ZCP Platforms: Survey, Issues and Challenges

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Abstract—Zakat calculation platform (ZCP) is an emerging application to support Muslims in calculating their Zakat easily, quickly and accurately. Each of these ZCP platforms has distinct functions and limitations. Currently there is no specific research on analyzing the Zakat calculation requirements. For that, this paper emerged to propose some of the biggest challenges and issues of the existing ZCP platforms and opens up lots of future work to be undertaken in the aspect of ZCP modernization.

Index Terms— ZCP, Zakat, Zakatable wealth, Modernization

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1 INTRODUCTION

Islam establishes the Zakat as a compulsory charity tool to enhance the development of the eight categories of recipients [1]. In Islam, all our possessions are considered one of the blessings of God and can be classified into either Zakatable or Non-Zakatable wealth [2]. For the purpose of Zakat calculation, Muslim scholars have established five categories of Zakatable wealth [3]. Each category is subject to different conditions such as rates and rules. Moreover, they divide the Zakatable wealth into two categories, the unanimously agreed wealth and the non-unanimously agreed wealth [4]. Furthermore, they have formulated many views, opinions and rules about Zakatable wealth and have extrapolated Zakat on other wealth through analogy [5][6]. The use of this analogy opens doors to the multiple different views and conflicts between Muslim scholars and these conflicts clearly appear especially when we want to calculate the amount owed to pay. Hence, how to calculate correctly this amount is one of the major issues in the field of Zakat. To fulfil the needs of current Zakat, several ZCP platforms were developed. One of the key aims of these platforms is to support Muslims in calculating their Zakat easily, correctly, quickly and accurately.

Over the past few years, we can see the enormous increase of the use of these platforms that presents a number of disadvantages viz; they are either incomplete, too complicated, or both; they do not meet the needs of almost all Muslims living in modern societies; the vast majority of them are limited to one school of jurisprudence and are poorly implemented with limited calculation categories; and so on. Currently there is no specific research on analyzing the Zakat calculation requirements. For this, in order to understand the limitations and advantages of different existing ZCP platforms, especially to determine whether they fulfil the Zakat calculation requirements, in this paper, we provide a general overview of different existing ZCP and approaches enabling to develop such platforms. Then, we provide a detailed analysis.

The rest of this paper is organized as follows. In section II, we present different existing ZCP in the field of Zakat and detailed analysis of various existing ZCP and approaches enabling to develop such platform. Section III discusses the ZCP issues and challenges. Finally, Section IV concludes our work with references at the end.

2 LITERATURE SURVEY

2.1 Exesting ZCP in the field of Zakat

Several Zakat calculation platforms have been developed due to the high demands on such Islamic applications. These platforms form a necessary tool and play a crucial role in Muslims life. They have made the entire process of calculating Zakat extremely simple and straightforward. There are two main categories for such platform, namely, desktop-based and web-based platform [7]. In[8][9] a simple desktop-based ZCP have been developed using J2ME language for mobile users, where the goal is to create a platform that can be used wherever the user is located and that is very easy to use by all users. Fausan et al. [10] developed a simple web-based ZCP by using Macromedia Dreamweaver to include animation techniques, where the goal is to create a very innovative and interactive platform. Denny et al. [11] and Dewi et al. [12] developed a simple desktop-based ZCP using Visual Basic, where the goal is to perform calculations and produce calculation reports automatically. Anita [13] and Siti et al. [14] developed a simple web-based ZCP using PHP language for understanding the wisdom of Zakat, charity law, the meaning of charity, the command regular charity, wealth requirement mandatory, Zakat Al-Fitr, Zakat Al-Mal, Zakat legislation and Zakat calculation. Dwi [15] developed a desktop-based ZCP using Java language, where the goal is to optimize the collection, management and distribution of Zakat. Nita and Irfan [16] developed a desktop-based ZCP using Borland Delphi, where the goal is to create a ZCP that is interesting to look at, flexible and user friendly.

During the past few years there has been a remarkable evolution in the world of Islamic Websites. For instance, Hidaya Foundation [17] provides a very important ZCP where the calculations are based on 2.5% of the total net worth that is available at the end of one lunar year. Abu Dhabi Zakat Fund [18] provides a helpful ZCP for any kind of provision. It includes but is not limited to Zakat on money, crops and fruits, gold and silver and Zakat on revenue-yielding property. Lembaga Zakat Selangor [19] provides a very important ZCP and online payment for ten selected banks. National Zakat Foundation of United Kingdom [20] provides a sophisticated and easy to use online ZCP including Zakat on cash, gold and silver, shares, unit trusts and equity investments, property and fixed assets, pensions, debts owed and Zakat on business as-

sets. Islamic Relief Worldwide [21], National Zakat Foundation Australia [22], Pro Zakat Foundation of India [23] and National Zakat Foundation Canada [24] provide the Muslim community with the most effective and accurate means of calculating Zakat. They provide a basic ZCP for growing awareness of Zakat among the world communities. Kuwait Zakat House [25] provides an interesting ZCP including Zakat on wealth, gold and silver, stock and Zakat on currency exchange. Kuwait Finance House [26] provides a ZCP to calculate Zakat on gold, precious stones for trading, silver, cash in hand and bank, debts, investments, funds, shares, property, share in partnership firms and Zakat on agricultural produce. Qatar Zakat Fund [27] provides online Zakat calculator, where the amount of Zakat due each year should equal 2.5% of a Muslim's disposable income and wealth. Zakat Foundation of America [28] provides an interactive ZCP including Zakat on cash, receivables, loans given, gold and silver, investments and Zakat on business related income. JamiatulUlama South Africa [29], South African National Zakah Fund [30] and many other websites have proposed the Zakat calculator using Excel Worksheet via their websites. With this type of ZCP, we just need to enter the amounts in the respective cells under each heads and the Zakat is calculated right away.

Nowadays, the design and the development of ZCP platform impose new requirements as a result of the diversity of technologies with specifics characteristic. In this context, several approaches have been proposed and used to design and develop such platform. For instance, (Hamid and Kasirun, 2007)[31] have been developed Islamic asset management system using object-oriented approach. (Harun et al., 2008)[32] proposed an ontology-based approach for developing the Zakat management system. (Al-Riyami, et al., 2014)[33] and (Mohammed et al., 2011)[34] applied expert system technology in the field of Zakat to assist Muslims in complex calculations. (Huraimel et al., 2007)[7] used Client-Server approach for developing a ZCP platform for mobile phone users. (Fenty et al., 2014)[35] proposed to apply mobile application development life cycle approach in the development of ZCP platform using JQuery Mobile Framework. (Noorul et al., 2013)[36] developed Muslim Android Application for Zakat Selangor using agile development approach. (Ahmad et al., 2013)[37] proposed the requirements analysis approach using the activity theory for ZCP platform development. (Imam &Usman, 2015)[38] have developed a simple ZCP using the Waterfall Model. Finally, (Atunnisa et al., 2015)[39] and (Naluri, 2013)[40] developed a ZCP platform using prototype model.

Each of these ZCP has some limitations and there is no universal efficient solution found yet. These approaches and platforms are discussed in detail in the next sub-section.

2.2 Existing ZCP and Approaches in Zakat Domain

As technology evolves, several approaches have been proposed and multiple ZCP have been developed. In[7], a platform that calculates the Zakat for mobile phone users with a GPRS connection has been developed using J2ME technology. This platform is based on Client-Server approach. The server side is just various web pages to get the prices of gold, silver and stocks. On the other hand the Zakat application in the mobile side is very important module since it is what the

clients will use. The main functionality in the mobile device side is to allow the client to set the Zakat configuration and to add Zakat items or to list the saved Zakat items. These items will be stored in the Record Management System (RMS). This platform has been built using the J2ME package which makes it a highly portable application. It is user friendly and the Zakat can easily be calculated at the end of the year on the day the user specifies. Also, it has the ability to obtain online prices for various Zakat items such as gold, silver and stocks. Moreover, it allows the user to change the school of jurisdiction and year type and can be used in offline mode in case a GPRS connection is not available but in this case the user should provides the required prices. However, it was only implemented to calculate the Zakat of money, gold, silver, stocks, fruits, crops and cattle and does not cover others.

(Al-Riyami et al., 2014)[33] applied Expert System technology in the field of Zakat to assist Muslims in the decision making of identifying the rules of making Zakat and to assist in complex calculations. The Zakat Expert System (ZES) was developed using a freeware rule-based shell called eXpertise2Go that is a web-based expert system. Knowledge that is acquired from a human expert is represented in the form of rules such as IF-THEN statements. These rules are used by the inference engine component to perform the reasoning process by that lead into achieving certain goals and consequently support decision making. To test the developed Zakat expert system, 20 individuals were asked to try it out and respond to a questionnaire after their evaluation of the system. Starting with the relevance of the Zakat system output, 16 users (80%) agreed that the system output was relevant, whereas only 1 user disagreed (5%) and 3 users (15%) did not take any side. Many of the survey participants mentioned that the system saves time and effort for the user when he/she wants to calculate Zakat. Moreover, this system offers the calculation of different types of Zakat, the user has the freedom of choice, either one type or as much as he desires to calculate in an understandable and clear manner. Also, the system is very useful for calculating Zakat quickly and accurately, very beneficial, relevant, convenient and easy to use. However, it had some technical and presentation limitations viz; the system does not support the Arabic language; the need for a computer to operate it; it does not state the source of the information; and so on.

(Mohammad et al., 2011)[34] developed an Expert System for the domain of Zakat. It consists of two main components, knowledge base and inference engine. The knowledge base uses facts to represent knowledge, and the inference engine executes rules upon these facts to provide responses. A user interface is developed to ensure the interactions between users and the system. A rule is considered as a conditional statement that links given conditions to actions or results. To design this system, methods KADS (Knowledge Acquisition and Documentation Structuring) and the development tools Jess (Java expert system shells)[41] has been used. The developed system is very helpful in calculating Zakat. It calculates the amount of Zakat that should be paid by asking the users some questions about their wealth. However, it cannot answer to questions of all Muslims belonging to different Islamic schools. Moreover, according to [42], the most common disad-

vantage cited for expert systems in the academic literature is the knowledge acquisition problem. However, when looking at the life-cycle of expert systems in actual use other problems seem at least as critical as knowledge acquisition.

(Harun et al., 2008)[32] proposed an ontology-based approach for developing the Zakat management system. This ontology has been developed using METHONTOLOGY that guides in how to carry out the whole ontology development through the specification, the conceptualization, the formalization, the implementation and the maintenance of the ontology. This later has been implemented in OWL, since it has been modelled with the Protégé tool. For that, they have involved four major activities viz; literature review; data collection and preparation; domain analysis and modeling; finally, ontology development. The Zakat management ontology is composed of several anthologies at different levels of abstraction viz; application, collection, distribution, documents and users. It is designed for interoperability of systems and will make the process of understanding and developing the Zakat management system faster. It aimed specifically to share the knowledge of Zakat, to help each person who is involved in the development of this system, to bind the different communities in the software development, to overcome barriers created by disparate vocabularies, approaches, representations, and tools in their respective contexts, to be used as a basis for software specification and development, and to bridge the gap between domain analysis and application system construction. However, it only covers two main processes in Zakat management viz; collection and distribution.

(Hamid and Kasirun, 2007)[31] developed Personal Islamic Asset Management System (PERISA) using Object-oriented approach by implementing Rational Unified Process (RUP) model. Using the RUP model, software product lifecycles are broken into four main phases that are termed as inception, elaboration, construction and transition phase. This system was developed using PHP language and MySQL database. It consists of nine modules, which are general information, admin, profile, archive, registration, Zakat, Fidiah, heritage and Waqaf. The main function of this platform is to calculate Zakat. This later is divided into six categories, which are income, business, share, saving, gold and silver, and Zakat on EPF (Employees Provident Fund). Usability test and software metrics measurement were done to ensure the system usability and system metrics in terms of reusability and complexity. PERISA is evaluated in terms of its usability as well as its reusability and complexity. The usability test is used to measure if PERISA has met user's requirements while the reusability and complexity measures the PERISA's maintenance. The usability test covers ease of use, functionality of each module, overall functionality and potential effectiveness of PERISA. From this test, it shows that the system is user friendly and easy to use for various backgrounds of users. Also, it is capable of managing user's personal Islamic asset such as Zakat. In addition, the system gives detailed information about these assets including various functions and calculator to calculate Zakat. However, the features of PERISA can still be improved by integrating online payment, online registration for Zakat and Fidiah receiver, online financial report and online asset registration for Waqaf.

(Fenty et al., 2014)[35] applied Mobile Application Development Life Cycle approach (MADLC-Approach) in the development of Zakat Maal Mobile Web Application (Z2MWA) using JQuery Mobile Framework for mobile users. JQuery Mobile is a development platform of JQuery, which provides a variety of user-interface elements and features for use in mobile applications such as Android, Blackberry OS6, Fannec (Mozilla), WebOS from HP (Palm), iOS (iPhone, iPod Touch, and iPad), as well as Opera Mobile. The MADLC includes seven phases viz; Identification: In this phase, developer collect and categorized ideas of zakat Maal application; Design: Developer creates design architecture of zakat Maal mobile application; Development: In this phase, the application is coded. Coding for different module of the same prototype can be proceeding in parallel; Prototyping: In this phase, the functional requirements of each prototype are analyzed. Developer creates and tests the prototype in Localhost; Testing: The scenario of testing based on use-case diagram and using black-box testing method; Deployment: Implementing server based applications to mobile applications and dashboards and databases that have been created; Finally, maintenance phase: it is the final phase, and this is a continuous process. This platform can help users to calculate the amount of Zakat that should be issued, in the form of Zakat per unit amount of the type of property and the calculation of the total amount of all assets owned. The value price of Zakat is updated automatically. Users can also receive an e-mail notification containing the amount of Zakat that should be issued along with a list of any assets that have been entered such as Nissab and Haul. It can be accessed by any platform and delivers speed, stability, and an excellent cross-browser experience for web mobile visitor. However, it is limited to one school of jurisprudence.

(Noorul et al., 2012)[36] developed Muslim Android Application for Zakat Selangor (MAAZS) using Agile development approach. The application of agile development approach provides a good fit and more iterative for mobile application development, which includes the client throughout the development of their system. It provides user with an accelerated delivery cycle and the flexibility to change requirements according to changing business needs. The MAAZS is developed using Rational Unified Process (RUP) model and is being implemented using PHP and JQueary language and MySQL database for the Android mobile platform. The mobile application development process comprises five phases viz; Analyze: This phase covers the activities of understanding MAAZS requirements and determining the goal of the project; Design: In the wire-framing stage, we chalk out a structure that highlights platform, features, specification and feasibility; Development: This phase begins with designing the User Interface (UI) and then coding it in minimum time; Certify: Throughout the whole development phase, we follows testing process to check MAAZS application's functionality; Finally, deploy and Maintenance: Deploy MAAZS application to client and maintain based on the agreement agreed by client. This platform provides a calculator to help users in calculating various type of Zakat easily and effectively without hassle. Its architecture is designed to simplify the reuse of components. It not only has the ability to calculate Zakat but also the ability to produce

user's status either the user is eligible to pay Zakat, not eligible to pay or qualified to receive Zakat. It is useful for Muslims users as it combine the Zakat information, Zakat, Skim Berkat which is Zakat monthly deduction, Fidyah and Kifayah in one application. However, it is developed especially for Selangor residents.

(Ahmad et al., 2013)[37] proposed the requirements analysis approach using the activity theory for android application development. The requirements are then used to develop a Muslim Android Application (M2A) that is based on Android platform. The M2A platform was developed using Malay language as the target users are Muslims from Malaysia. It is equipped with Zakat calculator, information about Zakat, Skim Berkat, and a special feature to find the nearest Zakat counter. Activity theory was applied in analyzing the requirements of this platform, which is a conceptual framework that focuses on the activity, where the interaction between actors and their surroundings are counted. The benefit of using activity theory for android application development is, we can see the interaction between the user (subject), community and the environment in order to accomplish certain activities and they are mediated by mobile technologies. The applied activity theory includes three steps viz; identify problems, identify actions and operations of the activity and model the activity using Engeström's diagram. This later consists of six essential elements, namely, subject, object, tools, rules, community and division of labour. Basically, an activity theory helps to structure the analysis. However, it does not prescribe what to look for.

(Imam & Usman, 2015)[38] developed a Zakat Calculation Information System (ZCIS) using Waterfall model. This model is done in a systematic and sequential approach starting from system level requirements and then headed to the stage of the analysis, design, coding, and implementation. This platform has been developed using the programming language JAVA and Eclipse. It is developed to help the community in general and in particular the users of Android-based Smartphone in terms of calculating Zakat including Zakat Al-Fitr and Zakat Al-Mal. Moreover, it can help users in calculating their Zakat independently and understanding the function of each charity. However, it is limited to one school of jurisprudence.

(Atunnisa et al., 2015)[39] and (Naluri, 2013)[40] developed a Zakat calculation platform using prototype method. A prototype display main functional capabilities of the proposed system. The process of prototyping involves six steps viz; requirements gathering, quick design, building prototype, customer evaluation, refining prototype, and engineer product. Prototyping is an attractive idea for complicated and large systems for which there is no manual process or existing system to help determining the requirements. However, it is usually not complete and many of the details are not built in it. The ABACZ platform that was developed using Java language, can present the calculation of Zakat Al-Mal with easy to use and practical. However, it does not cover all types of wealth and limited to one school of jurisprudence.

We have now covered the main characteristics, limitations and advantages of the existing ZCP platform. In Tables I and II below, we provide an analytical study of above platforms in tabular format. And in Table III, a summary of existing ZCP approaches with their strengths and limitations are given.

3 DISCUSSION

In the previous section, we have analyzed the different existing Zakat calculation platforms, and we have covered the main characteristics, limitations and advantages of these ZCP platforms and their approaches. This analysis shows that although multiple ZCP using different approaches have already been proposed which help in calculating the amount owed to pay, they do not provide complete requirements of Zakat calculation. For example, as shown in table II, the most of these platforms are limited to one school of jurisprudence and are poorly implemented with limited calculation categories. Moreover, the vast majority of them do not meet the new requirements that have emerged in the field of software engineering such as portability, reusability and interoperability. Also, this analysis shows that there are two main categories for such platforms, desktop-based and web-based platforms, and nine main groups of ZCP development approaches viz; Expert System based approach; Client-Server-based approach; Ontology-based approach; Agile-based approach; Prototype-based approach; Activity theory based approach; Mobile application development life cycle based approach; Waterfall-based approach; Finally, RUP-based approach.

The all ZCP platforms, mentioned in the Table I, are very useful and helpful to perform property calculations. They form a necessary tool and play a crucial role in Muslims life. One of the key aims of these platforms is to support Muslims in calculating their Zakat easily, correctly, quickly and accurately. Over the past few years, we can see the enormous increase of the use of these ZCP that presents a number of disadvantages. Indeed, the multitude of these platforms, although it has advantages, it also presents a number of disadvantages viz;

- The existing ZCP platforms do not meet the new requirements that have emerged in the field of software engineering;
- The majority of them are limited to one school of jurisdiction;
- They are poorly implemented with limited calculation categories;
- Most of them are not recommended from any official authority so far;
- Most of them are basically a Zakat calculator with no services;
- They are either incomplete, too complicated, or both;
- They do not meet the needs of almost all Muslims living in modern societies;
- The majority of them are limited to Android users;
- The most of them are developed in traditional manner;

TABLEAU 1: THE MAIN CHARACTERISTICS, LIMITATIONS AND ADVANTAGES OF EXISTING ZCP

ZCP Platforms / References	Multi-platforms	E-mail notification	Cover all schools	Cover all years types	Provide online prices	Zakat Informations	Full & Partial calculation	Characteristics / Advantages	Limitations / Challenges
(Huraimel et al., 2007)[7]			√	√	√	√	√	Provides online prices. Covers all schools and all years' types. Provides full and partial Zakat calculation	Limited to Mobile phone users and does not cover all types of wealth.
(Al-Riyami et al., 2014)[33]						√	√	Calculates Zakat quickly; There is no need for an internet connection; Provides full and partial Zakat calculation	Poor user interface design and does not include all types of wealth.
(Hamid and Kasirun, 2007)[31]						√	√	Provides a framework that supports reuse and extensibility. Provides full and partial Zakat calculation.	Limited to the Klang Valley and to Windows and Linux users.
(Fenty et al., 2014)[35]	√	√				√	√	Can be accessed by any platform (Multi-platform) and can send a notification e-mail to users.	Limited to one school and does not include all types of wealth.
(Noorul et al., 2012)[36]	√					√		Can be run on the android platform and Smartphone devices. Can produce user's status.	Limited to Selangor Residents and to mobile users.
(Imam and Usman, 2015)[38]						√		Can help users in calculating Zakat independently and know the function of each charity.	Limited to one school and does not cover all types of wealth.
(Ahmad et al., 2013)[37]						√		Can help to find the nearest Zakat counter; Ease the user with navigation.	Limited to Malay language and to Android users.
(Atunnisa, et al., 2015)[39], and (Naluri, 2013)[40]						√		Can help to define and understand the concepts and their definitions easily; Improves reusability and interoperability.	Difficulties on validation by domain engineers.
(Atunnisa, Satria et al., 2015) and [40]						√		Can present the calculation of Zakat Al-Mal with easy to use and practical.	Limited to one school and to a specific categories of wealth.

TABLEAU 2: SUMMARY OF EXISTING ZAKAT CALCULATION PLATFORMS

References	Approach-based	Technologies used	Environment	Zakat items	Type of platform	Schools covered

(Huraimel et al., 2007)[7]	Client-Server	J2ME GPRS Toolkit's emulator	Mobile devices	Money Gold Silver Stocks Fruits Crops Cattle	Desktop-based	Shafii Hanbali Maliki Hanbali
(Al-Riyami et al., 2014)[33]	Expert System	EXpertise2Go	Windows	Cash Silver Gold Securities Debt Cattle Crops Merchandise	Web-based	Maliki
(Abdul Hamid & Kasirun, 2007)[31]	Object Oriented	PHP MySQL Photoshop Rational Rose Microsoft Project UML	Windows Linux	Income Business Share Saving Gold Silver EPF	Web-based	Shafii
(Fenty et al., 2014)[35]	MADC-approach	HTML5 UML JQuery Mobile Dreamweaver CS5 XMAPP	Mobile devices	Gold Silver Income Mines Business Livestock Agricultural products Rikaz	Web-based	Shafii
(Noorul et al., 2012)[36]	Agile Methodology	PHP JQuery Java Script UML MySQL Eclipse Photoshop	Android	Earning Business Savings Stock EPF Gold Sliver	Desktop-based	Shafii
(Ahmad et al., 2013)[37]	Activity Theory	Engeström Endroid	Android	Gold Silver Savings Stocks Business EPF Earning	Web-based	Shafii
(Imam & Usman, 2015)[38]	Waterfall Model	JAVA UML Eclipse	Android	Gold Silver Agricultural products Savings Stocks Business Profession Gifts Livestock	Web-based	Shafii
(Atunnisa, Satria et al., 2015)[39], and (Naluri, 2013)[40]	Prototype Model	Java Eclipse UML	Android	Professions Zakat Al-Mal Zakat Al-Fitr	Desktop-based	Shafii

TABLEAU 3: SUMMERY OF EXISTING APPROACHES RELATED TO FIELD OF ZCP PLATFORMS

References	Approaches	Advantages	Limitations
(Hamid and Kasirun, 2007)[31]	Object-oriented	• Reusability and faster development; • Improved Reliability and Flexibility	Not feasible on large projects with frequent changes.

(Imam et al., 2015)[38]	Waterfall Model	• It is simple to use and understand; • It is feasible on small projects.	Difficulty responding to changes.
(Noorul et al., 2012)[36]	Agile Methodology	• Adaptive and cooperative; • Easy to understand and modify	It has a strong emphasis on customer involvement.
(Huraimel et al., 2007)[7]	Client-Server	• Quickly and easily change business logic procedures without changing the client program; • It is easy to design and implement.	Problem of traffic congestion; If one server fail, requests cannot be served.
(Al-Riyami et al., 2014)[33], (Mohammad et al., 2011)[34]	Expert System	• It improves decision making process, quality and time; • The error rate of successful systems is low.	Errors may occur in the knowledge base, and lead to wrong decisions.
(Harun et al., 2008)[32]	Ontology	• It helps to define and understand the concepts and their definitions easily; • Improve reusability and interoperability.	Extra time and human resources are necessary.
(Fenty et al., 2014)[35]	Mobile Application Development Life Cycle	• It allows to create a mobile application rapidly; • It is easy to refer back if any errors are reported.	Limited to Mobile Applications.
(Ahmad et al., 2013)[37]	Activity theory	• It overcomes the limitations of traditional task analysis methods; • It provides a worthwhile framework.	Time is very hard to handle in Activity Theory.
(Atunnisa, Satria et al., 2015)[39], and (Naluri, 2013)[40]	Prototype model	• Users are actively involved in the development of the system; • It allows to develop quickly a simple prototype and to give more requirements of the system.	It is usually not complete and many of the details are not built in the prototype.

- The majority of them have lack of portability, reusability and interoperability;
- The most of them have poor user interface design;
- The Muslims users have to go to different platforms if they want to calculate different types of wealth;
- The vast majority of them are limited to one language; and so on.

Like any new platform, the adoption of these platforms by Muslims is not free from issues. To fulfil the needs of current ZCP issues and to overcome the aforementioned drawbacks a new modernized ZCP must be designed to fulfil the Zakat calculation requirements. Some of the biggest challenges of this new ZCP are as follows.

- Cover all schools of jurisprudence: The main challenge to ZCP is how it takes in consideration all schools of jurisprudence. The new ZCP should have the ability to assist users in calculating their Zakat according to their school of jurisprudence;
- Cover all types of wealth: The ZCP should cover all types of wealth. However if it does not cover all wealth, the Muslims users have to go to different platforms if they want to calculate different types of wealth;
- Provide full and partial Zakat calculation: The ZCP should allow user to have the freedom of choice, either one type or as much as he desires to calculate in an understandable and clear manner;

- Ability to send the notifications e-mail to users: The ZCP should provide users with an e-mail service enabling them to send their questions and to receive the notification email containing the amount of Zakat that should be issued along with a list of information that have been selected or entered such as school, categories, sub-categories, and wealth;
- Multiplatform: The ZCP should be multiplatform so that it can be accessed by any platform (Windows, Android, Linux...);
- Multilanguage: The ZCP should be Multilanguage (Arabic, France, English,…) to make it globally understood;
- Web-based: The ZCP should be web-based so that it can be easily accessible via internet anywhere and anytime;
- Easy to use: The ZCP should be applicable to professionals and also normal users with the most effective and accurate means of calculating Zakat. Also, it should be user friendly and easy to use for various backgrounds of users;
- Provide online prices: The ZCP should provide online prices of Gold, Silver, Stock, and other wealth;
- Zakat information: The ZCP platform should be equipped with detailed information on all Zakat categories and all schools of jurisprudence. Also, it should be interactive and attractive as well as informative;
- Requirements of software engineering: The ZCP should meet the new requirements that have emerged in the field of software engineering such as portability, reusability and interoperability;
- Moreover, it should calculate Zakat quickly; it should have the ability to produce user's status either the user is eligible to pay Zakat, not eligible to pay or qualified to receive Zakat; it should have the ability to be used offline or online; it should have the ability to assist users in generating the calculation reports; and more.

All these challenges should not be considered as road blocks in the pursuit of ZCP platforms. It is rather important

to give serious consideration to these issues and the possible ways out before the adoption of these platforms by Muslims.

4 CONCLUSION

Zakat calculation platforms form a necessary tool and play a crucial role in Muslims life. In this paper, we have analyzed the different existing ZCP platforms. This analysis shows that although multiple ZCP using different approaches have already been proposed which help in calculating the amount owed to pay, they do not provide complete requirements of Zakat calculation. For that, this paper emerged to propose some of the biggest challenges and issues of the existing ZCP and opens up lots of future work to be undertaken in the aspect of ZCP modernization. One important future task that can be undertaken is to develop a new modernized ZCP based on the challenges that have been proposed. Development of such platform will help in the adoption of this ZCP by Muslims. At the same time other important future task that can be undertaken is to validate this platform through a case study.

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