

Artificial Intelligence Usage in Zakat Optimization

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ABSTRACT

The development of big data and Artificial Intelligence is a challenge and also opportunity in managing zakat. Dramatically changes of technology could impact on social life and employment throughout the world, including zakat institutions. This study discusses changes in the management of zakat in 4.0 industrial revolution era, and how big data and Artificial Intelligence take over part of amil duties. The method used in this research is qualitative with a constructivistic paradigm. The research subject of this study is Rumah Zakat as the national zakat institution, with the object of research on the change in management of zakat from zakat 1.0 era to the era of zakat 4.0 and any AI technology that can take over part of amil duties. There is a change in the management of zakat from the zakat 1.0 era to the zakat 4.0 era which is certainly influenced by the development of industrial revolution. The presence of AI technology has taken over part of the amil duties at Rumah Zakat, which is in charge of serving both muzakki and mustahiq. With the presence of various artificial intelligence and big data devices, made the tasks of amil are simpler, more time-saving, and more efficient.

Keywords : Big Data, Artificial Intelligence, Zakat, Rumah Zakat

INTRODUCTION

Rumah Zakat is a national zakat institution that has been established since the reformation period in 1998. The long journey of Rumah Zakat, which has more than 20 years in managing zakat in Indonesia, had brilliant achievements that have been recorded. Starting from the growth of collected funds, wider distribution, networks, information technology used, and as well as the growth of the amil.

The application of information technology in the zakat management, began by Rumah Zakat in August 2005 with the support of PT Lintas Arta Aplikanusa who provided a stimulus to increase professionalism of institutional governance. Application of the technology that implemented by Rumah Zakat is also

accompanied by changes in work culture on its amil.

Zakat is one of the most important pillar in Islam. In Islam, there are three economic pillars which are the implementation of Islamic teachings. The pillars contain real sector, sharia financial instituion sector, and zakat, infaq, shodaqoh, waqf sector.

Zakat is one part of the rules of social security in Islam, where social security rules are not known in the west, except in a narrow scope of security that is guaranteed by helping groups of weak and needy people (Qordhowi, 2007).

Indonesia has a huge potential for collecting zakat. There are several studies that discuss the potential of zakat in Indonesia.

The PIRAC study shows that the potential of zakat in Indonesia has a tendency to increase every year. Based on a survey conducted in 10 major cities in Indonesia, shows that the average potential of zakat reached Rp 684.550 in 2007 per *muzakki*, increased from the previous Rp 416.000 in 2004 (Baznas, 2017).

PEBS FEUI also conducted a study of the potential of zakat, using approach number of *muzakki* from the Indonesian Muslim population. If 95% of *muzakki* pay zakat, it can be projected that the potential of zakat collection in 2009 will reach Rp 12.7 trillion. Research conducted by UIN Syarif Hidayatullah Jakarta shows that the potential of national zakat can reach Rp 19.3 trillion (Baznas, 2017).

National Zakat Agency (BAZNAS) itself records, the potential of zakat in Indonesia has reached Rp 210 trillion or equivalent to 11% of state revenue. However, the realization of the national zakat collection in 2018 is still very far from its potential. According to Indonesia Zakat Outlook published by BAZNAS, in 2018 zakat collected by BAZNAS and amil zakat institutions (LAZ) reached Rp 8.1 trillion or only 4% of the zakat potential.

Huge potential of zakat should be a homework for every zakat institution in Indonesia, especially for zakat education. So knowledge about zakat can enter all elements of Muslim society in Indonesia.

The emergence of technology provides an important role in optimizing the management of zakat. Its role is increasingly prominent in the industrial community that is undergoing transformation into an information society. The presence of big data technology and Artificial Intelligence (AI) is a new phenomenon in this era of globalization.

Development of big data and Artificial Intelligence is a challenge and also opportunity in managing zakat. AI and big

data cannot be separated because AI definitely needs big data to be smarter. World data shows that every year the number of data continues to double. At present, there are around 7 billion people in the world, and more than 5,1 billion people using cell phone. Every day, we as humans have sent more than 11 billion texts, and more than 2,8 billion people seen and watching Youtube (Arief, 2019).

The world community that use to conducting “searching” activity, becomes very abundant data. Our data is circulating and has the potential to become a prospect for marketing. Without realizing it, every day we have received various offers that enter via email or our cell phone.

Rapidly changes of technology could impact on social life and employment throughout the world. The occurrence of the industrial revolution made the roles and tasks of work change, including in the management of zakat.

McKinsey Consulting predicted in 2030, one-third of workers in United States will become unemployed because of automation. About eight hundred million people globally will be replaced by big data technology and AI (Arief, 2019).

Referring to the challenges and opportunities that can be offered by big data technology trends and Artificial Intelligence, especially in the management of zakat, the researcher intends to discuss how changes in zakat management in the era of the industrial revolution. In addition, this study will also see how big data and Artificial Intelligence take over part of the amil zakat duties. It is expected that the results of the study can provide information on changes in the management of zakat in the era of industrial revolution, as well as big data and Artificial Intelligence to take over part of the amil zakat duties.

LITERATURE REVIEW

Zakat

Etymologically, zakat means *al-barakatu* or means blessing. According to Setiawan Budi Utomo (Utomo, 2009), zakat means part of the property with certain requirements that are required by Allah, to be given to those who have the right to receive it according to the provisions of the Qur'an surah At-Taubah verse 60.

Hafidhuddin (2002), in (Syauqi Beik, 2009) also states that zakat is the only worship that has special officers to manage it, as stated explicitly at At-Taubah verse 60. He said that the management of zakat through amil institutions has several advantages. (1) more accordance with sharia guidance, (2) guaranteeing certainty and discipline of zakat payers, (3) to avoid inferiority feelings from *mustahiq* if they were directly related to *muzakki*, (4) to achieve efficiency and effectiveness in the management and utilization of zakat, and (5) as a symbol of Islam in an Islamic government spirit.

In zakat management sector the Prophet Muhammad gave examples and operational instructions. The technical operational management is seen based on the distribution of amil zakat structure, which consists of: *Katabah*, the officer who records the obligatory zakat; *Hasabah*, officers who estimate or calculate zakat; *Juba'h*, the officer who took zakat from the *muzakki*; *Khazanah*, an officer who collects and maintains assets, and *Qasa'mah*, an officer who distributes zakat to *mustahiq* (people who are entitled to receive zakat) (Faisal, 2011).

In the development of Islamic history in Indonesia, there is no evidence of state regulation of zakat or the involvement of the state in collecting zakat during the Islamic kingdom in Java. Some sources say that zakat in some places is an individual obligation

without any relationship with the state (Wibisono, 2015).

In the 80s, wave of establishment a national zakat institution began to emerge which was founded by civil society initiatives such as the Yayasan Dana Sosial Al Falah (1987), Dompot Dhuafa Republika (1994), Rumah Zakat Indonesia (1998), Pos Keadilan Peduli Umat (1999) and DPU Daarut Tauhid (1999) (Wibisono, 2015).

The increasing number of zakat institutions, illustrates that zakat can play a major role in resolving the poverty in Indonesia. Through professional management, government support, and the application of technology to optimize the potential of zakat, can be used to raise welfare status of the poor people.

Big Data and Artificial Intelligence

The industrial revolution marked a turning point that had a major impact on world history. Almost every aspect of human daily life is influenced by the industrial revolution. There are four stages of the industrial revolution era, the first is the industrial revolution 1.0. Revolution which occurred after the invention of steam engine in the 18th century which has influenced to efficiency and effectiveness of the production method. At that time, industrial operations were still based on manual and mechanical.

Industrial revolution 2.0, marked by mass production activities, and there is involvement of electrical energy that supports the mass technology. While in the era of the Industrial Revolution 3.0, it was marked by the existence of automation and computers that could support various activities. Car manufacturers, cellular phones, electronics, can be created in minutes.

Industrial revolution 4.0 is an era where machines are integrated with internet networks. Activities in this era include a variety of advanced technologies such as

internet of things (IoT), advanced robotics, 3D printing and artificial intelligence.

The concept of big data was first used by Alvin Toffler in 1980, in a book called *"Third Wave"*. Big data is a new meaning in the middle of emergence internet and cloud and other new technologies (Guo & Wang, 2019).

Big data is a term that shows very large data (often with billions of terabytes) that can contain large amounts of heterogeneous, structured and unstructured data (text, numerical, image, e-mail, and data obtained from social networks), which can extrapolated, analyzed and correlated with each other (Spina, 2019).

Artificial Intelligence (AI) is a branch of computer science that studies the ways in which a combination of hardware and software systems can simulate the behavior of the human brain. One of the most important applications consists of complex algorithms, called learning machines, which are capable of learning and making decisions (Spina, 2019).

Lasse Rouhiainen (2008), in (Arief, 2019) describes Artificial Intelligence:

"AI is the ability of a machine by using algorithms to learn from data, and use what it has learned to make decisions like humans do. AI is a system that thinks like a human; systems that act like humans; systems that think rationally; and systems that act rationally."

AI technology will not only revolutionize large companies, but will also revolutionize every industry, including the management of zakat. Sooner or later AI will have an influence on human life. Starting from the financial industry, agriculture, transportation, education, and zakat institutions will not be immune from AI and will be affected. For this reason, preparation is needed to deal with technological changes that are so fast.

METHODOLOGY

The method used in this research is qualitative method. Qualitative methodology is a research procedure that produces descriptive data in the form of written or oral words from people and observable behavior (Moleong, 2017). Based on this method, this study can be categorized as descriptive where the researcher collects data to answer the research question.

The paradigm used by researchers is a constructivistic paradigm. Richard West (West, 2017) views constructivist approaches as subjective truths and is also created by the participants, with one of the researchers being clear from the participants. The constructivist paradigm holds that objectivity cannot be achieved in the physical world but only through human thought.

Subject of this research is Rumah Zakat as national zakat institution. Researcher have been collected information about the object of this study related to changes in management of zakat since zakat 1.0 era until zakat 4.0 era, and what artificial intelligence technologies have been applied to take over amil zakat duties.

RESULTS AND DISCUSSION

Zakat as part of the pillars of Islam in its obligations does not change from the first time. However, zakat management is undergoing changes from time to time. In this study, researcher try to examine changes in the management of zakat with a change approach to the industrial revolution.

Management of zakat in the 1.0 era is still traditionally carried out. Characteristics in the era of industrial revolution 1.0 are industrial operations still based on manual and mechanical. In the context of managing zakat in Indonesia, the era before the 80s zakat was only interpreted as an individual obligation without any relationship with

institutions or countries (Wibisono, 2015). *Muzakki* (the person who is obliged to pay zakat) directly distributes his zakat to *mustahiq* (zakat recipient), or entrusts it through the mosque prosperity council (DKM). Management of Zakat both in collection and distribution is still based on manual and mechanical.

Zakat in 2.0 era start with the establishment of zakat institutions by civil society, such as Dompot Dhuafa Republika (1994), Rumah Zakat Indonesia (1998), Pos Keadilan Peduli Umat (1999), dan DPU Daarut Tauhid (1999).

In this era, illustrates the management of zakat in a professional manner and there has been technological involvement in the management process, both in terms of collection, distribution and management. In the initial period of zakat management, Rumah Zakat have been used desktop computer technology, but there is several things that still done manually and not integrated. In terms of zakat collection, computers are used to manage the *muzakki* databases. Whereas in case of zakat distribution, computers are used for managing *mustahiq* databases and making zakat distribution reports. Whereas in terms of management, the recording of financial reports as a form of accountability of the institution has used Microsoft Office and Microsoft Access software. This was also made clear by Muhammad Trieha's statement when he served as a Corporate Secretary of the Rumah Zakat in 2011 (in SWA, 2011), Trieha revealed:

"In the early days of its establishment, the management of ZIS in Rumah Zakat was done manually and not yet integrated. Understandably, until 2001 the zakat institution which was previously called the Dompot Sosial Ummul Quro only had three offices, namely in Bandung, Yogyakarta and Jakarta. Similarly, the volume of receipts of managed funds is still

relatively small. Financial records and distribution of funds are still based on desktop computers, relying more on Office applications such as Excel and Access. Similarly, coordination between branches is more dominant using telephone and fax, in addition to sending documents through couriers. On the other hand, the lack of integration of information systems also affects the speed of decision making and the response to what develops in branches."

Zakat era 3.0 is an era where the internet and social media are the most widely used and preferred media by the public. In the field of collection, donation platforms have begun to emerge which can be used as a medium for payment of zakat. In the field of distribution, the public is increasingly able to get information related to zakat distribution activities. In the field of management, Amil's financial records and HR management are integrated and more transparent.

Zakat 3.0 era has also brought changes to the management of zakat in Rumah Zakat. Since 2005 with support of PT Lintas Arta Aplikanusa, Rumah Zakat entered more professional organization era in managing zakat. All Rumah Zakat branches can be connected nationally in collecting, managing and distributing. Preparation and structuring of the information system at the Rumah Zakat began in 2004, by setting up networks in each office. The purpose is to make every office network can be online, at least with an internet connection. The modernization of information technology system at Rumah Zakat was marked by the introduction of the concept "Transformation from Traditional to Professional Corporate". The introduction of VPN-IP technology began as the initial pilot for developing an internet system between office networks. Trieha revealed (in SWA, 2011):

"VPN-IP technology was chosen because of its relatively more saver in

terms of security. Also, the cost is cheaper, because there is introduced VoIP technology between branches and telephone features and no longer long distance using the PSTN. To support networks and applications that are real-time and online, Rumah Zakat entrusts its management to Lintasarta. The modernization of the IT system needs to be done soon because Rumah Zakat has launched its vision to become the largest zakat institution in Indonesia. At that time, we made the decision to invest in IT while the organization was still growing."

Information system started to integrating with the development of the platform, from desktop platform to website platform. This is indicated by the making of an Online Transaction (TOL) application, to help record receipts of donations in real time and online. To accelerate services, Rumah Zakat provides electronic data capturer (EDC) equipment to collection officers to visit *muzakki* places that will give their zakat. In addition to the TOL application, Rumah Zakat also developed an Online Attendance (AOL) and Online Financial Information System (SIKO) application which later developed into a Finance Information System (FIS) to help financial teams manage finances that have been inputted via TOL. To integrate several features of the application (TOL, AOL and SIKO), an integrated solution was developed called ERZIS (Enterprise Rumah Zakat Information System), which is now being developed more advanced called Core-Z (Collaboration Enterprise Zakat). Triha explained (in SWA, 2011)

"Now, each branch can operate an application system that has been built in Core-Z with authorization of access rights based on position and functional levels. And, everything is done in real-time online. A simple example, online attendance. The head office can find out in real-time who is coming on-time and who is late, even though the amil is in

Jayapura. Another example, now all permits, leaves, checking how many leaves left, and checking salary, can be done by himself through Core-Z. Each submission of leave or permission, automatically becomes one message received by the supervisor to remind him to approve or not the submission. This message will always appear when the boss opens the Core-Z main application until there is approval or not for the submission. Our mission, whatever the bank can do, we also have to do it. All is done so that zakat and philanthropy really become an easy and fun life style."

The emergence of various donation platform such as crowdfunding website, e-commerce, and any payment point with QR Code, is a sample of internet connection era for zakat management. Sharinghappiness.org; infak.id; and lelangbintang.id is a digital platform owned by Rumah Zakat to collect social fund and zakat from *muzakki* or donor. In addition, there is another platform that can be used to pay zakat. In this era, zakat can be collected through e-commerce platform such as Bukalapak, Tokopedia, Shopee, Blibli, JD.id, and Lazada. Furthermore, in this era, infaq fund can also collected through digital wallet platform such as Link-Aja, OVO, Go-Pay and Doku, etc.

In the case of zakat distribution, the zakat distribution report can be directly downloaded through the website. And distribution information can also be obtained in real time through social media accounts. In terms of zakat management which includes financial and HR management it has also been based online. It means, in this era, every aspects of zakat management have been made easier for *muzakki* or donor, mustahiq, and also for the zakat institution itself.

The presence of artificial intelligence and big data in the industrial 4.0 era began to gave an impact and change zakat institutions.

One of the impacts on the zakat institution from the rapid development of this technology is a robots are now able to provide zakat education and interact with *muzakki*. In addition, analytical management of *muzakki* and *mustahiq* data can be done with AI technology. Rania Chatbot is a robot created by Rumah Zakat that has been able to provide zakat education and interact with *muzakki*. Management of *muzakki* analytical data, and analytic zakat transactions can be seen on the internal website of Rumah Zakat. Real time transaction movements, which branches with the highest and lowest can be seen in real time without data processing. *Muzakki* transaction history can also be seen based on the region. The process of system integration with several banks through the host to host helps the financial division in the process of detecting each zakat collection transaction.

The existence of artificial intelligence (AI) in the management of zakat will take part of amil zakat duties. Researchers classify AI devices in the management of zakat based on the distribution of amil zakat structure, which consists of: *Katabah*, officer who record the obligatory zakat; *Hasabah*, officer who estimate or calculate zakat; *Juba'h*, officer who took zakat from the *muzakki*. *Khazanah*, officer who collects and maintains assets, and *Qasa'mah*, officer who distributes zakat to *mustahiq*.

Katabah (Officer who record the obligatory zakat)

These following AI devices that used to take over the task of recording obligatory zakat:

Devices	Description	Function
Survei Monkey	Online survey platform	Determine <i>muzakki</i>
Google Analytics	Track and measure digital impact	Determine <i>muzakki</i>

Devices	Description	Function
Microsoft Dynamics	Consumer Management System	Identify <i>muzakki</i>
Survey Gizmo	Online survey platform	Determine <i>muzakki</i>
E-filing	Tax reporting system	Online wealth calculation
Sistem LHKPN KPK	Wealth reporting platform	Wealth information of state administrators

Source: Data processing, 2019

The AI devices that have been mentioned previously have the ability to automate the various tasks and work of amil zakat. These devices can be used to manage and determine who are obligatory zakat (*muzakki*). With this tool, amil zakat can be helped to register the obligatory zakat more integrated.

The use of AI in the field of *katabah* for an institution will make it easier for stakeholders/leaders to make decisions. Stakeholders will get data and information more accurately and easier than manually. For example, institutional stakeholders will be easier and more appropriate in making decisions and policies to increase the number of *muzakki* from data obtained in the AI system.

Hasabah (Officer who estimate or calculate zakat)

These following AI devices that used to take over the task of estimating or calculating zakat:

Devices	Description	Function
Zakat Mobile – Rumah Zakat	Zakat Calculation Application	Determine and estimate the assets of the <i>muzakki</i>
Kalkulator Zakat-kitabisa.com	Zakat Calculation Application	Determine and estimate the assets of the <i>muzakki</i>

Devices	Description	Function
Kalkulator Zakat-DD	Zakat Calculation Application	Determine and estimate the assets of the <i>muzakki</i>
Kalkulator Zakat-Syaban	Zakat Calculation Application	Determine and estimate the assets of the <i>muzakki</i>
Perhitungan Zakat	Zakat Calculation Application	Determine and estimate the assets of the <i>muzakki</i>
Hitung Zakat Muslim	Zakat Calculation Application	Determine and estimate the assets of the <i>muzakki</i>
Zakatpedia	Zakat Calculation Application	Determine and estimate the assets of the <i>muzakki</i>
Zakat klik	Zakat Calculation Application	Determine and estimate the assets of the <i>muzakki</i>
KalZakat	Zakat Calculation Application	Determine and estimate the assets of the <i>muzakki</i>
Islamic Zakat Calculator	Zakat Calculation Application	Determine and estimate the assets of the <i>muzakki</i>
Muzaki Corner	Zakat Calculation Application	Determine and estimate the assets of the <i>muzakki</i>
Amalin	Zakat Calculation Application	Determine and estimate the assets of the <i>muzakki</i>
Ayo Bayar Zakat	Zakat Calculation Application	Determine and estimate the assets of the <i>muzakki</i>
Zakat pro calculator	Zakat Calculation Application	Determine and estimate the assets of the <i>muzakki</i>

Source: Data processing, 2019

The AI devices that have been mentioned previously have the ability to automate zakat calculation. These devices can be used to calculate how many zakat should be paid by *muzakki*. Through internet connection, *muzakki* can calculate zakat everywhere and anytime.

These sistem would be very useful because *muzakki* can operate directly, and

amil zakat workload can be reduced. All zakat calculation applications have the same algorithm system. The only difference being of the features offered on each application, for example, there are some added features such as the history of charity and others.

Juba'h (Officer who took zakat from the muzakki)

These following AI devices used to take over the task of taking zakat from the *muzakki*:

Devices	Description	Function
Coveragebook	Automatic measurement and reporting tool based on analysis links	Retrieve Data, filter automatically from analytics links and make reporting
Sprinklr	Managing social media	Providing zakat information to <i>muzakki</i> via social media
Kitabisa.com	Crowdfunding platform	Collecting social fund and zakat
Sharinghappiness	Crowdfunding platform	Collecting social fund and zakat
Omni Chanel	Information channel questions and comments on social media	Increase engagement of <i>mustahiq</i> and <i>muzakki</i> on social media
MozPro	SEO Analysis	Put zakat information on top positions through the internet
Auto Debt	An automatic system cuts customer money	Automatic debit transactions where the customer's balance will decrease according to the

Devices	Description	Function
		predetermined date setting
Facebook ads	Promotion system through Facebook	Providing zakat information to <i>muzakki</i> via Facebook
Instagram ads	Promotion system through Instagram	Providing zakat information to <i>muzakki</i> via Instagram
Chat bot	Virtual assistant chat	Interact with <i>muzakki</i>

Source: Data processing, 2019

The AI that have been mentioned previously have the ability to automate information distribution according to *muzakki* needs. *Muzakki* can also pay zakat automatically through several application that provided by zakat institution. Moreover, *muzakki* can pay zakat through auto debit system. As an example, in *kitabisa.com*, after *muzakki* calculate how many zakat should be paid, *muzakki* can determine which zakat institution would be distribute his zakat.

Khazanah (Officer who collects and maintains assets)

These following AI devices used to take over the task of collecting and maintaining assets:

Devices	Description	Function
Host to Host Payment	Financial system cooperation platform with banks	Bank cooperation system to detect donors directly without having to confirm
Core Z-Rumah Zakat	Fund management application	Analyze collected donation based on source of fund and donor

Source: Data processing, 2019

These AI devices is related to how zakat fund managed. These devices help amil zakat to analyze collected fund based on it sources. Gathered information from this device can be used to support decision making, making collection strategies, and distribution plans. As an example, Core-Z Rumah Zakat is an application that can solve problems in a particular issues, and can act as an expert advisor.

Qasa'mah (Officer who distributes zakat to mustahiq)

These following AI devices that used to take over the task of distributing zakat to *mustahiq*:

Devices	Description	Function
Google Form	Online survey platform	Survey to determine <i>mustahiq</i>
Lazismu	Zakat Recipient Application	Locate zakat recipient (<i>mustahiq</i>) around your neighborhood
Epresspack	Relationship media form	Publish distribution activity
Core Z	Application for collecting and distributing donations	Inform incoming donation, and donation contract to be channeled according to its designation
Anak Juara Information Sistem	Rumah Zakat Foster Care Integrated Information System	Provide information about foster children, who is the donor, and integrated directly with the report
Zams	Scholarship application system for funding and program needs	Inform data of the foster children with donor partner and also provide realtime informartion about history of donation
Sistem Informasi	Desa Berdaya Integrated	Detect Desa Berdaya location and see

Devices	Description	Function
Desa Berdaya	Information System	what programs have been implemented

Source: Data processing, 2019

The AI devices have been mentioned previously an ability to determine the zakat beneficiaries, and also can manage the zakat beneficiaries database. As an example, application that developed by Lazismu can detect or locate *mustahik* around us. Other than that, AJIS is an application that developed by Rumah Zakat have an ability to automatically remind amil zakat which foster kid doesn't have any foster parents. So amil zakat has a chance to find the donor to provided scholarship for that kids.

CONCLUSION

This study try to analyze changes that occurred in industrial revolution era, and artificial intelligence technology that take over part of amil zakat duties. The results illustrates the industrial revolution that occurred in the world, has been gave an influence to the management of zakat. Zakat in the before 80's era in Indonesia was still managed mechanically and traditionally. The mosque as a center for gathering and managing zakat doesn't use computer technology in collecting, managing and distributing zakat.

In 2000 or early millennium era, was an era where the development of internet in Indonesia brought changes to the management of zakat. The internet network and social media are used for promoting, collecting, managing and distributing zakat. In addition, the zakat management in this era are getting more professional and transparent. *Muzakki* can get information about the obligations of zakat and distribution of zakat faster, so the trust of *muzakki* to pay his zakat through institutions is increasing.

Technology developments are increasingly becoming a challenge and opportunity for zakat institutions in the management of zakat. The development of artificial intelligences has take over part of amil zakat duties. Artificial intelligences device could be used for every zakat institution structure and process, such as: *Katabah*, an officer who record the obligatory zakat; *Hasabah*, an officer who estimate or calculate zakat; *Juba'h*, an officer who took zakat from the *muzakki*. *Khazanah*, an officer who collects and maintains assets, and *Qasa'mah*, an officer who distributes zakat to *mustahiq*.

The emergence of various AI technologies is a challenge in developing amil capacity and capability in managing zakat. Zakat institutions must provide amil knowledge updates, by participating in various trainings, workshops, focus group discussions, and seminars. With these activities, Amil has the capacity, capability and understanding the trends and developments in the management of zakat in the artificial intelligence era.

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