



CENTRAL BANK
OF THE REPUBLIC OF AZERBAIJAN

Brief Overview of the Supervision Technologies (SupTech) Road Map of the Central Bank of the Republic of Azerbaijan for 2024-2029

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of the Central Bank of the Republic of Azerbaijan for 2024–2029**

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General provisions and Objectives of Road Map

The Supervision Technologies (SupTech) Roadmap has been jointly developed by the Central Bank of the Republic of Azerbaijan (hereinafter referred to as the CBAR) and the World Bank Group (WBG) within the framework of the "2024–2026 Financial Sector Development Strategy" and the Financial Sector Modernization Project-3 (FSMP-3), under the Finance for Development initiative.

This SupTech Roadmap represents the next step in enhancing the technological capabilities of the CBAR more efficiently and effectively. The roadmap aims to assess the current state of data management and define future perspectives for the use of technology and data in achieving risk-based supervision (RBS) objectives. It envisions leveraging advanced technologies such as enhanced analytics, big data, data visualization, and natural language processing to enable the CBAR to execute supervision more effectively. Consequently, based on global best practices, it is forecasted that SupTech tools will improve supervisory efficiency, enhance the quality of reporting by regulated entities, ensure compliance with regulatory requirements, and potentially strengthen the stability of the financial system.

This strategic roadmap outlines the significant opportunities that can be realized through the comprehensive application of SupTech. At the same time, it identifies a detailed reference model and complementary tasks for the development of SupTech, aimed at creating a cohesive portfolio of initiatives to address current supervisory needs efficiently.

The primary goal of the SupTech Roadmap is to enable CBAR to effectively address its current operational challenges in supervision by defining high-level objectives and actions that optimize the potential benefits of SupTech initiatives. This will lay the groundwork for long-term improvements while ensuring that resources in the near term are directed towards high-priority and high-impact actions. Some of the key objectives the roadmap aims to address include:

- Identifying the need for technological enhancements in developing supervisory capabilities and achieving consensus on core objectives and priorities.
- Determining and addressing existing constraints and barriers (e.g., legal, technical, institutional) to achieving defined goals and identifying alternative solutions.

- Establishing feasible and realistic implementation strategies by prioritizing actions.

1. Analysis of current situation

During the preparation of the SupTech Roadmap, several factors were identified that are likely to influence supervision in the coming years. These factors include both internal and external elements. Since the future development of supervision depends on these factors, it is crucial to address them. Below are the key factors identified that could impact the implementation of the SupTech Roadmap.

1.1. Key Internal Factors Determining the Need for SupTech Solutions

Based on the assessment conducted, it has been identified that the CBAR possesses a robust framework for collecting template-based structured data for most business activities. In this regard, clear processes have been established at the departmental level for the use of periodic data collected from financial institutions (FIs). The structured data collected is regularly used for both onsite and offsite supervision. However, there is a need for improvement in integrating various data sources for more complex analytical processes.

1.2. Key External Factors Determining the Need for SupTech Solutions

Overview of Key External Environmental Factors

External environmental factors refer to elements outside CBAR's internal environment that can influence its mission and objectives. CBAR must continuously monitor these external factors to identify potential challenges or opportunities and respond to them appropriately.

The following six key external factors highlight the need for the development of SupTech solutions:

Increasing Complexity of the Banking Sector

The growing complexity of the banking sector, characterized by advanced financial products, diverse service offerings, and intricate operational structures, presents significant challenges for banking supervision. This complexity encompasses complex business models, integrated financial services, and cross-border transactions, each posing unique risks and regulatory demands. As financial products and services become more complex, the potential

for systemic risk increases, necessitating specific expertise and robust management strategies. Advanced SupTech solutions are indispensable for managing this complexity. They enable CBAR to comprehensively analyze complex financial instruments and operations, ensuring the stability of banks and adherence to regulatory standards. These solutions facilitate real-time risk assessment, enhance transparency, and improve the effectiveness of regulatory frameworks while safeguarding financial system stability.

Rapid Digitalization of the Financial Sector

The financial sector is undergoing a phase of rapid digital transformation driven by technologies like mobile banking and fintech innovations. This digitalization increases the volume, speed, and variety of financial data and transactions. SupTech solutions are essential for efficiently monitoring and analyzing the vast amounts of data generated by digital financial services. Traditional supervisory methods are insufficient for managing the speed and complexity of digital transactions and detecting fraud, underscoring the importance of SupTech in ensuring regulatory compliance.

Changing Risk Landscape

The risk landscape, including the intensity, frequency, and types of risks, is rapidly evolving due to the increasing complexity of the banking sector. This dynamic environment compels CBAR to respond swiftly with decisions and actions in supervision. Alongside the digitization of financial services, the complexity of offered products continues to grow. From the use of biometrics to blockchain technologies, the business models of financial institutions become more intricate each year. These new business models introduce novel types of risks and data, requiring supervisors to adapt supervisory tools and monitor these activities. Relying on traditional tools that process only limited formats of structured data may no longer be sufficient.

Increasing Expectations of Consumers and Investors

With the financial sector opening up to local and foreign investors, and as financial inclusion and the number of active consumers in the market grow, consumers and investors demand greater transparency, security, and efficiency in financial services. They expect instant, seamless transactions, stringent data protection, and high service standards. To meet these expectations, financial institutions must operate effectively on these fronts. SupTech tools can contribute to enhancing supervisory capacity by monitoring customer service quality, data

security measures, and overall operational efficiency, thereby safeguarding the interests of customers and investors.

Compliance with Industry Standards

The digitalization of the financial sector not only involves the migration of financial activities to the digital realm but also signifies a transformation in industry quality standards. To meet the ever-growing regulatory requirements, the financial industry is heavily investing in RegTech solutions. The rapid advancement of RegTech solutions indirectly compels supervisors to keep pace with the technological progress in the financial industry.

2. Strategic Framework for SupTech Development

This section focuses on establishing a strategic framework for the development of SupTech at the CBAR. It outlines the key elements and components required to enable and promote the effective implementation of SupTech. Based on the findings from the analysis of the current situation and the contributions of stakeholders, the following framework will guide the development of SupTech capabilities.

2.1. Key Strategic Contributions and Perspectives of SupTech

Over the next five years, CBAR's primary strategic objective in the field of supervision is to prioritize the implementation of a risk-based supervision (RBS) approach. To achieve this goal, CBAR is determined to leverage SupTech as a catalyst for this transformation.

Three essential elements are crucial for developing an effective RBS approach:

1. Well-aligned risk assessment frameworks to establish consistent and predictive methods for identifying the risk profiles of supervised entities.
2. Advanced software solutions capable of providing calculated risk scores for each risk factor.
3. The availability of relevant data required for calculating these risk scores, which is of critical importance.

Therefore, the SupTech Roadmap will prioritize addressing two main elements within the context of technological advancement:

- **Data and Data Management Capabilities:** Ensuring the availability, quality, and accessibility of relevant data is crucial. This involves implementing robust data management systems and protocols for the efficient collection, storage, and retrieval of data.
- **Analytical Tools for Risk Scoring:** Developing and deploying advanced analytical tools capable of generating accurate risk scores in line with the requirements of the risk assessment framework. This includes leveraging cutting-edge technologies such as artificial intelligence (AI) and machine learning (ML) to analyze complex datasets and derive actionable insights.

These fundamental elements will form the foundation of the SupTech Roadmap, laying the groundwork for strengthening CBAR's RBS capabilities.

As SupTech is implemented, stakeholders' key expectations include achieving enhanced supervisory capabilities, which will significantly improve CBAR's overall efficiency in fulfilling its supervisory mission.

2.2. SupTech Vision

CBAR's vision for SupTech focuses on harnessing the power of data and technology to improve the effectiveness and efficiency of supervisory functions and processes. This vision supports CBAR's commitment to adopting a transformative approach to achieve effective RBS. The SupTech vision aims to establish CBAR as a digitally empowered regulator, accelerating the transition to more efficient RBS and transforming data into meaningful insights and decisions for supervision.

Additionally, this vision seeks to:

- Enhance the availability and comprehensiveness of supervisory data, enabling better alignment and support for supervisory processes and decisions.
- Expand the automation and digitization of supervisory processes.
- Develop simplified, automated, and valuable analytical capabilities.

By realizing this vision, CBAR will strengthen its supervisory framework and ensure it is better equipped to meet the challenges of an increasingly complex and digitalized financial landscape.

3. Planned SupTech Projects and Initiatives Portfolio of CBAR (2024–2029).

The proposed SupTech project and initiative portfolio is divided into two components:

1. **Component I:** “Achieving the Objectives of SupTech Pillars” – This encompasses a set of projects and initiatives designed to directly address the strategic objectives identified within the SupTech pillars. These initiatives play a critical role in accelerating the transformation process.
2. **Component II:** “Supporting SupTech Implementation through Comprehensive Organizational Change Management” – This focuses on developing essential skills and capabilities to enable the implementation of SupTech, laying a solid foundation for the successful execution of the initiatives outlined in Component I.

3.1. Component I. Enabling Achievement of Suptech Pillar Objectives

SECTION A: IMPROVING SUPERVISORY DATA AND DATA MANAGEMENT CAPABILITIES

A.01. Data Management Enhancement Program

A01.1. Initial Assessment of Data Maturity Level and Development of Organizational Data Management Framework

A01.2. Establishment of Data Management Office

A01.3. Implementation of Data Management Transformation Plan

A.02. Enhancement of Supervisory Data Program

A02.1. Development of Integrated Supervisory Data Model (Expansion of Data-centric approach)

A02.2. Strengthening the Supervisory Data Collection Ecosystem

A02.3. Improvement of Unstructured Data Management and Analysis

A.03. Enhancement of Data Analytics Tools and Model Programs

A03.1. Enhancement of Data Analytics Tools and Model Programs

SECTION B: DEVELOPMENT OF SPECIALIZED SUPERVISION TOOLS

B.01. Supervision Inspection Management (Internal and External)

B.02. Enhancement of Electronic Licensing System

B.03. Expansion and Enhancement of Credit Registry System Functionalities

B.04. Implementation of Anti Money Laundering Solution – Enhancing Risk Monitoring Capabilities in Prevention of Money Laundering and Terrorist Financing through Advanced Analytical Software Tools

3.2. Component II. Supporting the Implementation of Suptech Through Organization-Wide Change Management

C.01. Creation of New Suptech Implementation Program and Appointment of Suptech Program Management Group

C.02. Development and Implementation of CBAR's Data Cyber Resilience Enhancement Strategy

C.03. Development and Implementation of Digital Skills Development Plan in the Organization

C.04. Reviewing Information Technology (IT) Strategy to Ensure its Alignment with and Full Support of the New Suptech Implementation Program

4. General Overview of Expected Benefits from the Implementation of the SupTech Strategy

By adopting SupTech technology, CBAR can acquire new supervisory capabilities that will enable more efficient operations. The integration of SupTech tools into supervisory processes will allow CBAR to improve the quality, timeliness, and relevance of supervisory data, digitize and automate processes, and expand analytical capabilities. This will enable CBAR supervisors to better address challenges posed by the evolving financial services environment, expanded regulatory scope, and increasingly complex products and business models that complicate traditional practices.

The initial experiences of developed and developing countries have demonstrated that SupTech solutions have significant potential to enhance supervision. The overall impact of SupTech on regulators includes saving time, improving process efficiency, and enabling the reallocation of resources.

Key Advantages Expected from the Proposed SupTech Framework

Implementing the proposed SupTech framework is expected to yield the following primary benefits:

Areas for Improvement	Overview of Expected Benefits from SupTech Implementation at CBAR
Proactivity	<ul style="list-style-type: none">- Becoming a forward-looking, data-driven, real-time supervisor.- Transitioning from a reactive supervisory model to a proactive model to anticipate and prevent systemic shocks in a timely manner.
Enhancing Risk Management Capabilities	<ul style="list-style-type: none">- Automating the collection of data required for assessing risk factors within risk profile identification practices.

	<ul style="list-style-type: none"> - Strengthening overall risk control capacity to achieve more effective RBS.
Efficiency Gains	<ul style="list-style-type: none"> - Improving overall performance (e.g., reducing response times to queries and requests). - Providing opportunities for automation, enhanced mobility, better data management, and advanced analytics. - Ensuring better allocation of supervisory resources. - Increasing collaboration among teams (internal/external, macro/micro, etc.).
Greater Accuracy and Comprehensiveness	<ul style="list-style-type: none"> - Improving the quality, timeliness, and relevance of supervisory data. - Enhancing analytical capabilities. - Using innovative technologies to uncover previously unidentified patterns, connections, and networks. - Promoting increased collaboration among teams (internal/external, macro/micro).
Alignment with Requirements and Best Practices	<ul style="list-style-type: none"> - Increasing transparency in supervisory processes. - Better handling of the evolving financial services landscape, expanded regulatory boundaries, and innovative product and business models that challenge traditional practices.
Higher Trust	<ul style="list-style-type: none"> - Ensuring more efficient execution of supervisory activities.

	<ul style="list-style-type: none"> - Enabling quicker supervisory actions and greater capacity to prevent crises. - Building trust in the financial system.
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The use of SupTech solutions by regulators also has a positive impact on the activities of supervised entities, as it reduces the regulatory burden and improves supervisory and monitoring systems, reporting procedures, and more. The table below provides some relevant examples of how supervised entities can benefit from the supervisory potential enabled by SupTech.

Application Area of SupTech	Examples of Positive Impact on the Activities of Regulated Entities
Data Reporting and Data Management	<ul style="list-style-type: none"> - Reducing reporting burden through an optimized data model, improved validation, and an automated feedback loop on data quality. - Introducing APIs ensures automation on the reporting entity's side, reducing costs associated with manual preparation and submission of regulatory reports. - Data-centric reporting models minimize duplication and reduce the time required for data preparation, verification, and submission, while enabling regulators to perform complex analyses without additional data requests from supervised entities. - Automated and semi-automated reporting processes lower wage costs and the time spent on ensuring compliance.
Data Analytics	<ul style="list-style-type: none"> - Supervisory inspections will become more targeted and efficient, reducing the time and effort required from regulated entities. - Increased information sharing with regulated entities, combined with supervisors' ability to identify system-wide and complex connections, helps mitigate the

	<p>perceived unfair risk imposed by limited or incomplete data access on the part of regulated entities.</p>
<p>Processing Operational and Administrative Procedures through Supervisory Platforms</p>	<ul style="list-style-type: none"> - Aligning the supervisory work with the nature, scale, and complexity of regulated entities more effectively by directing resources and efforts away from manual tasks toward decision-making and improving overall productivity (more effective application of the risk-based approach). - Reducing the time spent analyzing various inquiries from regulated entities and increasing the transparency of the decision-making process. - Relying more on collected data and the ability to predict adverse impacts accurately enables supervisors to adopt a forward-looking approach, helping regulated entities identify significant risks at an early stage.