ISSN 1512-4649(Print)
ISSN 2667-9752(Online)

DIGITALIZATION AND BUSINESS PROCESS REENGINEERING IN GEORGIA'S BANKING SECTOR

Peer review method: Double-Blind
Accepted: May 27, 2025
Published: June 23, 2025
Original scientific article
DOI suffix: 10.36962/NEC20022025-68

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ABSTRACT

Today's rapidly changing economic and technological environment is actively driving the transformation of the banking sector, particularly in the directions of digitalization and business process reengineering. The article "Digitalization and Business Process Reengineering in the Banking Sector of Georgia" aims to reinterpret and systematize the ongoing developments in Georgia's banking industry within the context of digital transformation and process improvement. The research focuses on how business processes can be modernized through contemporary technologies and how they can be optimized to enhance both operational efficiency and customer satisfaction.

The paper discusses the PDCA, PDSA, and DMAIC cycles as tools for continuous process improvement. It presents the methodology of the "As-Is" analysis and provides a comparative analysis of restructuring practices using the examples of three leading Georgian banks. The findings highlight that these banks employ different approaches, underscoring the existence of distinct strategic visions and their adaptability to changing market demands. Simultaneously, the article identifies the typical challenges and recurring mistakes often encountered during the implementation of reengineering initiatives.

The core contribution of the study lies in aligning theoretical frameworks with practical cases – integrating classical management approaches with the imperatives of modern digital transformation. Furthermore, the article emphasizes that successful reengineering requires not only revisiting existing processes but also transforming corporate culture, directing investments appropriately, and ensuring active managerial engagement.

The approaches outlined in the study enable banking institutions to conduct comprehensive process inventories, apply Total Quality Management (TQM) tools, and manage processes as strategic subsystems. This research

supports the enhancement of the Georgian banking sector's global competitiveness.

The article is intended to assist both academic audiences and policy-making institutions that are interested in increasing the efficiency of the banking sector through modern technological approaches.

***Keywords**: digitalization; business processes; reengineering; banking sector; loan Approval process; "As-Is" model; TQM.*

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აბსტრაქტი

დღევანდელი სწრაფად ცვალებადი ეკონომიკური და ტექნოლოგიური გარემო აქტიურად განაპირობებს საბანკო სექტორის ტრანსფორმაციას, განსაკუთრებით კი პროცესების დიგიტალიზაციისა და რეინჟინერინგის მიმართულებით. სტატია „დიგიტალიზაცია და ბიზნეს პროცესების რეინჟინერინგი საქართველოს საბანკო სფეროში", მიზნად ისახავს საქართველოს საბანკო სექტორში მიმდინარე პროცესების ახლებურად გააზრებას და სისტემატიზაციას ციფრული ტრანსფორმაციისა და პროცესული გაუმჯობესების კონტექსტში. კვლევა ფოკუსირებულია იმაზე, თუ როგორ შეიძლება ბიზნეს პროცესების მოდერნიზება თანამედროვე ტექნოლოგიების მეშვეობით და როგორ ხდება მათი ოპტიმიზაცია ეფექტიანობისა და მომხმარებლის კმაყოფილების გასაზრდელად.

სტატიაში განხილულია PDCA, PDSA და DMAIC ციკლები, როგორც პროცესების უწყვეტი გაუმჯობესების

ISSN 1512-4649(Print)
ISSN 2667-9752(Online)

ინსტრუმენტები. წარმოდგენილია „As-Is“ ანალიზის მეთოდოლოგია და სამი წამყვანი ქართული ბანკის მაგალითზე რესტრუქტურიზაციის პირობების შედარებითი ანალიზი. ნაჩვენებია, რომ ბანკები განსხვავებულ მიდგომებს იყენებენ, რაც ხაზს უსვამს ინდივიდუალური სტრატეგიული ხედვების არსებობას და ბაზრის ცვალებად საჭიროებებზე რეაგირების უნარს. პარალელურად, სტატია ასახავს იმ გამოწვევებსა და ტიპურ შეცდომებს, რაც რეინჟინერინგის განხორციელებისას ხშირად იჩენს თავს.

ნაშრომის ძირითადი წვლილი მდგომარეობს იმაში, რომ იგი სთავაზობს მკითხველს თეორიული ჩარჩოს და პრაქტიკული მაგალითების თანხვედრას – ის აერთიანებს კლასიკურ მართვის მიდგომებს თანამედროვე ციფრული ტრანსფორმაციის მოთხოვნებთან. ასევე, გამოკვეთილია ის ფაქტი, რომ რეინჟინერინგის წარმატებისთვის აუცილებელია არა მხოლოდ პროცესების გადახედვა, არამედ კორპორაციული კულტურის ცვლილება, ინვესტიციების სწორი მიმართულება და მენეჯმენტის აქტიური ჩართულობა.

ნაშრომში წარმოდგენილი მიდგომები საშუალებას მისცემს საბანკო სტრუქტურებს განახორციელონ პროცესების სრული ინვენტარიზაცია, გამოიყენონ TQM-ის ინსტრუმენტები და უზრუნველყონ პროცესი როგორც სტრატეგიული მართვის ქვესისტემა. კვლევა ხელს უწყობს საქართველოს საბანკო სექტორის კონკურენტუნარიანობის გაზრდას გლობალურ სივრცეში.

სტატია დახმარებას გაუწევს როგორც აკადემიური, ისე პრაქტიკული პოლიტიკის შემმუშავებელ ინსტიტუტებს, რომლებიც დაინტერესებულნი არიან საბანკო სფეროს ეფექტიანობის გაზრდით თანამედროვე ტექნოლოგიური მიდგომების საფუძველზე.

საკვანძო სიტყვები: *დიგიტალიზაცია; ბიზნეს პროცესები; რეინჟინერინგი; საბანკო სფერო; სესხის გაცემის პროცესი; მოდელი ''As-Is''; TQM;*

INTRODUCTION

A business process in the banking sector refers to a set of interrelated actions or tasks aimed at achieving a specific goal. Each process involves a direct participant who is responsible for executing defined actions. These participants may include both the customer and the employee of a specific business unit. Certain processes in banking institutions are initiated at the customer's request and are completed with the delivery of a concrete outcome to the customer.

The development of the digital economy creates new information and communication tools for the business environment. An increasing stream of customers is using more diverse channels to access banking services through new platforms and banking ecosystems. Under the new digital paradigm, technologies adapt to changes in human behavior, resulting in the emergence of more efficient and cost-effective business solutions.

The banking system is highly sensitive and adaptable to external factors, which allows for the improvement of service delivery through the analysis of existing innovative experiences. This also facilitates the creation and implementation of fundamentally new digital products. The digitalization of banking operations has become a significant stage in the development of the modern economy. Credit organizations are incorporating digital technologies into their operations, making them more successful and competitive. Moreover, digitalization has become a key strategic focus for Georgia's banking structures today.

Despite its importance, the digitalization process in Georgia's banking sector is still in its early stages. This paper focuses on how digital technologies can be integrated into business processes while maintaining their continuity.

ANALYSIS

To date, there is no unified or universally recognized definition of the concept of "digital transformation in the banking sector." However, there is a general consensus that the digital transformation of the banking sector involves the transformation of both individual business processes and entire businesses or state institutions, based on business models and corresponding resources.

The term "business process modeling" was first used in the 1960s within the field of systems engineering by S. Williams, in his 1967 article "Business Process Modeling Improves Administrative Control." Nonetheless, it gained popularity only in the 1990s, when the term "process" emerged as a new paradigm for productivity. Companies began to prioritize thinking in terms of processes rather than functions and procedures.

Today, numerous sources address various aspects and challenges of business processes. However, it is

important to note that views regarding business processes vary greatly, which often leads to confusion. In the context of technological companies and processes, the primary focus is often on technology rather than the process itself. Yet, the issue goes beyond that. Each framework or concept of business process management (BPM)—including methods and approaches such as LEAN, Six Sigma, TQM, and others—has its own definition. When studying business processes as a subject of research, it is essential to first determine the goal of the research: are we examining the process for technological improvement, or are we analyzing it as a profitable business tool?

When business processes are studied as profitable tools, the research object includes both the common and distinguishing characteristics of business processes and business process management. It also involves different concepts and strategies of processes; methods and approaches to business processes; process modeling; process design and architecture; life cycle of business processes; reorganization and optimization of processes; process efficiency; and performance indicators of business process effectiveness, among others.

The first wave of process formation was marked by the classical school of management (e.g., F. Taylor, L. Gilbreth), where a scientific approach to processes emerged. This approach aimed to identify the single best way to perform a task. It involved observing processes, analyzing the resulting data, and implementing changes based on identified flaws—mainly by eliminating unproductive actions and increasing work efficiency.

Throughout the 20th century, the concept of organizational development focused on standardization, specialization, optimization, and centralized management of processes. This approach was effective until significant technological changes occurred, fundamentally altering customer demands. At that point, the existing management system began to constrain the development of companies, necessitating radical changes in organizational management.

These conditions gave rise to the concept of business process reengineering, which represents the second wave of business process management. The core idea of reengineering is the implementation of integrated processes aimed at delivering customer value, with information technology playing a central role. The key is to focus on customer value rather than on isolated functions and actions that add value at different stages. M. Hammer described business process management as a revolution in business.

All of the above contributed to the evolutionary transition to a new stage in process management, where the concept of quality management plays a central role. The phenomenon of quality management was first introduced by Feigenbaum in 1957; however, it did not gain substantial importance until the 1990s.

The introduction of ISO standards in corporate management promoted the expansion of the process-based methodology, which may be considered the third wave of process formation.

In the banking sector, the concept of business processes occupies a central role. The object of business process research includes various subsystems within the company. The achievement of targeted indicators is ensured by the process-based management subsystem, which is founded on the principle of continuous process improvement (e.g., PDCA, PDSA, DMAIC). This approach inherently ensures the achievement of the organization's strategic goals at all levels.

PDCA (PLAN-DO-CHECK-ACT) CYCLE FOR PROCESS IMPROVEMENT

The PDCA cycle, known as the "Deming Cycle"[1] in process management, comprises four iterative stages: Plan, Do, Check, and Act. E. Deming emphasized the importance of close interconnection between all stages of a product's life cycle—research, design, production, and sales. Consequently, cross-functional management plays a critical role in process management, as it breaks down barriers between departments and fosters both horizontal and vertical integration across various organizational levels.

PDCA is one of the most widely recognized cycles for process improvement. It begins with the **Plan** stage, during which the company identifies methods for ex-

1 W. Edwards Deming was a renowned American professor, business theorist, economist, statistician, and management consultant. He is best known as the originator of the PDCA (Plan-Do-Check-Act) cycle and as a key figure in the development of modern quality management principles. At the core of his philosophy was an emphasis on the quality of work.3According to Deming, "Quality is pride in workmanship." One of his most widely cited statements is: "Quality begins with the intent, which is fixed by management," and another is: "Quality is everyone's responsibility." Deming argued that 94% of defects are attributable to the system itself, while only 6% result from human error. He played a pivotal role in transforming Japan's management practices, contributing to what is often referred to as the "Japanese miracle."

ISSN 1512-4649(Print)
ISSN 2667-9752(Online)

ecuting current processes or addresses problem areas. This phase includes collecting and analyzing data using statistical process control tools, followed by developing an action plan to improve performance outcomes.

The next stage is **Do**, where the developed plan is tested within the company. This is followed by the **Check** phase, where the implemented decisions are evaluated to determine whether the expected results in terms of modernization or optimization have been achieved.

In the **Act** stage, if the innovations prove successful, they are institutionalized as new practices and refined further for continuous improvement.

PDSA (PLAN-DO-STUDY-ACT) CONCEPT FOR PROCESS IMPROVEMENT

In the context of process management, the role of statistical process control has evolved. Traditionally, it was considered one of the most crucial tools for managing processes. Today, it is viewed in connection with the company's strategic capabilities. Statistical process control requires learning and knowledge enhancement regarding processes, offering companies unique, non-replicable characteristics that are difficult for competitors to imitate.

This concept was introduced by Walter Shewhart.[1] His approach to statistical control aimed at identifying deviations and error trends before defective products were created. The focus shifted from detecting and removing faulty outputs to increasing the share of quality output. As a result, control departments were replaced with audit functions, where identifying errors became a tool for achieving the primary goal: delivering quality products to customers.

DMAIC (DEFINE-MEASURE-ANALYZE-IMPROVE-CONTROL) CYCLE FOR PROCESS IMPROVEMENT

DMAIC is a structured problem-solving methodology that powers Lean Six Sigma. It consists of five phases: Define, Measure, Analyze, Improve, and Control. This cycle aims to address and enhance existing processes with unknown root causes.

Effective business process management depends on identifying the interrelationships between factors influencing end results, quantitatively defining problems, and enabling decision-makers to monitor current process states and make data-driven decisions regarding future development.

Since ideal processes do not exist, their study and assessment must be ongoing. The objective is to identify and develop methods to reduce vulnerabilities and improve process performance—especially critical in the competitive and uncertain environment in which banking institutions operate.

This underscores the necessity of further research in this area. The concept of optimizing and improving the "As-Is" business model is grounded in scientific principles and employs management tools throughout the improvement process. It ensures high economic performance of the organization's business model. Moreover, in successful companies that implement best practices in process-oriented management, operational staff, line workers, and specialists are not episodically involved in research programs—they are continuously engaged.

Therefore, from a methodological perspective, it is essential to recognize that the business process system belongs to the group of socio-economic systems. Ultimately, the efficiency of business processes—and of banking organizations overall—is determined by socio-economic indicators.

"AS-IS" PROCESS ANALYSIS METHOD

Accurate description of existing or current processes—referred to as the **"As-Is"** state—is a crucial component of process modeling. It lays the groundwork for identifying weak points and determining the optimization potential of business processes.

During modeling, it is advisable to divide the object into problem zones based on selection criteria such as significant impact on organizational performance, high cost intensity, or the need for structural reorganization.

Modeling may follow either a functional or product-based approach. A product-based perspective results in a more customer-oriented model.

The primary objective of "As-Is" analysis is to identify process weaknesses. Benchmarking and standardized models can assist in this effort. The analysis focuses on three main categories of problems:

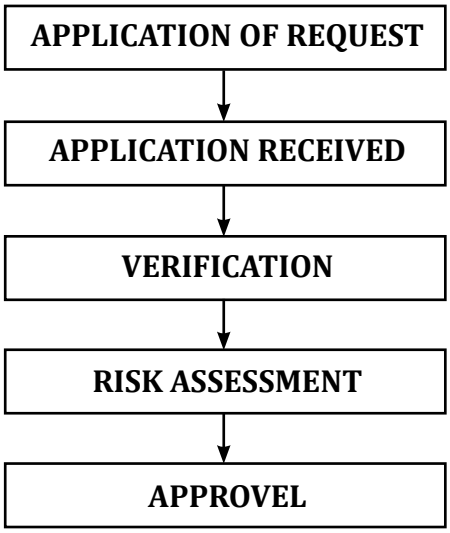
1. **Process execution sequence**, which includes inefficient or redundant actions, insufficient parallelism, excessive interfaces, and documentation.
2. **Information and technical support**, involving functional shortcomings of applications, low system throughput, integration issues, and information scarcity due to communication failures.

1 Walter A. Shewhart was an American engineer, statistician, and Ph.D., who laid the foundation for the theory of statistical control beginning in the 1920s. He developed the statistical method for constructing diagrams that identify deviations from norms and the emergence of errors — a method that became known as the Shewhart Control Chart

3. **Organizational structure and personnel**, where attention must be paid to overlapping responsibilities or ambiguous accountability.

Traditional analysis focuses on a company's internal environment, while systemic analysis considers external threats and opportunities. **SWOT analysis** integrates both by comparing a company's strengths and weaknesses against the external environment.

Figure 1[1]
Graphic Model of Loan Approval Processes ("As-Is")



SWOT analysis of business processes offers valuable insights into organizational potential and highlights aspects that may require outsourcing or reorganization.

The primary outcome of such research is not limited to analysis; it also includes the development of methodologies, models, recommendations, projects, and programs aimed at solving problems and increasing the efficiency of business processes.

BUSINESS PROCESS REENGINEERING

Reengineering refers to the fundamental reevaluation and radical redesign of business processes, with the goal of achieving dramatic improvements in key performance indicators such as cost, quality, service level, and operational efficiency. Four core terms define this concept: **"fundamental," "radical," "dramatic," and "business process."**

- **Fundamental** implies a reexamination of existing business rules and procedures, which are often outdated, misleading, or ineffective.
- **Radical** refers to complete overhaul rather than partial adjustments—rejecting old processes in favor of entirely new systems.
- **Dramatic** indicates that reengineering is not aimed at minor (10–100%) improvements, but is appropriate only when transformative (500–1000% or more) enhancements are necessary.
- **Business process** refers to a regulated sequence of purposeful activities, through which inputs are transformed into outputs that deliver value to customers via managerial influence and resource application.

In other words, reengineering is a form of organizational reform that significantly increases operational efficiency by redefining business processes and modifying or replacing the existing business model. Its essence lies in identifying core business processes, analyzing them in detail, describing them in clear terms, and transforming them accordingly.

Most modern companies acknowledge the necessity of reengineering to enhance overall business performance.

However, it is important to distinguish between seemingly similar but conceptually different terms such as **business process reengineering**, **reorganization**, and **restructuring**.

Restructuring is a complex optimization process of a company's operational system, aimed at responding to external environmental demands and ensuring competitiveness and efficiency. Key goals include improving labor intensity, productivity, costs, and service quality.

The need for restructuring is especially emphasized in the digital age, which requires companies to adopt new visions and approaches.

In the banking sector, restructuring began in 2015. The first institution to initiate this direction was the Bank of Georgia, which developed and offered restructuring options to its customers. In practice, restructuring in banking refers to changing the terms of loan servicing for customers. At that time, the amount of penalties subject to write-off often exceeded 50%.

LOAN RESTRUCTURING TERMS AND COMPARATIVE BANK CONDITIONS

Loan restructuring conditions vary across banks, depending on the individual policies of each institution. Table 2 presents the restructuring terms of Georgia's leading commercial banks.

As shown in the table, each of the three banks ap-

1 The chart was prepared by the doctoral student."

ISSN 1512-4649(Print)
ISSN 2667-9752(Online)

Table 2.[1]
Restructuring Conditions of Three Leading Commercial Banks

Restructuring Indicators	Bank of Georgia	TBC Bank	Liberty Bank
Loan Term	3–120 months	3–48 months	3–120 months
Interest Rate	Weighted average of liabilities	Weighted average 16–36%	Highest among all obligations
Issuance Commission	0.5% of loan amount	2% of loan amount	0% of loan amount
Early Repayment Fee	0%	2%	0%
Prepayment Fee for Covered Liabilities	0%	2%	0%
Penalty Write-off Amount	50–90%	GEL 100–500	Individually determined
Collateral	As agreed	As agreed	As agreed

1 "The table was prepared by the author using data obtained from banks." (bog.ge; tbcbank. ge;libertybank.ge)

plies its own approach to restructuring. Notably, all three banks charge an issuance commission. However, TBC Bank applies a 2% early repayment fee, in contrast to Bank of Georgia and Liberty Bank, where the same indicator is set at 0%.

Despite the benefits of loan restructuring, this scheme also has drawbacks—primarily reflected in the excess amounts paid by borrowers.

Banks reserve the right to refuse restructuring until the loan is officially classified as non-performing. In the current era of digital banking processes, the implementation of reengineering initiatives—often including reorganization—has become necessary for financial institutions.

Reengineering involves solving tasks consistent with its core methodology. These include: designing the existing business model, analyzing current processes, developing a new business process model, and implementing that new model. Reengineering typically consists of the following phases:

1. Preparatory Phase – defining goals, forming a team, and outlining expected outcomes.
2. Modeling and Evaluation of Existing Business Processes – analyzing the current ("As-Is") state.
3. Development of a New Business Process Model – designing the future ("To-Be") process model.
4. Implementation of the New Model – translating plans into organizational and operational change.
5. Quality Control – assessing functionality and compliance with objectives.
6. Final Evaluation – measuring effectiveness and project success based on predefined criteria.

Successful implementation of a new business model requires a comprehensive deployment plan that clearly defines organizational, financial, and IT resources. Following this, the staff must be informed of the new model and the transitional procedures accompanying implementation. Simultaneously, financial resources must be mobilized and material-technical support provided to ensure functionality.

The first stage of implementation is the **pilot phase**, during which both the new and old processes operate concurrently. Observing process performance and making necessary corrections is vital at this stage.

FINAL PHASE AND EVALUATION OF RESULTS

The concluding phase involves assessing the work performed against the initial project objectives and planned indicators. This includes measuring the effectiveness of newly implemented business processes.

During reengineering, typical **mistakes** often include:

- Attempting to improve the current process instead of fundamentally reengineering it. Companies that fail to achieve desired outcomes may make minor, superficial changes rather than undertaking structural reforms.
- **Fragmented approach** to process renewal. Many companies focus solely on transforming processes without viewing them holistically.
- **Inaccurate assessment** of corporate culture, resulting in misaligned implementation.

- **Lack of consistency** in adopting innovations, such as prematurely concluding the reengineering effort or narrowly defining objectives.
- **Irrational task distribution**, especially when process renewal is initiated from the bottom up, excluding upper and middle management who typically possess broader organizational vision. While they understand issues within their own departments, they may lack insight into the end-to-end process.
- **Insufficient resourcing** for innovation. Reengineering demands substantial investment, without which significant performance improvement is impossible.
- **Resistance to change** due to personal discomfort or perceived threats to established interests, resulting in project delays and setbacks.

CONCLUSION

Practice shows that approximately 55% of reengineering initiatives end unsuccessfully. Project success depends on multiple factors—most importantly, clear and accurate goal definition. Management must fully understand the necessity of reengineering and its implications, and communicate this effectively to all stakeholders. Team members must be motivated and prepared to take on new responsibilities.

For reengineering to be successful, proper communication across all levels, technological support, and a sufficient, independent budget are essential.

Ultimately, effective process reengineering requires a clear strategy, shared vision, organizational readiness, and strong leadership.

Improving the current "As-Is" business process model and achieving target performance indicators is made possible through a **process-based management subsystem**, which relies on TQM tools for continuous improvement. This, in turn, ensures the achievement of strategic objectives across all organizational levels.