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Kampus Sungai Petani

Faculty of Administrative
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e-VOTING: VOTEHERE4U 2.0

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ABSTRACT
e-Voting, an Electronic Electoral Online System, or named as VoteHere4U 2.0 is developed over two years to aid voters in their voting processes, to ensure the safety of the ballot and to accelerate the process of results. It is created using web-based platform, and it can be accessed online as long as there is internet connectivity. Voters can vote multiple candidates from the same post (committee members) and contested positions, and they can view the time allocated for voting. The main issues of the existing traditional voting are time-consuming procedure (a lot of time to cast a vote and count the ballots), not cost effective (printing and ballots distributions) and involve too many personnel to assist in voting stations. Besides, it can also give results of fake voting or inaccurate data. VoteHere4U 2.0 increases the voters' participation, reduce the number of election officers, lower the costs of running elections and improve the accuracy of the results (can be calculated automatically). The system enables the organisation to conduct voting via online to cater to any organisation's needs, without the worry of changing the coding or databases. Results are produced at real time and the setup for the voting event can be prepared within short period of time. As for the commercialisation value, it is adaptable to any other event or organisation that requires voting, where the election process can be conducted in an efficient and effective manner. Based on the responses of the voters who had used this system, they claimed that the usability criteria of the system's interface were between good to excellent scales (navigation, graphic, user friendliness and consistency, content, relevance and transparency).

Keywords: e-Voting, Internet, Efficient Voting, System's Interface and Usability

INTRODUCTION

The way people vote has changed over the years, where electronic voting has been deployed in many different types of election (Gibson et al, 2016). e-Voting or also known as electronic voting, is a term which incorporates several types of voting, including both electronic means of casting a vote and electronic means of counting votes, such as punched cards, optical scan voting systems, and specialised voting kiosks (Elewa et al., 2015). Electronic voting (e- Voting) is generally seen as a support tool for making the election process be more efficient and effective. VoteHere4U 2.0 (e-Voting) is developed to aid two of the electoral procedures in an organisation, where the elections were conducted to choose the new committee members of a woman's organisation and a social club. With the utilisation of this system, the voting processes have become easier for the voters, the security and safety of the ballot are ensured, and the process of results is smoother. Using the web-based platform, the system can be accessed online and is only accessible by the registered voters by keying in their staff ID to login.

PROBLEM STATEMENT

There are several issues when using traditional and manual voting system, the ones that involve pen and paper. Two of the main issues of the existing manual voting such as paper-based are time-consuming and not cost effective, where it takes a lot of time for a voter to cast a vote and involves higher budget to print the ballots. Moreover, manual voting also involves a lot of election personnel, who will have to monitor the electoral process; before, during and after voting. Besides, manual voting can also give results of fake voting, which is unreliable, and therefore, the need to shift from the manual voting system to a more sophisticated digitalised voting platform should be initiated. Munisami (2018) points out that fake voting which relates to the issue of intelligibility, such as a paper-based polling system (based on pen, stamps, punch cards or ballot) can produce ambiguous results. Habibu et al. (2017) further suggested that e-Voting utilises electronic ballots, thus, there are no rejected, mismarked, or invalid votes, as the results are automatically calculated, eliminating the need for manual tabulation or dreaded recounts. As a result, VoteHere4U 2.0 is developed to tackle these issues so that the electoral process in any organisation will be more efficient and effective.

OBJECTIVE

VoteHere4U 2.0 enables any organisation to conduct voting via online using the internet, in which will be able to cater to any organisation's needs, without the worry of changing the coding or databases.

SYSTEM ARCHITECTURE AND INTERFACE

Figure 1 below indicates the system's architecture based on the module and the flow of the processes involved in the system. Generally, the voter will directly interact with the online voting module and the voting result module can be accessed by the administrators and the election committee. In addition, this e-Voting comprises of the voters' and candidates' information in the database, while the votes, calculation of the total number of votes and the results will also be stored in the database.

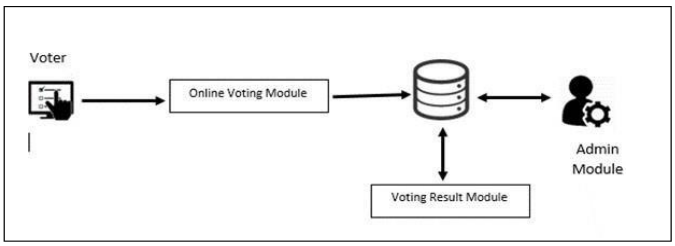


Figure 1. The System's Architecture

Figure 2 illustrates several interfaces of the system in which the voters acknowledged its usability and simplicity. These have increased the voters' satisfactions when using the system as it is quite easy to navigate and cast their votes within the stipulated time given.

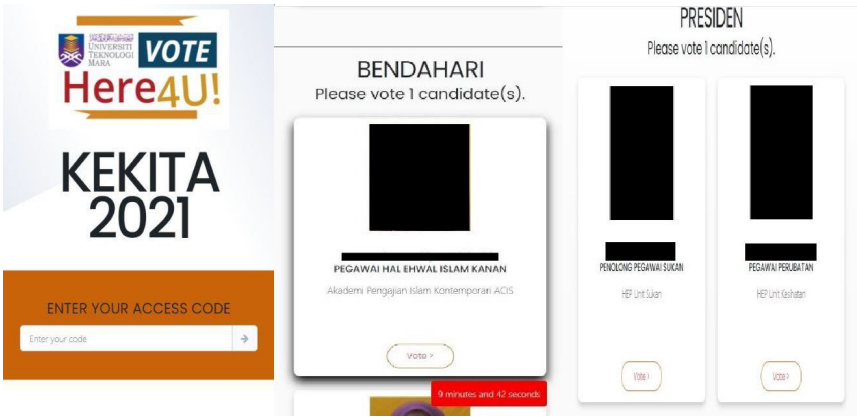


Figure 2. The System's Interfaces

NOVELTY

Several novelties are discovered from this developed system where the system can generate accurate real time results (can be checked from time to time if required), easy to set up, allow voters to vote multiple candidates from the same post and contested positions (five committee members are selected from ten candidates), and the voters themselves are able to view the time allocated when voting each candidate (to avoid time consumption and lengthy hesitation).

USEFULNESS

VoteHere4U 2.0 is useful and practical as the voters who had used the system acknowledged its usefulness and effectiveness. The time taken to vote was quick and the process to click the chosen candidates was also effective. According to the survey results,

nearly 90% of the voters claimed that the 'system is relevant to be used in the future and they also mentioned that the 'real-time results of the voting process' and 'the verification process are simple and efficient'; specially to mark a candidate of their choice. Most importantly, the administrative personnel can monitor the voting progress and can generate real time accurate results and the setup for the voting event can be prepared within a short period of time. According to Wang, Mondal, Chan and Xie (2017), the fundamental requirements for a voting system are usability, correctness (completeness and reliability), privacy, verifiable and additional requirements like fairness, efficiency and practicality which play very important roles in determining the success of a system.

COMMERSIALISATION POTENTIAL

The system is adaptable to any other event or organisation that requires voting, where the election process can be conducted in an efficient and effective manner. In addition, the system enables the organisation to conduct voting via online to cater to any organisation's needs, without the worry of changing the coding or databases.

CONCLUSION

To conclude, this e-Voting system indicates its capability to automate the election process and making it flexible, which might aid in reducing the unwanted human errors, showing scalability to outreach the voters, and making easy interpretation of the results. Most of the voters who had used this system gave positive perceptions towards the system in terms of its usability and satisfaction.

In addition, VoteHere4U 2.0 also fulfils the user's need as the result significantly shows positive acceptance towards the e-Voting platform, where the voters were mostly satisfied with the system by admitting that that 'the system is important and relevant' to be used in future voting. Generally, they also claimed that 'the system is effective' in terms of its clear graphic features and simplicity, as well as the system is reliable and accountable. As a result, highly efficient and ease of use of such system will lead to effective voting system and increase vote casting percentages drastically.

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