Artificial Intelligence Usage in Zakat Optimization

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Paper to be presented at International Conference of Zakat 2019
3-4 October, Universitas Padjadjaran, Bandung, Indonesia

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 institution 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 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), Dompet 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 applicated 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 Dompet 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 Dompet 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
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). Trieha 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 lifestyle."

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:

<table>
<thead>
<tr>
<th>Devices</th>
<th>Description</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survei Monkey</td>
<td>Online survey platform</td>
<td>Determine muzakki</td>
</tr>
<tr>
<td>Google Analytics</td>
<td>Track and measure digital impact</td>
<td>Determine muzakki</td>
</tr>
</tbody>
</table>

**Hasabah (Officer who estimate or calculate zakat)**

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

<table>
<thead>
<tr>
<th>Devices</th>
<th>Description</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zakat Mobile – Rumah Zakat</td>
<td>Zakat Calculation Application</td>
<td>Determine and estimate the assets of the muzakki</td>
</tr>
<tr>
<td>Kalkulator Zakat-kitabisa.com</td>
<td>Zakat Calculation Application</td>
<td>Determine and estimate the assets of the muzakki</td>
</tr>
</tbody>
</table>

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.
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:

<table>
<thead>
<tr>
<th>Devices</th>
<th>Description</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kalkulator</td>
<td>Zakat Calculation Application</td>
<td>Determine and estimate the assets of the muzakki</td>
</tr>
<tr>
<td>Kalkulator</td>
<td>Zakat Calculation Application</td>
<td>Determine and estimate the assets of the muzakki</td>
</tr>
<tr>
<td>Perhitungan Zakat</td>
<td>Zakat Calculation Application</td>
<td>Determine and estimate the assets of the muzakki</td>
</tr>
<tr>
<td>Hitung Zakat Muslim</td>
<td>Zakat Calculation Application</td>
<td>Determine and estimate the assets of the muzakki</td>
</tr>
<tr>
<td>Zakatpedia</td>
<td>Zakat Calculation Application</td>
<td>Determine and estimate the assets of the muzakki</td>
</tr>
<tr>
<td>Zakat klik</td>
<td>Zakat Calculation Application</td>
<td>Determine and estimate the assets of the muzakki</td>
</tr>
<tr>
<td>KalZakat</td>
<td>Zakat Calculation Application</td>
<td>Determine and estimate the assets of the muzakki</td>
</tr>
<tr>
<td>Islamic Zakat Calculator</td>
<td>Zakat Calculation Application</td>
<td>Determine and estimate the assets of the muzakki</td>
</tr>
<tr>
<td>Muzaki Corner</td>
<td>Zakat Calculation Application</td>
<td>Determine and estimate the assets of the muzakki</td>
</tr>
<tr>
<td>Amalin</td>
<td>Zakat Calculation Application</td>
<td>Determine and estimate the assets of the muzakki</td>
</tr>
<tr>
<td>Ayo Bayar Zakat</td>
<td>Zakat Calculation Application</td>
<td>Determine and estimate the assets of the muzakki</td>
</tr>
<tr>
<td>Zakat pro calculator</td>
<td>Zakat Calculation Application</td>
<td>Determine and estimate the assets of the muzakki</td>
</tr>
</tbody>
</table>

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:

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

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:

<table>
<thead>
<tr>
<th>Devices</th>
<th>Description</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook ads</td>
<td>Promotion system through Facebook</td>
<td>Providing zakat information to muzakki via Facebook</td>
</tr>
<tr>
<td>Instagram ads</td>
<td>Promotion system through Instagram</td>
<td>Providing zakat information to muzakki via Instagram</td>
</tr>
<tr>
<td>Chat bot</td>
<td>Virtual assistant chat</td>
<td>Interact with muzakki</td>
</tr>
</tbody>
</table>

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 occured in industrial revolution era, and artificial intelligence technology that take over part of amil zakat duties. The results illustrates the industrial revolution that occured 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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