Smart Contract - New Era of Subsequent Registration of Immovable Property in Georgia

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Key words: Access to Land; Informal settlements; Security of Tenure

SUMMARY

The Smart Contract represents a significant stride towards the modernization and digital transformation of the Immovable Property Registration process. Proposed by the National Agency of Public Registry, this land registration tool aims to leverage cutting-edge technology to enhance accessibility, efficiency, and security in property registration. By introducing the Smart Contracts and integrating secure settlement mechanisms through banks, the NAPR envisions a streamlined, remote, and secure property registration experience for citizens. The primary goal of the Smart Contract is to revolutionize the way immovable property registration is conducted.

Citizens seeking to buy or sell immovable property are the primary target audience of the Smart Contract. They are directly impacted by the digitization of the property registration process. Users experience enhanced convenience as they can initiate and complete property transactions from anywhere, reducing the need for physical visits to government offices. They will benefit from a more streamlined, efficient, and secure registration process. The success of the Smart Contract project in property registration will serve as a foundation for expanding similar digital services in other government sectors, ultimately making a broader range of services accessible through digital platforms.

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1. INTRODUCTION

The Smart Contract project represents a significant stride towards the modernization and digital transformation of the Immovable Property Registration process. Proposed by the National Agency of Public Registry, this project aims to leverage cutting-edge technology to enhance accessibility, efficiency, and security in property registration. By introducing the concept of Smart Contracts and integrating secure settlement mechanisms through banks, the project envisions a streamlined, remote, and secure property registration experience for citizens. Digital transformation aligns with the agency's commitment to providing efficient, accessible, and modernized government services to citizens.

The primary goal of the Smart Contract project is to revolutionize the way immovable property registration is conducted. The project seeks to achieve the following objectives:

- Enhanced Accessibility: The project aims to eliminate the need for physical visits to service centers for property registration. Citizens will be able to access government services from the comfort of their homes, reducing the time and effort required for the process.
- Efficiency and Convenience: By integrating Smart Contracts, the project intends to automate various stages of the property registration process. This will significantly reduce manual intervention, paperwork, and associated delays, ensuring a more efficient and streamlined experience for applicants.
- Security and Transparency: Smart Contracts provide a secure and transparent platform for property registration. The project will utilize blockchain technology to ensure data integrity, preventing fraudulent activities and unauthorized access to sensitive information.
- Secure Settlement: Introducing secure settlement mechanisms through banks will enable citizens to make payments and fulfill financial obligations directly within the digital platform. This feature ensures financial transactions are conducted in a safe and traceable manner.
- User-Friendly Interface: The digital platform will be designed with a user-friendly interface, making it accessible to citizens with varying levels of technological expertise. This inclusivity ensures that a wide range of users can benefit from the system.
- Cost Efficiency: The project's digital approach aims to reduce operational costs associated with physical service centers, paperwork, and manual processing. This will lead to resource optimization and improved resource allocation.

Citizens seeking to buy or sell immovable properties are the primary stakeholders of the Smart Contract project. They are directly impacted by the digitization of the property registration process. With this project, citizens will experience enhanced convenience as they can initiate and complete property transactions from anywhere, reducing the need for physical visits to government offices. They will benefit from a more streamlined, efficient, and secure

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registration process. Ensuring their understanding of the new system and their ease of use will be a crucial aspect of project success. The success of the Smart Contract project in property registration will serve as a foundation for expanding similar digital services in other government sectors, ultimately making a broader range of services accessible through digital platforms. As technology evolves, project will benefit from integration of advanced AI algorithms to enhance the accuracy and efficiency of property verification processes.

In summary, the business concept for the Smart Contract project is centered on leveraging technology for efficient, transparent, and secure property registration. The future development vision expands this concept to transform not only property registration but also the way citizens interact with government services. Through continuous innovation and collaborations, we envision a future where government services are seamlessly integrated into citizens' digital lives, fostering trust, efficiency, and progress. The Smart Contract project not only showcases our commitment to innovation but also stands as a beacon of strategic significance and organizational transformation.

1.1 Brief Overview of the Real Estate Market

"Georgia has made much progress over the past decade. Georgia has been growing faster than other upper middle-income countries, and GNI per capita increased from $3,048 in 2010 to $5,073 in 2022. Growth remained robust in H1 2023, although it eased to an estimated 7.6%, compared to 10.1% in H1 2022, driven by a rebound in private consumption. Service exports remained boosted by continued recovery in tourism" (World Bank). The significance of the real estate development sector in the banking system has materially increased. In the last four years, the credit portfolio of the sector has increased by approximately 2.5 times, as of October 2022, it was 5.9% of the business portfolio (1.516 billion dollars) (National Bank of Georgia).
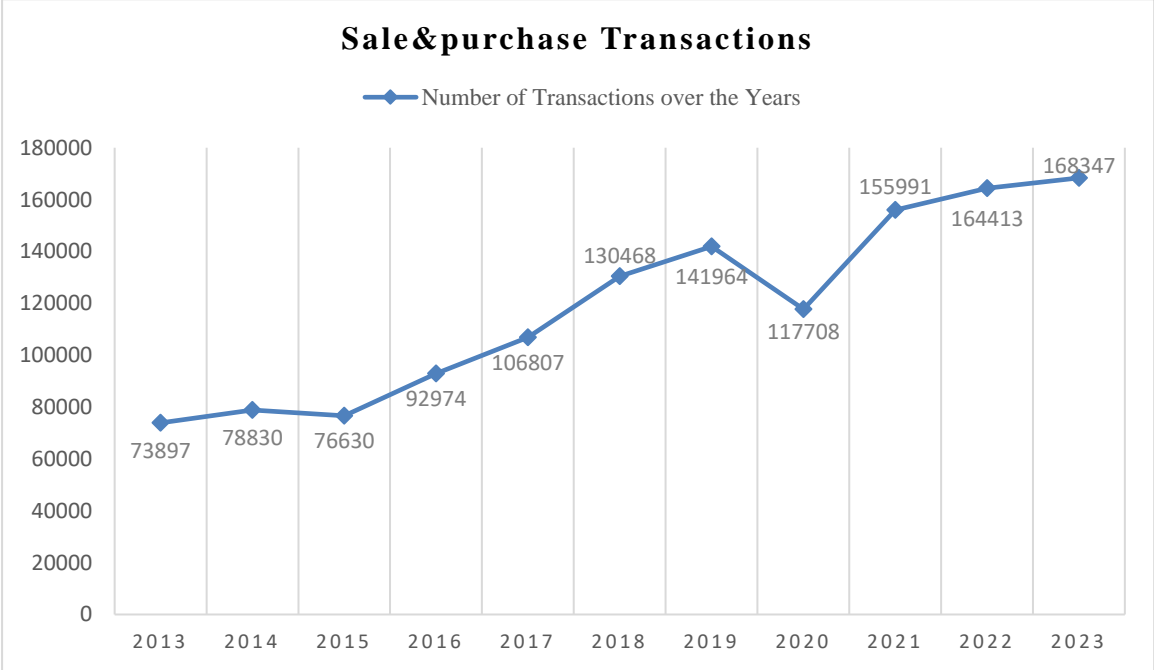

Chart 1. Sale & Purchase Transactions on the Immovable Property

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The real estate market and transactions on sale and purchase of immovable property have been steadily on the rise over last ten years as demonstrated in the graph above. Therefore, it was natural from NAPR to cater to the needs of the market and offer a solution that would be usefull for Georgian citizens, Banking community and the business in General.

1.2 Assessing the Need

"Georgia has made much progress over the past decade. Georgia has been growing faster than Agreement was signed with the On November 17, 2022, NAPR signed a contract with Georgian company ANOVA LLC for the provision of services for Smart Contract Consumer Survey. Funds were allocated from the World Bank funded Irrigation and Land Market Development Project. The aim of the survey was to: i) Identify services currently used by the users in the real estate transactions (expedited service delivery, renewal of extract, etc.) and third parties (notaries, lawyers etc.) involved in the process; ii) Rate the existing services – positive/negative perceptions, attitude to paid services, price etc.; iii) Determine potential price range for the proposed solution; iv) Rate the proposed solution - positive/negative perceptions, assess barriers etc.

The survey was conducted with Citizens of Georgia who have engaged in the real estate sale/purchase transaction, during the past 3 year period. Survey was be divided in two stages: 1) In-depth discussions and interviews with the focus group members; and 2) Approximately 500 phone interviews will be conducted throughout 7 major cities of Georgia. The discussions with focus groups lasted for 2 hours and phone calls, approximately 5 minutes. The survey was conducted in December 2022, provided interesting results.

According to the study, among the surveyed buyers and sellers, the willingness to use a smart contract in the future is quite high – (8.6 out of 10 points). They also rank it as high with regards to simplification of the immovable property transfer transaction – 8.5 points. Almost half of the respondents - 51%, rate the security that smart contract provides as its major advantage. The majority of the surveyed – 83%, are willing to use this product if the price will be 100 GEL, bit drops significantly to 43% if the price is 150 GEL.

Additionally, survey also identified some hesitations from the part of consumers connected to the following topics:

i) Involvement of Banks – Interviewees were not comfortable with the involvement of banks in cases when there was a debt owed to the Banks or if their account was subject to some enforcement action, lien, arrest etc.;

ii) Public Access to the Financial Information - It was not worth for the party to make publicly available the amount they received from the sale of property (the buyer and seller often have the opportunity to negotiate out of contract and indicate different amount in the contract from the one they received in cash).

iii) Governmental Control over the Finances – Interestingly, 5% of the interviewees do not want for the public institutions to have access to the real data on the value paid for the property, as they see it as a means for the government to control cases of property tax evasion.

iv) Time Constraints – From the seller's perspective, introducing smart contract means that they will receive funds, after the completion of the registration, while current model allows them to receive funds as soon as the application for registration is submitted to the NAPR.

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The survey provided a valuable source for feedback to NAPR and its findings were incorporated into the final product.
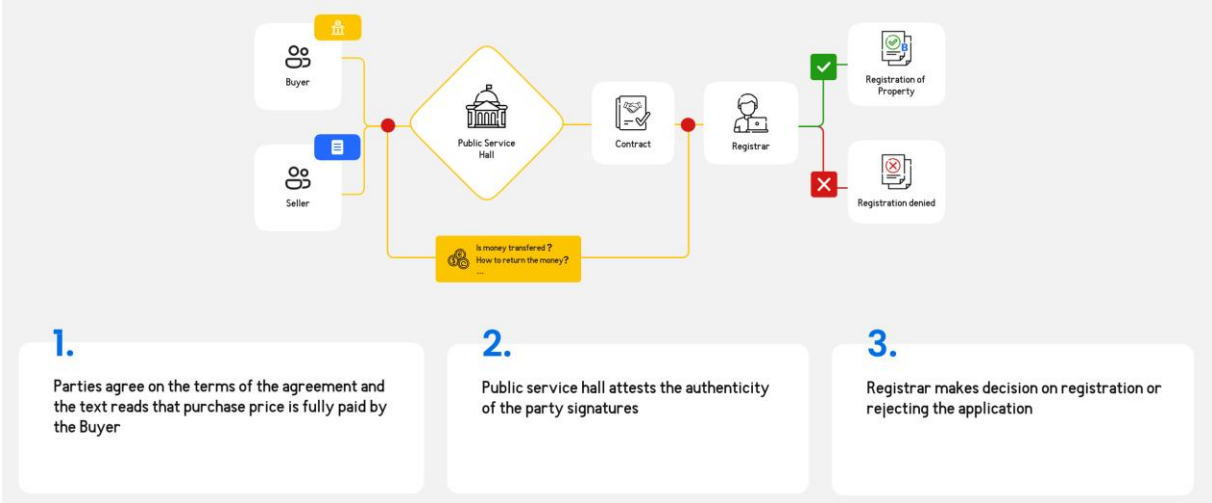

Diagram 1. Existing Business Process Executed in Material Form

One of the initial steps involved a comprehensive business process analysis. NAPR development team meticulously examined existing processes, identified pain points, and envisioned improved workflows on several stages. Regular communication with stakeholders was established to gather requirements and expectations. Team worked collaboratively to align project goals with stakeholder needs, ensuring a solid foundation for the subsequent phases.

2. DEVELOPING SMART CONTRACT ECOSYSTEM

Building upon the collected insights, the team developed the Minimum Viable Product (MVP) for the Smart Contract platform. The MVP aimed to encapsulate essential features and functionalities. Iterative feedback loops with stakeholders were pivotal in refining the MVP. The team received confirmations, validating that the MVP aligned with stakeholder expectations. The preparation of the system architecture design was a significant milestone towards the creation of the MVP. The team devised a robust architecture to accommodate the Smart Contract platform's complexities. A conducive work environment was set up to facilitate smooth development. This included selecting appropriate tools, frameworks, and technologies to ensure efficient coding and collaboration. To ensure seamless data management, the team planned and prepared a comprehensive database model. This model was strategically designed to efficiently store and retrieve data related to property transactions, contracts, and user profiles. Emphasis was placed on data integrity, security, and scalability. Development teams were actively involved in integrating various services and creating Application Programming Interfaces (APIs). These integrations facilitated smooth communication between different components of the Smart Contract ecosystem. The APIs were designed to enable seamless data exchange, ensuring that information flows efficiently through the system. The User Interface (UI) and User Experience (UX) design were meticulously crafted to provide an intuitive and user-friendly platform. The team aimed to enhance citizen engagement by creating visually

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appealing interfaces that simplified interactions. The UI/UX design was tailored to accommodate both usability and aesthetics, enhancing the overall user journey.

2.1 Smart Contract Stakeholders

The Smart Contract Ecosystem consists of many different systems that interact to produce the final product. The components and major connections related to Smart Contract Platform are described below.

The NAPR Immovable Property Registration System is a critical component within the Smart Contract ecosystem, responsible for overseeing the management, storage, and retrieval of property-related information. Its primary function is to provide a comprehensive repository for property records and data, facilitating efficient property registration and ensuring data accuracy.

The my.gov.ge platform, with its Smart Contract Booking Module, serves as an essential external component within the Smart Contract ecosystem. Its responsibilities include providing citizens with a user-friendly interface for accessing and booking services related to Smart Contract-enabled property transactions. This component streamlines the process, enhances accessibility, and ensures effective scheduling of property registration services.
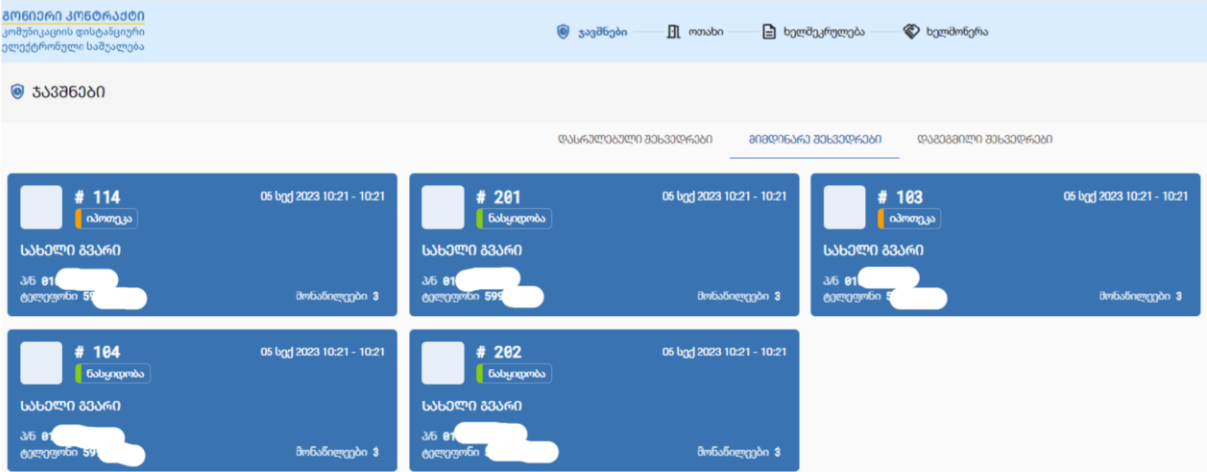
Picture 1 – Booking Module interface

AI powered remote identification service (AIS) is a vital external component within the Smart Contract ecosystem, providing advanced AI-based identification and communication services. Its core responsibilities encompass enhancing identity verification accuracy, facilitating secure communication, and contributing to the overall efficiency and security of property registration processes. AIS receives personal data from the booking module (my.gov.ge) to identify the citizen and it returns the results of identification.

a. AIS identifies citizens before at the start of providing government service - contract preparation. It exchanges the same data with Smart Contract Platform.

b. AIS also passes contract information to the citizens and obtains their confirmation that is passed back to Smart Contract Platform.

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c. AIS uses SSDA service for the identification purposes. It exchanges personal data with SSDA.
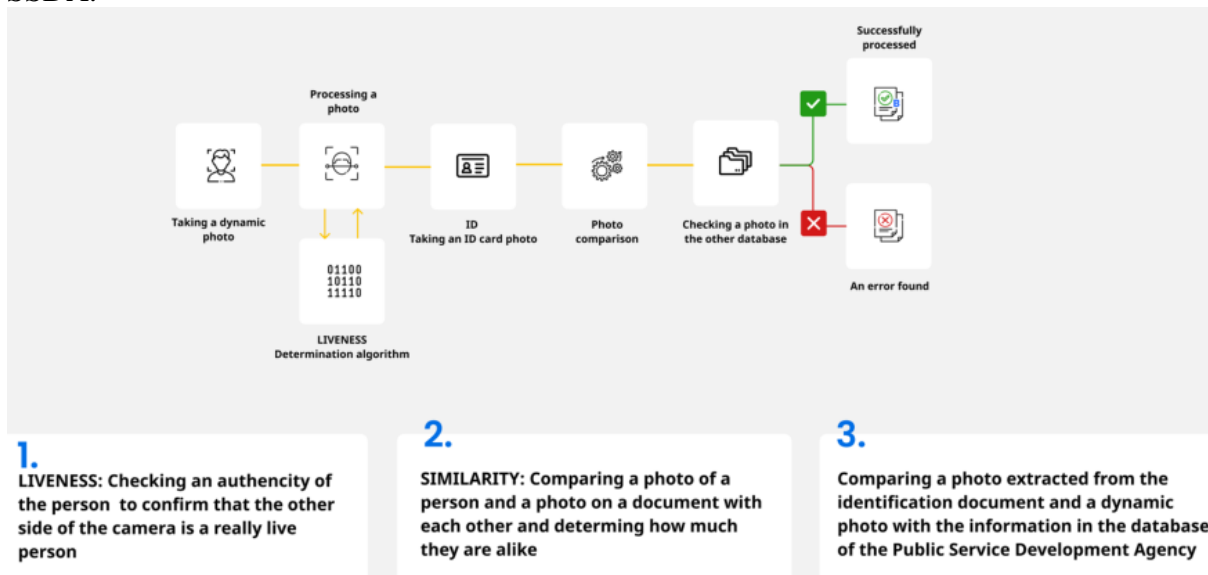

Diagram 2. AI Verification Process

The Smart Contract Platform serves as the central component within the Smart Contract ecosystem, primarily responsible for generating and facilitating the confirmation of immovable property contracts.
a. The Smart Contract Platform sends personal data to the Immovable Property Registration system (IPRS) and receives relevant property information for contract purposes.
b. After completing the contract, The Smart Contract Platform sends request to the IPRS system.
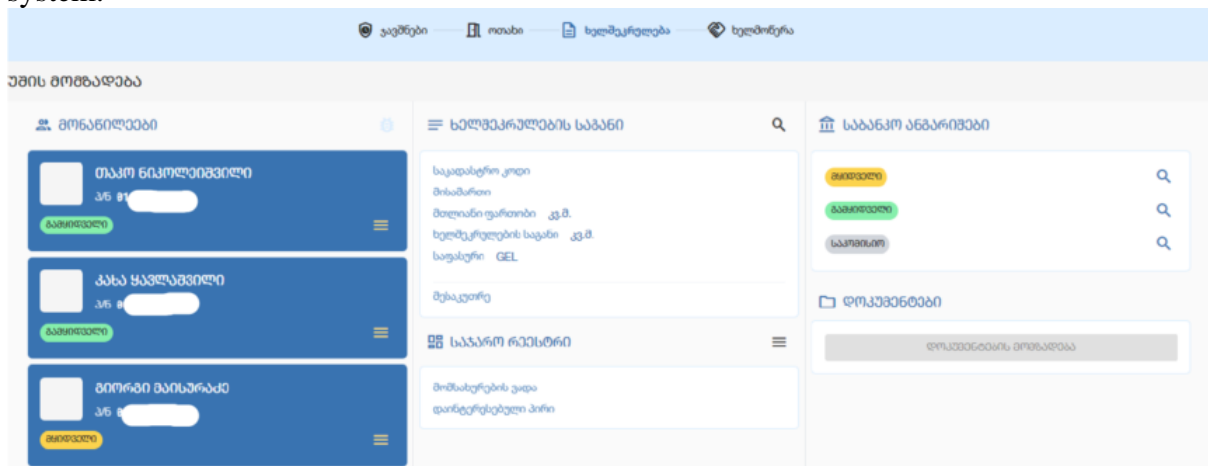
Picture 2. Creating a Contract

Commercial Banks and their involvement ensures secure financial transactions within the digital platform. Collaborating with the bank is crucial to establish a seamless and secure financial settlement process.

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Public Service Development Agency (PSDA) provides information on the citizen identification and access to their databases. Provides services for the Smart Contract for personal identification of Citizens.

Digital Governance Agency (DGA) operates the my.gov.ge platform and provides technical support to the project as required.

Public Service Hall customers provides high quality services to state and private institutions through "one-stop-shop" principle and serves as the "front office" of the NAPR, wherever the physical signature of the contract is required.

3. SMART CONTRACT CAPABILITIES

Currently Smart Contract system capabilities include:

● Booking of services and management of bookings: i) The citizen makes a booking on a specific date and time for the transaction parties; ii) The citizen cancels the booking; iii) The operator sees the booking linked to him, sees informational data of the booking and citizens;

● Remote identification: i) The citizen undergoes remote identification through a camera and an identity document; ii) The operator engages in a video call and assists the citizen by providing instructions through verbal communication;

● Creation of the contract, completion, verification (electronically), storage: i) The operator creates the contract, fills it with data, ensures that the parties agree to the transaction and their own signatures are signed; The operator registers the request based on the contract.

● Bank Transfers: i) Upon creation of contract, funds are transferred from the buyer's account to an escrow account pending registration approval; ii) After registration approval, funds from the escrow account are transferred to the seller's account. In case of Negative registration decision, the system swiftly reverses the funds from the escrow account back to the buyer's account.

● Limitation of Service: Initially, the service will cater to transactions involving only two parties of a contract and it will exclusively handle operations for straightforward purchases where the property has only one registered owner and no existing mortgage transactions.
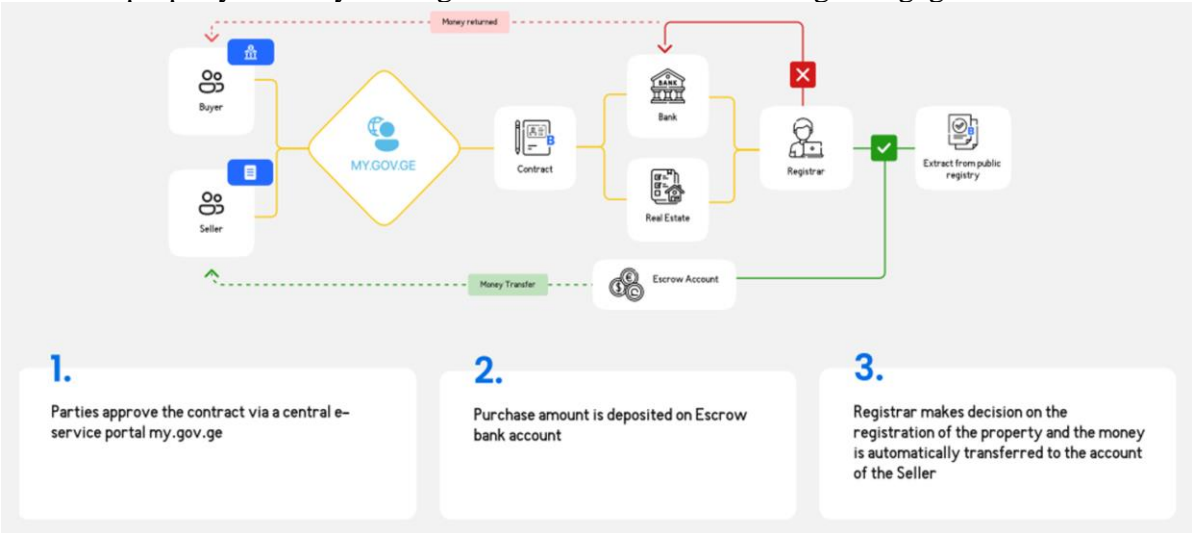
Diagram 3. Smart Contract Business Process.

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4. CONCLUSION

Smart Contract is a modular, scalable electronic service which can be further expended. Works are ongoing to fine-tune and expend its capabilities, by introducing even more automation, Blockchain, and Central Bank Digital Currency (CBDC). Mortgage agreements, and share transfers in the businesses are also on the development menu, and will be concluded in the 2024. Smart Contract will ease the legal and financial risks inherent to the sale and purchase agreements and will also cut the bureaucratic intermediaries in the process, making it a highly sought after product in Georgia and foreign markets. Perhaps owning to these unique features, Smart Contract was selected as the winner in the 13th Regional Cyber Security and IT Innovation Conference and Award (GITI 2023) held in Tbilisi on December 11-12, 2023. It claimed victory in the category of "The most successful IT innovation, demonstrated through the simplification of business processes".

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BIOGRAPHICAL NOTES

Ms. Elene Grigolia – is an experienced, PMP certified project manager with an in-depth knowledge of the land sector working in public service delivery for land administration and innovation technology in the National Agency of Public Registry (NAPR), Ministry of Justice, Georgia. Among her professional achievements, Elene as a Component Lead, successfully completed a large scale $US50 million World Bank land market reform program in Georgia. Within this program Elene was responsible for overseeing and communicating results of the ICT assessment to key stakeholders, ensuring uptake and smooth implementation of the new systems as a basis for national systematic land registration rollout. Elene has a proven track record of working with government stakeholders and the private sector to collect data, analyze results. Currently Elene serves as a Project Manager at the World Bank funded Georgia Resilient Agriculture Irrigation Land (GRAIL) project administered by the National Agency of Public Registry of Georgia. GRAIL aims to enhance land administration service delivery and building digital governance infrastructure by focusing on enhancing NAPR's IT Systems, Electronic Services and building National Spatial Data Infrastructure.

Mr. Teimuraz Gabriadze is a Senior Project Officer at the World Bank funded Georgia Resilient Agriculture Irrigation Land (GRAIL) project administered by the National Agency of Public Registry of Georgia. GRAIL aims to enhance land administration service delivery and building digital governance infrastructure by focusing on enhancing NAPR's IT Systems, Electronic Services and building National Spatial Data Infrastructure. Prior to GRAIL, Teimuraz was a chief lawyer at the World Bank financed Irrigation and Land Marker Development Project implemented by NAPR. Teimuraz participated in the implementation of the pilot project for

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systematic land registration and design and implementation of the subsequent scale up. Teimuraz is responsible for legal support of the SLR project. As part of his duties Teimuraz supported all aspects of the SLR project including but not limited to IT modernization and Procurement. Mr. Gabriadze is also tasked with international relations and communication with the World Bank team.

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