



GENERATIVE AI & RPA – OPPORTUNITIES FOR FINANCIAL REGULATORY AUTHORITIES

AN INTRODUCTORY OVERVIEW

FOREWORD

Recent advancements in generative artificial intelligence (AI) have marked a critical milestone in the evolution of technology. While powerful on its own, significant additional opportunities and value can be unlocked by combining generative AI with other technologies, including robotics process automation (RPA).

When integrated, generative AI and RPA can have a mutually reinforcing effect, with generative AI amplifying the complexity and range of automatable tasks to include cognitive problem-solving and RPA refining generative AI tasks through enhanced data and workflow management as well as improved quality assurance of generative AI outputs. Viewed through this lens, the joint application of generative AI and RPA enables novel and more advanced use cases, including within the realm of financial regulation where the bar for the application of generative AI is significantly higher due to the intricate nature of financial regulations and the associated regulatory and supervisory processes as well as the critical need for accuracy.

This introduction lays the groundwork for a series of focused articles discussing opportunities that generative AI, combined with RPA, open up for financial regulators in accelerating their internal innovation and digital transformation agenda. It offers a first conceptual overview of the interplay and synergies between generative AI and RPA and sets the stage for a more detailed exploration of how these technologies can help financial regulatory authorities evolve and augment their processes along the policy-making, licensing, supervision and enforcement continuum as well as with respect to other internal organizational processes.

Subsequent editions will provide deep dives into specific use cases as well as discuss in greater detail key prerequisites and organizational success factors to drive the effective adoption of these solutions along with the appropriate safeguards that must be put in place.

01

THE SYMBIOTIC EFFECT OF GENERATIVE AI & RPA

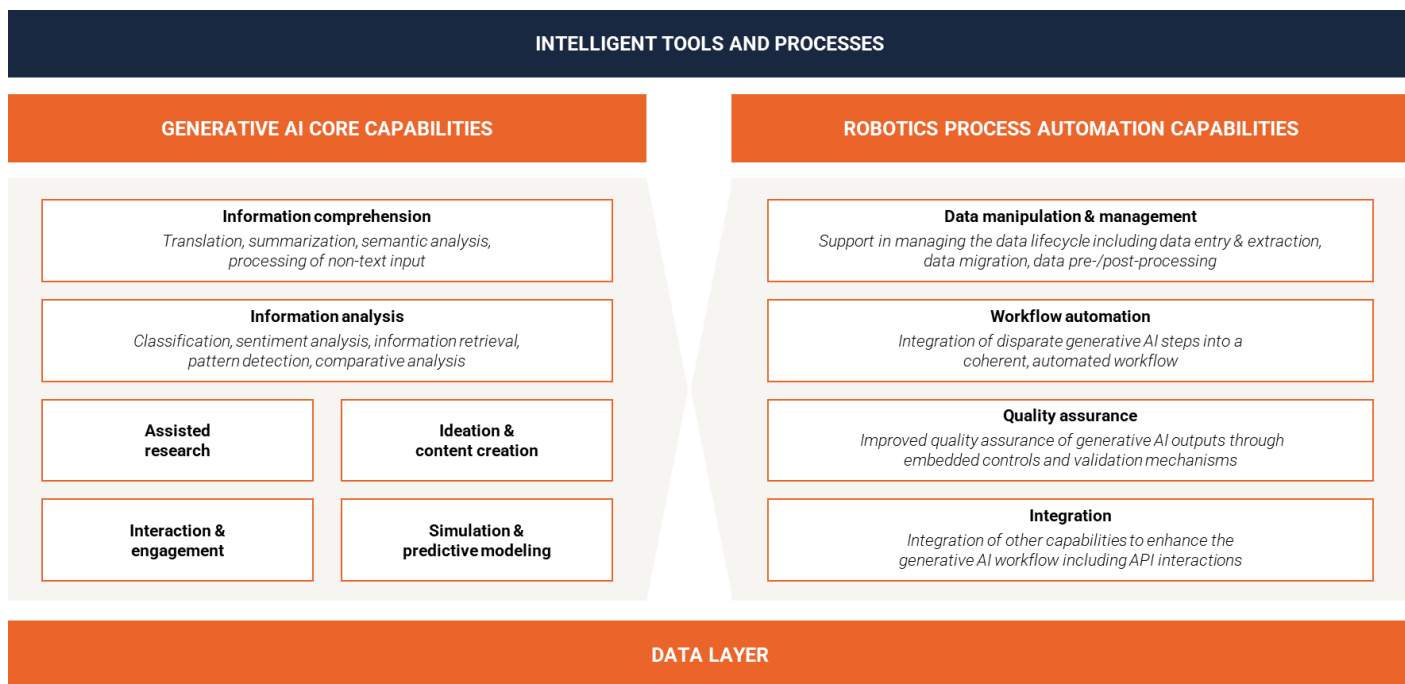
Generative AI encompasses a subset of machine learning frameworks that rely on deep neural networks—layers of algorithms modeled after the human brain—to analyze large sets of data, recognize complex patterns, and generate new content like text, images, or audio that mimic the original data in a novel way. While it offers many capabilities, one of generative AI's strengths lies in its ability to process and generate insights from unstructured text, marking a significant step-up from traditional, rules-based AI.

Where traditional AI relies on structured, rules-based inputs, generative AI employs advanced algorithms to navigate the intricacies of unstructured information by recognizing patterns and relationships in data to make predictions and/or generate outputs. This shift enables generative AI to perform tasks requiring a sophisticated understanding of language and context – capabilities once thought to be exclusive to human cognition – and allows for more nuanced, adaptive data interpretation.

RPA refers to the deployment of software bots that are programmed to perform repetitive, rules-based digital tasks, streamlining workflows by mimicking the way humans interact with applications and data. It allows for the seamless execution of tasks across a variety of platforms and applications without altering the underlying systems. By design, its application has been particularly concentrated in areas characterized by highly structured processes, where it has been viewed as enabler of higher efficiency, cost-effectiveness, and scalability.

The integration of both technologies offers multiple synergies.

Figure 1 Generative AI & RPA as a mutually reinforcing system



Generative AI introduces an advanced layer of intelligence that not only refines the sophistication of achievable automation but also broadens the scope of processes and tasks amenable to automation, extending from predominantly procedural processes and tasks to those involving complex problem-solving and decision-making that necessitate cognitive analysis.

In turn, the integration of RPA into generative AI can further enhance the completion of generative AI tasks. Besides enabling workflow automation across disparate generative AI tasks and integration with other capabilities, RPA can serve as a key enabler by streamlining and enriching the preparatory and post-generative phases of generative AI tasks. For instance, RPA can automate the extraction and pre-processing of relevant data sets that feed into generative AI models, ensuring consistency and accuracy of the input data.

Post-generation, RPA can among other things aid in integrating generative AI produced output into other systems, databases and workflows in a prescribed format. Moreover, RPA can also augment the reliability and integrity of generative AI outputs by embedding controls and validation mechanisms, ensuring it meets quality and relevant other standards and making the generative process more dependable while maintaining efficiency.

A critical component of the interaction between RPA and generative AI is the data layer. It serves as the foundation upon which both generative AI and RPA operate, facilitating the sourcing, processing and channeling of information. In this construct, RPA serves as the operational bridge between raw data and AI-processed information, contributing to a dynamic data lifecycle and, if well managed, optimized generative AI performance.

02

THE OPPORTUNITY SPACE FOR FINANCIAL REGULATORY AUTHORITIES

From the perspective of financial regulators, these technological advancements expand the opportunity space for internal innovation and digitalization. Whether deployed on a standalone basis or in combination with RPA, generative AI presents opportunities for use cases that were previously not realizable or constrained in their practical application due to the inherent limitations of traditional AI models.

Several emerging opportunities for application present themselves, which are set to further expand as the pace of development accelerates and generative AI models mature in terms of reliability and reasoning capabilities. At the current junction, conceivable solutions include :

- (Semi-)automated tools to execute core compliance assessments of entities during the licensing stage or as part of the off-site supervision cycle
- Digital supervision assistants, enabling novel and smart supervision delivery models including with respect to supervision planning, monitoring of licensed entities' risk and compliance profiles and live execution support
- Novel design options for digital conduct and consumer protection supervision instruments
- Policy development co-pilot solutions to assist in the drafting process, the analysis of policy trends (e.g. through thematic benchmarking) or the anticipation of policy impacts
- Digital agent solutions for the smart interaction with external stakeholders such licensed entities, license applicants and/or the intake and processing of queries from consumers

The technical design and the evaluation of the feasibility of these solutions will require an iterative approach, grounded in focused experimentation and testing and almost inevitably will necessitate bespoke training and finetuning to yield precise results. Additionally, authorities will need to lay the groundwork and ensure an appropriate data and information architecture exists to support their realization.

These more advanced opportunities come atop of other baseline application areas in day-to-day activities such as assistance in internal and external information retrieval and explorative analysis, drafting of communication materials and other routine information management tasks which can already now easily be implemented with readily available market solutions at limited cost and implementation effort.

03

A LOOK AT THE ANTICIPATED BENEFITS

Alongside the realization of other innovation and digital transformation initiatives, solutions anchored in generative AI and RPA have the potential to serve as an additional catalyst for operational excellence within financial regulatory authorities by elevating process efficiency and optimizing resource utilization, enhancing the overall quality of process execution, and sharpen insights for more informed decision-making.

Figure 2 Spectrum of potential benefits by generative AI & RPA solutions

ENHANCED PROCESS EFFICIENCY	<ul style="list-style-type: none">▪ Streamlined workflow processes and accelerated completion of tasks▪ More economic resource utilization with the redirection of efforts towards higher-value activities▪ Reduction in operational expenses through the automation of routine and administrative tasks▪ Increased scalability of processes with minimal additional resource or cost implications
ELEVATED EXECUTION QUALITY	<ul style="list-style-type: none">▪ Strengthened capabilities to process large data volumes, supporting more comprehensive analysis▪ Diminished risk and likelihood of errors through improved control measures▪ Greater consistency and reliability in task execution thanks to reduced influence of human basis
IMPROVED INSIGHTS & DECISION-MAKING	<ul style="list-style-type: none">▪ Deeper and more nuanced insights derived from richer data analysis, providing a stronger basis for making informed decisions▪ Increased flexibility in analysis, allowing for tailored approaches to specific decision-making contexts▪ Improved integration of diverse data inputs and formats

Naturally, the degree to which these benefits will materialize will vary based on the particular use case and, importantly, is predicated on having appropriate organizational prerequisites – both structural and soft factors - in place along with the appropriate (technical) safeguards such as in relation to generative model training and calibration.

What’s more, the latest generation of large language models benefit from enhanced cross-language capabilities including their ability to understand and generate text in multiple language thanks to the vast and diverse datasets trained on. While limitations remain, this further supports the case for scalability and greater cross-border cooperation among authorities in the design and deployment of such solutions.



CONCLUSION

The integration of generative AI with RPA holds significant potential in expanding financial regulatory authority's digitalization opportunities by extending into areas that require higher cognitive analysis. The opportunities and associated benefits, while possibly significant, are nuanced and dependent on the context of application.

As this series progresses, we will explore specific use cases for their practical and measured application in a regulatory and supervisory context.

The focus will be on providing initial perspective on their technical design as well as discussing how they can yield realizable improvements in operational efficiency and decision-making quality, bearing in mind the inherent constraints of the underlying technologies.

Generative AI and RPA can pave the way for a semi-autonomous supervision model. However, they should not be viewed as a panacea nor a replacement for human judgment.

ABOUT REGXELERATOR

Regxelerator is a technology-powered intelligence platform and innovation solution partner to the financial regulatory community.

As an intelligence platform, Regxelerator focuses on the development of novel, AI-enabled solutions that enhance access to and smart extraction of insights from financial regulatory developments. Its flagship platform Regxplora integrates regulatory updates from over 700 sources globally including financial regulators, central banks, standard setters and other key actors in the financial regulatory ecosystem.

As an innovation partner, Regxelerator assists financial regulatory authorities in accelerating organizational performance and transformation, combining traditional advisory offerings with generative AI and RPA-powered solutions and tools.

For more information visit regxelerator.com or send an inquiry to contact@regxelerator.com.