

A Review on Vulnerabilities in Mahavitaran Mobile Application

Mayuri More¹, Sneha Ambhore²

¹BCA, CTIS (Cloud Technology and Information Security), ²Assistant Professor
School of Engineering, Ajeenkya D Y Patil University, Pune.

Abstract - This investigation aims to review the study of M.S.E.D.C.L. services provided through the Mahavitaran application. The investigation was influenced by many factors like anyone can make an account on Mahavitaran application with the use of consumer number and billing unit which are written on the electricity bill which is also easy to be stolen from a letter box in any building. The user then gets access to all the features of application and he/she can obtain the available information or do any changes without the knowledge of the person to whom the connection originally belongs. The personal information like phone number and email-id of the consumer can be misused.

Keywords - Mahavitaran, Vulnerability, Consumer, Guest User.

I. INTRODUCTION

Earlier, people had to stand in queues for paying electricity bills, but as now everything can be done through mobile phones, Electricity bills can also be paid through mobile phones anywhere, anytime. The Mahavitaran application, an official App by M.S.E.D.C.L, enables consumers to facilitate Mahavitaran services at their fingertips. This app was made for the comfort of people while paying the bills. This app not only facilitates the paying of the bill but also provide many other services related to electricity consumption. The app is very much transparent while providing amenities to the consumers and thus making it simple and easy to use [1].

II. FEATURES OF MAHAVITARAN MOBILE APPLICATION

1. **Add or Remove Connection** - Apply for a new connection or remove an existing feature
2. **Submit Reading** - Meter reading can be submitted online by taking a picture and uploading in the corresponding feature of Mahvitaran app.
3. **Register/Review complaint** - Register or track complaints.
4. **Billing and payment history** - Track previous and pending payment and billing history.
5. **Provide Feedback** - Rate the app in terms of 1 to 5
6. **24x7 Customer Care** - Call the customer care anytime if trouble occurs
7. **Update Contact Info** - Mobile number and email of the consumer can be updated by this feature.
8. **Go Green** - A Consumer can opt for digital billing instead of paper billing for minimum use of paper.
9. **Feeder Information** - Technical information is provided.

10. **Nearest Office/Collection Centre locations** - Provides the list of nearest office and collection Centre's location
11. **Bill Calculator** - This utility helps in calculating required consumption and estimated bill amount for the connection.
12. **Report Power Theft** - If power theft is suspected, a complaint can be launched by this feature.
13. **New connection Appl Status** - Track status of a new application
14. **Apply for the Name change** - Changes the name of the consumer
15. **Apply for Load change** - Changes the power load.
16. **Pay Reconnection charges** - If applied for reconnection, charges can be paid through this feature.
17. **Useful links** - As the name suggests, useful links are provided by this feature.
18. **About Mahavitaran** - Everything about Mahavitaran is given in this feature.
19. **Guest login** - A person can log in as a guest by just using a consumer id and billing unit.

III. WHAT IS VULNERABILITY?

In cyber-security, vulnerability means any type of weakness or impotence in a system due to which it is easy to be attacked. Any type of weakness in a system, program or exposure to information security, results in vulnerability [2].

IV. PROBLEM STATEMENT

Some vulnerabilities are recently found in the Mahavitaran mobile application. Let us discuss further the vulnerabilities found and threats to the consumer due to these vulnerabilities. Any random person can access anyone's Mahavitaran App for which he/she only needs the consumer number and billing unit which can be found on a printed copy of the bill that can be easily available to anyone. The guest user can be anyone and does not need any verification for login. He/she just have to use any random email-id and phone number.

• **Add/Remove Connection** - Fig.1 represents the feature allowing the guest user to add or remove connection without knowledge of the consumer which may create some trouble for the consumer.

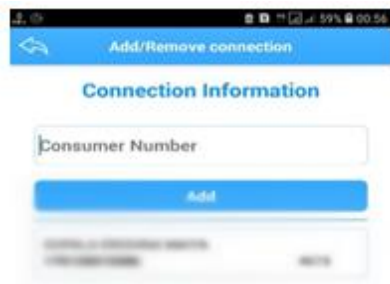


Figure 1: Add/Remove connection [3]

- Update contact info



Figure.2: Update contact info [3]

Fig.2 represents the feature showing the contact details like phone number, email-id and UID/Aadhaar Number which could be misused in many different ways. The phone number and email-id can be used to send spam messages or emails further trying to hack the consumer’s mobile phone or personal computer. The guest user also has access to change the contact details of the consumer, creating some troublesome activities.

- Apply for the Name change



Figure3(a): Apply for name change [3]

Fig.3(a) represents the above-mentioned feature allows the guest user to change the consumer Name which may result in false authentication.

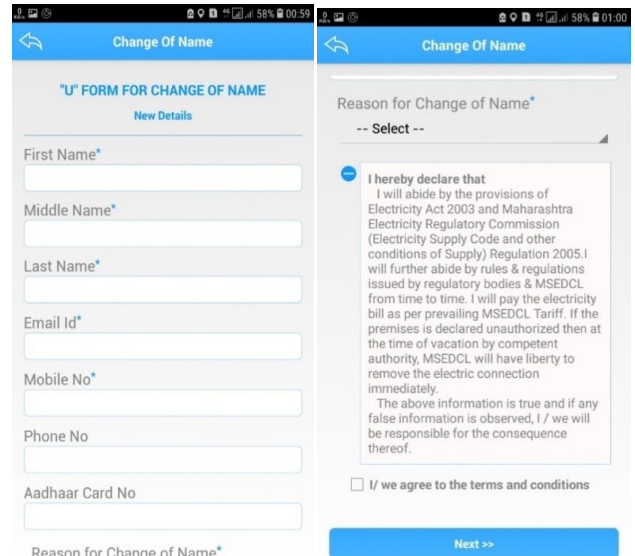


Figure 3(b): “U” Form [3] Figure 3(c). Declaration of change of name [3]

Fig 3(b), Fig 3(c) represents the fact that as soon as the guest user applies for the name change, “U” Form for change of name appears which consent the guest user to enter new details like, Name, Email-id etc.

- Apply for Load change

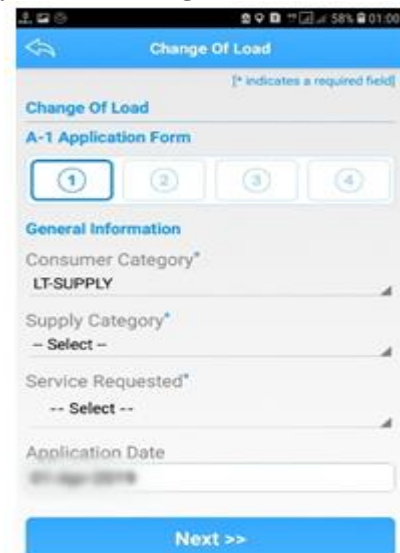


Figure 4: Apply for load change [3]

Fig.4 represents “Apply for load change” feature lets the guest user modify General information like Consumer Category, Supply Category, Service Requested, resulting in some technical issues regarding electricity consumption.

V. METHODOLOGY

There can be many solutions to the above-mentioned problem. I suggest:

1. A confirmation mail should be sent to the consumer on the registered email-id along with the name and phone number of the registered user whenever a new user login as a guest user. The mail should contain a link for allowing and denying the further activities of the guest user in the respective Mahavitaran Account.
2. There should be a feature in the app which tracks all the activities by any guest user and the consumer has access to deny the permit for the guest user.

VI. CONCLUSION

It has been observed that there were some vulnerabilities in the Mahavitaran mobile application by which the data of the consumer could be misused or misplaced by the guest user intentionally or unintentionally. The proposed method helps to prevent the mentioned vulnerabilities and avoid any cybercrime associated with the application.

VII. REFERENCES

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