Denormalization of the Global Order during the Covid 19 Pandemic and Its Impact on the Industrial Era 4.0

Dwi Ardiyanti & Fitriana Harahap
Universitas Potensi Utama
ardiyanti.1987@gmail.com, fitriannaharahap1@gmail.com

Abstract
This paper is a response from the shift of the global order that had focused on the mandate of international organizations to become more and more parties who played an important role in handling the Covid-19 pandemic, even at the level of the grassroots movement. This research focuses on increasing the use of digital access during the pandemic. The authors try to convey his analysis of the shift in the global order and its impact in the industrial era 4.0. The authors also analyze the challenges faced in using digital post Covid-19. This paper departs from the existence of a new phenomenon that emerged during the Covid 19 pandemic around the world, namely the learning from home, work from home, as well as everything new in the digitization system which then becomes a new normal behavior globally. The purpose of this paper is to analyze and explain the impact of the Covid 19 pandemic in the era of industry 4.0, both in the challenges to the potential for digitalization.

Keywords: industry 4.0, pandemic, global order, denormalization, digitalization

Background
Determining the case of Covid 19 as a worldwide pandemic is a big challenge for the global community. As of March 11, 2020, after the World Health Organization (WHO) determined a case of death due to Covid 19, it was the beginning of a new phenomenon globally and was enforced massively. All governments in the world are asked to immediately act responsively to prevent the high number of deaths due to the outbreak of the Corona virus which later became the Covid-19 pandemic (2019).

Previously, the world has been tested with a similar pandemic status, including the Spanish Flu (1916-1918), SARS (2002-2003), Ebola (2014-2016), MERS (2105). The number of deaths due to the Corona virus and the resulting Covid-19 pandemic is a challenge for the world in all fields. Globally, the world community is asked to come to terms with the new normal life phenomenon, namely without much physical contact, limited physical presence, the existence of Large-Scale Social Restrictions (PSBB), the phenomenon of work from home (wfh) to online learning. All of these activities are a new phenomenon and this habituation must be carried out immediately with the regulations issued by policy holders both at the local and central
levels. Until finally digital media finally became a solution to the problems caused by the outbreak of Covid 19 in the world.

Then, the global community must adapt to the impacts caused by Covid-19. Among them are physical development, fabrication activities, to small to large scale trade, many must also stop. Which then becomes an important lesson that skill development in non-physical development schemes must also be a priority for the government in the future to deal with global attacks like today. In the digital era, skills or abilities in using digital equipment are very important. Then the question that arises is how to behave abnormally in normal conditions (denormalization) in the global order in the current pandemic era? What is the impact of global attacks on the industrial era 4.0? Will digital mastery in the era of globalization then become one of the points in future development goals?

Global Order in Time of Covid-19 Pandemic

As the solar system in the space field already has its own order with its own orbit, each country already has global rules. The global order is like a global formation that is believed and obeyed with or without binding relationships. In the context of the global order, the state is one of the actors in it and is subject to international regulations.

This paper will discuss global decision-making in handling Covid-19 which then affects all levels of the international community. International organizations such as the United Nations, WHO, IMF to the World Bank have taken certain steps to reduce the impact of Covid-19 around the world, for a better order of life during the pandemic. Parag Khanna in his article published in The Hill: From Pandemic Crisis to a New Global Governance alluded to the need for new governments from all countries to deal with the global pandemic crisis. That during the 20th century the way of handling problems that was centered on international organizations such as the United Nations and WHO had to be renewed and strengthened. This was reaffirmed by the game of recriminations being carried out over the epidemic that hit the world by countries with strong economies, such as China and the United States.

On the other hand, International Organizations such as the IMF and the World Bank recorded a new record, namely credit applications of up to 1 trillion US dollars from 100 countries related to the handling of Covid-19. It is undeniable that for the sake of security and as a result of the implementation of the new work system, namely Work From Home (WFH) to online learning, there are many people in the world who have to endure layoffs to prevent the spread of Covid-19 around the world. Then, this also has an impact on international trade activities, especially factory materials which are mass produced for export.
One of them is Indonesia, which provides aid funds and basic necessities to people who are vulnerable and affected by the Covid-19 outbreak. The government has even budgeted a total of 250 million rupiah (Kemenkeu). Of course, this policy to provide aid funds to affected communities is not a recommendation from an international organization. However, it is the authority of the Indonesian government to participate in protecting those who are economically vulnerable.

The global order by placing international organizations as the main actors in handling the Covid-19 pandemic then turned unclear with the presence of multiplayer actors in it. The states no longer have to wait for orders to take policies related to handling Covid-19. In this case, the occurrence of global flows is interpreted by the existence of a better relationship than just orders and recommendations, namely "humanity calling or what is called humanity calling". This term was written by the author as a broad word that gives more space and greater meaning in responding to Covid 19.

Held, et al have seen a change in the shape of the relationship that occurs in the global order, which is interpreted as:

“A process (or set of processes) that takes the form of a transformation in the organization of the space of social relations and transactions seen from the increasing extensity, intensity, velocity, and impact of global flows that produces flows between continents or between regions, as well as a network of activities, interactions, and the application of power."

The authors here provide another point of view that the Covid 19 pandemic provides wider space for non-state global actors to actively participate in responding to it. From the individual level, each of them has been asked to be introspective of their own hygiene so that they will not injure the human rights of others and instead give them away. This worldwide pandemic has resulted in non-state actors continuing to struggle with ways to reduce the risk of Covid-19 sufferers. For example, artists, academics, NGOs and philanthropists around the world who have good intentions to raise funds to protect those affected by Covid-19, such as the poor and workers who are unable to stay at home to continue the survival of their families. They, in this case, are other actors in efforts to prevent the transmission of the Corona virus and reduce the number of Covid-19 sufferers throughout the world in addition to health workers and police. Held's statement can also be interpreted that the increase in communication in global flows has increased good (unwritten) cooperation between parties with the same goal of reducing the number of victims and transmission of Covid-19.
Multiplayer Actor in Handling Covid-19: Denormalization of the Global Order

Most of the governments of countries are dealing with Covid 19 very progressively, especially seeing the conjunctural rules set by the United Nations. Then the scheme of government order changes to follow the global order. In this case, countries are asked to take part in dealing with the Covid-19 pandemic by following recommendations from international organizations such as WHO and policy makers within the country. As David Heyman (London School of Hygiene & Tropical Medicine) emphasizes that "The governance of pandemics typically involves collaboration between the WHO, ministries of health and public health institutions."

Most of the world's people are starting to realize that there is a change in the global order, namely with the presence of individual actors in reducing the number of Covid-19 sufferers in the world. With self-discipline and good cooperation between people, it is not impossible that the Corona virus or what is called the Covid-19 pandemic will end soon in the world. Each party in this case must be actively involved in overcoming the spread of the Corona virus. So with that, the global order which was previously an agreement between actors at the policy-making level then the community who became actors or objects of implementing policies, then shifted to the discipline of each individual to maintain a healthy lifestyle which then influenced the policies that were made. Previously, it should be noted that the policies taken by governments around the world are mostly recommendations from the United Nations as an international organization. Then, people around the world implement the protocol. The world order still has to follow recommendations from policy makers as has been done by the United Nations and WHO.

The multiplayer actor in handling covid 19 here is the many roles played by various groups to reduce the number of Covid 19 sufferers and suppress its spread. As reported in one of the China Daily articles:

"…These non-state actors are playing an ever-expanding role with a direct stake in the formulation of health policy standards and the development of public health systems. For example, among the non-state actors that have been working on creating tools to respond to infectious diseases are the Bill & Melinda Gates Foundation, the Global Fund, the Coalition for Epidemic Preparedness Innovations (CEPI) and the Global Alliance for Vaccines and Immunization (GAVI). In light of the novel coronavirus outbreak, they have quickly mobilized resources, and pooled together leading global institutions and professionals around the world to take action to respond to the pandemic”.

As mentioned earlier, that in handling the outbreak which has been categorized as a pandemic, there are many actors from various circles who are trying without being asked and without any ties to work together with the community to reduce the
number of Covid 19 and deal with the impacts it causes, for example the impact on the economy. Therefore, a change in the global order is very clear.

The change in global order referred to in this case is the mechanism for mandates and recommendations from international organizations such as the United Nations, which are usually part of binding treaties and then signed by member states, now no longer have to be applied during the current pandemic. The community at the individual level can even now be a savior for the surrounding environment and even for the world to remain disciplined and carry out the #stayathome policy. On the other hand, the global order that was previously based on physical meetings (the UN session and the official presidential meeting for example), can now be replaced by digital media. Formal meetings such as the G20, for example, can be held with digital equipment, such as teleconferences without coming physically. The #stayathome policy also has an impact on the implementation of working from home (WFH), which then also uses a lot of digital media. A global order that focuses on individual discipline rather than on the severity of mandates implemented like stick and carrot policies, as usual, is a major change from the global order around the world. From the explanation above, it can be seen that the pandemic has changed the order of life globally, from what previously the policy-making process required a physical presence to a presence that can be replaced by digital media.

Returning to the discussion on recommendations from WHO and the United Nations as an international organization, David Heyman stated that WHO established International Health Regulations (IHR) whose task is to make recommendations and deal with the spread of viruses throughout the world which can be called pandemics, including Cholera, Plague, Yellow Fever, and Smallpox since 1969. But apparently not all of these viruses can be solved and instead evolve and spread throughout the world, such as HIV and SARS. When an outbreak with a very large number of victims throughout the world, the WHO will determine the status of a pandemic and then make certain recommendations with the aim of stopping its spread and reducing mortality. IHR's job is to collect blood samples from patients from various countries and then to be tested and with the aim of finding new antivirals which are then distributed throughout the world to deal with outbreaks. In this case, the government in each country must cooperate and follow every recommendation.

One form of recommendation made by international organizations is the policy taken by most countries that have prisons with excess capacity to release their prisoners, as is the case in Indonesia with the target of releasing 50,000 convicts (cnnindonesia). This later became another problem in the field of internal security.
**Denormalization: The Concept of The New Normal**

In the discussion of the New Normal, many webinars and scientific meetings both online and physically are held to discuss this agenda. Governments around the world do not want to put their citizens in a position that is not safe from the threat of the epidemic, but it is realized that the economy cannot be stopped for much longer. So, the New Normal concept needs to be discussed by the experts. Moreover, the New Normal discussion is a recommendation from the United Nations as a world organization that also discusses the important goal of reducing the number of Covid-19 victims in the world.

The New Normal concept of WHO recommendations, among others: (1) Countries that will implement the new normal concept must have evidence that the transmission of the corona virus can be controlled; (2) Countries must have adequate public health system capacity, including having hospitals to identify, test, isolate, trace contacts, and quarantine COVID-19 patients; (3) The risk of epidemic transmission should be minimized, especially in areas with high vulnerability. Including in nursing homes, health facilities, and crowded places; (4) Preventive measures in the workplace should be established, such as physical distancing, hand washing facilities, coughing and sneezing etiquette, and other preventive protocols; (5) The risk of import transmission from other regions must be closely monitored and considered; (6) The community must be involved to provide input, opinion, in the process of the new normal transition.

**The Impact of Industry 4.0 in the Pandemic Period**

We are currently in the Industry 4.0 era. Here, applying the concept of automation carried out by machines without the need for human labor in its application. Where this is a vital thing needed by industry players for time, labor and cost efficiency, for example the implementation of Smart Factory. Not only that, currently data retrieval or exchange can also be done on time when needed, via the internet network. So that the production and bookkeeping processes that run at the factory can be authorized by interested parties anytime and anywhere as long as they are connected to the internet.

If we look back at the Industrial Revolution 3.0 which is the starting point of the digital revolution era, which combines innovation in the fields of Electronics and Information Technology. There is a debate whether the Industrial Revolution 4.0 is suitable to be called an industrial revolution or just an extension or development of the 3.0 Industrial Revolution. But in fact, the development of the Industrial Revolution 3.0 to the 4.0 Industrial Revolution was very significant, new things that had never existed before in the 3.0 Industrial Revolution era began to be discovered. Experts
believe this era is the era of the Industrial Revolution 4.0, because there are many new innovations in Industry 4.0, including the Internet of Things (IoT), Big Data, 3D printing, Artificial Intelligence (AI), driverless vehicles, genetic engineering, robots and smart machine, and so on. One of the biggest things in the Industrial Revolution 4.0 is the Internet of Things (Farzayee, 2020).

The Internet of Things (IoT) has enabled various devices to be connected to the existing Internet network and controlled remotely as well as other virtual information assets (Sundara, 2017; Efendi, 2018). Aims to extend the benefits of continuously connected internet connectivity that allows us to connect machines, equipment and other physical objects with networked sensors and actuators to acquire data and manage their own performance, thereby enabling machines to collaborate and even act on the newly acquired information independently (Efendi, 2018).

As a small example, if previously in the era of the Industrial Revolution 3.0 we could only transfer money through ATMs or bank tellers, now we can transfer money anywhere and anytime as long as we are connected to the internet network. Enough with the applications in our gadgets and internet connection, we can control our financial activities wherever and whenever.

In addition to the Internet of Things, there is also the term Big Data which plays an important role in the Industrial Revolution 4.0. Big data is all information stored in cloud computing. Big data analytics and cloud computing, will help early detection of defects and production failures, thus enabling prevention or improvement of productivity and quality of a product based on recorded data. This can happen because of big data analysis with the 6c system, namely connection, cyber, content/context, community, and customization.

The term Big Data began to appear after 2005 was introduced by O'Reilly Media. However, the actual use of data and the need to understand the data have actually existed since ancient times (Aryasa, 2015). Many parties have tried to define Big Data (Chandarana, Parth, & Vijayalakshmi, 2014). It can be concluded that Big Data is a collection of various data collected with large storage capacity. The more data collected, the greater the storage volume (Eritha, 2016; Gunawan 2020).
But actually, the Industrial Revolution 4.0 is not just the application of advanced technology that is all digital, but also requires changes in the way of thinking and working so that it is necessary to master new skills that are more adaptive to this new situation. The Industrial Revolution 4.0 has brought new changes in life. Change is a necessity, and have we adapted to this new change?

It turns out that the Covid-19 pandemic has accelerated us to adapt to the Industrial Revolution 4.0. Some people who have not tried or have not considered it important, whether they like it or not, have entered the "trap" of the Industrial Revolution 4.0. Even more so in this WFH era, it is increasingly felt that life is changing. So, we entered the 4.0 Industrial Revolution because circumstances were forced (by accident). There are 6 areas that are experiencing real changes.

First, the world of education is now forced to implement online learning, from elementary to university during this pandemic. One way that can be used to carry out the online learning process is to use Google Classroom. Utilization of Google Classroom can be through multiplatform, namely through computers and through mobile devices. Teachers and students can visit the site classroom.google.com or can download the application through the playstore on android or through the app store on IOS with the keyword Google Classroom. The use is free of charge, so that its use can be carried out as needed (Gunawan, 2020).

Lecturers are also forced to learn to prepare lecture materials and online exams, as well as how to assess the achievement of learning outcomes. The campus is forced to prepare the rules of the game and its infrastructure. Students are forced to be prepared to learn new ways and even have to be ready for extra internet quota. Nabila Hilmy’s research based on questionnaire data obtained information about knowledge about online lectures that as many as 37% of students stated that they used the Whatsapp application as a learning medium. As it is known that the whatsapp feature makes it easy for lecturers and students to send softcopies of lecture materials,
voicenotes, discussions and questions and answers can be done easily because students are already familiar with this application. As many as 32% of students use Google Classroom as a learning medium, with various features that certainly make it easier for lecturers and students to share assignments and there is transparency of grades. Another 19% of students stated that they used the Zoom application to attend lectures via real time video conferencing. Another 12% stated that they use Google meet, e-mail, edmodo, and sms features from their respective smartphones (Zhafira et al, 2020).

Figure 2. Online learning media used by the Faculty of Economics, UTU

Based on the subsequent survey items, information was obtained about students' knowledge of the media used in online learning activities. As many as 53% students of Faculty of Economics, Universitas Teuku Umar (UTU) already know the learning media used in online teaching and learning activities, while the remaining 47% do not know the media before. The media in question are Whatsapp, Google Classroom, Zoom, Google Meet, E-mail, and others. The online learning model makes students more active and find out about many things, one example is from the use of this application. With online learning activities, students learn to use a new learning media, actively practice, and construct their learning environment (Simonson, Smaldino, Albright, & Zvacek, 2012).

Figure 3. Online Lecture System Preference Based on Student Learning Style
Second, the world of work and bureaucracy is now characterized by WFH. It turns out that we can work more flexibly, efficiently and quickly with online media, by saving paper, electricity, and fuel oil. We are all increasingly adaptive and accustomed to tele-conferences across cities and even across countries. Even a day can participate in 5 intensive cross-office meetings without being constrained by traffic jams. With the new way of working, the world of work faces the challenge of setting performance indicators for its employees, which are different from the old ways. In the end, the incentive system had to change. Indeed, the management of work organizations is experiencing disruption, and we have only been able to adapt partially.

Third, the world of health is entering the Industrial Revolution 4.0. During this Covid-19 pandemic, patients are worried about visiting the hospital. Today's doctor-patient interaction is considered risky. Because of that, online doctor consultations are now appearing and medicines are sent via online courier services. Even in developed countries, it has now come to the practice of tele-medicine based on artificial intelligence. In fact, we are already enjoying artificial intelligence for health with smart devices, such as counting the number of steps a day or heart rate.

Fourth, the social world greatly benefits from various platforms that allow for wider and faster donations or crowd funding. During the Covid-19 pandemic, many people use this platform to seek funds for various social interests. Even well-known artists without having to gather are able to successfully hold charity concerts online (detik.com).

Fifth, the world of online transportation is expanding. During this WFH, sending goods and buying food is enough to use an online motorcycle taxi service without any worries. This means that we already believe in online platforms that are connected to various things. Online systems like this have controlled human behavior.

Sixth, the world of agriculture and fisheries is facing a new way. In the era of the Covid-19 pandemic, some agricultural products experienced oversupply in villages and prices fell. Conventional distribution is limited. However, now some of Bandung Institute of Technology's partner farmers are enjoying online sales at better prices. Consumers also enjoy lower prices. Actually, this distribution deadlock should be overcome with blockchain instruments to manage food logistics more efficiently.

The future agenda of agromaritime 4.0 is the application of drones to fertilize and control pests, unmanned tractors, underwater robots, satellites to view nutrients in soil and marine ecosystem conditions, and bioinformatics to produce superior seeds.
Social distancing by the government certainly changes the social behavior and work of the community. The term working from home (WFH) or distance learning is becoming familiar and considered an opportunity for telecommunication operators in terms of data traffic. The unified communication innovation is suitable for companies for WFH or startups that develop online learning platforms for education circles. In conditions like today, everyone needs the internet and the internet needs telecommunication infrastructure. To deal with Covid-19, it is necessary to have a simple regulation that is fast at a reasonable cost in this case. Including for telecommunications operators, there should be no burdensome costs up to the local government level. Because without telecommunications operators, we cannot serve the internet needs for work and school from home,

Executive Director of the Indonesia ICT Institute, Heru Sutadi, said that the spread of Covid-19 had changed the world's perspective, for example, the suggestion to work from home would certainly have an impact on the country's economy and the Indonesian Information Technology (IT) industry.

However, if viewed from the positive side, Covid-19 also opens opportunities for cellular operators due to the increased use of the internet, applications, and artificial intelligence to facilitate human needs.

**Conclusion**

From the evidence presented above regarding the impact of using digital media during a pandemic like today, it proves that industry 4.0 is accelerating during the pandemic. Human habituation to use digital media during a pandemic is actually good for companies based on technology and information systems. However, there are many challenges ahead in terms of media mastery and the availability of human resources for its development.

Education now can no longer be applied only by focusing on conventional systems as has been done in Indonesia for many years. The education system must continue to be developed by following the development of needs and times in the industrial era 4.0. For example, in terms of new discoveries, the educational curriculum must create an adequate platform for this. The curriculum no longer makes school students to memorize, but has begun to get used to finding a new technology that can be used to solve everyday problems with digital tools. This of course needs the support of many parties, especially teaching resources. Then, all teachers and the resources they have must then be willing to transform in order to achieve these goals. Thus, the educational curriculum will be in accordance with the needs of the community.
Then, the next challenge is the problem of capital. As is known, in terms of development planning, a lot of capital, both physical and non-physical, is needed. Sufficient capital for physical and non-physical development will greatly affect the mastery of technology in the industrial era 4.0. For example, as happened during this pandemic, no one thought that the world would be hit by a disease outbreak that killed millions of people in a short time. The readiness of each country in dealing with disasters is highly dependent on the ownership of capital and technology to protect its people. Each government must be prepared to deal with the outbreak. In the era of disruption 4.0, everything will be easier to handle with digital media and this readiness must be made as early as possible. Learning from the Covid-19 pandemic, governments in all countries must be prepared with all possibilities. Therefore, all use of Big Data in the digital era must be maintained and development planning can no longer rule out digital-based technology. Keep in mind that the setup of these media and resources cannot be instantaneous and instantaneous. If the governments in all countries had prepared themselves properly, then the epidemic that ended with the status of a keeper as it is now will not happen. By tracking patients with digital access and applying high discipline, the public will be more aware of the dangers and will not fall more victims.

References

Arief, L., & Sundara, T. A. (2017). Studi atas Pemanfaatan Blockchain bagi Internet of Things (IoT). Jurnal RESTI (Rekayasa Sistem dan Teknologi Informasi), 1(1), 70-75.

CNN Indonesia. (2020, April 16). Yasonna: Pembebasan Napi saat Corona Rekomendasi PBB. Retrieved June 2, 2021, from nasional website: https://www.cnnindonesia.com/nasional/20200416152520-20-494204/yasonna-pembebasan-napi-saat-corona-rekomendasi-pbb

Detik News. (2020, April 14). Penggalangan Dana MPR untuk Berantas COVID-19 Capai Rp 500 Juta. Retrieved June 2, 2021, from detiknews website: https://news.detik.com/berita/d-4977237/penggalangan-dana-mpr-untuk-berantas-covid-19-capai-rp-500-juta

Efendi, Y. (2018). Internet of Things (IoT) Sistem Pengendalian Lampu Menggunakan Raspberry Pi Berbasis Mobile. Jurnal Ilmiah Ilmu Komputer Fakultas Ilmu Komputer Universitas Al Asyariah Mandar, 4(2), 21-27.

Farida, U. (2018). Pengelolaan big data pada perpustakaan: tantangan bagi pustakawan di era perpustakaan digital. Journal Net. Library and Information, 1(1), 19-29.

Farzayee, S. (2020). China and the Future of AI. Resolusi: Jurnal Sosial Politik, 3(1), 53-62.
Gunawan, F. I., & Sunarman, S. G. (2018, February). Pengembangan kelas virtual dengan google classroom dalam keterampilan pemecahan masalah (problem solving) topik vektor pada siswa SMK untuk mendukung pembelajaran. In Prosiding Seminar Nasional Pendidikan Matematika Etnomatnesia (pp. 340-348).

Heyman, D. (August 2021). Governance of pandemics - The Global Challenges Foundation. Retrieved May 2, 2021, from https://globalchallenges.org/global-risks/pandemics/governance-of-pandemics/

Kemenkes. (2020). Keputusan Menteri Kesehatan Republik Indonesia Nomor HK.01.07/MENKES/413/2020. Retrieved 3 April 2021 from https://www.kemenkes.go.id/media/14941/kepmenkes-hk-01-07-dak-covid-19.pdf.

Khanna, P. (2020). From pandemic crisis to a new global governance – The Hill. Retrieved 2 January 2021, from https://thehill.com/opinion/international/494683-from-pandemic-crisis-to-a-new-global-governance

Kumparan. (May 2020). Beda Konsep New Normal Versi WHO dan Pemerintah Indonesia. Retrieved April 2, 2021, from https://kumparan.com/kumparansains/beda-konsep-new-normal-versi-who-dan-pemerintah-indonesia-1tUP5YCbU75

Luo, W. (2020). Global health security must be multiplayer - Chinadaily.com.cn. Retrieved June 2, 2021, from Chinadaily.com.cn website: http://epaper.chinadaily.com.cn/a/202004/29/WS5ea8d36ea3102640f4a62d4f.html

Sirait, E. R. E. (2016). Implementasi teknologi big data di lembaga pemerintahan Indonesia. Jurnal Penelitian Pos dan Informatika, 6(2), 113-136.

Zhafira, N. H., Ertika, Y., & Chairiyaton, C. (2020). Persepsi mahasiswa terhadap perkuliahan daring sebagai sarana pembelajaran. Jurnal Bisnis Dan Kajian Strategi Manajemen, 4(1).