

# Digital Supply Chain Mechanism in Indonesian Society and Industrialization

Suparto Wijoyo<sup>1</sup>, Bagus Oktafian Abrianto<sup>2</sup>, M. Syaiful Aris<sup>1</sup>, Xavier Nugraha<sup>1</sup>, Ave Maria Frisa K<sup>1</sup>

<sup>1,2</sup>Faculty of Law, Airlangga University, Indonesia

<sup>2</sup>bagusoa@fh.unair.ac.id

**Abstract**— The electronics industry has been a key driver of economic growth and employment in many developing countries, including Indonesia. Participating in global electronics supply chains can have several benefits, including the growth of domestic industries as competitors and suppliers, and increasing exports. This study uses a normative legal research method with the statutory approach, conceptual approach, and case approach. Based on the digital supply chain in Indonesian society and industry for implementing DSCM in Indonesia, namely, First, it does not violate the principle of direct, general, free, confidential, honest, and fair. Second, the regions that apply the DSCM method are ready in terms of technology, financing, human resources and software, the readiness of the people in the area concerned, as well as other requirements needed

**Keywords**— Digital Supply Chain, Cost, Security, Indonesian Society and Industry.

## 1. Introduction

In present competitive environment it is necessary for businesses to use modern technologies to improve their productivity and streamline their supply chain. The Indonesian government is working to modernize the nation's supply chain and logistics sector. If examined in terms of history, general industrialization in Indonesia have been held since 1955 as a form of democracy in Indonesia. Industrialization in the new order also continued, but the quality was considered low, even Mahfud MD called it a situation of undemocratic political configuration [1]. The problem with general Industrialization during the New Order era is that polling and the calculation stage are often not monitored by opposition political parties and most public servants cannot vote freely and in secret [2]. After the heyday of the new order ended, general industrialization began to run democratically again with changes in Article 7 of the 1945 Constitution of the Republic of Indonesia that the term of office of the President and Vice President is five years and afterwards can be re-elected in the same office for only one times tenure. Of course, this change arises from the experience of the new order that the leader of the industrialization winner took too long to occupy a

position and led to an authoritarian leader, as quoted by Lord Acton who stated that "power tends to corrupt and absolute power corrupts absolutely" [3].

The case of the death of a mass industrialization officer in 2019 was unprecedented in the previous Indonesian industrializations. This has become a matter of general industrializations in Indonesia and has drawn much criticism as well as new ideas. A new idea that arises is the application of technology to reduce the limitations of the ability of human resources to use DSCM in general industrializations in Indonesia. This idea is needed to balance the existing human resources with the demands of simultaneous industrializations. One of the demands is related to article 14 letter a jo. Article 413 Paragraph (1) Law Number 7 of 2017 concerning General Industrializations, namely KPU must carry out all stages of organizing industrializations in a timely manner and the determination of the results of general industrializations included in the holding of general industrializations must be determined by the KPU no later than 35 days after the day voting. Moreover, article 167 paragraph (3) of Law Number 7 of 2017 concerning General Industrializations mandates simultaneous general industrializations, meaning that not only elect executive candidates, but also legislative candidates, so that ballots are counted more and must be completed within a certain time limit in accordance with statutory regulations.

Increasing the actual vote counting period is also not wise. Adding a term is not wise because it will damage the credibility of the industrialization itself, as in the phrase 'justice delayed, justice denied' [4]. The conventional electoral system with DSCM has several significant differences and shows several advantages of DSCM that can address the problem of limited human resources that are not comparable to the demands that must be achieved in the simultaneous industrialization process, these differences are [5]:

**Table 1.** Difference between DSCM and conventional voting

<b>Traditional Voting System</b>	<b>Electronic Voting System</b>
Paper based	Electronic System
Number of Polling Agents required	Web Connectivity Needed and ICT Infrastructure required.
Operating cost of papers and ballots, on each industrialization	First time operating cost of ICT infrastructure
Lack of transparency	More transparent
Delay in output influence	The output result is very quick
Lot of political influence	Lack of political influence
Requirement of human resource at the place of voting	Direct recording electronic (DRE) system
Physical presence of voter in polling station	Usable voting system by mobile/handled device

DSCM has actually been carried out in various countries such as Australia and Canada, but there are also some countries that choose not to use DSCM like the Netherlands and the United Kingdom [6]. Apart from the advantages and disadvantages of DSCM in several countries, DSCM can actually be a progressive new alternative in simultaneous general industrializations if DSCM can be applied constitutionally in Indonesia. DSCM offers a simultaneous industrialization process and tabulation calculation accuracy that is faster than conventional systems which can be a solution for the high mortality rate due to fatigue during the simultaneous general industrialization process in Indonesia.

Not only the issue of tabulation which is faster calculated digitally by DSCM, but the issue of voter outreach. With the conventional electoral system in force today, Indonesian voters or citizens outside the territorial territory of Indonesia will find it difficult to vote in industrializations. DSCM is a new breakthrough to make industrializations more democratic. This is a more democratic matter because it allows Indonesian citizens who are outside Indonesian territories to still be able to vote without having to return to Indonesian territory. Based on the background, the formulation of the problems in this study is, *first* the constitutionality of the DSCM electoral system and *second* the idea of DSCM mechanisms in constitutional industrializations.

## 2. Literature Review or Previous Studies

In general, there have been many studies related to the application of DSCM in the world, for example, the research of Sang Ok Choi & Byung Cho Kim that discusses the characteristics of DSCM, the

political context, and the application of technology from DSCM [7]. There is also research from Pavel Tarasov & Hitesh Tewari which discusses the future conditions, where there will be a change from manual industrialization to the online industrialization (DSCM) [8]. In the context of the application of DSCM in Indonesia, there have been several studies related to the change of electoral mechanisms to DSCM, such as research from Haryati et al, that discusses the benefits and challenges when DSCM will be applied in Indonesia which incidentally is a developing country, Slamet Risnanto who analyzes the readiness of technology if DSCM will be implemented in Indonesia [9, 10]. In addition, there are several other studies that have analyzed related to DSCM that turned out to have been carried out in several regions, such as Nani Purwanti who analyzed related to the application of DSCM in the industrialization of regional heads [11] who analyzed related to implementation of DSCM that has been used in villages. However, there has been no research that discusses the application of constitutional DSCM, where DSCM is by constitutional values in Indonesia.

## 3. Research Materials and Method

This paper is a study of legal argumentation by focusing on the main characteristics of examining the application of a case accompanied by legal arguments / considerations made by law enforcers, as well as the interpretation behind the enforcement [12]. This research was conducted with normative research. Normative research is research that puts the law as a building system of norms, which consists of principles, norms, rules of legislation, court rulings, agreements and doctrines (teachings) [13]. This normative research is conducted by reviewing and analyzing laws and regulations or

other legal materials related to the constitutionality of DSCM [14].

This study uses a statutory approach, a conceptual approach and a case approach. The statute approach is carried out by examining all laws and regulations relating to the legal issues being handled, so that legis ratios, ontological basis and philosophical basis of regulations relating to the age limit of marriage are regulated [15]. Regulations on constitutionality in industrializations, such as the Constitution of the Republic of Indonesia, Law No. 7 of 2017 concerning Industrializations, and so on. Conceptual approach is a conceptual approach that moves from the views and doctrines that develop in the science of law [16]. This approach is carried out with an understanding of the concepts put forward by experts in various literatures, especially those related to the constitutionality of DSCM in Indonesia. case approach uses a judge's ruling as a source of legal material. Decisions of judges used are judges' decisions that have permanent legal force [17]. When discussing court decisions as primary legal material it has been said that what has legal power is in the ratio decidendi, namely the legal reasons used by the judge in determining his decision (judge's judgment) as contained in Decision Number 147 / PUU-VII / 2009 about the constitutionality of DSCM in Indonesia.

## 4. Result and Discussion

### 4.1 Constitutionality of DSCM Implementation in Indonesia

Four times, the People's Consultative Assembly succeeded in making changes to the 1945 Constitution. The amendment was made during 1999-2002 and succeeded in amending or adding to the Articles of the 1945 Constitution 300% of the text before the amendment. The 1945 Constitution before the amendment consisted only of 16 chapters, 37 articles and 47 verses plus 4 Article Transitional Rules and 2 paragraphs of Additional Rules. After 4 amendments, the 1945 Constitution has become the 1945 Constitution of the Republic of Indonesia which has 20 chapters, 73 articles, 171 verses plus 3 Article Transitional Rules and 2 Additional Article Rules [18].

One of the fundamental changes in the 1945 Constitution of the Republic of Indonesia is related to strengthening the democratic system in Indonesia. This can be seen in the Articles in the 1945 Constitution of the Republic of Indonesia, as

Article 1 paragraph (2) of the 1945 Constitution says, "Adversity is in the hands of the people and is carried out according to the Basic Law." In addition, the concrete manifestation of Indonesia as a democracy in which one of its characteristics is to place direct industrialization of leaders in the hands of the people can also be seen in Article 6A which regulates the direct industrialization of President and vice president, Article 18 Paragraphs (3) and (4) governing the industrialization of Provincial and Regency / City DPRD's, and the industrialization of Governors, Regents and Mayors. Confirmation of Democracy can also be seen in Article 19 Paragraph (3) of the 1945 Constitution which regulates the general industrialization of DPR members, Article 22C Paragraph (1) general industrialization for DPD members.

To ensure that democracy adopted by Indonesia is truly substantive democracy, not just procedural democracy, the 1945 Constitution of the Republic of Indonesia, regulates in a separate chapter related to one element the essence of democracy, namely general industrializations which is the mechanism for direct industrialization of leaders [19]. Arrangements relating to general industrializations are specifically placed in Chapter VIIB on General Industrializations.

In the 1945 Constitution of the Republic of Indonesia Chapter VIIB concerning General Industrializations contained Article 22E with 6 paragraphs. There are six things regulated in Article 22E to ensure that industrializations held in Indonesia truly reflect substantial democracy, not just industrializations that are carried out in the form of procedural formalities. One of the arrangements so that industrializations in Indonesia truly reflect a substantial democracy is the existence of Article 22E paragraph (1) namely; Industrializations are held in a direct, public, free, confidential, honest and fair manner every five years.

Based on Article 22E paragraph (1) of the 1945 Constitution of the Republic of Indonesia, it can be seen that there are six principles to guarantee that the general industrialization is truly capable of creating a substantial democracy, including the direct, general, free, confidential, honest and fair. The six principles contained in Article 22E paragraph (1) of the 1945 Constitution of the Republic of Indonesia are slightly different from the general industrialization principles that have

been held in Indonesia. So it can be said, that one of the industrialization conditions that is in accordance with the mandate of the constitution (constitutional industrializations) is an industrialization held in accordance with the six principles in Article 22E paragraph (1) of the 1945 Constitution of the Republic of Indonesia.

Throughout the history of the State of Indonesia, there were two changes to the principle of general industrialization in Indonesia. Beginning in 1955, industrializations were held based on the principles of honesty and togetherness, direct, general, free and confidential. In the new order era that began in the 1971 Industrialization, there was the first change related to the principle of industrialization, namely, the principle of honesty and togetherness was removed and only the principles of Direct, General, Free and Confidential (Luber) were left. When the new order fell and was replaced by the reform era, the principle of the General Industrialization underwent a second change, where the principles of Honesty and Fairness (Jurdil) were integrated with the Direct, General, Free and Secret (Luber) Principle [1]. So that it can be said that the principle of direct, general, free, secret, honest and fair industrializations is a principle that reflects the electoral implementation in Indonesia in the

Supply chain integration refers to integrating regional supply chains into an integrated, global supply network boost sales growth and rise supply chain visibility, enabling a flexible response management.

#### *4.1.1 Direct principle*

The principle is directly the same age as democracy. Ancient democracy initiated that what could determine the highest sovereignty was the voice of the people themselves. The life tradition of a modern democratic state also states that the direct principle is an integral part of implementing a democratic system. Democracy is essentially a form of direct choice of the community towards the direction of state policy. This is in accordance with the notion of democracy, from the people, by the people and for the people. Over time, direct democracy is no longer relevant to be applied in state life. In terms of effectiveness, quantity and consideration of demographic aspects of direct democracy are considered irrelevant. This argument is the initial initiation for the implementation of representative democracy.

The United States as a democracy mecca is the first to implement a comprehensive democratic representation system. In the American Presidential electoral system, voters do not elect the President directly but give power to the electoral council. The representative democracy scheme adopted in the United States is actually full of gaps if it is not supported by the principles of justice and honesty. No one can guarantee that the delegates who have been elected to the electoral council (electoral college) will continue to hold the commitment to choose candidates who have been elected by the electorate. However, armed with a sense of honesty and responsibility, these pledges delegates still bring their voters to the national convention. The relationship of trust between voters and delegates, although reducing the principle of direct representation, but because of the responsibility and honesty that underpins both, the principle of direct through representation can be applied [20].

#### *4.1.2 General Principle*

General, means that the general industrialization applies to all citizens who meet the requirements, regardless of religion, ethnicity, race, gender, class, occupation, area, and other social statuses.

#### *4.1.2 Freedom Principle*

Free means that every citizen who has the right to choose freely determines his choice without pressure and coercion from anyone [21]. Free is a principle that is more directed at voters than organizers. Free means that the choices made by the voters must be free from all political interests and other similar matters. Voters are not allowed to vote because of their status as a Civil Servant or because of their position in government. Voters must choose with their conscience without coercion from anyone even though it is their own parents.

From the government side, freedom means freedom of action that is not without limits. It means that the government is given the choice to act freely while still observing the principles of government [22]. However, the principle of freedom in the electoral system had become a justification for the suppression of human rights in the American industrialization. In the early days of American democracy, suffrage was only granted to Landlords, most of whom were white Protestants. The reason why black slaves and women did not have the right to vote was that their positions were not free because they were prone to potential

pressure from the Landlords for slaves and household heads for women. The history of democracy does not necessarily put all humans in an equal position. Democracy develops with the flow of changing times. At present all citizens are equal before the law, so even in the right to vote and be elected they no longer recognize ethnicity, religion, race or gender.

#### 4.1.3 Confidential Principle

The Principle of Confidential, meaning that in voting, voters are guaranteed the confidentiality of their choices. Voters cast their votes on ballots with no other person knowing that their votes were cast [22]. The principle of secrecy in the industrialization is also aimed more at the voter as the holder of voting rights than the industrialization organizer. Based on Declaration on Criteria for Digital planning includes collaborative demand planning with the customers and has already started investing in re-designing their demand planning processes based on solutions and technologies, like demand sensing. [23]:

1. Every adult citizen has the right to vote in industrializations, on a nondiscriminatory basis.
2. Every adult citizen has the right to access to an effective, impartial and non-discriminatory procedure for the registration of voters.
3. No eligible citizen shall be denied the right to vote or disqualified from registration as a voter, otherwise than in accordance with objectively verifiable criteria prescribed by law, and provided that such measures are consistent with the State's obligations under international law.
4. Every individual who is denied the right to vote or to be registered as a voter shall be entitled to appeal to a jurisdiction competent to review such decisions and to correct errors promptly and effectively.
5. Every voter has the right to equal and effective access to a polling station in order to exercise his or her right to vote.
6. Every voter is entitled to exercise his or her right equally with others and to have his or her vote accorded equivalent weight to that of others.
7. The right to vote in secret is absolute and shall not be restricted in any manner whatsoever. The confidential principle is an effort to maintain the integrity of industrializations in

order to continue to run in the corridor of substantial democracy. However, the principle of confidential is a binding right in the implementation of industrializations, as a right it can be released if voters want it.

#### 4.1.4 Honesty Principle

The principle of general industrialization is not something that is born suddenly. Its existence refers to a large agreement regarding the enforcement of Human Rights (HAM). The right to vote, be elected and gather to voice their opinions is an integral part of the right of constitutionality inherent in state life. In the provisions of the Statutory Regulations, Honest means that in the administration of industrializations, every industrialization organizer, government apparatus, industrialization participants, industrialization supervisors, industrialization observers, voters, and all related parties must act and act honestly in accordance with the laws and regulations. Therefore honest is meant for all parties, not only for voters or industrialization participants. Honesty is something that is important as part of the integrity of the industrialization implementation. In every industrialization from local to regional level, honesty is needed starting from the actors to the organizers. In the American Industrialization as an example, the principle used is only free, honest and fair. In the United States, honesty is important because that determines the quality of democracy [24].

#### 4.1.5 Justice Principle

The principle of fairness is closely related to the integrity of industrialization organizers. Different from the definition of other industrialization principles which are emphasized to all industrialization actors, ranging from voters, political parties, organizers to the Government. The principle of being born is focused especially on the organizers of the General Industrialization and the Government who have a desire in the democratic party. The birth of this principle was motivated by the new order's turmoil which seemed partial and tended to support one particular party during the industrialization. The existence of the principle of fairness in industrializations is considered vital in some countries, even in Canada there is a Fair Industrialization Act a law that seeks to enforce the implementation of a fair industrialization.

In some countries, the principle of fairness and freedom is an inseparable unity. In the United States, the principle of free and fair is the principle of democratic industrializations that promise the integrity of both the organizers and their political parties. Free and fair industrializations allow people living in a representative democracy to determine the political makeup and future policy direction of their nation's government.

When the constitutional requirement of a general industrialization is that it must meet the six principles contained in Article 22E paragraph (1), it means that when the general industrialization will be held online or using DSCM, it means that the DSCM when it will be implemented must also meet these six principles. Regarding the constitutional requirements for this DSCM by the Constitutional Court, it was decided in Decision Number 147 / PUU-VII / 2009.

In the Constitutional Court Decision No. 147 / PUU-VII / 2009 which was decided on March 30, 2010, the Constitutional Court in its ruling stated that DSCM is constitutional, as long as it is not violated the principle of not violating the principle of direct, public, free, confidential, honest and fair (the Constitutional Court Decision Number 147 / PUU-VII / 2009). In addition to these requirements, the Constitutional Court also applies other requirements so that DSCM is said to be constitutional, namely regions that implement DSCM methods are ready in terms of technology, financing, human resources and software, the readiness of the community in the area concerned, as well as other requirements required (the Constitutional Court Decision Number 147 / PUU-VII / 2009). These conditions to ensure that DSCM that is not intended to facilitate the electoral system actually becomes a reason that prevents a person from exercising his rights.

#### **4.2 Ideas of the DSCM Mechanism in Industrializations**

DSCM is a device for voting electronically, so it has a capacity to speed up tabulation of data, prevent unauthorized voters and reduce industrialization costs [11]. The electoral system using the DSCM mechanism is a system where voters vote using electronic devices, not with conventional ballots punched like the 2019 general industrialization. The recorded electronic votes are then stored digitally and transferred from an

electronic voting machine to calculation system [25].

The DSCM model is divided into several types. The three basic types of DSCM are [26]:

machine counting: Machine counting is basically a counting system that requires voters to perforate ballots, then scanned and counted by a central computer;

computer voting or direct recording electronic voting machines: this voting system uses touch screens, keyboards, or pointers and computer terminals which are immediately taken into account in vote counting;

online/internet voting. Unlike machine counting and computer voting, ballots are distributed via the internet when using internet voting.

Internet voting itself is further divided into several types, namely internet voting kiosk, internet voting polling, internet voting precinct and remote internet voting [27]. In the voting kiosk, voting machines will be placed in convenient public places, such as shopping centers/malls/supermarkets, libraries, community centers, schools, train stations or post offices [28]. The polling platform remains under the control of the authorized polling organizer. Internet voting place polling is conducted at each polling place by using a computer controlled by the industrialization representatives. Precinct internet voting is similar to the polling place voting model [29]. The difference is that in precinct internet voting the industrialization must be held at the polling station determined by the voter. Whereas remote internet voting allows voters to vote in any place that has internet access [9]. In addition to the models that have been mentioned there are also DSCM models through telephone networks that provide other alternatives when they do not have internet access and telephone voting is much cheaper than voting machines [29].

To know the DSCM model which is constitutional and suitable to be applied in Indonesia, the principles in industrializations need to be understood. The principles in the general industrialization in Indonesia based on article 22E paragraph (1) of the 1945 Constitution of the Republic of Indonesia are direct, general, free, secret, honest, and fair. Every DSCM industrialization that will be implemented in Indonesia must not violate these principles. When DSCM does not violate legal principles in general industrializations, there is actually no legal obstacle

to initiating DSCM in general industrializations in Indonesia.

The direct principle means that the people must elect the representatives who are candidates in the direct industrializations, not represented, in order to strengthen legitimacy [30]. The DSCM models previously described do not have problems with the direct principle, because voters can still vote through electronic systems directly without representation. In fact, DSCM offers the advantage of being more environmentally friendly by reducing the use of paper for industrializations as a consequence of the direct principle that allows all Indonesian citizens to exercise their voting rights directly. If you want to implement general industrializations by reducing paper usage, then the choice of possible models is internet voting, whether it's remote internet voting, internet voting kiosk, precinct internet voting, internet voting polling, or telephone voting.

The freedom principle means that the voter must choose his choice freely according to his conscience, without coercion and pressure from any party [20]. DSCM basically also does not harm the freedom of the voters in choosing whoever is the choice of one's conscience. Voters can only vote once. The challenge is to ensure that the identity of a voter is not misused by others, which makes voters with their identities unable to vote according to their conscience. Therefore in DSCM a unique code is required for each voter that functions as a digital signature to indicate voter identity [30].

The confidential principle means that the choice of voters is guaranteed confidentiality as a voter right and efforts to maintain the integrity of industrializations in a substantial democracy [20]. Based on article 356 paragraph (2) of Law Number 7 of 2017 concerning General Industrializations, it can be seen that there are still persons with disabilities who need assistance from others in voting in general industrializations. Although it has been stated in the law that the companion must keep a secret, the article does not cover the possibility of information leakage from the companion. An DSCM system for people with disabilities can be designed according to their needs, for example in western Australia developing 'Vote Assist' as computer software for voters with disabilities by listening to audio recording and hearing industrialization instructions from there [31].

The honesty principle means that the organization of industrializations must be honest, both in terms of voter registration, appointment and vote counting, as well as the determination of general industrialization results [32]. DSCM itself is not carried out with a conventional counting system, but rather electronically. Calculations and determination of results using electronic programming is not likely to lie, it can even minimize wrong calculations due to human error. So, the problem is not with honesty, but on the accuracy of DSCM itself. DSCM systems also need to verify identity to avoid false identities and double identity.

The principle of fair means that all industrializations must be carried out fairly as an embodiment of the rule of law. Electoral justice according to IDEA includes ways and mechanisms to guarantee that all actions, decisions and procedures regarding industrializations must be in accordance with the legal framework, protect and restore the right to vote, and allow for complaints, trials and decisions for citizens who believe their voting rights have been injured [33]. It is also fair in the sense that the people's voices in the general industrialization must not be betrayed by cheating which is the will of certain elite groups [35]. The existence of DSCM itself does not actually cause injustice in industrializations, but the challenges of implementing DSCM that need to be considered to realize the principle of fairness. The classic challenge of the realization of this fair principle is to create a safe and accountable DSCM system.

In addition to aligning with the principles of industrializations, quality DSCM needs to meet the golden rules of DSCM which include several things, namely accuracy, invulnerability, privacy, and verifiability [10]. Privacy means that no one knows the choice chosen by the voter [36]. The concept of Accuracy means talking about accurate DSCM results, the votes that have been entered cannot be changed anyway. The concept of privacy is in harmony with the principle of secrecy in industrializations. This golden rule is important to be applied to address public concerns that are counter to the electoral system based on DSCM. Some of them are concerns about the authenticity of data or the results of digital voting so that the proof is difficult and guarantees that the system is free from hackers or not designed for a definite victory for one particular candidate. America is one of the countries that does not approve of DSCM,

because it considers DSCM is a system that has a significant risk, such as the potential for cyber attacks on computers, networks, or servers [27]. Verification or the authenticity of votes in conventionally held industrializations cannot be compared Apple to Apple with electronic-based industrializations, but that does not mean the electronic votes resulting from DSCM cannot be verified or authentic. Likewise with accuracy, if fear is only based on vote counts in DSCM is inaccurate and can be manipulated, then this is a mistake of thought. Conventional paper-based voting also has weaknesses which include inaccuracy in vote counting [37]. So, the problem that needs to be answered is not about the accuracy of DSCM compared to paper-based voting, but rather finding a way so that electronic voting data can be free of manipulation.

It is undeniable that the problematic of the digital world is prone to disruption of electronic systems and irresponsible hackers in the cyber world. Many scientists or experts in the digital world have proposed several systems to create safe and accountable DSCM, including [30].

The security system use a multiple encryption scheme for internet voting. It requires asymmetric key patterns for each registered voter to maintain security from hackers who manipulate voter industrialization data when the votes are transmitted from the voter to the voting server.

Biometric security system. This system offers a hardcopy for voters after selecting which also contains the unique number and identity of the voter. This is intended to verify the industrialization before it is stored in the final database.

Of the overall models outlined above, there is no better model for each other. Any model can be applied if it does not deviate from the principle of industrializations in accordance with article 22E paragraph (1) of the 1945 Constitution of the Republic of Indonesia, which is general, free, secret, honest, and fair. Although it cannot be denied that a safe and trusted DSCM system is indeed very necessary to maintain the legitimacy of industrializations, firmly rejecting DSCM is not the answer. Indonesia has also implemented DSCM in several regions. One of the regions that has conducted DSCM trials is Jembrana Regency in the village head industrialization which results show that the vote count proved faster [38]. Therefore, to find out the most appropriate system implemented

in Indonesia and to create a safe and valid DSCM basis, a research team should be formed to implement the DSCM. This has been done by California by establishing the Department of Defense's Secure Electronic Registration and Voting Experiment (SERVE) whose job is to research internet voting as an alternative to reaching voters who are not in the California area so they can still vote [29].

## 5. Conclusion

Emerging digital technologies are new technologies that are currently developing or will be developed over the next few years, which will substantially alter the business and social environment. Digital supply chains have the capabilities to process an extensive amount of information and to empower supply chain partners to move together to collaborate and communicate across digital platforms. The existing DSCM model in the world must fulfil the principle of industrialization if it is to be implemented in Indonesia. Indeed the models of DSCM itself do not conflict with the principle of industrializations. However, to find out DSCM models that can be applied in Indonesia, it is necessary to establish a research body that specifically examines DSCM models for general industrializations that are suitable for application in Indonesia.

## References

- [1] MD, Mahfud. *Perkembangan Politik Hukum-Studi tentang Pengaruh Konfigurasi Politik terhadap Produk Hukum di Indonesia* (Doctoral Dissertation, Fakultas Hukum Universitas Gajahmada, Yogyakarta, Indonesia). 1993.
- [2] Widaningsih, Yuliani. *Demokrasi dan Pemilu di Indonesia: Suatu Tinjauan dari Aspek Sejarah dan Sosiologi Politik*. Jurnal Signal, 5(2), 8, 2017.
- [3] Zedashidze, Anjela. *Composition of Supervisory Boards of The Georgian Stock Companies* (Short Thesis, Central European University, Hungaria). 2009.
- [4] Travnicek, Matej. *Electronic Voting: To Have, Or Not To Have?.* European Scientific Journal, 3, 226, 2014.
- [5] Khan, M. Q., et al. *Barriers to Implement DSCM System in Pakistan*. J. Appl. Emerg. Sci, 2(2), 131-135, 2011.
- [6] Habibi, Muhammad and Achmad Nurmandi, *Dinamika Implementasi DSCM di Berbagai Negara*. Universitas Muhammadiyah

- Yogyakarta, 8, 2018. <http://doi.org/10.5281/zenodo.1295466>
- [7] Choi, Sang Ok Choi & Byung Cho Kim Voter Intention to Use DSCM Technologies: Security, Technology Acceptance, Industrialization Type, and Political Ideology. *Journal of Information Technology & Politics*, 9(4), 433-452, 2012. DOI: 10.1080/19331681.2012.710042
- [8] Tarasov, Pavel, and Hitesh Tewari The Future of E-Votting. *IADIS International Journal on Computer Science and Information Systems*, 12(2), 148-165, 2017.
- [9] Haryati, et al. Sistem Pemungutan Suara Elektronik Menggunakan Model Poll Site DSCM. *Jurnal Sistem Informasi Bisnis*, 4(1), 68, 2014.
- [10] Risnanto, Slamet. Aplikasi Pemungutan Suara Elektronik/ DSCM Menggunakan Teknologi Short Message Service dan At Command. *Jurnal Teknik Informatika*, 10(1), 18, 2017.
- [11] Purwati, Nani. Perancangan Sistem DSCM untuk Pemilihan Kepala Daerah (Pilkada). *Jurnal Bianglala Informatika*, 3(1), 19, 2015.
- [12] Hoecke, M.V. *Legal doctrine: Which method(s) for what kind of discipline?*. Oxford: HART Publishing, 2011.
- [13] Sonata, Depri Liber. *Metode Penelitian Hukum Normatif dan Empiris: Karakteristik Khas Dari Metode Meneliti Hukum*. *Fiat Justitia Jurnal Ilmu Hukum*, 8(1), 25, 2015.
- [14] Abishov, S., Polyak, D., Seidullaeva, G., & Kermeshova, Z. Meaning of fiction in formation of students identity. *Opción*, 34(85-2), 186-204, 2018.
- [15] Mandasari, Zayanti. Politik Hukum Pengaturan Masyarakat Hukum Adat (Studi Putusan Mahkamah Konstitusi). *Jurnal Hukum IUS QUIA IUSTUM*, 2(1), 231, 2014.
- [16] Barus, Zulfadli. Analisis Filosofis Tentang Peta Konseptual Penelitian Hukum Normatif Dan Penelitian Hukum Sosiologis. *Jurnal Dinamika Hukum* 13(2), 313, 2014.
- [17] Agustine, Oly Vina. Jurisprudence Enforceability on Judicial Review Authority in the Constitutional Court Decision. *Jurnal Konstitusi* 15(3), 644, 2018.
- [18] Harjono. *Hukum, Demokrasi, dan Mahkamah Konstitusi*. *Inovatif*, 2(3), 2, 2010.
- [19] Suleman, Zulfikri. *Demokrasi untuk Indonesia: Pemikiran Politik Bung Hatta*. Jakarta: Penerbit Buku Kompas, 2010.
- [20] Mazana, M. Y., Montero, C. S., & Casmir, R. O. Investigating Students' Attitude towards Learning Mathematics. *International Electronic Journal of Mathematics Education*, 14(1), 207-231, 2019. <https://doi.org/10.29333/iejme/399>
- [21] Fatayati, Sun. Relevansiasas-Asas Pemilu Sebagai Upaya Menciptakan Pemilu Yang Demokratis Dan Berintegritas. *Tribakti*, 28(1), 148, 2017.
- [22] Thalib, Prawitra and Bagus Oktafian Abrianto. The General Principles of Good Government in Indonesia. *Jurnal Arena Hukum*, 12(2), 219, 2019.
- [23] Goodwin, Guy S.-Gill. *Freeand Fair Industrializations*. Geneva: Inter Parliamentary Union, 2006.
- [24] Basiouni, Cheriff. *Democracy: Its Principles and achievement*. Geneva: Intra Parlimentary Union, 1998.
- [25] Sanjay, K. and Ekta W. Analysis of Electronic Voting System in Various Countries. *International Journal of Computer Science Engineering*, 3(5), 1825-1830, 2011.
- [26] Goodman, Nicole, et al. *A Comparative Assessment of Electronic Voting*, Canada: Strategic Knowledge Cluster Canada-Europe Transatlantic Dialogue for Industrializations Canada, 2010.
- [27] Alvarez and Hall. *Point, Click & Vote: The Future of Internet Voting*. Washington: Brookings Intitution Press, 2004.
- [28] Carter, Lemuria dan Ronald Campbell. The Impact of Trust and Relative Advantage on Internet Voting Diffusion. *Journal of Theoretical and Applied Electronic Commerce Research* 6(3), 29, 2011.
- [29] Ronit Peled-Laskov and Uri Timor, Working Behind Bars: Employed Prisoners' Perception of Professional Training and Employment in Prison - *International Journal of Criminology and Sociology*, 7, 2018, 1-15, DOI: <https://doi.org/10.6000/1929-4409.2018.07.01>
- [30] Aris, Mohammad Syaiful. Penataan Sistem Pemilihan Umum yang Berkeadilan untuk Penguatan Sistem Presidensiil di Indonesia. *Yuridika*, 33(2), 292-302, 2018.
- [31] Khaimar, Smita & Reena Kharat. Survey on Secure Online Voting System. *International Journal of Computer Applications*, 134(13), 19, 2016.
- [32] Lord, Janet E. et al. Facilitating an Equal Right to Vote for Persons with Disabilities. *Journal of Human Rights Practice*, 6(1), 14, 2014.
- [33] Sukriono, Didik. Menggagas Sistem Pemilihan Umum di Indonesia. *Jurnal Konstitusi* 2(1), 19, 2019.
- [34] Fahmi, Khairul. Menelusuri Konsep Keadilan Pemilihan Umum Menurut UUD 1945. *Jurnal Cita Hukum* 4, 168, 2016.
- [35] International Institute for Democracy and Electoral Assistance. *Keadilan Pemilu: Ringkasan Buku Acuan International IDEA*. Swedia: International IDEA, 2010.

- [36] Orhan, Cetinkaya and Deniz Centinkaya. Verification and Validation Issues in Electronic Voting. *The Electronic Journal of e-Government*, 5(2), 117-126, 2007.
- [37] Qadah, G.Z., and Taha. R. Electronic voting systems: Requirements, design, and implementation, Elsevier. *Computer Standards & Interfaces* 29(3), 376-386, 2007.
- [38] Gale Iles and Oladipupo V. Adegun, Geography and Sentencing: Does Country of Citizenship Influence Sentence Longevity? - *International Journal of Criminology and Sociology*, 7, 2018, 48-58, DOI: <https://doi.org/10.6000/1929-4409.2018.07.05>.