

# Analysis of the Implementation of the XYZ Core Banking System at PT BPR Hariarta Sedana

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**Abstract:** The Core Banking System (CBS) is often referred to as the heart of a bank due to its crucial role in banking activities. Core Banking is used for processing loans, savings, customer information storage, and various other services. Real-time interaction is required to process banking activities. Each bank has its own strengths, needs, and target market in order to conduct its business. These needs must be supported by reliable, flexible information technology solutions that are ready for further development according to the bank's requirements. The transformation of Bank Perekonomian Rakyat (BPR) is a critical step in supporting economic growth for both the bank and its customers. This study highlights the latest trends in the banking industry related to banking digitalization, such as real-time online integration with delivery channels, including mobile banking services. This analysis also identifies the weaknesses of the previous banking system and the strengths relevant to the transformation desired by BPR's business needs. The availability of technology, system integration, and IT architecture are the focus to understand the existing infrastructure. For now, the implemented changes have significantly impacted the speed of operational performance and services, as well as better control of employee working hours.

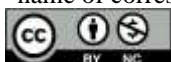
**Keywords:** Implementation of services, Core Banking, Banking Systems, Bank Perekonomian Rakyat

## INTRODUCTION

Bank transformation is an urgent strategic step amidst the dynamics of global change and rapid technological development. Banks, as financial entities that focus on economic inclusion, should view this transformation as an opportunity to strengthen their role in empowering communities and accelerating overall economic growth (Hisam, 2023). The speed and accuracy of the bank's service, along with the adjustment of the level of support to severity codes based on business disruption and financial exposure, operational control, and the availability of temporary solutions, demonstrate its commitment to service.

The trend of customers visiting bank offices to conduct transactions is starting to decrease. Moreover, BPR branch offices are not as numerous as commercial bank branch offices. Customers choose to make transactions independently at anytime and anywhere. Banks are competing to provide the best digitalization of banking services to increase loyalty and add new customers. The digitization of banking services includes mobile apps, mobile banking services (similar to branchless), online data transfer at any time, payment of various bills or bill payments, payment via QRIS, opening accounts or deposits, applying for loan facilities and others.

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Vietcombank shows that digital transformation has a positive influence on the performance of Vietnamese commercial banks, with a statistical significance of 1%. This confirms that digital transformation has a positive impact on the performance of Vietnamese commercial banks. In addition, the interaction between digital transformation and bank size has a positive influence on the performance of Vietnamese commercial banks, with a statistical significance of 1%. This confirms that the larger the scale of commercial banks, the greater the digital transformation will have a positive impact on their performance (Do, Pham, Thalassinos, & Le, 2022).

The Industrial Revolution 4.0 has created a driving force for the application of technology in business activities. With the rapid development of high-speed internet, cloud computing, and blockchain technology, the Industrial Revolution 4.0 is changing the way businesses operate, the way they do business, and consumer behavior (Tan et al., 2022). Changes and diversification of business activities due to digital transformation are strong in the banking sector. In addition, the issue of digital transformation in business activities in commercial banks has received much attention from researchers, policymakers, and companies (Lee & Shin, 2018).

In the initial stage of this research, it is necessary to conduct an in-depth analysis of the existing IT landscape in the Core Banking System (CBS) implementation. CBS is the heart of a bank's operations. The bank's ability to compete effectively and be a market leader is almost entirely due to its core technology capabilities (Raharjo, 2021). A successful CBS must be customer-centric, intelligent, adaptive, agile, and comprehensive. Financial Services Authority Regulation Number 75/POJK.03/2016 also defines CBS as an electronic system that serves as an application for final processing of all daily banking transactions, including updating data in BPR and BPRS books, encompassing customer, deposit, loan, accounting, and reporting functions.

This involves evaluating the existing technology infrastructure, system reliability, and operational efficiency. The study also highlights the most recent CBS trends in the commercial banking industry, such as BRI. BRI's collaboration with SilverLake has proven to significantly improve CBS performance. The end-of-day (EOD) process, which previously took 6–7 hours, was cut by 40%–50% to 3–4 hours. The TPS (transaction per second) capability increased by 317%. BRI's UKER office, which previously had to wait for the EOD process to complete, can now operate 24 x 7. In December 2021, BRI awarded SilverLake the Best Partner Award for CBS (Utoyo, 2023) for its performance and support.

With the benefits of digital transformation for commercial banks as described above, researchers believe that digital transformation can really help improve the performance of commercial banks. Therefore, BPRs need to balance budget, human resources, infrastructure and governance for the implementation of digital technology applications and have prepared human resources capable of managing data, security and software development.

PT BPR Hariarta Sedana has recently transferred its CBS development to CBS XYZ. With the latest CBS provider change, it is expected to simplify operational processes and reduce dependence on outdated and complex systems. CBS ABC was still lacking in system updates to meet current needs.

## LITERATURE REVIEW

Core banking systems play a vital role in modern financial institutions, including rural banks (BPRs). These systems not only optimize bank operations, but also provide various strategic benefits that help BPRs remain competitive and meet increasingly complex customer and regulatory needs.

The core banking system enables the automation of various banking processes that were previously done manually (Alrabiah, 2018). This reduces operational time and costs and minimizes the risk of human error. Higher operational efficiency allows BPRs to serve customers more quickly and accurately, which in turn increases customer satisfaction.

With a core banking system, BPRs can offer better services to customers. Features such as 24/7 access to accounts, online transactions, and mobile banking services enhance customer convenience. In addition, the system enables personalization of services based on customer data, which can increase customer satisfaction and loyalty.

The core banking system helps BPRs manage risk more effectively. The system provides tools to monitor transactions in real-time, detect suspicious activities, and ensure compliance with applicable

banking regulations (Singh & Best, 2019). With the ability to generate compliance reports automatically, BPRs can more easily meet regulatory requirements, which is critical in maintaining the integrity and reputation of financial institutions.

The core banking system integrates all data and information related to the bank's operations in one platform. This enables better data management, more in-depth analysis, and more informed decision-making. This integration also makes it easier for BPRs to track and manage overall financial and operational performance, which is essential for effective business strategy.

In addition, with a sophisticated core banking system, BPRs have a strong foundation to innovate. For example, BPRs can introduce new products and services more quickly and easily. The system also supports the adoption of the latest technologies, such as artificial intelligence and data analytics, which can be used to develop more effective business strategies and be responsive to market changes.

The core banking system also allows BPRs to grow and expand without worrying about technological limitations. The system is designed to scale, so it can accommodate the increase in transaction volume and number of customers as the bank grows. With the ability to add new modules or features, BPRs can continuously update and improve their services according to market needs.

Moreover, security is a critical aspect in modern banking. The core banking system is equipped with advanced security features, including data encryption, multi-factor authentication, and suspicious activity monitoring (Khattak, Jan, Ahmad, Wadud, & Khan, 2021). This helps BPRs protect customer data and ensure that banking transactions are conducted securely, which is critical to maintaining customer trust.

The implementation of a core banking system is a strategic move for BPRs in facing the challenges of modern banking. With benefits that include operational efficiency, improved customer service, better risk management, data integration, ability to innovate, scalability, and enhanced security, the system is an important foundation for BPR's success and sustainability in the digital era.

Based on Khine (2019) research, banks should internally discuss and analyze the time required to select the right vendor. This is critical to ensuring that the chosen vendor can meet the bank's specific needs and support the successful implementation of the core banking system. Furthermore, Khine emphasized that the implementation management team should have project management scheduling skills and the ability to lead the team in carrying out the implementation effectively and efficiently. Management also needs to assign the right employees to positions that match their expertise to ensure successful implementation. By putting the right people in the right places, banks can optimize the performance of the implementation team and achieve the desired results in the implementation of the core banking system.

The results of Basyir & Safitri (2022) research show that the variables of system quality and net benefits partially have a significant effect on the success of the Core Banking System information system at PT Bank Perkreditan Rakyat (BPR) Hasamitra West Java. Meanwhile, the only factor that negatively impacts the success of the Core Banking System information system is its usage. However, the variables of system quality, information quality, service quality, information use, user satisfaction, and net benefits together (simultaneously) affect the success of the Core Banking System information system at PT Bank Perkreditan Rakyat (BPR) Hasamitra West Java.

The objective of the research is to analyze the implementation of the Core Banking System (CBS) in Bank Perekonomian Rakyat (BPR). This involves examining the latest trends in banking digitalization, assessing the weaknesses of the previous banking system, and identifying the strengths and capabilities of the new CBS to support BPR's business needs.

## METHOD

The research employed a qualitative approach to address the formulated problem. This method is carried out by researchers by conducting detailed data exploration by interviewing one person from the BPR Hariarta Sedana business team and by conducting direct observation involving the collection of documents and the analysis of work agreements with CBS vendors. For this research, the researcher will examine the documents to find relevant terms, conditions, and clauses. The research may involve a comparative analysis between the old and new vendor agreements.

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## RESULT

### Business needs at BPR Hariarta Sedana

Company has a slogan, "Always Serving You," that is always carried in the company's identity. According to internal opinion, serving customers needs to be based on an IT strategy with speed and security. According to Henderson & Venkatraman (cited in Belete & Hagos, 2020), IT strategy includes two main dimensions: business strategy and IT strategy. Business strategy determines how an organization achieves its business goals, while IT strategy ensures that information technology supports and enhances the business strategy. The company prioritizes the swift and efficient completion of financial transactions, including fund transfers, payments, and withdrawals. A quick response to customer requests is essential. In the back of the kitchen, also wants fast end-of-day, end-of-month and end-of-year processes.

These processes involve daily transaction reconciliation, reporting, and significant data processing. The EOD, EOM, and EOY processes need to be considered not only in terms of recording accurate transactions before starting the next day but also paying attention to the time management of employees in charge of processing transaction reports. Additionally, company mission is to ensure transaction security in order to maintain high-quality service for its customers. The profitability of the business will ultimately determine its needs. Therefore, the company heavily depends on good performance in the following areas:

#### Speed and security in transactions

In the rapidly growing world of banking business, CBS has become a very vital estuary to support transaction operations in banking. Transaction types include savings, deposits, loans, accounting, operational and financial reports, and SLIK. With a growing number of customers every day, the company needed the latest data engine and CBS support to effectively manage CIF. The company expects real-time transactions at all branches to support better customer service and centralized control, operated 24 hours a day from the data center by competent and experienced personnel.

#### Establishing a new, more efficient and honest culture for management

Experience has shown that employees often have to work overtime for the EOD, EOM, and EOY processes, resulting in additional costs during book closing. If overtime is frequent, management is concerned that employees' health is weak and job performance will drop. Furthermore, the company aims to reduce dishonest practices, specifically window dressing. Investment managers use window dressing as a strategy to enhance the appearance of portfolio or fund performance before presenting it to clients or shareholders (Febriani, Wahyudi, & Olimsar, 2021). Companies can make their own adjustments by using the CBS they have acquired. Unfortunately, irresponsible employees are also more likely to manipulate the data or information reported in the financial statements. Meier & Schaumburg (cited in Chang, Tseng, & Yen, 2020) say that an indication of window dressing practices is a different return between before and after reporting. The goal is to make banks look healthier than they really are. This practice is very dangerous because companies do not know the true health of the banks behind dishonest reporting.

### Problems found at CBS ABC

The company's management had complained that operational employees often worked overtime due to poor time management. This was because in 2014, the company bought out CBS so that the withdrawal time of EOD, EOM, and EOY transaction reports was released to the company, so that the company could intervene at any time the nominative data was withdrawn. The fact that time is not fixed makes working hours not ideal.

The data processing was also quite long because the application algorithm pulled data from the beginning of 2014 until the last year the company used the application, thus disrupting operational transactions. At that time, CBS ABC was using My SQL 5. However, the increasing number of CIFs led to inadequate technology infrastructure, resulting in a slow data withdrawal process for the company. The lack of vendors providing the latest version updates also resulted in ineffective data processing.

Whether a company chooses to buy or subscribe to CBS, it is important to determine what the business needs. Buying out means that the company must also be able to monitor users who access the

CBS. Because the company can keep the CBS in its own hands, a lack of security can cause window dressing. The security discussed here pertains to unmonitored history logs. According to the IT team, user activity is sometimes visible, sometimes invisible because there is a bug in the security system, so window dressing has occurred outside of IT and operational control.

### DISCUSSIONS

The costly experience in the past has changed company's view of using CBS on a subscription basis. The company still needs a lot of experience in managing a buy-out CBS. By subscribing, the company does not have to worry about data center maintenance, so it can focus on operational activities. Currently, the use of XYZ CBS has only been running for five months, so its effectiveness is still temporary because no significant problems have been found. To evaluate the effectiveness of the two CBS systems, it is necessary to compare them based on the needs of both users and IT.

| <b>Business Requirements</b> | <b>CBS ABC</b>  | <b>CBS XYZ</b>  |
|------------------------------|---|---|
| Schedule cut off             | EOD, EOM, and EOY are quite long because the cut off time is more flexible because they use their own servers, so employees often work overtime until 12 at night. In addition, the long-time is due to the unbroken data from 2014 to 2021, when the company cut off the data. | It is quite fast because the vendor limits transaction activities to 6pm. If you need additional hours, the company needs to write a letter requesting an extension of time to close the book via e-mail.   |
| Credit calculation method    | Employees can only calculate daily interest manually, so human error often occurs.  | Employees can choose the type of credit calculation that has been accommodated by XYZ.  |
| Application intervention     | The application can intervene in changing the bad credit status. Customers are allowed to pay interest and principal installments can be late. Bank health data can be fabricated by irresponsible people.  | It cannot be interfered with because only the vendor has the program. For example, to change the status of bad debts, banks need to pay principal installments and penalties, not just interest. The bank's health data becomes unique. The company must comply with the vendor's accounting rules. |
| Data retrieval speed         | With more and more CIFs, outdated engine data and un-updated applications are slow.   | The data retrieval is fast and stable because the vendor technically manages the best data engine according to them.  |
| Maintenance                  | Need to mobilize the best IT team to maintain the infrastructure. However, at that time, the company was already in place but still remained vendor-dependent.  | There is already an IT team from the vendor that is focused on maintaining the infrastructure and is always guarded 24 hours, so the company's IT team does not need to monitor the infrastructure for 24 hours.  |
| Security                     | Controlled only during 8 working hours.   | Controlled 24 hours.  |
| Cost                         | It's only expensive at the beginning because it's a buyout.   | It's quite expensive because of the monthly subscription.   |

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Risk mitigation through the establishment of a core banking center of excellence with specialized human resources and expertise in CBS is essential. This ensures that strategic decisions are supported by adherence to best practices in development and maintenance (Utoyo, 2023).

The choice between a perpetual license and a subscription CBS should be based on the bank's needs and capabilities. According to Xin & Choudhary (2018), increased IT investment does not always correlate with increased profits. Banks need to develop various capacities, such as understanding, seeking, and gathering appropriate digital knowledge, often resting with business executives or teams.

The company prefers subscribing to CBS rather than purchasing it outright, recognizing the difficulty in regularly maintaining IT infrastructure. If a bank has a strong IT team, opting for a buyout system might be feasible. Otherwise, a subscription with vendor support is more suitable. The service provider is responsible for system maintenance, updates, and repairs, reducing the burden on the in-house IT team. As long as the service provider adheres to security and privacy regulations set by OJK, subscribing is the optimal choice, allowing the bank to focus on other application development needs.

The implementation of technology in people's economic banks has not yet reached the level of commercial banks. Therefore, decisions should always return to the bank's specific needs and its ability to maintain the infrastructure.

The results show that CBS XYZ is a superior choice, providing better efficiency and security compared to CBS ABC. These findings underscore the importance of aligning IT strategy with business strategy, supporting previous literature. The transition to CBS XYZ serves as a model for other institutions facing similar IT infrastructure challenges, highlighting the need for vendor support and up-to-date technology to maintain efficient and secure operations. Over the five months of using CBS XYZ, the way employees work has become more effective, with operational teams experiencing timely cutoffs that reduce the need for overtime. Although CBS ABC excelled in terms of system independence and data security, the company was not ready for major investments in system development maintenance, bug fixes, and security updates. Another challenge was the need for an IT team experienced in system maintenance and development.

This research is in line with the findings of Basyir & Safitri (2022), which state that system quality and net benefits affect the success of the Core Banking System information system at PT Bank Perkreditan Rakyat (BPR) Hasamitra West Java. The only negative factor affecting the success of the Core Banking System information system is its use. However, the variables of system quality, information quality, service quality, information usage, user satisfaction, and net benefits simultaneously affect the success of the information system.

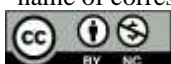
## CONCLUSION

Based on the results and discussion, it can be concluded that CBS XYZ was the superior choice, significantly improving efficiency and security. The transition to CBS XYZ not only improved employee effectiveness, but also streamlined operational processes, eliminating the need for overtime through timely transaction reporting. Although CBS ABC offered advantages in system control and data security, the high costs associated with maintenance, bug fixes, and security updates posed a challenge. The need for a skilled IT team further emphasized the complexity of maintaining a sophisticated system. This case emphasizes the importance of aligning IT strategy with business objectives and shows the need for vendor support and modern technology in achieving operational excellence.

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