

TIME OF CHANGES: DIGITALIZATION FROM ECONOMIC AND CULTURAL PERSPECTIVES

Editors:

György Iván-Neszmélyi

Gabriella Kovács



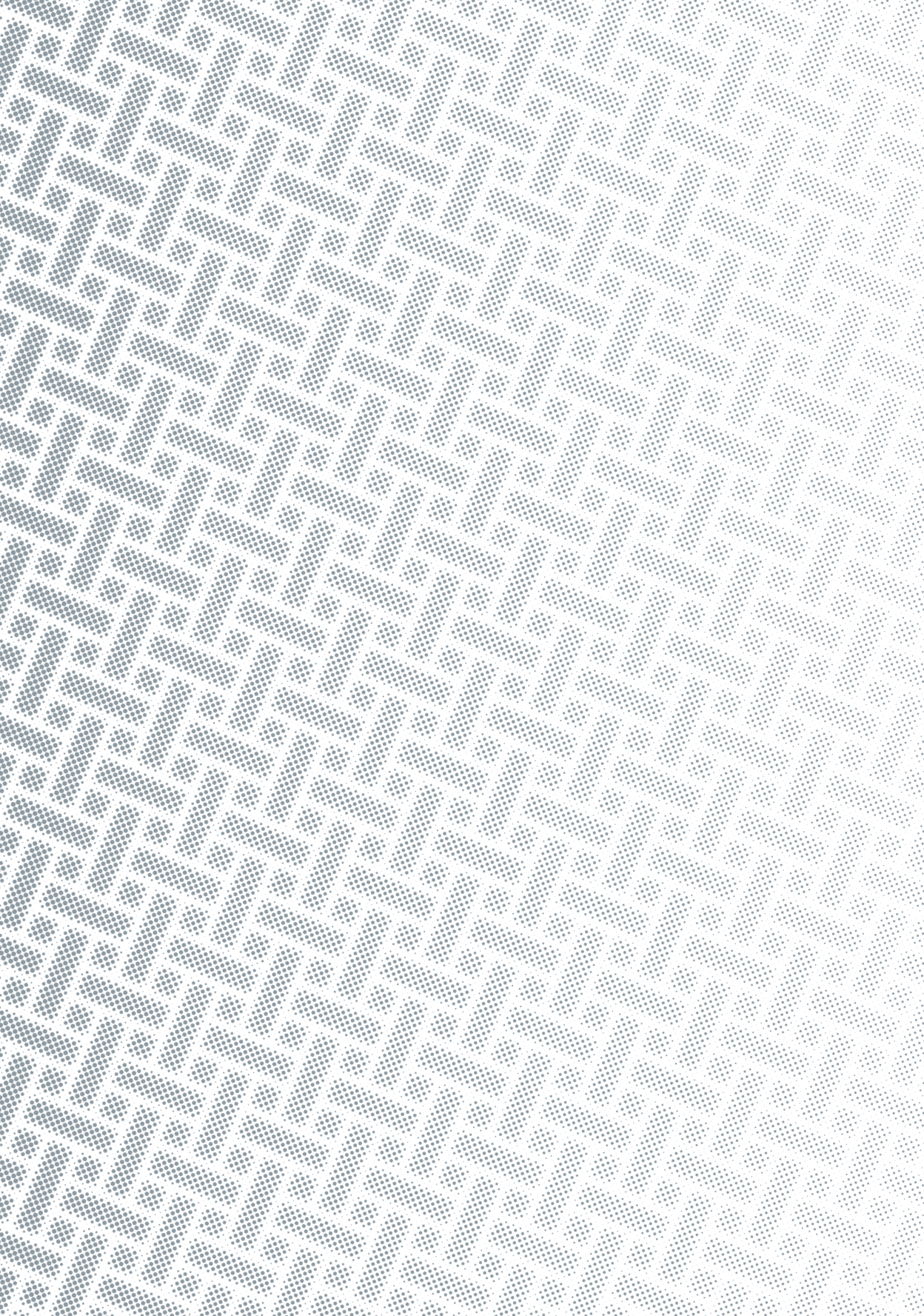
BUDAPEST BUSINESS SCHOOL
UNIVERSITY OF APPLIED SCIENCES
2021

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Oriental Business
and Innovation Center
Budapest Business School



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ISBN: 978-615-6342-17-1

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Cover design and graphic: BEZ-KER Bt.

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Publisher: Budapest Business School, University of Applied Sciences
Oriental Business and Innovation Center Book Series

Supported by the Magyar Nemzeti Bank

Printed in Hungary

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Foreword

The global pandemic of Covid-19 in 2020-21 spectacularly demonstrated the importance of digitalization, which was the central idea of the fourth OBIC Conference—which took place online in May 2021 after a one-year postponement. In spite of the delay, the main message of the conference was still timely as it can be drawn from its title: *“Megatrends in Asia: Digitalization—Security and Foreign Policy Implications”*.

The present book—which is the eleventh volume of the OBIC Book Series—is a selection of studies of researchers, including PhD students, who presented their most up-to-date results of their researches at the conference. As it can be seen, the issue of digitalization had significant impacts on the international relations of the world, and security and foreign policy implications have come into the forefront in Asia since the emergence of the pandemic. The range of new challenges is really wide: hectic and fluctuating energy prices, the disruption of global supply chains, the critical stage of tourism, and several other commercial sectors—all these symbolize that we are at the threshold of a new age in which definitely the need for security and digitalization will play leading roles.

This edited volume contains eight chapters that cover a variety of topics from economic development, foreign policy, and culture, but with a special focus on digitalization. Among others, the esteemed reader can learn about the application of digital tools in foreign policy in Thailand, the rise and spread of the digital yuan as well as the Japanese linguistic solutions in the new age. We believe that the results and conclusions of the studies provide the reader with new ideas that could be starting points for further discussions and research.

Finally, we wish to express our gratitude for the support received from the Budapest Business School, University of Applied Sciences (BBS) and the Magyar Nemzeti Bank (Central Bank of Hungary, MNB) whose continued trust, support, and guidance enabled us to organize the mentioned conference and publish the present book of studies.

Editors of the book:

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The Economic Power Shift in the 21st Century: The Changing Dynamics of the Eurasian Supercontinent

Boglárka Anna Éliás, Levente Horváth, Péter Klemensits, Meszár Tárík,
Szabolcs Veres, and Alexandra Zoltai

1. Introduction

In the 20th century, the center of the world economy was still concentrated in the developed Western regions, but by today this situation has changed. Beside slow economic growth, the dominance of developed countries declined, while developing regions and emerging centers of power gained increasing influence. It can be said that economic power is shifting more and more to the East, with China, India, Turkey, Indonesia, Vietnam, and the surrounding countries developing at a much faster rate than Western states, claiming a larger and larger share of the performance of the world economy. The fastest growing region is projected to be Asia (4.7 percent) over the next four decades, followed by sub-Saharan Africa (4.4 percent), and by the Middle East and North Africa (3.9 percent). Growth rates in Latin America (3.3 percent) and Eastern Europe (3.2 percent) are expected to coincide with growth in the world economy. The slowest growth is expected in the developed regions since the growth rate of the economy will slow down as the level of development of the countries rises. The Economist Intelligence Unit (2015, p. 4) forecasts that Asia will play an increasingly important role in the world economy, with a weight expected to exceed 50 percent by 2050, while traditional power centers, such as the European and American continents, will lose more and more importance.

Undoubtedly, we can speak of the emergence of a Eurasian era in which economic, political, and military power are increasingly shifting to the East, while the Atlantic region is losing its central weight. As a prominent geopolitical expert, Parag Khanna (2019, p. 36) said, the world is becoming Asian. At the same time, a new multi-centered world order is emerging, where, through connectivity and complexity, the unity of Europe and Asia is taking on a new meaning, and the 21st century could be a century of Eurasia. Peter Frangopan (2019, p. 266) examines the Chinese Belt and Road Initiative (BRI) and is already writing about the emergence of a Eurasian supercontinent. According to Bruno Maçães, we are witnessing the creation of a new world map in which the rise of Asian countries in parallel with the weakening of the American global power will shift the balance of power to the East, creating a new geographical

entity from Lisbon to Jakarta—Eurasia. Among the power centers of the supercontinent, China plays the most important role as, thanks to the BRI program, the country is working on creating a new global economic system with the help of land and sea transport corridors, with China in its center (Mações, 2018, p. 235). Kent E. Calder (2019, pp. 71–85) claims that after the Cold War, the center of economic growth shifted to East Asia, and the transformation of geopolitical relations and the reunification of Europe and Asia herald the birth of a new supercontinent based on the Euro–Chinese partnership. In addition, however, the logistics and IT revolution, the political and economic transformation of Europe, Russia, and Southeast Asia, and the geoeconomic aspirations of India and Iran also play a major role in the story.

The study aims to shed light on the phenomenon of economic power shifting to the East, by reviewing the economic development of Asia’s key regions and states¹, approaching it from the aspect of Eurasian integration and demonstrating that the efforts to unite the supercontinent also significantly underpin Asia’s dominance in the 21st-century world economy.

2. Global Powers

2.1. People’s Republic of China

For nearly 18 centuries until the 1820s, China produced 25–33 percent of the world’s GDP. In the period that followed, the balance of power completely changed for China, and it only began to find its way back to its former self in the last third of the 20th century. This period, in turn, already created a completely different economic environment for China with changed international relations. One of the biggest advantages of the Chinese socio-economic system is that it builds heavily on the country’s traditions going back to thousands of years, while at the same time it is able to innovate and also to be quite flexible (Blahó – Kutasi, 2010, p. 159). Thanks to this flexibility, today’s Chinese economic success is built on “socialism with Chinese characteristics”.

The economy of the People’s Republic of China has now become the world’s second largest economy after the United States (US), thanks to its reforms in the more than thirty years since the announcement of its policy of reform and opening in 1978.

¹ Due to space constraints, the study of Eurasian states cannot be exhaustive, so it does not deal in more detail with, for example, the Arab countries, Iran, Pakistan, or the Philippines.

The aim of the reform and opening was to gradually dismantle the over-centralized, planned economic system of the Maoist period. At the same time, the country began to open to foreign capital, which took place only gradually through the special economic zones, or SEZs. SEZs could form independent economic rules different from the rest of the country. Their main goal was to create a suitable economic environment for capital inflows from abroad, i.e. they served as a liberal economic environment. Thus, by the turn of the millennium, China became the fastest growing economy in the world with an average growth rate of 9.3 percent (Mészáros, 2005, p. 4). It did not decrease significantly even after that; until 2011 the GDP growth exceeded 9 percent per year on average. Since 2013 sustainable and balanced economic growth has been the primary goal of the Chinese Communist Party, envisaging a more subdued pace of economic development, with a greater emphasis on transforming the former export-oriented economic structure and increasing domestic demand (Embassy of Hungary in Beijing, 2016).

In the autumn of 2013, China furnished another proof of its intensifying global role when it launched the Belt and Road Initiative project, with an aim as ambitious as to revive the traditions of the old Silk Road. Beijing committed itself to build and upgrade transport networks following the traces of the one-time caravan routes connecting Europe and Asia, and, naturally, to boost the regions concerned economically. Basically, we witness a long-term international development scheme managed (funded) by China, which also satisfies the geostrategic goals of Beijing by linking the remote regions with major trade routes. The BRI includes two mega projects: one of them is the Silk Road Economic Belt, and the other is the 21st Century Maritime Silk Road. The former links China with Central Asia, the Middle East, and Europe on land, while the latter unites the major maritime trade routes of Africa, Europe, and Oceania as well as South and Southeast Asia. The two schemes are inseparable, and the aim is their parallel implementation. Although the significance of high-speed railways and motorways is unquestionable, maritime transport still plays a primary role regarding the volumes of transport. Therefore, in a global sense, the Maritime Silk Road has an even greater significance than the "economic belt" encompassing continents (Klemensits, 2018, pp. 109-112). Following GDP growth of 7.4 percent in 2014 and 6.9 percent in 2015, the Chinese leadership has already set a growth rate of 6-7 percent for the coming years, which entered the public awareness as the so-called "new normal" with its main purpose being to emphasize the qualitative indicators of economic growth (decreasing inflation, tightening environmental standards, slowing growth in raw material and energy demand etc.) (Embassy of Hungary in Beijing, 2016). And in 2015, the "Made in China 2025" program was announced, modelled on the German "Industry 4.0", which aims to strengthen the global competitiveness of

Chinese companies and gradually reduce state involvement by envisaging greater use of innovative technologies. At the same time, China is working on building a knowledge-based society based on a creative workforce (Ibid.).

Current Chinese president, Xi Jinping recently introduced a new concept of the Chinese economy that is expected to determine Chinese economic growth in the future, and that is the "dual circulation economic system". The internal circle would cover internal production, consumption, and innovation, and the external would retain China's role in the world economy, as China does not want to lock itself in anyway (Tang, 2020); it is enough to mention the fact that in 2020 China became the European Union's (EU) largest trading partner (Zoltai, 2021). China is one of the countries that has been able to deal with the coronavirus epidemic so successfully that it could achieve economic growth in 2020 as well (+2.3 percent), while the world average was -3.5 percent. Indeed, the Chinese economy performed quite well, and in 2020 continued to become the world's second largest economy with a GDP of US\$14,723 billion (World Bank, 2021a).

It is clear then that since the 1960s, there has been an extremely high and fairly rapid economic growth in the East Asian countries. This has by now resulted in three of the world's 10 largest economies being located in East Asia, two of which are on the podium, China in second place and Japan in the third.

2.2. Russia

At the end of the Cold War, the bipolar world order ceased, and the United States became the hegemonic power of the global system. In addition to the US, there are other regional powers. These great powers include China, India, Brazil and, of course, Russia, the successor to the Soviet Union, the heir to the nuclear arsenal and the largest country in the world.

By the 21st century, global power relations have changed, and in the case of Eurasia, an economic and political force field has emerged that cannot be ignored. In the emerging new multipolar global order, one of the main counterparts of the United States is Russia, Europe's fifth and the world's sixth largest economy in terms of GDP at purchasing power parity.

After the appointment of Vladimir Putin as prime minister in 1999 (President of Russia, 1999) and then his election as president, a new era began in Russia. The

first step of the new president was to stabilize the economic situation created in the former Yeltsin era. This process can be estimated to have taken place between 2000 and 2008.

Thanks to the rising oil prices in the 2000s, the Russian budget reached a balance. In addition, public sector salaries and the wages of working people had been significantly increased. After that, Russia also took up the fight against emigration successfully, considerably weakening the country's further economic growth (Vaszari, 2018, p. 79). Tax revenues from the driving economic sectors (gas and oil exports, arms exports) have stabilized the economy. The population started to have a growing income surplus. In the course of a few years, this has reshaped the image of Russian cities and the living standards of the population. It was these conditions and circumstances that facilitated Russia's global economic progress and laid down the groundwork for the country's strengthening.

The Russian economy is a resource-driven, centralized structure dominated by the extraction of minerals and energy (30 percent of the world's natural resources are located in Russia). However, this model is very problematic, as the proportion of added value in resource-driven economies is low, and export market prices create a vulnerable situation. The extraction of energy and minerals is clearly a feature of resource-driven economies.

Russia supports its geopolitical aspirations with economic steps as well. The most important area of international economic involvement is energy exports. However, thanks to the foreign exchange reserves accumulated from this income, Russia is an investor even in the neighboring countries. The Eurasian zone can be considered the country's number one sphere of interest. Russia's main efforts include developing the EU–Russia, the CIS (Commonwealth of Independent States)–Russian and the Sino–Russian relations. Unfortunately, the deterioration of the EU–Russia ties has greatly delayed the establishment of further European relations, leaving Russia with only the latter two alternatives.

The Eurasian Economic Union was established in 2015 on the basis of the Customs Union created in 2010 (members: Russia, Kazakhstan, and Belarus). Russia, Belarus, Kazakhstan, Kyrgyzstan, and Armenia joined the newly formed alliance (Ministry of Foreign Affairs of the Republic of Belarus, 2020). The Eurasian Union was created to ensure the free movement of capital and services. However, the Russian superpower aspirations can be clearly discovered therein. The Union is also a new center of economic power, but potentially it can even be a military one and also an instrument of

geopolitical, superpower aspirations. The Central Asian region is a priority for Russia for the future.

The relationship between Russia and China can be considered balanced, which has become especially true recently. The new economic driving force of the multipolar world order could be China, which Russia seeks to cooperate with. The Russian Energy Strategy formulated in 2009 (Government of the Russian Federation, 2009) has already prescribed a clear shift of emphasis from western markets to the east (the Chinese market is complementing the European). The Russian–Chinese cooperation is positive for both parties. In economic terms, China can increase its economic potential by using Russian natural gas. The “Power of Siberia” gas pipeline between Russia and China, completed in 2019, made it clear that the direction of Russian–Chinese relations was moving in a positive way (TASS, 2019).

Russia’s future strategies have two goals: on the one hand, increasing the well-being of the population and economic prosperity, and on the other hand, the possibility of geopolitical aspirations in Eurasia. In terms of geopolitical goals, the most important thing for Russia in the future is to maintain its current position in the world. Strengthening the Eurasian Economic Union, and closer economic and monetary relations between the countries of the Union are short-term goals for Russia.

Although we cannot classify Russia as a major emerging country on the basis of economic data alone, it is still an important global player due to its political and military power, and its cooperation with China is not negligible in economic aspects either, so its investigation is certainly justified.

2.3. Japan

Japan’s economic development in the 20th century aroused the admiration of the world, as it was achieved despite Japan’s defeat in World War II. The favorable evolution of the international environment, and the fact that Japan was able to turn the globalization of the world economy and the growing free trade to its own benefit have also supported this success (Blahó – Kutasi, 2010, p. 139). By the end of the 20th century, Japan became Asia’s largest regional market and issuer of capital, to which the high level of education of workers and the disciplined social morale have greatly contributed, which allowed the systems that were created to operate easily, quickly and accurately, increasing the country’s competitiveness incredibly. As a result of the cautious liberalization that took place in Japan and the developmental state model,

by the 1970s, Japan became the center of the East Asian uprising that was thought to be unique at the time (Ito, 1996, p. 205). The *keiretsu* system, the successor to the *zaibatsu* system, which is the financial system of groups of companies built around the banks that finance the group of companies, plays a very important role in the economic life of Japan and its development (Yu, 2020, p. 186).

From the late 1980s onwards, growth began to slow and structural problems (economic policy failures: interest rate policy and subsidy policy) became increasingly apparent, all of which led to the 1998 financial crisis in Southeast Asia (Székely-Doby, 2017, p. 631). Between 1989 and 2002, there was a financial and economic crisis in Japan, and this time interval, that is the 1990s, is also called the "lost decade" of Japan in the literature of economic history (Blahó – Kutasi, 2010, p. 144). The Japanese economy was not able to fully get rid of the bad loans that caused the crisis until 2010, but the 2008 global crisis also played a major role in this, as the world market had a negative effect on Japan's growth opportunities (Ibid., p. 152). From 1968 to 2010, Japan was the world's second largest economy after the United States, but under the effect of the crisis, it was unable to maintain this position, and another East Asian country, China, took the second place. However, Japan still holds the third place behind China and accounts for 5.8 percent of the world's GDP² (World Bank, 2021b). However, Covid-19 also had a negative impact on the Japanese economy, with the International Monetary Fund (IMF) estimating a 5.1 percent decline in Japanese economic data in 2020, which is worse than the world average (-3.5 percent) (IMF, 2021).

In the case of Japan, like Russia, we cannot speak of an economically emerging country in terms of numbers, but it must not be forgotten that Japan is a developed, mature, large economy that continues to be a major player among the global powers and therefore needs to be the subject of the analysis.

2.4. India

India is often referred to as the other rising giant in Asia after China, not only because its human and natural resources make it capable of a rapid economic development similar to that of China, but its economic policies since the 1990s also provide a strong background for this. In the decades after obtaining independence (1947), a state-led, import-substituting, planned economy laying emphasis on heavy industry was developed in India, typical of communist-socialist states. They started to reduce

² 2020 data, Japanese GDP: US\$4,850 billion.

high import duties and quotas in the second half of the 1970s, causing the economy to boost in the 1980s. However, in 1990-1991 there was a liquidity crisis triggered by the collapse of the Soviet Union with which India had close economic ties. Prime Minister Narasimha Rao, who took office in June 1991, turned to the IMF for a loan and, complying with the conditions, he launched a full economic liberalization program (Simon, 2000). Overcoming the crisis, the Indian economy quickly recovered and picked up an even faster pace, remaining on the list of the ten fastest growing economies since 1980, showing annual GDP growth of at least 3 percent but above 8 percent in several years (World Bank, 2021c). The service sector has become an increasingly important part and a driving force in the economy since the 2000s (Ghate, 2012).

As early as at the beginning of the 2000s, predictions were made that forecast India to become a superpower (Thirlwell, 2004). India has been shaping its foreign policy in line with this new position ever since. The country conveys the image of a benevolent middle-income state rather than a country that may rise to the level of the world's superpowers. This is precisely the purpose of its public diplomacy: to dispel fears about the country's economic rise and thus to maintain, without interruption, the broad system of economic, strategic, and cultural external relations that it needs for its further development (Mazumdar, 2020). In addition to bilateral relations, India also places great emphasis on multilateral engagements. In 2021, it will be a non-permanent member of the United Nations (UN) Security Council and will also play an active role in various UN organizations. In addition, in 2006, along with Brazil, Russia, and China, it became a founding member of the BRIC (since 2010 BRICS, with the addition of South Africa), an association of emerging economies.

Analysts of the Indian economy usually point out the factors that could hinder India's development in the coming decades, or that even India is lagging behind the emerging economies of the BRICS. The lag can be seen primarily in the examination of social relations. Although India, reducing the number of poor and starving people in a constant pace (Alkire – Seth, 2015), has made great strides in recent decades—halving the rate of deep poverty between 1990 and 2010—but still lags far behind Russia, China, or even Brazil. The latest World Bank data on India are from 2011 and show that 22.5 percent of the population lives on less than US\$1.90, compared to 0.1 percent in Russia, and 7.9 percent in China in the same year (but fell to 0.5 percent by 2016), and 4.7 percent in Brazil (World Bank, 2021d). In addition to and in connection with poverty, there is a lag in infrastructure compared to other emerging economies, and the infrastructure development is taking place at a relatively slow pace (Centre for Economics and Business Research, 2020).

Several analysts believe that India will be able to adjust its weaknesses and that its pace of development is not expected to decline further in the next thirty years. In its 2017 report for 2050, PwC predicts an average annual growth rate of 4.9 percent for the Indian economy between 2016 and 2050, making India the world's second largest economy after China by 2050 in purchasing power parity terms, ahead of the United States (Hawksworth – Clarry – Audino, 2017). The latest forecast from the Centre for Economics and Business Research (2020) already anticipates the possible effects of the crisis caused by the coronavirus epidemic. However, according to their calculations, the sharp decline in India in 2020 will be followed by a rapid "rebound" and they forecast 9.0 percent by 2021 and 7.0 percent by 2022 for the GDP growth of India, followed by a slight moderation, so that by 2035 the average annual growth will be 5.8 percent.

3. Regional Powers

3.1. Turkey

The London-based Standard Chartered multinational banking and financial services firm predicts that Turkey will become the world's fifth largest economy by 2030 (Daily Sabah, 2019), while China ranks first in the same comparison. In an analysis by PwC, Hawksworth and Chan (2015) write that Turkey's economy will outperform Italy by 2030 and will be one of the seven largest emerging market economies.

Turkey is a young, dynamic, and growing economy offering huge opportunities for foreign investments, but this was not always the case. After World War II, state-owned companies were not cost-effective, and this was the case until the last third of the 20th century. In the '80s, however, changes took place and the Turkish government, led by Süleyman Demirel, paved the way for export-led growth. The far-reaching reform program was designed by Deputy Prime Minister Turgut Özal, and as a result of his strategy, the economy was liberalized. Accordingly, direct foreign investments were encouraged, the tax system reformed, the private sector expanded, and, from that point on, Turkey showed a non-negligible total factor productivity (TFP) growth.

This was followed by a decline, and the 2001 crisis was perhaps even more severe than the one in the 1990s (Macovei, 2009, pp. 4-5). But after this period recovery was relatively quick, followed by a rebound in foreign and domestic investments, boosting productivity and real convergence. Since 2001, Turkey has implemented significant and impressive structural reforms that have been recognized by the international

community. The catching-up process of the Turkish economy accelerated significantly between 2002 and 2007, when real GDP grew by an average of 6.8 percent per year (Macovei, 2009, p. 9).

In the last decade, in 2016, the Turkish economy experienced another crisis, preceded by a downturn in tourism due to the terrorist attacks and the coup attempt that began on July 15, 2016, which, however, it successfully survived, and the country gradually regained its strength. The country's proximity to the Balkans and the rest of Europe as well as to various emerging markets in the Middle East and Central Asia implies significant business potential, making it a major investment destination and export trading platform today. Turkey is not only interested in the huge and growing domestic market but also, as mentioned above, reaches countries and regions such as Western Europe, Russia, the Middle East, North Africa, or even Central Asia. It was chosen as a regional base by companies such as Coca-Cola, General Electric, Microsoft, Procter & Gamble, or Philip Morris (Argüden, 2007, p. 1). In addition, Turkey is now a manufacturing hub in various industries, especially in the automotive industry, where the current Turkish government plans to become a leading automotive nation in Europe and move forward to belong to the five largest ones globally in the next ten years (Hürriyet Daily News, 2021).

Nor can we forget that by now Turkey's role in energy security has become unnegligible. Due to the significant oil and gas reserves in the Caspian Basin, the Central Asian countries are receiving increased global attention. A number of researchers believe that this area has untapped reserves that could even rival the Arabian Gulf. On this basis, Turkey, although not a major energy producer, can still play a significant role in the rise of Eurasia for its geographical location at the crossroads of the east-west and north-south energy corridors as a transit country allows it to be a key energy hub for the supercontinent as a whole. By way of an example, the Southern Gas Corridor may be mentioned, which is extremely important for the whole of Europe, often referred to as the Silk Road of Europe, and the Trans-Anatolian Natural Gas Pipeline (TANAP) project realized there, which is the backbone of the aforementioned energy transport route. The point is that natural gas is transported from Azerbaijan to Europe via Turkey, and the EU can thereby significantly reduce its dependence on Russian gas (Çeviköz, 2016, p. 28).

3.2. The Republic of Korea

South Korea (the Republic of Korea) has achieved remarkable success in combining rapid economic growth with significant poverty reduction. The Japanese developmental state model has been followed in many respects by South Korea's development trajectory and institutional solutions. In the 1950s, as a result of the Japanese colonial rule and the Korean War, South Korea was one of the poorest countries in the world. The economic recovery began in the 1960s, with the five-year plan in 1962 beginning to industrialize the country and laying the foundations for economic growth (Heo et al., 2008, p. 2). The second five-year plan of 1967 was already based on export incentives and import substitution (Ibid., p. 5). Since the 1970s, the South Korean economy has produced spectacular and dynamic economic growth thanks to the export-driven industrial and service sectors. Its economic growth was 8-12 percent per year from the 1980s until the mid-1990s (Neszmélyi, 2020, p. 276). The state also played a major role in economic success, as did the *chaebols* which are similar to the Japanese *keiretsu* system.

By the mid-1990s, the South Korean economy began to show signs of problems, as evidenced by the fact that in June 1997, foreign loans accounted for 24 percent of gross domestic product (Heo et al., 2008, p. 16). However, even in the years between the regional crisis of 1998 and the global economic crisis of 2008, the country's economic performance grew by 4-6 percent per year. Recovery from the latter was relatively quick, but the economic growth has been only between 2 and 4 percent afterwards (Neszmélyi, 2020, p. 277). Since 2008, South Korea has concluded a number of free trade agreements (FTAs) with Asian, American, and European countries and other partners including the European Union. The EU-South Korea FTA (KOREU) entered into force on July 1, 2011. For the EU it was the first FTA with a partner country in Asia, and KOREU marked a new era in the EU-South Korea trade relations (Neszmélyi, 2020, p. 276). Since it came into force, import duties have been eliminated on nearly all products. South Korea is now one of the largest economies in the world, ranking ninth in the global rankings in 2020 and fourth in Asia in terms of nominal GDP (US\$1,540 billion) (Kim, 2020). Effective measures to curb the spread of the Covid-19 epidemic limited the estimated decline in GDP to just over 1 percent in 2020, the smallest decline among OECD countries. The economic recovery is driven by growth in consumption encouraged by large government transfers to households as well as an upswing in exports from South Korea, which was provided by semiconductors. In addition, significant digital and green investment plans have supported economic revival, which is projected to grow by around 3 percent per year in 2021 and 2022 (OECD, 2020).

3.3. ASEAN

The countries of Southeast Asia are also taking an active role in the shifting of economic power to the East. If we think of the region as a single entity, it is the fifth largest economy in the world, accounting for 3.4 percent of global GDP. In the region with a population of 655 million, the expansion of the middle class is spectacular: while in 2012 it consisted only of 190 million people, according to projections, this number could reach 350 million by 2022 (Kuusinen – Pierzynowski – Yuson, 2019, p. 4). Of course, Southeast Asia is a heterogeneous region, with mainly the Tiger Cub Economies³ (Indonesia, Malaysia, the Philippines, Thailand, and Vietnam) playing a key role. Development was also facilitated by the strategic location, as thanks to the Strait of Malacca, the states of Southeast Asia also took an active part in maritime trade, which provided the right starting point for development after obtaining independence. The establishment of the Association of Southeast Asian Nations (ASEAN) in 1967 was a major step forward, as maintaining regional peace, promoting economic growth and social development were among the organization's most important goals. ASEAN has also contributed to the creation of a framework for political, security, and economic cooperation in the Asia-Pacific region, with free trade agreements with major powers playing a key role (Mahbubani – Sng, 2017, pp. 74-75). The ASEAN Economic Community was established in 2015, creating a common market among the member states. Average GDP growth in the member states ranged from 3.8 to 7 percent between 1989 and 2009, which has strengthened further in recent years. According to the McKinsey 2018 report, the best performing economies in the world included 8 ASEAN member states (CNA, 2018). In 2019, the ASEAN Secretariat projected that by 2030, ASEAN could be the world's fourth largest economy (Gronewold, 2019). The progress of ASEAN integration also increases the combined economic power of its members, which in some respects contributes to the emergence of an economic bloc similar to the European Union. As a result, although some countries will play a greater role in the reorganization of global economic power, it is expected that the region as a whole will play an increasingly important role in the long run.

The role of Southeast Asia in the world economy is well illustrated by the fact that the region is a global hub of the processing industry. The sector accounts for 20 percent of ASEAN's GDP and, in addition to being one of the most important markets, it also has the third largest workforce in the world (Kuusinen – Pierzynowski – Yuson, 2019, p. 12). Besides investment, increased innovation is an important component of growth as well.

³ The name suggests that these countries followed the same export-oriented economic development as the Four Asian Tigers (Hong Kong, Singapore, South Korea, Taiwan).

However, the development of Southeast Asia is hampered by a backward infrastructural environment that requires significant investment. The Asian Development Bank predicts a minimum of US\$2.8 trillion in infrastructural investment in the region between 2016 and 2030, which already requires the involvement of external sources (Standard Chartered, 2019).

It is no coincidence that the countries of Southeast Asia have been keen to join China's Belt and Road program (for the region especially the new 21st Century Maritime Silk Road megaproject has a huge importance), which, in addition to investment, aims at the economic development of the countries concerned and at the simultaneous strengthening of connectivity across Asia (Zoltai – Klemensits, 2020, p. 7). Large-scale infrastructure development projects with the active participation of China can further strengthen the economic cooperation between Southeast Asia and the outermost regions, demonstrating that advancing Eurasian integration and the closer connections within the supercontinent will further improve Southeast Asia's economic position in international comparison. Although the shift of economic power to the East can be seen in the example of almost all ASEAN member states, Indonesia and Vietnam stand out.

3.3.1. Indonesia

With a population of 270 million, Indonesia is the largest economy in Southeast Asia. The country, as a member of the G20, was included in the upper middle-income countries according to the World Bank in 2019, but it can also be classified as a newly industrialized country. In terms of purchasing power parity, Indonesia currently has the seventh largest GDP in the world, but PwC reports that by 2050 it could already be ranked fourth (Hawthornthwaite – Chan, 2015). The biggest question, however, is what political, diplomatic, and military power will be associated with its economic power. The Economist Intelligence Unit's 2015 report also ranks Indonesia as fourth in the 2050 forecast of global economies. Indonesia's economic development accelerated after the fall of the Sukarno regime following the 1997 crisis, certainly achieving 4 to 6 percent per year, which proved unbroken until the outbreak of the Covid-19 epidemic, when a GDP growth of -2.1 percent was reached in 2020 (Kim – Koepke, 2021). The country has performed particularly well in the fight against poverty, halving the poverty rate to 9.78 percent between 1999 and 2020 (World Bank, 2021d).

3.3.2. Vietnam

According to PwC's 2017 forecast (Hawksworth – Clarry – Audino, 2017), Vietnam could be consistently the fastest growing large economy in the world by 2050, with an annual GDP growth of approximately 5.3 percent, while ranking 20th globally in terms of purchasing power parity (Hawksworth – Chan, 2015). At present, Vietnam's economy, which is a socialist-oriented market economy following the Chinese model, is the 23rd largest in the world in terms of purchasing power parity. The development of the country that joined ASEAN in 1995 has been remarkable for the past 30 years. Economic and political reforms launched in 1986 (Doi Moi) triggered rapid economic growth that turned one of the world's poorest nations into a lower middle-income country. Between 2002 and 2018, its GDP per capita increased 2.7-fold exceeding US\$2,700 in 2019, while more than 45 million people were lifted out of poverty. During both 2018 and 2019, the GDP grew by 7 percent, while thanks to the export-oriented processing industry and domestic consumption, the economy showed significant resilience as a result of which a positive growth of 2.9 percent was reached in 2020 during the coronavirus epidemic (Lee, 2021).

4. Conclusion

As it is seen above, the development of Asia's major economies has produced spectacular results in the recent past, and long-term forecasts are also optimistic about the future. The emergence of the new world order has also led to a significant transformation in geopolitical relations, an important basis of which is the stable economic background of the emerging countries. However, the shift of economic power to the East will not only lead to the rise of Asia but will also give the entire Eurasian supercontinent an increased role thanks to the integration efforts (Belt and Road Initiative, Eurasian Economic Union). A new multipolar world order is emerging, where the center of the world economy will be East Asia, and the rise of Eurasia can now take place under the leadership of the countries of the Far East, most of all China. Apparently, some states, such as South Korea, Japan, and India, in cooperation with the United States, want to limit China's ambitions along with Beijing's leadership, yet at the same time, as a consequence of connectivity and interdependence, they seek cooperation while also trying to improve their own positions in the emerging new Eurasia. An important lesson is that the West also needs to adapt to the changing balance of power, while it is worth paying attention to all the (economic) steps leading to the success of Asian states.

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The Effect of Digital Tools on Foreign Policy in Asia – through the Case Study of Thailand

Dávid Görömbölyi

1. Introduction

When in 2012, during the researcher's second diplomatic posting¹, he approached his Ambassador with the idea of creating an embassy Facebook page, the Ambassador objected very strongly, saying that it was a serious institution, not a "tabloid agency" (sic!), and that "childish social networks have no place at Embassies" (sic!).

In 2016, during the author's third diplomatic posting², his idea of creating an embassy Facebook page was welcomed by his Ambassador, insofar as saying "well, I don't like social media and I don't have any of it, but since many are doing it, and more and more Embassies are also appearing online, let's do it, let's not fall behind".

And in 2020, when during the researcher's fourth diplomatic posting³ he organized an interview in the leading daily paper of the host country, his Ambassador told him "Yes, OK, I'll appear in the print version, but please focus on how we will multiply the reach online, on Facebook and Instagram, while I put it out on my Twitter!".

This piece of diplomatic insight shows that a lot has changed in the world of diplomacy, just like a lot has obviously changed in the world—in line with the megatrend of digitalization.

2. The Megatrend of Digitalization in Foreign Affairs

There is a general understanding among scholars and practitioners (Nopakhun, 2021; Martin – Jagla, 2013; Beltran, 2021; Ittefaq, 2019) that the transformative effect of modern media and social networks on diplomacy is obvious, and very much similar to that on politics. This is actually not at all natural if one thinks about it, as political

1 At the Embassy of Hungary in Warsaw, 2012-2014.

2 At the Embassy of Hungary in Bangkok, 2015-2019.

3 At the Embassy of Hungary in Lima, 2019-2021.

communication always wanted this, it always wanted to “get the message out” to as many people as possible, while diplomacy in the past was much more reserved, much more “behind-the-scenes” and never actually focused on opening up to the public. Nevertheless, the opening happened (Ryniejska-Kietdanowicz, 2019). This is, of course, nothing new for the reader, as practically all areas of human activities have been transformed by the communication revolution.

The author believes that in their depths and scope these ongoing changes measure to those revolutionary changes that the Westphalian new order⁴ or the Vienna Congress⁵ brought about in the world of diplomacy, therefore, it is fair to say that they constitute nothing short of a complete paradigm shift of the area.

2.1. Pre-existing Consensus

Most researchers agree that

- 1) there is an obvious transformative effect, offering new tools, so the format of diplomacy has changed,
- 2) this effect brought diplomacy out of the „shadows”, where it used to quietly function through centuries,
- 3) this effect brought diplomacy closer to people, made it more accessible, understandable, and
- 4) the multiplication effect of web 2.0⁶ has certainly helped diplomats in well-known areas of public diplomacy, trade promotion, and consular protection etc.

2.2. Hypotheses and Scope

The hypotheses of the wider research, of which this study constitutes a part of:

- 1) Digitalization has changed not only the format but also the substance of diplomacy;
- 2) It has made diplomacy not only more accessible but more transparent;
- 3) It has raised the level of accountability in foreign affairs; and
- 4) Overall, the megatrend of digitalization has affected diplomacy in ways that is good for society.

⁴ The Peace of Westphalia of 1648.

⁵ The Congress of Vienna of 1814-1815.

⁶ Web 2.0, or widely referred to as 'Web two', is the second stage of development of the internet, characterized especially by the change from static web pages to dynamic or user-generated content, maximized interactivity, and the growth of social media.

To achieve a scientifically solid set of results and conclusions it is beneficial to examine multiple comparable/similar entities in the course of research, like the changes in diplomacies of sovereign nation states. However, to be able to generalize conclusions, these examples or case studies shall be geographically diverse to be able to keep results free from the effect of possible regional or cultural factors.

Starting the research, the author found himself in a rather favorable situation, as he has served as a diplomat on three continents, thus having on-field experience in the digital functioning of three distinct countries' foreign affairs. These being Thailand, Poland, and Peru, the research setup is ideal as all these diplomacies represent medium-sized countries, which have an important, established role in their region (Charoenvattananukul, 2019), and their functioning mirrors the approximate average of the three distinct geographical areas with a significant global coverage.

Thailand's foreign affairs constitute a traditional system, which has undergone significant changes of modernization in recent decades, following suit with the intensive development of the country itself. With the arrival of the digital revolution, following suit with the international community, its diplomacy has started utilizing online tools, and in the following chapters we shall see the changes it brought about.

2.3. Methodology

For this publication the research methodology has been three-fold. First, the author obviously got re-acquainted with the online presence of the Royal Thai Ministry of Foreign Affairs (MFA)—the structure that he also used during his posting in Thailand. Secondly, a flexible questionnaire was compiled that focused on different elements of the above hypotheses⁷. Up to the present moment, 17 people have filled it out—both Thai and non-Thai diplomats, professionals, and simple users of the Thai MFA's online surfaces, resulting in a representative group with a diverse knowledge of the issues at hand. And third, it was essential to conduct an in-depth interview with the people behind the web 2.0 presence of Thai foreign affairs—colleagues from the Thai MFA. Thankfully, H. E. Mr. Natapanu Nopakun, deputy spokesperson of the MFA was so kind to discuss these issues with the researcher.⁸

⁷ The questionnaire included 15 binary (yes-or-no) questions, each followed by an option of further evaluation or explanation through examples. After reception of each questionnaire, a short follow-up discussion was conducted for greater understanding and exclusion of any possibility of misunderstandings.

⁸ The interview took place on April 9, 2021, through videoconference between Bangkok and Budapest.

3. The Case Study on Thai Diplomacy

3.1. The Online Tools of Thai Diplomacy

To maximize the level of future comparability between the three country case studies, the researcher decided to focus on the three most globally used social platforms: Facebook, Twitter, and Instagram; with the occasional mention of any other digital formats for further examples or additional interesting data.

3.1.1. Platforms of the Royal Thai Ministry of Foreign Affairs

The Facebook page of the MFA is very well managed, it is obvious that there is serious attention and work in it, with a dedicated staff and leadership. The content is balanced both in style and substance, it is modern but serious. The account has more than 270,000 followers.

The same can be said about the MFA's Twitter and Instagram pages, which carry valuable, carefully crafted contents, equally targeted to seasoned professionals and interested young citizens alike. The MFA Twitter page has 100+ thousand followers, while the Instagram profile has a modest but engaging 3900+ followers.

Language use on the MFA pages is flexibly adapted according to the specific content, with a good balance between English and Thai, many times using both within one post.

3.1.2. Platforms of the Minister

The picture is very different, when one looks at the online presence of H. E. Don Pramudwinai, Minister of Foreign Affairs for Thailand. Naturally, in a sense this is a personal choice, it very much depends on the character, personality of the leader in question, how much they tend to utilize such tools. However, the Minister of Foreign Affairs is the most obvious face of the foreign policy of any country, therefore, it may be considered a duty to represent through modern channels as well.

Minister Pramudwinai has created his profiles on all three major platforms, and it seems that he has more or less abandoned them all. They are not updated, not even used as a surface to put out news links for the multiplication effect.

On Instagram his latest post is from August 2019, while on Twitter he has less than 50 followers. One may argue that in his position having no social media presence might actually look better than having such abandoned profiles.

Obviously, as politics go, ministers may change on a moment's notice, and with the arrival of someone with greater drive in this field, we could see an instant turn to the positive. The government as a whole is pro-digitalization (Ministry of Foreign Affairs of Kingdom of Thailand, 2018), which is mirrored in the Facebook profile of Prime Minister Prayut Chan-o-cha, with more than a million followers and colorful, daily, sometimes even hourly updates (Nopakhun, 2021).

3.1.3. Platforms of the Royal Thai Embassies

In the experience of the author, embassies are the most crucial stakeholders in the online presence of a country's diplomacy. They are the ones "getting the message out" globally, they are the ones that can adapt the main communication lines to the host country's style, taste, language etc. It is safe to say that while the headquarters (HQ) serves as the "brain" behind online activities, the extensive web of embassy online profiles constitute the many arms of the system providing reach and coverage. At the present moment there are 104 Thai diplomatic representations worldwide (embassies, consulates, and representations at international organizations), all with their own distinct online presence. This provides an obvious arsenal of communication potential.

Examining this arsenal of Thai diplomacy one can conclude that there is a massive and stable Facebook presence of all individual representatives. It is the declared major tool that they utilize in a well-thought-out way, establishing a clear presence in the online scene of the host countries.

Instagram usage is more random, meaning that most embassy Instagram pages are created, but the majority of them seem dysfunctional. There seems to have been an "enthusiastic" period of regular posting and updating after the creation, but these then become more or less abandoned as time passes. It is true even for big embassies like the Royal Thai Embassy (RTE) in Berlin or the RTE in London. On the other hand, good examples are also present, like the RTE in Tokyo, which has a trendy and dynamic Instagram page.

Embassy Twitters are mostly low key. If an official embassy Twitter feed cannot reach a thousand followers in a country with the population of India, it certainly seems

questionable why the administrator keeps it up and running. On Twitter the RTE in Washington performs quite well⁹, which is understandable with Twitter being the main “fast consumption” social network in the United States (US).

3.1.4. Other Mentionable Platforms

The spokesperson of the Thai MFA, Mr. Tanee Sangrat has a private Facebook profile and an acceptable Twitter profile, but not with a wide following crowd¹⁰, and an abandoned Instagram page. Thai ambassadors' Twitter pages, which are usually utilized as extra options for a more “personal” online presence, are rare and unorganized.

3.2. Examining the Tendencies

3.2.1. Performance of the MFA

Having analyzed the incoming information, opinions and the factual material on the examined surfaces, the author's opinion is that the work of the Thai Ministry of Foreign Affairs HQ is nothing short of outstanding.

- The ministry itself uses social media comprehensively.
- The Department of Information does have an internal strategy for online presence, helping to plan and execute related tasks.
- There is a common guidance for embassies on how to use their online tools and what contents to provide, which keeps a perfect balance between a central guideline and an on-field adaptation and usage. In the professional experience of the researcher, it is extremely important to find this golden middle path because an overwhelmingly strict central attitude may cause a bureaucratic, untailored set of almost identical pages worldwide, while a negligent HQ attitude may cause dysfunctionality and lack of valuable substance.
- The use of additional, detailed micro-tools like interlinking, hashtagging, tagging also works beneficially and adds to the success of the MFA profiles.

There is also an additional gem in the system. The MFA operates an online radio station called Saranrom Radio for Thai foreign policy news and issues. The mission of the radio is literally to “be the bridge between the people and the MFA”. This extra

⁹ Quite well is relative here: the less than 9000 followers is good compared to other RTE Twitter profiles, but is by no means exceptional in US comparison.

¹⁰ Less than 1000 followers.

effort certainly carries added value. What is more, the MFA is evaluating a reach to the trendiest corners of web 2.0, like TikTok or Clubhouse, so the audience can soon prepare to hear about activities targeted towards the youngest generation too.

3.2.2. Transformation of Diplomacy Happening

All agree that yes, Thai diplomacy has been transformed by digitalization and web 2.0. There is a soft, general criticism that some homepages are still old school (meaning first generation style), an observation that there is sometimes not enough attention to maintain pages or profiles, but the general opinion is that Thai diplomacy has indeed come closer to the people, courtesy of digitalization, and that the previously unknown, even secretive realm of diplomacy is now out in the open. While most of society has earlier been isolated from diplomatic issues and activities of the country, in the present day anyone, a rice farmer in the faraway provinces, or a tuk-tuk driver by the khlongs of Bangkok, can check out what the MFA is doing on that particular day.

It is agreed as well that the style of diplomacy has changed towards the easily accessible. The tone is less official and bureaucratic, which surely helps people to find connection. Likewise, the contents are consumer-friendly, written in an easy, everyday style.

3.2.3. Substance Change

When asked if the presence of these tools affect the everyday diplomatic decision making of diplomatic leaders—as that would definitively mean that these tools are causing a substance change—the answers mostly emphasized that these should affect but not overtake decision making, as in that case diplomacy would become mere public relations (PR). Analyzing the Thai situation, most say that at the HQ web 2.0 is consistently factored in the activities at the ideal level, but at the embassies it is rather diverse. A few ambassadors do not care about it, and some others are completely guided by a social media-centered thinking. The majority, however, succeed in finding a balanced approach and consider online presence in decision making proportionally. This, in itself, is proof that digitalization affects not only the format but also the substance of diplomacy.

Moving on with the question of substance change, the general opinion is that the change is slow but nevertheless existing and ongoing. Since leaders now know that their activities are conducted in “the open”, since they feel the everyday transparency in the general opinion and evaluation of their embassies or departments, they have started giving priority to issues and goals with good PR. Pursuing a goal that

is favored by the populace “pays well” in the digitalized world, therefore, there is a stronger drive to deliver positive results, or just simply go for important social issues and do more charity work than ever before.¹¹ Another such effect considered by many is that while earlier many initiatives tended to be much delayed or even forgotten in the spirit of the legendary Thai “*sabai-sabai*”¹² attitude (Chongkittavorn, 2020), nowadays the decision makers do pay attention to appear online with the actual outcome or results of the original initiatives.

3.2.4. Accountability

The previous line of arguments leads us straight to one of the most important hypotheses of this research, accountability.

Before detailed analysis of the situation, it needs to be mentioned that the questionnaires brought very diverse answers and opinions, therefore, the author considered the potential of this hypothesis failing. Some answered along the lines of “absolutely not, the accountability didn’t grow, the government just says whatever they want...”. However, politics being mentioned here, the researcher might have not given them clear and accurate questions. After some further discussion with the participants, it turned out that they were just comparing one government’s behavior with the other, one leadership with the other, therefore, they were basically giving a political opinion of the government (which they are otherwise absolutely entitled to do). Since this research is looking for the comparison between the situations now and approximately 15 years ago, before web 2.0 entered our lives, these questions have been readdressed. In this second attempt even young Thai professionals with an “opposition viewpoint” said that a growing level of accountability is coded in the existing tendencies, deriving from the growing level of transparency.

For this, two basic reasons have been considered widely.

- First, the need for follow-up. It is easy to see that if everyone can see what issues are on the table, then we are one step away from the concerned leaders being accountable for delivering results. There are some very tangible and fitting examples on the Thai MFA’s online surfaces.

11 This is one of the more obvious substantial changes of the past decade in diplomatic activities. While earlier embassy charity work was scarce, mostly done by only the biggest and richest representations or connected to certain rare occasions, in recent years ambassadors are almost competing in their embassies’ charity activities, eagerly publicized online.

12 „Just relax and enjoy the flow”—the author’s free translation.

For example, the MFA very openly pledges to back green initiatives and environmental protection. Very well, the pledge could have been made 20 years ago in the form of a press conference or press release, and then be forgotten, as the public did not have ways to follow the everyday functioning of the ministry. Nowadays, if there is no follow-up, if the topic “disappears”, then anyone can put the question to the MFA or the minister himself—what has been done in this field? This is actual accountability in the digitalized world in action. Fortunately, as one scrolls or searches the MFA surfaces, they will see delivered results in the form of actual projects—the cleaning-up of the Chao Praya river, participation in the Earth Hour, just to name a few. This is digitalized accountability in the positive.

Likewise, we can see the Thai MFA pledging to support gender equality, and a few weeks, possibly months later we can notice in their online presence that the MFA is announcing important nominations to international organizations, promoting Thai female diplomats, and being proud of doing so. Similarly, the MFA and the RTEs are occasionally posting promotional messages and substantial materials to promote high-level female participation and to object gender discrimination.

- Second, the interactive quality of web 2.0. There is a variety of engagement options in forms of comments, mails, links etc., therefore, the aforementioned rice farmer or tuk-tuk driver can, at any time, ask or comment—and fortunately in the case of Thailand this interactive quality works in practice. It is interactive, they are answering. When a question or comment is submitted, the Public Diplomacy Division addresses it. If it is general or easy to answer, they reply, if it is more detailed, more relating to a specific field, then they refer the question to the relevant department for it to be answered. The MFA has even developed a chatbot, which will enter into service soon on their central homepage, and possibly even on the social media platforms.

It is important to emphasize that this particular hypothesis does not seek to prove that diplomatic leaders¹³ are providing better results today than before web 2.0 (although in consequence this might generally be the case). This hypothesis intends

13 In modern times, Thailand has been ruled by a complex web of power hubs. Since 2014 the governmental power has been in the hands of the military elite, first in the form of a coup-based interim government, later in the form of a semi-democratically elected coalition government, criticized by many both internally and externally. The examined hypothesis does not claim, of course, that this military government’s diplomatic branch has been acting in an accountable manner, far from it. But it does claim that because of the explained reasons the public has way more tools to factually scrutinize governmental diplomatic work and act accordingly—but the evaluation of the state of general democratic rights of the country far exceeds the aims of this sectoral study.

to show that the level of accountability has grown, courtesy of web 2.0, and that it provides the public with an additional democratic oversight tool, which in and of itself is a positive change.

3.2.5. An Unexpected Consequence

Upon starting this research, the author did not focus on the possibility of digitalization in diplomacy directly helping social development. After having talked to many concerned, it has become clear that there is an external result of the discussed changes that needs to be examined, and it is the effect on social mobility.

In earlier times—as one would think—everywhere, and especially in the traditional Thai social texture, diplomatic jobs automatically went to the privileged ones, the sons of nobles, business magnates, or diplomatic “clans” themselves. However, with the world of diplomacy having opened up towards everyone, with job vacancies jumping up on smartphones all over the country regardless of social status, now anyone, the sons and daughters of even the previously discussed rice farmer or tuk-tuk driver can have access to this career, based on merit and not parental heritage.¹⁴

In the Thai diplomatic corps there are many such examples to support this argument (Nopakhun, 2021). Obviously, social change does happen with or without web 2.0, therefore, we shall not put down this phenomenon simply as the result of digitalization, but it seems clear that the access to information and the simplified online processes of contact and application played an inductive role in the appearance and growth of these tendencies.

3.3. Risks of Digitalized Diplomacy

One obvious risk of the ongoing tendencies comes from the substance change of diplomacy. If we are overly focused on PR success, it is easy to become superficial and turn to a populist, “like-hunting” approach, which in consequence can jeopardize the original goals and policies.

¹⁴ This is not to say that there is no corruption in the system, far from it. This is to indicate that a new, previously unseen possibility opened up for those who are talented and qualitatively worthy as opposed to the “old ways”, when such possibilities virtually did not exist.

The second type of risk derives from human character itself and the immediate nature of digital activities. In this digital age, the drive to be fast, to be first is high, and it has already caused quite a number of diplomatic *faux pas* when leaders (ministers, ambassadors etc.) expressed their standpoints online impulsively, with little or no consideration and little or no substance control. This is of course partly because for many the digitalized way of acting is a new type of functioning; therefore, it is possible that with the new generations moving up to leadership positions this type of risk will slowly blend in with the general and average daily risks of public activities.

The third type of risk is technical. The more an entity is present online, the more it needs to face the risks of technological malevolence. Be it hacking, spying, infiltration, surveillance or any form of illegal technological crime, diplomatic organizations must continuously be aware and upgrade their cybersecurity. It is easy to only see the upsides and advantages of digital tools, and it is easy to overlook these invisible threats, which are usually difficult to understand even in the explanation of professionals. Moreover, as the race between hackers and IT-security experts is never-ending, even the best performing institutions can face major consequences in matters of national security in case of a temporary lapse of focus.

3.4. Pandemic Boost

One cannot discuss modern digital development and overlook the effects of the global Covid-19 pandemic of 2020-21. As it has at least temporarily transformed our world, boosting online activities in all forms imaginable, it has left a mark on diplomatic functioning as well (Beltran, 2021; Chongkittavorn, 2020).

For those familiar with the strict and traditionally ceremonial ways of the creation of diplomatic agreements, it felt astonishing that due to the quarantine, for the first time ever, bilateral international treaties and multilateral agreements have been signed through videoconferences. As a Thai-related example, see for instance the online signing ceremony of the Regional Comprehensive Economic Partnership¹⁵ (RCEP)

¹⁵ The Regional Comprehensive Economic Partnership (RCEP) is a free trade agreement between the Asia-Pacific nations of Australia, Brunei, Cambodia, China, Indonesia, Japan, Laos, Malaysia, Myanmar, New Zealand, the Philippines, Singapore, South Korea, Thailand, and Vietnam. This accounts for about 30 percent of the world's population (2.2 billion people) and 30 percent of global GDP (US\$26.2 trillion) as of 2020, making it the biggest trade bloc in history. It was signed on November 15, 2020 at a virtual ASEAN (Association of Southeast Asian Nations) summit hosted by Vietnam and will take effect 60 days after it has been ratified by at least six ASEAN and three non-ASEAN signatories.

Agreement in November 2020, one of the most important diplomatic achievements of the whole year globally.

Joint statements or common positions, earlier always carefully signed by the participants personally, in original at the end of the event to the pride of the host nation, are now quite simply „agreed upon” through the pixelated screens of faraway ministers’ offices. And of course, the usual work environment of the pandemic age shifted from the protocol-guided, seated diplomatic meeting halls to the practical and hi-tech world of videoconferences. Keeping in mind the terrible consequences of the pandemic, expressing condolences for all those millions of lives lost globally, but realizing and understanding everyday reality, one must conclude that the pandemic has had a rather beneficial effect on digital development in diplomatic activities.

4. Conclusions

4.1. Overview

Analyzing the questions of digitalization in Thai foreign policy, one can find—and this is already an important conclusion—that if it were a race (which it is not), then Thailand would be somewhere in the middle of the field of all countries. Its MFA does indeed use web 2.0 tools, and it uses them consciously, along clear lines of a strategy, therefore, Thailand is well ahead of those many countries, which still have no will to utilize the arsenal of social media. On the other hand, the consistency is quite random. With the most important person, the Minister of Foreign Affairs missing from the picture, and some other such examples, one can see that there are many chances missed, therefore, Thailand is well behind those most cutting-edge diplomacies, which utilize state-of-the-art tools in all forms and on all levels.

The good news is that development in this field is quick, supported by the government’s grand Thailand 4.0 Strategy¹⁶, which pushes for online modernization in both private and public sectors (Chongkittavorn, 2020). In the MFA, the internal social media policies and the designated personnel are already in place (Ministry of Foreign Affairs of Kingdom of Thailand, 2018), so we can expect a dynamic and significant growth in the coming years (this already is happening, of course), and we can

¹⁶ The Thailand 4.0 Strategy is a socio-economic initiative that is based on innovation, creativity, high-quality services, and new technology, employed for boosting the quality of life. This initiative is a stepping stone in the advancement of the country’s development through supporting—among other areas—digitalization in both private and public sectors.

certainly expect a regionally important role from Thailand soon in this segment of diplomacy (Charoenvattananukul, 2019).

4.2. Hypotheses and More

As for the hypotheses, all the results show that they are looking in the right direction. The research is incomplete as for now, therefore, these statements cannot yet be considered scientifically proven, but nevertheless, there are good signs that the claims do correlate with reality.

Digitalization resulting in substance change in diplomacy is certainly happening (Rodríguez Gómez, 2015). Boosted by the change in format and the growing awareness of diplomatic leaders with the intention to satisfy the populace, we can clearly see new issues, new viewpoints, new emphases, and new approaches in decision making, which were not present before web 2.0.

Not only being closer to the people but being more transparent—it also seems to be obvious worldwide, the author would even go as far as saying it is proven, as we can practically check up on the ongoing topics in real time. In the case of Thailand, yes, the tendency is there, but it would help a lot if one could have a more consistent look at the activities of the minister himself.

Accountability—this is possibly the most important part of the research, so one needs to be careful with consequences, especially as the research explained above has received mixed inputs, even if those seemed to result from a misinterpreted question. A possible well-founded opinion as for now can be that yes, thanks to these new tools, diplomacy has become more accountable because promises and commitments are made in front of “the whole world watching”, and any interested individual has the opportunity to follow up on concrete steps or specific actions taken. Furthermore, the interactive nature of web 2.0 makes it crucial to react to inquiries of any kind, when the public literally takes “account” of issues and activities.

Unrelated to the original hypotheses, the researcher has found that Thailand can actually offer some best practices to the “pool of good practices” the world uses. It also seems that there is a further positive external factor of the examined tendencies: advocating, indeed helping social mobility.

Overall, if the “big question” is: “Are the tendencies caused by the megatrend of digitalization in Thai foreign policy good for Thai society?”, then the author believes, after consideration of all the effects, advantageous and risky, that the answer is “Yes”.

5. Closing Remarks

Obviously, the research must go on, using further sources, inquiries, and case-by-case examination to scientifically prove the hypotheses beyond a reasonable doubt.

As the world will keep changing, digitalization will provide tools yet unimaginable, and as society as a whole, diplomacy will—sooner or later—also start utilizing these tools, which then in return may affect and transform its own different qualities. Therefore, any analytic approach may only result in a temporary snapshot of these tendencies, and it is only useful to understand related studies as such.

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How Mobile Technologies Contribute to the Digital Economy in China and Their Major Impacts

Attila Endre Simay

1. Introduction

Chinese has become the second most used language on the internet with around 863 million users, which means that around 19.3 percent of the total internet population use this language around the globe. The most popular language is English. However, the penetration is still under 60 percent in 2019, so further growth can be expected in China (Internet World Stats, 2019), which could potentially challenge the dominance of English on the internet one day. Nonetheless, this study argues that the English-dominated internet is mainly used by Western users, and the Chinese-dominated internet of China shows major differences besides the similarities.

The present study briefly summarizes the digitalization and the development of mobile-based internet applications in China and its potential impacts. As China became the biggest economy in the world based on GDP (PPP), the internet penetration has also grown year by year, and China has become a more and more important part of the World Wide Web. However, this study also points out that the internet probably is not the same worldwide. After a brief review of the relevant theory of the main phenomena and terms included in the article, this study will highlight the significance of China and its internet, while a chapter will show the relevance of the mobile internet and mobile devices in this ecosystem of the internet economy.

2. Internet and Mobile Economy

The internet can be considered a system architecture—sometimes referred to as a “network of networks”—that has revolutionized communication and methods of commerce by allowing various computer networks around the world to interconnect. It emerged in the United States (US) in the 1970s but did not become visible to the general public until the early 1990s. Nowadays it can be used for almost any purpose that depends on information, and it is accessible by every individual who connects to one of its consistent networks. The internet supports access to digital information by

many applications, including the World Wide Web (WWW), which was developed by CERN in 1993 (Kahn – Dennis, 2021).

Modern achievements in the development of global information and communication technologies and internet technologies led to the formation of a global electronic environment for economic activity that, in turn, opened new opportunities for organizational and institutional design in business and other spheres of social and economic activities. Information and communication technologies (ICT) has become a general factor of production. One of the processes of the digital economy formation is transferring the different types of social and economic activity by usage of ICT into an electronic environment of the internet, for example e-commerce. The economy which is based on electronic goods and services, launching electronic business and electronic commerce and using electronic money, is called electronic or digital economy. To this definition such directions of e-economy as e-government, e-media, and e-learning may be added (Berdykulova et al., 2014).

E-commerce uses a website to transact or facilitate the sale of products and services online. Online retail sales have exploded in recent years. Online retailers can predictably provide convenient, informative, and personalized experiences for vastly different types of consumers and businesses (Kotler – Keller, 2012, pp. 438-441). Mobile commerce (m-commerce) is defined as the buying and selling of goods and services through mobile devices via wireless networks. M-commerce has some advantages over its predecessor since users may conduct transactions on the internet at any time, from anywhere. Also, it offers completely new possibilities, like location-based services (Liébana-Cabanillas – Marinković – Kalinić, 2017). Another important part of mobile-based internet economy is mobile payment. One popular area where mobile devices play a vital role is in the domain of mobile payments. Researchers are increasingly convinced that mobile payment systems are an appropriate means of payment with many advantages over traditional payment systems. Moreover, convincing consumers to use mobile payment systems as an alternative to other well-known payment systems has been a key success barrier for the uptake of the technology. Affective and anticipated regret had a positive and significant influence on the intention to adopt mobile payment systems, while the influence of anxiety was found insignificant in a recent research (Verkijika, 2020).

3. The Significance of China and Its Internet

China has become an important player in the global economy over the past decades, and according to the World Bank's gross domestic product (GDP) ranking, it is already the second largest economy worldwide. The largest economy was the US with US\$21,433,226 million, followed by China with US\$14,342,903 million by 2019 (World Bank, 2020a). However, if we take a look at the so-called purchasing power parity (PPP) ranking, we see that China has already become the largest economy in the world. The Chinese GDP (PPP) is around US\$23,523,358 million, while the US' GDP (PPP) is the same US\$21,433,226 million, as no currency issues influenced the calculation (World Bank, 2020b). Estimations about 2020 GDP ranking was not available when this article was written, so based on the 2019 estimations, China is probably the biggest player in the global economy. China has a major impact in the world economy in general, while the Chinese language is also quite relevant on the internet, as it was mentioned in the introduction.

In fact, the internet economy plays an important role in the Chinese economy; the 13th Five-Year Plan contained the priorities of the economic policies until 2021, as the plan is about the 2016-2020 time period. In the highlights of this economic planning, we actually find issues of the internet. One is about the infrastructure, as the plan seeks to foster the cybereconomy by increasing the internet speed but lower the costs, support innovations in business methods and logistics chains. Another one is rather content related as the government wishes to foster positive culture in cybereconomy, clean up the online environment, and promote digitalization in the media industry (China Daily, 2015). The phrase of cybereconomy was used to refer to the internet and/or online economy in the highlights as well as to the governmental intention to improve internet technology, while maintaining social stability and harmony.

The 14th Five-Year Plan (2021-2025) was announced in March 2021. The highlights of the plan contain both research and development (R&D) and innovation-driven development (Wei, 2021). Although cybereconomy or internet economy is not highlighted as a major field of the document, these innovation-related fields certainly refer to the digital technologies, too.

In order to understand the mobile environment, and especially the mobile internet environment in case of China, this article would like to provide a general overview about the Chinese internet since in China it differs from the internet which we know in Hungary or in the European Union in a broader context. Therefore, we should under-

stand these differences and not suppose that the World Wide Web is really worldwide and operates in the same ecosystem (Simay, 2017).

One of the important differences is that the Chinese internet is dominated by Chinese companies and platforms, and among these three major companies have a significant impact. These three companies are often referred to as BAT, as a composition of the companies' initials. Alibaba is China's biggest e-commerce group, which handles more transactions each year than eBay and Amazon combined. Jack Ma, its chairman, pledges to serve 2 billion consumers around the world within 20 years. The second giant is Tencent, which specializes in online games and social media, and now it is one of the most valuable public firms in the world. These two firms have become global forces, while the third member of China's so-called BAT trio of internet giants is Baidu, an online-search firm that came to dominate the mainland market (The Economist, 2017). From the Western point of view, Baidu can dominate this market after Google left the country, however, it should be noted that Google can never become a really big player in the Chinese market. Indeed, they had rapidly lost their market share even before the official bans.

Western internet giants either did not manage to really succeed in the Chinese market, or they even became banned by the government. Amazon had only 0.7 percent market share in the B2C e-commerce market, while Alibaba dominated the online shopping market via Tmall with 56.7 percent by 2017 (Statista, 2017). The Great Firewall of China allows no access to Google, Facebook, and YouTube, in order to protect the country's internet from undue foreign influence (Bloomberg News, 2018). The actual reason behind banning huge Western search engines and social media sites is that the government considers them as a political risk to social stability. Although this definitely influenced the market environment in China, this article does not focus on these political motivations, especially because at that time these decisions were not taken based on economic considerations.

The internet economy and online media have also provided a fortune for the leaders of the Chinese internet giants. According to the Forbes estimations in 2021 many businessmen from the internet economy can be found in the top 10 richest Chinese list. The second richest Chinese is Ma Huateng with US\$65.8 billion, thanks to his web-media giant, Tencent. The third and fourth richest Chinese both come from e-commerce. The third one is Colin Zheng Huang with US\$55.3 billion, who is the founder of online discounter Pinduoduo and was its CEO until July 2020. The fourth is Jack Ma with US\$48.4 billion, who is the cofounder of Alibaba, but nowadays his e-commerce empire is also under pressure because Chinese regulators launched an

anti-monopoly investigation into the company in December 2020. Finally, seventh on this list is Zhang Yiming with US\$35.8 billion, who founded ByteDance, the creator of popular short-video app, TikTok (Wang, 2021). Robin Li, the founder and CEO of Baidu was not in the top 10, as he was “only” the 46th with US\$9.6 billion in 2020 (Forbes, 2021). The ranking shows that the Chinese internet economy provides a fortune for its major players, thus, its economic relevance is quite inevitable in this country.

The number of internet users in China hit 854 million as of June 2019, which meant an 61.2 percent internet penetration rate. Around 26 million more people have become connected to the internet in the first half of 2019 and the penetration increased by 1.6 percentage points in half a year. However, we should note that internet use in China is dominated by mobile internet users. A total of 847 million Chinese people used mobile phones to surf the internet, which is around 30 million new users in the first half of 2019. Mobile phone users accounted for 99.1 percent of the total netizens, up 0.5 percentage point (China Daily, 2019a). By the end of 2020, internet penetration reached 70.4 percent (Statista, 2021d) with 989 million users (Statista, 2021b), and among those 986 million were mobile internet users (Statista, 2021c).

According to another relevant data, which probably highlights the importance of mobile devices in the Chinese internet ecosystem, the number of mobile phone subscribers in China has been skyrocketing since 2011, hitting a new landmark of more than 1.25 billion users in April 2014. By the end of 2012, China had already become the country with the most mobile phone users worldwide. By that time the number of users in China was already equivalent to the sum of users in all European countries combined. In 2012, the market for mobile devices reached a high level of saturation in China, with 89 percent of the population using a mobile phone. In fact, in September 2019 about 1.6 billion mobile phone subscriptions were registered in China (Statista, 2019). Meanwhile, the mobile internet traffic is rapidly increasing in China. Whereas it was 3,750 million GB at the beginning of 2016, the traffic increased to 55,390 million GB by the start of 2019. Indeed, in three years the traffic multiplied around 15 times (CNNIC, 2019).

The Chinese mobile operator market is an oligopoly with three major players. Regarding 4G users, China Unicom and China Telecom combined had a total of 328 million 4G network users in 2017, while the market leader China Mobile had 622 million. However, the smaller two had less than half the 4G users of the latter, so the gap was slowly narrowing (China Internet Watch, 2017). China Unicom had 160 million 4G subscribers at the end of September 2017, while China Telecom had 167.5 million. Altogether, the market leader China Mobile had 66 percent share of total 4G

subscriptions in China (Waring, 2017). However, we should not forget that all the three wireless carriers in China are state-owned companies, therefore, government policies and priorities could be directly implemented in the mobile service market.

As the next technological step, 5G is the fifth generation of mobile internet connectivity. It promises much faster data download and upload speeds, wider coverage, and more stable connections. The Chinese carriers made the superfast service available to consumers in 50 Chinese cities, including Beijing and Shanghai, by the end of 2019. Regarding hardware, Huawei has supplied the largest amount of network equipment for China's 5G rollout. Meanwhile, the US has blacklisted Huawei (BBC News, 2019), mainly because the American government considered that China's dominance of 5G telecommunications networks was one of the top national security and economic threats for the US. They claim that Huawei is too closely tied to the Chinese government, so the equipment made by Chinese telecom companies could pose a threat to national security and have urged allies not to use it in their systems (Benner, 2020).

In order to control the spread of Covid-19, the Chinese government also used lockdowns and strict social distancing restrictions. Those restrictions, however, boosted e-commerce and the digital economy in general. In February 2020, China launched a new campaign to offset the economic slowdown and boost sustainable growth. The focus of New Infrastructure is the digital economy and innovations, like 5G networks, big data centers, Internet of Things (IoT), blockchain etc. In case of 5G, with the accelerated construction of networks for the technology, China will become the largest 5G market in the world, and this is expected to have a huge direct and indirect economic output in the following years (PwC, 2020). In fact, the pandemic has fostered the digitalization and mobile digital economy in China, too.

4. Mobile Platforms in the Internet Economy

The official data showed that digital economy or internet economy has become a key engine for China's new economic driver. The internet economy index, one of the five sub-indexes of the new economic driver index, contributed 80.8 percent to the growth of the combined index in 2018. China has seen a stable and fast growth of the new economic index since 2014 and had a growth rate of 28.7 percent in 2018. The country also recorded 31.6 trillion yuan (US\$4.6 trillion) in e-commerce transactions. The number of mobile internet users in China reached 1.4 billion in 2018, a growth of 9.9 percent year-on-year, which can be considered a main component of the internet economy (China Daily, 2019b). According to a report from 2017, the personal

computer internet economy revenue fell by more than 20 percent in the same year. Meanwhile, the revenue of mobile internet economy reached 341.56 billion yuan with a share of nearly 75 percent of total internet economy revenue. This indicated that the gap between the mobile internet economy and the PC internet economy kept widening, and the mobile internet economy has become the core and leading power in China's internet economy development. Thus, China's internet economy stepped into the mobilization era. The revenue mainly came from online and mobile shopping, followed by advertising, gaming and payment, and the mobile income surpassed the PC internet income in every segment by 2017 (iResearch, 2017).

The revenues of Chinese search engine companies were estimated to reach 135.76 billion yuan (US\$19.74 billion) in 2018, with an increase of 20.8 percent in a year, and estimations suggest reaching 158.08 billion yuan (US\$22.98 billion) in 2019 and 183.17 billion yuan (US\$26.63 billion) in 2020 (China Internet Watch, 2019b). The user base of mobile search in China grows to be near 685 million by the end of 2018, which was an increase of 3.79 percent in a year. Among the browsers, Baidu was still the first choice for users searching for information (China Internet Watch, 2019a). Baidu became a dominant player in the search engine market, and a report from September 2019 also highlighted its market share dominance. Among all platforms, Baidu had 66.64 percent market share, however, its dominance came from the mobile internet because while its market share was around 41.96 percent in desktop, the mobile search market share was around 81.2 percent. So the mobile internet still accounts for most of its search engine market share. The Sogou search engine came second in terms of all platforms with 17.85 percent, especially because of desktop presence with 38.59 percent, while the Shenma search engine came second in terms of the mobile with 11.13 percent, and 6.9 percent in total (Market Me China, 2019). In case of Shenme, another Chinese internet giant can be observed as Alibaba have bought UCWeb, a mobile browser company in 2014, and the two have developed Shenme as a mobile search engine (Clover, 2014). Thus, some competition can be seen in the search engine market, especially in the mobile search engine market, between two Chinese internet giants: Baidu and Alibaba.

According to iResearch's report (2019a), the most popular application in July 2019 was WeChat, a communication application by Tencent. In the top 10 we could find further applications of the three internet giants of China. The second most popular was QQ, another communication application of Tencent, and QQ Video was the eighth on the list. Alipay, the financial application of Alibaba was in the third place, and TaoBao, their e-commerce application in the fourth. The video application of Baidu, iQiyi is the fifth on this top list, while the Baidu Search is the tenth (iResearch, 2019a). In

contrast, in other major economies of the region the Western applications are allowed and used. For instance in Japan, LINE (messaging) is the most used application, followed by many Google apps (second to sixth places and Twitter in the seventh spot) (Statista, 2021a). While in India TikTok took the first place, and multiple sources report Facebook and Google apps among the most downloaded applications (Business Insider India, 2019; Jesentha K., 2021).

Also, in July 2019, Baidu Search was the most visited website, followed by QQ. However, in the third place another search engine could be found: so.com. The Sogou search engine was the ninth. Taobao, the customer-to-customer (C2C) platform of Alibaba is the fourth, while Tmall, the business-to-customer (B2C) platform is seventh. The most popular video site, iQiyi is actually “just” in the 12th place of the top list (iResearch, 2019b). So the so-called BAT trio had strong positions in the mobile internet, as the majority of the most used applications belong to them in China. It should be also noted that the Chinese usually use their mobile phones to access the internet. On the other hand, among the most popular websites we can also find BAT sites, but their dominance is less overwhelming.

Probably the fiercest competition could be seen in the mobile payment market, where two of the BAT trio are involved: Tencent and Alibaba. China has by far the largest mobile payment market in the world with around 577.4 million users in 2019, which is 81.1 percent of smartphone users. In comparison, this penetration was 37.6 percent in India, 36.7 percent in South Korea, and 25.3 percent in Japan in this region. However, the Chinese penetration is much lower among the overall population with 49.6 percent, which means this market still has room for further growth. Alibaba's Alipay and Tencent's WeChat Pay are the two leading payment systems, which have introduced QR code-backed payments into the daily habits of consumers. The main reasons behind the general use of mobile payment are that China is a mobile-first market, meaning that most internet users' first device was a mobile phone, and credit card ownership was low when mobile options Alipay and WeChat Pay were first introduced (Cheung, 2019). China is the largest mobile payment market in the world, handling a total of 532.814 billion mobile payment transactions worth 445.22 trillion yuan in 2018, up 92.48 percent and 44.53 percent year-on-year respectively. After the outbreak of the Covid-19 epidemic in China, the people were encouraged to use mobile payment, online payment, and barcode payment to avoid the risk of infection, which provided further boost to this market (Global Information, 2020).

Already in 2016, the Chinese mobile payment market was around US\$5.5 trillion, which was more than 50 times bigger than that of the US' US\$112 billion market. The

Chinese market was shaken up by one-time underdog Tencent, which was snatching market share from rival Alibaba (Lucas, 2017). Alipay's market share shrank from around 80 percent in 2014 to just around 50 percent in 2017. Meanwhile, Tenpay's market share increased from 7 percent to 40 percent during the same period, because Tencent could take advantage of the integration of instant messaging platforms like QQ and popular messaging app, WeChat to acquire new users (Chan, 2017). After this shift, the market seems to be stable because the market shares were more or less the same in Q3 2019, when Alipay had 54.5 percent, and Tencent had 39.5 percent market shares. Moreover, the market size grew to US\$8.16 trillion (China Banking News, 2020). The mobile payment market is indeed a duopoly market with these two major players, while other competitors remain relatively small.

According to the official Chinese statistics, among the 854 million online payment users 852.5 million used mobile online payment in 2020 (China Internet Watch, 2021), and 73.4 percent of mobile internet users already used mobile payment in June 2019, and in fact, mobile payment was widely used years ago because in June 2016 the mobile payment penetration was 64.7 percent. However, even mobile payment could be soon outdated in China because following the popularity of QR-code scanning payment, the deep integration of biometrics, ETC (electronic toll collection) and online payment services resulted in new payment schemes that no longer rely on mobile phones. For instance, Alipay introduced a face-recognition payment product, Dragonfly, that integrates software and hardware. WeChat payment has also launched a face-recognition payment product, Frog, which can be connected to a point of sale (POS) device. Both products were put in place rapidly (CNNIC, 2019). Therefore, while widely used mobile payment methods are just a future vision in Europe, mobile payment could be the past in China soon.

5. Conclusions

The study was based on various public sources including business news in order to provide a more or less comprehensive view of the Chinese internet, especially its mobile-based internet economy. Users in China mainly access the internet via their mobile devices, and mobile phones have become an essential part of daily life. The mobile and mobile internet networks are operated by Chinese state-owned mobile carriers using the also Chinese Huawei network technologies. Thus, technological development is fostered by the government, and new technologies can be rapidly implemented as they rely on Chinese firms. The internet economy is already based on mobiles, and in some respect, the country has become more developed than the rest

of the world. 5G networks and widespread mobile payments could be an example of these technological achievements, which could show a potential future landscape for the global internet networks and economic environment.

Applications and internet solutions are also quite different from the Western world as Chinese internet giants develop all-in-one type applications to the consumers. Mobile payment, social media, news media, search and other functions could be integrated into one single application. While the study used Western terms to describe the ecosystem in order to provide a better understanding, we should keep in mind that the major Chinese applications have many functions. This integration of functions probably also reflects how the future could be like as users tend to prefer convenience, and probably the legal and social environment would allow the integration of this level of personal data use and higher level of personalization. Moreover, the Chinese internet giants, especially Alibaba and Tencent, have plans to go global and provide their services in a larger and larger scale outside of China, too.

On the one hand, the study could help to see what the internet economy environment could be like if the Chinese companies succeed to implement their services globally, on the other hand, the better understanding of the Chinese ecosystem also helps the Western companies to prepare to deal with Chinese consumers. However, Western companies did not really succeed in the Chinese market, therefore, new innovations based on a better insight can probably pave the way for a potential future success. Globalization could mean one day that the World Wide Web is really worldwide, unlike today.

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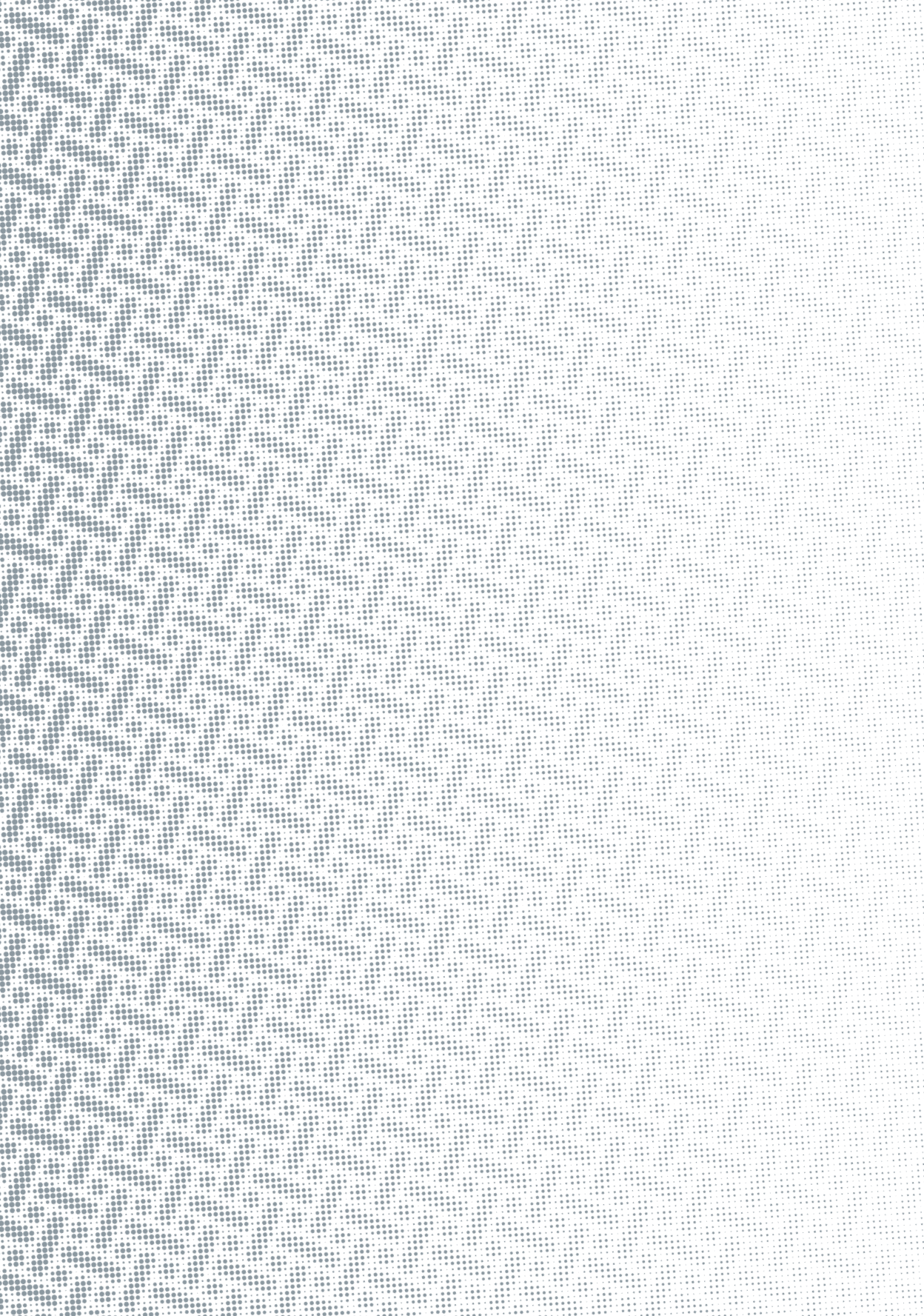
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The Impacts of AI Adoption in the Chinese Advertising Industry

Yuling Wei

1. Introduction

Artificial intelligence (AI) is changing the future of advertising. As the Chinese government issued a "Three-Year Guidance for Internet Plus Artificial Intelligence Plan" in 2016, the impact of AI on advertising is becoming extremely impressive. For example, the size of the Chinese mobile advertising industry increased by 47.8 percent to approximately 542 million yuan in 2019 (Statista, 2020). Due to a huge number of users turning to "mobile-first" and vibrant digital advertising landscape, the Chinese mobile market size is expected to reach one billion yuan by 2022 (Statista, 2020). Meanwhile, China's internet advertising market reached almost 500 billion yuan in 2020, an increase of 14 percent compared with last year's statistical report (China Daily, 2020). The realization of efficiency in mobile advertising has also effectively improved after adopting AI technologies (Fan, 2019).

As the marketing industry continuously develops, the traditional advertising model no longer fits to the current environment. Due to the remaining problems, unsatisfactory advertising return on investment (ROI) and unclear target users, advertisers need to improve the efficiency of media resources and traffic management. AI advertising is solving these issues based on the substantial user characteristics. For example, providing more creative content with advanced AI technologies (Fan, 2019). The significance of adopted AI technologies, big data, and algorithms is the enhancement of the efficiency of the advertising process. It has become a more data-based, tool-based, synchronized, and highly efficient advertising process. Otherwise, design cycles are shortened, customer communication is simplified, labor and economic costs are decreased, and ad management efficiency is improved (Li, 2019).

This paper studies AI as a form of technological and digital innovation, especially how AI impacts the Chinese advertising industry. The research focuses on practical examples from China by collecting secondary data, analyzing how these companies adopted big data and use AI technologies to create smart ads and personalized user-friendly ads.

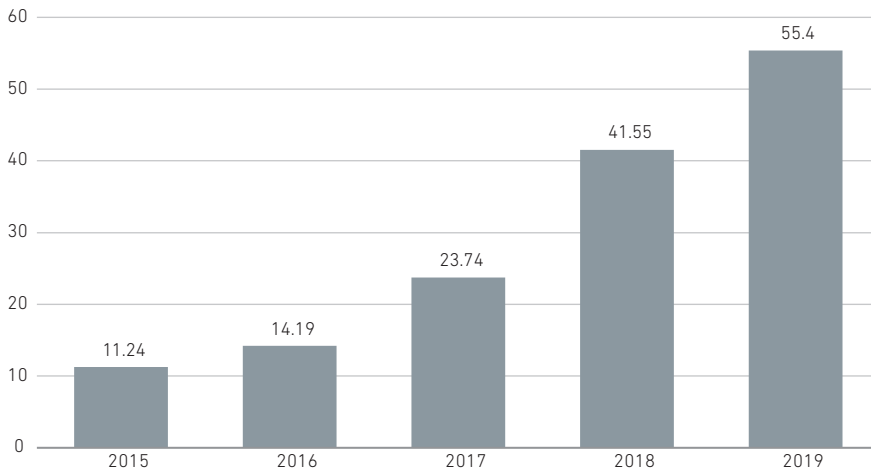
2. China's AI Advertising Industry

AI has become a new engine in the future of the world economy when we look at the global AI market size. The global AI market size reached US\$39.9 billion in 2019 and the compound growth rate (CAGR) is expected to grow by 42.2 percent from 2020 to 2027. The continuous research and development (R&D) directed by AI technologies is driving AI adoption in all walks of life, such as automotive, healthcare, retail, finance, and manufacturing. However, advertising and media are leading the market and accounted for more than 20 percent market share of the global revenue in 2019. This high market share cannot live without the contribution of AI application in the advertising and media industry (Grand View Research, 2021).

Before opening to foreign trade and investment and implementing free-market reform, China's economy was very poor and stagnant, and relatively isolated from the world economy. However, after economic reforms and trade liberalization, China has become one of the world's fastest-growing economies with the real annual gross domestic product (GDP) growth averaging 9.5 percent in 2018. Nowadays, China's economy has become a very important part of the world and it is the world's largest economy if considered on a purchasing power parity (PPP) basis. According to the World Bank PPP data, GDP in PPP is at 23,523,358 in 2019 (millions of international dollars) (World Bank, 2021). Moreover, the "13th Five-Year Plan announced for Developing National Strategic and Emerging Industries" (2016-2020) identified AI development as the sixth among 69 major tasks for the central government to pursue (He, 2017). The future plan of the State Council targets the growth of China's AI industry to reach a "world-leading" level in some AI fields, with a core AI industry gross output exceeding 400 billion yuan (US\$60.3 billion) and AI-related industry gross output exceeding 5 trillion yuan (US\$754.0 billion) in 2025 (Ding, 2018).

Currently, China's AI market size reached 71 billion yuan in 2020 with a CAGR of 44.5 percent from 2015 to 2020. Although China's AI market grew rapidly during these years, it is still a young AI market if compared to the American AI market (Deloitte, 2019).

Figure 1
China's AI market size (2015-2019) (billion yuan)



Source: recreated by the author based on Statista (2021).

Since 2015, AI development has differed from the past because AI has been commercialized in many new areas. It mainly involves improved computing power, top-level design, capital support and user demand. In the past five to ten years, computing power has improved in many areas, such as AI chips, sensors, big data, and cloud computing. However, improved computing power in China is still relatively weak when compared to the US. Otherwise, financial assistance is greatly supported by AI technologies (Deloitte, 2019). According to global investment, the financial amount reached US\$39.5 billion in 2017, meanwhile, the total amount in China increased to 23.74 billion yuan (Statista, 2021). As the AI market is booming around the world, it is not only satisfying the demands of business but also that of customers and governments and improving their living standards (Deloitte, 2019).

3. AI and “Big Data” in the Chinese Advertisement Industry

The advancement of technologies such as AI, big data, cloud computing, and the Internet of Things (IoT) brings us to a new industry—the Fourth Industrial Revolution or Industry 4.0 (Schwab, 2017). AI and big data are the heart of the enhanced performance for all other technologies, and they play an essential role in the evolution of Industry 4.0 (Soni et al., 2018, p. 10). After adopted AI and big data in the advertising

industry in 2011, it greatly decreased the cost of labor and economics, simplified customer communication, restricted advertising process steps, and improved ad management efficiency (Qin – Jiang, 2019).

AI can be considered as a type of computer science that contains developed methods and techniques and at the same time builds an intelligent computer system. This system is the simulation of human and animal cognition, which includes problem solving, learning, perception, action, and communication (Copeland, 1993). Moreover, AI includes three key technological trajectories: robotics, systems, and deep learning (Cockburn – Henderson – Stern, 2018). However, AI is a significant part of innovation. This technology has potentially influenced the production and the characteristics of a wide range of products and services, such as productivity, customer shopping experiences, customer relationship management, competition, and employment. Apart from advertising industry, AI has also been used in other industries, such as automotive industry (Syahrivar et al., 2021) and cosmetics industry (Jaswal, 2021). However, job losses and job polarization might occur in employment due to the development of robotics and AI over the next decades. On the other hand, AI could also change the innovation itself over time with equally profound consequences (Cockburn – Henderson – Stern, 2018).

Big data (BD) can be defined as a whole process which mainly manages and analyzes the volume, variety, velocity, veracity, and value of data and tries to create feasible insights for sustainable value delivery and establishing competitive advantages (Wamba et al., 2015). BD can also be defined as data with high informative potential which protects traditional database software while collecting, storing, managing, processing, and analyzing it (Manyika et al., 2011). For the usage of BD, enterprises are mainly using big data to analyze the impact of customer online reviews on product experiences to predict trends in product design innovation, especially on e-commerce platforms (Hu – Liu – Zhang, 2008). Big data and AI are closely linked to each other. On the one hand, without big data, AI could not even learn. If more data could be applied into the AI model, AI would be even more intelligent than before. More accurate and intelligent AI models require a huge amount of data and it is becoming increasingly significant (Chen, 2019). On the other hand, AI could bring new methods for big data analytics solutions because AI and machine learning have greatly improved the efficiency of algorithms and have provided better data analytical solutions (Gurav, 2019).

AI advertising as a consumer-centered, data-driven, and algorithm-mediated brand communication has become a fast-growing area of the advertising industry (Li, 2019). AI adoption in the advertising process mainly reflects in consumer insight discovery,

advertising creation, media planning and buying, and advertising impact evaluation (Qin – Jiang, 2019).

Consumer insight discovery is mainly about using social network analysis technologies to analyze a huge amount of data in the advertising market, to explore what it is that consumers really want and need by a consumers' digital lifestyles measurement (Ibid). The first step is to obtain consumers' daily behavioral trajectories through a spatial and temporal app usage pattern mine (STAUP-Mine) algorithm (Lu – Yang, 2018). Based on the "carefulness" of users, relevant consumers' behavior characteristics can be adjusted, otherwise, a game theory model can be used to identify consumers' communication modes and information in social media (Fu – Xie – Rui, 2015; Zhang et al., 2016). Besides, GPS and GIS site information are another good way to know consumers' daily behavioral trajectories by the prefix-scan algorithm (Feng – Zhu, 2016; Shou – Di, 2018). After all these algorithm methods, consumers' digital profiles are gained from the enormous amount of data from multiple sources. The profile usually contains gender, age, origin, hobbies, purchasing power, and recent consumptions (Liu et al., 2018).

Advertising (Ad) creation is the technology of using natural linguistics processing (NLP) and deep learning to generate personalized and customized advertisements, including text, images, and other creative design or material elements. The process of Ad creation mainly involves three aspects. First, according to the findings of consumer insights, consumers' preferences for creative advertising are inferred. With the help of in-depth semantic analysis and real-time consumer interaction, consumers' preferences for creative Ads are predicted as well as how much they will accept a certain advertising idea in the forthcoming future (Qin – Jiang, 2019). Following that, the ad creation algorithmic logic is extracted. The algorithmic logic of advertising content production is extracted using artificial intelligence technologies such as target semantic extraction, correlation analysis, cross-media information retrieval based on content, sentiment analysis, and topic analysis (Abbasi et al., 2018; Deng et al., 2019). Last, the targeted Ad creation is automatically created with the help of an algorithm. It can be gathered into one step which combines the analysis of users' needs, strategic advertising planning, advertising creative performance and Ad creation (Qin – Jiang, 2019).

Media planning and buying mainly involves identifying and examining consumers' real-life scenarios based on a measurement system for consumers' digital lifestyles and using programmatic tools to optimize the media mix for media planning and buying. In this way, the personalized advertising content can be delivered directly to

users. The first step is to build a consumer touchpoints model in advertising based on the findings of the consumer insight discovery. The second is to try to classify consumer touchpoints and run related algorithm simulation in information acquisition media, daily use media, and online shopping media to know consumers' daily behavioral trajectories (Qin – Jiang, 2019). The next step is to create a performance indicator system for media planning and buying by adopting probabilities logic and specifically Markov logic networks (MLNs)¹ in logic and distributional semantics (Beltagy et al., 2016). In the end, based on performance indicator systems and targeted Ad content, personalized media planning and buying can be realized through programmatic buying (Qin – Jiang, 2019).

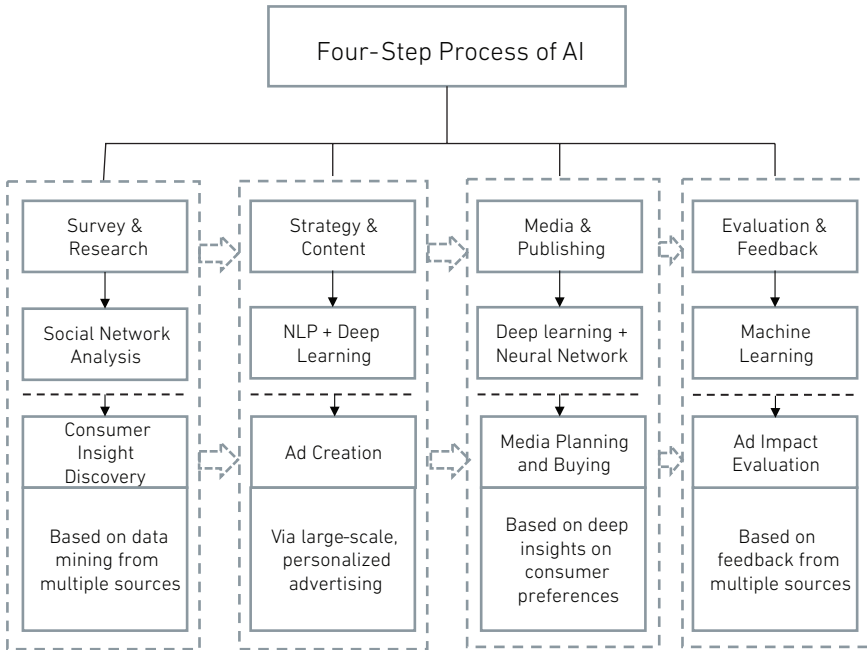
Ad impact evaluation refers to collecting data through real-time monitoring of users' feedback; with the help of matching learning, optimized real-time feedback can be obtained from various feedbacks to achieve the consistency between the brand impact and the advertising impact (Li, 2019). During the process of ad impact evaluation, AI technologies are used to collect real-time feedback data from massive sources (Kim, 2014). Matching learning methods mainly use hierarchical clustering, neural network, and principal component analysis to extract and classify the features of gathered data (Thi – Le – Dinh, 2015).

According to the previous descriptions of the advertising process, we know that AI technologies have made a significant influence on it. As it can be seen in Figure 2 below, the new advertising process can be summarized as the four-step process of AI, and it explains a huge difference if compared with the traditional one (Qin – Jiang, 2019). The main characteristics of adopted AI technologies in the advertising process are data-based, tool-based, synchronized, and highly efficient. Since programmatic buying is relying on big data technologies, big data can be regarded as one of the core factors for advertising operation powered by AI technologies. Smart advertising cannot run without data or algorithms, but the advertising process has transformed from a linear process to a data-based platform with algorithms; it is becoming more dependent than before. Meanwhile, to complete the consumer insight discovery, smart tools are essential to record consumer footprints, process relevant data, and automatically generate consumer insights (Qin – Jiang, 2019). In general, after adopting AI technologies in advertising, the programmatic buying, Ad design, Ad impact, and AI-driven processes are highly efficient. Moreover, it has significantly improved the advertising operation in its cost, quality, service, and speed (Yang – Liu – Zhang, 2017, p. 43).

¹ Markov logic networks (MLNs) is a kind of statistical model which combined first-order logic knowledge and probabilistic reasoning (Beltagy et al., 2016).

Figure 2

Four-step process of artificial intelligence (AI) advertising natural language processing (NLP)



Source: recreated by the author based on Qin – Jiang, 2019.

4. Chinese Best Practices

4.1. Tencent

Since Tencent was founded in Shenzhen, China, in 1998, it has developed into a leading provider of internet services in China after more than 20 years. In Tencent, there are 6 business groups that provide a range of internet products, such as CSIG (Cloud and Smart Industries Group), WXG (WeChat Group), IEG (Interactive Entertainment Group), PCG (Platform and Content Group), TEG (Technical Engineering Group), and CDG (Corporate Development Group). "Connection strategy" is the most powerful strategy in Tencent, it mainly includes connecting people with people, connecting people with services, and connecting people with devices (Lee – Law, 2018). The vision and mission of Tencent are to create value for users, technology for good. Tencent

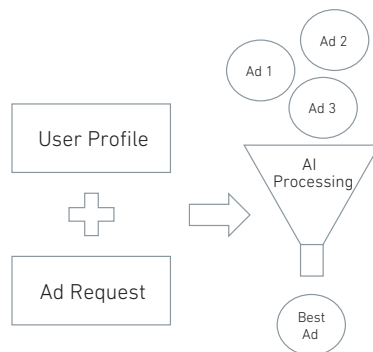
uses technology to enrich the lives of internet users. The high-performance advertising platform of Tencent helps brands and marketers reach out to hundreds of millions of consumers in China (Tencent, 2021).

The active daily users of Tencent are up to more than 800 million, their main activity is to share interesting content and browse business updates on a various portfolio of quality platforms, such as WeChat, QQ, QZone, and other related third-party apps (Lee – Law, 2018). Tencent’s ecosystems are highly reliant on data, for example, improving the performance of Tencent online games and gaining a deeper insight into users’ behavior through data mining (Tencent, 2016). Besides, it has also increased investment in AI and applies AI technology to its products, such as advertising system performance, content recommendations, and financial services (Tencent, n.d.).

Tencent helps businesses attract audiences by using AI to deliver personalized marketing messages across all aspects of its advertising services, including a deep understanding of user preferences, precise targeting of audiences, Ad authoring, programmatic creative generation, intelligent bid optimization, and end-to-end insights (Lee – Law, 2018). In addition, Tencent has collaborated with a computer vision and AI company, Mirraid and asked for placing Ads in old movies without interrupting the viewing experience (Newsroom, 2019). These new types of Ads could help advertisers have a better engagement with their target audiences. Meanwhile, Tencent is also testing this type of Ad on its own video platform, WeChat. If the experiment is successful, more video platforms might adopt the new Ads (Mehta, 2019).

Figure 3

The process of Ads serving through machine gun for a moving target



Source: recreated by the author based on Lee – Law, 2018.

As we can see, Figure 3 shows the process of Ads serving through machine guns for a moving target in Tencent. For example, if there are tens of billions of requests from users and hundreds of thousands of Ads, the machine gun will match the most relevant Ads to users by machine learning models trained on extremely large historical data. AI adoption in Tencent Ads is creating an intelligent profile to have a more accurate understanding of users' insights, identifying target users automatically, searching for potential new customers, and creating personalized Ads by DPA (Data Protection Act) (Lee – Law, 2018).

4.2. TikTok

As the smart terminals and mobile internet developed rapidly, more and more netizens began to prefer making short videos to record their life through rich content and personalized expression (Xu – Yan – Zhengwu, 2019). TikTok is the most downloaded short video app in China, it has greatly satisfied the needs of netizens with a natural traffic advantage. In addition, it has also become one of the most popular advertising platforms for companies (Yu – Cang – Qian, 2020). According to the 2020 research report released by the China Netcasting Services Association (CNSA), the number of Chinese netizens has reached 940 million. In 2020, the number of internet audio-visual users in China expanded to 901 million, the utilization rate of internet users reached 95.8 percent, and the average daily use time was approximately 110 minutes. The market share of short videos accounted for the highest share in the online audio-visual industry, it reached about 130.24 billion yuan and increased by 178.8 percent compared with 2019 (People's Daily Online, 2020).

TikTok was launched in 2016 as creative short video social software with the slogan of "record a good life". Most TikTok users are women and young people. The length of a short video in TikTok is usually 15 seconds, and the users can select background music, motion editing, and add some special effects for their short video. Otherwise, TikTok has also created a distinct music community and launched the "Dance Dancer Machine" with human keypoint detection technology (Xu – Yan – Zhengwu, 2019). TikTok is one of the most popular short video platforms, and it is not only about entertainment but has also infiltrated into other fields, such as advertising, e-commerce, tourism, education, and live-streaming. It has an essential impact on the entire audio-visual industry and the national economy (People's Daily Online, 2020).

However, the great success of TikTok could not be achieved without strong AI technology. TikTok has mainly adopted a powerful algorithm, artificial content

recommendation mechanism, and human keypoint detection technology to achieve accurate user posture to target posture. AI intelligent algorithm helps TikTok to label user-published content as a tag (Xu – Yan – Zhengwu, 2019). When the user opens the vibrating app, the homepage of TikTok will pop up the video by sliding. The vibrating app can analyze the user's preference based on the liked videos and the dwell time on a certain video, and recommend videos which they might like, thus, increasing the users' frequency and loyalty using TikTok (Wei, 2017). To meet the needs of young people, TikTok has launched a "Dance Dancer" function that users can play on a mobile device. This function is mainly dependent on the human keypoint detection technology, which relies on AI algorithm technology. The number of TikTok users has increased after the launch of the "Dance Dancer" function (Xu – Yan – Zhengwu, 2019).

Figure 4

The process of artificial intelligence in TikTok



Source: recreated by the author based on Rangaiah, 2020.

We can see from Figure 4 above, how AI technology works in TikTok. The whole process can be simply analyzed in two aspects, the consumer side and the producer side. On the consumer side, TikTok's algorithms can attract users' preferences quickly based on the "likes" and the comments of the users. Since the duration of each video is quite short, it is easy for the TikTok algorithm to build vast datasets. On the producer side, AI also enables content producers to make viral videos, simplifying video editing and improving popular components such as music hashtags and filters by category (Rangaiah, 2020).

4.3. Alibaba

Jack Ma founded Alibaba in Hangzhou, China, in 1999. Its mission is to make doing business anywhere easy (Alibaba Group, 2021). Alibaba is a world leader in AI application. AI technologies are used in its gigantic e-commerce platform (Mubayi et al., 2017). Alibaba's sales on Singles' Day in 2019 reached a new high of \$38.4 billion, setting a new record (Singh, 2019). On the other hand, Ali Cloud is critical to the company's e-commerce success. Ali Cloud includes five main areas: speech technology, image technology, video technology, and IoT cloud-based integration services (Mubayi et al., 2017).

In 2016, the Alibaba e-commerce platform decided to launch the Luban System through its AI lab in order to improve design posters for ads on Taobao.com and Tmall marketplace. Meanwhile, since 2018, the Luban system has also provided similar services to third parties. The 170 million well-designed posters boosted the click-through rate (CTR) of the Taobao online marketplace by 100 percent. In addition, the Luban system supported other annual campaigns, creating over 400 million posters in 2017, more than 8,000 posters a second. In 2018, Alibaba Group opened the platform to other businesses, and in this year's Singles' Day discount campaign, 6 million posters for 200,000 Taobao merchants were developed (Qing – Jiang, 2019). According to the statistical data above, the performance of ad design and copywriting on Alibaba's e-commerce platform has greatly improved.

Alibaba's AI-enabled recommendation system is another significant AI application. Because of this highly sophisticated system, Taobao now knows online buyers better than they know themselves. To ensure mobile users can open multiple browser windows on their phones, a more personalized recommendation system was developed by Alibaba. It improved the efficiency of browsing on mobile devices and delivered a more personalized shopping experience (Alibaba Clouder, 2021).

5. Conclusions

The study explored how AI and big data have impacted the advertising process and explained how AI technologies and big data have been adopted in the Chinese advertising market and how the new advertising process works with AI, based on the various secondary sources. A better understanding of specific markets is essential to business success, so this study provides some insights into the Chinese market to help those companies who want to enter the market. The study finds that the

advertising process has been greatly enhanced by AI algorithms and big data application, it becomes more data-based, tool-based, synchronized, and highly efficient. After adopting AI technologies and big data, it essentially decreased the cost of labor and economics, simplified customer communications, restricted advertising process steps, and improved Ad management. The performance of advertising has improved. In terms of advertising itself, the programmatic buying, Ad design, Ad impact, and AI-driven process are becoming highly efficient after applied AI and big data. Furthermore, AI algorithms have enhanced the quality, service, and speed of advertising, as well as providing customers with more accurate content recommendations.

Since AI has become one of the significant revolutionary elements of the upcoming digital era, more and more multinational companies have adopted AI technologies and are investing significantly in the research and development of AI, such as Amazon.com, Inc., Google LLC, Apple Inc., Facebook, Alibaba, BMW, Nike, and Starbucks. The purpose of these companies is to make AI more accessible for enterprise use-cases. The advertising and media industry took more than 20 percent of the global revenue market share in 2019 and became the biggest holder of AI market share. The high market share is mainly contributed to by adopting AI technologies in the advertising industry (Grand View Research, 2021). The benefits of adopting AI are: increasing the return on Ad's revenue and reducing the amount of money which is spent on an ineffective budget. The other advantage of adopting AI technologies is helping a brand discover and convert new customers (Kaput, 2021). AI advertising in China has effectively improved the advertising experience for both the advertisers and the target market by decreasing unliked Ads and unliked targeted customers. In addition, it also brings richer user labels, more advanced crowd expansion technology, and optimized click transformation of the target population (Fan, 2019).

In modern digital advertising, AI-powered programmatic advertising is the main form nowadays. According to eMarketer's predicted data, more than 86 percent of US display ads might be "bought through automated channels". And 80 percent of mobile display ads are already purchased through apps (Kaput, 2020). Facebook and Google as the largest advertising companies in the world captured nearly 90 percent of the growth of the digital advertising business in 2017 (Thompson, 2018). Although the Ad revenue of Facebook and Google has declined a little, it is still expected to reach 83 percent in 2021 (Graham, 2021). Moreover, AI enables the development of short video platforms in China. TikTok is one of the most successful short video platforms, it delivers a better user experience with the help of AI technologies. The effects of AI in TikTok are enhanced visual quality and select content recommendations, and generation of new ideas for content (Bennehard, 2020). Tencent Ads mainly help businesses

attract audiences by using AI to deliver personalized marketing messages across all aspects of its advertising services (Tencent, 2021).

The main limitations of this study are that the article relies on secondary data, the findings are not practical enough, and the answer is inadequate for the research question. Besides, society and technologies change over time, so findings could differ in other societies, and they would vary as technological developments reshape the business and social environment. As a direction for future research, the author might do some qualitative and quantitative research to improve the persuasiveness of the findings.

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Digital Yuan – A New Global Currency? China's New Challenges and Endeavors in Global Trade¹

Orsolya Pócsik and György Iván Neszmélyi

1. Introduction

The adoption of the digital yuan is an important monetary policy step as well as a political process. The world is watching China. The authors' conviction is that the digital yuan will become a single currency within a decade. The national authority and trust in China are going to become stronger.

The aim of the study is to demonstrate how the yuan will come to be the commercial leading currency and how it will fulfil the role of world currency. The authors also examined how to adopt the digital currency in China. The methodologies of the research are the processing of the secondary data of Chinese macroeconomic and PBOC (People's Bank of China) data and the connections between them.

In the final chapter of the study, the authors are looking for answers to the trends of the innovation. The greatest advantage of the digital yuan is the usage of floating exchange rate. Moreover, since the value is decided on the market, it has no control in the global trade. The success will be guaranteed.

1.1. A Historical Review of the Role of Currencies

The study begins with a review of the history of currency. The official currency is the renminbi (which means people's money) in China—other ones are the Macau pataca and the Hong Kong dollar. The official currency's ISO code is CNY and the unit of the renminbi is the yuan. This currency was introduced in 1949. The aim of adoption was curbing hyperinflation in the country. The conversion period concluded in strict rules between 1949 and 1978. After the opening of the Chinese economy in 1978, the dual exchange rate system was introduced, one with a domestic currency and one with a

¹ Supported by the ÚNKP-20-3-II New National Excellence Program of the Ministry for Innovation and Technology from the source of the National Research, Development and Innovation Fund.

foreign currency whose exchange rate was well above the domestic ones. As a consequence, on the one hand, money trading started in the country, on the other, however, the black economy caused serious damage. In the 1980s, the double exchange rate was abolished, and greater convertibility was set as a goal.

In 1994, the fixed exchange rate system was introduced, and the currency was pegged to the American dollar. This was beneficial during the Asian economic crisis; the currency did not weaken in 1998. The yuan was included in the currency basket as an optional reserve currency in 2016. A plan was set to move away from pegging to the dollar and peg their currency to the currency basket of the Hong Kong dollar, the Japanese yen, and the South Korean won (Goreczky, 2020). The Chinese currency cannot be exported from the country, thus, they are trying to influence foreign tourists and investors, whose states subsequently invest in foreign government bonds.

One of the most important historical points was when the original Silk Road was developed more than 2000 years ago. Ten independent states were created where all dynasties issued their own currencies during the Five Dynasties and Ten Kingdoms period (907-979). Single copper coins were used throughout the Chinese territories and currency exchange shops became important trading sectors in the age of the Song dynasty (960-1279). Transfer documents appeared in the 11th century: bank vouchers, debit notes, bills of exchange. The first state banknote appeared in Sichuan in 1024. The use of paper money was already widespread between the 11th-14th centuries. Its creation was decided centrally and the value of the money reached 400 million garlands in the period of the Southern Song dynasty (1127-1279) (one garland means a thousand coins). There were several known banknotes in circulation (known as *jiaozi*, *qianyin*, *kuaizi*, *guanzi*) between the 12th-13th centuries in the Liao and Chin Empires. For the first time, Kublai Khan (who established a dynasty under the name "Yuan") adopted paper money, which was printed on a piece of wood by the Chinese printing technology in 1260. China became the leading maritime power of the world between the Song dynasty and the Ming dynasty (1405-1433) (Banai – Papp, 2018).

The authors created sections of the history of the last century in the Chinese banking system based on Banai and Papp (2018), and Turner, Tan, and Sadeghian (2012) as follows:

- (1) The one-tier banking system was established by the People's Bank of China (PBOC) in 1948.
- (2) Sector-specific banks were set up as the Agricultural Bank of China (ABC), the Bank of China (BOC) for the financing of agricultural activities, and the People's Construction Bank of China (PCBC) in 1978.

- (3) In 1984, another bank was established to finance large, state-owned enterprises: the Industrial and Commercial Bank of China (ICBC).
- (4) Another three additional banks were founded with commercial profile in 1994.
- (5) Several banks were formed in the 1980s.
- (6) The international expansion of Chinese banks started in 2008.
- (7) The renminbi entered the Special Drawing Rights (SDR)² currency basket in 2016.
- (8) The yuan was the fifth most significant currency among international payments in 2017.
- (9) The introduction of digital yuan.

The state-owned commercial banks continue to operate on a level playing field with everything decided by the top leadership of China instead of the bank executives.

The American dollar has been the dominant global currency for more than 60 years, in spite of shifts in the international monetary system (IMS). The good examples of these changes are, in chronological order, the creation of the SDR in the 1960s, and a theory, which was called Triffin dilemma; the collapse of the Bretton Woods system in the 1970s that became to be less the link to the dollar in exchange rate arrangements; the emergence of Japan in the 1980s as a global creditor; the introduction of the euro in 1999; trends toward greater diversification of reserves following the global financial crisis of 2008; and China's efforts to boost the internationalization of the renminbi and to promote its reserve currency status over the last decade (Iancu et al., 2020).

Despite these changes, the dollar's share in global reserves has remained above 50 percent, while its share in global foreign exchange turnover has been stable, close to 45 percent since 1989. Although other currencies, particularly the renminbi, have been reportedly gaining some ground in trade invoicing, the dollar's use for financial asset denomination has been on the rise. To put it more simply, in recent decades, the best performing currencies have been the American dollar and, to some extent, the euro.

Not all reserve currencies fulfil all international roles. For instance, the Japanese yen, the British pound, and the Swiss franc are used internationally mainly for investment purposes, while the renminbi has been little used in such a way but increasingly so for trade invoicing. The European Currency Unit (ECU) has predominantly played

² The SDR is an artificial currency instrument of the International Monetary Fund (IMF) based on a basket of the most important international currencies by weight: the US dollar, the euro, the Japanese yen, the British pound, and most recently, the Chinese yuan.

the role of an anchor currency. But the most used reserve currencies such as the American dollar and the euro have been widely used internationally for both trade and finance (Iancu et al., 2020).

The sustained economic growth and rapid trade integration of emerging markets and developing economies (EMDEs)—particularly China—have led to less-concentrated global output and trade increase, and gradually shifted the world's economic center of gravity. Financial integration has also become more pronounced, with global capital flows measured as the sum of gross capital inflows across all countries relative to the global GDP, three times as large in recent years as in the 1970s. These tendencies (Table 1) have not affected the American dollar as the dominant reserve and international currency. Moreover, the Covid-19 crisis has led to a global flight to safe assets, and to the dollar in particular, supported by the United States' (US) Federal Reserve's actions to provide liquidity. The US dollar is the dominant reserve currency, with a share of 61 percent of global reserves at the end of 2019. The euro comes second one with 21 percent of reserves, and other currencies' shares are much smaller. To illustrate this point, the dollar's major role as a reserve currency is compatible with its wide international use: it stands out as the currency most traded in the foreign exchange market (44 percent of turnover), and the most used for trade invoicing (54 percent of global trade) and financial claim denomination (51 percent of cross-border bank claims) (Iancu et al., 2020). Based on the IMF report by Iancu et al. (2020), the role of the US dollar and the British pound as global currencies cover the entire period of analysis (1947-2018). Different currencies have covered shorter eras consistent with their status of reserve currencies: in addition to the French franc and the Deutsche mark since 1970 and the Dutch guilder since 1973 (all three were substituted by the euro in 1999), the Swiss franc and the Japanese yen fill this role since 1973, the Australian dollar and the Canadian dollar since 2012, and the Chinese renminbi since 2016 (Ibid.).

Table 1
Share of international payments and global reserve currency

Currency	Share of international payment transactions (08/2020) %	Share of global reserve currency (Q1/2020)
USD	39.0	57.9
EUR	36.0	18.7
GBP	6.7	4.1
JPY	3.6	5.3
CYN	1.9	1.9

Source: authors' own editing based on Goreczky, 2020.

By 2030, China could overtake the United States as the world's largest economy, while the share of EMDEs in global GDP is expected to exceed 50 percent by that time. Despite this ongoing shift to a more multipolar global economy, the high degree of inertia in the currency composition of global reserves suggests that the US dollar will remain the dominant reserve currency for the foreseeable future.

A possible drawback is that the euro shares have been held up in countries with strong economic and political ties to the eurozone, the European Union countries outside the eurozone, which are in the European Exchange Rate Mechanism (ERM-II) and peg against the euro, or are obliged under the European Union membership to ultimately adopt the euro. As a good example of recent years, Russia's reserves have seen a great shift away from the US dollar. Public data highlight a gradual decline in the US dollar's share of reserves over 2006-14, from 49 to 44 percent, with significant fluctuations starting in 2017, conceivably mirroring developments in the US-Russian relations. To illustrate this point, there was a particularly sharp decline in the dollar's share in Russian foreign exchange reserves in 2018 following the introduction of US sanctions against Russia. When comparing the state of the shares before and after this 2018 episode, after applying year fixed effects to partially adjust for economic and other influencing factors, it is revealed that tensions in 2018 resulted in a considerable 26 percent fall in the dollar share (Iancu et al., 2020).

China became the first large country to put the central bank digital currency (CBDC) into limited use as the testing of a digital renminbi (e-RMB) by banks, government, businesses, and individuals is currently underway in 28 provinces. The release of a CBDC could have different reserve implications depending on the country and global circumstances. The CBDC issued by current issuers could increase the demand for reserves denominated in these currencies, whereas a CBDC introduced by smaller countries with highly credible policy frameworks could make their currencies easier to use as reserves (Iancu et al., 2020).

It can be said that the digital currencies can take on various forms and can be issued by both the public and private sectors. The implications of digital currencies for reserve holdings will depend on which kind of digital currency prevails. With accelerating digitalization and technological innovations, the impact of technology on international reserves and global configurations could become more prominent over time. It is worth noting that creating new classes of assets, reshaping the financial industry, and transforming reserve management technology can affect reserve holdings by transforming the traditional drivers of reserve configurations (such as network

effects, trade and financial linkages, geopolitics, institutions, and the legal system) and their impact on reserves (Iancu et al., 2020).

After World War II, the US became the leading economic superpower. It achieved this by creating a currency system based on the price of the dollar and gold, and the investments were paid in dollars. The US was the world leader in the industrial production and innovation, in coal mining, oil exploitation, and electricity production. It even owned 80 percent of the world's gold reserves. The first sign of the weakening was the dollar-linked exchange rate that ceased to exist when the Bretton Woods system was abolished, and the International Monetary Fund was weakened. China became the world's leading economy in 2013 as China controls most of the capital and gold reserves. The most attractive feature of the Chinese currency with regard to investment is its convertability. Unorthodox means to strengthen the external market of the yuan include the establishment of the Shanghai Futures Exchange (SHFE), resulting from the merger of the metal, the crops and the oil exchanges, whose trade composition still determines where the agricultural products dominate. The People's Bank of China has launched the process to create the national digital currency in 2024.

China interprets commercial practices differently. Its method is simple: economic expansion and conquest. The economic power of China is not a different model of market economy, but in terms of substance, public and semi-state Chinese companies operate on the basis of the sovereign credit. It gives the Chinese system an advantage to use its financial techniques of globalization, so it uses forms of market economy, while we believe that the modern market economy has a strong political bias which includes the rule of ownership, business freedom and economic rationality that is not present in the country. The one-party China is a strange player in the order of world capitalism. That is why many people think that what is being done in economic development in the world looks like war (Bod, 2020).

Table 2 shows the summary of GDP projection in the following years: 2016, 2030, and 2050, measured by market exchange rates. China will be the leader, the US will reach the position of the second largest economy, and India will be the third most dominant country in the world (Hawthornthwaite – Clarry – Audino, 2017).

Table 2

Breakdown of the components of average real GDP growth (2016-2050)

Country	Average population increase/ year	Average real increase per capita/year	Average GDP growth/ year (in domestic currency)
China	-0.1%	3.1%	3.0%
Japan	-0.5%	1.4%	0.9%
United States	0.5%	1.3%	1.8%
United Kingdom	0.4%	1.5%	1.9%
India	0.7%	4.1%	4.9%
Germany	-0.2%	1.5%	1.3%
France	0.3%	1.3%	1.6%

Source: Hawksworth – Clarry – Audino, 2017.

In several cases, the reduction in the dollar was more specifically traceable (Table 3). Russia has subsequently reduced the proportion of the US currency significantly as the US has introduced sanctions and continued to act hostile towards China. China has declined to relieve the USD weight (Table 4) and the United States launched a trade war against it. These countries partly purchased gold from the dollar, and other central banks also increased their gold reserves, but the change in the currency proportions in the long term represents a reduction in the weight of the dollar. The dollar has an appreciable interest rate, the risk-free returns in the euro, Swiss franc, English pound and yen are negative. Confidence may further increase in the Chinese currency (Table 5), and its share could multiply the country's economic weight (Fellegi, 2020).

Table 3

GDP at market exchange rate (MER) rankings (at constant 2016 USD)

GDP at MER ranking	2016 rankings		2030 rankings		2050 rankings	
	Country	GDP at MER	Country	Projected GDP at MER	Country	Projected GDP at MER
1	United States	18562	China	26499	China	49853
2	China	11392	United States	23475	United States	34102
3	Japan	4730	India	7841	India	28021
4	Germany	3495	Japan	5468	Indonesia	7275
5	United Kingdom	2650	Germany	4347	Japan	6779

Sources: Iancu et al. (2020) for 2016 estimates; Hawksworth – Clarry – Audino (2017) for projections for 2030 and 2050.

Table 4

Investments by currency unit: RMB million, except percentages

Date	RMB	USD	HKD	Others
December 31, 2019	76.65% 4,226,384	14.29% 787,775	4.30% 237,004	4.76% 262,899
December 31, 2020	78.09% 4,366,310	12.55% 701,408	3.80% 212,522	5.56% 310,877

Source: Bank of China, 2021.

Table 5

Due to customers by currency

Date	RMB	USD	HKD	Others:
December 31, 2019	75.40% 11,925,923	11.61% 1,836,997	7.94% 1,255,663	5.05% 798,965
December 31, 2020	77.04% 13,003,027	9.78% 1,651,454	7.81% 1,318,279	5.37% 906,411

Source: Bank of China, 2021.

China wanted to launch the pilot program at the beginning of 2020. Due to the Covid-19 pandemic, however, which broke out in January, the state had to focus on public health. More and more people have come to prefer contactless credit card payments (Table 6) and are only one step away from using national digital currencies (Andrea, 2020).

Table 6

Transaction amount of banking unit: RMB billion, except percentages

Items	2019	2020	Change (%)
Transaction amount of corporate online banking	204,334.071	232,166.028	13.62
Transaction amount of personal e-banking	36,366.825	40,520.497	11.42
Transaction amount of mobile banking	28,278.569	32,277.028	14.14

Source: Bank of China, 2021.

The changes in the rate of USD and RMB can be seen in Table 7.

Table 7

The changes in the exchange rate of USD and RMB

	2016	2017	2018	2019	2020
USD/RMB year-end central parity rate	6.9370	6.5342	6.8632	6.9762	6.5249
EUR/RMB year-end central parity rate	7.3068	7.8023	7.8473	7.8155	8.0250
HKD/RMB year-end central parity rate	0.8945	0.8359	0.8762	0.8958	0.8416

Source: Bank of China, 2021.

Across nations or regions, the authors' discussion of the Optimum Currency Area theory will proceed on four levels:

1. The long-standing debate on the optimum domain of fixed exchange rates in comparison to keeping them flexible when all currencies are treated symmetrically.
2. The asymmetrical role of a key currency in securing exchange rate stability within an optimum currency area.
3. The secondary debate on whether one needs complete monetary union (as in continental Europe) to secure an optimum currency area's internal domain.
4. An even more subordinate topic is the important issue of whether a group of economies with close trade ties (as in East Asia) would benefit from collectively pegging their currencies to an outside currency such as the US dollar (McKinnon, 2004, p. 2). It is clear that China is the optimum currency area.

2. E-Commerce

According to the China Internet Watch (cited in Weissberger, 2020), internet penetration in China reached 61.2 percent in 2019, which means 854 million internet users. This number climbed to 988 million in 2020, with 67 percent of internet penetration reached, while the access of internet via mobile phones was 99.1 percent. Chinese internet users in urban areas account for 73.7 percent of total internet users, while rural areas make up 62.8 percent. The share of the population with no access to the internet was 541 million in 2019. In the same year, 74.8 percent of total internet users engaged in online shopping and 74.1 percent of them in online payment.

After more than 30 years of digitalization, by 2016, China became the country with the largest body of internet users along with a fast-expanding cybermarket. China's increasing power in cyberspace is not only about the enhancement of technological capabilities. The smartphone is the leading internet access device in China.

In 2021, the number of Chinese internet users reached 1 billion, which means one in five users in the world (Cheng, 2021). Less than 30 percent of them earned monthly 5,000 yuan (US\$774) or more in 2020, according to the China Internet Network Information Center (CNNIC, 2021a). Online retail sales reached 11.76 trillion yuan (US\$1.8 trillion) in 2020, with an increase of 10.9 percent from 2019; in fact, China reached the first rank in the world for the last eight years (CEIC, 2021). 86.4 percent of internet users (that is, 854 million people) use online payment methods (CNNIC, 2021b).

China is one of the world's largest digital economies, where online shopping is becoming more and more common. The use of the internet and applications is increasing rapidly, and as a result, the traditional commerce and financial system are transformed, in which new, innovative solutions emerge day by day. The population of China is larger than that of the US; the whole of China's population is a potential digital yuan user. It is beyond doubt that China will be the champion of digital competition with the world's largest digital currency becoming the leader in the following decade. The renminbi has a parallel course to the dollar with an increase of the visibility of international financial transactions and the international reserve currency. Most of all, it is an economic-financial success story for Beijing. The Chinese government will implement ongoing reforms that will bring about rapid but sustainable growth for China. China also promotes the internalization of the currency through the DCEP.

The Digital Currency Electronic Payment (DCEP) system means the central bank's digital currency and the commercial electronic payment tools that are going to be linked with it. Moreover, it is a fiat currency³. The DCEP is in RMB, and it is used by the central bank and the general public (Hoffman et al., 2020).

The US dollar is the most important reserve currency, and other currencies are joining it: the Japanese yen, the euro, and the Chinese yuan. The economic-political and market conditions must be met in order to ensure a stable currency. There is a one-party system in China, and although many forms of capitalism are present, the party controls the financial policy. The yuan carries risks, which means that the American central bank, better known as the Federal Reserve, has more confidence in global financial markets than in the Chinese central bank. The digital version of the renminbi may be able to function in areas where the influence of the dollar is decreasing (Növekedés.hu, 2020).

³ Fiat money: "in a broad sense, all kinds of money that are made legal tender by a government decree or fiat. The term is, however, usually reserved for legal-tender paper money or coins that have face values far exceeding their commodity values and are not redeemable in gold or silver" (Encyclopædia Britannica, 2021).

3. Advantages and Disadvantages of a Common Digital – and Global – Currency

For a more detailed overview, the authors would like to illustrate the advantages and disadvantages of the adoption of digital yuan (Table 8). These factors will determine who the winners and who the losers will be when the digital yuan will be adopted worldwide.

Table 8
Pros and cons of the adoption of the digital yuan

<i>Advantages of the adoption of digital yuan</i>	<i>Disadvantages of the adoption of digital yuan</i>
Revocation of trade in the underground economy	There is no target date; the adoption year may be 2023
Reduction of the possibility of money counterfeiting	Privacy issues
Avoidance of tax evasion – traceable cash flows	Test mode
The currency's role as a reserve currency is rising	
New currency in hybrid form	
Mobile financial solutions are popular	
Strengthening China's own currency	
Reduction of the use of US dollars	
Set down for blockchain technology	
Exchange rate of digital yuan would be pegged to the renminbi	
It should use the two-level financial system	
Yuan is growing its international recognition	
Underprivileged people can be eligible for services	
China can become the leader in fintech technology and artificial intelligence	

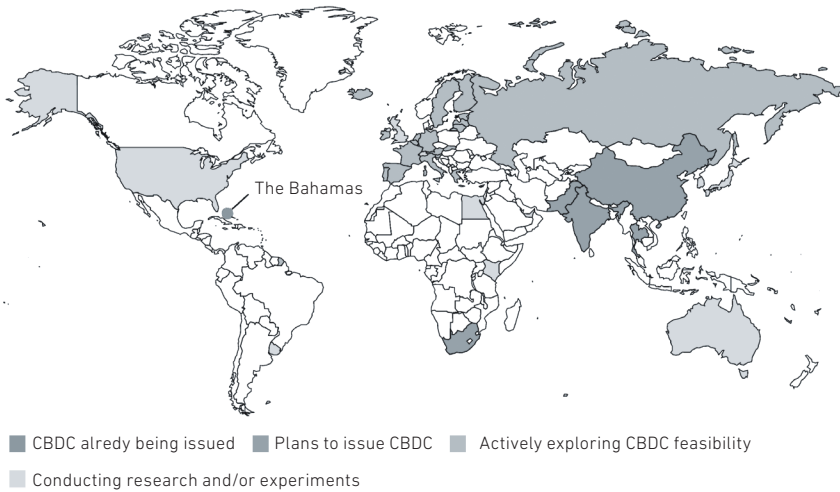
Source: authors' own compilation.

4. The Adoption of the Digital Yuan

According to Mu Changchun, the PBOC's deputy director, China's digital (Figure 1) and physical currency work in parallel. Experiments are taken on the usage of the digital renminbi in China. Shenzhen has tens of thousands of local residents, who have received free digital money and mobile phone "wallets", which are necessary to the usage (Portfolio, 2020). Mu recently said that China's new national digital currency would operate on a two-tier system, with the PBOC and commercial banks allowed on the second tier of the centralized system. In November 2019, the PBOC announced that it had intended to carry out a pilot project with restrictions on large-scale cash transactions that it would continue for two years, and it would be implemented in phases in Hebei Province, Zhejiang Province, and Shenzhen City (Muir, 2019).

Figure 1

Digital ambitions: central banks at varying stages of developing digital currencies



Source: Bloomberg News, 2021.

As Mu noted: "The currency is not for speculation. It is different to bitcoin or stable tokens, which can be used for speculation or to require the support of basket of currencies" (cited in Muir, 2019). The digital yuan is probably more able to assume the role of the dollar as the global reserve currency (Table 9). (The digital currency can be successfully applied in a country like China where electronic payment systems are already used by more than half a billion people.) China would not only be the leading power in the world in terms of purchasing power parity (PPP), but it could also transform the international trade. So far, the countries trading with China needed more exports than imports to ensure an adequate amount of yuan. China should not print a digital yuan what is be able to fulfil the commercial needs. Thus, the price of the digital yuan that is able to be determined by the market, just like the current price of bitcoin is influenced by supply and demand. Beijing is officially lobbying for a reserve currency like that, which is based on the currencies of members of the IMF and the SDR. In the world economy that will follow the Covid-19 era, the weakened US economy will provide a perfect opportunity to take another step forward. The idea of a gold-based digital yuan was not confirmed by official sources, although China has been busy gathering its gold reserve for a few years. China should also be supported as soon as possible for the global spread of the digital currency. The persuasion of

the countries referred to as the “global South” could be key to the creation of an alternative to the US dollar, although the Russian–Chinese economic relations can be a good sign that the acquisition of the aid will not be such a difficult task for China (Alex, 2020). The PBOC announced that it wanted to sideline the cash transactions with a big value in single provinces in November 2019, but according to Mu, the digital yuan is created in order to provide a supplement besides the paper money. China will introduce the national digital currency as soon as possible in order to place a pressure on the United States (Muir, 2019). Four banks and such entities as China Telecom took part in the testing phase (Mandiner, 2020).

Table 9
Chronology of China's DCEP system

Date	Event
2014	The PBOC begins work on developing a digital alternative to cash called Digital Currency Electronic Payment (DCEP).
August 2019	Mu Changchun replaces Yao Qian as head of the PBOC Digital Currency Research Institute (DCR).
December 2019	State media reports that DCEP is being actively tested in desired cities, commercial banks, and telecom companies.
April 2020	A photograph of the Agricultural Bank of China's digital wallet prototype appears online.
May 26, 2020	PBOC governor, Yi Gang says there is “no timetable” for DCEP's launch.
July 20, 2020	A retired senior official announces that DCEP's back-end architecture is “basically complete”.
July 8, 2020	DiDi Chuxing, China's largest ride-sharing company, signs with PBOC to jointly „explore and research the application of digital currency in the area of intelligent travelling”.
July 2020	The PBOC is reportedly reaching similar agreements with Meituan Dianping (food delivery), Bilibili (video sharing) and ByteDance (parent company of popular short video platform, TikTok).
August 3, 2020	At its mid-year meeting, the PBOC reports that “legal/fiat digital currency closed testing sites have been effortlessly launched”.
August 5, 2020	Chinese media confirms that all four major commercial banks are testing DCEP implementation.
August 14, 2020	A policy planning document of the Ministry of Commerce of China outlines preliminary plans for DCEP expansion to all major urban centers, including Hong Kong and Macau. No timetable is given.
August 15, 2020	Xinhua refutes media rumors that DCEP testing will be expanded, reasserts that zones will remain „4+1”: in Chengdu, Shenzhen, Suzhou, Xiong'an, and at the 2022 Beijing Winter Olympic Games.
August 27, 2020	A former Bank of China official predicts that the scope of DCEP application testing within current test sites will be expanded “this year or next”.
August 29, 2020	Screenshots circulating on social media reveal details of the China Construction Bank's digital wallet, including wallet user tiers, registration requirements, and transaction limits.
August 31, 2020	Chinese financial media reports that two more banks have joined PBOC's DCEP consortium: the China Postal Bank and the China CITIC Bank.
September 3, 2020	Australia-based SBC News airs exclusive interview with a DCEP user, confirming that DCEP is being used in some pilot locations as a wage supplement.

September 7, 2020	Chinese financial magazine, Caixin Weekly publishes lead editorial expressing concern at DCEP's potential for infringing on user privacy.
September 14, 2020	PBOC deputy governor, Fan Yifei states that laws will eventually require DCEP to be accepted everywhere in the country and issuance will be controlled by major commercial banks.

Source: Garnaut Global, 2020 cited in Hoffman et al., 2020.

Renminbi is attracting foreign direct investments. The extension of the Chinese financial hegemony also sought to include Hong Kong (Hong Kong dollar) and Macau (Macau pataca) in the common currency area. The aim was given: to make the Chinese currency turn into a reserve currency in as many states as possible. After all, if the trade turnover is large, it will be necessary to have a reserve currency in the country. There are a number of African central banks whose credibility is virtually zero—due to long years of serious inflation and the depreciation of their currencies. China has built up very strong economic positions in Africa during the new Silk Road initiative: roads, railroads, harbors, mines have become Chinese property. The states sold these in dollar and the depreciation of their own currencies only makes it even more expensive to repay the debt. African countries live on the extraction and export of raw materials; therefore, these are accounts in dollars for their trading partners, which are usually quoted in dollars on international commodity markets. On the part of Beijing, however, the economic expansion makes the payments in yuan illogical. The cash is expensive because it needs to be manufactured, handled, transported, exchanged and replaced. The other reason is the lack of an African financial intermediary system. There is no infrastructure, no bank; the people do not have bank accounts. Mobile phones are common, so they manage their finances through them; this fact makes the digital currency most convenient. Beijing is also trying to gain access to global financial affairs in another area. Beijing wanted to adopt the digital money before the pandemic (Növekedés.hu, 2020). During the postcolonial era, but especially since the early 2000s, China has been increasingly involved in the African continent, establishing various platforms, like Forum on China–Africa Cooperation (FOCAC) and signed many agreements that serve the fostering of Sino–African cooperation (Tarrósy, 2011). China has built much-needed transport infrastructure that can increase Africa's connectivity with the rest of the world, which in turn can contribute to a higher level of integration into the world economy (Tarrósy – Vörös, 2018). China as a growing power has been seeking the ways to tackle the pandemic disease and its policy relations with African countries (Engelberth – Sági, 2021).

With the central bank digital currency, it will be at technological challenge to protect the stability of the financial system, said the director of the Central Bank of Hungary (MNB), Pál Péter Kolozsi (MTI, 2021). The digitalization had moved exceptionally

quickly in the financial world. The financial system is undergoing transformation, the assets are controlled by the state and are beginning to cram the market. Dániel Nagy, the former division director of HOLD Asset Management said that China had been at the forefront of this process. In the Bahamas, the CBDC has already been adopted. On the other hand, the target date is the Beijing Winter Olympic Games that is going to begin in 2022, and by then China will plan to make the Chinese CBDC operational, which foreigners will be able to use. It is possible that this process will accelerate internalization projects. It is the so-called hybrid CBDC which will be created and will be used in a commercial bank network, and the transactions can be supplied by the Chinese central bank. There will be significant potential transactions between the commercial banks. The economic policy objectives of the digital yuan were identified as the Chinese state control over cash flow and ending the independence from the dollar system that had already begun since the 2008 crisis. The leading role of the euro-dollar system can be taken over by an alternative model. The crises could not trigger a turn that would bring about an increase in the weight of the yuan. The central bank digital currency may be a new, much cheaper solution in the international trade, but the current process of financial transfers is slow to take place across several time zones and financial systems. Almost all of China's main trading partners started developing the CBDC, such as Saudi Arabia. As a consequence, the dollar is expected to lose its strength. The development of CBDC is going on rapidly in Europe, and the research is underway in the United States (MTI, 2021).

China banned the trading of cryptocurrencies in 2017, despite the ongoing bitcoin mining activities in the country, and President Xi Jinping announced in 2020 that he strongly supported the use of blockchain technology and would initiate a national digital currency. The Agricultural Bank of China, which is one of the largest commercial banks in the country and owned by the state, has officially started testing the digital yuan. Matthew Graham, the managing director of Sino Global Capital, says that the application should be downloaded only by those who have been approved by the government (Andrea, 2020).

According to China's central bank, the digital yuan tries to establish the DCEP system. The consumer allows the use of the currency via Alipay, JD.com, and WeChat. The new platforms are to be found in online payment systems. The DCEP should be able to sell in retail and internet ecosystems perfectly. Customers could be enticed to move to a different wallet that is accepted by all e-commerce platforms to avoid the contradicting policies of Alipay and WeChat Pay, which control most of the digital transactions in China. The digital yuan is likely to expose possibility for retailers and banks to offer wallets that assert greater changeability. JD.com, which, so far,

depends on an association with Tencent for its payment needs, has cooperated with the PBOC through its fintech arm, while JD Digits improves blockchain platforms to assist the digital currency with a wallet. Pinduoduo Inc. receives payments from both WeChat Pay and Alipay and is planning to develop its own payment system. TikTok owner, ByteDance Ltd. returns for third-party payment service; and Uipay increases the payment volume of its Chinese short video platform, Douyin. Most Chinese consumers are able to connect both with Alipay and WeChat Pay. These platforms seek to be more than just payment and cash transfer services by offering mini-applications from food arrangement and grocery shopping to movie and train ticket purchases. WeChat Pay has a captive user base as it is fixed within the popular WeChat short messaging app. Ecosystem stickiness and other elements, including online spending credit offered and poor usability of existing digital wallets by banks, will keep consumers loyal to Alipay and WeChat Pay wallets even when they are transacting with digital yuan (Kang, 2020).

5. Conclusion

China has the money of the future. The currency of the 20th century was the dollar, but the money of the 21st century is still uncertain. It could be one from the international currencies like the US dollar, the euro, the British pound, the Japanese yen, or the Chinese yuan.

The new, Chinese digital currency system works in test mode and certain public employees (chosen by lotteries) get their salaries in e-RMB. The users are able to pay in local and online stores and at vending machines.

The renminbi is increasingly used in cross-border investments and international financial transactions. The country which uses renminbi is also known as a "renminbi currency area". The currency area is expanding with the global distribution of yuan usage. The core of the currency area is nothing more than China. With the digital yuan as a currency, there are many good labels such as capacity strength, instant payments, maintaining the role of financial intermediation, or the placement of the USD. How can the e-RMB become stronger? The answer is very simple. The e-RMB potentially boosted cross-border links, cheap and quick payment. The digital money is the issue of technology and geopolitics. It is the era of birth of a new global currency center. The future may be Eurasian; it may be the Chinese way.

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Digitalization and Cultural Industry: The Korean Wave Moving from East to West

Lady Gaviria-Ochoa and Laura Cristina Salazar Villegas

1. Introduction

Every cultural group has produced material and immaterial expressions that characterize their own views of the world, beliefs, and ways of life. Such expressions can be accessed, purchased, and consumed physically or digitally in this globalized world, mostly if people are guaranteed access from any location. In this scenario, culture does not become an exclusive; but massive and plural, that is, a cultural industry.

UNESCO (2005) defines cultural industries as those industries that communicate cultural expressions regardless of their commercial and economic value. These industries foster the movement and trade of cultural goods, increase the circulation of capital, have a favorable impact on economic growth, and create direct and indirect employment (Puente, 2007; UNESCO Institute for Statistics, 2016). Notwithstanding, the cultural immaterial expressions and creative goods are ideas, images, and sounds that are meant to be available digitally to be massively consumed.

Therefore, there is a connection between cultural industries and mass culture. Following Eco (1965), the mass culture is built in a society in which the mass equally participates of rights, consumption, and access to communications. Furthermore, mass media has led to the development of cultural consumption given that television, press, radio, cinema, soap operas, and music are constantly available to those wishing to access such goods (Ibid.). This also means that mass media mixed with mass culture could transform cultural groups, even national cultures (Blanco – Zubieta, 2000).

Undoubtedly, digitalization of cultural goods and services have provided a proper setting to foster global interaction and the creation of new forms of mass culture, which go beyond national cultural boundaries. In this complex scenario, national governments have tried to strengthen their exports and imports of cultural goods and services (Lee, 2013) that positively influence economic growth. Since the 2008 crisis, countries finally understood the power of culture as it creates a potential market

supported on digital platforms; consequently, music, books, films, TV programs among others would not be consumed in the traditional way.

According to UNESCO (2015), governmental public policies have facilitated growth from US\$28.1 billion in 2004, which were 26 percent of the total global exports, to US\$96.8 billion in 2014. Also, there was significant growth in North America and Europe reaching 49.1 percent of the total global cultural exports; followed by South and East Asia with 45.5 percent; Central Asia and Eastern Europe with 2.7 percent; Latin America with 1.2 percent; and the other areas of the world with less than one percent (Ibid.). One of the interesting cases in East Asia is South Korea and its *Hallyu*.

South Korea represents one of the best examples of how to use cultural industry to improve economic growth and potentialize soft power globally (Park, 2015). *Hallyu* describes the way that South Korea could make the most of the world's rapid evolution and the Western influence on its culture (Oh – Lee, 2014); also, it shows the *Hallyu*'s impact on popular culture, positive lifestyle for Asians, and change of the image of South Korea as a country (Ryoo, 2009). Lee (2013) explains that different Asian regions related South Korea with negative images such as war and economic uncertainty.

The Chinese coined the term *Hallyu* in 1997 when Korean entertainment began to massively flood the market, especially after the success of the series "What is love all about?" (Lee, 2013). Simultaneously, the Asian economic crisis favored the Korean wave of expansion because countries like Vietnam, Indonesia, and China preferred to purchase Korean programs as they were cheaper than local production. For instance, producing a series in South Korea cost a quarter of a Japanese production, or even a tenth of one produced in Hong Kong (Ibid.).

Hallyu refers to Korean dramas, music known as K-pop, video games, national sports, language, and gastronomy. In 2012, this phenomenon began to be promoted by newspapers and digital publications when the *Gangnam Style* music video by rapper PSY became viral. In addition, this turned into the most seen video in the history of YouTube until July 11, 2017. Even though South Korea is known as an industrialized country with manufacturing companies such as Samsung or Hyundai, the cultural industry has become a rapidly growing global phenomenon that affects national economic performance.

The Korean creative industry began to show significant participation in the global market reaching exports for US\$5.79 million in 2015 (UNESCO, 2015). Although the

Korean entertainment exports were growing, the imports of Hollywood movies decreased (UNESCO, 2015). For instance, Korean films represented only 21.3 percent in the local market in 1998, then they reached 35.8 percent in 1999, 32 percent in 2000, and 54.2 percent in 2004; whereas imports of Hollywood movies decreased from 72.3 percent in 1998 to 41.2 percent in 2004 (Korean Film Council, 2005).

Interestingly, *Hallyu* emerged as a cultural endeavor in 1997, and has progressively expanded reaching international recognition as an unstoppable wave or force. This paper analyzes two decades of expansion from major international markets such as China and the United States (US) to Colombia, a distant culture and geographical region. Firstly, this paper presents the methodology. The second section explains South Korean cultural public policies and their impact on *Hallyu*. The third section provides details on how the *Hallyu*'s movement was developed in China and the United States. The fourth section explains the case of Colombia, focusing on Medellín given the community's participation in the applied survey and their willingness to provide information regarding the community. Lastly, final comments are presented.

2. Methodology

This qualitative research has got a descriptive scope. Findings of sections two and three are based on content analysis of governmental documents, research papers and related reports. Section two gathers analysis of South Korean public policies from 1997 to 2017, especially trying to define the institutional influence on *Hallyu*. Section three showed limitations as primary sources from China did not have direct access, which meant that secondary sources from papers and research were used.

The fourth section that explains the case of Colombia was based on direct, in-depth interviews with leaders and participants of *Hallyu* Colombia. Every interviewee signed an informed consent, which allowed the use of information for academic purposes. The interview was applied to the two leaders and few members of the movement in a format of twelve questions in the first part and eleven in the second. The in-depth interview inquired firstly about how they got to know *Hallyu*, the activities that individuals participate in, the cultural influences that *Hallyu* create; then, the second part asked about *Hallyu* Colombia and how the community had organized since its creation. The interviews were analyzed with the program NVivo, creating nodes according to the main categories of this research. After coding, dendrograms were created with cross-coding according to the nodes.

In addition to this, a brief digital survey was applied nationwide. The leaders of *Hallyu* Colombia helped to make sure members of the community (400 people in 2018), answered the thirteen-question survey. In total, 98 members, most of them from *Hallyu* Medellín, answered the survey reaching 97 percent of statistical confidence. The survey's questions aimed to characterize the community, their preferences, and images about South Korean culture. In order to analyze this data, basic descriptive statistics were used.

3. South Korean Public Policies and *Hallyu*

After World War II and the Korean War, South Korea started a process of economic and social transformation from 1953 to 1993, thus, the country emerged as an industrialized economy. Before the 1990s, South Korean cultural goods were known, but their full potential had not been achieved (Messerlin – Shin, 2013). Actually, “[...] the cultural policy of the former governments had mainly focused on protecting Korean culture and its market through regulations, Kim’s government has shown some efforts to strengthen the Korean cultural industry before opening its door to the foreign market” (Park, 2015, p. 96).

Up until 1993, Kim Young Sam’s government made culture into an industry leading to “The creation of a new Korea”. The aim of Kim Young Sam was to globally position South Korea through a public policy known as *Segyehwa* (Shim, 2002). This prompted the *chaebols* such as Samsung, Daewoo, Hyundai, LG, and SK to invest in the cultural industry (Park, 2015; Shim, 2002). These investments allowed Kim’s government to broadcast the first cable television service with twenty-one channels in eight local stations in 1995, and the latter reached 77 stations in 1998 (Park, 2015).

Regarding the film industry, American corporations such as Twentieth Century Fox, Warner Brothers, Columbia, and Walt Disney rapidly created subsidiaries in South Korea and imported about 818 foreign films in the period 1988-2001 (Park, 2015). In 1995, Kim’s government approved the Motion Picture Promotion Law to support the development of local film making providing tax reduction to investing *chaebols* (Park, 2015).

In the following governmental period, Kim Dae Jung (1998-2003) was severely affected by the financial crisis of 1998, but the introduction of broadband internet at the end of the 1990s posed an opportunity to emerge from such a situation. Therefore, the governmental task was to turn a manufacturing industry into a knowledge-based

one (Park, 2015). Compared to Kim Young Sam's government, Kim Dae Jung fostered the technological development and influence on the cultural industry (Shim, 2002). Hence, this made *Hallyu* more sustainable given that Kim Dae Jung's public policies promoted cultural exports and shaped the South Korean society (Yim, 2002).

In addition, this government created annual plans that progressively shaped the cultural industry. In 1998, the new cultural plan aimed to educate and train human capital to respond to the new media generation, which also implied the growth from four art schools in well-known universities to 70 in 2003 (Park, 2015). In 1999, the second plan firstly provided the legal setting to support the *chaebols'* investment in the cultural industry; secondly, defined the planning, development, production, distribution, and consumption of cultural goods and services; and, thirdly, established the fund for the cultural industry promotion (Ibid.). In 2000, the plan Vision 21 proposed the integration of cultural goods such as films and TV dramas with the information technology, which was supported by resources of one percent of the national budget in 2000 (Ibid.).

In the governmental period of 2003-2008, Roh Moo-Hyun set continuity to the cultural public policies planned and implemented by former presidents. This government connected the processes of creation and exporting to internet and technological advances; moreover, one of the main aims was to digitalize the traditional cultural content and make it available to the public in general through the Korean Cultural Content Agency (Kim – Jin, 2016). Lastly, Roh Moo-Hyun's government created the Korean Foundation for International Cultural Exchange (KOFICE), which promotes the Korean cultural industry in topics such as research, conferences, statistics, and the organization of events (Korean Foundation for International Cultural Exchange, 2016).

Next, Lee Myung-Bak (2008-2013) promoted the notion of Korea as a nation of high cultural standards. This government created a *Hallyu* promotion team within its Ministry of Culture to ensure its continuity (Lee, 2013). Especially considering that since the mid-2000s the Korean wave policy has transformed into a complex web of activities and tasks such as planning, financing, investment, research, marketing, brand development, training, consulting, and events, all of which involved diverse individuals and organizations in South Korea and abroad (Kim – Jin, 2016).

Lastly, Park Geun-hye (2014-2017) made cultural enrichment one of her priorities during her presidency, but two out of ten tasks proposed were directly related to *Hallyu*, that is, the promotion of diversity and K-style (Stangarone, 2015). Also, Geun-hye tried to expand education in liberal arts; to make traditional culture a way of

life; to connect traditional culture with modern values; to create an offer on cultural activities to make life happier; and, to create an ecosystem to support art (Wi – Yoon, 2013). During this presidency, *Hallyu* drove the national economy using information technology.

In 2014, Geun-hye stated in the World Economic Forum in Davos, Switzerland that value was added once Korean music, drama, and films paired up with YouTube, and with it a global sensation emerged (Kim – Jin, 2016). Furthermore, the president affirmed that added value becomes unlimited when cultural values are combined with information technology (Park, 2015). As a result, the convergence of *Hallyu* and information technology created places for events such as SM Town and KT K-Live in Seoul, which provide a proper setting for K-pop digital concerts using tridimensional holograms (Kim – Jin, 2016).

Consequently, Geun-hye focused on *Hallyu* to boost the national economy and recognized its influence on Korea's international image. This wave became unstoppable once *Gangnam Style* became known worldwide, making South Korean cultural exports an example to follow. Also, the production of motion pictures has benefitted from this Western acceptance, the movie *Train to Busan* won the best foreign film in Cannes in 2016. Furthermore, musical groups have participated in MTV Europe Music Awards, Billboard Music Awards, American Music Awards, and the Grammy Awards ceremony.

4. *Hallyu's* Expansion to China and the US

Hallyu started with television dramas in China in 1992 with the broadcasting of the series "Jealousy". This sixteen-episode series was transmitted by MBC from June to July 1992 and was based on the novel *Long Shadow of my Love* from 1991 (Chung, 2011). From October 1991 to February 1992, MBC also transmitted the television series "Eyes of Dawn" in 36 episodes with a rating of 54.8 percent, and the series became the ninth best rated drama of all times (Chung, 2011; Jiae, 2016). However, the Korean wave's true success was yet to be known.

In 1997, Chinese Central Television (CCTV) transmitted "What is Love?" on Channel 1 (Chung, 2011). This achieved the second-best foreign series up until that time and was transmitted again as audiences demanded so. The same year witnessed another success, "Star in my Heart", another drama series featuring Ahn Jae Wook, who became a famous actor in China (Ibid.; Jang, 2012). Furthermore, the imports of South Korean TV series grew because they were based on Confucian values, romance, family life

in urban areas, and professional careers (Chung, 2011). This suited the interest of different Chinese spectators who belonged to different generations.

Although TV dramas are widely known in China, K-pop is key to the expansion of *Hallyu*. Chinese audiences became familiar with K-pop through TV drama series' main themes such as *Forever* featured in "Star in my Heart" (Ibid.). However, radio stations were responsible for popularizing this tendency. The FM Beijing's radio station began to transmit K-pop in a weekly program known as "Seoul Music Hall" in 1996 (Jang, 2012). Due to the success of this program, different radio stations started to create slots for South Korean music programs to increase their audience (Ibid.).

K-pop has been extremely popular among Chinese adolescents. In 1998, the Korean group named H.O.T. (1996-2001) was the first to release an album in China (Jang, 2012). Another example is NRG that sold as many copies as H.O.T. in 1999 (Ibid.). The influence of K-pop has gone beyond music and now includes fashion and lifestyle. Chinese fans have tried to imitate how to wear garments or to dye their hair according to the singer of preference, thus, *Hallyu* became a social phenomenon in China (Gim – Bak, 2004).

As *Hallyu* got more popular in China, the Chinese government tried to limit the number of Korean TV drama series allowed on Chinese television in 2006 (Tuk, 2012). Consequently, the total income of Korean exports of TV drama series decreased for the first time from US\$101.6 million to US\$85.9 million (Tuk, 2012). Nonetheless, Chinese audiences found a way to watch their Korean TV drama series on social media or websites such as Weibo, in which people can share and access videos (Gilardi et al., 2018; Tuk, 2012).

Chinese audiences are eager to consume cultural goods and services from South Korea. This is due to the fact that *Hallyu* provides an alternative to American and Japanese cultural products; the former provides a setting for Western values that have been somehow adopted by some generations of Chinese, but that cannot create total cultural convergence, whereas the latter poses historical rivalry that overshadows the cultural products (Kim, 2010). In contrast, *Hallyu* creates a convergence of cultural core values that connect to Confucianism.

Apparently, Chinese audiences that consume Korean TV drama series consider that the Korean society represented in these series seems to be "more Chinese than China" (Dator – Seo, 2004, p. 9). In fact, Korean dramas reflect on family-centered behaviors, respect for the elders, and loyalty to the social group. Thus, this TV programming

indicates what lies at the core of Asian societies that follow Confucianism¹, as it promotes firstly long-term orientation; secondly, a well-defined hierarchical structure; thirdly, relations of trust; and fourthly, governance by individual and social behavior (House et al., 2004; Chhokar – Brodbeck – House, 2008).

Even though South Korean society has been adopting different Western cultural values and behaviors, the cultural core was distant to the United States. Undoubtedly, American audiences and markets were difficult to captivate with culture-based products due to the fact that entertainment products such as music, TV series, or movies were massively generated and consumed in the domestic and international market. Actually, K-pop was not popular in the United States until the *Gangnam Style* phenomenon hit the global market. The use of YouTube facilitated massive access regardless of location and language understanding. This has led to emerging events such as K-Pop Hot 100 in August 2011 and concerts of K-pop in New York in October 2011, in Brazil in December 2011, in Paris in February 2012, and in Chile in March 2012 (Ju – Lee, 2015).

However, the Asian and Asian–American migrants were truly responsible for the expansion of *Hallyu* in the United States. In fact, Korean migration is the seventh largest Asian group in the US (Migration Policy Institute, n.d.). Considering the aforementioned, the impact of *Hallyu* on Korean migrants is more relevant in intercultural contexts as Korean identity becomes a factor of social interaction (Yook – Yum – Kim, 2014).

Nonetheless, the Korean wave was beginning to influence American audiences. In fact, in May 2004, the Chicago Sun-Times newspaper affirmed that the Korean wave was yet to develop in the country given that American, Korean, and American–Korean populations are devoted to Korean TV drama series in cities like Chicago, Philadelphia, Honolulu, Los Angeles, Seattle, Washington, and New York (Jung, 2009). Furthermore, digitalization has helped K-drama to expand in the US: “according to a 2008 report from the Korea Foundation for International Culture Exchange (KOFICE) on the patterns of media acceptance by American audiences, more active approaches to consumption using personal computers and mobile gadgets, rather than the passive reliance on living room’s flat screens, have significantly affected the decision-making process of audiences” (Chung, 2011, p. 41).

1 Furthermore, House et al. (2004) classifies South Korea in the Confucian Asia cluster because this society shows the strong historical influence of the Chinese Confucian ideology. According to the authors, “some distinctive Confucian teachings included the emphasis on learning through a hierarchical, family modeled institution, which taught principles such as diligence, self-sacrifice, and delayed gratification” (p. 189).

One of the reasons of acceptance in the American market is the hybridization of the culture-based products, especially in the case of K-pop and K-drama (Longnecker – Lee, 2018). For instance, the hybrid of K-style and the well-known American musical format that integrates singing, dancing, and the use of familiar images (Ibid.), which connect to internationally recognized music groups from the 1990s such as Backstreet Boys or NSYNC. This is the case of BTS, which has been loved by the American audiences, especially due to their active social media activity (Ibid.).

5. *Hallyu* in Colombia: the Case of Medellín

The introduction of *Hallyu* to different big cities in Colombia, including Medellín, was facilitated by LG's advertising strategy called K-pop by LG, which aimed to captivate the young generation that value technology and social media (LG Electronics Colombia, 2011). Thanks to the aforementioned strategy, K-pop became known in Colombia, and young people showed their interest in the movement and joined (Quintero – Agudelo, 2017). In Colombia, digitalization was key for the expansion of *Hallyu* as the fans' age cultivated interaction through digital forms.

According to interviewees, *Hallyu* Medellín started as a group of individuals with a common interest, that is, South Korean music and video games. The number increased due to easy interaction in social media and the fact that *Hallyu* had expanded globally. However, most of the active members did not know anything about South Korean culture before joining the community.

Most of the interviewees acknowledge that they had a positive perception about Japan and China, and some of them approached *Hallyu* because they already knew animes and J-pop. Furthermore, the interviewees' perception of South Korean culture is varied, that is, South Korea is an advanced and conservative country that relies on discipline; moreover, education is demanding and reflects the required social behavior. Also, the perception shows that "[...] the culture is reserved, the society is based on criticism, there is no freedom to do or think what one wants" (Member survey answer #28, 2017)².

In 2017, *Hallyu* Medellín's Facebook group had about one thousand members, and meetings showed 400 active members. Most of their ages range from 13 to 29 years

² Original text in Spanish: "Su cultura es tan reservada, su sociedad tan crítica, no hay libertad de hacer o pensar lo que uno quiera".

old, and the majority are aged between 17 and 20 years old. From this group, about 69 percent purchase goods related to *Hallyu* such as CDs, DVDs, makeup, and video games. Also, about 55 percent have attended at least one concert of K-pop artists.

Currently, *Hallyu* Medellín has two main leaders who are in charge of decision making, resource management, and organizing events such as *Hallyu* Pocket Medellín, Explosive Music Medellín and Aniversario de la Comunidad (Anniversary of the Community's Creation).

Besides the main leaders, there are fandom leaders for each K-pop artist. Actually, "the fandom leaders are in charge of organizing meetings every week so people can join and increase the numbers of the community" (Interviewee 1, 2017)³. Due to the increase in members, the community counts thirty integrated fandoms, each one with a Facebook group and a fandom leader. Also, fans follow TV drama series, films, and video games, even produced prior to 2011.

This has led to *Hallyu* Medellín to be recognized in the city as promoters of Asian and South Korean culture. The community has been invited to different events and activities in the city, "for instance, Asia Pacific Center gave a space to promote *Hallyu*, and some leaders were there [...]. Animeco also invited us as they wanted something with *Hallyu* in events given that many people go for K-pop. This year many people have contacted us to participate in events" (Interviewee 3, 2017)⁴. Thus, the community has become responsible for communicating what *Hallyu* is about and attracting new members of the public to join and enjoy this cultural expression.

6. Final Comments

The Asian crisis of 1997 led to the development of *Hallyu* thanks to the governmental public policies and the use of digital mechanisms, which meant access to people all around the world. This creative and cultural industry was promoted by South Korean conglomerates such as LG, which eventually in 2011 introduced K-pop in Colombia. Thus, *Hallyu* began to expand in Asia and the Western world.

³ Original text in Spanish: "Los sublíderes que nos encargamos de hacer reuniones casi cada 8 días para que las personas vengan y se integren más a la comunidad".

⁴ Original text in Spanish "Por ejemplo, Asia Pacifico nos dio un espacio este año para pues promocionar Hallyu, estuvieron unos líderes allá (...). También Animeco nos contactó que también quería algo de Hallyu en sus eventos ya que mucha gente va más a sus eventos por el kpop. Este año si nos han contactado para ser público nuestro grupo en eventos".

In Asia, China is a successful market given the connectivity and cultural familiarity. Regarding the United States, distance and cultural differences were not barriers and South Korean migrants helped the expansion of *Hallyu* in major cities around the country. Therefore, the Korean wave made the most of their own cultural legacy, the Western influence, and the rapid changes around the world (Oh – Lee, 2014).

Even though the introduction of *Hallyu* is late in comparison with China and the United States, the *Hallyu* Medellín community has been working to make sure South Korean cultural expressions are known in the city. The community resorts to digital interaction using social media such as Facebook and YouTube to make the cultural movement more visible and to attract more participants. Furthermore, the Korean wave has fostered a space of digital interaction, entertainment, and learning amongst Colombian young people, who became interested in a non-convergent culture and that has led to the creation of a well-organized community and diverse cultural expressions.

This well-organized community of national, regional, and fandom leaders show a hierarchical structure that is respected and followed. Thus, Confucian core values of hierarchy and respect are implicitly communicated, learned, and followed in the new *Hallyu* communities such as Colombia and Medellín. This also means that the cultural distance between the Colombian and South Korean culture tends to create cultural convergence through *Hallyu* and the access to the cultural goods that it promotes.

Therefore, the use of digitalization in *Hallyu*'s goods and services has increased the cultural exports of South Korea around the world and set a platform of soft power to create cultural awareness and learning. This deepens as members of the *Hallyu* communities around the world learn and help to make South Korean culture visible.

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Japanese Linguistic Solutions in the Age of Digitalization: Start-up Landscape in 21st-century Japan

Judit Hidasi

1. The Motivation of the Research

The incentive to investigate language use and solutions of digital vocabulary in Japanese originated from a comparative linguistic research project. The research project initiated and led by professor Károly Polcz of Budapest Business School's Department of English aimed at pointing out the impact scale of the domineering language (that of English) in the terminology of startups worldwide (Polcz, 2017). By setting up language pairs—English–German, English–French, English–Spanish etc.—the research team were to check and screen online startup glossaries in each particular language pair and analyze the solutions with regard to the translation typology (Polcz, 2020). Japanese as a target language was also included in this project of linguistic comparison. It took, however, not long to find out that in contrast to other (mostly European) world languages, in Japanese there are no glossaries of this kind in use neither online (internet-based online glossaries) nor in printed versions. To be precise: there was just one blog identified containing a modest vocabulary list (SEEDATA, 2018) consisting of altogether 25 pages involving less than 70 entries.

This surprising discovery prompted the author to find out what the reasons were behind this. It turned out that in Japan the startup business culture is much less developed than in other countries of the developed world; the number of startups is still very limited but growing; and most startups are strongly domestic market oriented (the Galapagos syndrome will be explained later) and have no or little global potential. From this one could imagine that startups in their linguistic solutions might rely less—if at all—on the English language as a base because domestic consumers could be better addressed in their native tongue. Contrary to this assumption, startup websites—that the author collected samples of terminology from in lack of proper glossaries—proved to offer a rich inventory of English-based terminology. Hence, in this article, first the startup scene in Japan will be mapped, and next the digital terminology part.

2. The Japanese Startup Landscape

It is giant multinationals, not startups, that give Japan its strength and recognition on the global technological landscape. The postwar economic growth has traditionally been attributed to the Japanese large firm centered system, with stable corporate groups focused on *keiretsu* structure around large companies. Since big corporations relied primarily on in-house research and development, the need to purchase products or services from startups was limited. In the 1970s and '80s, the domestic market became so big that companies focused internally. They did not need to compete with global giants. They focused more and more on the domestic market and failed to focus on innovation. In the absence of M&A (mergers and acquisitions) activity and an IPO (initial public offering) market in Japan (Statista, 2021a), it was rather unattractive to invest in startups for venture capitalists.

The political system was also optimized for favoring large firms. A peculiar regulatory system as well as a lack of financial support by the government were obstacles for young entrepreneurs. The social norms of postwar Japan did not serve as an incentive for setting up new, risky ventures. On the one hand, many young people—in accordance with tradition—were expected to carry on the family business and follow in the steps of their fathers. These well-established dynasties of craftsmen, artists, chefs, hoteliers, mechanics, and small manufacturers are stable providers of best-quality artifacts, on-stage performances (Kabuki and Noh actors), hotel and food services, precision tools etc. On the other hand, for university graduates an elite career meant aiming at working for large companies or top government agencies with lifetime employment and seniority-based wages (Statista, 2021b). If young graduates went into a large company, they would have a guaranteed job for life. If they worked hard, they would get a steady stream of big promotions. Even if they did not work hard, they would still get a steady stream of small promotions. So joining a company was all reward and practically no risk. Starting a company was all risk, and reward was uncertain. Reference here to the culture-research guru, Geert Hofstede is in place. The following is pointed out with regard to Japan:

... Japan is one of the most uncertainty avoiding countries on earth. This is often attributed to the fact that Japan is constantly threatened by natural disasters from earthquakes, tsunamis (...), typhoons to volcano eruptions. (...) You could say that in Japan anything you do is prescribed for maximum predictability. (...) In corporate Japan, a lot of time and effort is put into feasibility studies and all the risk factors must be worked out before any project can start. Managers ask for all the detailed facts and figures before taking any decision. This high need for

Uncertainty Avoidance is one of the reasons why changes are so difficult to realize in Japan (Hofstede Insights, 2019).

Compared to the United States (US) and given the fact that Japan possesses one of the top national economies globally (the third after the US and China), Japan's startup ecosystem is still very shallow. While venture capital investment in the US exceeded US\$99 billion in 2018, domestic startups in Japan received only about 164 billion Japanese yen in venture capital, equaling about US\$1.5 billion (Statista, 2021c).

3. Mindset Shift among Young Entrepreneurs?

By today, the employment landscape has significantly changed in Japan. There is less and less lifetime employment and guaranteed promotion, so joining a big company has become less rewarding and riskier than it used to be. At the same time, starting your own company has become less risky because there is equity financing now. Since the burst of the asset bubble in 1990 and the following period of slow economic growth and ultimately decades of recession, a slow economic structural shift can be witnessed that has contributed to building a better environment for establishing ventures in Japan. A new breed of young entrepreneurs, who grew up in Japan's recession era, is emerging. The performance crisis of large firms has made it less attractive to work there and many startups today have been founded by elite university graduates.

There is a clear win-win collaboration opportunity between large corporations and startups. Large corporations have for long focused their in-house research and development (R&D) activities on strategic themes and issues which are directly related to their core businesses in order to increase the return on investment (ROI) and other efficiency indices. Therefore, they have hardly been able to deal with frontier technologies which are far from their existing businesses, resulting in a lack of innovations from Japanese corporations. This inconvenient mechanism in corporate R&D activities has produced motives for large corporations to search deep-tech startups as their co-development partners. Since Japanese high-tech corporations require frontier technologies which cannot be developed in-house, startups spun out from universities, which usually have more advanced technologies, have become their main targets. As a rule, technologies in leading universities are considered to be 10 to 20 years more advanced than technologies in large corporations. However, deep-tech startups spun out from universities tend to lack know-how and capabilities to commercialize. Therefore, they are motivated to collaborate with corporations which

can support them to transform their technologies into viable products and services. Hence, this win-win collaboration opportunity has led to the recent tide of deep-tech investments and corporate venturing. The rise of independent venture capital (VC) funding and the participation of large corporations in venture capital have stimulated entrepreneurship. Established companies no longer see startups as investments, they also start to view them as possible partners in tech to help their core business. The attitude toward failure is also slightly changing in Japan, and the rewards seem to be promising in the long run. Strange as it may look, most of Japan's tech firms tend to be based in the world's most populated metropolis, that is in Tokyo (13 million inhabitants, and population of 42 million in the greater Tokyo area). Recently though, more and more attention has been directed to certain cities and "startup hubs" in the countryside—which for a number of geographical, climatic, cultural, and geopolitical reasons have significant growth potential: on Hokkaido (the northernmost island in relative proximity to Russia and China) and on Kyushu (the southernmost island of the main islands in the proximity of Korea, Taiwan, and China).

Still, on the whole, startups lag far behind in comparison to the US or European countries. The number of startup-dedicated VC funds may be only one-fiftieth (1/50) of that in the US. But some small tech names are breaking into Japan's mainstream—and it is a trend that is set to rise significantly in the coming years. The startup scene in Japan is being characterized by a lot of M&A and IPO activity with traditional businesses either buying tech firms or creating funds to back startups. There is, on the whole, a bigger social awareness and acceptance of startups now when compared to the beginning of the 21st century.

4. Startup Rankings

On the internet one finds hundreds of sites introducing and ranking startups in Japan. The ranking list—as can be expected—is changing by the hour—depending on the performance and market share of the startups (Startup Ranking, n.d.). Just to name a few:

Mercari

First launched in 2013, Mercari (2021) was founded by former Rakuten employee, Shintaro Yamada—and has become one of Japan's most recognizable e-commerce platforms. Epitomizing Japan's mobile shopping obsession, Mercari enables people to easily buy and sell second-hand items in a mobile marketplace with their

smartphones. Over 100,000 items are listed on Mercari each day, which has been described by some in the media as “the new eBay”. It became the first successful unicorn in Japan. It is currently worth almost half a billion dollars and has offices in the United States and the United Kingdom.

Seven Dreamers

Capturing the Japanese spirit of invention perfectly, Tokyo-based Seven Dreamers Laboratories, Inc. was founded in 2014 with the goal of “creating things the world has never seen” (Crunchbase, 2021). It has made breakthroughs in the fields of healthcare and robotics, including a “laundry-folding robot”—which proved to be a great success.

Connected Robotics

Connected Robotics (2015), based out of Tokyo (a rare exception) is making an automaton skilled at crafting *takoyaki*, battered octopus balls that are one of the country’s most popular street foods. The idea of robot-made street food seems to be an ideal panacea to Japan’s dwindling labor market.

Hachi Tama

Hachi Tama unlocks the potential of the internet of things (IoT) with artificial intelligence (AI) by providing a smart, pet-feeding device, equipped with a camera, which can monitor a pet while its owner is out of the house (E27, 2021). Hachi Tama, owned by “cat healthcare toilet” company Toletta, is currently backed by US\$1 million in seed funding, and expects to do very well given there are over 22 million domestic pets in Japan.

Hikakaku

Price comparison site Hikakaku (2021) lists prices of new products side by side with the price of its second-hand counterpart. Sellers can list items at the price that is most likely to result in a sale.

Quatre

In cosmetic stores, it is customary to give out samples to advertize their business. Quatre (n.d.) is looking to bring this idea to a larger scale. Aircatalog is the online matching service where companies that make samples can connect to

establishments that would like to distribute samples. Whether it is a hotel looking for shampoo samples or a gym looking for protein bar samples, there are a myriad of opportunities.

Baseconnect

The team is developing BaseconnectList, a database of business contacts that can be used for sales (Baseconnect, 2021). Thousands of businesses' contact lists can be accessed in about 30 seconds. It has contact lists from 130,000 companies, with the goal to snatch 1 million within the year.

600

600 offers a cashless kiosk-in-a-fridge or unmanned convenience store service for offices (Store600, n.d.). Founded in 2017 by Kei Kubo, the company recently raised 100 million yen from Asahi Media Lab Ventures, SMBC Venture Capital, AG Capital, and Apricot Ventures.

Aeronext

Aeronext (n.d.) provides center of gravity control technology to enhance the basic performance of drones. Founded in 2017, it is currently developing an aeroplane capable of vertical take-off and landing with fixed wings, utilizing its own multicopter technologies.

5. Administrative Measures for Enhancing Startup Activities

As of 2018, Japan has produced two unicorns, and the government is aiming to raise this number to 20 by 2023. The first unicorn was Mercari followed by the deep-learning startup, Preferred Networks. High-growth ventures have also emerged in biotech, gaming, media, logistics, and artificial intelligence.

The Japanese government has recognized the significance and need for support for startups in promoting innovation and technology development. It announced its eagerness to back young entrepreneurs by promoting cooperation between startups and larger firms and setting up funds and other financial incentives to spark investments. On January 31, 2020, its Cabinet approved bills on a tax reform package for the fiscal year (which starts on April 1 in Japan) 2020 in an effort to encourage

business investment in advanced communications infrastructure and startups with innovative technologies.

The annual tax plan will give a 15-percent tax credit to companies that invest in building base stations or other infrastructure for ultrafast 5G mobile networks. The measure is intended to promote the spread of the next-generation wireless technology. The government also plans to let companies deduct 25 percent of such investments from their taxable income when big companies put 100 million yen (US\$917,000) or more into innovative startups, and small and midsize firms invest at least 10 million yen. Under the tax reform plan, the Nippon Individual Savings Account, a small-lot, tax-advantaged investment program, will be reviewed to prompt more individuals to shift their money to investments from savings.

From a human resource point of view, more and more engineers and experts are to be imported from abroad to invigorate startup innovations. Mie Prefecture, Hokkaido Government, and Ibaraki Prefecture have been newly certified for "Startup Visa", one of the International Startup Activity Promotion Projects issued and enforced on December 28, 2018. With this new certification, foreign entrepreneurs are able to stay in Japan for up to one year in the abovementioned administrative regions. Several government agencies and offices dedicated to startup promotions have entered the scene such as the Ministry of Economy, Trade and Industry's (METI) Startup and New Business Promotion Office, Economic and Industrial Policy Bureau; the Japan External Trade Organization's (JETRO) Startups Support Division, Innovation and Intellectual Property Department; and the New Energy and Industrial Technology Development Organization's (NEDO) Startup Group, Innovation Promotion Department.

Japan's legacy in technological innovation is still alive thanks to iconic consumer tech companies such as Sony and Panasonic or carmakers such as Toyota and Honda. From the portable transistor radio to the Walkman, the VCR and Blue-ray to NTT DoCoMo setting, and the oncoming augmented-reality (AR) and holographic generation, Japan has always played a significant role in the development of technology. In order to maintain this legacy, much has to be done for the promotion of startups that could enhance innovation and global presence. In 2019, software-as-a-service (SaaS) startups accounted for 20 percent of the 87 IPOs in Japan. The strength of SaaS startups in Japan is a result of their unique characteristics that make them easy for companies to adopt. Japanese companies can subscribe to these services without any top-down decision making, unlike when introducing package software or on-premises systems.

Japan is facing the impending crisis of an ageing society and a declining working-age population. One-third of Japan's total population is expected to be 65 or older by 2030 (Matanle, 2018). The economy needs to improve work efficiency immediately, and robotics and AI startups are likely to respond to this change in full force, helping businesses automate their work by leveraging digital technologies. In this process, however, Japan should avoid the Galapagos syndrome. The word "Galapagos" has gained attention in Japan as an explanation for the loss of global competitiveness by the Japanese economy and Japanese companies, even though the Japanese companies are competitive domestically (Akiike – Katsumata, 2018, p. 1). It was first said to refer to the unique evolution made by Japanese technologies and services. Later on, however, the word has come to be used to criticize Japanese companies in their failure to expand overseas and their drop in international competitiveness.

6. The English Language Landscape in Japan

English language competence as a lingua franca has become an imperative in the economically developed world—particularly so in the context of globalization. English is namely as much the result of globalization as a generating tool of it. Therefore, it is of utmost importance for Japan to possess an ample number of professionals with effective English language working proficiency in the field of international relations, economics, and science. Still, approved by statistics and surveys carried out in East Asia on a regular basis, Japan has been for decades underperforming with respect to this expectation—in spite of the huge amount of economic, academic, and logistical efforts put into foreign language (which is practically limited and equal to English in Japan) acquisition. Japan has consistently scored last or next to the last in any of the four language skills (listening, grammar, vocabulary, reading) for the past decades (Aoki, 2017). In 2014, in the Test of English for International Communication (TOEIC), Japan ranked 40th out of 48 countries. For the Test of English as a Foreign Language Exam, Japanese scored as some of the poorest English speakers in Asia (Wright, 2015, p. 1). The English-proficiency scores of the Eiken test (used as an official certification of English language ability in Japan) once again proved to be well under the desired minimum level of requirement (Aoki, 2017).

The reasons behind this low performance are complex and manifold (Hidasi, 2019), but suffice to say that contrary to common belief, English in Japan has stayed to be an obstacle to overcome in communication. Even in cases of emergency—like earthquakes, tsunamis, or for that matter the recent coronavirus epidemic—communication in English means a challenge. The Ministry of Health, Labor and Welfare's website

(n.d.) uses poor quality machine translation for much of its foreign language provision of information including that relating to Covid-19. A ministry official confessed: “Our ministry doesn’t have a dedicated team of staff specializing in English-language communication” (Kopp, 2020, p. 16).

It is of course not only the grammar and not only the different structure of the language but also the writing system and the pronunciation. From among the four writing systems used parallelly in modern Japanese (*kanji* = Chinese characters; *hiragana* = one form of syllabic writing; *katakana* = another form of syllabic writing; and Latin alphabet) *katakana* (48 syllables) started being used to help Japanese people pronounce borrowed words (the majority being loanwords from English in modern times) as transcribed into Japanese in the *katakana* system. Since the 20th century, *katakana* has been used mainly to write non-Chinese loanwords, onomatopoeic words, foreign names, and also in telegrams and for emphasis (the equivalent of bold, italic or upper-case text in English). The Japanese system phonetically combines two of the English sounds per character with the exception of the “n” sound. As an example, we take the English word “family”—which will be transcribed as ファミリー (“*f’a-mi-rii*”). In Japanese, there is no distinction made between “l” and “r”. In spite of the fact that Japanese children are taught the Roman/Latin alphabet at a fairly young age, their schoolteachers almost always teach them the alphabet’s pronunciation using *katakana* because on the one hand, it is easier to teach the Japanese children that way since *katakana* is already familiar to them, and on the other, the Japanese teachers are not able to make the correct distinction and pronunciation themselves. Hence, they learn to pronounce the number “2” (“two”) not like “too” but like “*tsuu*”—because that is the nearest transcription version in *katakana*. As children grow up without knowing the correct phonetic pronunciation of the English words, they gradually lose the ability to hear and differentiate between them. Soon enough, words like “rice” and “lice”, “sip” and “ship”, “than” and “dan” become the same to the Japanese ear. As a result of this practice, English words pronounced by Japanese speakers—following their *katakana*-driven articulation—would result in words like: シリーズ (*shiriizu* for series), ワード (*waado* for word), カリスマ (*karisuma* for charisma), ワイヤレス (*waiyaresu* for wireless), タイヤー (*tayaa* for tyre), and ツアー (*tsuaa* for tour) etc. Japanese users—mistakenly and naively—believe that English speakers would understand these words, but in reality, these distorted versions are mostly incomprehensible for English ears.

There are very few fluent speakers of English in Japan, and even the ones with functional language skills tend to produce *katakana*-driven pronunciation. In spite of this, the prestige of the English language—particularly in advertisements, science

discourse, and media—is high. So much so that even in cases when a valid and usable Japanese word or expression exists, there is a tendency to replace them by a japanized version of the English loanword. This is often done purely for the effect of creating a sense of modern, up-to-date, international narrative. This tendency is to be observed also in the linguistic solutions of digital communication and for that matter on startup websites.

7. The Language of Japanese Startup Websites

Digital technology itself was initiated and mostly developed in science communities with an English linguistic background. Hence, several countries and language communities of the world with a profoundly different language culture are forced to find solutions to successfully combine the semantic and pronunciation specifics of each English lexical item in digital vocabulary with their own linguistic-bound repertoire and possibilities. Japanese language offers an exciting example of hybrid solutions—beginning from mirror translations to direct “takeovers” through mixed coinage of loanwords—but all significantly influenced and camouflaged till unrecognizability by the strict rules of the Japanese *katakana* transcription.

The categorization of linguistic solutions can be broken down into the following types in accordance with research in the field (Polcz, 2017, 2020):

1. zero equivalent
2. formal equivalent
 - a. direct loan
 - i. full loan
 - ii. target language approximation
 - b. partial direct loan (hybrid mirror translation)
 - c. indirect loan (mirror translation)
3. combined equivalent
 - a. partial content-based hybrid translation
 - b. indirect loan (partly content-based translation)
4. autonomous equivalent

Out of these, several types have no relevance in Japanese because of the transcription imperative. “Full loan”, for instance, would make sense only if the Latin alphabet and pronunciation were in use. But Japanese speakers tend to pronounce English loanwords according to the syllabic segmentation of their *katakana* script—no matter that in principle they are aware of the original pronunciation rules. Hence, for instance

monthly active users (MAU), even if written in English, would be read out as “*man-surii akutibu yoozaa*”—following the *katakana* breakdown: マンスリーアクティブユーザー. Examples for other types can be found though:

- target language approximation: network → *nettowáku* (ネットワーク);
- partial direct loan: ebook → *denshi bukku* (電子ブック)—it has to be noted here that for “electronic”, the target language word is used, whereas for “book”, it keeps the English word—notwithstanding a valid Japanese equivalent (*hon* 本);
- indirect loan: income gain → *riso* (利息);
- partial content-based hybrid translation: search engine optimization (SEO) → *kensa enjin saitekika* (検索エンジン最適化)—in this case, the first and the third elements apply the Japanese equivalent, that is content-based translation, but the second word is the japanized version of the source language;
- indirect loan (partly content-based translation): minimum sellable product (MSP) → *saishou hanbaikanou purodakuto* (最小販売可能プロダクト)—the first two words are given an approximation of semantic meaning in Japanese, while the last word is transcribed in *katakana*;
- autonomous equivalent: “due diligence” translates into Japanese by a Japanese word of its own: *hyouka* (評価) meaning “evaluation”.

8. Final Remarks

Japan—our world becoming more and more globalized notwithstanding—still belongs to the group of countries that are not properly known and understood, and hence, it is often misinterpreted by many observers and analysts. The reasons for this are manifold including geographical distance, language barrier, and, last but not least, cultural screens. The impressive economic and technological achievements produced by Japan by the second half of the 20th century gave the impression of an unprecedently massive and uninterrupted development that might lead the country to become in time a number one economic power of the world (Vogel, 1979). These expectations of linear growth have failed and led to setbacks in economic performance as well as in technology. For example, in robotics and the internet of things (IoT), in the hardware area Japan has traditionally been very strong. But there has been a shift in the last decades, so that the importance is not so much on hardware alone but on software as well. As a consequence, Japan has lost its primacy in many areas of digital technology and innovative solutions including AI integrating with robotics. These changes notwithstanding assumptions in Japan—leading power of innovation and digital technology—have remained in the global perception. Hence, people get surprised when confronted with the reality: today, Japan has one of the lowest levels of

entrepreneurship in the developed world. Due to reluctance to in-corporate changes and reforms, Japan is lagging behind other developed countries. This explains the relatively small number of startups in Japan.

In September 2020, Japan's then new prime minister, Suga Yoshihide announced the formation of a Digital Agency, a new government entity created to help pave the way for digital transformation in Japan. This digital transformation is aimed at boosting efficiency in both public and private sectors. The newly appointed digital transformation minister, Hirai Takuya labeled his new way of doing things as "government as a startup". "I want the agency *itself* to be a startup. And in a way it is. It started from nothing," he outlined (Rakuten Today, 2021, emphasis original). While most new governmental organizations are built on top of some existing legal framework, this time, they are building from scratch. "Essentially we want to change the way we've done things up until now. The agency is a symbol for regulatory reform, a major pillar of our growth strategy; we want to change the mindsets of every governmental agency" (Rakuten Today, 2021). Despite a global reputation for technological prowess, Japan's public sector and much of its private sector have been slow to embrace the digital era. At the end of the '80s and beginning of the '90s, Japan's economy was leading the world, but the move from a hardware-driven world to a service- and software-driven one was not properly addressed by Japan. Japan's manufacturing prowess once drove its economy to extraordinary heights, before a shift towards digital services stole the spotlight away. Yet, some corporate attitudes remain stuck in the old ways. This has to be changed.

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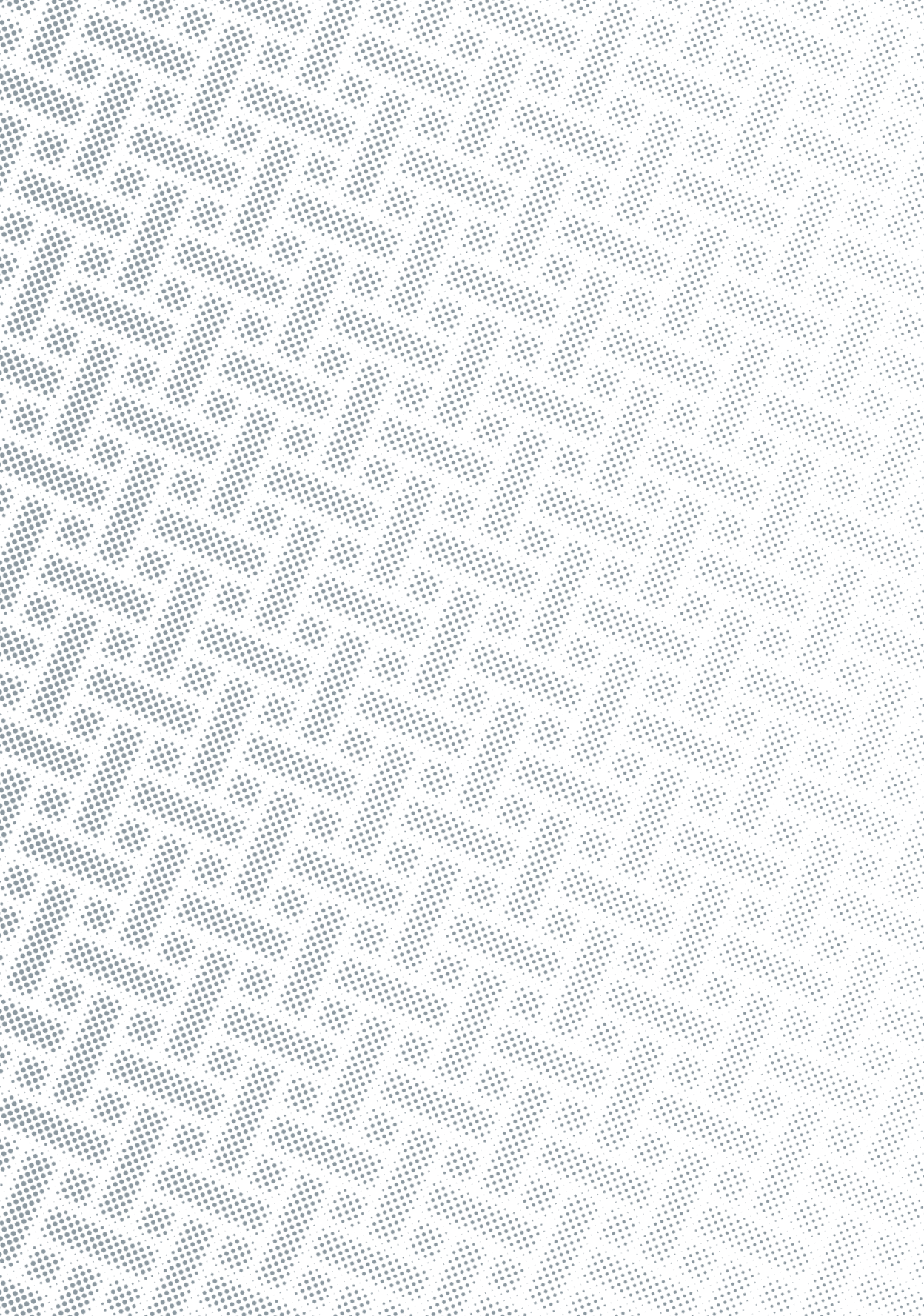
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The Asian World – Are We Ready for It?

Elena E. Nicolae and Mariana Nicolae

1. Introduction

The Covid-19 pandemic has totally changed the way people look at and interact with the world. The present research explores what accelerated change means in 2021 at mega levels and how it affects people at personal levels. If one looks at the shifts between Asia and Europe, one can make sense of the mega levels, though even those trends have been affected by the pandemic. Demographically, more than 50 percent of the world's population lives now in Asia. From among the world's 30 megacities, 21 are currently in Asia, and even there, according to the data of the United Nations (UN), population shifts are happening fast, so by 2030, Delhi will overtake Tokyo as the world's largest city. In purchasing power as well, Asia was predicted to constitute half of the world's middle class by 2020. However, the pandemic has brought about significant changes and research done by Pew Research Center (Kochhar, 2021) shows that South Asia, mainly India, together with Sub-Saharan Africa, have known a large leap in the growth of poverty, reversing the progress on this front after the financial crisis in 2008.

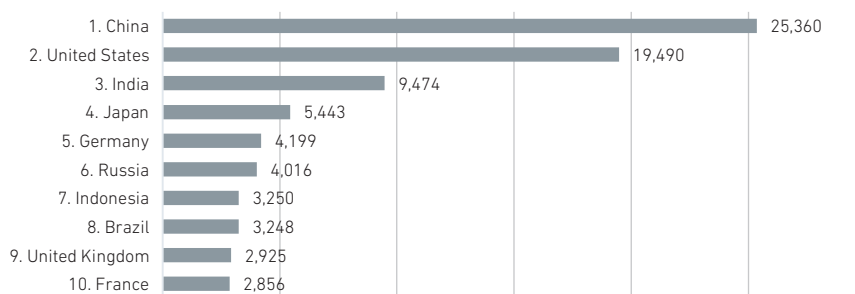
Nevertheless, the Asians, the rich, the crazy rich, the not so rich or even those downright poor, continue to have an impressive effect on the world trade, especially through their purchasing power that is already changing the relevant statistics. If one considers the GDP purchasing power parity (PPP) calculated at 2017 data in USD as seen in Figure 1, it is clear that from the top 10 countries in the ranking provided by Index Mundi, four are from Asia, only three from Europe, and two from the Americas. If Russia is counted as part of Asia, it is clear that more than half of the most powerful spenders are in Asia, no longer in Europe or America.

The way that China and other Asian countries responded to and have managed the pandemic has been watched by the whole world. Of course, opinions differ whether those responses were appropriate or not, were sufficiently transparent or not. However, most experts have long stated and politicians also started to admit that the Asian world is ready to begin the Asian era for the world as we know it now. Most of

the Western-specialized media on geopolitics and economics concentrate on Asia and how its trends and megatrends are going to change the world as we have known it so far. For example, the May-June 2021 issue of *Foreign Affairs* is devoted to “Trade Wars” analyzing mostly, but not only, the relations between the United States (US) and China. The end of integration, problems of world leadership, the need of significant reforms, saving the planet, and saving humanity are among the themes of the respective issue with a clear common thread uniting those approaches and underlining the need for good policy choices. As Daniel Kurtz-Phelan (2021), the editor of the issue points out, it is “ultimately, not immutable economic forces but policy choices—foolish or wise, myopic or farsighted—[that] will determine where we go from here”. This is an interesting and a relatively new point of view, obviously depending on which school of thought one has followed.

Figure 1

Top 10 countries in the world by GDP (PPP) (in billion USD)



Source: Index Mundi, 2020.

Issues of identity and culture are common in today's Asian and non-Asian worlds, and those issues create tensions at mega, mezzo and micro levels. Will things really change in the coming world? What will the new normal look like? Is Asia a sustainable hub of the megatrends that are already changing our world(s)? And if so, which part of Asia? Japan, China, and India have long been in the forefront of large and fast-growing economies. And now there are growth rates in Vietnam, the Philippines, and Bangladesh that leave behind European economies such as those of the Netherlands, Belgium, and Switzerland. Are we Europeans therefore part of the megatrends that seem to shape the world today or are we left behind or, even worse, suffer their consequences? Is technology going to be a dream come true for most people or another nightmare? Will people be able to work in mixed teams with robots and artificial intelligence? Based on whose culture? And who will lead? And... who are we?

These are some of the questions the paper tries to explore from the perspective of how (higher) education in Europe, under heavy scrutiny in a globalized online society, is preparing students for the Asian world and the various megatrends at work there. It does so through a local and international review of the most significant research available to the authors on the issues connecting Asia to the European Union (EU) and, therefore, Eastern Europe. The most important claim that the paper puts forward is that, no matter how implicit and diffuse, culture is a vital component of any megatrend, whether on- or offline. Even if this is highly acknowledged and accepted at a theoretical level by pundits and academics, it is the last item on the list of most of the largest economic or political projects and the main cause of their failure. The paper also puts forward a suggestion for practical policy making in order to address the strategic importance of research and education for so many diverse and competing entities.

2. Megatrends

Based on evaluating relevant research, industry data, news reports, and in-house interviews with project leaders, the Project Management Institute (PMI), a global leading authority on project management, conducted an assessment of the state of the world after the pandemic set in and came up with five megatrends, which seem to be prevalent in today's project economy. The specialists at PMI believe that the megatrends have a common denominator which is both dangerous and opportunistic for the world we live in: they intensify exclusion, disruption, and discontent (Prashara, 2021, p. 4). This is a view shared by many other entities and individuals studying the same reality, even if they identify a different number of megatrends (Frost & Sullivan, 2020; World Bank Group, 2020, pp. 60-62) or label the megatrends differently, not even naming them as such (Khanna, 2019, pp. 143-214). The five megatrends that the authors chose to briefly address here are based on the PMI research (Prashara, 2021): Covid-19; climate crisis; civil, civic, and equality movements; shifting globalization dynamics; and mainstream artificial intelligence.

2.1. Covid-19

The noise around the pandemic is deafening, however, the data speak for themselves: as of April 10, 2021, the World Health Organization (WHO) reported 134,308,070 confirmed cases of Covid-19 globally, including 2,907,944 deaths (World Health Organization, 2021). All researchers and pundits agree on the fact that the medical

crisis revealed and emphasized systemic inequalities regarding income, wealth, employment, and access to healthcare for disadvantaged and marginalized groups.

Probably one of the most visible effects of Covid-19 has been the way in which digitalization impacted how people work and learn. Probably the briefest but clearly expressed summary of this impact was done by Mac Glovinsky, global program manager at UNICEF: "The world of education got knocked 30 years ahead overnight" (cited in Fister Gale, 2021). Glovinsky and his team worked with Microsoft, the University of Cambridge, and Dubai Cares to make up for the shutting down of schools in over 190 countries.

2.2. Climate Crisis

Climate change has been used lately in a multitude of ways by different groups of people to demonstrate whatever their objective is. However, besides its threatening effects on the quality of people's lives, it has also increased the gap between the rich and the poor. The UN Department of Economic and Social Affairs (UNDESA, 2020, p. 83) shows that the ratio between the incomes of the richest and the poorest 10 percent of the global population is 25 percent larger than in a world free of global warming. To this, the effects of the Covid-19 crisis need to be added which intensified the forces of conflict and climate change.

The EU has massive research and statements on the matter of climate change. It is clear that climate change is in fact a composite megatrend, one in which so many elements can be found as underlined by the European Environment Agency (EEA, 2015). This is important for the current research because it suggests that more has to be done than updating environmental policies or enhancing economic and technology-driven measures to make them more efficient. What the report suggests instead is, put simply, a change in culture and more education. It sounds simple, but it is probably one of the most complex lines of actions to be taken: living well within ecological limits. This simple statement "requires fundamental transitions in the systems of production and consumption that are the root cause of environmental and climate pressures. Such transitions will, by their character, entail profound changes in dominant institutions, practices, technologies, policies, lifestyles and thinking" (EEA, 2020, p. 6).

2.3. Civil, Civic, and Equality Movements

The third megatrend that affects our future is civil, civic, and equality movements and is correlated to all the other megatrends. Mass protests against an increasing number of very diverse subjects from systemic racism and police violence to corruption, electoral manipulation, or LGBTQ rights, have increased annually by an average of 11.5 percent in just one decade, from 2009 to 2019. That this megatrend is picking up so rapidly can be inferred from the existence of a Global Protest Tracker designed in 2017 by the Carnegie Endowment for International Peace (2021) to help researchers, decision makers, and journalists with data to exemplify how protests affect global politics. The tracker shows that since 2017 over 230 significant anti-government protests have erupted worldwide, in more than 110 countries, out of which more than 25 major protests have been directly related to the coronavirus pandemic.

2.4. Shifting Globalization Dynamics

Shifting globalization dynamics is an important megatrend which shows, among others, that although there is a strong trend in population ageing all over the world (UNDESA Population Division, 2020), this also means that in 2020, millennials and Gen Zers are now to form the majority of the global workforce. Why is this important? Because more than one-third of the young people which make up the millennials and Gen Zers mainly live at present in two countries: India and China, and the figures that Population Matters (2021) publish show that around 2027, India is expected to overtake China as the world's most populous country. Even if, according to the same source, by 2050 China's population is projected to decrease by 2.2 percent or 31.4 million, Asia will still remain the most populous continent of the world.

The relevant issue for the present research is that the increasing number of young people in emerging markets is not matched by their work education, in other words, the reality in those emerging markets is high unemployment and rising poverty levels which have been exacerbated by the pandemic. One of the important issues here, clearly not the only one, is the gap of diverging values between organizations and young people in understanding needs, aspirations, and ways of working. And these complex issues can be addressed only by education.

2.5. Mainstream Artificial Intelligence

Mainstream artificial intelligence (AI) is the last megatrend chosen to be explored in order to give a clearer background to the present research. At the moment, AI is all around us from Google Translate, which is used by all, though relatively few know that it is a neural machine translation system, to heavy industry robots or surgical robots. AI has expanded well beyond automated routine tasks to taking decisions for humans based on their behaviors. AI does so by using adaptive algorithms to help people through unfamiliar environments. One cannot be sure in which direction the world is taken; there are so many dystopic visions of a future in which AI monitors and even enslaves humans. Will people be able to work in mixed teams with AI, which is already happening in many parts of the world (Merkusheva, 2020), or will accelerated innovation take place mainly and consistently in Asia (Roberts et al., 2021)? It cannot be sure, but there is hope that the ethical choices that need to be built in the algorithms are values of an inclusive, diverse, and collaborative world, and that the policy regulations that are being taken all over the world will be done with a view on the future of humanity, not the supremacy of one player or ideology over the others on the global market (Li et al., 2020; Slaughter – McCormick, 2021).

Nourbakhsh and Keating (2019, p. 2) discuss humanity's uncertain future and the need to embed ethical discussions in all technology-related issues. They have both been known as supporters of conversations that look at the diversity of human society's historical heritage and, therefore, their voices are very credible. "Unless algorithms are developed intentionally to get rid of bias, they have been shown to harm equity and harm justice," says Nourbakhsh and underlines one of his strongly and often reiterated views: "People think of technology as value-neutral, but AI systems aim to optimize data, and embody value in those tasks" (cited in Lev, 2020).

With all the existing implications, with the continuous anticipations of accelerated innovation in everything, including medical research, education, and creative work, the need for more quality education, and particularly more diverse education, is essential in the prospect of Asia becoming the new power hub of AI in the very near future. As Nourbakhsh and Keating (2019, p. 2) say, "we need a common language to describe and analyze the future that is now unfolding" and continue by underlining that semantics and language are a foundational aspect of their shared research work. Words such as autonomy, agency, technology, and identity are threatened with reformulation, as AI shifts our understanding of what it means to be human and how human-machine interactions may evolve.

Since the focus of the present research is how the local, European culture connects Asia to where we live and one claim of the research is that culture is a vital, even if implicit and diffuse, component of any megatrend, the authors would like to briefly bring into the discussion a book of fiction, written by the 2017 Nobel prize laureate, born in Nagasaki but living and being educated in Britain, Kazuo Ishiguro. The book, *Klara and the Sun* (2021), is a glimpse into a dystopic world told by an AF (artificial friend) to a human adolescent girl. The book is a simple, yet powerful metaphor of the many possibilities the future has in store for humans. And “ethics” as such often shows up in the story which also looks at the power of education (the lifted vs. those unlifted) and the need for wisdom, empathy and, as the story unfolds, growing up, which is only allowed for humans, not for machines no matter how intelligent they are or can become.

3. Black Swans or Gray Rhinos?

In the end, no matter how many megatrends are taken into consideration, five or seven or ten, or how they are labeled, those megatrends are all about the human capability of connecting, about people’s cultures and about shared values. Actually, John Naisbitt, who first used the term “megatrend” in the early 1980s to refer to a series of changes taking place mainly in the US and, later on, in the rest of the world as well, was strongly criticized for the concept (Slaughter, 1993). However, the term, as well as Naisbitt’s books (1982; Naisbitt – Naisbitt, 2010), became incredibly popular and has been widely used ever since. Nevertheless, the criticism of the academic world, and not only that, continued. Slaughter (1993) gives a critique of Naisbitt’s books (1982 and its sequel from 2000) rightly underlining the lack of a theoretical basis for the analysis of complex change processes and a lack of clear selection criteria for the processes through which certain trends have been selected over others.

One should not, however, forget that the ‘70s and ‘80s of the last century were the heyday of predictions. The need to have a patterned view and understanding of what is happening to us, our world and our future is part of the general mindset of people and explains the popularity of the genre and the many books that have become best-sellers in spite of being flawed. Another criticism of Naisbitt’s first book, that contributes to the discussion here, is the focus on the US and issues characteristic mainly of the Western world and cultures.

And yet, as Slaughter (1993, pp. 846-847) shows, contemporary Western cultures can no longer provide answers for the world’s complex problems. This is partly due, in Slaughter’s analysis, to the fact that industrialism exacerbated rational and

quantitative approaches and ignored in general other, more intuitive approaches such as myth, religion, participation, and transcendent knowledge. And partly but clearly very relevant to the conversation is the inability of most people to see the outlines of a new world order. In times such as the last decades that saw an accelerated technological progress but also an increase in the volatility, uncertainty, complexity, and ambiguity of our worlds (Bennett – Lemoine, 2014), forecasting the future has become so relevant and important for human societies that new academic disciplines and fields of research have been established under the umbrella title of “futures studies” alongside with popular bestsellers such as Naisbitt’s books. And yet, the capacity of human beings to understand future changes is rather limited as explained in a seminal research published in 2013 in *“Science”* by Quoidbach, Gilbert and Wilson under the title “The End of History Illusion”.

Being able to evaluate future possibilities could help us all to take better decisions. And yet, is it possible in practice? Pundits in risk management and organizational and societal change have come up with various metaphors in order to describe thinking processes. Probably the most relatively recent and well-known examples are Taleb’s (2007) “Black Swan” and Wucker’s (2016) “Gray Rhino”. These are not the only examples of beastly metaphors (in English) to offer excuses for people’s faulty decision-making processes. There are others as well: the elephant in the room, the see-no-evil monkeys, the ostrich with its head in the sand, and so on. They are, in this or other forms, to be found in other languages as well.

If Taleb’s black swan was used to describe rare and unexpected events, Wucker’s gray rhino is used to refer to an obvious large and dangerous possibility that people choose to ignore. In retrospect, the Covid-19 pandemic was a gray rhino. Governments have been warned, but never believed it. And so are many more aspects of the world today, including climate change with all its foreseeable effects. As Wucker (2020) says, it is better to concentrate on gray rhinos and do something about them than on the unpredictable and rare black swans. She advises to take the following roads: “long-term thinking, a greater emphasis on the real economy rather than stock market performance and, above all, a commitment to hold ourselves and our leaders accountable”.

The way we look at and react to the world around us is deeply rooted in our cultures, our identities and our values. From Said’s *Orientalism* (1978), which drew attention to the inaccurate cultural representations that were so widespread at the time in the West, to Ferguson’s *Civilization: The West and the Rest* (2012), which is another popular but highly controversial book, most of Western academics and the general public

have been living with a mindset shaped by the general superiority of the Western world and civilization over the rest of the world. That is obviously true of Central and Eastern Europe as well (Moldicz, 2017).

As it has been shown in the section dealing with megatrends, the Asian world has been slowly but clearly and surely changing the worldviews of the Western civilization. Grudgingly and with strong and clear ideological lenses, analysts, consultants, entrepreneurs and lately even politicians have started to address the issues related to Asia's rates of development, and the general public is attracted more and more to the popular cultures of a diverse and paradoxical continent.

The next section of the research explores how education reflects the rise of Asia, how it prepares people for a new world which is already ridden by complex questions: research tends to consider the impacts of the megatrends at the micro levels where education can usually have an effect. The authors have chosen to refer to education as a gray rhino for reasons that will be elaborated in the next section.

What will the new normal look like? Is Asia a sustainable promise for our already changing world(s)? And if so, which part(s) of Asia? The pandemic triggered significant declines and deepened disparities globally. What will happen to Europe, to the individual countries? Are people part of those megatrends or are they left behind? How can any education system cope with such complex, contingent questions? Should it?

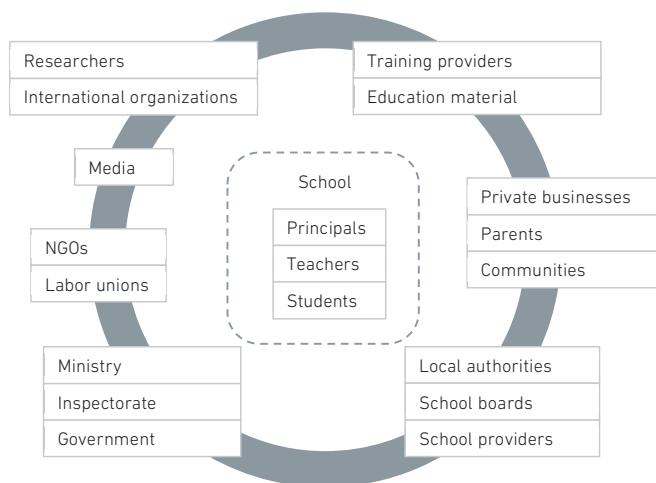
4. Education

The authors are going to briefly explore the role of education in preparing people for the challenges of the future. Education is both blamed for a lack of enough understanding of the issues and solutions that need to be addressed and, at the same time, education is called upon to step up the important work it does in alleviating the effects of underdevelopment and improve living conditions. In most countries of the world, education suffers the same treatment: enormous expectations to improve society, usually budget cuts of various degrees, and blaming and finger pointing when the unexpected or even the expected appears under various forms to disrupt societies as shown in section 2.3.

There is a lot of literature on the need for more and better education for everybody. Nicolae (2015) provides a comprehensive image of the various social and individual needs for education and the economic value of a good education system for any

given society. At the same time, the public narratives all over the world continue to insist, with good reasons, on the need for reforms in order to improve education systems. In Romania, for example, the last three decades have witnessed a large number of attempts to reform the system of education without much success. This is an expected outcome as reforms and changes in large systems are not easy to implement and evaluate in terms of effects. There are no magical solutions, no ready-made recipes that can be copied from more successful situations to guarantee success. The more complex systems are, the more unpredictable reactions or unexpected consequences may appear in responses to seemingly simple changes. When such reforms are done hastily, without thorough preparation, limited by funding and time, the results will be disappointing to the majority. And this is naturally due to the many stakeholders and therefore vested interests in the education system of a country. Figure 2 offers a good image of the probable stakeholders in education, on their diversity and range and, therefore, on the variety of visible and less visible interests in education as they have been highlighted in an OECD study (Burns – Köster, 2016).

Figure 2
Potential stakeholders in education



Source: Burns – Köster, 2016.

Education has been deeply impacted by the Covid-19 crisis at all its levels and all over the world. As it has often been shown, the pandemic has almost annihilated the functioning and outcomes of education systems that had been already under tension in many different ways.

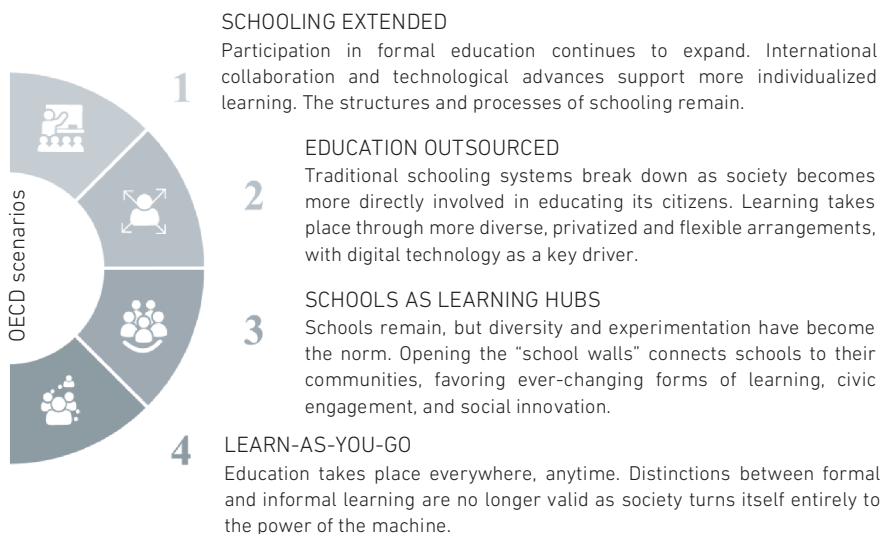
This is the main reason why the authors chose to refer to public education as a gray rhino in the present research. Although most researchers and analysts of education, as well as the general public, have been long ago warning about the necessity of reforms at all levels and the necessity to bring digitalization closer to the everyday practice of schools and higher education institutions, not much has been really done in this respect. Most public education systems have not been created, nor prepared, to cope with a pandemic, with the need to provide and to carry on effective teaching and help learning during the lockdown. This is especially true at the primary and secondary levels of the education system where children rely heavily on the safety net supports that many receive in school and which have been transferred to parents during the pandemic. The figures vary depending very much on the various organizations providing them. However, there is clear consensus on the general deterioration of academic performance together with other developmental skills prompted, beyond the crisis of the education systems per se, by the widening of already existing socio-economic inequalities.

In this difficult period there have been a lot of proposals and responses to address the crisis from specialists and non-specialists alike. As it has already been mentioned in section 2.1, the world of education was forced everywhere to take fast decisions and to jump online. There are so many possibilities and even more reactions and criticisms that it is indeed difficult to make sense through all the noise surrounding us. Therefore, as a solution to look at the various versions of the future (under the forms of assumptions, hopes, fears, or merely signals that some things started to move) the OECD analysis (2020) has been chosen that suggests four possible scenarios into the future of education (schooling in the OECD publication) for a time frame of about 20 years.

The alternative futures presented in Figure 3 are the result of a long process of research by various OECD specialists and consultants, and they are built around the following possibilities: a) schooling or education is extended; b) education is outsourced and, as a result, there will be an expansion of learning markets; c) schools change into learning hubs becoming involved in their communities and being open to innovation; and d) the end of school-based learning in general and the acceptance of the fact that people can learn anywhere, anytime.

Figure 3

Possible scenarios for the future of schooling as seen by OECD



Source: OECD, 2020, p. 7.

Obviously, there are many issues that need to be raised and discussed concerning each scenario. The OECD study (2020) does so by starting from present and past experience and lessons from the pandemic. It seems that under scenario 1 there will be a continuation of the current mass education/schooling systems given its economic and practical benefits: taking care of children while permitting parents to work. There is also a cultural benefit to scenario 1: in a globalized world schools act as a social framework, building relationships, bridging inequalities, and reproducing social norms.

One of the important implications of scenario 1 is that education systems are traditionally built around national models and identities. As a result of digitalization could the world witness the birth of an international school system? Will students be able in the future to enroll in a public school system of another country without having to worry about the usually discriminating fees for international students? And there are many more other issues related to developing common assessment and instruction kits, or issues related to investment in education research and development, or the effects of technological development, especially AI, on mainstream education system (virtual and augmented reality, robotics, blockchain etc.).

One issue that is critical and inflates spirits and discussions across the world, as it affects everyone, refers to the use and transparency of data. People discuss the real need for all educational data to be shared with all stakeholders irrespective of the situation and the answer is not easy to give as so many things depend on it including student-teacher, teacher-parent, and other relationships in schools.

Scenario 2, the outsourcing of education, is also based on signals from the present and have been intensified, in the authors' opinion, by the pandemic. Remote work, innovations in business models and policy choices, increasing digitalization etc., more need for employee well-being might all contribute to the emergence of scenario 2, in which instant access to information indeed allows learning to take place anytime, without the facilitation of a traditionally qualified teacher. This scenario, however, raises a lot of questions from how it is known that learning is indeed taking place to the role and qualifications of teachers, from learners with special needs to the sad truth that a diversity in learning sources does not necessarily mean access to and use of those sources.

Scenario 3, in which schools change into learning hubs is another way to embrace a future which appreciates decentralization and is comfortable with uncertainty. The authors of this present research—as educators in higher education—find this scenario challenging but less likely to happen except in certain areas and to certain limited extents. It is true that there is a global outcry about the increasing lack of formal education credentials (diplomas, graduation certificates, degrees) to reflect competence. Everyone can recall local stories of corporations hiring people with relevant experience and skill sets but not necessarily with the “right” advanced qualifications. The debate is long and ardent, and the many power games around formal academic credentials contribute even more to inflame it. The increasing polarization and atomization of our societies now prompt for building bridges and strengthening belonging in communities. However, the future is hazy and people's capacity to correctly predict it seems still more of a dream than a real capability (Quoidbach – Gilbert – Wilson, 2013).

Finally, scenario 4, “learn-as-you-go” means that education happens continuously, anytime in a digital world. Distinctions between formal and informal learning are no longer valid and the authors of the OECD study (2020) believe that society, through digitalization and AI, seems very likely to adopt this scenario. Obviously, there are many questions from the contents of learning to larger ethical ones (auditing algorithms), to the use of student data, the role of teacher etc.

Consequently, the question arises: what can (higher) education do? Based on the literature that has been consulted, and mainly on the authors' own research, practice and reflections (Nicolae, 2015, 2017; Nicolae, 2020) it is believed that, beyond the big picture made up by scenarios and megatrends, the researchers feel empowered as educators to do some things at micro, individual levels in order to avoid the gray rhino. Some of the things they have been doing as they consider them significant and worth their efforts in order to prepare students for a volatile, uncertain, complex, and ambiguous (VUCA)—and very possibly Asian—world, are the following:

- Encourage students to think critically and creatively, expressing themselves, not only reproducing and echoing the teachers' thoughts and ideas;
- Stress importance of lifelong learning, not only grabbing of degrees;
- Encourage students (and the lecturers and their colleagues as well) to read books, not only articles;
- Encourage and reward patience, hard work, and discipline;
- Role model: more humility than arrogance;
- Politeness, courtesy, etiquette and netiquette, civility;
- Introduce diversity in classes through case studies, business models that are not only mainstream or coming from the Anglo-Saxon traditions but also from Asia and other parts of the world;
- Encourage Romanian business students to know more about their own local identities and roots, avoiding thus the tendency to know more about Japanese business do's and don'ts than about their own or about what happens in Hungary or Poland or other countries in their proximity.

The authors strongly believe that these are practices that need to be incorporated in education. Because the "new normal" that has become the main topic all over the world will require new skills, and the scenarios the OECD (2020) listed as possible for the future of education show the need for profound changes in the present education systems. As many surveys show (TIAA – EY Parthenon, 2020), the costs of not caring and not acting will most probably be significantly high.

5. Conclusions

In this paper the authors have explored issues related to accelerated change at mega levels and how change affects people at personal levels by mainly considering education. They have looked at how the Asian world is ready to begin and how people can get ready for that.

Five megatrends have been explored: Covid-19; climate crisis; civil, civic, and equality movements; shifting globalization dynamics; and mainstream artificial intelligence, showing the need for more long-term collaboration and understanding than blame gaming and short-term competition.

The authors have looked at how (higher) education, under heavy scrutiny in a globalized online world, is preparing students for the future. No matter how implicit and diffuse, culture is a vital component of any megatrend, whether online or offline. Suggestions have also been put forward for individual practice that could further be incorporated into practical policy making to address the need for sustainable and inclusive education for so many diverse and competing entities.

Hopefully, the authors have managed to point out that if humanity wants to avoid the next gray rhinos it would be better to start collaborating even in highly individualistic areas such as higher education or even people's own self-development. The literature analyzed shows that collaboration and inclusion are vital for a systemic change and sustainable development.

If people want to thrive in a VUCA world, they need to learn continuously in an agile and innovative learning environment, which means not only listening to the ideas of others and getting to understand their cultures but, as Khanna (2019) says in the concluding remarks to his very popular book, *The Future is Asian*, coming to terms with the fact that we are living the making of a global history which will have to consider Asian and Western civilizations as equally important.

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