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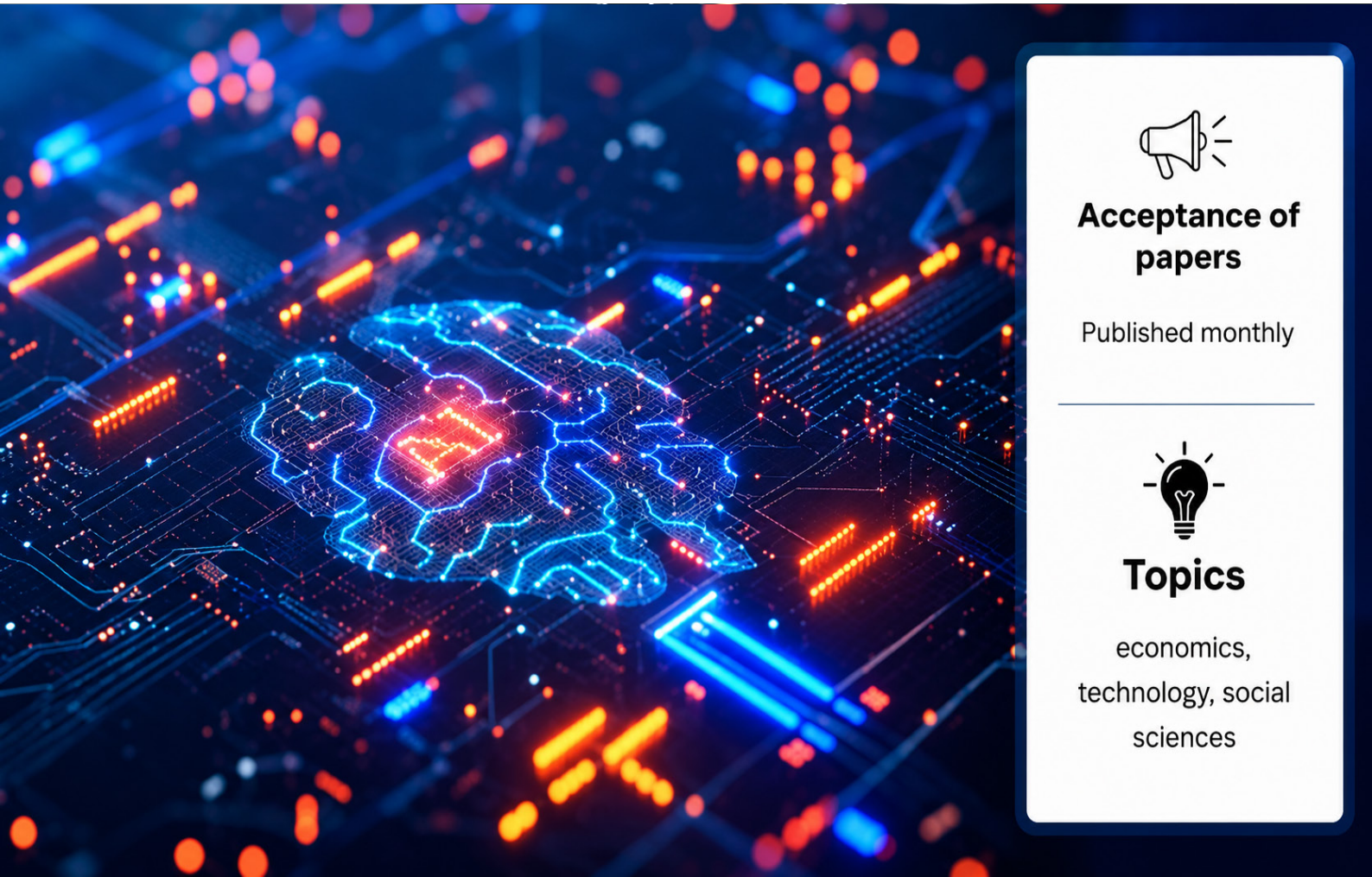

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IMPROVING THE EFFICIENCY OF STRATEGIC RESOURCE ALLOCATION IN BANKING ACTIVITIES THROUGH ARTIFICIAL INTELLIGENCE

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Abstract: This article examines the opportunities for improving strategic resource allocation in commercial banks through artificial intelligence technologies. The study shows that AI can support more efficient allocation of capital, liquidity, funding, investment budgets, human resources, and technological capacity by improving forecasting, risk-return assessment, scenario analysis, and strategic prioritization. Recent international evidence indicates that banks are increasingly using AI in credit risk assessment, capital management, business modelling, and internal process optimization. At the same time, effective AI-based allocation requires reliable data, human oversight, model-risk management, cybersecurity, and alignment with the bank's long-term strategy. Based on the analysis, an integrated AI-supported strategic resource allocation mechanism is proposed, enabling banks to move from static, historically based allocation toward forward-looking and adaptive resource management.

Keywords: artificial intelligence, commercial bank, strategic resources, resource allocation, capital management, liquidity management, strategic management, predictive analytics, banking efficiency, AI governance.

Annotatsiya: Ushbu maqolada sun'iy intellekt texnologiyalari yordamida tijorat banklarida strategik resurslarni taqsimlashni takomillashtirish imkoniyatlari tadqiq etilgan. Tadqiqot natijalari shuni ko'rsatadiki, sun'iy intellekt prognozlash, risk va daromadlilik nisbatini baholash, ssenariyli tahlil hamda strategik ustuvorliklarni belgilash jarayonlarini takomillashtirish orqali kapital, likvidlik, moliyalashtirish manbalari, investitsiya budjetlari, inson resurslari va texnologik salohiyatni yanada samarali taqsimlashga ko'maklashishi mumkin. So'nggi xalqaro tajriba banklar kredit riskini baholash, kapitalni boshqarish, biznesni modellashtirish va ichki jarayonlarni optimallashtirishda sun'iy intellektdan tobora keng foydalanayotganini ko'rsatmoqda. Shu bilan birga, sun'iy intellekt asosida resurslarni samarali taqsimlash ishonchli ma'lumotlar, inson nazorati, model risklarini boshqarish, kiberxavfsizlik hamda bankning uzoq muddatli strategiyasi bilan muvofiqlikni talab etadi. Tahlil natijalari asosida sun'iy intellekt ko'magidagi strategik resurslarni taqsimlashning integratsiyalashgan mexanizmi taklif etilgan bo'lib, u banklarga statik va tarixiy ma'lumotlarga asoslangan taqsimlashdan istiqbolga yo'naltirilgan hamda moslashuvchan resurslarni boshqarish tizimiga o'tish imkonini beradi.

Kalit so'zlar: sun'iy intellekt, tijorat banki, strategik resurslar, resurslarni taqsimlash, kapitalni boshqarish, likvidlikni boshqarish, strategik boshqaruv, prediktiv tahlil, bank faoliyati samaradorligi, sun'iy intellekt boshqaruvi.

Аннотация: В данной статье исследуются возможности совершенствования стратегического распределения ресурсов в коммерческих банках с использованием технологий искусственного интеллекта. Результаты исследования показывают, что искусственный интеллект способен способствовать более эффективному распределению капитала, ликвидности, источников финансирования, инвестиционных бюджетов, человеческих ресурсов и технологического потенциала за счёт совершенствования прогнозирования, оценки соотношения риска и доходности, сценарного анализа и определения стратегических приоритетов. Современный международный опыт свидетельствует о том, что банки всё активнее применяют искусственный интеллект для оценки кредитного риска, управления капиталом, бизнес-моделирования и оптимизации внутренних процессов. В то же время эффективное распределение ресурсов на основе искусственного интеллекта требует надёжных данных, человеческого контроля, управления модельными рисками, обеспечения кибербезопасности и согласованности с долгосрочной стратегией банка. На основе проведённого анализа предложен интегрированный механизм стратегического распределения ресурсов с поддержкой искусственного интеллекта, позволяющий банкам перейти от статического распределения, основанного на исторических данных, к перспективному и адаптивному управлению ресурсами.

Ключевые слова: искусственный интеллект, коммерческий банк, стратегические ресурсы, распределение ресурсов, управление капиталом, управление ликвидностью, стратегическое управление, предиктивная аналитика, эффективность банковской деятельности, управление искусственным интеллектом.

INTRODUCTION

Strategic resource allocation is one of the most important functions of commercial bank management because the long-term competitiveness, profitability, financial stability, and growth potential of a bank depend on how effectively limited resources are distributed among business areas, customer segments, products, technologies, and risk categories. In traditional banking practice, resource-allocation decisions have usually been based on historical financial performance, budget limits, regulatory requirements, expert assessments, and annual strategic plans. Although these approaches remain important, the increasing complexity and speed of change in the banking environment reduce the effectiveness of decisions based predominantly on historical information.

Modern banks simultaneously manage several types of strategic resources. Financial resources include regulatory capital, economic capital, liquidity, funding, and investment budgets. Organizational resources include qualified employees, management capacity, technological infrastructure, customer relationships, data assets, and intellectual capital. Strategic allocation therefore requires managers to determine not only how much capital should be assigned to a business unit, but also where digital-investment budgets should be directed, which customer segments should receive greater commercial attention, what proportion of technological capacity should support risk management or customer experience, and which business areas should receive additional human and managerial resources.

The growing importance of artificial intelligence creates new opportunities to improve these decisions. The Bank for International Settlements describes the financial system as an information-processing system whose ability to allocate economic resources has historically been shaped by advances in computing and information technologies. The development of machine learning, generative AI, and emerging AI agents is further expanding these capabilities [1].

The Basel Committee also notes that artificial intelligence and machine learning are being applied across the banking value chain, while digitalization simultaneously creates opportunities for efficiency and new strategic, operational, and reputational risks [2].

The growing role of AI in higher-level banking decisions is confirmed by recent empirical evidence. According to the Bank of England and Financial Conduct Authority survey, 75 percent of responding financial firms were already using AI in 2024, while a further 10 percent planned to use it within three years. AI is increasingly being applied not only to internal-process optimization and customer service, but also to credit-risk assessment, business modelling, capital management, and other financially material decisions [3].

These developments make it necessary to reconsider strategic resource allocation as a dynamic, data-driven, and analytically supported management process. The purpose of this article is to identify the main mechanisms through which artificial intelligence can improve strategic resource allocation in commercial banks and to develop an integrated approach for applying AI while maintaining appropriate governance and human oversight.

REVIEW OF LITERATURE ON THE SUBJECT

Contemporary research increasingly interprets artificial intelligence in finance as a technology that changes not only operational processes but also the mechanism through which resources are allocated. Aldasoro et al. emphasize that successive generations of AI have increased the ability of financial institutions to process dispersed information and improve financial intermediation, asset management, insurance, and payment functions [1]. This perspective is directly related to strategic resource allocation because better information processing may improve decisions concerning lending capacity, risk exposure, liquidity, funding, and investment priorities.

The Basel Committee's work on the digitalization of finance provides a broader institutional perspective. The Committee identifies artificial intelligence, cloud computing, APIs, distributed ledger technologies, and technologically enabled third-party providers as major components of the changing banking environment. While such technologies can improve efficiency and customer outcomes, they can also amplify strategic and operational risks, increase third-party dependencies, and require banks to strengthen governance, risk management, and staff capabilities [2].

Evidence from the Bank of England and FCA demonstrates that AI use is gradually expanding into more material functions. In addition to internal processes and customer support, firms reported current or planned use of AI in credit-risk assessment, algorithmic trading, and capital management. Specifically, 4 percent of surveyed firms were already using AI in capital management and an additional 10 percent planned to do so over the following three years [3]. This is important because capital is one of the most constrained and strategically significant resources in banking.

The Bank of England also notes that advanced AI may increasingly inform core financial decisions such as credit and insurance underwriting and may therefore influence the allocation of capital in the financial system [4]. This indicates that AI-based decision support may gradually move from auxiliary tasks toward direct involvement in strategic financial-resource allocation.

At the same time, the Financial Stability Institute emphasizes that AI adoption requires strong governance. The main areas requiring attention include model-risk management, data governance, staff expertise, third-party AI providers, and new business models [5]. Consequently, AI-based strategic resource allocation should not be interpreted as unrestricted algorithmic optimization. It should be implemented within the risk-appetite framework, governance architecture, and accountability mechanisms of the bank.

The Basel capital-planning guidance provides another important methodological foundation. It states that sound capital planning should determine the prudent amount, type, and composition of capital consistent with a bank's long-term strategy and its ability to withstand stress. Capital-planning decisions should also be informed by scenario analysis and stress testing [6]. AI can complement this process by processing a greater number of variables and scenarios and identifying changing relationships between risk, profitability, and resource requirements.

RESEARCH METHODOLOGY

The study applies systemic, comparative, analytical, and structural approaches. Official publications of the Bank for International Settlements, Basel Committee on Banking Supervision, Financial Stability Institute, Bank of England, Financial Conduct Authority, and IMF were reviewed. The functions of artificial intelligence were compared with the main areas of strategic resource allocation in commercial banking. Based on the synthesis of theoretical and institutional approaches, an integrated mechanism for AI-supported strategic resource allocation was developed.

ANALYSIS AND RESULTS

The analysis shows that artificial intelligence can improve strategic resource allocation in banking only when resources are viewed as an interconnected portfolio rather than as separate financial or administrative categories. Capital, liquidity, funding, human resources, technology, data, and managerial capacity interact with one another. For example, rapid expansion of a lending portfolio requires additional capital, liquidity, risk-management capacity, technological infrastructure, and qualified employees. Therefore, an optimal decision in one resource category may become inefficient if its effects on other resources are ignored.

The first and most important direction is AI-supported capital allocation. Capital is a scarce resource that banks must distribute among business lines while maintaining regulatory capital requirements and an appropriate risk-return balance. Traditional allocation frequently relies on historical profitability and regulatory risk weights. AI creates opportunities to supplement these methods with forward-looking information concerning default probabilities, changes in market conditions, customer behavior, sector dynamics, and stress scenarios.

A bank may, for example, compare the strategic attractiveness of corporate lending, retail lending, SME financing, treasury operations, and digital services. The most profitable business segment in the previous year may not necessarily be the most attractive segment in the future. Artificial intelligence can identify changing patterns of demand and risk and support managers in evaluating expected rather than purely historical returns.

Basel capital-planning guidance emphasizes that capital planning should be closely connected with the bank's long-term strategy and should remain robust across different potential scenarios and stressful outcomes [6]. AI-based forecasting and scenario analytics can expand the number of conditions evaluated and allow banks to update capital-allocation decisions more rapidly when the external environment changes.

This leads to a transition from historical capital allocation toward forward-looking risk-adjusted capital allocation.

The second major direction is liquidity and funding allocation. Banks need sufficient liquidity to meet payment obligations and unexpected withdrawals, but holding excessive liquid assets can reduce profitability. Strategic management therefore requires a balance between resilience and resource efficiency.

AI technologies can process payment flows, deposit movements, customer behavior, market indicators, and funding conditions in real time or near real time. This makes it possible to identify emerging liquidity needs earlier and adjust the distribution of liquid resources across currencies, business units, and time horizons.

The BIS study on AI agents for cash management demonstrates that generative AI can be tested in environments where liquidity managers must balance adequate cash with the cost of holding excessive liquidity [7]. Such developments indicate a broader potential for AI to support bank treasury and liquidity-resource management.

Nevertheless, liquidity decisions should remain aligned with prudential requirements. Basel Core Principle 15 requires banks to maintain comprehensive risk-management systems and assess capital and liquidity adequacy in relation to their risk profiles, market conditions, and macroeconomic developments [8].

The third direction is credit-resource allocation. Lending resources should not be allocated solely according to current customer demand. A bank must also consider credit risk, sector concentration, expected profitability, strategic priorities, regulatory capital consumption, and potential macroeconomic developments.

AI can help segment potential borrowers more precisely, identify sectors with changing risk profiles, detect early warning indicators, and estimate future credit demand. This enables management to distribute lending capacity among customer groups and sectors in a more differentiated manner.

For example, if an AI-based system identifies rising deterioration risk in one industry while detecting improving fundamentals and demand in another, the bank may gradually redirect lending resources before conventional financial statements fully reveal the change. In this sense, AI transforms resource allocation from a reactive process into a predictive process.

The fourth direction is strategic investment-budget allocation. Banks increasingly invest in mobile banking, cybersecurity, cloud infrastructure, AI models, data platforms, compliance technologies, customer-experience systems, and new digital products. Investment resources are limited, while the number of potential digital projects continues to increase.

Traditional investment prioritization may be influenced by departmental lobbying, historical budget shares, or uncertain assumptions. AI can strengthen this process by comparing expected financial benefits, strategic relevance, implementation risk, customer impact, operational savings, and regulatory importance across projects.

The objective should not be to maximize the number of AI or digital projects. The Basel Committee emphasizes that digitalization can create benefits but also amplify strategic, reputational, operational, and system-wide risks [2]. Therefore, resource-allocation decisions should distinguish between technology investment that creates measurable strategic value and investment motivated primarily by technological fashion.

A rational sequence is therefore (Figure 1):

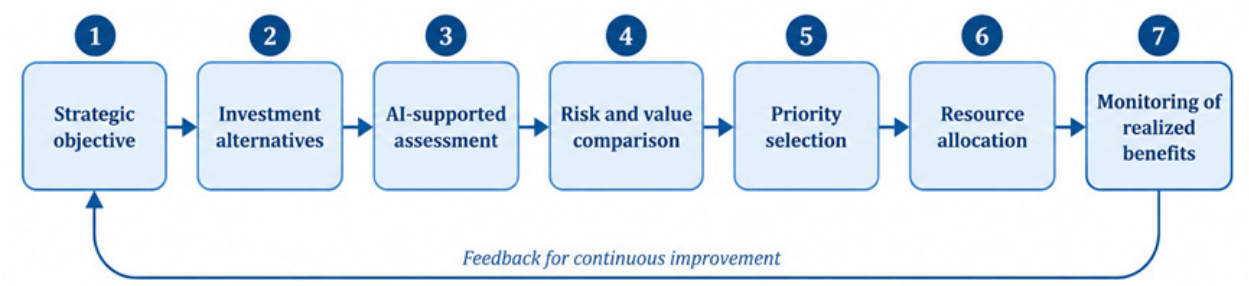

Figure 1. AI-supported strategic investment allocation process[1]

The fifth direction is human-capital allocation. AI adoption does not eliminate the strategic importance of employees; instead, it changes the distribution of human tasks. Routine data processing, information retrieval, reporting, and some analytical activities may be increasingly automated, while demand grows for model validation, data science, cybersecurity, strategic interpretation, customer relationships, and AI governance.

AI-supported workforce analytics can identify workload patterns, skills shortages, employee-performance trends, and areas where automation could release human capacity. This allows the bank to redirect employees from repetitive tasks toward higher-value activities.

In this context, strategic resource allocation should move from the question “How many employees does a department need?” toward “What combination of human and AI capabilities produces the greatest value for this activity?”

This represents the development of a Human + AI resource architecture (Table 1).

1 Source: developed by the author.

Table 1.
Strategic banking resources and opportunities for ai-based allocation[2]

№	Strategic resource	AI-supported management mechanism	Expected efficiency effect
1	Capital	Risk forecasting, scenario modelling, portfolio analytics	Higher risk-adjusted returns
2	Liquidity	Cash-flow forecasting, early-warning analytics	Lower liquidity cost and stronger resilience
3	Credit resources	Borrower and sector analytics	Better portfolio quality and allocation
4	Funding	Deposit and market-funding forecasting	More efficient funding structure
5	Investment budget	Project prioritization and benefit prediction	Higher return on strategic investments
6	Human capital	Workforce analytics and AI augmentation	Higher employee productivity
7	Technology resources	Capacity forecasting and use-case prioritization	More efficient digital investment
8	Customer resources	CLV and propensity analytics	Higher customer value and retention
9	Management attention	AI dashboards and decision prioritization	Faster strategic response

The sixth direction is customer-resource allocation. Although customers are not traditionally described as a bank resource in accounting terms, customer relationships represent an important strategic asset. Banks have limited marketing budgets, relationship-manager capacity, retention incentives, and service resources. These should be allocated according to long-term customer value rather than uniformly across the entire customer base.

AI models can estimate customer lifetime value, probability of churn, likelihood of purchasing additional products, risk profile, and service needs. This allows banks to prioritize high-value relationships and use scarce commercial resources more efficiently.

For example, a high-value corporate customer experiencing signs of dissatisfaction may justify immediate intervention by a relationship manager, while a low-risk retail customer requiring a simple routine service may be efficiently supported by an AI assistant. Resource allocation therefore becomes differentiated according to expected strategic value.

The seventh direction is allocation of technological and computational resources. As AI adoption expands, banks need to determine which activities require advanced AI models, which can be addressed by traditional analytics, and which should remain primarily human-managed. Running sophisticated models can involve substantial computing, cloud, model-provider, integration, and governance costs.

Therefore, the bank should avoid applying the most complex AI technology to every decision. The appropriate principle is technology proportionality: the sophistication and cost of the AI solution should correspond to the economic and strategic materiality of the problem.

Low-materiality productivity tasks may use externally supplied general-purpose tools. Higher-materiality activities such as credit-risk models, capital allocation, pricing, or strategic customer analytics may require stronger internal control, proprietary data, model validation, and human oversight.

This distinction is particularly important because one-third of AI use cases reported in the Bank of England/FCA survey involved third-party implementations, while provider concentration was significant across cloud, model, and data services [3].

As a result, strategic resource allocation must also include decisions about build versus buy, cloud versus internal infrastructure, and proprietary versus external AI capabilities.

The eighth direction is AI-based scenario resource allocation. Traditional annual budgeting allocates resources according to one main plan and several alternative assumptions. However, banking conditions may change substantially during the planning period.

Artificial intelligence can support dynamic scenario analysis by continuously monitoring macroeconomic, customer, credit, liquidity, and market indicators. Resources can then be redistributed when defined signals or thresholds are reached.

For example, an increase in expected credit losses may trigger additional capital allocation to risk buffers,

2 Source: developed by the author.

a rapid increase in digital customer activity may justify additional technology capacity, while deterioration in funding conditions may lead to greater liquidity reserves.

This creates the following management logic (Figure 2):

Figure 2. Dynamic strategic management process with artificial intelligence[3]

Thus, strategic resource allocation becomes adaptive rather than fixed (Table 2).

Table 2.
Traditional and ai-based strategic resource allocation in banks[4]

№	Criterion	Traditional approach	AI-based approach
1	Information base	Historical reports	Historical + real-time + predictive data
2	Planning frequency	Annual or quarterly	Continuous/adaptive
3	Capital allocation	Historical profitability and limits	Forward-looking risk-adjusted analysis
4	Liquidity management	Static buffers and forecasts	Dynamic predictive monitoring
5	Investment selection	Expert and financial evaluation	Multi-factor AI-supported prioritization
6	Workforce allocation	Headcount-based	Skills, workload and AI-augmentation based
7	Customer resources	Broad segmentation	Individual customer-value analytics
8	Scenario analysis	Limited scenarios	Multiple continuously updated scenarios
9	Decision process	Mainly expert-driven	Human + AI decision support
10	Monitoring	Periodic variance analysis	Continuous anomaly and performance monitoring

Another important result of the analysis is that AI-based strategic resource allocation should be evaluated not only through cost reduction but also through the quality of strategic outcomes. A lower operating cost does not necessarily mean that resources have been optimally allocated. A bank might reduce technology expenditure but weaken cybersecurity; reduce liquidity but increase vulnerability to deposit outflows; or shift excessive capital toward high-yield lending while increasing concentration risk.

Therefore, strategic resource allocation effectiveness should be evaluated through a balanced set of indicators (Table 3).

Table 3.
Indicators for assessing the effectiveness of ai-based strategic resource allocation[5]

№	Assessment area	Recommended indicators
1	Capital efficiency	RAROC, ROE, capital utilization, capital adequacy
2	Credit-resource efficiency	NPL ratio, expected loss, portfolio return, concentration
3	Liquidity efficiency	Liquidity cost, liquidity buffers, funding stability
4	Investment efficiency	ROI of digital projects, benefit-realization rate
5	Operational efficiency	Cost-to-income ratio, processing time, automation rate
6	Human-resource efficiency	Productivity per employee, high-value task share
7	Customer-resource efficiency	CLV, retention, cross-selling, acquisition cost
8	AI efficiency	Decision speed, forecast accuracy, adoption rate

3 Source: developed by the author.
4 Source: developed by the author.
5 Source: developed by the author.

9	Risk sustainability	Model incidents, cyber events, limit breaches
10	Strategic adaptability	Resource-reallocation lead time

The analysis further indicates that governance must function as a constraint and control layer across the entire resource-allocation mechanism. AI can make decisions faster, but faster decisions can also transmit errors faster. The BIS has recently highlighted that AI can accelerate trading and portfolio adjustments, increase operational dependencies on external technology providers, and make financial-system risks more complex and difficult to assess [9].

The Financial Stability Institute similarly emphasizes model-risk management, data governance, skills, and third-party AI providers as areas requiring particular attention [5].

Accordingly, high-materiality resource-allocation decisions should not be fully delegated to AI. In capital planning, liquidity strategy, large credit reallocations, strategic investment, and major business-model decisions, AI should primarily generate forecasts, scenarios, optimization recommendations, and warning signals, while final accountability remains with the appropriate management committee, management board, or supervisory board.

The appropriate management principle is therefore:

AI recommends — management evaluates — governance controls — the board remains accountable.

This is particularly relevant for Uzbekistan. The IMF's 2025 assessment of banking supervision in Uzbekistan emphasizes the importance of forward-looking risk management, capital and liquidity adequacy assessment, risk appetite, stress testing, and closer links between strategic objectives, risk profiles, and capital planning [10]. These institutional requirements create a strong methodological basis for future use of AI-supported capital and resource-allocation tools in Uzbek commercial banks, provided that governance and supervisory requirements are maintained.

Proposed Integrated Mechanism for AI-Based Strategic Resource Allocation

Based on the study, strategic resource allocation in a commercial bank can be organized as an integrated management cycle (Figure 3):

Figure 3. AI-enabled strategic resource allocation cycle[6]

The mechanism begins with data integration because capital, liquidity, credit, customer, operational, and technological decisions cannot be optimized independently when the underlying information remains fragmented.

The second stage consists of AI-based diagnostics and forecasting. The bank analyzes existing resource utilization and predicts future requirements.

The third stage is strategic prioritization. The bank determines which business areas, projects, customer segments, and risks have the greatest strategic significance.

The fourth stage combines resource allocation with risk-return evaluation. AI generates alternative allocation scenarios, while management evaluates their consistency with the bank's risk appetite, regulatory limits, and long-term strategy.

The fifth stage is implementation and continuous monitoring. Instead of waiting until the end of the planning period, AI systems identify performance deviations and emerging resource imbalances.

Finally, the feedback mechanism enables the bank to reallocate resources when market, customer, risk, or operational conditions materially change.

The principal methodological difference of the proposed approach is that strategic resource allocation

6 Source: developed by the author.

becomes a continuous learning and adaptation process rather than a one-time budgeting exercise.

CONCLUSIONS AND SUGGESTIONS

The results of the study demonstrate that artificial intelligence can significantly improve the efficiency of strategic resource allocation in commercial banks by expanding the information-processing, forecasting, scenario-analysis, and decision-support capabilities of management. AI can support more effective allocation of capital, liquidity, credit resources, funding, investment budgets, human capital, technology, and customer-management resources.

The greatest strategic potential of AI lies in its ability to shift banking resource management from historically based allocation toward forward-looking allocation. Traditional decisions frequently reflect the profitability and risk profile of the past, whereas AI can help estimate future changes in customer demand, sector risk, liquidity needs, capital requirements, and technological capacity.

The study also demonstrates that strategic resource allocation should not be fragmented. Capital, liquidity, technology, human resources, and customer resources are interdependent. Consequently, the optimization of one resource category without considering its effects on other areas may create suboptimal results for the bank as a whole.

From this perspective, AI should function as an integrated strategic intelligence layer capable of connecting data from different areas of the bank and transforming them into coordinated management recommendations.

At the same time, the effectiveness of AI-based allocation does not arise automatically. Poor-quality data, inappropriate models, excessive dependence on third-party providers, cybersecurity vulnerabilities, and insufficient professional competencies can reduce or reverse the expected benefits [2], [5]. Therefore, the development of AI capabilities must be accompanied by data governance, model validation, human oversight, staff development, and clearly defined managerial accountability.

The proposed mechanism of “data integration → AI diagnostics → resource forecasting → strategic prioritization → allocation → implementation → monitoring → adaptive reallocation” can transform bank resource management from a relatively static budget-based process into a dynamic and strategically adaptive system.

Thus, the future efficiency of strategic resource allocation in banking will depend not simply on how many resources a bank possesses, but on how accurately it can identify where, when, and under what level of risk each unit of capital, liquidity, technology, human capability, and managerial attention can create the greatest sustainable strategic value. Artificial intelligence can become a central instrument for achieving this objective, provided that its analytical capabilities are combined with sound banking judgment, prudential requirements, and responsible governance.

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