EXPO 2020

إكسبو 2020
دبي، الإمـــارات العربيــة المتحــدة
DUBAI, UNITED ARAB EMIRATES

Bureau
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المجلس العالمي
EXPO 2020 DUBAI
WORLD MAJLIS

Aligning clock speeds: transformations in
technology, government and society

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Clock speed is a central topic for how we cope with innovation, especially if we are seeking to create real benefits for society at large. It is particularly important today as the scale and nature of technological transformations in our highly connected world can be very exciting, but also have the potential to widen gaps between countries, communities and generations.

World Expos and World Majlis

Since the first Great Exhibition held in London in 1851, World Expos have connected people and provided special places to spark dialogue among those who are curious about the future. With their mix of art and science, imagination and analysis, machines and ideas, governments and people, Expos are special places for gathering inquisitive minds who want to ask questions about the future and, in so doing, learn more about each other. Expos have always been, simultaneously, a mirror of their times and a window into the future.

World Expos offer a stage for disruptive technologies, ideas and innovative thinking to make a grand entrance in society. From the X-ray machine, to the first picture phone, from television and cinema to the autonomous car, the Expos have offered first glimpses of new technologies on the horizon and their potential to change people's lives forever.

Inspiring the Journey to Expo 2020 and Beyond

The goal of the World Majlis is to explore important questions that bear on the future of humanity as we look for ways to make progress and benefit as many people as possible.

Each World Majlis is part of the journey to 2020 and beyond. Each will bring together different people that wish to offer genuine opinions and spark new ideas. These will be documented and made accessible to others as a wide collection of measured and informed views on important and difficult topics. They will inform the thought leadership programming for Expo 2020 and its legacy outcomes, both tangible and intangible.

The World Majlis explores topics from multiple perspectives, seeks inputs that should not be overlooked and asks questions that can lead us to think differently. It values the lessons of the past when society was facing moments of change and reflecting on future directions.

While the conversation is itself a key outcome, we hope that each World Majlis will offer suggestions and avenues for the future that can be empowered and shared through Expo 2020.

The World Majlis Conversation

Aligning clock speeds: technology transformations, society and government.

If the pendulums of technology, government and society swing at different speeds, will we find solutions and alignment only by adjusting clock speed?

It is natural to explore the question of clock speed to understand the pace of development and integration of technology innovation within society. However, aligning to the same clock speed might not be the answer...

Governments and society should move at the same clock speeds as technological development ...

...but is it feasible or even desirable?

Public policy is almost always lagging behind technology innovation and adoption...

... why is society or the private sector sometimes slower making changes?

Technology innovation is taking place at an unprecedented (exponential) pace...

...but are we actually disrupting enough where it is really needed? And is technology the only disruptive force, or also policy, business models and values?

Framing the Conversation

The pendulums of technology, government and society swing at different speeds. Technology innovation is faster than that of society and, in turn, changes within society are often ahead of government. Technologies with systemic impacts on people and communities also advance more rapidly than our ability to truly grasp their implications and to weigh short-term benefits against long-term concerns (or vice-versa). In the words of Bill Gates "we always overestimate the change that will occur in the next two years and underestimate the change that will occur in the next 10".

Technologies that are transformational and disruptive are so across the board. Their implications can be simultaneously broad and profound – business models, regulations, people's psychology, the science behind them, etc. If properly understood, managed and leveraged across government, business and society, technological developments have the potential to generate benefits and opportunities to address some of the major challenges the world faces today. Their impact is on the well-being of people and the planet, access to opportunities, security and privacy, among others.

Reflections from the Past

While today's context is unique, the past can offer important lessons and insights for the future.

The story of the Radium Girls
Do we ever understand the science of new technologies enough?

Soon after its discovery, radium became one of the most valuable materials. Apart from its potential to fight cancer, it was believed to have so many health benefits that people took to drinking radium water. One of its earliest applications was to produce glow-in-the-dark watches. To paint the glowing watch dials, young women used to tip a fine brush into a radium solution and then sharpen the tip using their lips. At the time, this factory job was not only relatively well paid but also considered a very glamorous one. The women had access to a liquid that could also make their curls and nails glow. And then the women started to fall sick. Around 1938 the United States federal government began regulating and set basic safety limits for handling radiation.

Telegraphs and Machine Translation
Do we overestimate the impact (positive or negative) of new technologies on opportunities?

Machine translation and the telegraph are interesting examples of the difficulties of judging their impact on future opportunities.

"It will not be very long before the remaining linguistic problems in machine translation will be solved for a number of important languages" and "in about two years we shall have a device which will at one glance read a whole page and feed what it has read into a tape recorder and thus remove all human cooperation on the input side of the translation machines". (Professor Erwin Reifler, 1957)

While we have significantly advanced translation technology, there is still a major gap between what engines and humans can do. "Google Translate is all about bypassing or circumventing the act of understanding language. [..] The engine isn't reading anything— not in the normal human sense of the verb "to read". It's processing text. The symbols it's processing are disconnected from experiences in the world. It has no memories on which to draw, no imagery, no understanding, no meaning residing behind the words it so rapidly flings around." Douglas Hofstadter, 2018, The Atlantic.

A related example from the world of diplomacy: when Lord Palmerston, the British Prime Minister and Foreign Secretary, received the first telegraph message in the mid-1800s he was reported to have said: "This is the end of diplomacy!'

Clock-speed and Climate Change
Are we disrupting fast enough?

Extract from "A brief history of climate change", BBC, published in 2013.

1927 - **Carbon emissions reach one billion tonnes per year**

1957 - An oceanographer warns that: "Human beings are now carrying out a large scale geophysical experiment..."

1965 - A US President's Advisory Committee panel warns that the greenhouse effect is a matter of "real concern".

1972 - **First UN environment conference, in Stockholm.**

1975 - "Global warming" enters the public domain in the title of a scientific paper.

1989 - Carbon emissions reach six billion tonnes per year.

1992 - United Framework Convention on Climate Change agreed at the Earth Summit in Rio de Janeiro.

2006 - **The Stern Review concludes that climate change could damage global GDP by up to 20% if left unchecked – but curbing it would cost about 1% of global GDP.**

2013 - The first part of the IPCC's fifth assessment report says scientists are 95% certain that humans are the "dominant cause" of global warming since the 1950s.

2015 - **Paris Agreement.**

2017 - Second warmest year on record and carbon emissions reach 37 billion tonnes per year.

Signals for the Future

Old and New AI
How do we keep technology "in check" despite its clock speed?

"The foundations of the AI being used now are relatively old. Some major tech firms are advancing true innovations, but most are largely engaged in squeezing brilliant new applications out of existing AI approaches. But the kind of breakthroughs that will revolutionise AI itself require fundamental new science now. [..] Understanding the nature of intelligence stands as one of the great problems in science; harnessing the forces of machine intelligence to make a better world stands as a defining challenge of our time."
L. Rafael Reif, President of MIT, 1 February 2018

Deeper research on the nature of intelligence will be the new frontier. How do we ensure that future disruption is benefical to humanity in fields such as AI, but also cloning, genetic engineering, etc.?

The Trust Economy & the Decentralized Internet
Should speed serve efficiency and consumption or citizen value?

Initially considered as an example of creating greater flexibility and opportunities for consumers and employees, the "sharing" of the "sharing economy" is being questioned as it relates to the initial champions of this business model. Alternative solutions are focussing more on creating greater social impact. Similarly, in the big data space, large and well-established knowledge players are now being challenged by networks promoting free data access, privacy and security.

From technology to policy innovation
How can policy and technology work hand in hand?

The recent report of the European Academies' Science Advisory Council (EASAC) on Negative Emissions technologies (February 2018) emphasises that while "every tool in our toolbox may be necessary in the second half of the 21st century to tackle climate change", technology alone cannot provide the solutions. Governments, companies and society still have to focus on minimising emissions and there is great scope for innovative ideas and policies.

From Humanism to Humanics
How can future education bridge the gaps created by the different clock speeds?

Amongst the emerging views on the future of education in the age of artificial intelligence, the science of "Humanics" proposed by Dr. Joseph Aoun in his new book "Robot-Proof" highlights data literacy, technological literacy and human literacy as three pillars for future education and life-long learning. Is this enough or are we leaving behind other sicences?

The Way Forward

We hope that the ideas that emerge will spawn new avenues of thoughts, inform the conversations around future Majlis in the UAE or in other parts of the world and contribute to generate robust content for Expo 2020 Dubai and its legacy.