Academic Paper

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Cyberspace has been a rapidly growing part of society today. Almost every industry and aspect of people's lives has been digitized due to its convenience and speed. From financial services to being able to contact one another, it is all done through cyberspace. However, this expanding use of digital means has also exposed individuals and organizations to a constantly growing array of cyber threats and risks. As people find that they are vulnerable to digital threats, the need to understand these threats and how to protect themselves from them is critical. Recognizing this, we bring an innovative solution, a cybersecurity app that is meant to empower users with the latest cybersecurity knowledge and effective strategies to on how to better their online defenses.

Cyberspace contains a variety of threats such as phishing attacks, malware infections, identity theft, and ransomware attacks. As technology advances cybercriminals also become more sophisticated, in their tactics making it difficult for individuals to keep up with the threats and protective measures. When people lack awareness and understanding they become vulnerable to exploitation risking the compromise of information, personal privacy, and financial security. The need for a solution that not only educates users about cybersecurity risks but also provides them with the necessary tools to protect their online presence is now more urgent than ever before. Our cybersecurity app can be that solution.

Our cybersecurity app is *AllSafe*, a dynamic and user friendly app designed to bridge the cyber knowledge gap and empower individuals to take control of their online security. We want this application to serve as a comprehensive resource that provides real-time updates on emerging cyber threats, the latest cybersecurity trends, and personalized guidance on how users can improve their cybersecurity. A target demographic that was heavily considered when creating this app was the middle-to-elderly age group. They are often targeted in cyberattacks

and cybercrime due to the probability of them not being as tech savvy. Older demographics make up a majority of victims for cyberattacks. With that in mind, we wanted an easy to navigate interface that is simple and comfortable in design. This ensures that anyone with any level of technical knowledge can use our service without feeling frustrated.

The key features and priorities that we designed for our app are meant to provide our clients with the best and most tailored information at their fingertips. Users can provide the app with information or requests that pertain to their needs and the service will provide them with recommendations and personalized security plans that fit their unique needs. This feature of tailoring and personalization will affect other features. There will be a daily module that can provide explanations on cybersecurity topics, specifically ones that algorithms will prioritize based on their cyber preferences. The app will also have specific modules that provide users with explanations on common cyberattacks and how to spot them through examples. All these features can be adjusted by the user based on whether they would like more complex and nuance information or if they would like simple and practical tips. This goes back to our priority of maintaining a tailored experience for the user that provides them with best cybersecurity knowledge that we can provide.

All the features and desired outcomes that we want for the app our founded in user friendliness. This also applies with our monetization strategy. Its a free to download app that allows users to benefit from all features without any uprfront costs. There will be ads, particularly ones that focus on digital products and software, but we will have a subscription for an ad free experience. The cost will be \$4.99 a month, a \$8.99 family package to save on multiple accounts, and a \$50 yearly subscription that saves the user \$10. This monetization model is for all to be able to use the app. The subscription service at the moment is very basic,

but, over time and with company growth we would like to add more features to our premium users without giving our free users less content.

The academic research we conducted to develop and find the reasoning behind this product varied in topics and contributed to our growth as entrepreneurs. Because we had differing academic backgrounds, we needed to first establish what we meant by cybersecurity so that we could all be on the same page when it came to developing a cybersecurity app. An agreed upon definition of cybersecurity came from a 2014 journal that summarized the definition as a "collection of resources, processes, and structures used to protect cyberspace and cyberspace-enabled systems from occurrences that misalign de jure from de facto property rights" (Craigen, Thibault, Purse, 2014, p.17). This definition of cybersecurity fits our way of viewing this topic for this product because of how it states its procedural development and what it is protecting against. The writers of this journal broke down this definition into simple-to-understand terms and made a complex topic understandable for all of our group members (Craigen, Thibault, Purse, 2014). What is understood from this research is cybersecurity is to compile all the best information and practices to maintain an absolute defense of its intended defender. Making this topic understandable for the masses is something that we as a group want to obtain through our product.

Because this product is being constructed as an entrepreneurial venture, we needed to understand an interdisciplinary lense through cybersecurity. An entrepreneurship is interdisciplinary practice due to it requires multiple segments from different academic and professional fields to be able to market a product. Furthermore, once that product is able to be pitched and potentially funded it is paramount that the product is understandable for people who are not familiar with that field, in this case cybersecurity. A 2020 article from the *National Cyber*

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Summit (NCS), describes how cybersecurity is an interdisciplinary subject due to it's need for being applied across different fields and domains (Jacob, Peters, Yang, 2020). This is further expanded on because cybersecurity has to be adaptable to "contribute to understanding security in the context of legal, economics and criminology perspectives" (Jacob, Peters, Yang, 2020, p.1). From this, it can be concluded that cybersecurity requires knowledge and to being well versed in differing fields. Because cyberspace is a ever evolving domain that is involved in every industry and aspect, cybersecurity needs to know how to tailor itself for that specific thing. A cybersecurity plan will differ from one person to another. This interdisciplinary view is something that we recognized in our app AllSafe and something that we wanted to emphasize in the purpose of our product.

After establishing a definition of what cybersecurity means for us and how cybersecurity is interdisciplinary, we needed to find a way for the product to be interdisciplinary for our group. One of our group members is a leadership major, so we conducted research on how leadership applies and can be seen within cybersecurity and how it applies to our product. An article was found in the *Quality Management Journal*, that explains how cybersecurity has become an essential part of organizations requiring managers and leaders to be well-versed and to take the initiative in applying cyber protocols within their organization (Radziwill, 2018). Being able to take the lead and have to learn about a topic, that someone might not be familiar with, is a daunting task. But, what we understood from this is that for someone to have a better sense of their own or for others cybersecurity, then they would have to be empowered and well equipped to do so. This is where we see our app, AllSafe, serve as we want to give our users the confidence and ability to do just that.

The empowering of individuals to better their own cybersecurity was especially considered when we came up with our target market being older generations and the elderly. This is due in large part to a high amount of targeting and cyber crime that is conducted against this demographic. To support this, a 2016 article from *Nova Southeastern University* discussed how senior citizens are the most targeted on the internet and that 1 out of every 5 seniors will be targeted in cyber-related attacks and scams (Brown, Levy, Terrell, 2016; Willis, 2015). This increase of targeting towards the elderly and middle-aged people will make them feel scared or powerless within cyberspace. Especially due to the fact that more in parts of life are becoming digitized can be disheartening towards this demographic. However, in this 2016 article, research was speculated that utilizing a cybersecurity awareness approach in teaching older generations could lead to a decrease in cyberattacks on this demographic (Brown, Levy, Terrell, 2016). This is important because this approach relates to the concept of teaching an empowering an individual to protect themselves from cyber threats. This is what we as a group want to accomplish within our app AllSafe.

When we began developing the app, we wanted to understand how cyber information is made available to the masses. Particularly, if this information pertains to how an organization has compromised or mishandled clients' information. This seemed important to us because we would want to empower our users to know how to handle their information on the internet. In a 2012 article from *The Business Lawyer*, discusses how companies were not liable to disclose customer information due to massive cyber attacks and breaches that could cause hefty financial losses (Trope, 2012). This is important to our app development because we wanted to be aware of how mishandled people's information is online and how we can better educate our customers in protecting against it. Furthermore, in the article, the writer suggests awareness and new legislation to be enacted on this type of information breaching (Trope, 2012). This information is important because bringing awareness to this may prevent further personal mismanagement. What we could do in our product would be to add a section on breaking down legal cases or cyber laws that are in place. This can give our clients an advantage in understanding what laws are in place to protect them digitally and what organizations may do to avoid any liability in cyber attacks against them.

By creating an app that provides users with cybersecurity information, we want to make sure that our product can look for gaps where current research may be missing. A 2022 article from the *Educational Gerontolog*, discusses how there was a lack of available reports on cyber risks, leading to a downplaying of financial stakeholders in cybersecurity (Cremer, Sheehan, Fortman, Kia, Mullins, Murphy, Materne, 2022). This is important because those who are tasked with researching, developing, or funding cyber security advancements may have been led to downplay a problem. This can cause an effect on not only the cybersecurity but also those dependent on cybersecurity services. How this pertains to our app, Allsafe, would be to inform our clients on where cybersecurity research is heading. As they would be dependent on our service for accurate information, we would want to give them a full understanding of where the field is heading.

From the research we conducted, we have a better understanding of where our product stands. We know that cybersecurity is an interdisciplinary topic that requires self-leadership to improve one's own defense.

This entrepreneurial experience has integrated skills acquired from various disciplines, including insights gained from a marketing business class. Leveraging principles learned in marketing, the AllSafe cybersecurity app is strategically positioned to address the dynamic intersection of technology and user engagement. I had to apply principles from marketing classes such as the emphasis on targeting the middle to elderly age group aligns with effective audience segmentation. Understanding the specific needs and vulnerabilities of this demographic allows for tailored marketing strategies. Furthermore, in the realm of marketing, a user-centric approach is paramount. The design considerations, such as a simple and comfortable interface, resonate with the fundamental marketing principle of meeting the customer's needs and preferences.

This assignment further addresses the marketing aspects that I learned by being an entrepreneurial project. In that class, we studied entrepreneurship through a product on behalf of a business lens while here I got to conduct one. This entrepreneurial endeavor has provided an opportunity to apply not only the core principles from my major but also insights gained from marketing coursework. It's a testament to the versatility and applicability of skills acquired beyond the confines of a specific major, demonstrating the holistic nature of entrepreneurial success. As the AllSafe app progresses, this blend of skills continues to be instrumental in shaping a product that not only meets cybersecurity needs but different disciplines and subjects.

Making our cybersecurity app, AllSafe, into a reality requires a strategic approach encompassing funding, targeted marketing efforts, and thoughtful development. To transform our innovative concept into a reality, we would adopt a multifaceted plan. Securing initial capital is crucial for app development, marketing, and ongoing maintenance. A combination of approaches will be employed to obtain the necessary funds. Crowdfunding campaigns on popular platforms can engage a broad audience and generate interest in the product. Additionally, seeking partnerships with cybersecurity focused investors, venture capitalists, and industry stakeholders can provide not only financial support but also valuable expertise and networks. Furthermore, possibly getting a grant through a government agency or an institution could be a way of securing initial funding.

Once initial funding for our app is secured, targeting a specific demographic would come it play. We wanted this app to be marketed initially towards an older demographic due to higher cyber crimes being conducted against them. Given that older individuals may not be as tech-savvy, traditional advertising channels such as television, radio, and print media can be effective. Emphasizing the simplicity and user-friendly nature of AllSafe in these campaigns would resonate with this demographic. Moreover, community outreach programs and partnerships with senior centers, retirement communities, and organizations catering to older individuals can facilitate direct engagement. Workshops, seminars, and demonstrations on cybersecurity awareness can be organized to not only market the app but also educate the target audience. Online marketing efforts should focus on platforms commonly used by the older demographic. Collaborating with elderly advocates or experts in the field of senior technology education can lend credibility to the app and help build trust among potential users.

Ensuring the app is user-friendly, especially for those less familiar with technology, is paramount. Conducting usability studies with older individuals during the development phase can provide valuable insights. The interface should be intuitive, with clear navigation and minimal technical jargon. Features like voice guided tutorials and easily accessible customer support can enhance the user experience for this demographic. Also, ensuring that regular updates and improvements based on user feedback and emerging cybersecurity trends will be crucial. Demonstrating a commitment to staying current and responsive to user needs will contribute to the long-term success and adoption of the app. By combining strategic capital acquisition, targeted marketing, user-friendly design, and continuous improvement, AllSafe can evolve from a concept to a reality, making a meaningful impact on cybersecurity awareness and protection, particularly among older demographics.

To determine if our cybersecurity app is a success in its purpose, we would need to conduct research on our customers to see if the app has helped improve their own cybersecurity skills. With a product that is created with prevention in mind, it is difficult to know whether you are making an impact or not, especially at the starting stages. The hope would be for our clients to not be in a situation that threatens their cybersecurity to begin with. However, there are certain ways we can go about seeing if we view our product as a success. The two metrics that we would use to determine success is surveying our customers to ask about how they feel about their cybersecurity and if they are satisfied with the app.

The first method would be to conduct periodic surveys on our customers. The surveys would consist of questions that ask if the client has felt that their cybersecurity knowledge has improved and if they feel more secure in cyberspace. We would want to know if their confidence in recognizing and mitigating cyber threats has increased after using our app. Additionally, we would inquire about their overall satisfaction with the app's content, usability, and the effectiveness of the personalized security plans provided.

These surveys would be strategically timed to capture different stages of the user journey, from the initial onboarding phase to regular usage intervals. By gathering feedback at various points, we can assess not only the short-term impact of the app but also its ability to contribute to the long-term improvement of users' cybersecurity awareness and skills.

Moreover, tracking the number of reported incidents or identified threats by users who actively engage with the app can serve as an indicator of its impact on preventing cyber threats.

This data would help us understand the practical application of the knowledge gained through the app in real-world scenarios.

In addition to collecting data, feedback will be sought through user reviews and testimonials. Understanding the specific ways in which users have applied the knowledge gained from the app in their online activities and how it has positively influenced their cybersecurity practices will provide valuable insights into the app's effectiveness and being able to refine it.

In the ever-expanding realm of cyberspace, our interconnected world has experienced an unprecedented digital revolution. From financial transactions to interpersonal communication, the conveniences afforded by the digital landscape are undeniable. However, this pervasive reliance on technology has brought forth a new set of challenges, as individuals and organizations find themselves navigating an increasingly complex landscape of cyber threats. The urgency to comprehend and guard against these threats has never been more critical.

Recognizing this imperative, our entrepreneurial venture culminated in the creation of AllSafe, a cybersecurity app designed to empower users with knowledge, strategies, and personalized plans to fortify their online defenses. As we delve into the intricacies of our journey, it becomes evident that the need for such a solution is not merely a product of technological evolution but a response to a profound societal shift.

Cyberspace, once a boon for its speed and convenience, now harbors an array of threats ranging from phishing attacks and malware infections to identity theft and ransomware assaults. The relentless advancement of technology propels cybercriminals into ever-more sophisticated tactics, creating a perpetual challenge for individuals to keep pace with evolving threats. The consequence of this knowledge gap is vulnerability—exposing personal information, compromising privacy, and jeopardizing financial security.

AllSafe emerges as a solution crafted to bridge this knowledge gap and empower users of all ages, with a specific focus on the middle-to-elderly demographic often targeted in cyberattacks. The interface's simplicity and comfort, informed by marketing principles, aim to make cybersecurity accessible to even the less tech-savvy. It is not merely an app; it is a comprehensive resource providing real-time updates, educational modules, and personalized guidance to enhance users' cybersecurity posture.

The interdisciplinary nature of cybersecurity, requiring insights from various fields, mirrors the collaborative essence of entrepreneurship itself. In recognizing cybersecurity as an ever-evolving discipline, we not only sought to define it for ourselves but also to adapt it to the specific needs of our users. Furthermore, our research highlighted the pressing need to empower individuals in the face of escalating cyber threats. The focus on older demographics, often targeted and vulnerable, aligns with a broader vision of inclusivity and empowerment. Our app aims not only to educate but to instill confidence in users, providing them with the tools to safeguard their digital presence. The monetization strategy, balancing accessibility with sustainability, ensures that the app remains within reach of a broad user base. The fusion of marketing concepts with cybersecurity principles creates a synergy that propels AllSafe into a distinctive position in the market.

As we look ahead, transitioning from conceptualization to implementation requires a strategic approach. From securing initial funding through crowdfunding campaigns and partnerships to targeted marketing efforts, every step is meticulously crafted to realize our vision.

The user-centric design, validated through usability studies and continuous improvement, ensures that AllSafe remains a trusted companion in the dynamic landscape of cybersecurity. In assessing the success of our venture, metrics extend beyond financial gains. The impact on users' cybersecurity knowledge, their increased confidence in navigating cyberspace, and the tangible reduction in reported incidents become pivotal indicators. Periodic surveys, user feedback, and testimonials provide the qualitative insights essential for refining and enhancing the app's efficacy.

In conclusion, AllSafe is not merely an app; it is a testament to the transformative potential of entrepreneurial endeavors. It encapsulates the spirit of collaboration, adaptation, and empowerment that defines success in the digital age. As we embark on this journey, the mission is clear: to arm individuals with the knowledge and tools needed to navigate the digital landscape securely. In doing so, we contribute to a safer, more resilient cyberspace for all. Citations:

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