

## Analysis of the implementation of the CDC (Centralized Document Collateral) credit file system at BTN Syariah Bandung through the PDCA cycle

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### ABSTRACT

Bank BTN, in supporting KPR financing, requires customers to prepare several documents, including personal identity, financial information, and certificates of title to home/equipment/vehicle ownership guarantees. Efficient storage and management of these documents are crucial to prevent loss due to mismanagement. To enhance services, Bank BTN has implemented a Centralized Document Collateral (CDC) documentation system. This study aims to analyze the CDC system's implementation using the PDCA cycle to evaluate each work step. Employing a qualitative descriptive method, data were collected from credit processing units at Bank BTN Syariah Bandung through observations, interviews, and literature studies. The findings indicate that the CDC system significantly improves document management efficiency, with key benefits including reduced document loss, streamlined retrieval processes, and enhanced security measures. These improvements contribute to more effective work processes and higher service quality for customers. However, some obstacles were identified, such as limited technological infrastructure and storage capacity, which require follow-up actions to enhance performance. Solutions like increasing server capacity, adopting cloud storage, optimizing data management can address these issues. The study concludes that the CDC system is a valuable tool in documenting customer credit files at Bank BTN Syariah Bandung, offering substantial enhancements in operational effectiveness and document security.

Keywords : CDC (Centralized Document Collateral) System, Credit Document, PDCA (Plan, Do, Check, Act ) Cycle

## 1. INTRODUCTION

Technological disruption is currently the main driver behind drastic transformations in various industries worldwide (Jordan et al., 2022). The industrial revolution in digital technology development has impacted various business sectors, forcing companies and individuals to adapt and keep pace with technological advancements (Kreitshtshtein, 2017). The technological transformation, evolving into Technology 5.0, is often considered a threat (Mittal & Gupta, 2022), but it presents an opportunity for businesses to innovate, increase efficiency, enhance accessibility, and solve complex problems (Haralayya, 2016).

Competition in the banking industry is increasingly influenced by technological advances that offer a competitive edge. Banks worldwide continue to invest in new technologies to improve operational efficiency, enhance customer experience, and expand service reach (Gerling & Lessmann, 2023). One significant aspect of this technological competition is the rise of innovative digital and Internet of Things (IoT)-based platforms, including mobile banking applications, internet banking, and other digital banking services. These advancements not only improve customer interactions but also enhance internal systems, such as the bank's operational document filing system.

Document management in banks is critical to maintaining the integrity and security of customer information and meeting strict regulatory requirements (Febriyanto et al., 2023). Every document, from transaction forms to credit contracts, must be stored and maintained properly for quick and efficient access when needed (Ardianto et al., 2020). Manual document filing systems in banks are time-consuming and prone to errors (Yuliana et al., 2022). Physical document storage requires large spaces and extensive manpower for retrieval and management, leading to inefficiencies and the risk of human error, such as document loss or mislabeling, which can have severe consequences (Aulia & Afkarin, 2024).

Manual archiving is less efficient, less secure, and prone to errors and risks of document loss or damage (Puspita et al., 2024). These limitations can delay customer service, emphasizing the need for digitalization and automation to improve document management services. Digital transformation in document management is a strategic step for banks to enhance efficiency, security, and traceability of information (Laksono & Nisa, 2024). The decision to adopt a digital documentation system aims to reduce operational complexity and comply with increasingly stringent regulatory demands (Shabri, 2022).

Bank BTN, a leading bank in Indonesia, has shown its commitment to providing exceptional customer service, including the management of mortgage financing documents. The implementation of a digital documentation system aims to improve service delivery, enabling quick retrieval of documents by related units and customers (Kennedy et al., 2020). The use of an electronic document management system allows banks to store, manage, and access documents centrally and automatically, speeding up internal workflow and facilitating document review for staff and customers (Samsuri, 2022).

Bank BTN has adopted a centralized digital technology documentation system called CDC (Centralized Document Collateral) for KPR documents. This system aims to facilitate online document storage and retrieval, reducing time and costs while improving service to customers who need bank-stored documents (Nilawati et al., 2019). However, previous research on credit document storage in banks has limitations, such as variations in research methods and instruments, which affect the consistency and comparability of results (FS et al., 2024). Additionally, many studies are context-specific, limiting the generalizability of findings (Martini, 2022).

The CDC system needs continuous monitoring to ensure effective and efficient operation according to company procedures. The PDCA (Plan, Do, Check, Act) Cycle Approach, introduced by Deming, aims to improve personnel coordination, create effectiveness, and establish feedback mechanisms for continuous quality and efficiency improvements (Chojnacka-Komorowska & Kochaniec, 2019; Kalemulloev et al., 2021). The PDCA cycle involves identifying necessary actions (Plan), implementing strategies (Do), reviewing and evaluating results (Check), and taking corrective actions

(Act) to achieve the desired changes (Azwir & Satriawan, 2018).

The PDCA cycle approach in supervising bank document storage often faces obstacles, such as staff adaptation to new systems and implementation challenges (Winasis & Riyanto, 2020; Yulianti, 2022). The importance of analyzing the CDC system's implementation at Bank BTN, particularly in managing mortgage financing documents, prompted this research. This study aims to analyze the CDC system's implementation using the PDCA cycle to evaluate each work step. This study addresses gaps in current research by providing a comprehensive evaluation using the PDCA cycle and exploring practical implementation challenges, offering unique insights into the effectiveness of digital documentation systems in banking.

## 2. METHOD

This study uses a descriptive analysis and a qualitative technique to evaluate the deployment of the CDC (Centralized Document Collateral) system at Bank BTN Syariah Bandung utilizing the PDCA Cycle technique. The target demographic consists of bank officers and management involved in the KPR credit file documentation procedure. Participants were selected based on their credit processing jobs, experience with the CDC system, and willingness to participate in the study.

Data was gathered through observations, interviews, and a literature study. Observations were made at the credit processing units of Bank BTN Syariah Bandung to better understand the workflow and document management processes (Creswell, 2016). Detailed notes were taken on how to store, retrieve, and manage credit documents. Semi-structured interviews were carried out with 15 bank officers and management personnel directly involved in the KPR credit file documentation procedure. Each interview lasted 30 to 60 minutes and followed a set methodology to maintain uniformity. Topics covered were the CDC system's effectiveness, obstacles, and noted improvements. Interviews were recorded and transcribed for in-depth study. Furthermore, relevant literature, such as research journals, articles, theses, and documents pertaining to mortgage finance at Bank BTN Syariah, was evaluated to offer a theoretical foundation and context for the study. The literature review concentrated on digital transformation in banking, document management systems, and the PDCA cycle (Bryman, 2016).

Thematic analysis was used to assess the qualitative data collected during observations and interviews. This procedure entailed transcribing the interview recordings verbatim, coding the transcriptions and observation notes to identify significant themes and trends, and categorizing the coded data into themes corresponding to the PDCA cycle stages (Plan, Do, Check, and Act). This method assisted in determining how each stage was executed and the influence on document management efficiency. Triangulation was utilized to validate the findings by comparing data from interviews, observations, and the literature. The study uses these approaches to give a complete evaluation of the CDC system's installation and influence on the efficiency and security of KPR credit file administration at Bank BTN Syariah Bandung.

## 3. RESULTS AND DISCUSSION

### 3.1 RESULT

State Savings Bank (BTN) Syariah is a state-owned bank that focuses on housing financing or KPR (Home Ownership Credit). BTN Syariah in its operations emphasizes the principles of justice and equality in determining profit-sharing rewards between customers and the bank. The superior product that customers are most interested in is Subsidized KPR and this product is an alternative solution for customers who want to own their own home at an affordable price (Marisa Anggraini & Amin Wahyudi, 2022; Yanto & Prabowo, 2020).

Bank BTN Syariah offers two types of Sharia-based mortgage financing, namely KPR BTN Platinum iB and KPR BTN Indent iB. KPR Platinum iB is a product Purchase House from developer/non-developer, house new and second hand as well as Ready occupancy (ready stock) or take over credit

from other banks. Prospective customer individuals can use contract murabahah (sale where to buy in contract murabahah, stipulation price agreement enforced in a way fixed (fixed) until end financing finished and term time financing, size installments No changed. Period given time for iB Platinum KPR financing is given in a period time maximum of 15 years, with a financing ceiling maximum of 80% of the price of the House from the developer and the remaining 20% required as a mandatory down payment provided by the customer. Mechanism payment installments can be arranged by cutting wages with a down payment contribution minimum, of 10%.

Meanwhile, KPR BTN Indent iB is facility financing that uses an " Istishna " contract or sell-buy order according to sharia special for houses, shophouses, and apartments. Still under construction, so customers are Not yet required to pay installments/grace period (delay payment). Period time BTN Indent iB KPR financing is given a maximum of 15 years, with maximum bank financing of 80% of the price bought House from the developer and the remaining 20% as a down payment for customers. Mechanism Payment installments are done through cut salary, a down payment contribution of just 10% (Wardani & Rokan, 2022).

Bank BTN in support of financing Homeownership requires several necessary documents prepared by its customers, including identity personal customers, information finance, history facility ever financing received, Certificate of Rights on Guarantee Home/ Equipment / Vehicle Ownership, as well document other related things with financing or document company, if an application for asset company. Related to documents received from customers as recipient facility financing naturally must be documented in the save file in a way physique nor in the form of soft file data which must be maintained Because documents must still awake at least up to the keel funding that has been provided by the bank.

Management document financing at BTN Syariah Bank holds a role because in it stored record footsteps on documents financing received by the bank from its customers. Documents intended must awaken security for credibility institution banking as storage document can trust his trust so that can increase integrity institution finance. As it develops technology and information need attention special to storage as well as security documents customers to remain safe and secure from risk loss or damage, which is a concern that will make the threat serious and impactful financial in a way significant for the bank's reputation Alone.

System security documentation financing in banking becomes something that is not acceptable in guarding trust in industry finance. Security documentation is not only naturally proactive but must realize in the suitability of the increasingly digital era of technology easily accessed in a way fast, awake confidentiality and security from threat malware (Febriyanto et al., 2023).

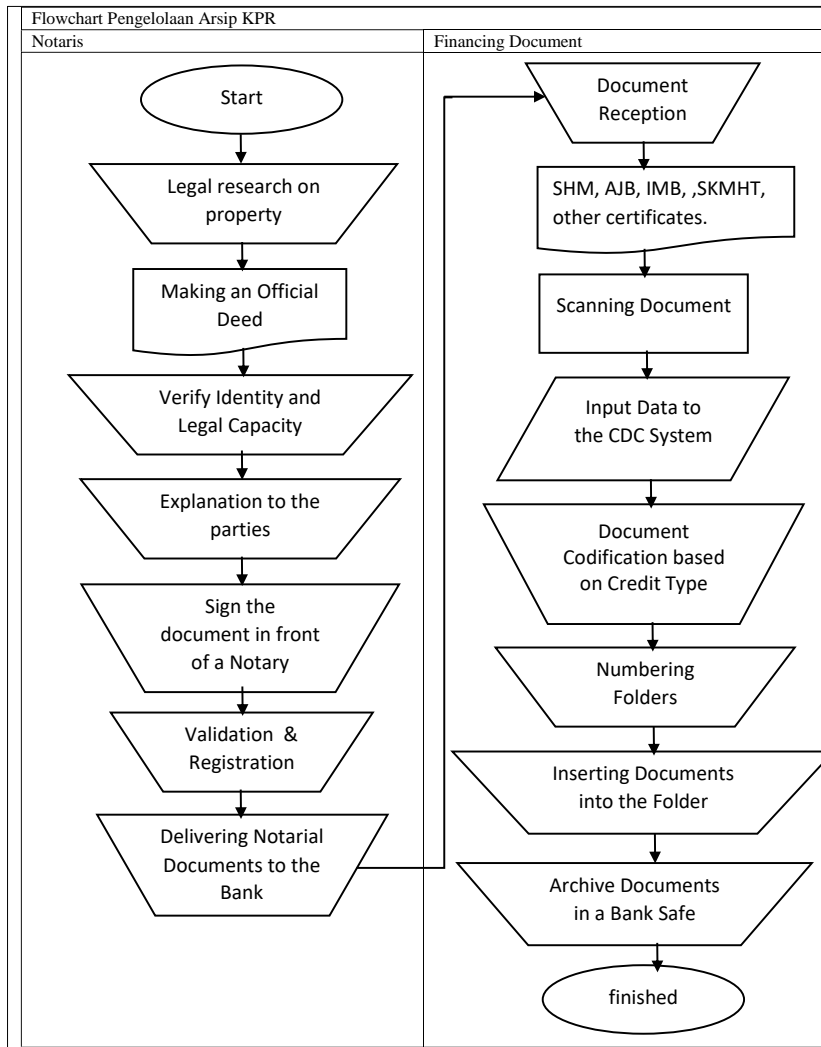
In the era before technology, lots of documentation financing in banking was done manually, implementation took more Lot to eat time and more Lots involved activity physique like work: search archive, duplication documents, and manual distribution. Documentation manually gives rise to risk errors man the more increases, such as accuracy search, data file management, damage physique document guarantee, and accurate filing.

The development era will the more Keep going until progress technology uses the Internet of Things-IoT, where digital transformation becomes something of a necessity, esp in sector banking (Jopanda & Fauzi, 2023), in various places Already Lots apply system digitalization to make it easier its operations to manage and access document customers with fast, accurate, as well still guard security (Gultom & Rokan, 2022).

The key main BTN Syariah is to give optimal service to customers with innovative products with the Utilization of Digital Information (Engkur, 2018). Service is not only about service product banking but also taking the initiative progressive in service about maintenance document product financing. BTN Syariah adopted a known digital system as the CDC (Centralized Document Collateral) system, via application system CDC documentation is made A solutions that transform digital technology that replaces function-safe in-store customer data. Change This expectation can prove exists a transition to more modern technology in service information for BTN Syariah Bank customers (Masruroh et al., 2024).

Application CDC system (Centralized Document Collateral) become aspect crucial for Bank BTN Syariah, apart from being useful for service customers also supports maximum for employees in giving enhanced quality service to customers. CDC (Centralized Document Collateral) System is expected to give convenience for inner bank staff to manage document customers with fast and efficiently, that's the end of it will produce efficiency with significant time and effort. Furthermore, security is guaranteed in the use CDC system (Centralized Document Collateral) give guarantees that customer data will be protected with Good from potency leakage or abuse of information.

A. Management process Document Customer Credit Home Ownership (KPR) at PT Bank BTN Syariah uses The CDC (Centralized Document Collateral) system can described, as follows:



**Figure 1. Management process Document Customer Credit Home Ownership (KPR) at PT Bank BTN**

The steps for managing the above financing document archives are described as follows:

- 1) The notary conducts legal research on the property to be guaranteed. This includes checking the land ownership status with the local BPN (National Land Agency), whether the owner is the legal owner, is not in dispute, and has no encumbrances or other mortgage rights. This ensures that the sale or grant of mortgage rights complies with applicable legal regulations.
- 2) The notary makes an official deed that records the transaction between the seller and the buyer, or the giver of the mortgage right and the recipient of the mortgage right. This deed records transaction details, including price, terms, and other conditions.
- 3) The notary checks the identities of the parties involved in the transaction and ensures that

they have the legal capacity to carry out the transaction. This consists of checking documents regarding identity, marital status, and other relevant matters related to the transaction.

- 4) The notary explains the parties regarding the contents of the deed, rights, obligations, and legal implications of the mortgage financing transaction from the Bank. The aim is for all parties involved to fully understand the consequences of the transactions they are carrying out.
  - 5) After all parties agree with the contents of the deed and complete the entire document verification process regarding mortgage financing, they will then sign the required documents in front of a Notary.
  - 6) The Notary will ratify the deed of agreement for mortgage financing, then the Notary's office will register the deed at the local BPN (National Land Agency) office to ensure that the mortgage rights on the property mortgaged/guaranteed to the Bank have been officially recorded.
  - 7) After the validation is complete, the Notary will deliver a notarial agreement deed in the form of SKMHT (Power of Attorney to Impose Mortgage Rights) or APHT (Deed of Granting Mortgage Rights) if it is still temporary. All these documents are submitted to the bank in the form of a notarial financing document.
  - 8) The Financing Document Unit will receive notarial agreement documents from the Notary which have been approved by Mortgage Bank.
  - 9) Documents that have been received by the Bank will then be scanned by the officer to be input into the CDC (Centralized Document Collateral) system.
  - 10) Bank officers will input data on minutes of proof of receipt of debtor documents into the system. Document receipt is carried out to provide the status that the document has been received and stored.
  - 11) Document grouping is carried out based on the type of credit facility, for each type of financing and each document has a different code, for example, code 05 is Platinum KPR and code 02 is Subsidized KPR.
  - 12) Provide a KPR customer account number in the Principal Documents Folder and credit facility Dossier and the account number is automatically obtained from the system. The inclusion of customer financing account numbers is done to make it easier for bank officers to search for debtor documents.
  - 13) Credit facility documents that have been assigned a code and account number will then be entered by the officer into the Basic Documents Folder and Dossier Folder for customer financing facilities that have been assigned an account number.
- Filing of credit facility document files are then put into a safe and arranged according to the debtor's serial number so that it is easy to search.
- B. Analysis of the CDC (Centralized Document Collateral) system at Bank BTN Syariah Bandung Branch Office using the PDCA (Plan-Do-Check-Act) Cycle.

#### 1) Plan (Planning)

Planning is a design that determines whether a system can complete something that must be completed (Utami et al., 2024). At the planning stage, PDCA is expressed in the form of actions to determine which processes need to be improved what improvements need to be made, and how to do them.

The implementation of the CDC system at Bank BTN is designed so that its operations can improve performance effectively and efficiently on the job. The use of an electronic/automated documentation management system is designed to enable banks to centrally store, manage, and access documents. This effort is to speed up internal workflow and facilitate access to document review for staff and customers who need information related to their documents (Tatyana, 2020).

Implementation of planning (Plan) in the CDC system at Bank BTN involves a series of strategic steps to ensure readiness and continuity of operations in facing various risks of loss or damage to documents stored at the bank. Bank BTN implements work steps according to the framework described above in the form of verification of every document that will be stored and documents that will be issued or borrowed by the credit unit.

The documents that will be stored are previously rechecked for completeness, both from the Notary and documents that have been collected by officers as part of the requirements for providing KPR credit facilities. If all the collected documents have been verified by the credit document completeness checking department, the documents will be categorized based on which files will be stored.

As illustrated below:



**Figure 2. Work Steps**

## 2) Do (Implementation)

Implementation is carrying out a pre-planned process when receiving documents either from the notary or those collected for the bank's internal needs. This stage is the implementation of work steps that have been planned for receiving documents to be compiled and monitored for the implementation process (Eddy et al., 2020). The implementation of the Centralized Document Collateral (CDC) system at Bank BTN Syariah aims to increase efficiency in credit document management through integration and centralization of storage and management of documentation related to the type of collateral pledged as collateral. This process begins with the collection and digitization of all credit documents from various branches, then stored in a secure, cloud-based centralized repository.

Bank BTN Syariah Bandung Branch has used the Centralized Document Collateral (CDC) system as part of its efforts to support increased efficiency and security in managing credit guarantee documents. When officers receive documents from notaries or those collected internally at the Bank, they then carry out a process of document verification, monitoring, and control.

Each credit guarantee document that has been received is then verified by the authorized officer to check the validity of the documents, whether each document contains legal elements from a notary, whether the bank's validity is met, and whether the requirements related to financing are met. After the validity of the document is proven to meet the requirements and legality, the document will be scanned to be input into the CDC (Centralized Document Collateral) system. The documents entered are then grouped by credit type with different codes and then stored in the folder that has been given the code. Archiving document files are then put into a safe and arranged according to the customer's serial number so that they are easy to search.

## 3) Check (Evaluation)

Check is the implementation of an evaluation of the process that has been implemented previously, reviewing how far the results obtained are by the plan. Based on the implementation of the CDC system at Bank BTN Syariah Bandung, some obstacles hinder the credit documentation process. These include limited technological infrastructure, limited storage capacity which makes it difficult to manage and store documents effectively or slow system performance, thus affecting the efficiency of the scanning process and document data input.

The implementation of the CDC (Centralized Document Collateral) system at Bank BTN Syariah has not been fully implemented properly due to slow system performance and frequent downtime. The system is still Web-based and a special application has not been created for storing

documentation data related to financing facility document archive files. The system created is less than perfect as a result of the technological infrastructure not supporting the CDC system to run optimally. A system that runs slowly will certainly hinder officers from responding to user requests and the data management process in storing credit facility documentation archives at the bank.

#### 4) Act (Follow-up)

The Action stage is an evaluation of obstacles to follow up on parts that cannot be implemented according to work steps. Follow-up for improvements is intended to answer how to overcome obstacles in implementing the CDC (Centralized Document Collateral) system to make it better in the future (Eddy et al., 2020).

The Act (Follow-up) stage in the CDC (Centralized Document Collateral) system at Bank BTN involves a series of structured steps to ensure the management of stored customer documents efficiently and safely. To improve performance and document storage capacity, Bank BTN needs to carry out a comprehensive evaluation of the existing technological infrastructure including the hardware and software used. Solutions to these obstacles, such as increasing server capacity and implementing cloud storage technology, can help overcome storage limitations and ensure faster and more stable access.

In addition, Bank BTN can apply data compression technology to reduce file size without sacrificing quality, thereby saving storage space, and deleting data that is no longer relevant to prevent system overload and downtime. With these steps, Bank BTN can ensure that the CDC system can operate quickly and efficiently and has sufficient storage capacity to support long-term operational needs.

### 3.2 DISCUSSION

The results show that Bank BTN Syariah has made progress in enhancing document management using the CDC system. The transition from manual to digital documentation has improved process efficiencies, reduced the risk of human error, and increased customer data security. This is consistent with the findings of Tatyana et al. (2020), who emphasized the advantages of electronic documentation systems in terms of speeding up internal operations and improving access to information.

However, the execution has not been without its obstacles. The study highlighted considerable challenges, including limited technological infrastructure, insufficient storage capacity, and sluggish system performance. These concerns impede the efficiency of the CDC system and the bank's ability to respond quickly to client and internal requests. The literature backs up these findings, stating that digital transformation in banking necessitates strong infrastructure and ongoing updates to meet expanding data demands (Jopanda & Fauzi, 2023) Gultom & Rokan, 2022).

This paper contributes to the current body of knowledge by presenting a detailed case study of CDC system deployment in a specific banking scenario. Unlike earlier research, which has mainly examined digital documentation in broad terms, this study provides detailed insights into the practical obstacles and tasks involved in migrating to a digital system.

For example, Febriyanto et al. (2023) explored the theoretical components of documentation security without delving into the concrete implementation stages or obstacles. This study fills that gap by analyzing the full process, from document verification to digital storage, and finding specific obstacles such as system downtime and insufficient storage. The findings also contradict the more optimistic perspectives offered by Engkur (2018), who emphasized the seamless integration of digital systems while ignoring technical and operational challenges.

The findings have significant implications for the banking industry, particularly for institutions planning a comparable digital transformation. To begin, the findings emphasize the importance of investing in a strong technology infrastructure to support digital systems. Banks must guarantee



that their servers and storage solutions can handle the increasing demand that comes with digitizing documents.

Second, the study emphasizes the need for continuous system evaluations and modifications. The CDC system at Bank BTN Syariah has had performance concerns, indicating that frequent maintenance and upgrades are essential for preserving efficiency and security. This is consistent with the advice of Usman & Dafitri (2020), who underlined the need for continual evaluations in digital implementations.

The study has significant drawbacks. The study is limited to Bank BTN Syariah's Bandung branch, so the findings may not be applicable to other branches or banks with various operational scales and technological infrastructures. Furthermore, the study concentrates on the early stages of CDC system deployment, but long-term performance and sustainability are not discussed.

While qualitative research provides detailed insights, it may also inject subjectivity, particularly in data interpretation and topic analysis. Future research could benefit from a mixed-methods approach, which includes quantitative data to validate qualitative findings and provide a more complete study.

Future research should look on the long-term effects of CDC system implementation across various branches and banks to better understand the scalability and flexibility of these systems. Comparative studies of banks with varying levels of technology innovation may provide useful insights into best practices and common hazards.

Furthermore, looking into customer satisfaction and perceived value of the digital documentation system may provide a more complete picture of its benefits and opportunities for improvement. Researchers could also look into the cost-benefit analysis of digital transformation in document management to get a better idea of the financial implications for banks.

#### 4. CONCLUSION

The implementation of the CDC (Centralized Document Collateral) system at BTN Bank aims to increase the efficiency of credit document management through digitalization and centralization of cloud-based document storage and management. Based on the results of research using the PDCA cycle, it can be concluded that the implementation of the CDC (Centralized Document Collateral) system at Bank BTN Syariah Bandung is effective in solving problems that exist in its operations. In its implementation (Do), the CDC (Centralized Document Collateral) system at Bank BTN Syariah Bandung allows for more efficient tracking, access control, and search for documents. Document workflow automation speeds up approval and verification processes reduces manual errors and processing time, and improves integration with other banking systems.

However, based on the evaluation (Check), in implementing this system some obstacles hinder the credit documentation process, including limited technological infrastructure, storage capacity, and slow system performance. This requires follow-up (Act) on technological constraints to improve performance and document storage capacity. Solutions such as increasing server capacity, cloud storage technology, data compression, and eliminating irrelevant data can help overcome storage limitations and ensure efficient operations.

The documentation system at the bank requires stricter supervision because it contains several important documents related to letters and certificates that are guaranteed by customers to obtain financing from the bank. A documentation system was created to facilitate management, search, and ensure security, but this will be meaningless if there is no strict supervision from management so that the system can run well. Better innovation is needed so that the CDC system can increase security and efficiency in document management, including the application of appropriate technology that has an impact on regulatory compliance and personal data protection.

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