



## The Digital Revolution as a Effort to Build a New Economic Narrative

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**ABSTRACT:** Environmental pollution and climate damage are certainly a serious problem for most people because their impact can threaten the survival of the ecosystem of creatures and humans themselves. So this needs to be anticipated regarding the effects of carbon, gas emissions, and the greenhouse effect, all of which have replaced the operational systems of analog or manual devices with electronic devices, especially digital-based electronic devices that are environmentally friendly and have the potential to maintain economic stability with new patterns and methods. digitally based.

**Keywords:** Green Technology, New Economic Narrative, Climate Damage



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### INTRODUCTION

The development of the digital world has made such big changes to the business world, the non-formal industrial sector to education ([Bildt, 2017](#); [Volberda et al., 2021](#)). This makes the state order to form a new structure in the operational mechanism based on digital technology ([Aguilera & Pandya, 2021](#)). It is unavoidable that technology has become an integral part of human life, as a result, all forms of operations in the industrial sector, organizations and educational institutions implement systems of administration, information, and practical digital-based data transactions and are connected between one application and another ([Breslow, 2018](#); [Roth, 2019](#); [Wiseman, 2015](#)).

The process of disruption experienced by the organization or company is expected to be able to cut through the complicated bureaucracy and the stages of procedures that are considered difficult for others in the administrative process ([Beltagui et al., 2020](#); [Fraser & Ansari, 2021](#); [Khan et al., 2021](#)). In addition, the business order in the industrial sector has also experienced almost the same pattern by utilizing digital technology and optimizing new media devices ([Hassan, 2021](#); [Quinn, 2014](#); [Utesheva et al., 2016](#)). Communication and information systems run easily and automatically with operational financing that is much more efficient and suppresses budgeting, transparency, and accountability and programmed automatically so that data can be easily identified and easily accepted ([Fritzsche & Gölzer, 2021](#); [Green, 2020](#); [McLoughlin et al., 2019](#)).

Applications that are operated through online digital device platforms continue to grow every year created by creators, programmers and algorithms experts as well as investors who dare to "burn money" to invest in *start-up companies* through the *venture capital process*. Of course, a large

investment for technology in *start-ups* is needed to streamline spending ([Kieti et al., 2021](#); [Shree et al., 2021](#); [Zatsarinnyy & Shabanov, 2021](#)).

Increasing number of *start-ups* for digital applications in information and communication technology is expected to create *green technology* which also has the potential for a *green economy* ([Ali et al., 2021](#); [Liu & Dong, 2021](#); [Ying et al., 2021](#)). In the era of the 3rd industrial revolution as the beginning of the establishment of early digital technology or the establishment of computerization, it was the initial target to achieve *green technology* or environmentally friendly technology ([Desheng et al., 2021](#); [Ikram et al., 2021](#); [Shan et al., 2021](#)). While the establishment of Silicon Valley is designed to expand *green technology* so that people turn to digital technology to reduce the use of fossil fuels that have the potential to have high population levels, reduce the effect of greenhouse gases and so on. The use of new media is strived to become a new medium in the use of work equipment so as not to depend on analog technology ([Lievrouw, 2012](#); [Lister et al., 2009](#)). Therefore, new media are important economic institutions to view them from a corporate perspective, a balance between a public space perspective and a corporate perspective is needed in viewing the operationalization of search engine platforms such as Google, then social media such as Facebook, Twitter, and Youtube and search engine platforms or aggregators ([Sudibyo, 2021](#)).

Efforts to develop digital technology to replace analog technology as an effort to minimize the effect of greenhouse gases. According to Bill Gates, greenhouse gases trap heat, causing the Earth's average surface temperature to rise. The more greenhouse gases, the higher the temperature rise. And once in the atmosphere, the greenhouse gases stay there for a long time; about one-fifth of the carbon dioxide emitted now will still be in the atmosphere within the next 10,000 years ([Gates, 2022](#)).

Greenhouse gas emissions have increased dramatically since the 1850s due to human activities, such as burning fossil fuels. Carbon dioxide emissions, which have grown since the 1850s, have caused global average temperatures to rise as well. Greenhouse gases absorb heat and trap it in the atmosphere. It works the same way as a greenhouse. It is undeniable that the Earth is getting hotter, due to human activities, the impact is bad and will worsen ([Gates, 2022](#)).

Since the spread of the Covid 19 outbreak in Indonesia since 2020, the effect of greenhouse gases has decreased along with the decrease in air pollution levels because people are starting to get used to Working From Home, Learning From Home to Worship From Home ([Afshar, 2020](#); [Ingusci et al., 2021](#)). So that the intensity of the use of fossil fuels in transportation facilities, as well as natural gas has also decreased. The intensity of using electrical facilities increases such as digital gadgets, then computers or laptops whose use at home is increasing compared to the use of analog power so that what was previously limited to digital adaptations are starting to be required for familiarity with the use of digital technology. This then demands every individual, organization or community of citizens to think in a disruptive way.

This disruptive effort then pushed the Government and the private sector, with the New Normal situation, the industrial and education sectors are required to start switching to a digital-based work system so that they can increase the potential of green technology and *clean technology* to reduce the potential for natural damage and the effects of greenhouse gases.

Various sources of disruption trigger the emergence of various business impacts. On the supply side, many industries are seeing for themselves how new technologies create entirely new ways to meet existing needs and significantly disrupt existing value chains. Storage technologies and *grid computing* in the energy sector will accelerate the shift towards more decentralized sources. The

trend of digitization is leading to more openness, meaning more data in the supply chain, more data at the fingertips of customers, and more end-to-end comparisons in terms of product performance shifting power to the customer. So that through digital technology it is able to provide benefits for producers and consumers themselves.

This paper aims to explain and understand how digital technology is a new economic narrative in technology that aims to create a shift from analog technology to green technology and increase efficiency.

The method used in this paper is to use a literature review that examines various secondary data sources such as newspapers, books or primary literature, and through research journals. The literature network data search system used here, the author uses Research Rabbit and also for the analysis of the network literature the author uses the bibliometric method.

Bibliometrics comes from the word biblio or bibliography and metrics, biblio means novel and metrics means measuring. Bibliometrics is meant to measure or analyze novels/literature by using mathematical and statistical approaches ([Diodato & Gellatly, 2013](#)). On the other hand, the purpose of bibliometrics is to explain the written communication process and the character and direction of development in a descriptive manner, counting and analyzing various communication facets ([Basuki, 1990](#)). Bibliometrics can share a description of the written communication process and its development in a discipline. 3 theorems in bibliometrics. These are Lotka's law, Zift's law and Bradford's law. Lotka's rule is used to determine author productivity, Zift's rule is used to calculate word rank and frequency in literature ([Royani & Idhani, 2018](#)).

## **RESULT AND DISCUSSION**

### **Starting the Digital Revolution**

The digital revolution is a term to describe a phase in the history of technological development when there is a transition from the application of analog-mechanical technology to the application of digital electronic technology in almost all fields. The digital revolution describes the estuary of change in length; step by step; through a series of experiments, innovations, and policy changes at the national and international levels involving many parties: governments, international institutions, industry, research institutions, and scientists. More strictly speaking, the digital revolution refers to the comprehensive changes brought about by digital computing and communication technologies since the second half of the 20th century. The crucial period was between the late 1950s and late 1970s, when there was continuous adoption and development of computing technologies that gave birth to internet phenomenon with various applications and functions. The digital revolution is characterized by the integration of computing systems into aspects of people's lives. Computerization and digitization touch all aspects of life ([Sudibyo, 2021](#)).

When computers and the internet have become an important part of people's lives, the Digital Revolution has also changed the working mechanism in various fields. Along with the rapid development of digital technology and the development of digital data recording methods replacing analog as a new standard in the business world, new functions of digital technology have emerged that replace manual functions, which in the previous decade were carried out by secretaries or typists. This then becomes the basis of a picture of the transition from analog systems to digital systems.

The digital revolution has also colored the fourth Industrial Revolution which advances digital technology not only in communicating between computers with one another offline, but also connecting one computer to another computer or other device in an integrated manner and can also be connected to each other globally.

The fourth industrial revolution had a monumental impact on the global economy, so vast and varied that it makes it difficult to decipher one impact from the next. Indeed, all the major macro variables that one can think of, GDP, investment, consumption, employment, trade, inflation, and so on will be affected ([Schwab, 2017](#)).

The impact that the fourth industrial revolution had on economic growth is a problem that divides economists. On the one hand, technology pessimists argue that the critical contributions of the digital revolution have been made and their impact on productivity is almost over. The convergence of the physical, digital and biological worlds at the heart of the fourth industrial revolution offers a significant opportunity for the world to achieve great gains in resource use and efficiency. As the World Economic Forum's Project Mainstream Initiative to accelerate the transition to a green economy, the promise going forward is not only that individuals, organizations and governments can be less impacted by the natural world, but also that there is great potential to restore and regenerate our environment through use of technology and design of intelligent systems.

There are four paths that can lead us to the era of digital change ([Schwab, 2017](#)). First, thanks to the *Internet of Things* (IoT) and smart assets, it is now possible to track the flow of raw materials and energy to achieve new and major efficiencies across the value chain. *Second*, the democratization of information and transparency that emerges from digitized assets has given citizens new powers to ensure that companies and the state carry out their responsibilities. *Third*, new information flows and increased transparency can help change citizen behavior on a large scale, as it becomes a pathway of less resistance within a set of business and new social norms of a sustainable green system. *Fourth*, as detailed in the previous section, new business and organizational models promise innovative ways of creating and sharing value, the result of which is system-wide change that can actively benefit the natural world as well as our economies and societies.

The disruptive changes brought about by the fourth industrial revolution have defined how public institutions and organizations operate. In particular, the fourth industrial revolution uses governments, whether regional, national, or local, to adapt and reshape themselves by finding new ways to collaborate with citizens and the private sector.

The Disruption theory moves in line with the emergence and development of information technology applications and transforms ordinary forms of entrepreneurship into *startups* ([Christensen et al., 2018](#); [Kasali, 2017](#)). It is expected that individuals who are at the *incumbent level* must be able to accept innovation and be willing to be open to receiving updates. On the one hand, technology also requires the government to disruptively replace technology that has the potential to damage the climate and the environment, it should be disrupted to change and switch to energy-saving technology and expand and introduce green technology to the public ([Terry, 2020](#)).

Disruption is a process that does not happen instantly. Starting from an idea, research or experiment, then the process of making, developing a business model. When successful, newcomers will expand their business at the lowest point of the market that the *incumbent ignores*, then slowly work their way up to the segments that the *incumbent has dominated* ([Kasali, 2017](#)).

Before the introduction of *self-driving cars*, people were familiar with solar energy technology for street lighting which is commonly used in villages, villages and toll roads. This technology stores solar energy in the device and is used at night. Then the water heater technology (*Water heater*) which stores the sun's heat for later use as a water heater. This kind of technology has become an update and disruptive to reduce the use of electrical energy that is too wasteful or the use of natural materials and reduce the potential for environmental damage.

Likewise, public transportation such as Trans Buses including Taxi (though not all) use Gas Fuel (BBG) to reduce too much pollution smoke and can also damage the environment and damage ozone in the air. This kind of technology was created for the benefit of a cleaner environment and climate to avoid smoke pollution which is dominated by fuel oil such as gasoline and diesel which causes damage to the air space. So that appropriate technology is needed that can provide health insurance in a clean environment and climate.

Likewise with internet technology, through email, which is used for correspondence and promotes *paperless* (reducing paper use) which for hundreds of years has contributed to the valley of paper and also raw material for paper pulp from tree bark that continues to be dredged, tree trunks that continue to be cut down causes the environment to grow. plantations or forestry companies are slowly reducing their natural resources and being eroded from their natural resources. So again that technology must be able to accommodate and facilitate as well as replace functions, which are expected to be able to restore nature conservation and its cultivation.

The electricity function basically also functions to reduce the use of fossil fuels such as oil and natural gas by utilizing technology that can transfer or transact data practically using the internet network and reduce paper waste which is usually used for correspondence so that it can be used to generate systems. optimal remote work and return to the concept of *green technology and green city*.

If we look at the Covid 19 phenomenon, it may not be completely considered negative, even though Covid has such a big role in threatening human health and life, there are practical actions from the government so that all activities outside are stopped and return all people, workers, students, and so on to carry out their activities at home. not to go anywhere. The pandemic has caused factories to stop operating and data is no longer going back and forth on the roads, so air pollution has been drastically reduced. Busy cities like Jakarta, for example, with the pandemic, vehicle traffic has decreased by  $\pm 35\%$ , carbon monoxide pollution has fallen sharply by  $\pm 50\%$ , and CO<sub>2</sub> pollution <sub>has</sub> decreased by 10% as well as methane pollution ([Yuswohady, 2021](#)).

If you look at the phenomenon in China, in just two weeks after the *lockdown*, energy use and emissions fell by 25%, thereby cutting 1% of total cumulative emissions ([Yuswohady, 2021](#)). This picture has made citizens around the world aware of the importance of clean air. They also realized that the management of the city had been confused and overwhelmed. No wonder the city governments around the world to fix the city to be healthier and greener pollution-free.

By the middle of the 21st century, rising global temperatures are projected to raise the world death rate by the same amount of about 14 deaths per 100,000 ([Gates, 2022](#)). By the end of the century, if emission growth remains high, climate change could be responsible for an additional 75 deaths per 100,000 people ([Gates, 2022](#)).

Prevention of damage to the climate and increasing the potential of green infrastructure, there is still scientific uncertainty, we already understand enough to know that the future is bad. There are two things we can do about it: *first*, adapt. We can try to minimize the impact of changes that are already present and we know will occur. Because climate change will have the worst impact on the world's poorest people, and most of the world's poorest people are farmers. Then the next, *second*, is mitigation, namely by stopping adding greenhouse gases to the atmosphere.

Indonesia should develop innovative climate solutions because it has government funding, research universities, national labs, and start-ups that attract talent from around the world, so it has to pave the way. If you look at the potential use of resources in the world, such as natural gas, they follow the same path. In 1900, natural gas was only 1% of the world's energy. It took seventy years to reach 20%. Nuclear fission is faster, rising from 0 to 10% in 27 years. Over time, people in the world naturally start to use more renewable energy, but if left unchecked, the growth will not be fast enough ([Gates, 2022](#)).

Responding to the phenomena described previously, *electricity* needs to be developed, as well as online digital technology must also be used as the main tool that is increasingly integrated in all sectors of human life which is starting to make peace with technology and self-acustoming at an advanced level. Globally changes in human behavior towards *online learning* have increased by 21% and their digital *entertainment activities such as: online games , social networks ,* and online music have increased by more than 30% ([Savitri, 2019a](#)).

This dependence on electricity is still better than the use of raw materials that extract too much natural resources, such as the use of carbon for industry. The large number of digital device users basically maintains the *green economy* and improves *green technology* , although in the end the traditional pattern of local craftsmanship is slowly being abandoned, but it does not rule out the possibility that the local wisdom system can also integrate with digital technology with a new operational order.

*Green technology* is important to pay attention to in the private sector to the government. Until now, most of the climate *disasters* (environmental damage) are still blaming the use of private or public transportation that uses fossil fuels. Therefore, green technology in the transportation sector needs to be encouraged and developed. As well as transportation that is capable of *self-driving* (automatic driving) based on internet technology and artificial intelligence.

Vehicle *Self-driving* also known as a robot car, autonomous car, or driverless car is a vehicle that is able to sense its environment and move with little or no human input. *Self driving vehicles* are cars or trucks where the human driver does not need to control the vehicle being operated, but is still safe. This technology combines sensors and software to control, navigate and move the vehicle ([Savitri, 2019b](#)).

Environmental impact is also a serious problem. Affordable and comfortable *self-driving* cars can increase the mobilization of people every year. If those vehicles are fueled by gasoline, transportation-related air emissions could skyrocket. However, if the vehicle is electrified (and paired with a clean electricity grid), then transportation emissions can drop significantly. To the extent that electrified electric cars allow for more shared rides (like GoJek, Grab, Uber and so on), emissions could drop even further.

The work system in the office is also the same. Database transactions if not using email, population data collection, residents and so on can be automated by using an internet network that is connected to one another. Such as data collection on residents who have undergone vaccines, as well as identification of any data collection for PCR *swab tests* , antigens, and Booster vaccines which can be directly inputted into the Ministry of Health's data for the Peduli Protect application automatically, including identification of the latest public health conditions through EHAC which is now integrated through Peduli. Protect it, then the database system and data collection on citizens' health using paper forms are no longer needed and reduce paper waste.

In line with various sectors whose data collection is based online and can be accessed anywhere, anytime, and using digital devices, *start-up companies* that respect the use of high technology will certainly expand their infrastructure in the long term. So this is where then becomes the potential

for a new economic narrative, such as Silicon Valley's mission to advance the country's economy through *green technology* so that it can advance the economy with a new style.

For the independent business sector (entrepreneurs) such as Small and Medium Enterprises (UKM) have a big role and power in advancing the economy in Indonesia, especially with the existence of online digital technology tools and optimization of *Search Engine Optimization* (SEO), as well as social media, in the digital era, the spirit to Entrepreneurship comes in a slightly different form.

Entrepreneurs can take advantage of the virtual world to expand their market reach. Not only the surrounding area, but also throughout Indonesia, even neighboring countries, to the world. This is also what has made the SME industry more enthusiastic in recent years. The difference is, in the digital era, entrepreneurship activities are referred to as startups or start-ups. Small business actors no longer need to start a business by opening physical and open stalls, but with social media, they can open their own stalls online and are easily accessible for digital media users ([Akbar, 2018](#))

This is of course also supported by a digital financial transaction and investment system such as crypto currency (*cryptocurrency*). The underlying technology is *blockchain*. The technology functions as a cryptographic ledger that can make economic transactions automatic and practical and other types are decentralized, faster and more private ([Savitri, 2019a](#)). This kind of technology also reduces the use of paper valleys which are commonly used for recording financial transactions and for recording stock trading.

## CONCLUSION

Based on the explanation that has been explained by the author here, it can be concluded that digital technology, or technology based on electrical devices (electricity) is the main solution in providing *green technology development in green computing* but still increasing the potential of the country with a new style. *Green computing* is a solution to prevent environmental damage caused by gas emissions and the greenhouse effect. Environmentally friendly use of computers and resources. In broader terms, green computing is involved in designing, engineering, manufacturing, using and disposing of computing devices in a way that reduces the environmental impact.

This green computing sphere then gave birth to renewable technologies that support an increase in the climate and a healthy green environment and reduce the impact of excessive carbon emissions, as well as the effects of greenhouse gases. This transition certainly familiarizes the public to switch to using electronic devices as the main transaction data device, reducing the waste of physical devices such as paper, then plastic, rubber and the like and can be replaced with other environmentally friendly materials. In addition to the database, data recording is no longer using paper as the recording medium, but can use computer software for recording.

This green technology or green computing, and accompanied by the development of startups in Indonesia, can become a new economic narrative that is more efficient and practical by promoting a digital-based industrial work operational system and automated recording, as well as an interconnected information network.

## REFERENCE

Afshar, V. (2020, August 26). Working from home: Making the new normal work for you. *ZDNet*, 1–5. <https://www.zdnet.com/article/how-to-pivot-your-work-from-home-strategy/>

Aguilera, E., & Pandya, J. Z. (2021). Critical literacies in a digital age: current and future issues.

- Pedagogies: An International Journal*, 16(2), 103–110.  
<https://doi.org/10.1080/1554480X.2021.1914059>
- Akbar, A. (2018). *Digital Ekosistem* (T. Rahmawati (ed.); 1st ed.). Penerbit Republika.  
<https://opac.perpusnas.go.id/DetailOpac.aspx?id=1072753>
- Ali, E. B., Anufriev, V. P., & Amfo, B. (2021). Green economy implementation in Ghana as a road map for a sustainable development drive: A review. *Scientific African*, 12, e00756.  
<https://doi.org/10.1016/j.sciaf.2021.e00756>
- Basuki, S. (1990, August). Kolaborasi Pengarang, Sebuah Kajian Bibliometrik. *Majalah Ikatan Pustakawan Indonesia*, 12–18. <https://opac.perpusnas.go.id/DetailOpac.aspx?id=477499>
- Beltagui, A., Rosli, A., & Candi, M. (2020). Exaptation in a digital innovation ecosystem: The disruptive impacts of 3D printing. *Research Policy*, 49(1), 103833.  
<https://doi.org/10.1016/j.respol.2019.103833>
- Bildt, C. (2017). The digital age. *Global Health Action*, 10(sup3), 1344030.  
<https://doi.org/10.1080/16549716.2017.1344030>
- Breslow, J. (2018). Moderating the ‘worst of humanity’: sexuality, witnessing, and the digital life of coloniality. *Porn Studies*, 5(3), 225–240. <https://doi.org/10.1080/23268743.2018.1472034>
- Christensen, C. M., McDonald, R., Altman, E. J., & Palmer, J. E. (2018). Disruptive Innovation: An Intellectual History and Directions for Future Research. *Journal of Management Studies*, 55(7), 1043–1078. <https://doi.org/10.1111/joms.12349>
- Desheng, L., Jiakui, C., & Ning, Z. (2021). Political connections and green technology innovations under an environmental regulation. *Journal of Cleaner Production*, 298, 126778.  
<https://doi.org/10.1016/j.jclepro.2021.126778>
- Diodato, V. P., & Gellatly, P. (2013). *Dictionary of Bibliometrics*. Routledge.  
<https://doi.org/10.4324/9780203714133>
- Fraser, J., & Ansari, S. (Shaz). (2021). Pluralist perspectives and diverse responses: Exploring multiplexed framing in incumbent responses to digital disruption. *Long Range Planning*, 54(5), 102016. <https://doi.org/10.1016/j.lrp.2020.102016>
- Fritzsche, A., & Gölzer, P. (2021). Industrial Applications of Artificial Intelligence: From Grand Stories of Digital Disruption to Actual Progress. *Procedia CIRP*, 104, 683–688.  
<https://doi.org/10.1016/j.procir.2021.11.115>
- Gates, B. (2022). *How To Avoid Climate Disaster: The Solutions We Have and The Breakthroughs We Need* (2nd ed.). Penguin Random House.  
<https://www.penguinrandomhouse.com/books/633968/how-to-avoid-a-climate-disaster-by-bill-gates/>
- Green, P. (2020). Disruptions of self, place and mobility: digital nomads in Chiang Mai, Thailand. *Mobilities*, 15(3), 431–445. <https://doi.org/10.1080/17450101.2020.1723253>
- Hassan Ikram, M., Ferasso, M., Sroufe, R., & Zhang, Q. (2021). Assessing green technology indicators for cleaner production and sustainable investments in a developing country context. *Journal of Cleaner Production*, 322, 129090.  
<https://doi.org/10.1016/j.jclepro.2021.129090>
- Ingusci, E., Signore, F., Giancaspro, M. L., Manuti, A., Molino, M., Russo, V., Zito, M., & Cortese, C. G. (2021). Workload, Techno Overload, and Behavioral Stress During COVID-19 Emergency: The Role of Job Crafting in Remote Workers. *Frontiers in Psychology*, 12.  
<https://doi.org/10.3389/fpsyg.2021.655148>



- Kasali, R. (2017). *Disruption: Tak Ada Yang Tak Bisa Dinbah Sebelum Dihadapi, Motivasi Saja Tidak Cukup* (1st ed.). Gramedia Pustaka Utama.  
<https://opac.perpusnas.go.id/DetailOpac.aspx?id=1017529>
- Khan, M. Z., Khan, Z. U., Hameed, A., & Zada, S. S. (2021). On the upside or flipside: Where is venture capital positioned in the era of digital disruptions? *Technology in Society*, 65, 101555.  
<https://doi.org/10.1016/j.techsoc.2021.101555>
- Kieti, J., Waema, T. M., Ndemo, E. B., Omwansa, T. K., & Baumüller, H. (2021). Sources of value creation in aggregator platforms for digital services in agriculture - insights from likely users in Kenya. *Digital Business*, 1(2), 100007. <https://doi.org/10.1016/j.digbus.2021.100007>
- Lievrouw, L. A. (2012). Alternative and Activist New Media: Digital Media and Society Series. *Contemporary Sociology: A Journal of Reviews*, 41(3), 387–388.  
<https://doi.org/10.1177/0094306112443521i>
- Lister, M., Dovey, J., Giddings, S., Grant, I., & Kelly, K. (2009). *New Media: A Critical Introduction* (2nd ed.). Routledge, Taylor & Francis Group. <https://www.routledge.com/New-Media-A-Critical-Introduction/Lister-Dovey-Giddings-Grant-Kelly/p/book/9780415431613>
- Liu, Y., & Dong, F. (2021). How technological innovation impacts urban green economy efficiency in emerging economies: A case study of 278 Chinese cities. *Resources, Conservation and Recycling*, 169, 105534. <https://doi.org/10.1016/j.resconrec.2021.105534>
- McLoughlin, I., McNicoll, Y., Beecher Kelk, A., Cornford, J., & Hutchinson, K. (2019). A ‘Tripadvisor’ for disability? Social enterprise and ‘digital disruption’ in Australia. *Information, Communication & Society*, 22(4), 521–537. <https://doi.org/10.1080/1369118X.2018.1538382>
- Quinn, S. (2014). Libraries: At the epicenter of the digital disruption. *The Australian Library Journal*, 63(2), 175–177. <https://doi.org/10.1080/00049670.2014.930382>
- Roth, S. (2019). Digital transformation of social theory. A research update. *Technological Forecasting and Social Change*, 146, 88–93. <https://doi.org/10.1016/j.techfore.2019.05.016>
- Royani, Y., & Idhani, D. (2018). Analisis Bibliometrik Jurnal Marine Research in Indonesia. *Marine Research in Indonesia*, 25(4), 63–68.  
<https://doi.org/https://doi.org/10.37014/medpus.v25i4.200>
- Savitri, A. (2019a). *Bonus Demografi 2030 : Menjawab Tantangan serta Peluang Edukasi 4.0 dan Revolusi Bisnis 4.0* (R. Sartika (ed.); 1st ed.). Penerbit Genesis.  
<https://openlibrary.telkomuniversity.ac.id/pustaka/158484/bonus-demografi-2030-menjawab-tantangan-serta-peluang-edukasi-4-0-dan-revolusi-bisnis-4-0.html>
- Savitri, A. (2019b). *Revolusi Industri 4.0: Mengubah Tantangan Menjadi Peluang di Era Disrupsi 4.0* (T. Aftar (ed.); 1st ed.). Penerbit Genesis. <https://lib.ui.ac.id/detail?id=20487692&lokasi=lokal>
- Schwab, K. (2017). *The Fourth Industrial Revolution* (1st ed.). World Economic Forum.  
<https://www.weforum.org/about/the-fourth-industrial-revolution-by-klaus-schwab>
- Shan, S., Genç, S. Y., Kamran, H. W., & Dinca, G. (2021). Role of green technology innovation and renewable energy in carbon neutrality: A sustainable investigation from Turkey. *Journal of Environmental Management*, 294, 113004. <https://doi.org/10.1016/j.jenvman.2021.113004>
- Shree, D., Kumar Singh, R., Paul, J., Hao, A., & Xu, S. (2021). Digital platforms for business-to-business markets: A systematic review and future research agenda. *Journal of Business Research*, 137, 354–365. <https://doi.org/10.1016/j.jbusres.2021.08.031>
- Sudibyo, A. (2021). *Jagat Digital: Pembebasan dan Penguasaan* (Y. Wihartono & G. A. Putro (eds.); 2nd ed.). Kepustakaan Populer Gramedia.

<https://opac.perpusnas.go.id/DetailOpac.aspx?id=1414962>

Terry, O. (2020). Disruption Innovation and Theory. *Journal of Service Science and Management*, 13(03), 449–458. <https://doi.org/10.4236/jssm.2020.133030>

Utesheva, A., Simpson, J. R., & Cecez-Kecmanovic, D. (2016). Identity metamorphoses in digital disruption: a relational theory of identity. *European Journal of Information Systems*, 25(4), 344–363. <https://doi.org/10.1057/ejis.2015.19>

Volberda, H. W., Khanagha, S., Baden-Fuller, C., Mihalache, O. R., & Birkinshaw, J. (2021). Strategizing in a digital world: Overcoming cognitive barriers, reconfiguring routines and introducing new organizational forms. *Long Range Planning*, 54(5), 102110. <https://doi.org/10.1016/j.lrp.2021.102110>

Wiseman, K. L. (2015). Liturgy in the Digital Age: Introduction. *Liturgy*, 30(2), 1–2. <https://doi.org/10.1080/0458063X.2015.985921>

Ying, L., Li, M., & Yang, J. (2021). Agglomeration and driving factors of regional innovation space based on intelligent manufacturing and green economy. *Environmental Technology & Innovation*, 22, 101398. <https://doi.org/10.1016/j.eti.2021.101398>

Yuswohady. (2021). *Consumer Megashifts 100 Post Pandemic* (1st ed.). Gramedia Pustaka Utama. <https://ebooks.gramedia.com/id/buku/consumer-megashifts-100-post-pandemic>

Zatsarinnyy, A. A., & Shabanov, A. P. (2021). Method of centralized reproduction of information transmission processes in the digital platform control loop. *Procedia Computer Science*, 186, 63–69. <https://doi.org/10.1016/j.procs.2021.04.125>