Analysis Of Data Security Systems In Business Organizations

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Abstract

This research aims to find out the data security system at Graha Pena Makassar. Graha Pena Makassar is also called Fajar Building which was built in 2007. Graha Pena Makassar is an office building that is the main choice for investors for business development. This research was conducted by identifying potential security gaps and existing security infrastructure. This research method is observation, literature study and conducting interviews. The results showed that the data security system implemented by Graha Pena Makassar has not implemented technology or special applications for database security systems. The security system implemented is more on a physical security system.

Keywords: Analysis, Data Security, Business Organization

Abstrak


Kata kunci: Analysis, Keamanan Data, Organisasi Bisnis

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1. Background

Companies generally have both physical and non-physical places to run their company management. Companies need security as an aspect to protect company operations, protect data, keep employees safe and create a safe and productive environment. In the era of technology that continues to develop, in addition to protection against physical threats, also data management, especially because it is currently an era of increasingly complex big data. One of the companies that really needs data security today is the Graha Pena Fajar company.

Business organizations are organizations that really need data security. With the advent of the internet of things era, it is very easy for business organizations to interact with each other, cooperate and conduct business transactions. It is necessary to have security features on the data system of a business organization so that the data owned is safe from data theft. In line with research [1] states that the application of security features on the IoT platform for business intelligence will make the system safe to prevent the system from all types of cyber attacks and threats.

Graha Pena Fajar Office, an office that houses several business companies, needs to always be aware of various security risks. The position of the Graha Pena Fajar office, which is also located in the center of Makassar City, where access is very easy to reach and very busy in terms of traffic, also needs to pay attention to physical security. These risks include potential threats to the physical security of the office, such as theft, damage, or unauthorized access, as well as risks related to data security, such as information security breaches or cyber attacks. Computer systems have four very important security parameters, including physical security, system security, application security, and data security. Physical security is the first protection that is directly related to the outside world. While the next aspect is logical security which discusses users can enter the system, the level of authority to each user (system, program, and data) [2].

In this context, this research aims to conduct a thorough analysis of the physical security and data security systems at Graha Pena Fajar Office. Through an in-depth understanding of the challenges faced and an evaluation of the existing security infrastructure, this research will provide critical insights to improve the effectiveness and efficiency of the security system at the office. The results of this analysis are expected to provide important solutions to maintain the security of data within the organization of Graha Pena Fajar Makassar Office and provide security to all management systems within the scope of Graha Pena Fajar business organization.

2. Method

This type of research is qualitative research. Qualitative research is descriptive in nature with data collection techniques are through literature studies, observations and interviews. Data collection through literature studies is carried out by conducting case studies on data security problems that often occur in a business organization, from the results of these studies it becomes a reference for researchers in conducting observations and interviews in the field. Researchers directly observed the existing data security system at Graha Pena Fajar Makassar. Then, researchers conducted interviews with employees, asking questions to obtain information about the data and physical security system implemented at Graha Pena Fajar Makassar. The observation results include physical security which includes door security systems, surveillance cameras, and security systems for employees or visitors who enter and exit the office. Researchers identified the infrastructure data security measures implemented. Furthermore, researchers conducted interviews with the data security team and staff authorized for physical security at the Graha Pena Fajar office. Researchers gather information on the effectiveness of existing physical security measures, such as the adequacy of security systems and potential physical risks that may arise. Identify any improvements or enhancements that may be needed. In addition, the researcher extracted information about the existing data security systems, including data encryption, user authentication, and security monitoring.
The following is a flowchart of the research method:

![Flowchart of the research method](image)

Researchers analyzed the existing data security system including data encryption, user authentication, security monitoring, a database of every company that has collaborated and visitor data at Graha Pena Fajar. Researchers identified potential vulnerabilities or threats to the data security system owned by each company with offices in Graha Pena Fajar Makassar.

3. Result and Discussion

3.1 Data Security

Data security at the Graha Pena Fajar Makassar office does not yet have a special protection application in protecting all databases in the office. Steps taken by the Graha Pena Fajar office by implementing strict Standard Operating Procedures (SOP). This is in line with research [3] Standard Operating Procedures are steps and procedures if there are visitors who want to enter the data center room, so as to reduce the threat to the data center room to be entered by people who do not have permission. Therefore, 3 SOPs are proposed that have levels of access rights. For level 1 (lowest level), there are SOPs for access to the generator room and entrance room.

For level 2, there is an SOP for access to the office/operations command room and vendor and service area room. For level 3 (the highest level), there is an SOP for access to the server room. This office promotes a policy that requires employees to maintain the confidentiality of important and personal data and not to leave the Company’s premises. Each data is given to the respective person in charge and may not be handed over to anyone. The security required includes physical security (server room and supporting infrastructure), access security (humans as users), data security (viruses and data theft) and computer operating system security [4]. This can create an internal security layer that focuses more on awareness and adherence to established rules. Thus demonstrating employee integrity in maintaining data confidentiality.

The communication system at Graha Pena Fajar Makassar still uses Handy Talkie (HT) communication. 1) Radio System. There is a special employee radio system that allows direct communication between employees quickly and efficiently. 2) Internet-based Data System. An internet-based data system managed by department heads and accessed by the board of directors. The advantage of this system lies in the ability of the directors to stay connected and abreast of developments through the application, even when out of town. Thus, the HT communication system at Graha Pena Fajar not only facilitates effective internal communication, but also gives the board the flexibility to continuously monitor and manage information in real-time, improving productivity and coordination throughout the organization.

In addition to using HT, the communication system at Graha Pena Fajar Makassar is implemented using a note-based communication method. For example, in the security aspect of the post, this system involves the use of a notation book to record every event or activity that occurs. This notation book provides a structured and documentative approach in tracking events, allowing security officers to record details of events, reporting, and other important information. This approach not only serves as an effective internal communication tool between security officers, but also creates a well-documented audit trail. However, it requires a device security system that is integrated into the physical security...
system. Intelligent hardware security should be designed not only to protect devices and data from attacks, but also to react in the best possible way and maintain privacy in the event of an attack or tampering [5].

By using a records-based communication system, Graha Pena Fajar Makassar can ensure that security-related information is well-documented and can be accessed quickly when needed.

The evaluation of security effectiveness at Graha Pena Fajar Makassar is done through the approach of monitoring the number of complaints received. This measurement provides a direct picture of the extent to which the security system operates and responds to the needs of the occupants or users of the facility. By monitoring and analyzing the number of incoming security-related complaints, the office can identify potential problems or gaps in the security system that need to be fixed or upgraded. A low number of complaints can be interpreted as an indication that the security system is functioning well, while an increase in the number of complaints can indicate a need for security repairs or upgrades. Using this approach, Graha Pena Fajar Makassar can proactively evaluate and improve their security system, efficiently maintaining the safety and satisfaction of the occupants or users of the facility.

3.2 Data Security System Constraints and Solutions offered

Graha Pena Fajar Office faces several obstacles in its security system. The obstacles faced in the security system contained in the Graha Pena Fajar Office, namely: 1) Security officers (security guards) on duty always use gadgets; 2) Low resolution of CCTV cameras; 3) There are several areas that cannot be covered (reached) by security officers.

After analyzing the data obtained during observations and interviews, the solution is given that

1) The solution to the first constraint, which is to provide training and form a policy that prohibits the use of devices during duty, so that their focus can be strengthened on monitoring and security; 2) The solution to the second constraint, which is to upgrade CCTV cameras with higher resolution, ensuring that the recorded images provide clearer and more useful information in security efforts; 3) The solution to the third constraint, which is to evaluate and expand monitoring coverage by adding CCTV cameras at strategic points that have not been reached. In addition, increasing the number of security officers or redeploying them to cover less covered areas can be an additional solution.

The solution that can be provided for data security systems in a business organization is to implement encryption techniques. Cryptography is the knowledge and art of protecting the confidentiality of messages (data or information) with a secret technique into a form of code that has no meaning [6]. Another solution that can be provided in managing data security is to carry out an OTP (One Time Password) security strategy when users want to log into their account as a form of protection of user Personal Data. This security strategy is used so that more security is maintained on the user's personal data [7]. Cryptographic algorithms that can still be used, namely the DES algorithm by maintaining data and network security by going through several stages in the process of working can only make your data safe from attackers by converting text blocks to cipher blocks before being read by the recipient. The recipient must read and change back from the cipher block to the text block using a specific application [8]. The application of the SHA-1 method in data security can also be used. With this data security application, unwanted people who want to know about data information will not easily find out financial data information and each User must log in first, and for data input or treasurer must know the private key given by the leadership [9].

4. Conclusion and Suggestion

This research shows that Graha Pena Fajar Office as a business organization has not implemented application or software-based data security. Data security is only carried out privately, namely through the protection of user accounts and passwords and encryption of data owned. The application of SOPs is also applied to maintain confidentiality and data management. The implementation of physical security systems involves the use of fences, human security, CCTV, access cards and metal detectors. However, there is still a need to increase security in certain areas, for example the database security system for companies that are members of business organizations in Graha Pena Fajar, a database security system for each data owned by each company. On the other hand, it is necessary to improve physical security.
such as increasing CCTV resolution, implementing a more structured data security program, and using more sophisticated security technology. Continuous monitoring of the effectiveness of security measures needs to be improved, and consideration should also be given to integrating more sophisticated data security systems, such as encryption and double authentication.

The Researcher's suggestion for Graha Pena Fajar Office is to consider investing in the latest security technology, drawing up a more detailed data security program, and continuously improving coordination between physical and data security measures. In addition, regular training for security staff, active monitoring of security systems, and increased employee awareness of security policies can be useful additional measures. In line with that, it is necessary to mitigate the challenges of cybercrime by implementing cybersecurity through proactive measures, strengthening regulations and establishing reliable, effective and efficient cybersecurity frameworks or procedures [10]. By implementing these recommendations, it is hoped that Graha Pena Fajar Office can increase the overall level of security and protect assets and information owned by the company.

REFERENCES


