A Cyber Security and Digital Transactions to Educated the Micro, Small and Medium Business Community

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ABSTRACT

The rapid growth in the digital economy has brought countless benefits, especially in the micro, small, and medium enterprise (MSME) community. However, along with these opportunities, serious threats also emerge in the form of increasingly sophisticated cybercrime. This article aims to explain the important role of cyber security in digital transactions and how it can be used as an educational tool for the MSME community. The importance of understanding cyber threats and cyber security practices in a rapidly changing digital era cannot be underestimated. This article discusses the various types of cyber threats that MSMEs may face, such as phishing, malware, and ransomware attacks, as well as the financial and reputational impact these attacks can have. Additionally, this article highlights the cyber security principles that MSMEs must follow to protect their data and digital transactions. Apart from explaining threats, this article also promotes the role of education in increasing MSME awareness and understanding of cyber security. We present practical recommendations on how MSMEs can educate themselves and their team members on cybersecurity best practices. Additionally, this article discusses available resources, such as online training and security tools that can help MSMEs protect their businesses from cyber threats. With a better understanding of cyber security and best practices in digital transactions, the MSME community can reduce the risk of data and financial loss, and build a stronger foundation for sustainable growth in the digital economy era. This article provides useful guidance for the MSME community looking to strengthen their defenses against cyber threats and harness the unlimited potential of secure digital transactions.
INTRODUCTION

In the rapidly developing digital era, the role of micro, small, and medium enterprises (MSMEs) is vital to the global economy. As the main pillar in creating jobs and encouraging economic growth, MSMEs are the backbone of many countries around the world (Widioatmodjo, 2016). However, the success of MSMEs today depends not only on the innovation and quality of the products or services they offer but also on their ability to operate and transact safely in a digital world full of challenges. In recent years, MSMEs have entered the digital world rapidly, implementing electronic transactions, e-commerce websites, and various technological tools to increase efficiency and customer reach (Chakti, 2019). However, in the process, they have also become the main targets of increasingly sophisticated cyber-attacks. Cybercrime, ranging from phishing attacks to data hacking, has the potential to threaten the survival of MSME businesses and affect consumer trust.

The main issue that must be discussed is the types of cyber threats generally faced by MSMEs. This includes phishing attacks, malware, ransomware, and other cyber threats (Havidz et al., 2021). Apart from that, there is a lack of cyber security awareness and education, as MSMEs often lack an adequate understanding of cyber security. Lack of awareness and how important cyber security education is in protecting their business (Basoeky et al., 2021). This also includes an understanding of the basic principles of cyber security. Another problem is the challenge of limited resources, namely that MSMEs often operate with limited resources, including a limited budget for cyber security. This problem includes how MSMEs can overcome these limitations in implementing effective cybersecurity solutions. Apart from that, the role of education in improving security is how training and education can help them identify, prevent, and overcome cyber threats (Fitriani et al., 2022).

Previous research has shown that education and training have become one of the most important solutions for SMEs. MSMEs need to understand cyber threats and how to identify them. Training that focuses on phishing recognition, safe password use, and basic cybersecurity measures can help them mitigate risks (Setiawan, 2017). In addition, use security tools such as antivirus software, firewalls, and other network security tools. Using this tool can help MSMEs protect their systems and data from cyber-attacks. On the other hand, monitoring and early detection can help MSMEs detect cyber-attacks before they cause major damage. This involves monitoring network traffic and analyzing suspicious activity (Nur, 2021). Next, MSMEs need to implement security practices in digital transactions, such as the use of strong security protocols (such as HTTPS), data encryption, and two-factor authentication. This will help protect online transactions and customer data. Next, partnerships with security providers, several MSMEs can take advantage of partnerships with cyber security providers or cyber security service providers who provide solutions that suit their needs and budget (Akbar, 2018). It is also necessary to implement security policies and standard operating procedures (SOPs) where MSMEs can develop clear security policies and SOPs to manage cyber threats. This includes security incident response planning, as well as practices that employees must follow. It is also necessary to monitor social
media and online reputation, namely, MSMEs must monitor their social media and online reputation, because cyber-attacks can also affect their business image. This involves handling reviews Steps and effective communication with customers. MSMEs need to carry out regular updates and vulnerability management such as regular software and system updates is very important to reduce the risk of vulnerability exploitation. Updates and proactive vulnerability management can help prevent attacks. MSMEs need to create a security emergency plan, namely outlining the steps that must be taken in response to cyber security incidents (Sri Adiningsih, 2019). This includes recovering data and systems after an attack.

The Novelty in this research focuses on training for MSMEs, namely training as an integral part of the cybersecurity solution. The focus on cyber security training for MSMEs may be considered new because often cyber security research focuses more on security technologies and tools. Apart from that, the connection with digital transactions is the relationship between cyber security and digital transactions. The increasing use of digital transactions among MSMEs and its impact on their business security could be a newer topic. Next are special recommendations for MSMEs, namely concrete and practical recommendations specifically aimed at MSMEs. These recommendations can include tools, strategies, or steps that suit the capacities and needs of MSMEs. This service research explores the crucial role of cyber security and digital transactions in educating the MSME community. Cybersecurity is no longer just the responsibility of large IT departments; is now a must for all business owners, especially for those running businesses with limited resources. The ability to understand, identify, and address cyber threats is an indispensable skill in an increasingly connected business world. Through a better understanding of cyber security and the implementation of best practices in digital transactions, the MSME community can minimize the risks associated with the risk-filled digital world. It is hoped that MSMEs can build a stronger foundation for sustainable business growth, safeguard their data and finances, and maintain the trust of valuable customers. Thus, this service research can be an important guide for the MSME community that wants to move forward in an increasingly complex digital economic era.

METHODS

The method that will be implemented in this PKM Program service is by providing training and mentoring. The implementation of this community service activity is divided into 3 stages, namely preparation, implementation, and completion with the following details:

- Program Preparation

 Directed survey activities to observe and study the potential of natural and human resources involved based on target group criteria. Then mastery of basic material, mental readiness, enthusiastic interest in participating in the PKM program (Abduh, 2021). In the preparation stage, this service activity begins with a coordination process with service members, coordination with the Head of Girian Bawah Output, and the head of the MSME Group in the sub-district, in March 2023.

- Implementation

 The implementation of the training program is more effective, starting directly from the initial activities, active participation of participants, mastery of the material, implementation of activities, skills, and enthusiasm for participating in the PKM program to producing products according to the
desired goals (Firmansyah et al., 2021). At the implementation stage, service activities are divided into 5, namely:

1. Training and mentoring on how to detect cyber security threats, how to overcome them, and how to prevent them.
2. Training and mentoring on how to make digital transactions using Internet banking, m-banking, and e-commerce
3. Provide information about e-commerce and the advantages of using it
4. Assistance and guidance on how to make transactions using e-commerce
5. Training and mentoring regarding knowledge of MSME business models

- Completion

Assessment and comparison before and after implementing the program. Successful if the final results show a significant improvement (70%). If the measurement results are below, it is declared less successful.

**RESULTS AND DISCUSSION**

**Empowerment Program**

The community empowerment program for the MSME Group from Girian Bawah, Bitung City began by analyzing the situation of partners, namely the MSME group, by identifying the problems they were facing. After the situation has been properly identified, an attempt is made to formulate a solution that can be created to overcome the problem. These solutions are carried out through activities for empowerment. This activity is in the form of a training program through workshops carried out directly at the Girian Bawah UMKM Output, Bitung City in collaboration with the village government and presenting the UMKM group in the village. Some of the activities carried out include providing training and mentoring on e-commerce that can be used by MSME groups, conducting training on how to use it, sales, payment, and transaction systems, and also providing techniques for identifying cyber-crimes in real-time so that they can find out the modus operandi of crime perpetrators. cyber as well as Assistance to the MSME Group from Girian Bawah, Bitung City to get an online market through e-commerce which is used through business modeling. The expected results are in the form of increased knowledge about e-commerce which can be implemented, increased skills in using e-commerce by the MSME Group, and increased marketing area resulting in an increase in income for the MSME Group and increased production of MSME products due to increasing market demand (Mardjono et al., 2022).

See Table 1.

<table>
<thead>
<tr>
<th>CURRENT PARTNER SITUATION</th>
<th>PKM IMPLEMENTATION</th>
<th>PKM RESULTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of knowledge and skills possessed by MSME actors</td>
<td>Conduct training on how to detect cybercrime attacks, carry out countermeasures</td>
<td>Increased skills in detecting cybercrime attacks, taking</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Problem</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regarding cyber-crime and preventive measures</td>
<td>Provide techniques for electronic transactions using Internet banking, mobile banking, and e-commerce</td>
</tr>
<tr>
<td>MSME actors lack the ability and knowledge to carry out digital transactions using internet banking, mobile banking, and other e-commerce.</td>
<td>Conduct training and mentoring on MSME business models that can be used by MSME actors</td>
</tr>
<tr>
<td>Lack of knowledge about the right business model for MSMEs in managing their business</td>
<td>Increased knowledge about e-commerce that can be implemented</td>
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</table>

Implementation

The MSME Group community empowerment program began by holding training on the use of information technology with material providing training and mentoring MSME business models that can be used by MSME actors. Some of the training and mentoring materials provided are conducting training on how to detect cybercrime attacks, and taking countermeasures and preventive measures on cybersecurity, the second material is about conducting training and mentoring on MSME business models that can be used by MSME actors. The third material is about providing techniques for electronic transactions using Internet banking, mobile banking, and e-commerce. All training materials were carried out face to face in Girian Bawah Exit, Bitung City. The activity began with an opening by the sub-district government and continued with training activities. Activity documentation can be seen in the following pictures. The provision of materials began with providing materials, live demos of e-commerce applications, and transactions via mobile banking and ended with a question and answer discussion with participants, namely the sub-district government and the MSME Group. See Figure 1, implementation of empowerment activities.
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Figure 1. Implementation of empowerment activities.

The results that can be achieved from this empowerment program are an increase in knowledge about e-commerce which can be implemented by the Girian Bawah Output MSME Group, Bitung City. Apart from that, the MSME group also experienced increased skills in using e-commerce. This was seen during the evaluation after the activity by interviewing the MSME Group participants who were present. Another result obtained is an increase in skills in detecting cyber threats resulting in increased awareness of the dangers of cybercrime and cyber-criminal acts for the MSME Group because the MSME Group can identify cyber-crime so they become more careful, including regarding online fraud.
The final result that can be produced is an increase in income for MSMEs due to increasing market demand. This happens because the MSME Group can produce and increase product production to meet existing market demand. This empowerment program is very important to carry out and should not only be for the MSME Group from Girian Bawah, Bitung City but can be extended to other villages that have MSME groups so that there is an increase in welfare in the MSME Group. This can happen if there is sufficient funding and mature cooperation between universities and local governments.

The results of this research have brought changes in increasing awareness of MSME players through cybersecurity education programs. This program aims to build a special education program designed for MSMEs. These programs may include workshops, seminars, and online educational materials that emphasize the importance of cybersecurity and provide practical guidance. This increases awareness of the importance of cyber security, especially in digital transaction activities in the MSME ecosystem, including digital startups (da Silva, 2021). In addition, this study proves that providing free or low-cost online resources that are easily accessible to MSMEs, such as guides, video tutorials, and educational materials can help them increase their understanding of cyber security threats (Sunariani et al., 2017). Another thing that has become an interesting discussion is in the context of providing cybersecurity solutions that are affordable and suit the needs of MSMEs (Irawan et al., 2020). This can include antivirus, firewall, and other cybersecurity software that is easy to implement and manage. This is in the context of risk management and consumer protection for the smooth running of the payment system (Hidayati & Rumsiyah, 2018). In addition, it is very important to encourage MSMEs to use cloud-based cybersecurity services that can provide effective protection without requiring large investments in physical infrastructure. This is important in the context of empowering MSMEs (Hastuti et al., 2020)(Ismail et al., 2021). MSMEs need to provide cyber security consulting services that can help MSMEs evaluate their security needs and design effective protection strategies (Henarti, 2005). It is necessary to implement a digital entrepreneurship development strategy for MSMEs using the Penta helix model (Barus, 2020). To guarantee cyber security for MSMEs, it is necessary to establish an assistance center or cyber security center that can provide technical support and quick response to security incidents (Oganda et al., 2021). Utilizing digital marketing as an integrated marketing communications strategy for MSME products will grow businesses that are increasingly developing (Rachmawati, 2018)(Wong, 2013).

Collaborative Initiative efforts are needed to encourage collaborative initiatives between MSMEs to share experiences, resources, and lessons related to cyber security. This could include establishing MSME cybersecurity groups or associations. This effort will increase Competitiveness in the Digital Economy Era (Usaha, 2021). Another effort is to form partnerships with cybersecurity service providers to provide special discounts or affordable service packages to MSMEs (Santoso et al., 2021). There is a great need for special MSME cyber security regulations by encouraging the government to design special regulations that accommodate MSME cyber security needs, including incentives or assistance for MSMEs that comply with certain security standards (Banjarnahor et al., 2022). Another thing is establishing regulations such as requiring MSMEs to carry out regular cyber security audits to ensure compliance with security standards and detect potential risks quickly. This is to guarantee digital transactions for MSMEs (Adzim et al., 2021)(Fadila et al., 2021). Another thing with incident response training is providing training on responding to cyber security incidents to help MSMEs overcome attacks quickly and effectively. One thing that must be paid attention to is digital marketing in MSMEs.
Apart from that, cyber security insurance encourages MSMEs to consider cyber security insurance as an additional protection measure. After that, it is necessary to enforce the law for actors related to e-commerce as a form of economic expansion for MSMEs (Tulim et al., 2019)(Lukito, 2017). By implementing this solution, it is hoped that MSMEs can significantly improve their cyber security, protecting their data and business operations from increasingly complex cyber threats. These steps can also help create a safer and more reliable business ecosystem for MSMEs. Collaborative Initiative efforts are needed to encourage collaborative initiatives between MSMEs to share experiences, resources, and lessons related to cyber security. This could include establishing MSME cybersecurity groups or associations. This effort will increase Competitiveness in the Digital Economy Era (Usaha, 2021). Another effort is to form partnerships with cybersecurity service providers to provide special discounts or affordable service packages to MSMEs (Santoso et al., 2021). There is a great need for special MSME cyber security regulations by encouraging the government to design special regulations that accommodate MSME cyber security needs, including incentives or assistance for MSMEs that comply with certain security standards (Banjarnahor et al., 2022). Another thing is establishing regulations such as requiring MSMEs to carry out regular cyber security audits to ensure compliance with security standards and detect potential risks quickly. This is to guarantee digital transactions for MSMEs (Adzim et al., 2021)(Fadila et al., 2021). Another thing with incident response training is providing training on responding to cyber security incidents to help MSMEs overcome attacks quickly and effectively. One thing that must be paid attention to is digital marketing in MSMEs (Winedar et al., n.d.). Apart from that, cyber security insurance encourages MSMEs to consider cyber security insurance as an additional protection measure. After that, it is necessary to enforce the law for actors related to e-commerce as a form of economic expansion for MSMEs (Tulim et al., 2019)(Lukito, 2017). By implementing this solution, it is hoped that MSMEs can significantly improve their cyber security, protecting their data and business operations from increasingly complex cyber threats. These steps can also help create a safer and more reliable business ecosystem for MSMEs.

CONCLUSION

The conclusion that can be drawn is that the community of the MSME Group from Girian Bawah, Bitung City after participating in the MSME Group empowerment training on empowering the community with cyber security and digital transactions, as well as improve and developing the community’s local economy through business management for Micro, Small and Medium Enterprises MSME Group from Girian Bawah, Bitung City, the community of the MSME Group has been able to increase community knowledge, 2) to increase the strategic ability to manage a business, 3) to increase the ability and knowledge of Micro, Small and Medium Enterprises (MSME) actors regarding cyber-crime and preventive measures in managing businesses to keep them safe from cyber-attacks, 4) to increase the ability of MSME actors to make digital transactions using available digital platforms, including internet banking, mobile banking and e-commerce. Apart from that, the basic contribution that is being targeted is increasing the ability (skill) of the MSME Group to use information technology e-commerce so that it can increase income and welfare.
Suggestions that can be given to empowering MSME Groups regarding empowering communities through cyber security and digital transactions, as well as to improve and develop the community's local economy are as follows:

1. The government, both sub-distRICTs, and cities, need to build information technology infrastructure in the form of adequate internet access in the Girian Bawah Exit area, Bitung City to increase the accessibility of farmers to utilize the internet and other information technology to improve community welfare.

2. Sub-DISTRICT governments need to collaborate with campuses to organize training and assistance programs in the use of information technology, especially in electronic transaction systems, e-money, e-wallet, and other electronic transaction systems so that people can carry out electronic transactions more quickly.

3. It is necessary to provide training and assistance, especially on cyber security systems, so that the MSME community can know the risks and crimes that can occur in e-commerce and know how to avoid and overcome them.

REFERENCES


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