

**Academic Paper**

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## **Introduction**

As we know technology is a must in our modern society mostly for the better and it is still progressing especially to humanity. Technology also helps us around the world such as enhancing our business and innovations as well as helping us with time management. On the other hand, there are some drawbacks, especially for the people who are ignorant about such information as updates, which could be risky. Also, some people exploit technology to harm others. That being said, of the groups that are the most vulnerable to such a topic would be the elders and that is where we would like to discuss this paper.

One of the problems regarding elders when it comes to technology is that many tend to struggle to keep up with the new changes such as computer updates, software updates, etc. In addition, they also have problems such as a lack of knowledge and skills explicitly concerning computers. Lastly, they are also ignorant of the cybercrime strategies and methods to protect themselves this could be such as phishing attacks or malware. Now, imagine you were hackers and aware of the lack of technology knowledge from elders who have retirement money or related benefits coming their way monthly, imagine the pressure and danger they are facing which could potentially affect not just wealth but also health. Therefore, elderly people essentially need basic training to help them with their challenges and difficulties as well as prevent them from cyber criminals and their vicious hunger targeting them due to their vulnerability and lack of knowledge.

To start, after thoughtful ideas from our group, we have created an innovation called the cyber crusaders. The Cyber Crusaders is an online platform that will help people like elders when it comes to dealing with cybersecurity threats with educational aspects. Moreover, this platform helps the elders such as video tutorials that will help explain aspects like common strategies that cybercriminals use to scam them like malware and phishing. To add on, showing them how to avoid cyberattacks like using safe websites and emailing, antivirus software, computer updates, and strong passwords also another concept of the tutorials. That being said, the tutorials will, however, be simple, easy, and user-friendly, designated to the elders such as learning at their very own speed. Different languages in this platform will also be added to accommodate the diverse needs of the elderly as well as easy accessibility for those who are disabled.

Next, as the Cyber crusaders to help the elders, our business will be a for-profit business to gain a source of income to sustain the business and benefit the seniors. A few of the following ways we would earn such income from this business would be to have a website that provides ads that will generate revenue over time. Also, we have a membership that'll be an affordable price. Lastly, we will have a shop page where we will sell merchandise such as t-shirts, and hats as well as some useful items that are used in our everyday lives. Lastly, by showing engagement and seriousness to elderly customers we will have organized events designated for elders to join and interact online or even in person. Overall, our goal is still to show how our company cares and can improve a person's life and make everything easy and compatible.

## Literature

Moving on, as the internet is a useful tool, it could also pose many risks and dangers, especially for the elders from cyberattacks. So, as the internet increases and becomes dependent for many people, cyberattacks also tend to do the same, especially for our elders who are attackers' main target due to their lack of knowledge. Having said that, we've raised an important point which is how one can protect and prevent the elders from cyberattacks. So, I will explore more about the problem of cyberattacks against the elders and suggestions in terms of our company.

So, I will start by explaining the types and sources of cybercrimes that elders encounter in our modern society especially digitally. Next, will also show some of the impacts and consequences of cyberattacks on the elders, this is also such as emotional and financial harm. After, I will elaborate more on the difficulties and challenges elders tend to face when it comes to technology and the Internet as well as how can one overcome them. More on, another concept is the ethical and moral implications of cybercrimes against the elders like privacy as well as violation of their dignity. Lastly, we will discuss how our company known as the Cyber Crusaders will come into play and help prevent or reduce these issues to ensure protection against cyberattacks.

As the internet poses many challenges such as a lack of necessary computer and security skills to prevent themselves from online threats, they are, no doubt, they are hackers' main target. According to the Internet Crime Complaint Center, elders lost about 3.1 billion dollars in 2022. (IC3 2023). From that, we understand elders are indeed vulnerable with lots of wealth in their pockets so, we must take action by

speaking up and implementing ways to prevent this! Now, Let's begin by diving into some of the methods and ways cybercrimes tend to occur when approaching elders and their ignorance. According to frontiersin and its report, some of the attacks and methods cybercrimes use against elders are online fraud. Phishing, Romance scams, and Grandparent scams (Yuxi Shang, 2022). Now, let's elaborate on each technique on how they impact the elders. As for Online fraud as many of us know it's commonly used today when one offers fraudulent invites that involve potential victims. Some techniques in Online fraudsters would be such as persuading a person, in this instance an elder, by informing them of how high of a status one is to gain information, offering big returns as well, and scaring the elders to act fast before it's too late. For instance, An attacker may perhaps create scarcity in an elder by getting their relatives involved especially those whom they love. Although this method is wrong and disgraceful, attackers unfortunately take advantage of such acts. After, we now look into phishing which is a type of online fraud. This method includes sending emails that are fraudulent, and deceptive to older adults to trick them into receiving their personal information. This attack method is an efficient, unfortunate way to deceive the elders by sending an email pretending to come from a legitimate source such as an agent, the bank, a relative, etc. In many cases, an attachment is usually added to the email for them to click and as a result, they're trapped in the attacker's hand. Next, another online fraud that we'll talk about what's in the article from Frontiersin is Romance scams. This type of fraud includes the scam name "romance" but explicitly for elders, exploiting their emotional needs to find a partner digitally. Such a process occurs by scammers who create "profiles" that are typically fake and then pretend their interest in elders deceiving them into sending

money, gift cards, and even their personal information. As crucial as that can be, this is another tactic attackers love to use. Lastly, grandparent scams are the last online fraud type that I'll be talking about regarding the methods attackers commonly use to trick elders. Similar to what I said before regarding relatives and how elders tend to be vulnerable when they get involved, this scam is about the same concept such as a grandkid or a relative, but for this scam, the "relative" is requesting something. This is pretty much someone impersonating a relative who is requesting help or anything in general to the elder in which personal or even potentially sensitive information could be revealed. For example, an impersonated grandchild may ask the "grandparent" for their card information to buy this new toy that was released. As a result, the impersonated grandchild earns the credit card information like a piece of cake. That being said, we must be attentive to such methods and attacks attackers tend to do against our beloved elders as well as help take action and help strengthen the elders with knowledge and skills on how to fight this. Overall, these attacks and methods are my examples regarding the cybercrimes elders encounter in our modern society.

Furthermore, we will now look into some of the impacts and consequences of cyberattacks on the elders. So, as we know, cyberattacks are malicious attempts to access, and damage computer systems such as stealing, and sabotaging. We also understand that cyberattacks target elders more than the rest, adding pressure and difficulties to them. A few examples of some serious impacts and harms would be such as emotional harm. According to an Oxford academic from the Journal of Cybersecurity, a study by Snider et al, elders and their exposure to online attacks could potentially lead to greater psychological distress, fear, and anxiety (Snider 2022). That being said, we

now understand that cyberattacks a political violence that can cause distress, fear, and anxiety to people, especially among elders. The reason why that's the case is that elders usually feel insecure and even helpless when they lack knowledge of something such as detecting and preventing cyberattacks. For instance, elders most likely wouldn't know and aren't aware of the phishing emails that we encounter every day, this is such as not knowing whether or not the link is malicious, whether or not there are spelling errors or urgent requests. In addition, they also may not know the updates that occur such as updating their software, and their passwords or even understanding the concept of password strength. Overall, these, without a doubt, cause anxiety and distress for many people, particularly the elders. Another common example of how the elders could potentially gain stress and anxiety or even distress is when cybercriminals tamper with their health information. This could be such as their medical records or financial security which could potentially lead to health harm. For instance, an elder patient has a heart disease or diabetes which is controlled by medication and monitoring, if attackers tamper with their information even slightly, imagine the harm that could be. Lastly, another reason an elder may encounter such feelings as stress or anxiety would be when a cybercriminal may potentially cut off or make access to technology hard for them such as using social media, communicating, or even when they want some entertainment. As a result, after the following is cut off or limited for them, they will most likely have stress, anxiety, or even physiological distress. This is because many elders tend to live alone due to either being a widow, from a divorce as well or their family due to living their own lives and, since the only way to communicate and contact them is by using a source of technology and that's cut off or limited, imagine

the loneliness or stressed person a person may feel or go through. Overall, these are my overview regarding the elders and the consequences they face when they're involved with cybercriminals as well as their lack of knowledge.

Having said this, now let's go more in-depth on the difficulties and challenges elders tend to face when it comes to technology and the Internet as well as how can one overcome them. So, let's begin by mentioning the challenges and difficulties elders face regarding our dependent, daily usage known as technology. According to BMC Public Health of Barriers and Facilitators to the use of e-health by Older Adults: A Scoping Review, some difficulties and challenges that elders tend to face when it comes to technology and the internet are physical aging and lack of self-efficacy (Wilson 2021). To elaborate more on each aspect, physical aging is when a person grows older and faces changes in their physical features such as loss or reduced hearing, physical abilities, reduced mobility, and more. As a result, these could impact them with difficulties and in this instance, technology such as devices and platforms that they are most likely not used to. In addition, the screen size, small buttons, and difficult navigation in devices make it tremendously more difficult to handle. Next, as for lack of experience, similarly, as we said before, elders did not grow up with computers nor a device in their pockets wherever they go, so that, unfortunately, grants them a lack of knowledge from technology usage nor any basic skills. To transition, let's now talk about some of the ways elders could overcome such challenges and hardship. One of the first ways I would like to mention is if possible, to design platforms that are user-friendly and accessible. As we mentioned the aging elders have that's uncontrollable, and addressing such needs will perhaps reduce the difficulty. Another way to overcome such



challenges would be to educate them. Providing a type of education or training could help elders tremendously such as navigating them into what's right or wrong, support, and usage of technology in general especially when related to how to fight their enemies, the cybercriminals. In addition, the following article by Ncoa recommended a few tips for elders on how to improve their cybersecurity efforts such as having strong passwords, avoiding malicious links and attachments, how to update programs like antivirus and software, and more (Ncoa 2023). Overall, these are my overview regarding some of the challenges and difficulties elders tend to face when it comes to technology and how to overcome them.

Moreover, after mentioning a few challenges and consequences as well as the lack of elders' haven we'll mention the elders and how they pose ethical and moral challenges. First I'd like to begin by mentioning privacy as one of the implications for such crime. As we recently mentioned online fraud like phishing and some related scams, we must also understand that these can compromise the privacy of the elders which may potentially hurt them from the actions they take. As cybercriminals do such activities they're accessing unauthorized places like elder's personal information and any other related activities. According to the 2020 elder fraud report, this action indeed violates a person's right to privacy and exposes them to further harm (IC3, 2020). Next, we'll talk about another implication of such a crime called Dignity. Cybercrimes like cyberbullying could also involve the dignity of elders. This is because an attacker could give elders emotional distress and shame when they harass or threaten them. In addition, this could also get involved in such as healthcare services. The article Older Adults' Sense of Dignity in digitally-led Healthcare by Raja et al. explained how elders

experienced a sense of dignity in digital healthcare services like smart home technologies and telemedicine. In addition, the authors conducted a study with 12 elders regarding the digital world finding out that they felt disrespected and ignored (Raja 2022). Overall, elders are human beings, and based on the following articles we can figure out the challenges they face ethically and morally such as their privacy and dignity.

After the following explanation of each concept I mentioned, Lastly, we will now mention how our company, the Cyber Crusaders, will be involved and help prevent or reduce these issues against cyberattacks, especially the elders. Cyber Crusaders is a group of innovators who have the ambition to help protect the elderly from such crimes online. Our main goal here is to at least reduce such attacks by educating the elders on what they need to know to fight back. More on about the company, we are a for-profit business in Virginia, for elders who are 55 years of age and older. To elaborate on this business and what it contributes, it is a series of video tutorials that help understand cybersecurity in a basic manner. As a result, the elderly will begin to understand the tactics of cybercriminals and avoid such attacks. In addition, they'll also be taught to handle emails to avoid any phishing attempts, computer and software updates as well as core concepts of managing strong passwords and how to save them. Lastly, we'll also have easy access for everyone including the disabled. For the company, however, to run, we need to make an income, especially for a profit business. That being said, we've decided to do a few methods to generate income. The first thing we've decided to do is generate income from our website by displaying advertisements. Next up, having a membership with a price of 29.99 dollars a month is another method of generating some

money. Lastly, we've included a shop page such as items that are used every day with special deals and discounts to receive engagement so that our members could be well taken of. To end, this is the overview of our company's cyber crusaders and how it will help prevent or reduce cybercriminals.

### **Overview of problem and innovation related to material covered classes Outside the major**

To start, I would like to provide an overview of how the problem and innovation relate to courses I've taken outside of my major in cybersecurity. The first course that relates to this would be psychology which is known as PSYC 201S here in ODU. A brief concept of what psychology is and how it relates to our problem and innovation is understanding the psychological factors such as feelings that could affect a person's behavior. So, attackers can distribute such changes in the elder's behavior by bringing stress, anxiety, loneliness, etc. In addition, it could also bring about an impairment to their mental health. Now, how it relates to our paper, is that our problem of cybercrime victimization of elders involves such factors and behavior. That being said, the creation of Cyber Crusaders business would come into play and address such issues as giving support, Educating, as well as lots of engagement to not have any of the following factors like loneliness nor distress.

The next related course I'd like to add related to this would be Sociology. Sociology was also taken in ODU known as SOC 201S in which it includes social interactions and mainly the structures of human society. A few things that could relate to

the problem from a sociological perspective would be such as the age, income, and education used as well as the vulnerability of the elders encountering scams and frauds. As for the innovation Cyber Crusaders and its relationship with sociology, would be such as the well-being of the elders in the technology world as well as empowerment.

Furthermore, another course taken here at ODU that relates to the problem and solution would be the communication course called COMM 112R. Understanding the concept of Communication is also essential when it comes to such problems and solutions. As for the problem and how it relates, would be understanding how attackers operate and deceive elders into receiving their information digitally. As for the innovation and how it relates coming from communication would be enhancing literacy and building a better foundation for the elders in terms of understanding in the online world.

Lastly, I chose this course entrepreneurship as my last related concept for the problem and solution. Entrepreneurship course was probably one of the most important courses related to this topic because it includes many important bases like how to run a new business, innovating, economic growth, and so on. So, entrepreneurship and how it relates to the problem and innovation regarding the elders would be adding practices of entrepreneurship to establish a business that will include a service. In this case, after learning the following skills from an entrepreneurship course such as problem-solving, risk-taking, and teamwork, our group and I created a business called Cyber Crusaders to help the elders and their needs. Overall, psychology, Sociology, Communication, and entrepreneurship are my 4 courses that are related to the problem and innovation.

### **Overview of how to determine whether your innovation is effective**

Now, to deep dive into the effectiveness of our innovation, our team has conducted a few goals. We as the innovators of Cyber Crusaders and our main goal is to meet the needs of our elderly customers. If our innovation does not meet their needs then most likely it isn't useful for them. Our actual goal, however, is to help our customers who are elders to prevent cybercriminals from such attacks or even reduce it. Our team has also surveyed our site to receive feedback on how we could become a better business as well as whether or not one is learning for our tutorials. Furthermore, to determine whether or not our innovation is effective look at the following numbers that join especially those that visit the websites. The number of visits to the website is critically important because of many things. Aside from elders signing up and joining the program, we could also determine whether or not the advertisement plan is working. In addition, as we've previously mentioned, we've also added a shopping page. That being said, determining whether or not we're making a profit is another method to figure out if our innovation is effective. So, Our vision is to establish a successful, beneficial business. We want the elders to stop being hunted for cybercriminals by being vulnerable and fighting back. Although there are probably some related businesses today we are innovating but, elders with a high percentage are still being hacked, such businesses are not benefiting society and we as Cyber Crusaders can be better and stronger than the rest by helping our elders who lack many aspects of the digital world.

### **description of what is needed to turn your innovation into a reality**

To start the following business called Cyber Crusaders, the first step that will be done is registering the business. For this instance, the registration will be in Virginia, named Cyber Crusaders and it will be going to the courthouse to receive the certification of DBA which is known as Doing business. This step is where we get our foot in the door to get started. Aside from that, getting the DBA name will also help by preventing other businesses from using the same name which could potentially hurt us in advance. Next, to report or pay any taxes we need a Tax Identification Number. To do so, we'd need to go to the Virginia Department of Taxation online to sign up. Next up would be applying for a limited liability company. In doing so, we'll also need to register with the State Corporation Commission. As for taxes, although you shouldn't be worried about starting the business, keeping track of the taxes and expenses will be sufficient to turn this innovation into reality. That being said, now let's dive into the financial plans we've conducted for this company. Using the article [How Much Does It Cost to Build a Website for a Small Business in 2023](#) by Sarah Berry, we have established a startup cost for a website-based business. The domain name which will be called CyberCrusaders.com will be around 11 dollars per year to get started. Website hosting is also another concept that's needed and will cost around \$24-120 dollars per year. Now to secure the website, an SSL certificate will be a must, being up to \$1500 per year, especially for online transactions. After getting the following, now we need a website design which could be around \$2000 to \$15000 and the number of pages may

increase the price more from about \$1000 to \$5000 extra. Functionally will also be the other strategy for our website which will be around \$2000 to \$25000 to allow e-commerce transactions. To transition, we'll now go more into the payroll. We planned on hiring 6 employees with a salary of \$35000 with a total of 210 per year. The employees will be a CEO, a product manager, a Chief technology officer, a sales manager, a Business development manager as well as a customer service representative. We will also add advertisement for a cost of \$5000 to generate revenue. As for rent, we've concluded that finding a free location will suffice.

As for the income, we've established a few methods on how to generate some money by keeping this business active and running. The first thing will be a Monthly website subscription for about \$19.99. This price may, however, change depending on the number of people signed up. Next, we've invested in advertising for our website. The following numbers on how it works are: When 500,000 monthly page views the advertisement, income will come out to be about \$1000 to \$5000 per month. So, 1M monthly page views: \$2,500 - 25,000 per month 5M monthly page views: \$10,000 - 100,000 per month 10M monthly page views: \$25,000 - 250,000 per month 20M monthly page views: \$50,000 - 700,000 per month 40M monthly page views: \$100,000 - 2,000,000 per month and so on. Lastly, we've concluded that a shopping page will occur to generate more income. So far in the shopping cart are T-shirts which are \$20 and hats which are \$20. However, down the line, more items especially related to elders will be added!

## Summary

To sum up, from this project I've learned many things which I have never learned before. For instance, Creating an online platform business that helps elders from cyberattacks such as providing educational videos and concepts is something new to me. In addition, I also didn't know how vulnerable and targetable is against cybercriminals. Yes, I knew elders are aging and their physical capabilities are decreasing but researching how many of a loss elders tend to lose a year is unfortunate. Furthermore, another lesson learned from this project is that elders have different needs and preferences than us, especially regarding technology and cybersecurity. With that, anticipating with the mindset of how to come up with a business plan requires essential research such as how to support and guide them. Now, as what I would have done differently would be to meet elders in person and see their vulnerability. This action would have helped me and my team tremendously knowing the fact that they are the audience for our business. Additionally, contacting related companies who are doing the same who also be another idea to gain more knowledge on how to do better. Overall, after researching the following and how to overcome them, we've added that to our company such as the tutorials as well as anything related to being the best business we can be to help the elders who are probably being robbed digitally right now at this very second.



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