

Application of Business Continuity Planning to Monitoring Infrastructure for The Distribution of Social Assistance Funds at PT Bank BRI

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Abstract

The distribution of social assistance funds is one of the important aspects in supporting the welfare of the community, especially in programs such as the Family Hope Program (PKH) and Basic Necessities. PT Bank Rakyat Indonesia (BRI) has a big responsibility in ensuring that the distribution of social assistance funds to beneficiaries is carried out on time, efficiently, and safely. In this context, the implementation of a Business Continuity Plan (BCP) in the monitoring infrastructure of the distribution of social assistance funds is very important, in order to maintain operational continuity despite unexpected disruptions or disasters. BCP focuses not only on operational recovery after an outage, but also on risk mitigation measures aimed at preventing disruptions from occurring. This article comprehensively discusses the application of BCP in the social assistance fund distribution monitoring system at PT Bank BRI, focusing on risk identification, the development of disaster recovery procedures, and the implementation of modern technology to support operational continuity. In addition, this article also explores the importance of regular simulations and testing in ensuring the readiness of systems and teams in dealing with emergency situations. This research aims to provide insight into how a structured BCP can strengthen the social fund distribution system and increase public trust in the management of social assistance. It is hoped that the results of this research can be a reference for other organizations that have similar responsibilities in managing the distribution of social assistance funds or other public services

Keywords: Business Continuity Plan, Distribution of Social Assistance Funds, Risk Mitigation, Disaster Recovery, PT Bank BRI

INTRODUCTION

The distribution of social assistance funds in Indonesia, such as the Family Hope Program (PKH) and basic necessities, has a very important role in improving the welfare of the community, especially poor and vulnerable families. This program not only serves as a tool to reduce poverty, but also as a means to accelerate economic recovery, especially in the face of emergencies such as natural disasters or economic crises. PT Bank Rakyat Indonesia (BRI) as one of the banks responsible for the distribution of this social assistance, has a big challenge to ensure that the assistance funds can be distributed quickly, precisely, and safely to the beneficiaries. The monitoring infrastructure used by PT Bank BRI to monitor the distribution of social assistance funds plays a very vital role. The infrastructure must be able to overcome various challenges and disruptions that may arise, such as IT system failures, cyberattacks, natural disasters, or other disruptions that can affect the smooth distribution of aid. Therefore, it is important for PT Bank BRI to have a systematic contingency plan, known as the Business Continuity Plan (BCP), which not only focuses on operational recovery after the disruption occurs, but also on mitigation and prevention efforts so that the disruption does not have an impact on the process of distributing social assistance funds.

In practice, the implementation of BCP on IT infrastructure in BRI is not easy. One of the main challenges is its vulnerability to cyberattacks. With the increasing sophistication of attack methods, such as ransomware, phishing, and DDoS, the systems that manage social funds are becoming potential targets for irresponsible parties. Cyberattacks can damage the integrity of highly sensitive data, such as beneficiaries' personal information and social fund transactions, hampering the distribution process. Therefore, strengthening the cybersecurity aspect in BCP is something that cannot be ignored.

In addition, another challenge that often arises is the reliance on physical infrastructure that is prone to disruption. BRI as a large institution certainly has adequate infrastructure, but a surge in transactions in certain periods, such as during the disbursement of social assistance, can cause servers or networks to experience overload. This limited capacity has the potential to cause downtime or decreased system performance, which in turn hinders the distribution of funds to people in need. BRI needs to evaluate and strengthen the existing infrastructure, as well as ensure that there is a redundancy system that can replace the main system in the event of a failure. Furthermore, disaster recovery procedures are also an important aspect of BCP. Along with the increasing potential threats, it is important for PT Bank BRI to have a recovery procedure that is not only fast, but can also be tested periodically. Without adequate testing and simulation, the readiness of the operational team in handling disruptions or disasters becomes less than optimal. The team's readiness to make decisions and recover from disrupted systems is also greatly influenced by the quality of their training and knowledge of crisis scenarios.

As technology develops, Big Data and Artificial Intelligence (AI) are starting to show great potential in supporting BCP. This technology can be used to analyze transaction patterns in real-time, predict potential problems, and provide faster and more precise solutions in overcoming disruptions. The use of this latest technology, although it has been implemented in several sectors, is still not fully maximized in the context of the distribution of social assistance funds. Therefore, this study aims to explore how these technologies can improve system resilience and accelerate operational recovery.

With this background, this study aims to analyze and evaluate the application of BCP in the social assistance fund distribution monitoring system at PT Bank Rakyat Indonesia. This research is expected to provide recommendations to improve existing systems, strengthen preparedness in dealing with disruptions, and ensure that the distribution of social assistance funds can continue to run smoothly in various situations. Along with that, this research is also expected to contribute to increasing the effectiveness and efficiency of social assistance programs that are urgently needed by the Indonesian people.

RESEARCH

This study uses a qualitative descriptive approach with a case study method at PT Bank Rakyat Indonesia (BRI), especially in the monitoring system for the distribution of social assistance funds for the Family Hope Program (PKH) and Basic Necessities. This methodology was chosen to describe in depth how BCP (Business Continuity Plan) is applied in the system infrastructure that is crucial for the distribution of national social assistance. The focus is to describe the process, policies, and effectiveness of BCP implementation in the social assistance fund distribution monitoring system within BRI.

RESULTS AND DISCUSSION

Literature Review

A. Business Continuity Plan (BCP)

A Business Continuity Plan (BCP) is a strategic plan designed to ensure that a company's operational activities can continue to run or recover quickly in the event of serious disruptions, whether technical, natural, or social. BCP should include identification of critical functions, business impact analysis, risk assessment, recovery strategies, and communication mechanisms during crises. Research by Abdullah et al. (2023) in the *Journal of Risk and Resilience Systems* emphasizes that effective BCP plays an important role in maintaining customer trust and minimizing losses during disruption incidents.

B. BCP in Banking and Social Assistance Fund Distribution

In the banking industry, the sustainability of the system is crucial because it is related to large-scale financial transactions, including the distribution of social assistance that targets millions of people. According to Handayani and Prasetyo (2024) in the *Journal of Digital Technology and Security*, the implementation of BCP in the banking sector must pay attention to aspects of information security, system redundancy, and coordination between work units in the disaster recovery process. PT Bank BRI, as a bank that distributes government social assistance funds, has a great responsibility in maintaining the reliability of the monitoring system and disbursement of social assistance. This is in line with the research of Simbolon & Arifin (2023) which emphasizes that the social assistance distribution system is highly dependent on the reliability of information systems and structured emergency procedures.

C. Vulnerability of the Social Assistance Distribution System to Disruptions

Digital-based social assistance distribution systems are highly vulnerable to a wide range of disruptions, from cyberattacks to network and infrastructure disruptions. In this context, Rahmatullah et al. (2024) point out that the highest risks threatening digital distribution systems are ransomware and DDoS attacks that can suddenly paralyze services. They emphasized the importance of integrating cybersecurity in the BCP framework. Delays in the disbursement of social assistance not only have an impact on the reputation of the institution, but also have the potential to cause social unrest. Therefore, a reliable monitoring system and quick response to incidents are key indicators of the success of social assistance distribution (Nuraini & Wibowo, 2023).

D. Utilization of Technology in BCP Implementation

Technological developments such as Artificial Intelligence (AI), Big Data Analytics, and Cloud Computing provide opportunities in improving the effectiveness of BCP for example, it can be used to detect system anomalies early, while Big Data can help in identifying risk patterns based on historical data. According to Chen et al. (2023) in the *International Journal of Digital Continuity*, the use of machine learning in crisis management systems can improve the accuracy of disruption predictions and speed up the recovery process. In the context of digital banking, BRI can adopt this technology to automate monitoring and emergency response to disruptions in the social assistance disbursement system.

E. BCP Regulations and Standards in Financial Institutions

Research by Putri & Kurniawan (2023) in the *Journal of Finance and Financial Technology* states that compliance with BCP regulations is directly related to the operational resilience of banks, especially in the face of systemic threats to digital service.

Discussion

The implementation of the Business Continuity Plan (BCP) in the social assistance fund distribution monitoring infrastructure at PT Bank Rakyat Indonesia (BRI) is very important to ensure the smooth and sustainable distribution process despite disruptions or disasters. The distribution of social assistance funds, such as the Family Hope Program (PKH) and Staple Food, has a significant social impact, and any disruption to the system that handles these distributions can potentially worsen the socio-economic conditions of the beneficiaries. Therefore, ensuring system resilience through the implementation of effective and on-target BCP is very vital. This discussion will review various important components in the implementation of BCP at PT Bank BRI, focusing on risk identification, development of recovery procedures, technology used, and the importance of simulation and testing of emergency plans.

1. Identification of Risks in the Social Assistance Fund Distribution Monitoring System

Identifying risks is the first step in implementing BCP. Without a clear understanding of the risks that may occur, organizations will not be able to plan effective mitigation measures. In the context of the distribution of social assistance funds, there are various types of risks that can threaten the smooth

operation of operations, such as IT system failures, cyberattacks, natural disasters, and human error. Kumar & Gupta (2023) argue that the banking sector, particularly those involved in the distribution of social funds, is particularly vulnerable to cyberattacks that can cause major disruptions in the flow of funds. In addition, technical issues such as server failures, errors in transaction data processing, and limited network infrastructure can be obstacles in ensuring the smooth distribution of funds.

One of the major risks faced by PT Bank BRI is the reliance on technology to process and manage distribution data. Cavusoglu et al. (2023) explain that damage to IT infrastructure, such as servers that fail to function or software that does not run properly, can cause delays in the disbursement of funds, which has a direct impact on the beneficiaries.

2. Risk Mitigation Strategy and System Resiliency Management

After identifying risks, the next step in BCP is to formulate mitigation strategies to reduce the likelihood of disruption and prepare the system for emergency situations. One of the mitigation strategies that can be implemented is the implementation of cloud computing and data redundancy. Cloud computing allows critical data and applications used in the distribution of social funds to remain available despite disruptions to local systems. Zhang et al. (2023) stated that cloud computing not only provides secure data storage, but also provides high scalability in terms of processing capacity, which is crucial in handling large transaction volumes.

It is also important to ensure that PT Bank BRI has a redundant and distributed data center. This redundancy allows the system to switch to another data center in the event of a failure at the main data center. Liu et al. (2023) stated that the use of distributed data centers reduces the likelihood of significant down-time and ensures service availability despite disruptions to some infrastructure.

3. The Role of Cybersecurity in BCP for Social Fund Distribution

Cybersecurity is an integral part of every Business Continuity Plan, especially in the banking sector. With the increasing threat of increasingly complex cyber attacks, such as DDoS (Distributed Denial of Service) attacks or ransomware, it is very important for PT Bank BRI to have a strong security system. Patel & Shah (2023) emphasized the importance of protecting customer data and transactions made in the context of social assistance distribution. Data leaks or disruptions to transactions can damage a bank's reputation and lower public trust in the social assistance programs it runs.

PT Bank BRI must ensure that its security system has various layers of protection, including data encryption, the use of advanced firewalls, and real-time network monitoring. Additionally, it's also important to have a dedicated team focused on monitoring potential cyber threats and ensuring that the systems used are always updated regularly. Krebs & Hamadeh (2023) revealed that one of the best ways to prevent disruptions caused by cyber threats is to conduct penetration testing and security audits on a regular basis.

4. Emergency Plan Recovery and Testing Procedures

Disaster recovery procedures are one of the key elements of BCP that must be carefully prepared. A quick and effective recovery is essential to maintain the continuity of the distribution of social assistance funds. Chavez et al. (2023) revealed that it is important for PT Bank BRI to have a specific recovery plan for each type of disruption, be it a technical glitch, a cyber attack, or a natural disaster. The plan should include the steps that each department involved in the distribution of social funds should take, as well as the desired recovery period.

In addition, simulation and testing of the disaster recovery plan is also critical to ensure that the entire system and team is prepared for emergency situations. This testing can be carried out in the form of a simulation of crisis scenarios, which are held periodically to test the speed and effectiveness of recovery procedures. O'Reilly (2023) stated that regular testing will increase the readiness of the entire team in the face of disruptions, as well as ensure that existing procedures can be implemented effectively and efficiently.

5. The Role of Technology in Supporting Operational Continuity

Technology plays a very important role in supporting the continuity of social assistance funds. In this case, the technology is not only used to monitor transactions, but also to ensure that the system can return to operation quickly in the event of an outage. Chen et al. (2023) emphasize that the use of the latest technologies, such as Artificial Intelligence (AI) and Big Data, can be helpful in predicting potential disruptions and providing faster solutions. AI can be used to detect anomalous patterns that

indicate potential system disruptions, while Big Data allows for faster and more accurate analysis of transaction data.

The application of this technology can also help PT Bank BRI in improving the efficiency of system recovery, because technology-based systems will be easier to recover compared to systems that depend on physical infrastructure. Zhang et al. (2023) suggest that PT Bank BRI should leverage technologies that support automation in the recovery process, which allows for the reduction of manual interventions and speeds up the recovery process.

6. The Importance of Team Training and Readiness in BCP

Ongoing training for all teams involved in the distribution of social assistance funds is also an equally important part of BCP. Krebs & Hamadeh (2023) revealed that human error is often one of the factors causing disruptions in operations. Therefore, it is important for PT Bank BRI to organize regular training for the operational team, as well as conduct periodic emergency simulation testing to improve the team's readiness to face various situations.

CONCLUSION

The distribution of social assistance funds such as the Family Hope Program (PKH) and non-cash food assistance (Staple Food) is a vital activity that directly touches the welfare of the Indonesian people. As the main distributing bank, PT Bank Rakyat Indonesia (BRI) plays an important role in ensuring that social assistance funds are distributed in a timely, transparent, and safe manner. This background demands the existence of a reliable and sustainable monitoring system, considering that disruptions to information infrastructure can have major implications for program continuity and public trust. The main problems identified in this study include potential technical risks such as system disruptions, natural disasters, and cyberattacks, as well as lack of operational readiness in emergency scenarios. Even if the monitoring system is digital and integrated, without a mature recovery strategy, the distribution process can stall or experience systemic errors. Therefore, the implementation of the Business Continuity Plan (BCP) is a strategic solution to maintain the sustainability and stability of the social assistance distribution process.

Through a case study at BRI, it was found that the implementation of BCP has included a number of important components: from critical process identification and business impact analysis (BIA), risk assessment of monitoring systems, recovery strategies with DRC (Disaster Recovery Center), as well as the use of technologies such as hybrid cloud, real-time notification systems, and layered cybersecurity. In addition, BRI also conducts simulations twice a year to test the system's resilience to various disruption scenarios. However, some things need to be improved. Among them are: expanding BCP training to all units related to social assistance, regular updating of SOP documents, and increased coordination with third parties (vendors and technical partners). This is important so that service recovery does not rely solely on one core team, but becomes a comprehensive cross-functional responsibility.

With the implementation of adaptive, evaluative, and tested BCP, BRI shows readiness to keep the social assistance distribution monitoring system running. This implementation not only ensures technical sustainability, but also supports social stability and the effectiveness of government policies in distributing aid to people in need.

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