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Diploma Thesis.

Authentication in an information system

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I. Summary

As the technology is a way of enhancing and improving both public and private services and makes it less stressful for everybody to access such services, Rwanda online transaction should also have an effective way of protecting and providing its service to the level of excellence. Bank of Kigali internet banking system should lead to a higher operational effectiveness expressed in terms of more successful fulfillment of security, the authenticity of their information, customer satisfaction, and quality goals. This research provides evidence that authentication in an information system will be a strategy that enhances customer satisfaction from a security perspective. The thesis will be analyzing the current situation that is working now in Rwanda. Rwanda online banking (mobile providers and banks) is quite hard to ensure security of the use of the internet banking where you need to log in on your online account by filling out only your username and static password information, it is realized as an issue of security compared to other developed countries especially in Europe.

The research, conducted by collecting the responses from the respondents showed that around 89% are not satisfied with the current technology, based on the outcomes, to ensure the security of the customers' accounts, One Time Password based email will be implemented to authenticate an information system for a constant user and for marketable solutions.

Key words: encryption, authorization, authentication, Token, OTP, hashing.

II. Aim and objectives

1.Aim

The main aim of the present study is to assess the current satisfaction of BK customers that uses online banking and implement a process of authentication in the information system for a constant user and for marketable solutions.

2.Objectives

In order to achieve the main goal, the following partial goals have to be met:
- ✓ Reliable information source will be evaluated.
- ✓ Examine the current authentication method.

- ✓ Select a suitable authentication method according to the old one.
- ✓ Implement the chosen authentication method.
- ✓ Assess and making a conclusion.

III. Methodology

- ✓ The preparation of the diploma thesis will be preceded by analyzing and combining literature sources.
- ✓ Based on different research, different authentication methods to secure information systems will be compared to make an overview of the current problem and any other relevant information.
- ✓ In the theoretical part of this diploma thesis, all methods will be described, and in the practical part will be analyzing the significance of different authentication methods and why are they important.
- ✓ The final application will be selected based on specific goals of individuals or groups of persons and will be described steps needed to achieve it. The proposed results will be summarized in the conclusions of the work.

IV. Research questions

Is this research going to solve the problem of authentication in an information system?

Is OTP via email the best technology according to the target market? And why?

V. Results

With this method, the data was collected and processed by analyzing customer satisfaction on current BK online banking system which is currently working by using a one-step authentication system. From the observations, it can be concluded that about 89% need a solution not only access their accounts but also the security associated to these accounts. Therefore, the focus was to find the right content sources for building a new way of accessing their accounts by adding a new layer to the current way of authentication. An application that helps them to create an account by using an email which linked to the bank account was therefore the solution to this problem

5. Conclusion

In this project, we described how OTP via email can be the first solution to authenticate BK internet banking users as the current system is less secure as they are still using static password method to access their accounts. We reviewed different technologies that are currently used all over the world, starting from where static passwords are used till now at new world of advanced technology including the drawbacks and the advantages of these systems. After assessing current level of customer satisfaction towards BK online banking today, which is currently utilizing static passwords, the results clearly showed that it is not viewed as protected and safe. Two Factor Authentication thus becomes the most suitable solution to this problem.

The findings showed that high proportion of the users need to be authenticated so that they can access their accounts. The only downside to this is that each client needs to have a token material which is still costly for the current users of BK online banking, and that is the reason sending OTP via email will be successfully. This is however worth the risk and the researcher recommends that the bank uses this system.

VI. Recommended information sources

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