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"My Number" Digital Identification Cards: The Need to Strengthen its Security in Order to Acquire People's Confidence in the National ID of Japan

Introduction

"My Number" is a 12-digit electronic card that holds details of Japanese citizens and residents that aids in administrative services such as taxation and social security (Fee, 2022). In addition, he mentions that it serves as a national ID since the IC chip that runs it stores the personal information of the card holders, as seen in Figure 1. Kyodo News (2023) estimates that around 89 million people have acquired the ID.

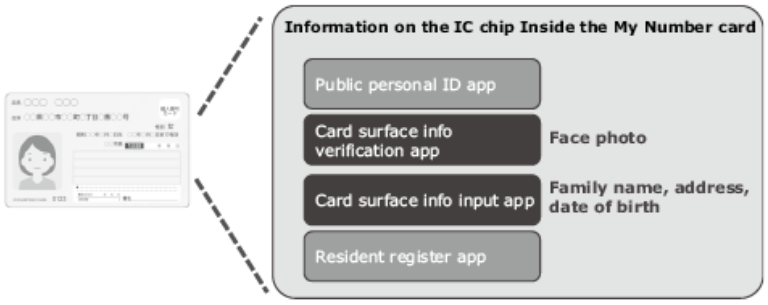

Figure 1: IC chip stores personal details (Shimizu et al., 2021)

Privacy and Security Concerns

Cementing Japan as a digitised nation is one of the main reasons why My Number use was implemented (The Japan Times, 2023). However, this is doing the opposite. Recent privacy and cyber security concerns have been on the rise. Examples of the issues are: issuing the certificate of one person to another (Exum, 2023), personal data leakage (The Asahi Shimbun, 2023), and wrongly associating hospital records (Kyodo News, 2023b), to name a few. This has caused distrust amongst the population about its credibility and anxiety over their digital identity privacy. Japan still has a long way to go in order to climb the Digital Competitiveness index of the International Institute for Management Development (IMD) (Stewart, 2023). Therefore, necessary improvements should be made to the technology that runs My Number in order to gain public confidence in the digital identification system.

Proposal for the Improvement of My Number System Implementation

Since the My Number privacy breaches are causing anxiety amongst the Japanese, recommendations are hereby provided to improve its implementation. First and foremost is the development of Information and Communications Technology (ICT) programs within the Japanese government. Nakamura and Suzuki (2019) recommends training of ICT-related skills to promote e-governance.

Once expertise in ICT is established across governmental bodies, steps to prevent cyberattacks and personal data leaks in the My Number System can be taken. Developing an Attack Framework organises the necessary steps to take in case systems face threats (Conklin et al., 2022). They also propose Threat Modeling Steps, as shown in Figure 2.

Figure 2: Steps to follow in case of a threat (Conklin et al., 2022)

Technological solutions, such as the use of Flexible Round-Optizimed Schnorr Threshold (FROST) signature and Verifiable Credentials (VC) Data Model that have

been suggested by Kim et al. (2023) can be applied. According to them, these extra security measures help strengthen security management. They mention how FROST prides itself with the fact that client signatures are anonymous, and how VC Data Models can be used by organisations in order to validate digital identities. These would benefit data management and security as there are plans to connect mobile plans and bank accounts to the IDs (Mainichi Japan, 2023).

Conclusion

Persistent threats continue to challenge digital societies around the world. Advancement in cyber security systems should be used by the Japanese government, as they can prevent identity theft and data leakage within the My Number system. In conclusion, further research in e-governance cyber security is necessary in order to propose appropriate and possible solutions to promote public confidence when using the electronic national IDs in Japan.

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