

Business Process for debit card transactions using Electronic Data Capture (EDC) Case study: Bank CIMB Niaga Tbk.

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Abstrak

Electronic Data Capture (EDC) dalam perbankan merupakan salah satu sarana yang memudahkan transaksi di tempat perdagangan. Tidak semua pembeli membawa uang tunai untuk membeli barang yang diinginkan; biasanya, pemilik toko atau asisten menyarankan pembeli tersebut untuk menarik uang di ATM atau melakukan transfer menggunakan mobile banking atau metode serupa. Masalah muncul ketika antrian di ATM terjadi, dan tidak semua pembeli mengaktifkan layanan mobile banking. Terkadang, kesulitan dalam proses transaksi menghalangi pembeli untuk menyelesaikan pembelian, meskipun mereka tertarik atau sudah menegosiasikan harga barang tersebut. Pengenalan mesin EDC perbankan dapat meringankan masalah-masalah yang telah disebutkan. EDC saat ini adalah alat transaksi yang luas penggunaannya. Selain kemudahan yang ditawarkan dalam transaksi, alat ini juga meninggalkan beberapa masalah yang perlu ditangani. Dalam makalah ini, penulis bermaksud untuk menganalisis proses bisnis dan perbaikan untuk meminimalisir risiko kejahatan dan kehilangan aset.

Kata Kunci: Electronic Data Capture (EDC), Transaksi Perbankan, Mobile banking, Business process analysis, Mitigasi Risiko

Abstract

EDC (Electronic Data Capture) in banking is a means of expediting transactions at trade outlets. Sometimes not all buyers bring cash to buy the goods they want, usually the shop owner/keeper directs the buyer to withdraw money at an ATM or transfer using mobile banking or something similar. The problem that occurs is that sometimes there are queues at the ATM and not all buyers activate mobile banking. In fact, sometimes you don't end up buying an item that you have bargained for/liked, it's just a matter of a difficult transaction process. The presence of EDC banking machines can reduce the above problems. EDC is a transaction tool that is widely used today. Apart from ease of transactions, it also leaves several problems that need to be fixed. In this paper the author wants to analyze business processes and improvements so that they can minimize the risk of crime and lost property

Keywords: Electronic Data Capture (EDC), Banking transactions, Mobile banking, Business process analysis, Risk mitigation

I. INTRODUCTION

CIMB Niaga, originally established as PT Bank Niaga on September 26, 1955, has always prioritized core values and professionalism within the banking industry. This dedication has made it a respected source for high-quality banking products and services [1]. In 1987, it led the Indonesian banking sector into the modern era by being the first local bank to introduce ATM services. This step marked a significant milestone for the country's banking technology [2]. The bank continued to pave the way in technological advancements by being the first in Indonesia to offer online banking services to its customers in 1991 [3]. CIMB Niaga's mission is to be recognized as a dependable banking institution within Indonesia and to be a part of the foremost universal banking network in Southeast Asia [4]. This involves understanding customer needs, delivering suitable and comprehensive financial solutions, and nurturing lasting relationships.

To become a trusted bank in Indonesia, CIMB Niaga emphasizes several aspects, all of which focus on customer satisfaction with CIMB Niaga services [5]. Three main things, namely:

- 1) Understand customer needs
- 2) Providing appropriate and comprehensive financial solutions
- 3) Establish sustainable relationships.

CIMB Niaga also applies several core values that are always adhered to in supporting the company's vision, namely:

- 1) Integrity is everything.

Act honestly, sincerely and reliably in making decisions based on professionalism.

- 2) Always put Customer first

Helping, serving to meet or anticipate stakeholder needs and creating added value and solutions that exceed customer expectations as well as empowering human resources and supporting them to unleash their superior potential [6].

- 3) Passion for excellence

Providing the best quality of every product, service and work process and applying open and responsible leadership for the decisions made and emphasizing the importance of achieving success, building a sense of trust and mutual respect in a healthy competitive environment.

II. LITERATURE REVIEW

A. Business process

Business management is a comprehensive regulatory effort to carry out the required business efforts and produce the desired business goals. Business management is needed to achieve a goal, a business venture, both in terms of profit and other goals as desired by the business manager. A regulatory process is needed so that the business is able to run as desired and is able to plan, target the desired targets and be able to anticipate possible business risks [7]. The correct business process can reduce a company's operational costs in producing its output products. Standardized business processes can also increase production effectiveness. At every stage of the business process that a company goes through, it always has targets that must be achieved in accordance with its vision and mission [8]. Each stage of the business process always involves areas of work that are in accordance with the targets at that stage so that each target at that stage contains knowledge which, if managed well, will improve company performance.

B. EDC (Electronic Data Capture) Product Identification

CIMB Niaga itself has provided transactions using an EDC machine to expedite transactions. EDC services at CIMB Niaga support banking business transactions.

EDC (Electronic Data Capture) in banking is a means of expediting transactions at trade outlets. Many buyers do not bring cash to buy the goods they want [9]. The presence of EDC machines can reduce problems such as

queues at ATMs which make visitors uncomfortable. Another benefit of EDC Banking is in handling cash. The problem of counterfeit money, miscalculations in both receiving and returning it at outlets or criminal acts that are rampant regarding cash. In Indonesia, it is still a topic of considerable concern. So BI (Bank Indonesia) is promoting e-money [10]. One of the facilities is EDC banking to minimize the circulation of cash.

Now many banks have issued EDC Banking as a means for their customers to make transactions at their outlets. The regulations at each bank are also different, but are basically the same because the reference has been set by BI (Bank Indonesia). Some banks have even appointed third parties to manage applications for banking EDC machines [11]. It is hoped that the management of banking EDC applications submitted to third parties will increase the circulation of banking EDC machines, especially in the trading area.

C. Hierarchical Process

In the deposit hierarchy process, it is divided into 3, namely cash, transfer and payment. Cash can be made by coming to a branch office or via ATM. Meanwhile, transfers are made at branch offices, ATMs, iBanking and mobile banking. For self-payment, you can make payments at branch offices, ATMs, iBanking, Mobile Banking, eCommerce. The eCommerce transaction here itself is a means of payment using EDC (electronic data capture) or point of sales.

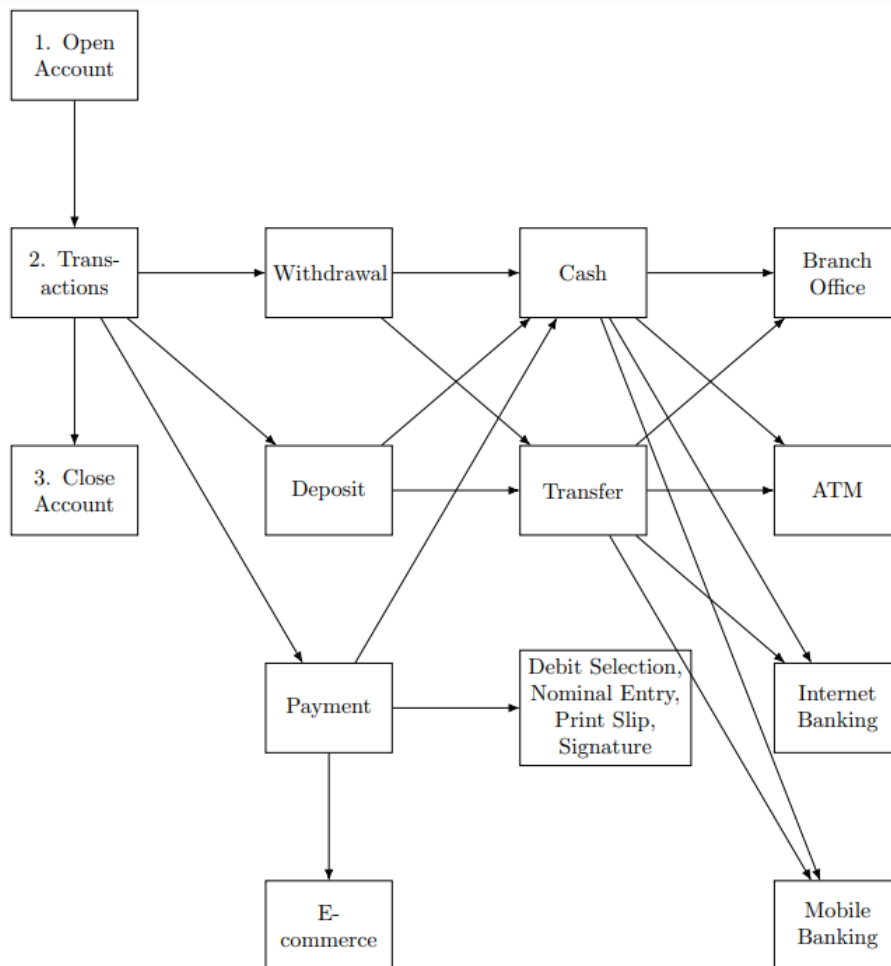


Fig. 1. Hierarchy Process

In the circled part you can see the process being broken down, namely the payment process using EDC.

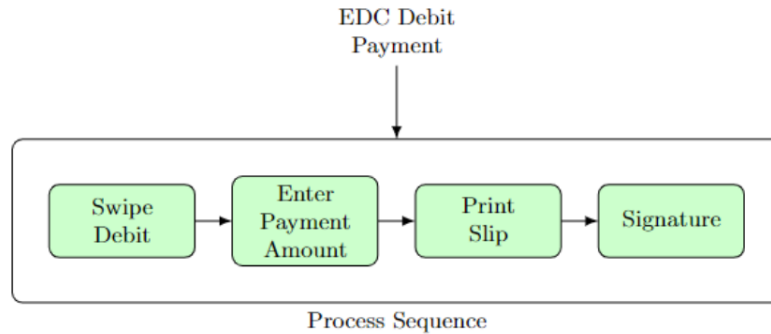


Fig. 2. Sequence Process

At this stage the author wants to explain the business process for Electronic Data Capture (EDC) payments using a debit card. As explained above, EDC itself is a transaction tool that is widely used today. Apart from the ease of transactions, there are also several problems that need to be fixed. Some EDCs still use authentication using signatures. The seller only matches the signature on the card with the transaction slip. This is very vulnerable. These are the EDC business processes that use authentication with signatures as well as the proposed improvement business processes.

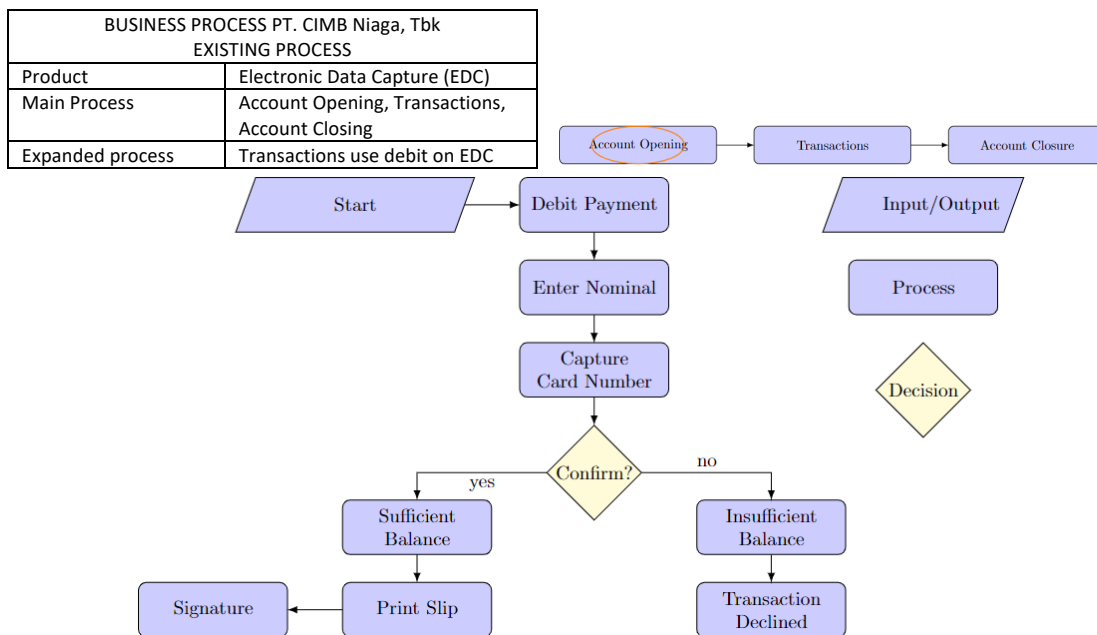


Fig. 3. Existing Business Process

BUSINESS PROCESS PT. CIMB Niaga, Tbk IMPROVEMENT PROCESS	
Improvements	Use of Pin, SMS Notification
Performance Measures	Transaction Security, Reducing Investigation Costs, Reducing Compensation Costs

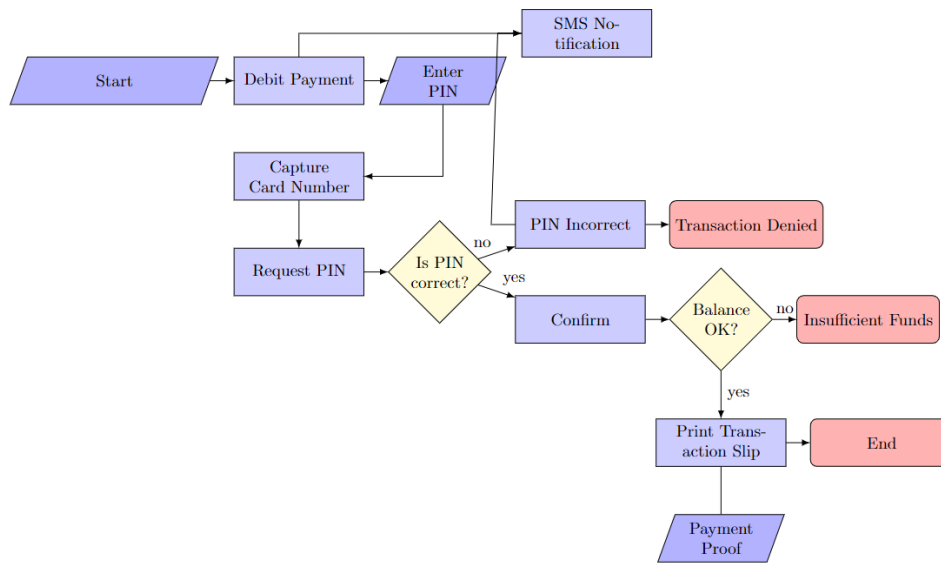


Fig. 4. Business Process Improvement

D. Existing Business Process Performance

EDC is a payment tool that is widely used today. Here we will explain the processes that occur in the existing process. At the payment stage after the buyer gets the desired item and can make payment using EDC. After the buyer submits his debit to the cashier, the cashier will swipe the EDC machine and enter the nominal amount of the purchase. After that, the machine will check whether the card is still valid or declined and will check the balance in the bank database whether it is sufficient to make a payment or not. If the card is declined, the card will be returned to the buyer. And if the card is still valid and has sufficient balance, a slip will be printed. After the slip is printed, the buyer must sign the slip and the cashier matches the signature on the back of the card.

III. Results And Discussion

A. Decision Making Analysis

In the existing business process for CIMB Niaga bank, it has been described that making a payment only requires a signature that is matched to the signature on the back of the card. This is the point of the problem, if someone loses their debit card and someone else finds it, there is a big possibility that person can drain the contents of the account and use it for shopping by just forging a signature. This process is very risky and has happened several times. Therefore, it is necessary to improve business processes in transactions using EDC. This is done solely to protect customer assets and maintain the bank's credibility and so that incidents like this do not happen again in the future.

B. Improvement Analysis

At this stage, improvements to business processes are proposed. With the new proposed business process here, we use or activate the pin feature after swiping the card so that future theft can be prevented. And if the card is lost and the thief knows the pin, an SMS notification can be made to notify you more quickly about account theft. So that action can be taken. This process is very useful for reducing investigation costs in the event of theft and compensation costs for customer assets in order to maintain the bank's credibility. Several

banks have implemented the use of pins on some of their EDC machines, such as Bank Mandiri, Bank BCA, but have not yet implemented SMS notifications. SMS notification itself has been implemented independently for transactions receiving money into accounts and sending money into accounts but has not yet been implemented for transactions using EDC.

C. Indicators or measurements with a balanced business scorecard

Here we will use simulation with the Balanced Business Scorecard. According to Paul Harmont, the Balanced Business Scorecard is divided into 4 parts, namely:

- 1) Financial Perspective is a measurement seen from a financial point of view.
- 2) Customer Perspective is a measurement seen from the consumer's point of view.
- 3) Internal Business Perspective is a measurement seen from the company's point of view
- 4) Innovation and learning perspective is a measurement in terms of innovation and technology.

TABLE I
 FINANCIAL PERSPECTIVE BUSINESS SCORECARD

Financial Perspective	
Goals	Measures
Reduce costs	<ol style="list-style-type: none"> 1. Reduced compensation costs if theft occurs with EDC. 2. Reduced investigation costs if a crime occurs due to EDC transactions. 3. Cost optimization in terms of maintenance.
Increase sourced income	<ol style="list-style-type: none"> 1. Increase income due to increased consumer confidence. 2. Increase income from using EDC. 3. Increase the number of EDC users. 4. Increase the amount per transaction from EDC.

TABLE II
 CUSTOMER PERSPECTIVE BUSINESS SCORECARD

Customer Perspective	
Goals	Measures
Improving the quality of EDC service to customers	<ol style="list-style-type: none"> 1. Increase consumer confidence. 2. Reduced number of complaints submitted to customer service. 3. Increasing number of EDC users. 4. The increase in the number of transactions resulting from the use of EDC. 5. Increased number of satisfied customers based on surveys.
Improves EDC user-friendliness	<ol style="list-style-type: none"> 1. Increase the number of customer satisfaction. 2. Increase the number of EDC users. 3. Reduced number of frauds. 4. Reduced number of fraud attempts.
Increase customer satisfaction	<ol style="list-style-type: none"> 1. Low transaction failure rate. 2. It's easy to use the EDC feature.

TABLE III
 INTERNAL BUSINESS PERSPECTIVE BUSINESS SCORECARD

Internal Business Perspective	
Goals	Measures
Optimize resources	<ol style="list-style-type: none"> 1. Maintain company credibility. 2. Reduced number of human resources allocated for handling fraud. 3. Reduced amount of investigation or compensation funds.
Database optimization	<ol style="list-style-type: none"> 1. High level of ease of data mining process 2. There is a fast and real-time level of data collection.
Support business units	<ol style="list-style-type: none"> 1. Supporting businesses in carrying out transactions.

TABLE IV
INNOVATION AND LEARNING PERSPECTIVE BUSINESS SCORECARD

Innovation and Learning Perspective	
Goals	Measures
Competent human resources	<ol style="list-style-type: none"> 1. Competent and specialist human resources are available in managing existing systems/infrastructure. 2. Available human resources who can flexibly adopt technology and dynamic information system developments.
To support the company's short-term and long-term strategies	<ol style="list-style-type: none"> 1. There is an infrastructure and responsive system to reduce risk.
To support on demand banking model	<ol style="list-style-type: none"> 1. High level of flexibility of systems and infrastructure to accommodate business needs. 2. High level of compatibility of systems and infrastructure to accommodate business needs.

IV. Conclusion

There needs to be improvements in the transaction process using EDC to improve performance and business process performance. Improvements that can be made by CIMB Niaga bank include activating the pin feature, updating the EDC machine which supports the use of pins and developing a system that can send SMS notifications. This is important to do in order to maintain consumer trust and to maintain the company's credibility considering that CIMB Niaga is the 5th largest bank in Indonesia.

REFERENCES

- [1] Harmon, P. (2007): "Business Process Change, A Guide For Business Managers and BPM and Six Sigma Professionals, Second Edition". Morgan Kaufman.
- [2] Porter, M. E. (1985) : "Competitive Advantage – Creating a Sustaining Superior Performance" The Free Press, New York, NY.
- [3] Annual Report CIMB Niaga <http://www.cimbniaga.co.id> (accessed 10 April 2012).
- [4] Alkhowaiter WA. Digital payment and banking adoption research in Gulf countries: A systematic literature review. *International Journal of Information Management*. 2020 Aug 1;53:102102.
- [5] Darma GS, Noviana IP. Exploring digital marketing strategies during the new normal era in enhancing the use of digital payment. *Jurnal Mantik*. 2020 Nov 30;4(3):2257-62.
- [6] Najib M, Fahma F. Investigating the adoption of digital payment system through an extended technology acceptance model: An insight from the Indonesian small and medium enterprises. *International Journal on Advanced Science, Engineering and Information Technology*. 2020 Aug 10;10(4):1702-8.
- [7] Niankara I. The impact of financial inclusion on digital payment solution uptake within the gulf cooperation council economies. *International Journal of Innovation Studies*. 2023 Mar 1;7(1):1-7.
- [8] Schiansky P, Kalb J, Sztatecsny E, Roehsner MC, Guggemos T, Trenti A, Bozzio M, Walther P. Demonstration of quantum-digital payments. *nature communications*. 2023 Jun 29;14(1):3849.
- [9] Xia H, Gao Y, Zhang JZ. Understanding the adoption context of China's digital currency electronic payment. *Financial Innovation*. 2023 Mar 2;9(1):63.
- [10] Bhuiyan MR, Akter MS, Islam S. How does digital payment transform society as a cashless society? An empirical study in the developing economy. *Journal of Science and Technology Policy Management*. 2024 Jan 18.
- [11] Fatma M, Ruzikna R. Pengaruh Penggunaan E-Commerce Dan Digital Payment Terhadap Pendapatan UMKM (Studi Kasus Pada UMKM Sektor Kuliner Kecamatan Tuah Madani Kota Pekanbaru). *Management Studies and Entrepreneurship Journal (MSEJ)*. 2024 Mar 3;5(2):3518-65.