The Critical Benefits of Teaching Senior Citizens About Microsoft Windows and Cybersecurity

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Abstract

Cybersecurity and Microsoft Windows have both been fields that have constantly grown over the past few decades. However, while Cybersecurity and Windows continue to evolve, senior citizens who grew up with older technology, have been left out of being active users of the new technology, leading to a digital divide. This digital divide has hindered senior citizens not only from understanding basic features but also becoming one of the most susceptible groups to cyber-attacks. For this reason, senior citizens need proper training to use new technology, stay up to date, decrease the digital divide, and reduce the risk of cyberattacks. This paper will address the need for senior citizens to be trained on Windows and Cybersecurity and also address future recommendations for improving the issue. The specific objectives of this paper are:

- To determine through cybercrime and phishing data how prevalent the issue of senior citizens not having knowledge of cybersecurity and Windows is.
- To examine how the digital divide between senior citizens, cybersecurity, and Windows affects aspects of life.
- To analyze the cybersecurity and Windows challenges that affect senior citizens and to find new solutions.
- To provide the benefits and utility of teaching basic cybersecurity techniques, hygiene, and Windows to senior citizens.

Background

Many senior citizens have tried to stay in touch with modern technologies such as computers, and smart devices (Vacek & Rybenská, 2016). According to Zulkipli et al. (2021),

50% of the elderly population is using the Internet and that number has continued to grow over time. This has resulted in the elderly becoming one of the fastest-growing Internet user groups. Yet, there continues to be a significant digital divide that puts them at high risk of cybercrimes.

Barriers for Senior Citizens

Several barriers prevent senior citizens from accessing and utilizing technology effectively. These barriers include the effects of evolving technologies, lack of knowledge and help, cyberattacks and crimes, and difficulty retaining knowledge related to modern technologies.

The Effects of Evolving Technologies

Due to ever-evolving technologies and features, a continually growing gap exists for the elderly to learn about cybersecurity. Some of the reasons for this gap are physical conditions, beliefs about technology, health issues, and a lack of digital and cyber hygiene. These reasons lead to devices being unsecured and vulnerable, making them easy targets for cybercrime (Zulkipli et al., 2021). Microsoft has also made considerable changes that have created challenges for the elderly who use their products and systems. An example is in 2007 when the Microsoft Office "Ribbon" interface was introduced and caused issues for users above the age of 50 who "do not have background knowledge and work experience with computer" (Darejeh & Singh, 2014). Another challenge is the lack of knowledge and challenges with acquiring help.

Lack of Knowledge and Help

One of the many factors that creates a barrier for the elderly to have digital literacy is how they have learned compared to future generations. Studies have shown that the elderly have had a linear or analog learning style that takes the form of passively reading physical books and journals. This also applies to traditional media like cable television. This style of learning is

fundamentally different compared to the Internet where the user needs to be active in how they access the correct information and other methods of learning. Overall, this creates a significant challenge for the elderly, which includes having to understand a new form of learning as well as staying safe while doing so (Castilla et al., 2018).

Another issue that occurs for the elderly is how people dislike having to help them. According to Hilbert (2018), there is a "tendency to act dismissive when a senior citizen asks for help can lead them not reaching out anymore which is unproductive." An example of this is when in the study, an elderly female became very adequate with AOL on her own due to her daughter becoming frustrated with her whenever she had questions about online platforms. This example proves that this way of thinking about the elderly only continues to further their digital gap instead of closing it by being understanding and patient.

Cybercrime Statistics

An additional challenge and risk for senior citizens is cyberattacks. According to Zulkipli et al. (2021), the four most common cyberattacks in 2020 were phishing, behavioral attacks, consumer attacks, and identity theft. Furthermore, there were reports that "53.47% of the older adults were possible in becoming the phishing attacks' victims" and "47.47% of the older adults were prone to phishing attacks and more likely to let their guard down while at home." Regarding phishing, an FBI report in 2020 reported over 847,000 complaints to the Internet Crime Complaint Center, resulting in $7 billion in losses and a 38% percent increase in phishing alone over the year (Bardsley-Marcial & Johnson, 2022). In addition to cyberattacks, another challenge is retaining knowledge.

Retaining Knowledge

A large barrier for senior citizens is the inability to retain cyber and application knowledge. In a study analyzing the challenges for the elderly using the Internet and communication technology, it was noted that 90% of the respondents in the study "agree upon the fact that an awful lot of time is used up before they comprehend something and this new learning must be repeated until they have it learned properly" (Vacek & Rybenská, 2016). This tedious process of having to repeat tasks to comprehend them could deter senior citizens from engaging with new technology.

Implications for The Issue

The challenges mentioned above have significant implications for senior citizens. For example, the elderly having difficulty retaining knowledge may hinder them from seeking help. Another significant implication is the loss of billions of dollars of their hard-earned money.

Plateau in Wanting to Ask Questions

According to a study on the challenges that senior citizens have with information and communication technology, when the elderly were in group lessons, it was stated that they "may be shy when it comes to asking a question of the teacher lest they see themselves appearing to be incompetent or not well informed" (Vacek & Rybenská, 2016). This pattern of functioning may lead to never speaking about potential issues. The elderly losing billions of dollars from cybercrime is another significant implication.

Large Costs

The elderly being a large population on the Internet without cyber or application literacy, lends them to become very susceptible and profitable for cybercrime. Studies show that cybercriminals have stolen nearly $40 billion from people in the age range of 50 to 60. This is further proven by how in 2016, Identity theft tax refund fraud alone cost $1.7 billion in losses

(Zulkipli et al., 2021). Another example occurred in 2020 for “elder fraud.” According to Huey and Ferguson 2022), the Internet Crime Complaint Center (ICCC) and the Federal Bureau of Investigations released a 2020 report on “elder fraud” alone, which was “an estimated $1 Billion in losses, accounting for some 28% of all losses reported to the ICCC.

Methodology

The methodology used in this conceptual paper included a thorough review of multiple research studies, interviews, and surveys regarding the topic. The approach used was to examine, theories, and key concepts and note gaps in the research. This process allowed for the synthesizing of different perspectives and the integration of themes and patterns. Additionally, the process revealed gaps such as a lack of adequate research that pertained to the elderly learning about Microsoft Windows.

Findings of Research

The research reveals a digital divide when it comes to senior citizens, which is a result of evolving technologies, lack of knowledge and help, and difficulty retaining knowledge. The research also revealed that there are significant implications that include the elderly not asking for help and the loss of billions of dollars due to cybercrimes. One deficit noted in research findings was related to difficulty finding diverse literature or studies related to senior citizens and the use of Microsoft Windows. Despite some gaps, the research offers us some solutions that mitigate these challenges.

Solutions

Some solutions that have been identified for mitigating the problems of senior citizens not accessing or effectively utilizing new technology have included teaching basic cyber hygiene and application use and introducing social media applications for connections.

Teaching Basic Cyber Hygiene and Application Use

One of the ways the elderly can learn about cybersecurity is through education. This can take the form of videos, training, activities, frameworks, and other methods to instill a fundamental knowledge of how to be safe on the Internet. Par the figure to the right, it's one of many methods that can be beneficial in teaching the elderly how to regularly protect themselves on the Internet. (Zulkipli et al., 2021). Another form of education can be outreach programs for teaching about the necessary settings to use and who to interact with online (Hilbert, 2018). Additionally, improvement has also been shown by working at an individual level with the elderly. According to Vacek and Rybenská (2016), individual teaching was considered "most suitable for seniors who are a little overwhelmed by computers, and an experienced and compassionate teacher will always be an enormous help." Security frameworks are another method for teaching cybersecurity by helping the elderly to learn by their own action and not wasting time through ridicule. According to Lindvall (2022), when using ContextBased MicroTraining as a base for the browser extension WebSec Coach, "results showed that every respondent perceived a positive change in their cybersecurity awareness." To sum up, training senior citizens while at the same time being patient and compassionate with them elicited positive results.

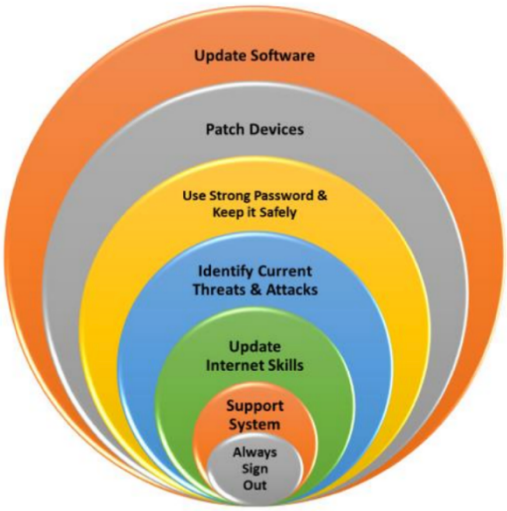

Fig.1 Cybersecurity Awareness Framework for the Elderly

Figure 1. Cybersecurity Awareness Framework for the Elderly (Zulkipli et al., 2021)

Introducing Social Media and Applications for Connections

Another solution is the introduction of social media and applications for connections. Studies show that introducing the elderly to social media platforms and teaching them about features like videoconference and email improved social interaction between the elderly and their families. This can be useful by giving them a larger safety net and circle to teach them about cyber awareness (Castilla et al., 2018). Another method for improving learning is through simplified application designs. According to Darejeh and Singh (2014), when using an interface to better understand Microsoft, there should be a "simplified interface, reduced clutter, on the screen, reduction of terminology, and a particular type of help." This approach to application design helps improve the learning capabilities of the elderly who use Microsoft for work or daily life.

Conclusion

As the elderly population has considerably grown when it comes to internet use, there is an urgent need for them to have a fundamental understanding of cybersecurity and Microsoft Windows. However, this study has shown that while efforts are being made to educate the elderly on the use of technology, interfaces, cyber hygiene principles, and Microsoft application use, there are still several barriers that intrude on this process and maintain the digital divide with the elderly and technology use.

These barriers include the quick pace of evolving technologies, a general lack of understanding and resources for help to learn, the risk of cybercrime and its effects on the elderly, and difficulty retaining cybersecurity or Microsoft knowledge.

Barriers like these create large implications both for the elderly and the economy in the forms of the elderly feeling less inclined to ask questions which leads to large costs with

phishing and cybercrime attacks. As a result, these costs from cybercrime have resulted in losses of billions of dollars.

Despite these challenges, there are solutions to these issues that include various teaching styles for the elderly to better understand cybersecurity and Windows and introducing social media and appealing interfaces of software to interest them as well. Videos, training, outreach programs, and individual teaching are other ways that the elderly can gain a better understanding of technology. Additionally, social applications also introduce the elderly to groups of other people who may have challenges like them and can learn from each other. These solutions along with more research being done on the topic will be crucial in improving the overall cyber hygiene and Windows knowledge of the elderly, creating a more intellectual and less victimized group in a technological-focused world.

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