Jurnal Pendidikan dan Konseling
Volume 4 Nomor 5 Tahun 2022
E-ISSN: 2685-936X dan P-ISSN: 2685-9351
Universitas Pahlawan Tuanku Tambusai

# Business Process Management Transformation: Loan E-Restructuring For Small-Medium Enterprise Debtors Affected By Covid-19 Pandemic In Bank XYZ

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**Abstrak**

Pandemi COVID-19 telah memberikan dampak yang luar biasa bagi kehidupan manusia, termasuk akselerasi digital dalam perbankan. Salah satu usaha bank adalah memberikan kredit kepada Usaha Kecil Menengah (UKM) yang juga terkena dampak pandemi COVID-19 dan tentunya memerlukan penyesuaian kembali dalam fasilitas kreditnya yang lebih dikenal dengan Relaksasi/Restrukturisasi kredit. Di Bank XYZ, proses persetujuan restrukturisasi kredit dilakukan secara manual dan memakan waktu. Proses ini perlu diotomatisasi atau diubah agar lebih efektif, efisien, dan objektif. Bank harus mampu menganalisis dan mengambil keputusan dengan cepat dengan tetap menjaga prinsip 5C. Penelitian ini bertujuan untuk mengkaji dan mentransformasikan proses restrukturisasi kredit debitur UKM. Fokusnya adalah pada optimalisasi E-Restrukturisasi pinjaman melalui Manajemen Proses Bisnis, menggunakan kerangka kerja tujuh langkah dan tiga komponen inti BPM (manusia, proses, dan teknologi). Hasil penelitian ini ditunjukkan melalui Notasi Pemodelan Proses Bisnis yang disederhanakan. Penelitian ini menjadi masukan untuk membantu debitur dan perbankan menghadapi pandemi COVID-19, mempertahankan bisnis, dan memulai pemulihan ekonomi. Diharapkan setelah pandemi, proses ini dapat diterapkan di segmen bisnis lain di bank.
**Kata Kunci:** *Pandemi COVID-19, UKM, E-Restructuring, Manajemen Proses Bisnis, Notasi Pemodelan Proses Bisnis.*

**Abstract**

The COVID-19 pandemic has had a tremendous impact on human life, including digital acceleration in banking. One of the bank's businesses is to provide credit to Small and Medium Enterprises (SMEs) which are also affected by the COVID-19 pandemic and of course require readjustments in their credit facilities, better known as loans Relaxation/Restructuring. In Bank XYZ, the loan restructuring approval process has been done manually and takes time. This process needs to be automated or transformed to be more effective, efficient, and objective. Banks must be able to analyze and make decisions quickly while maintaining the 5C principles. This research aims to review and transform the loan restructuring process of SME debtors. It’s focused on optimizing loan E-Restructuring through Business Process Management, using a seven-step framework and three core components of BPM (people, processes, and technology). The results of this study are shown through the simplified Business Process Modeling Notation. This research is an input to help debtors and banks face the COVID-19 pandemic, maintain business, and start economic recovery. It is hoped that after the pandemic, this process can be applied in other business segments in the bank.
**Keywords:** *COVID-19 Pandemic, SMEs, E-Restructuring, Business Process Management, Business Process Modeling Notation.*

## INTRODUCTION

The world was forced to change at the end of 2019 through the COVID-19 virus from Wuhan, China, in December 2019. The virus spread so fast, caused uncertainty for humans, and instantly became a pandemic. The virus entered Indonesia in February 2019. The Coronavirus (COVID-19) affected various aspects of life. First, it impacted the health aspect, then continued the social, educational, religious, and economic factors. The demand for goods and services decreased during this period [1], although there was an increase in demand via the marketplace over time. This situation is difficult for developing countries [2], especially for countries with large populations and dominated by micro, small and medium industries (MSMEs) as economic support as Indonesia. Business actors from various sectors experienced a significant decline in sales turnover with limited community activities [3]. Many businesses have stopped their business operations temporarily, at least until things get back to normal. One thing that must be considered during this period is business sustainability [4]. It is also highlighted the importance of extending loans to support the economy [5]. Business owners have difficulty maintaining income, so there is a failure to pay debt obligations to banks. This is a big risk for banks, and then it will be reflected in the level of credit risk and bank financial performance. There is a significant difference in NPLs before and after the announcement of Covid-19. [6]

The solution for debtors to relax bank loans due to the pandemic is restructuring. Restructuring is one of the best legal solutions to the crisis. The Indonesian government also issued a loan relaxation policy during the spread of the Coronavirus (COVID-19) outbreak. This policy provides relief for all banking debtors affected by the Coronavirus (COVID-19) and is expected to help business people maintain their business continuity. The loan relaxation policy is expected to be a banking stimulus issued by the government through the Financial Services Authority Regulation Number 11/POJK.03/2020 and renewed by Number 17/POJK.03/2021, which includes six restructuring alternatives, namely by: 1. lowering interest rates; 2. extension of the period; 3. reduction of principal arrears; 4. reduction of interest arrears; 5. additional loan or financing facilities; and or 6. conversion of loan/financing into Temporary Equity Participation.

Since then, many banks have started to automate customer restructuring projects to simplify administration and shorten the processing time required, so that the Bank can focus on its business. The bank here is one of the largest banks in the world from China and acquired two Banks in Indonesia. It has 1 Head Office, 21 Branch Offices, 52 Sub-Branch Offices and 13 Cash Offices, spread across cities in Indonesia such as Jakarta, Bandung, Semarang, Solo, Yogyakarta, Surabaya, Denpasar Bali, Mataram Lombok, Palembang, Bandar Lampung, Batam, Pekanbaru, Pontianak, Makassar and Pangkal Pinang. The Bank, as a commercial bank, is also required to implement this policy, in addition to helping customers maintain their business continuity. And currently, at the bank, the process of applying for debt restructuring for debtors affected by COVID-19 is still manual, so it requires a longer work process, is time-consuming and increases risks for both customers and The Bank itself. The loan restructuring process is divided into three periods before the pandemic, from the pandemic until now and later after the pandemic period ends.

It is essential that companies have the right tools, technology and skills to deal with this crisis. Companies must have an innovative approach to respond to this pandemic, including enabling workforce, communication, collaboration, and business transformation. It is time to quickly move from manual, people-dependent processes and switch them to automation and orchestration to reduce complexity. [7]

This research focuses on the objective of optimization the business process for the implementation of loan E-Restructuring, reducing the risk of problems occurring in the implementation of loan E-Restructuring by standardizing and automating loan restructuring applications, transforming conventional processes into digital for loan e-restructuring to speed up loan restructuring process and reduce subjectivity in decision making E-loan restructuring. Companies today revolve around the idea of Service-Oriented Architecture and Business Process Management (BPM) is seen as an essential building block of SOA. One of the best ways to begin E-restructuring is by using Business Process Modeling Notation (BPMN) as the new standard to model business process flows.

Based on research, Covid-19 Pandemic affects many sectors and causes significant changes, including the health sector, pharmaceuticals, financial services, and professional services. Many traditional organizations attempt to reshape their business processes by examining processes that drift apart from their routines.[8]

It's safe to suppose that business processes were redesigned in an unanticipated and revolutionary manner at an abnormal speed. This is now seen as a positive effect of the digital adoption and acceleration pandemic, which previously can take several years to come at this point. Still, now it only took months, [9] as shown in figure 1.

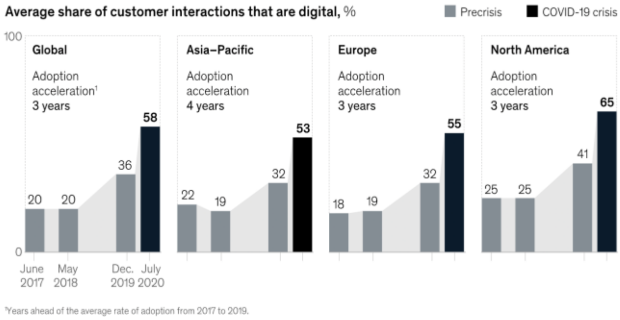


**Figure 1. Digital Acceleration before and after Covid-19**

Figure 1 shows that people in the world significantly enjoy and are accustomed to the adoption of technology to simplify their daily activities. Of course, COVID-19 is one of the main factors accelerating digital adoption.

When defining digital transformation, it's important to remember that it's a comprehensive, holistic concept that redesigns core processes and changes culture, organization, relationships, and business models, allowing long-term delivery of sustainable outcomes and the creation of value for citizens and organizations.[10]

Covid-19 has revolutionized the way of digitalization and with the digital transformation era, providing scientific evidence for process redesign is an advantage, so it can bring economic effects and reduce the administrative burden.

There are several factors determining digital transformation according to practitioners' insights, such as: developing digital transformation strategy and aligning governance up to the challenges facing, continuous business process digitalization that are identified and well prepared so that it will be aligned with requirements, efficiency and compliance, building organizational culture (know-how, leadership, workforce skills, upskill and enabling talent), planning and implementation of appropriate IT infrastructure that allows digitalization. [11]

Organizations adopt creative ways of doing business in parallel with their existing information systems when evolving technology produces disruptive shifts.[12] An explorative BPM strategy is more adaptive, flexible, informal, open, agile, and creative for unpredictable business processes to achieve a relative competitive advantage from digital innovation.[13]

BPM is defined as "supporting business processes by using methods, techniques, and software to design, enact, control, and analyze operational processes involving humans, organizations, applications, documents, and other sources of information," further connecting BPM from modelers to organizations, their administration, and their customers. [14]

To make radical business process modifications better and accepted by managers and practitioners, a new paradigm can be added to the area of BPM.[15]

[16] uses ambidexterity theory to understand the seemingly opposing but complementary forces of continuous process improvement (i.e., BPM exploitation) and digital process innovation for this goal (i.e., BPM exploration). They also used the metaphor of a tree, which is meant to emphasize a natural progression toward process performance, to create a symbolic model for the BPM discipline to show its organic structure and links with the environment of an organization. BPM ambidexterity is experienced by offering work alternatives for continuous usage after the Covid-19 pandemic end.

BPMN provides flexibility by using two levels of information representation, a graphical notation that is easily understood, and BPMN constructs to redefine a set of specific attributes. This ability to define attributes and user-specific activities and procedures makes BPMN as one of the preferable options and easy to comprehend.[17]

Legal relaxation of bank loans is an easing of loan terms, both financial and non-financial, to provide convenience to banking customers [18]. Restructuring is one of banks' efforts to overcome this risk that increased significantly due to the Covid-19 pandemic. Restructuring is necessary for the banking system to avoid future losses. [19]

Loan restructuring is predicted to make it easier for debtors to fulfill their debt obligations to the bank, so its liquidity will be maintained. The Bank needs to accelerate process improvement, which requires these tasks: analysis of existing processes, changing existing processes, developing new processes, deploying new and modified processes through Bank, training staffs and must leave inefficient old processes. [17] So Bank must focus at least on the following: Reduction in the duration of loan process implementation, time of implementation reduction, Cost Reduction and Quality Improvement.

Compared to previous studies, this research will focus on research in the SME sector in particular, and credit restructuring in general. This study also discusses the restructuring of these debtors due to the impact of the Covid-19 pandemic that has occurred since late 2019.

BPM will be made by comparing the current process, and the proposed process that can be used, in order to shorten the SLA time of each part involved, as well as standardize the assessment of the debtor, in order to facilitate the assessment. The criteria used are 5 C's, including character, capacity, capital, collateral and condition.

Other results that are expected to be obtained from this research are in the form of an alternative sequence of suggestions or choices of prospective customers who are eligible for credit restructuring. These results can provide assessment considerations to the bank to determine the best solution in determining prospective customers who are eligible for credit.

**METODE**

The research method related to loan e-restructuring is qualitative research with an observational approach. This approach was chosen to examine the availability of detailed descriptions of the phenomenon more deeply. A qualitative approach also encourages understanding the substance of an event. Thus, qualitative research is not only to fulfill the researcher's desire to get an overview/explanation but also help to get a more profound explanation. [20]

This research uses primary and secondary data. The data used in this study is primary data, namely data obtained from sources that researchers specifically collected. The data collection technique of this research was carried out through observation, Standard Operating Procedures, the

Bank has an internal memo and other tools the Bank has. While secondary data is obtained by researchers indirectly or through the mediation of other media, such as books, notes, journals, archives, both published and not published in general.

This research's stages include collecting data and mapping business processes for restructuring. After that, data collection on SME debtors at the bank were carried out. After the identification and problem formulation process and literature study and observation, the researcher will ask some of the loan process' members. This stage is to dig up information to the committee and loan proposers covering the following variables: 5C debtor indicator, steps of processes taken, along with the existing sub-processes and their completeness, and then interpreting to get proposals for improving Business Process Management, primarily related to restructuring SME debtors affected by COVID-19. BPMN for loan processes at current condition was drawn and after some discussion and considerations, new or modified BPMN with simpler processes was described. The last step is making conclusions and suggestions. Draw conclusions that are the results of research that has been carried out to be used as a tool that can help debtors and the bank jointly face the COVID-19 pandemic and maintain business continuity and start economic growth.

One of the related data in this study is related to the restructuring trend in Indonesia during this Covid which was obtained from the The Financial Services Authority (OJK), noted that bank credit restructuring continued to slope after the COVID-19 pandemic passed its third year in Indonesia.

**Table 1. Total Loan and SME**

| | Total Loan | | SME | |
|---|---|---|---|---|
| **Period** | **NoA** | **Amount** | **NoA** | **Amount** |
| Apr 20 | 1,02 mio | 207,2 T | 0,8 mio | 99,3 T |
| Jun 20 | 6,56 mio | 740,79 T | 5,29 mio | 317,29 T |
| Oct 20 | 7,53 mio | 1.113,93 T | 5,84 mio | 369,8 T |
| Nov 20 | 7,5 mio | 951,2 T | 5,8 mio | 382 T |
| Dec 20 | 7,6 mio | 971 T | 5,8 mio | 386,6 T |
| Mar 21 | 5,55 mio | 808,75 T | 3,89 mio | 310,5 T |
| Jul 21 | 5 mio | 778,9 T | 3,58 mio | 285 T |
| Dec 21 | 4 mio | 663,49 T | 3,11 mio | 256,73 T |
| Jan 22 | 3,7 mio | 654,64 T | 2,96 mio | 251,93 T |
| Feb 22 | 3,7 mio | 638,2 T | 2,84 mio | 244,7 T |

The population under study is Bank XYZ Debtors. And the sample used is Bank XYZ SME Debtors, or internally the Bank is better known as the Commercial Express Division (Comex).

The following is a description of Bank XYZ debtors from 21 branches and 61 sub-branches:

**Table 2. Bank XYZ's Debtors Nominative**

| No | Region | Corporate | Commercial | Comex | Consumer | Total |
|---|---|---|---|---|---|---|
| 1 | Jakarta I | 37 | 84 | 189 | 367 | 207 |
| 2 | Jakarta II & East Ind. | 26 | 87 | 170 | 356 | 189 |
| 3 | Jakarta III & Karawang | 11 | 79 | 137 | 365 | 172 |
| 4 | West Java | 2 | 31 | 82 | 17 | 62 |
| 5 | Central Java & Yogyakarta | 1 | 22 | 81 | 26 | 40 |
| 6 | East Java, Bali & Nusa Tenggara | 1 | 19 | 111 | 38 | 59 |
| 7 | North Sumatra | 1 | 28 | 71 | 45 | 55 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 8 | Tangerang & South Sumatra | 2 | 30 | 121 | 305 | 88 |
| | **TOTAL** | **81** | **380** | **962** | **1.519** | **2.942** |

Based on previous research, the discussion is divided into several aspects, namely:

1. Regulatory studies: Influence on the management and utilization of the BPO (Business Process Optimization) framework in terms of loan e-restructuring for the Small Medium Enterprise segment
2. Utilization of Information Technology: Influencing the readiness of banks as creditor and debtor readiness in terms of implementing loan e-restructuring
3. Other similar scientific articles: They influence the selection of best practices for modeling information systems related to loan restructuring and as a benchmark.

After the pandemic, this opportunity should be fully exploited to assess the lockdown periods to develop a more sophisticated business case in which the learned deviations can be integrated into more agile ways of modeling, executing, measuring, and optimizing the business process rather than reverting to old procedures. And can assist organizations in overcoming the economic catastrophe that has resulted.

In terms of management, BPM exploration helps companies take a long-term perspective by attempting to get greater business value from pandemic effects.

## RESULTS AND DISCUSSION

### Development of Loan Distribution in the period before the COVID-19 pandemic

**1.** Small Medium Enterprise Loan Segmentation in the period before the COVID-19 pandemic

2018 was the period before the pandemic entered Indonesia. This scientific article focuses on the SME segment, along with the results of the exploration of the growth or development of SME loans in 2018, which is divided into four quarters, as shown by the table below:

**Table 3. SME Loan Outgrowth Report 2018 [21]**

| Quarter | Outstanding | Growth (% YoY) | SME Composition to total Credit | NoA Loan |
|---|---|---|---|---|
| Q1 | 987,5 T | 9,8% | 20% | 16 million |
| Q2 | 1.025,7 T | 9,6% | 20% | 16,2 million |
| Q3 | 1.037,6 T | 9,6% | 19,6% | 16,4 million |
| Q4 | 1.086 T | 9,7% | 19,9% | 16,3 million |

**2.** Restructuring rules before the COVID-19 pandemic

In order to maintain bank health stability and offer public business capital, the proper and efficient non-performing loan settlement model is the primary option. Non-performing loans can be rectified through loan management. The handling of loans that have already reached the non-performing quality level is reinforced through several more legal initiatives. Settlement of loan management according to Financial Services Authority Regulation No. 11/POJK/03/2015 concerning "Prudential Provisions in the Context of National Economic Stimulus for Commercial Banks" is as follows:

**a.** Rescheduling, which entails modifications in loan terms for the customer, payment plan and/or term, includes the grace period or modifications in the quantity of installments.

**b.** Reconditioning, which entails modifying some or all the loan terms, include, but are not limited to, changes in payment plans, periods, and other factors and/or other requirements, as long as they do not necessitate a change in the way things are done, such as the maximum loan limit, as well as the conversion of the entire loan or a portion of its participation in the banking system.

**c.** Restructuring, which entails a change in loan terms in the form of a new loan; and/or conversion of the entire or a portion of the interest arrears into new loan principal, and/or conversion of all or part of the loan principal an amount of the loan is converted into equity in the company.

**Development of Loan Distribution DURING the COVID-19 pandemic**

In 2020, Loan restructuring during the COVID-19 pandemic, 561,950 debtors have been successfully restructured with a total restructuring value of Rp113.8 T (total loans), and 522,728 were MSME debtors with a comprehensive restructuring value for MSME debtors of Rp. 60.9T (53.5% of the entire loan composition) [22].

1. Three Components of BPM

The basic components of any BPM strategy involve processes, people, and technology.


**Figure 2. BPM Components**

The three components are described and applied to the credit process as follows:

**Table 4. BPM Components in Loan Process**

| | |
|---|---|
| People | Relationship Manager, Branch Manager, Sub-Branch Manager, Regional Head, SME Division, IT Division, Credit Reviewers, Directors, and customers |
| Processes | SME Credit Restructure Process |
| Technology | E-restructure of SME |

2. BPM Framework Implementation

The BPM Framework used was developed by John Jeston and Johan Nelis, which includes a strategic component. If applied in the credit process are as follows:

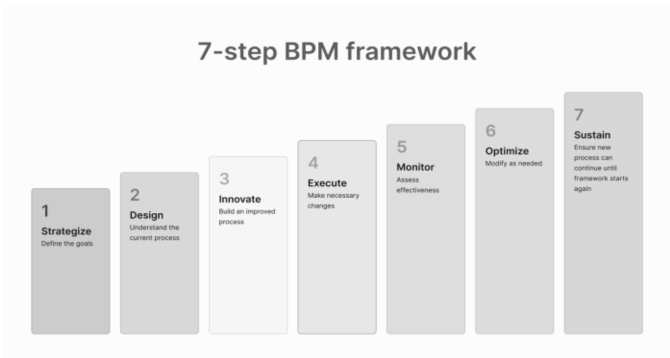


**Figure 3. BPM Framework**

The details of the stages of the BPM Framework obtained from observations and discussions with several credit committees and managerial teams involved are as follows:

**Phase 1 – Strategize:**

In this stage, the Bank determines the final goal to be achieved and also determines the resources involved, including the PIC, implementation period, success criteria and determines the impact or effect of the change on the stakeholders.

**Table 5. Phase 1 (Strategize)**

| **Objective / Goal** | **Improving the effectiveness and efficiency of the SME loan restructuring process by implementing an information system, thus transforming it into an "SME loan e-restructuring".** |
|---|---|
| Available Resources | 1. **Financial Resources:** system development costs as stated in the Cost Budget Plan and Bank Business Plan.<br>2. **Human Resources:** IT division as drafter and implementer, SME division as business and product owner, Branch representative and management as user from the bank side, and customer as end user.<br>3. **Educational Resources:** Bank internal regulations and regulatory rules in the form of POJK and PBI.<br>4. **Physical Resources:** IT infrastructure in Information System implementation. |
| Timeframe | 1. **Planning Phase:** excavation planning and system requirements exploration for the specific module of SME credit e-restructuring carried out in Q1 (1 quarter).<br>2. **Development Phase:** system development for the specific module of SME credit e-restructuring carried out in Q2-Q3 (2 quarters).<br>3. **Implementation Phase:** implementation of credit e-restructuring after the development period which could start in Q4. |
| Project Management | 1. **Product & Business Owner:** SME Division.<br>2. **IT Development and Planning:** IT Division. |
| Success Measurement | 1. **Financial Aspects:** increased fee-based income from the credit restructuring process and decreased percentage of NPL (Non-Performing Loans). Also, from reducing process costs.<br>2. **Customer Aspects:** gain convenience from the use of the information system with reduced administration and waiting periods of the credit restructuring process.<br>3. **Process Aspects:** increased speed of credit restructuring process services and reduced manual processes. |
| Impact | 1. **Bank Side:** increasing bank reputation in terms of digital transformation in Loan sector and effectiveness and efficiency.<br>2. **Customer Side:** increasing the level of customer satisfaction in doing business with the Bank, especially in terms of credit processing. |

**Phase 2 – Design**

The next stage is Discover and Design regarding the entire process that must be carried out to achieve the goals that have been set previously. Also identify bottlenecks in the process and what can be done to fix them.

**Table 6. Phase 2 (Design)**

| | |
|---|---|
| End to End Process | The adjustment/enhancement process is the SME loan restructuring process with the following stages:<br>**1.** The process of applying for SME credit restructuring.<br>**2.** SME credit structure analysis process.<br>**3.** SME loan restructuring approval process. |
| Workflows | Based on the end-to-end process for each stage, the parties involved include:<br>**1. Customers and Branch Representatives:** at the stage of submitting SME loan restructuring.<br>**2. SME Division:** at the stage of analyzing the SME credit structure.<br>**3. Director:** at the stage of approval of SME credit restructuring. |
| Error Handling | Handling of special cases end-to-end, namely:<br>1. Support from the Branch Representative in the SME loan restructuring application process.<br>2. Additional analysis and recommendations in case of deviations or anomalies in the SME loan restructuring analysis process.<br>3. An increase in the number of approvals if there is a deviation in credit approval (up one level). |
| Key Success Factors | 1. Compliance with regulatory rules (POJK, PBI, and internal bank regulations).<br>2. Adjustment of SOPs for the implementation of SME loan restructuring.<br>3. Information distribution to customers regarding the new SME loan restructuring process. |

**Phase 3 – Innovate**

In this stage, processes that can be improved or changes to processes can be developed to achieve process effectiveness and efficiency.

**Table 7.** Phase 3 (Innovate)

| | |
|---|---|
| Process Enhancement | **Existing Process to be adjusted.**<br>There are 5 swimlanes, namely:<br>**1. Debtors:** apply for credit restructuring and receive feedback from the bank.<br>**2. Branches/Clusters:** provide recommendations for general credit restructuring applications.<br>**3. SME Division:** provide additional recommendations from the SME side.<br>**4. Board of Directors:** approves restructuring approval based on recommendations in credit committee activities.<br>**5. Credit Operation:** setting / updating credit facilities from debtors to the core banking system. |
| Innovation | **1. Application Process:**<br>**a.** Making credit restructuring forms in a system for customers (e-form).<br>**b.** Upload credit restructuring administrative documents in a system for customers.<br>**2. Analysis process:**<br>**a.** 5C analysis systemically.<br>**b.** The scoring mechanism is based on the bank's risk management.<br>**c.** Specific aspects of the SME economic sector affected by the COVID-19 pandemic. |

| | |
|---|---|
| | **3. Approval process:**<br>**a.** The approval process uses information system media.<br>b. Digital signature mechanism. |
| Modified Aspects | **1. Application Process:**<br>**a. Prior to this,** submissions were made through paper forms (paper based).<br>**b. After**, submission via software (paperless).<br>**2. Analysis Process:**<br>**a. Before,** recommendations from credit analysts were manual (full human judgment).<br>**b. After,** recommendations from credit analysts in a systematic manner (assisted recommendation).<br>**3. Approval Process:**<br>a. Prior to the implementation of the credit committee in a face-to-face meeting.<br>**b. After,** the implementation of the credit committee virtually with the media information system. |
| Automated Aspects | **1. Application Process:** distribution of information from customers directly to the designated branch.<br>**2. Analysis Process:** an analytical process that uses a scoring mechanism as a weighting for SME credit risk.<br>**3. Approval Process:** appointment of an approver who is involved in making credit restructuring decisions. |

**Phase 4 – Execute**

Included in this stage is the stage of implementing or implementing changes by trial and error on the modifications made.

**Table 8. Phase 4 (Execute)**

| | |
|---|---|
| Implementation | There are 4 swimlanes, namely:<br>**Debtor** **:** Process the application online and get feedback from the bank.<br>**SME e-restructuring system:** Credit restructuring analysis process.<br>**Credit Committee** **:** Approval process supported by information system.<br>**Credit Operation** **:** The process of setting facilities to the core banking system. |
| Modification | Information system development with the following modules:<br>1. Customer Management (customer data integration with core banking, credit restructuring is intended for existing customers who still have active credit facilities)<br>2. Request Management Form (online form for credit restructuring submission)<br>3. Credit Analysis Management (managing credit applications supported by automation)<br>a. 5C analysis<br>b. Risk Based Scoring<br>c. List of affected economic sectors<br>d. List of customers who have previously restructured credit |

| | |
|---|---|
| | e. Debtor information data from OJK (SLIK)<br>4. Approval management<br>a. Risk based approval<br>b. Alternate approval<br>5. Document Generator (as the final approval process which becomes an official archive / document from the bank for the customer) |

**Phase 5 – Monitoring**

In this stage, supervision and control or assessment is carried out to measure the effectiveness of the new process using previously designed parameters.

**Table 9. Phase 5 (Monitoring)**

| **Assessment** | **Monitoring with KPI (Key Performance Indicators) from the company.** |
|---|---|
| Qualitative Metrics | Develop qualitative metrics to monitor the progress of improvement results: |
| | 1. Time of improvement. |
| | 2. Rate of error. |
| | 3. Transaction volume. |

**Phase 6 – Optimizing**

In this stage, after the evaluation, it is known whether the development or modification of the process carried out makes the performance better or is still too time consuming or other obstacles encountered. Other improvements need to be made or it is enough with the existing improvements if it is felt to meet expectations. Evaluations should be carried out periodically.

**Table 10. Phase 6 (Optimizing)**

| | |
|---|---|
| Evaluation | Evaluate and determine policies in order to continuously improve the performance of business processes, especially loans. |
| Adaptation | Adjust flexibly based on regulatory and internal bank regulations, as well as continuous communication with internal parties involved in the process. |

**Phase 7 – Sustain**

This stage ensures that the changes that have been made can continue in the long term.

**Table 11. Phase 7 (Sustain)**

| **Opportunity** | **Learn the keys to successful implementation that can be used in other business processes.** |
|---|---|
| Vision | Updating technology and business process management in order to increase effectiveness and efficiency. |

3. Business Process Gap Analysis

The credit restructuring process flow that was originally manual has become systemized to achieve efficiency and effectiveness of the work process flow as well as in terms of time and cost.

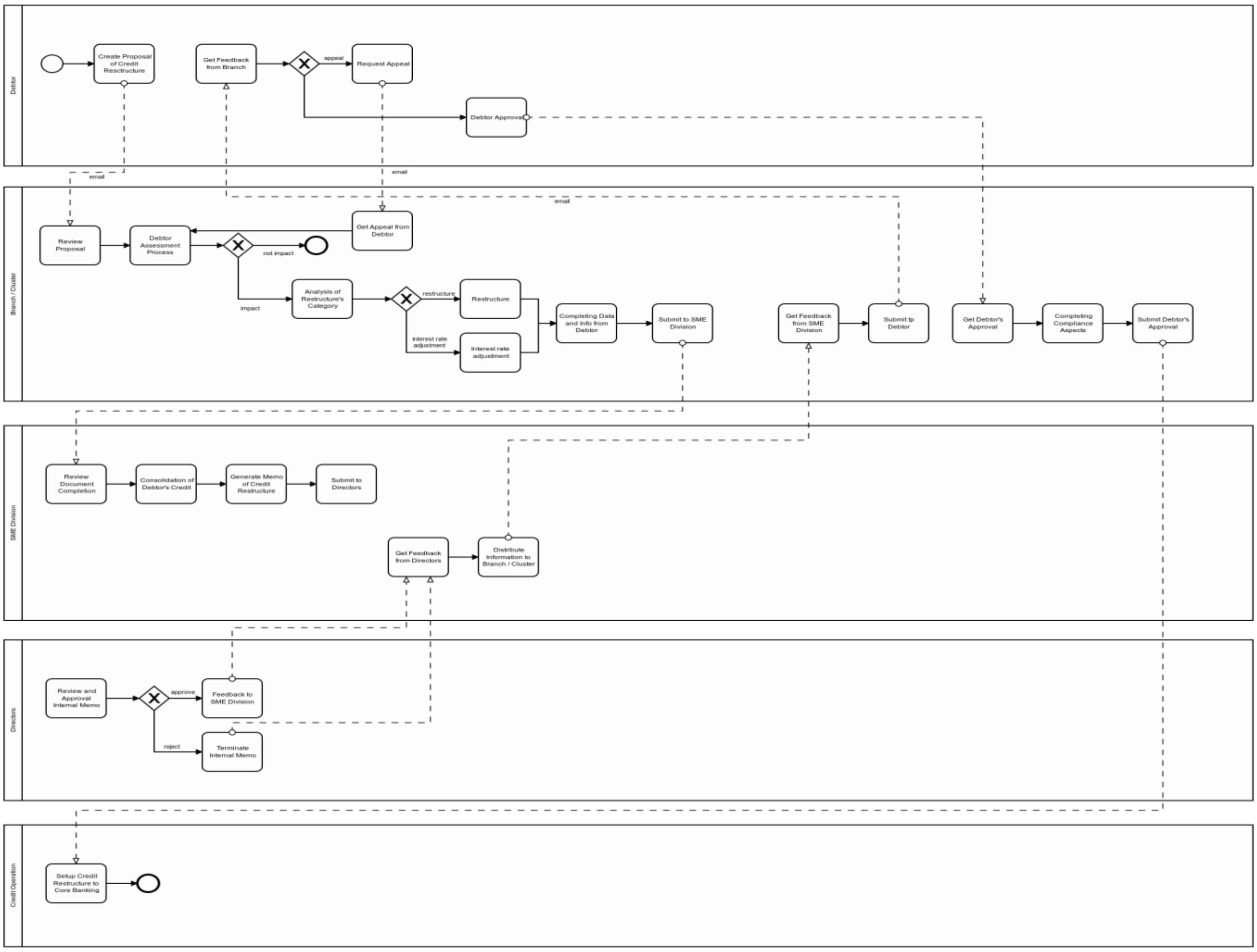


**Figure 4. Loan Reconstructing Process before technology implementation**

They were then related to the flow of the loan restructuring process, which was originally manual with the following flow, as describe in figure 4.

From the picture above, it can be seen that the existing process is contained in 5 lanes and 7 stages, and there are many sub-tasks that exist with all actions that require going back and forth between several parties.

It is an existing business process that takes a long time to process a credit restructuring application. This is an important factor in terms of service from the bank to customers, because this restructuring process is one of the keys to the success of SMEs in running a business that is currently constrained by financial factors.

The existing process flow for the restructuring proposal is as follows:

The debtor comes to the branch to fill out the loan restructuring application form and submits supporting documents completed by the debtor and submitted to the branch. Then the branch reviews the application by conducting an assessment of the debtor's profile (affected by covid-19 or not), analysis of the restructuring proposal (what credit facilities are affected and proposed for restructuring) and the branch will provide feedback if the application is rejected. Then the branch makes a choice of restructuring options (interest or installments). The Branch then asks the debtor to complete the complementary administration (optional) and the Branch continues the submission to the SME division.

The SME Division will check the completeness of documents, consolidate debtor's credit facilities and prepare a memo for applying for a credit restructuring and then send a memo of approval to the director as the credit committee.

The credit committee will provide the approval process. Approved or rejected results will be informed to the SME division. Which will then continue the approval / rejection information to the Branch. And then the Branch informs the results of the submission to the debtor. If the results are approved, you can proceed to another process. And if rejected, the decision returns to the debtor to appeal or not. And for appeals, the process is repeated from the beginning.

Transformed BPMN with simplified processes are suggested as the following, in the context of implementing information technology:

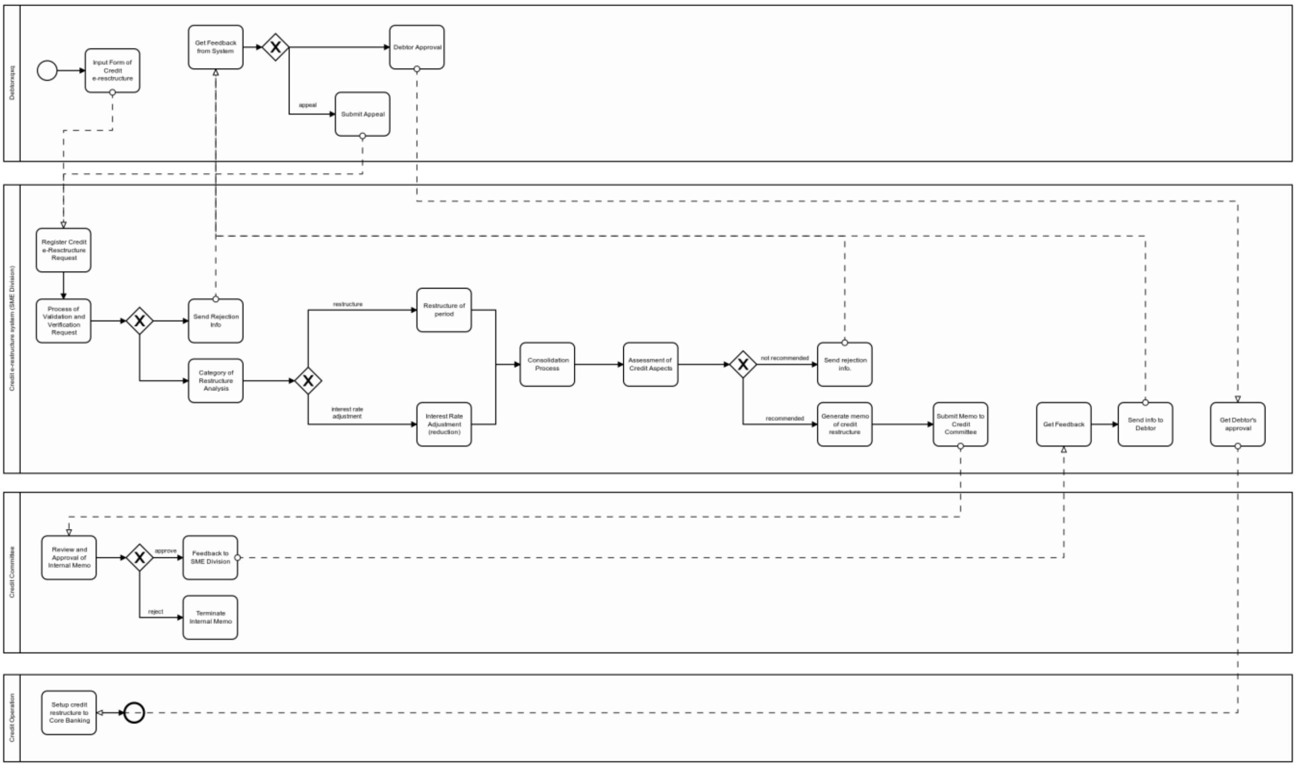


**Figure 5. Loan Reconstructing Process after technology implementation**

It is the result of improvisation of the previous business processes which initially always involved humans in every process, became systemized with the support of:

a. 5 C analysis
b. Scoring results
c. Approval assignment

In addition, documents that were originally paper based have become paperless with the support of a document generator.

The process flow for restructuring as a result of improvement is as follows:

Debtors fill out an online application form and upload supporting documents in accordance with bank regulations. The branch performs data verification and validation of the uploaded documents for the restructuring submission and sends rejection to the debtor if it is not verified and invalid.

The system then recommends a mechanism for restructuring the restructuring of interest and installments. The system also automatically performs credit analysis based on 5C indicators and credit risk scoring, as well as credit facility consolidation. The system then issues the results of the evaluation of the process with the following results:

a. Recommendation (system assigns to credit breaker and generates credit restructuring memo).
b. Not recommended (the system sends rejection info to the debtor).

The credit committee will do the approval based on the assignment from the system. The results are approved or rejected, will be informed to the SME division. Debtors can see the results of the existing online system of the Bank or information from the branch. For disapproved results, you can proceed to the next process and for rejected results, the debtor can file an appeal and repeat the process from the beginning.

From the image of the modification of the existing process, it can be seen that the lanes become 4 with more concise sub-tasks, and there are only 4 stages of the process. And back and forth documents that previously existed can be deleted and accessed together through the system that has been created.

From the flowchart, the initially manual process is in the following sections:

a. Initial data submission for loan restructuring applications by customers
b. Distribution of loan restructuring requests from branches/clusters/regions to the loan committee
c. Paper-based approval process at the loan committee already able to enter the system to increase the effectiveness and efficiency of the loan restructuring process to e-loan restructuring.

By applying BPM and using BPM, the quality and bank performance of loan processes could be increased substantially. The most important effects of the procedure presented are:

a. Cycle time could be reduced. Erasing double processes and back-and-forth processes, and as soon as a specific process step is finished, the case is automatically moved forward to the next step.
b. Output per team member could be increased by using automatization. In general, the importance of using simple models to describe, simulate and assess business processes is increasing in the field of financial institutions. Every BPM system available has its own reporting and performance measurement concept broad and user-friendly analysis functions.[17]

Based on the existing flow and improvement results, the following table summarizes the differences and the gap analysis for each loan restructuring application:

**Table 12. Differences Recap and Gap Analysis**

| Aspect | Existing Flow | Improvement Flow |
|---|---|---|
| Human Involvement | Debtor (1 person)<br>Branch Representative (1 person)<br>SME Division (2 person)<br>Loan Committee (4 person)<br>→ 4 entities with human involvement max 8 people | Debtor (1 person)<br>Loan Committee (4 person)<br>→ 2 entities with human involvement max 5 people |
| *Human Error* | High Risk<br>- manual form checking<br>- manual mandatory document<br>- manual checking assignment approval | Less risk<br>- e-form<br>- document completion by system<br>- automated approval assignment |

| Aspect | Existing Flow | Improvement Flow |
|---|---|---|
| *Cost* | High Cost<br>- print paper-based form<br>- document delivery cost | Low Cost<br>- paperless<br>- upload softcopy documents |
| *Service Level Agreement* | Slow<br>- work queue<br>- human judgement | Fast<br>- system assignment<br>- automated recommendation |
| *Housekeeping Data* | High Risk<br>- paper based<br>- archiving at branches and credit operations<br>- pic resign, data / archive uncleared | Reliable<br>- database<br>- online<br>- archive online |

**CONCLUSION**

Through the BPM e-restructuring carried out at Bank XYZ, the following conclusions are obtained from the research that by simplifying and automating the process, it is possible to optimize the Credit Committee's decision-making process which was originally manual to software-based or more systematic.

BPM is also able to standardize and automate the submission of loan restructuring for SME debtors, especially during the Covid-19 pandemic based on the 5C indicators contained in e-restructuring. And by automation and e-restructuring are very capable of shortening processing time for SME debtor loan restructuring requests, especially during the Covid-19 pandemic and are expected to be used for non-pandemic restructuring processes and for loan scoring for new customers.

This is of course, with automation and e-restructuring, it will increase objectivity in decision making related especially in loan restructuring, become faster and give an advantage to debtors and banks.

Recommendation discussions are using these topic-related recommendations, such as a more comprehensive exploration of regulations from regulators regarding loan restructuring, a more thorough exploration of the best practice of using information technology in the banking domain related to the effects of the COVID-19 pandemic and analyzing current business processes and improve business processes to be more effective and efficient in terms of loan restructuring.

Hopefully, this research will assist decision-makers in realizing that process automation is a potential driver and that Bank adoption of software E-restructuring may be a key determinant for companies' management to apply such solutions.

Organizations will likely continue to use business process automation solutions in the future, partly as business continuity enablers in the event of similar crises, but primarily to ease employees of repetitive, time-consuming, simple tasks and redirect their potential to more ambitious tasks, boosting the company's development, increasing its competitiveness, and improving the service quality.

Managers may find this helpful information not just during the pandemic but also in the event of any unexpected crises or the face of a more rapid digital transformation.

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