da Fonseca

Assistant Professor, University of São Paulo

Denise Morais da Fonseca aims to understand how the immune system recovers from infections and the long-term effects on the body to prevent them, particularly in low- to middle-income countries.

[#immunology](#) [#infections](#)

Ruth Morgan

Professor of Crime and Forensic Science, University College London

Ruth Morgan researches the interpretation of forensic evidence and intelligence to understand decision-making in crime investigation and detection.

[#forensicscience](#) [#justice](#)

Gaëlle Offranc Piret

Researcher, Inserm

Gaëlle Offranc Piret is developing flexible, thin and nanostructured brain implants for therapeutic applications such as restoring function for disabled people.

[#physics](#) [#nanomaterials](#)

Adriana De Palma

Co-Investigator Researcher, Natural History Museum

Adriana De Palma uses big data to investigate how land management and climate change impact biodiversity today and in the future.

[#ecology](#) [#biodiversity](#)

Nicholas Pyenson

Curator of Fossil Marine Mammals, Smithsonian Institution

Nicholas Pyenson travels through geologic time to uncover the evolutionary origins of whales and other marine animals to better understand their past and present, and their co-existent future with humanity.

[#evolution](#) [#oceans](#)

Shin Yongdae

Assistant Professor, Seoul National University

Shin Yongdae is studying the physical principles underlying complex biological phenomena and developing novel technologies that enable the control of cellular processes.

[#biophysics](#) [#cellengineering](#)

Sabrina Sholts

Curator of Biological Anthropology, National Museum of Natural History, Smithsonian Institution

Sabrina Sholts uses museum collections of biological remains to study environmental factors on animal health in the past and present.

[#biologicalanthropology](#)
[#humanhealth](#)

Benjamin C.K. Tee

President's Assistant Professor, National University of Singapore

Benjamin C.K. Tee designs artificial skin sensor systems with self-repairable and degradable properties, with applications from biomedical robotics to electronic waste reduction.

[#syntheticmaterials](#) [#sustainabletech](#)

Wang Yihua

Professor, Fudan University

Wang Yihua is researching how the quantum physical properties of materials can be harnessed for the next generation of computing.

[#quantumcomputing](#)
[#nextgencomputing](#)

Class of 2018

Enass Abo-Hamed

Fellow, Royal Academy of Engineering, Imperial College London

Enass Abo-Hamed is developing safe and low-cost hydrogen production and storage technologies to increase access to clean and reliable power across the globe.

[#nanoengineering](#) [#energystorage](#)

Shahzada Ahmad

Ikerbasque Professor, Basque Center for Materials, Applications & Nanostructures

Shahzada Ahmadahzada is designing materials for energy conversion, conservation and storage and is pioneering a new generation of light harvesters to advance the fabrication of cost-effective solar cells.

[#novelmaterials](#) [#energyconversion](#)

Rona Chandrawati

Scientia Fellow; Senior Lecturer, University of New South Wales (UNSW)

Rona Chandrawati is developing nanotechnology sensors to simplify the early detection of life-threatening diseases and to alert consumers to food contamination.

[#nanotechnology](#) [#lifesavingsensors](#)

Vinet Coetzee

Senior Lecturer, University of Pretoria
Vinet Coetzee is developing fast, affordable and accurate diagnostic tools that can be used to screen for health conditions such as malaria in a non-invasive fashion and that do not require blood, electricity or highly skilled people at the point of care.

[#biomedicine](#) [#malaria](#)

Rubén Costa

Senior Researcher, Madrid Institute for Advanced Studies of Materials
Rubén Costa is developing the next-generation of bio-LEDs, aiming to eliminate the need for toxic, polluting and finite rare-earth metals in the world's artificial lighting.

[#nanotechnology](#) [#bioLEDs](#)

Yabebal Fantaye

AIMS ARETE Research Chair, African Institute for Mathematical Sciences
Yabebal Fantaye is applying artificial intelligence to cosmological data sets in order to unravel the formation of the universe and to satellite images of the Earth in order to monitor African development progress.

[#cosmology](#) [#Africandevlopment](#)

Janet Gutierrez-Uribe

Department Head, Bioengineering and Science, Monterrey Institute of Technology and Higher Education (ITESM)
Janet Gutierrez-Uribe is identifying and characterizing the chemical composition of bioactive compounds in foods to better prevent chronic and degenerative diseases.

[#foodengineering](#) [#nutrition](#)

He Guojun

Assistant Professor, The Hong Kong University of Science and Technology
He Guojun is applying cutting-edge econometric and statistical models to quantify the health impacts of air pollution in China.

[#mathematicalmodelling](#)
[#healthpollution](#)

Daniel E. Hurtado

Associate Professor, Pontificia Universidad Católica de Chile
Daniel Hurtado is developing novel computational tools that can dramatically improve the diagnosis and management of respiratory diseases.

[#computationalmodelling](#)
[#respiratorydiseases](#)

Michael Janus Bojdys

Assistant Professor, Functional Nanomaterials Group, Humboldt University of Berlin
Michael Janus Bojdys is developing materials for the next generation of electronics that combine useful electronic properties without the need for rare, hard-to-come-by resources.

[#nanoengineering](#) [#nanomaterials](#)

Lamis Jomaa

Assistant Professor, American University of Beirut
Lamis Jomaa is examining the linkages between food insecurity, migration and human health outcomes to influence community-based nutrition interventions.

[#nutritionalscience](#) [#foodsecurity](#)

Pierre Karam

Assistant Professor, American University of Beirut
Pierre Karam is integrating biosensors into smartphones in order to monitor and control waterborne and infectious diseases in real time in resource-limited settings.

[#analyticalchemistry](#) [#biosensors](#)

Sang Ah Lee

Assistant Professor, Korea Advanced Institute of Science and Technology (KAIST)
Sang Ah Lee is studying how spatial intelligence and memory changes over time and is developing methods to enhance and supplement cognition for early treatment of Alzheimer's disease and various neurodevelopmental disorders.

[#neuroscience](#) [#Alzheimer's](#)

Po-Shen Loh

Associate Professor, Carnegie Mellon University
Po-Shen Loh is advancing core theory in mathematics to deploy practical solutions such as delivering free personalized learning systems through smartphones.

[#mathematics](#) [#learningtech](#)

Matthew McKay

Professor, Department of Electronic and Computer Engineering, The Hong Kong University of Science and Technology
Matthew McKay is applying big data and modelling to inform intelligent vaccine design, which has the potential to speed up the search for effective HIV and hepatitis C vaccines.

[#computationalimmunology](#)
[#vaccines](#)

Julia Makinde

Postdoctoral Research Associate, Imperial College London
Julia Makinde is using next generation computational and immunological tools to aid the design of vaccines and therapies against pathogens such as HIV.

[#immunology](#) [#vaccines](#)

Juan Pedro Ochoa Ricoux

Assistant Professor, Pontificia Universidad Católica de Chile
Juan Pedro Ochoa Ricoux is studying neutrinos – ghost particles that permeate the space around us – in the hope to learn more about the events and processes that produced them, both inside and outside our planet.

[#particlephysics](#) [#neutrinos](#)

Rodney Dewayne Priestley

Associate Professor, Princeton University
Rodney Dewayne Priestley is developing sustainable processes to engineer the function and properties of nanostructured colloids that will improve the delivery and efficacy of active molecules in drug delivery and healthcare formulations.

[#nanoengineering](#) [#novelmaterials](#)

Simone Schuerle

Assistant Professor, Head of Responsive Biomedical Systems Laboratory, Institute of Translational Medicine; Branco Weiss Fellow, ETH Zurich
Simone Schuerle is developing micro- and nanorobots that could be introduced to the body, helping to diagnose and treat diseases more locally and effectively.

[#biomedicine](#) [#nanorobots](#)





Amanda Russo, Ruth Morgan, Liu Ying, Benjamin C.K. Tee and Sabrina Sholts in the session How can scientists become role models?

Mahyar Shirvanimoghaddam

Academic Fellow, University of Sydney

Mahyar Shirvanimoghaddam is developing ultra-low power communication strategy for green and sustainable internet of things to replace batteries with piezoelectric materials – materials that accumulate charge from vibrations in their environment.

[#electricalengineering](#)
[#internetofthings](#)

Angela Wu

Assistant Professor, The Hong Kong University of Science and Technology

Angela Wu is studying the genetic information in individual cells to generate new insights into complex biological systems such as embryonic development, sepsis and cancer.

[#bioengineering](#) [#geneediting](#)



Class of 2017

Sergiy Bogomolov

Lecturer and Assistant Professor, Australian National University

Sergiy Bogomolov develops algorithms and tools to provide solutions for the automatic analysis of cyber-physical systems used in applications such as autonomous vehicles.

[#computerscience](#)
[#artificialintelligence](#)

Karen Jacqueline Cloete

Researcher, iThemba Laboratory for Accelerator Based Sciences, National Research Foundation

Karen Cloete researches ion beam techniques to study biological phenomena in the fields of biomedicine, forensic science, food toxicology and ocean pollution.

[#biophysics](#) [#ionbeams](#)

Jodie L. Lutkenhaus

Associate Professor of Chemical Engineering, Texas A&M University

Jodie Lutkenhaus is harnessing the power of organic polymers to develop alternative energy resources.

[#chemicalengineering](#)
[#organicbatteries](#)



Start-ups in Dalian



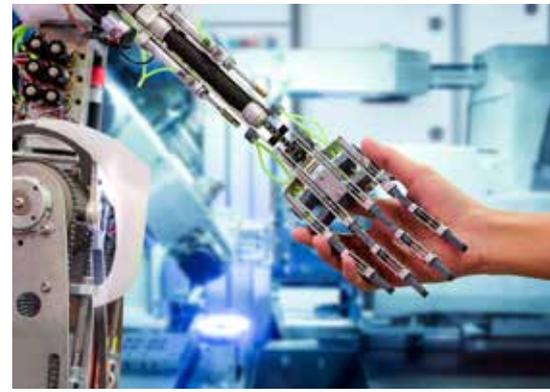
Start-ups possess unique advantages to shape the future and convert disruption into positive outcomes. These young companies are the source of many of the technologies emerging from the Fourth Industrial Revolution and are best placed to enable its benefits.

The following companies took part in the Annual Meeting of the New Champions 2019:

- | | |
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| ACTO | Conatix |
| Ada Digital Health | Congenica |
| Aden Tech | Crescent Enterprises |
| Agricxlab | Data Integrated Limited |
| AID:Tech | Development Reimagined |
| Amal Glass | Digital Locker Services |
| Analytics 4 Life | DyeMansion |
| Angkas | Edukasyon.ph |
| Antwork Network Technology | Electronics Recycling Services Fuel |
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| Ayannah | Exploris Health |
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holo one	Visu Autotec (Ningbo)
Humanising Autonomy	Xtelligent
IDUN Technologies	
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inveox	
K2Data Technology (Beijing)	
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Acknowledgements

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For more information about these companies, please consult TopLink or go to <https://www.weforum.org/events/annual-meeting-of-the-new-champions/partners>.

Digital update



China

Trade war and the future of globalization - top quotes from the World Economic Forum in China

Robin Pomeroy 3 Jul 2019



China

What just happened? 5 stories from the World Economic Forum in China

Ceri Parker 3 Jul 2019



Fourth Industrial Revolution

Who is first (and last) in the race to build a workforce fit for the future?

Vinod Bakhavachalam, Emily Glassberg Sands
2 Jul 2019



Fourth Industrial Revolution

Here's how factories can lead in the Fourth Industrial Revolution

Charlotte Edmond 3 Jul 2019



Aerospace

Europe is designing satellites that 'surf' their way past space debris

Camilla Colombo 2 Jul 2019



Blockchain

Blockchain will make sure green pledges aren't just greenwash: a new initiative by young leaders at the World Economic Forum

Robin Pomeroy 2 Jul 2019

The event page of the Annual Meeting of the New Champions 2019 provides more information from the meeting, including photographs, press releases, social media and webcasts of selected sessions.



This report is also available to download:
http://www3.weforum.org/docs/AMNC19_Report.pdf

Contributors

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David Aikman, Chief Representative Officer, China, Member of the Executive Committee, World Economic Forum

The report was written by **Alec Ash, Kaiser Kuo, Kate Lamb** and **Catherine Ong**. The Forum would also like to thank **James Fullerton, Cameron MacMurchy, Madhur Singh** and **Peter Vanham** for their work as official writers at the Annual Meeting of the New Champions 2019.

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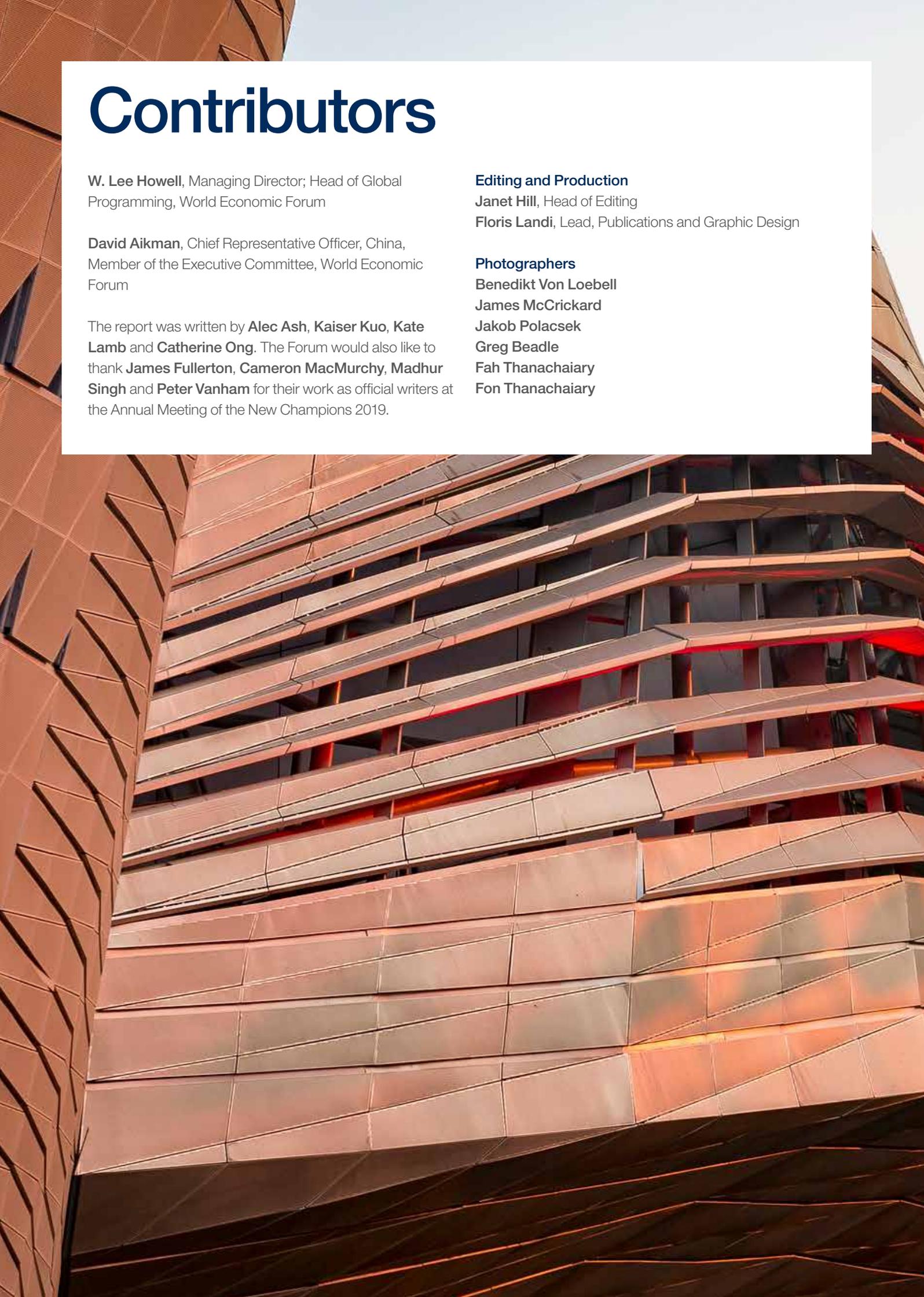
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