



# The Future is Now

Quarterly Emerging Trends Report

Q2 2018



# **H**AVE YOU **REVIEWED** YOUR **BUSINESS MODEL?**

The Future is Now, Quarterly Emerging Trends Report (Q2 2018)

First edition published in Japan  
by the Asian Productivity Organization  
1-24-1 Hongo, Bunkyo-ku  
Tokyo 113-0033, Japan  
[www.apo-tokyo.org](http://www.apo-tokyo.org)

©2018 Asian Productivity Organization

The Views expressed in this publication do not necessarily reflect the official views of the Asian Productivity Organization (APO) or any APO member.

All rights reserved. None of the contents of this publication may be used, reproduced, stored, or transferred in any form or by any means for commercial purpose without prior written permission from the APO.

# The world is changing

constantly at a rapid pace, and  
technology is disrupting companies, industries,  
and overall economies.

Have you reviewed your business model yet? Disruptive changes have certainly changed the way we do business at the Asian Productivity Organization too. We have served our member economies well since 1961 but we want to do it even better. That is the reason why we have sought to reinvent our business model by adopting a more digital-centric, platform-based business model and a transformative strategic planning approach to finetune existing projects while planning for future projects, in an effort to better serve the needs of member countries as we approach APO Vision 2020.

To enable member countries to better navigate the socio-economic and digital tech landscape, APO now adopts a country-specific approach. We do so, by offering initiatives such as the Specific National Programs and releasing the Future is Now - APO Quarterly Emerging Trends Report, among others. At the end of the year, we will also be publishing the APO Annual Scenario Report to better capture the driving forces and the critical uncertainties coming our way, and recommended approaches and ways to address the challenges ahead.

The Future is Now (Q2 2018) report has incorporated positive feedback from stakeholders: not only have we identified emerging driving forces for the quarter around the region, we have also provided a low-down on how these emerging trends or driving forces will affect member economies in terms of productivity and competitiveness. This bears more relevance to the work of the member countries, as they consider the plausible impact of the rise of the Prêteurship Economy, the emerging concept of Economies of Agility (EOA), the future of the Internet, the graying of the global population and so on.

As we approach summer, I will also like to take the opportunity to welcome all delegates to Tokyo for the Sustainable Productivity

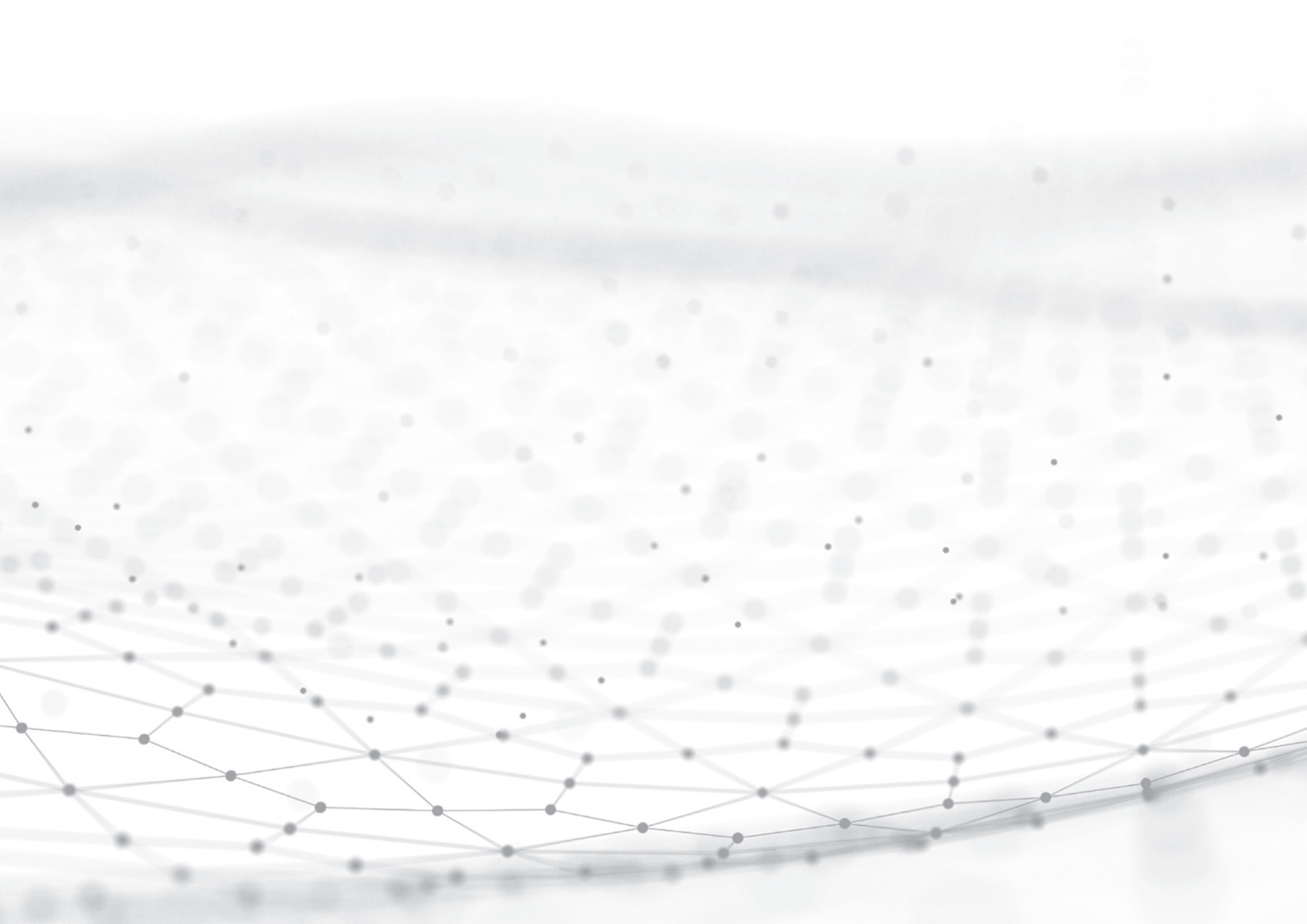
Summit and the Strategic Planning Workshop from 10-12 Jul 2018, where APO Directors and NPO Heads will huddle behind closed doors to mull through the APO Tokyo Scenarios, deliberate upon the emerging trends, and come up with appropriate overarching national initiatives that can drive productivity and enhance economic competitiveness for the next few years. This is a critical period for APO and our work will bear material impact on the future of APO and the member countries.

Do let us know what you think about the emerging trends identified and how you would review your business model to meet the future challenges ahead. The world is changing constantly at a rapid pace, and technology is disrupting companies, industries, and overall economies. We therefore need to constantly refresh our strategies to stay ahead of the curve.



Dr. Santhi Kanoktanaporn  
Secretary-General  
Asian Productivity Organization  
Jun 2018



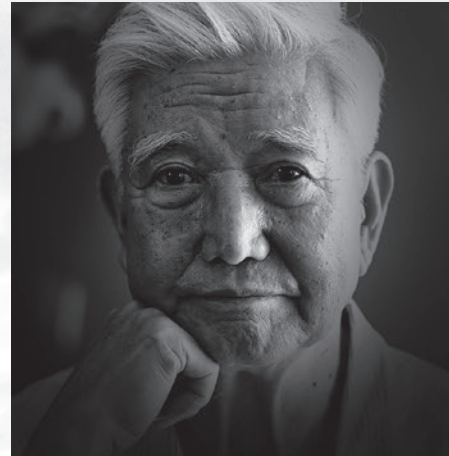


# Table of Contents

## Economies of Agility



## The Rise of Gerontocracy



## AI Legal Framework



## Prêteurship Economy



## Shatternet



# Economies of Agility

The ubiquity of the Internet and the emerging surfeit of tech startups and unicorns every week in Silicon Valley, buoyed by venture capital wealth stepping up to the plate and offering hundreds to billions of US dollars for anything and everything that looks close to becoming the next Google or LinkedIn, have created the emerging concept of economies of agility (EOA), where the more flexible the organization becomes, the greater the incremental economic benefits it reaps through the ability to rapidly scale up, instantly attune to customers' needs and demands, fail quickly, and rebuild just as quickly.

In today's tumultuous markets, where established companies are furiously battling assaults from startups and other insurgent competitors, the prospect of a fast-moving, agile, adaptive organization is turning into a panacea for companies. The challenge, however, is in making organizations into rapid-prototyping, fast-changing, quick-adapting machines a

reality. According to the Harvard Business Review (HBR), companies often struggle to know which functions should be reorganized into agile cross-disciplinary teams and which should not. Research has shown that it is not unusual to launch hundreds of agile new teams only to see them bottlenecked by slow-moving middle-management bureaucracies. HBR studied the scaling up of agility in hundreds of US companies, including small firms that run the entire organization with agile methods, larger companies (i.e., Spotify and Netflix) that were born agile and became more so as they grew in size, and larger companies like Amazon and the United States Automobile Association that are making the transition from traditional hierarchies to enterprises that tap EOA.

Interestingly, it is not a case of one size fits all: research has shown that some companies' For example, one prominent company's attempts to innovate and operate like a lean startup have not yet generated the requisite financial results





sought by its investors and board of directors, which led to several senior executives resigning in the wake of the dismal performance. However, studies have also shown that companies can scale up agility effectively and that doing so really creates substantial economic benefits. The question is whether leaders can be realistic and set the tone of transition so that the emerging concept of EOA can take root.

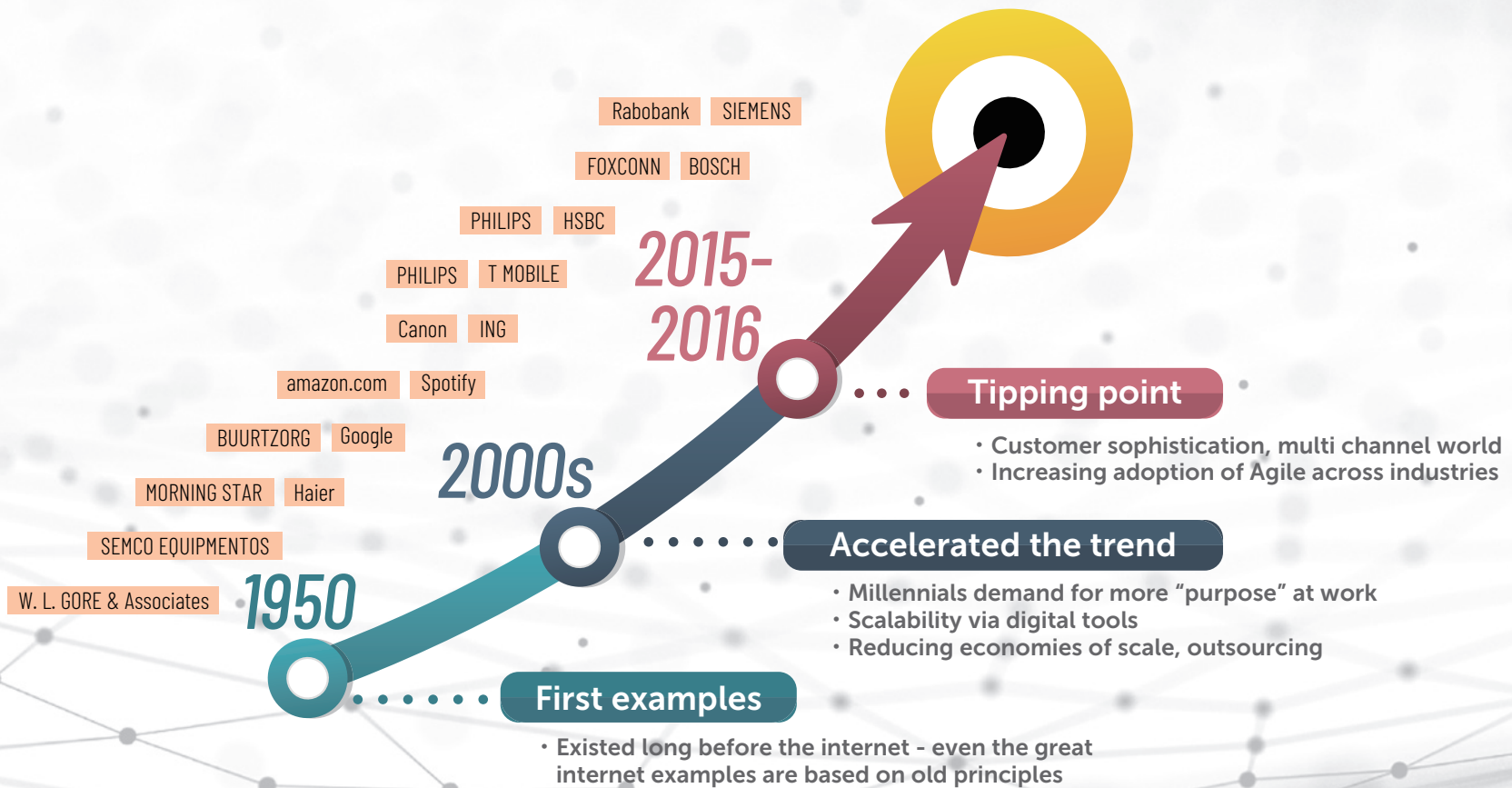
### **Why Does This Emerging Trend Matter to the APO?**

As we find ourselves in the eye of Industry 4.0, and with the increasing gravitation of accelerators, venture capital funds, and even sovereign wealth funds toward innovative companies that can generate monumental innovative ideas through disruptive business models, member countries should start doing more research on “agilizing” traditional and tech companies over the spectrum of enterprise development to ride the wave of EOA. The trend is still emerging, but the general

direction is set. In a rapidly changing environment, keeping organizations in a rapid prototyping mode makes logical and economic sense. Whatever can be outsourced, should logically be outsourced. Whatever can be kept digitally fluent and nimble, should naturally be kept fluent and nimble. Member economies will likely see more tumultuous economic conditions that appear to be increasingly protectionist, navel gazing, and inward looking. There are silver linings like the Comprehensive and Progressive Agreement on Trans-Pacific Partnership (CPTPP) but without the buy-in from the two largest economies of the USA and PR China, it behooves member economies to deploy business-oriented policies to build up a pool of agile organizations that can quickly adapt to shifts in technologies, politics, and socioeconomic conditions.

# Economies of Agility

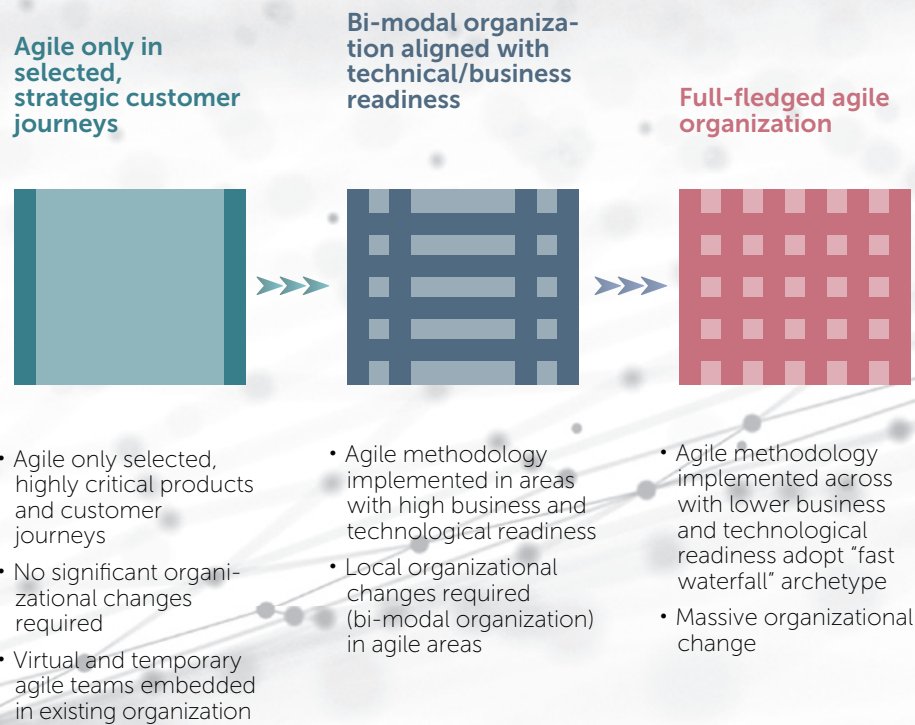
Agility is not a new concept: the “living organism” has shown how work should be approached and the momentum keeps increasing.



Source: McKinsey & Company. (2018). Competing through organizational agility. [online] Available at: <https://www.mckinsey.com/business-functions/organization/our-insights/competing-through-organizational-agility> [Accessed 21 Jun. 2018].

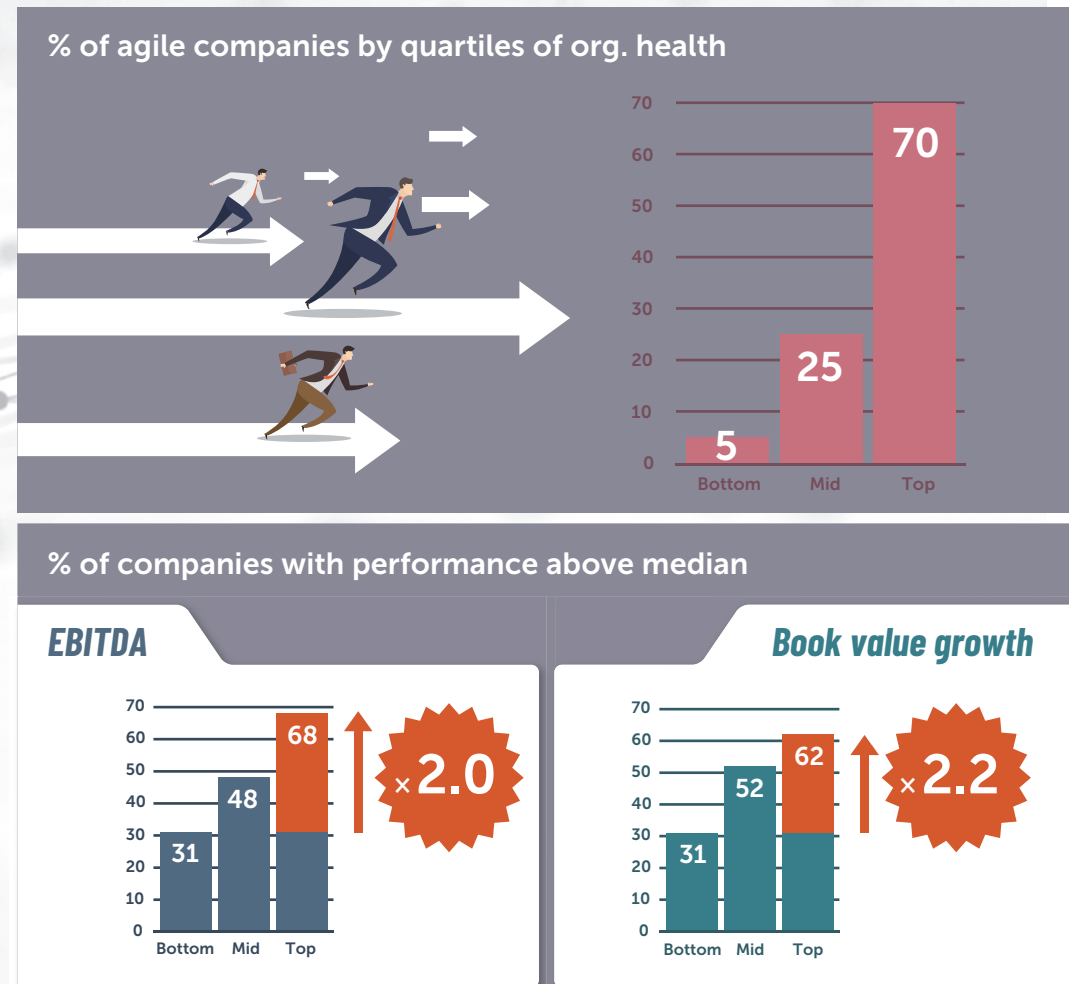


## The agile transformation can be structures in several ways.



Source: McKinsey & Company. (2018). Competing through organizational agility. [online] Available at: <https://www.mckinsey.com/business-functions/organization/our-insights/competing-through-organizational-agility> [Accessed 21 Jun. 2018].

## Agile companies demonstrate superior organizational health and financial performance.





# The Rise of Gerontocracy

The UN World Population Prospects revealed that Asia had the largest proportion of the global population at 59.9% in 2017, which was forecast to be 57.9% in 2030. One meaningful finding in the statistics was the distinct increase in the elderly in many Asian countries with an obvious trend toward an aging society. The dynamics among different age-groups actually determine what people produce and consume, with ramifications for labor employment in Asia-Pacific economies. More importantly, politics is the most critical challenge for this emerging demographic change. The gap between younger generations and the elderly has created dissident views on sociopolitical issues.

Societies with “silver democracies” are generally evaluated as more conservative and less dynamic. Older people’s voices are overrepresented, and youth’s influence wanes. Social welfare issues related to the quality of life of the elderly become a main subject of discussion. In this regard,

many reports pointed out that the emergence of elderly-friendly policies and distribution schemes such as retirement age extensions and pensions are the entry points to a gerontocracy. The phenomenon should be monitored cautiously as policies might be aligned with populism at the sacrifice of the young generation. The pieces of an apple need to be distributed to ensure that another apple can be produced for the next generation while older people have stable lives. When these two fine lines are crossed, the groups must compete for the sake of their interests, and social conflicts increase.

A major cause of gerontocracy is falling birth rates, which many developed countries are struggling with. Generational imbalances and population gaps may lead to a biased society, which is a serious problem in achieving sound national development. This has significant implications for developing APO members

when deciding policies on population maintenance, birth rates, and issues involving women and children. Although it is hard to imagine now, countries with decreasing populations today were once young with high birth rates. For example, in the 1980s the ROK government promoted a national birth control slogan advocating two babies per household, similar to PR China's one-child policy over the last four decades. However, the current

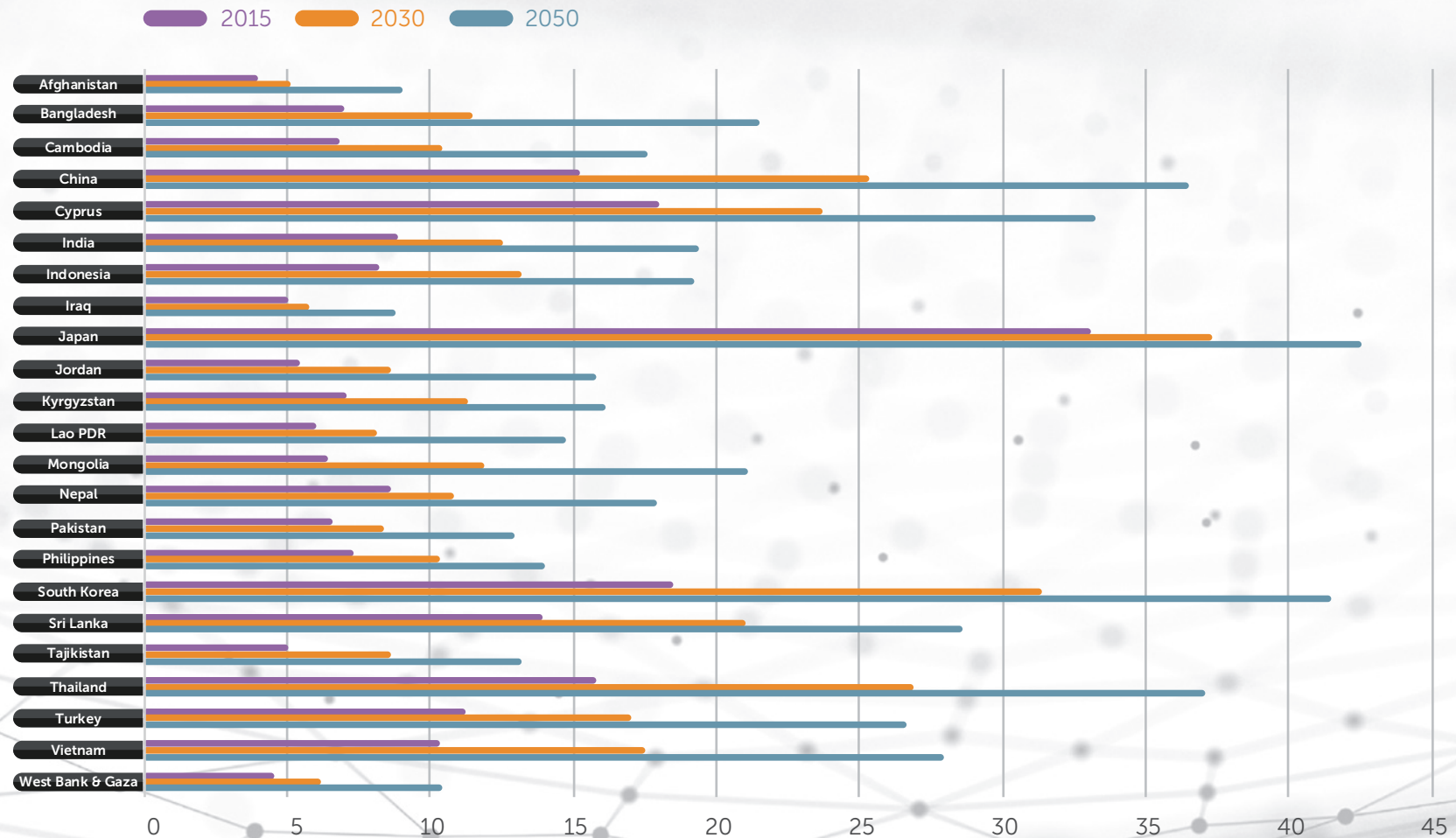
struggle with aging societies shows that such policies were wrong and did not foresee the results 30 years later, when the outcome of a population policy becomes evident.

### **Why Does This Emerging Trend Matter to the APO?**

When a country is politically and economically prosperous, the role of

the young generation is critical. Their participation in voting and voices reflected in the public arena rejuvenate the economy and create innovation. Accordingly, policies for youth population maintenance and engaging them in an official decision process are urgently and critically needed in both developed and developing countries.

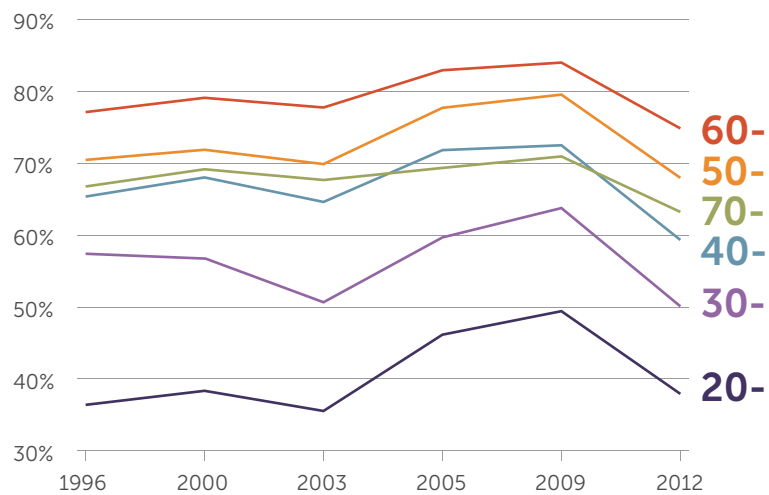
# Percentage of Population Aged 60+ in Asia-Pacific Resion



Source: Ageinternational.org.uk. (2018). Annual report | Age International. [online] Available at: <https://www.ageinternational.org.uk/about-age-international/Annual-report/> [Accessed 21 Jun. 2018].

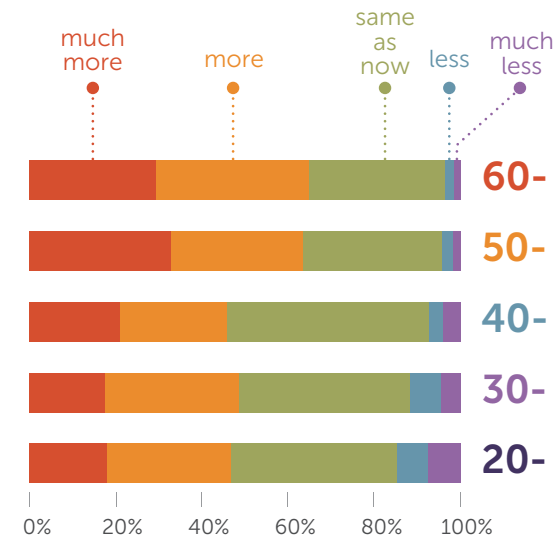
## Elderly Voters are Much More Likely to Vote Than the Younger Ones

Japan's lower house turnout after electoral reform 1996-2009



## Elderly Voters Have Clear Preferences on Welfare Issues

Preference over welfare by age in Japan



# AI Legal Framework

The convergence of intelligent systems and robotic technologies has led to the development of systems with attributes that simulate those of human beings in terms of partial autonomy and ability to perform specific intellectual tasks, and may even have a human physical appearance. They are commonly called "autonomous and intelligent systems (A/IS)" or AI.

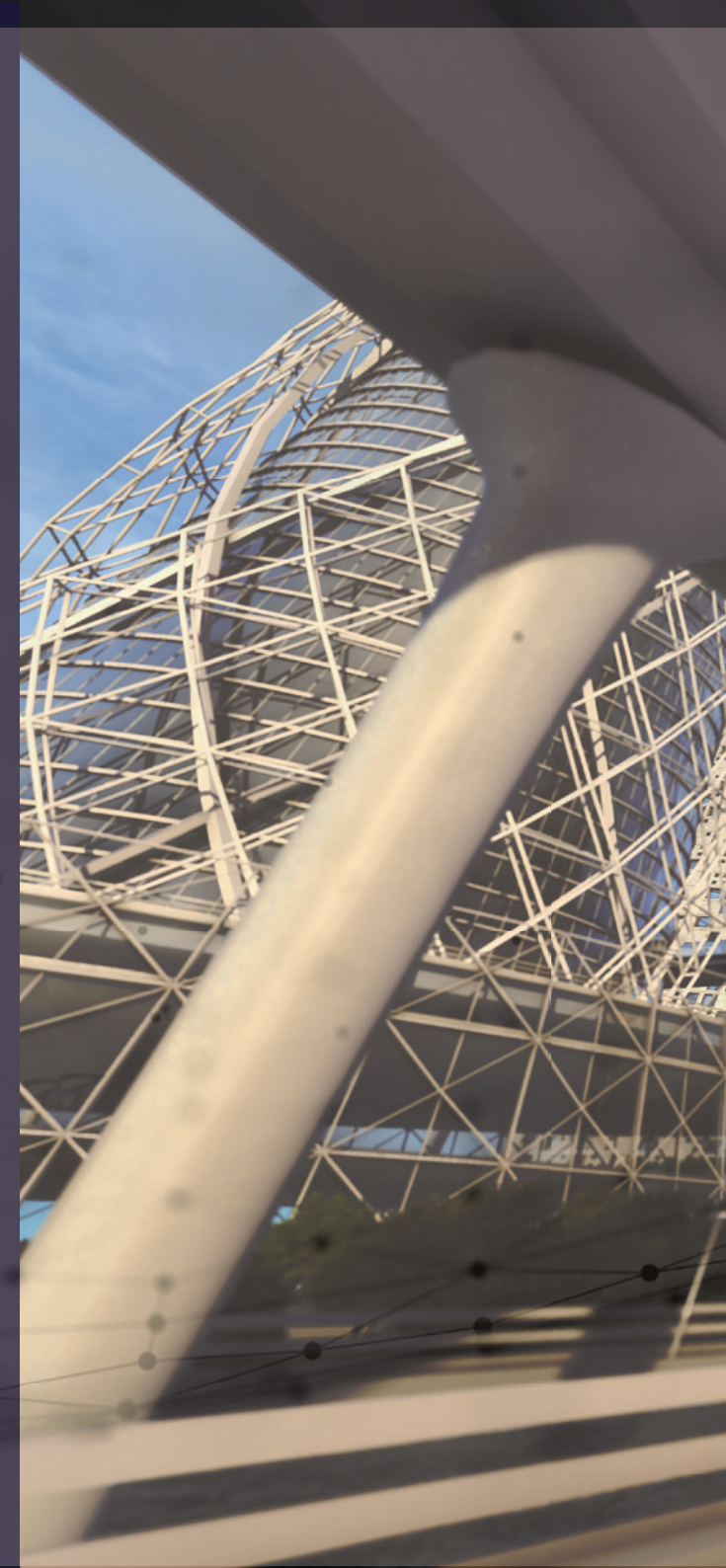
The next question to ponder will be the legal status of complex AI/S, which is intertwined with broader legal questions on how to ensure accountability and allocate liability when such systems cause harm.

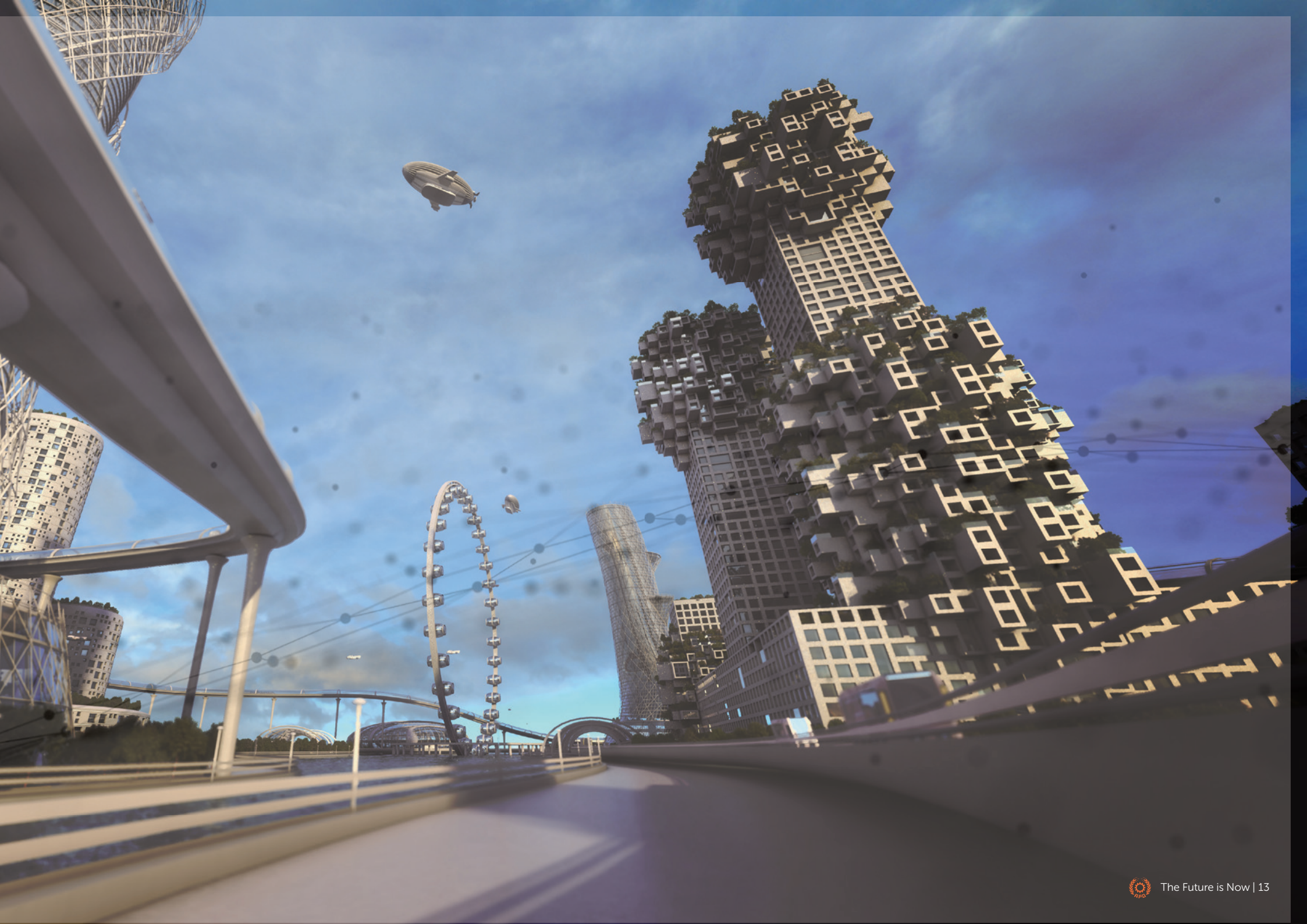
Without the proper knowledge and information, our fears will only continue to expand and make us more insecure. Therefore, an accurate understanding of the facts is essential. Based on available data and knowledge, establishing appropriate transnational legislation to regulate and apply ethics to AI could be required. This could also be one method of slowing down the development speed of

AI/S, allowing us to address critical issues that may affect prosperity. Discussions on legalizing AI and data-driven technology vary widely, from providing electronic "personalities" with legal status to regulating self-driving cars and drones.

Some jurisdictions are already taking legislative steps. For example, the state government of Arizona, USA, has recently passed a bill that would allow delivery robots to operate on sidewalks and in crosswalks. These are also legislated in some other states.

In the EU, lawmakers called for legislation to regulate the rise of robots, including an ethical framework for their development and deployment and the establishment of liability for the actions of robots including self-driving cars. In the USA, unmanned aircraft systems, also called drones, are regulated by the Federal Aviation Administration. Two sets of rules have been established, one for recreational-use drones and one for drones used commercially. The latter require registration.







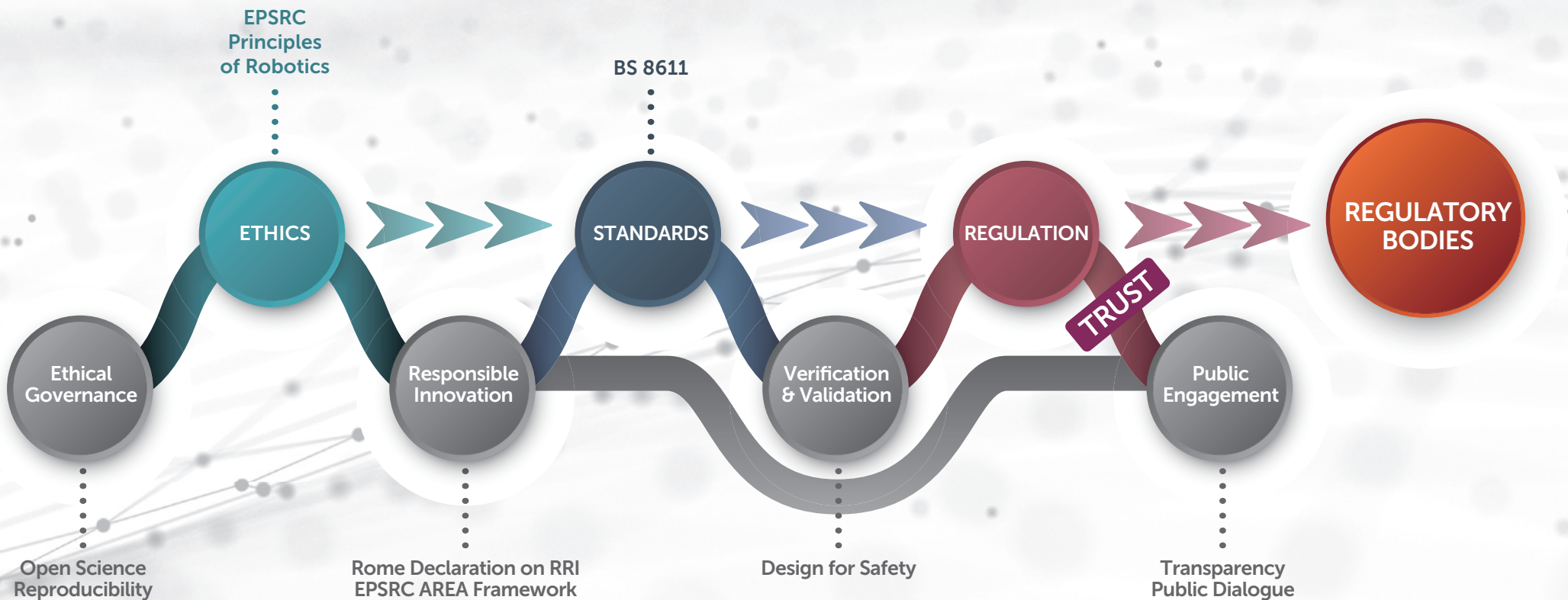
On the international front, the Institute of Electrical and Electronic Engineers (IEEE) has recently launched a Global Initiative on Ethics of Autonomous and Intelligent Systems to establish societal and policy guidelines for such systems to remain human-centric, serving humanity's values and ethical principles. According to the IEEE concept paper, these systems must behave in ways beneficial to people beyond reaching functional goals and addressing technical problems. This will allow for an elevated level of trust between people and technology that is needed for its fruitful, pervasive use in our daily lives.

## **Why Does This Emerging Trend Matter to the APO?**

APO member countries will have no choice but to consider the legal perspectives on AI and other new technologies as they develop. We should delve into questions such as the legal implications for AI and human society and impacts on the legal systems of countries in Asia and the Pacific. Are international laws required to regulate the actions of AI/S and data-driven technologies? Considering these may help us shape our collective future.



# AI Ethics Roadmap and Regulatory Framework



Source: Hamlyn.doc.ic.ac.uk. (2018). [online] Available at: <http://hamlyn.doc.ic.ac.uk/uk-ras/sites/default/files/2016%20April%2028%20Alan%20Winfield%20Robot%20Ethics.png> [Accessed 13 Jun. 2018]

# Prêteurship Economy



Digital-sharing platforms will revolutionize the conventional market economy on a scale now unimaginable. In many ways, it could upend the current nature of our exchange-based market system built on the notion of ownership transfers of goods and services from suppliers to buyers. Attachment to goods and services through economic/legal ownership will become

obsolete in the new market economy. The utility of goods and services can now be enjoyed without the exclusive privilege of ownership, thanks to the new business platform made possible by digital technology, which bypasses ownership transfers and will soon shift to the concept of prêteurship ("lendership") instead, where most values derived from resources and economic output will be consumed by

decentralized economic agents without acquiring any resource proprietorship.

The exponential growth of the mutual-sharing economy indicates that prêteurship will potentially shape the future of the market economy. The enjoyment of resources when their values are exchanged through democratized and decentralized digital-sharing platforms

Digital-sharing platforms will revolutionize the conventional market economy on a scale now unimaginable. In many ways, it could upend the current nature of our exchange-based market system built on the notion of ownership transfers of goods and services from suppliers to buyers. Attachment to goods and services through economic/legal ownership will become obsolete in the new market economy. The utility of goods and services can now be enjoyed without the exclusive privilege of ownership, thanks to the new business platform made possible by digital technology, which bypasses ownership transfers and will soon shift to the concept of prêteurship ("lendership") instead, where most values derived from resources and economic output will be consumed by decentralized economic agents without acquiring any resource proprietorship.

The exponential growth of the mutual-sharing economy indicates that prêteurship will potentially shape the future of the market economy. The enjoyment

of resources when their values are exchanged through democratized and decentralized digital-sharing platforms will alter the way those resources are priced. Market prices will tend to be lower since asymmetric information hindering the efficient allocation of resources can be circumvented through the full transparency of such platforms. Those platforms create more efficient allocation in the economy, overcoming problems such as idle resources and even income inequality, facilitated by the free flow of information held equally by market participants without anyone holding privilege to public information, a feature inherent in the sharing platform, which then allows greater access for abundant/unutilized resources to be deployed in the market. Another efficiency gain would occur if economic agents assigned greater value of renting over ownership via closer alignment of needs with the resources they wish to acquire.





## Why Does This Emerging Trend Matter to the APO?

With proper regulation and institutional settings such as the provision of infrastructure, the prêtreurship economic model would contribute to resolving efficiency problems such as unemployment and idle resources in the economy through the full democratization of market access. In

the end, this could address the decreasing labor productivity faced by economies at present. Cyclical unemployment, which is typical of agriculture-based economies, could be overcome via labor-sharing digital platforms informing the idleness of labor platforms reporting on idle manpower at any time. Motivated by the urge to optimize the use of resources, more decentralized market transactions

can be achieved, therefore permitting more economic agents to participate in the market to generate value. This could provide a sustainable remedy to the problem of economic and income inequality in member countries.

# Shifting from ownership to usage

Conversion toward rental based economy will lead into a form of market where exchanging usage of resources dominates market transaction.



# Shatternet

From the day it was invented until recently, the Internet has been the most democratic space in the world where practically zero regulation is the norm. This is a borderless public arena and unregulated virtual space where the flow of information can be ensured by setting it free while adhering to the preferences of all parties involved. This is an environment where a unified source of information from diverse resources can be relied upon. This particular property of the Internet has disrupted the mode of living of modern humans and provided societal benefits in the form of increasing efficiency.

In an effort to address the potential social externalities of the Internet, several nations and economic blocs have made efforts to limit the right to access the Internet through setting restrictions based on geographical and national boundaries to “protect” users. In this case, their citizens may block the potential of the Internet to serve as a unified platform for exchanging information. A well-meaning

policy direction to suppress the potential harm of the Internet may have unintended consequences of also repressing its positive externalities, in a case of throwing the baby out with the bath water. Unchecked regulation of the Internet could be diverted to benefit certain favored groups in a society while blocking freedom of access to larger but less favored groups in the same society. Relying on international arrangements for regulating the Internet may be less desirable due to the differing needs of the regulators to protect their citizens. If the waves of pressure continue, they may trigger the creation of another free, democratized virtual space or push dissidents into the dark web, exposing society to more potential harm. Society would lose a unifying virtual space for gathering information and exercising the freedom to information. Instead, we would have a shattered, tightly regulated, and oppressive virtual space.

## Why Does This Emerging Trend Matter to the APO?

The Internet has served as the backbone for the free exchange and generation of ideas. The rise of the Shatternet will raise the prospect that we risk losing this free market of ideas for innovative solutions to problems faced by society. The digital revolution has proven beneficial to productivity, but efficiency improvement cannot be sustained with a shattered, overregulated, oppressive Internet that could have potentially detrimental impacts on standards of living in member countries.

## Which countries regulate internet content?

According to RWB's definition, ~60 countries experienced some sort of web censorship in 2009, up from 30 in 2008.



Source: La Libertad De Prensa En El Mundo (2009), Reporters Without Border

# References (In order of appearance)

- Harvard Business Review. (2018). Agile at Scale. [online] Available at: <https://hbr.org/2018/05/agile-at-scale> [Accessed 13 Jun. 2018]
- Forbes.com. (2018). [online] Available at: <https://www.forbes.com/sites/stevedenning/2018/05/07/hbr-embraces-agile-at-scale-rethinking-how-we-live-and-work/> [Accessed 13 Jun. 2018].
- Harvard Business Review. (2018). The New Rules of Talent Management. [online] Available at: <https://hbr.org/2018/03/the-new-rules-of-talent-management#one-banks-agile-team-experiment> [Accessed 13 Jun. 2018].
- McKinsey & Company. (2018). Competing through organizational agility. [online] Available at: <https://www.mckinsey.com/business-functions/organization/our-insights/competing-through-organizational-agility> [Accessed 21 Jun. 2018].
- Slideshare.net. (2018). Winning competition through organizational agility. [online] Available at: <https://www.slideshare.net/McKinseyCompany/winning-competition-through-organizational-agility> [Accessed 13 Jun. 2018].
- The Silver Economy, International Organization for Standardization. See, <https://www.iso.org/news/Ref2168.htm> [accessed 4 June 2018]
- BBC NEWS, 2015, Voting age in Japan to be lowered from 20 to 18, 17 June. See, <https://www.bbc.com/news/av/world-asia-33160454/voting-age-in-japan-to-be-lowered-from-20-to-18> [accessed 4 June 2018]
- Of the old people, by the old people and for the old people, Gerontocracy, See, <http://100.daum.net/encyclopedia/view/54XX45900024> [accessed 4 June 2018]
- Organization for Economic Cooperation and Development (OECD) Society at a Glance 2016, OECD social indicators. See, <http://www.oecd.org/about/publishing/corrigenda.htm> [accessed 4 June 2018]
- United Nations (UN), World Population Prospects 2017 revision. See, [https://esa.un.org/unpd/wpp/publications/Files/WPP2017\\_KeyFindings.pdf](https://esa.un.org/unpd/wpp/publications/Files/WPP2017_KeyFindings.pdf) [accessed 4 June 2018]
- Ageinternational.org.uk. (2018). Annual report | Age International. [online] Available at: <https://www.ageinternational.org.uk/about-age-international/Annual-report/> [Accessed 21 Jun. 2018].



- Umeda, M. (2018). The Politics of Aging: Consistent and Growing Age Gap regarding Welfare Issue Salience in Japan over the Last Forty Years. Brookings Working Paper.
- Arizona Legislature takes first step toward legalizing delivery robots y Howard Fischer Capitol Media Services Feb 8, 2018 [http://tucson.com/news/local/arizona-legislature-takes-first-step-toward-legalizing-delivery-robots/article\\_f66d0f94-dc38-5e21-9e1c-2b17667bf387.html](http://tucson.com/news/local/arizona-legislature-takes-first-step-toward-legalizing-delivery-robots/article_f66d0f94-dc38-5e21-9e1c-2b17667bf387.html)
- Reuters <https://www.reuters.com/article/us-europe-robots-lawmaking/european-parliament-calls-for-robot-law-rejects-robot-tax-idUSKBN15V2KM>
- Federal Aviation Administration [https://www.faa.gov/uas/getting\\_started/](https://www.faa.gov/uas/getting_started/)
- The IEEE Global Initiative on Ethics of Autonomous and Intelligent Systems. Ethically Aligned Design: A Vision for Prioritizing Human Well-being with Autonomous and Intelligent Systems, Version 2. IEEE, 2017. [http://standards.ieee.org/develop/indconn/ec/autonomous\\_systems.html](http://standards.ieee.org/develop/indconn/ec/autonomous_systems.html).
- Hamlyn.doc.ic.ac.uk. (2018). [online] Available at: <http://hamlyn.doc.ic.ac.uk/uk-ras/sites/default/files/2016%20April%2028%20Alan%20Winfield%20Robot%20Ethics.png> [Accessed 13 Jun. 2018].
- La Libertad De Prensa En El Mundo (2009), Reporters Without Border



# The Futures Team



Ta-Te Yang  
Mayu Chiba  
Huong Thu Ngo  
Dr. Jose Elvinia  
Towfiqul Islam  
Arsyoni Buana  
An Funakoshi  
Joshua Lau  
Shoko Ikezaki  
Jisoo Yun

(Left to right order)

---

Design Concept: Etsuko Okabe



# SUSTAINABLE PRODUCTIVITY SUMMIT



10th July 2018 TOKYO, JAPAN

*Block Your Date for LIVE Broadcast!* 

S H A P I N G   T H E   I M P O S S I B L E



**Andrew W.  
Brentano**

Tiny Farms

*Future Food*



**Dr. Niklas  
Arvidsson**

KTH Royal Institute of  
Technology, Sweden

*Future  
Cashless  
Society*



**William D.  
Eggers**

Deloitte Center  
for Government Insights

*Government  
2025*



**Ryan  
Janzen**

TransPod Inc

*Future  
Transportation*



**Takeshi  
Arakawa**

Panasonic

*Smart Towns  
and  
Smart Homes*



# ASIAN PRODUCTIVITY ORGANIZATION

