EUROPEAN CENTRAL BANK

EUROSYSTEM

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Fifth Meeting of the European Fintech Payments Dialogue

The 5th meeting of the European Fintech Payments Dialogue took place on 11 February 2025. Representatives of seven European fintechs and payment experts from the European System of Central Banks (ESCB) held a discussion on the theme of '*artificial intelligence in payments: use cases, EU regulation impact on business development and potential risks'.* Ahead of the meeting, a set of questions was distributed to help structure the dialogue (Annex 1).

Current, emerging, and potential future use cases of AI in payments

Participants noted a difference between classic machine learning (ML)[1] models, many of which have already been operating for several years, and recent artificial intelligence (AI), including large language models (LLMs)[2] and Generative AI (GenAI)[3], which is currently giving rise to new use cases. Traditionally, investment was focused on back-end use cases such as operational process optimisation and fraud prevention. Recent years have however seen a surge in investment in front-end solutions, particularly chatbots used in the retail financial sector.

The participants identified transaction monitoring, as well as fraud detection and prevention, as mature use cases that have been deployed at scale and operating autonomously for several years. Moreover, risk assessment and credit scoring areas (e.g. Buy Now, Pay Later) can be improved by using advanced AI models, due to their ability to detect patterns and anomalies imperceptible to the human eye. In this context, detecting changes in behaviour and cadence[4] (such as the frequency and mode of salary payments) is too challenging for traditional analytical tools but just ripe for AI-based analysis. Some suggested that AI has the potential to elevate financial services by harnessing data that has long been available yet remains untapped by human analysts and combining streams of data located across isolated sources. Other use cases include payment process optimisation, routing, and security, as well as customer onboarding and KYC processes.

Current developments in AI technology can increase the personalisation of financial service offerings, challenging the 'one-size-fits-all' approach currently common in retail payments. It was suggested that GenAI and LLMs can enable companies to adopt a 'segment-of-one' approach[5], allowing them to satisfy each customer's needs based on their individual preferences and past behaviour. The introduction of conversational guiding elements operating on Natural Language Processing (NLP)[6] can also improve

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1 A subset of AI techniques which use algorithms and statistical models to enable machines to learn from data sets and make inferences without explicitly being programmed for specific tasks.

2 A type of AI model trained on vast text-based datasets and specialised to understand and generate text.

3 A type of AI model capable of generating new content (e.g. text, images, music) in response to a given prompt.

4 In business terminology, cadence refers to how often a regularly scheduled thing occurs.

5 A concept whereby all customers are provided with truly individual and customised offers and services at every moment of the customer relationship.

6 A subfield of ML focused on the interaction between computers and humans using *natural language*, enabling machines to understand and respond to human language more effectively.

accessibility to payments and benefit vulnerable groups like the elderly and people with limited or no technological skills.

Using AI agents[7] can improve efficiency and free up resources for complex cases but does not remove the need for human involvement. The latter will remain essential because people understand situational context better and crucially support the AI 'learning process' by programming expert knowledge into the model itself. Further, while AI enhances the capabilities of both the individual and the team, it cannot turn a novice into a professional. Hallucinations[8] also remain a significant challenge for LLMs, especially as they are used to tackle more complex tasks.

Potential future use cases discussed include AI-powered orchestration, automated decisioning and AI-driven smart payments. The example of an app that integrates instant payment systems with chat interfaces using AI was also discussed. Although such commercial solutions have not yet been fully explored in the European market, it was noted that similar use cases could be provided in countries where mobile payment solutions are especially prevalent. However, it was also argued that the most promising chat-based payment use cases relate to more dynamic and complex tasks such as automated moderation of customer disputes in real time. Overall, participants agreed that a user focused perspective is important when considering new product offerings and AI applications. Ideally, AI agents could be leveraged to deliver tailored services, effectively giving everyone their own personal financial assistant.

Prevalent business models in the market

Overall, most fintechs agreed that the business value of AI is rooted in its applications rather than the technology itself.

One presented business model includes two separate elements: the foundational aspects (AI model, technology, and data) and the use cases. The company does not sell the underlying technology itself but instead keeps it open source while encouraging partnerships and wider innovation. Profit is generated from the solutions built on top of the AI technology, as well as their integration with schemes and other platforms. Others have adopted a tiered subscription-based business model. In these cases, AI is priced into the subscription fees, as it is leveraged to provide value added products or services to the end user.

Another business proposition involves building proprietary AI foundational models that feed on and analyse consumer data. The firm uses them to suggest products, services, and solutions to merchants, operating on a percentage of the sales facilitated. Some fintechs choose to employ small language models (SLMs)[9], thus embedding AI to support their business operations while avoiding vendor lock-in. Simpler models produce fewer hallucinations while still executing necessary tasks successfully. Nevertheless, others noted that SLMs are unfit for their business purposes, which require greater reasoning capabilities offered only by multiparameter-capacity models.

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7 An AI agent is a computer program or system that can perceive its environment, make decisions, and take actions to achieve specific goals without human intervention (e.g. a self-driving car).

8 In the context of LLMs, hallucinations are instances where models produce misleading outputs that are grammatically correct and coherent but factually incorrect or nonsensical.

9 A language model with fewer parameters and a smaller dataset than an LLM, typically designed for specific use cases where computational resources are limited.

Other fintechs describe themselves as non-AI-native, having embraced open-source AI which is embedded and adapted to their specific needs and use cases. They argue that building complex proprietary models to support their solutions and products hinders profitability during business expansion.

Identifying and balancing risks

The discussion highlighted that AI-related risks to privacy and security are either inherent to the technology or arise from its practical applications. The former includes the potential for data collection and use without consent, susceptibility to data breaches as well as new attack vectors such as model inversion[10] and data poisoning[11]. On the application side, surveillance, manipulation, and reality distortion (e.g. deep fakes) – all of which can now occur at a grand, previously unattainable scale – are particularly key concerns.

To mitigate such risks, participants recommended adopting 'privacy by design' principles, such as data aggregation, anonymisation, regular purges and the utilisation of synthetic data and federated learning models. The use of privacy enhancing technology and local model inference[12] can also reduce privacy risks. The aforementioned measures should be supported by well-established robust security procedures. The established practice of employing 'trusted third parties' to mitigate privacy risk is not seen as future proof, and greater cross-organisational, cross-country cooperation is needed. It was argued that more cooperation between the EU institutions and the industry is necessary in order to support the safe development of AI in payments.

The fintechs noted that there is a need for explainable and transparent AI, particularly when decisions made by AI models affect consumers. In this sense, tackling the so-called 'black box' problem, whereby decision-making by advanced AI models (e.g. LLMs) is very difficult to understand, constitutes a major ongoing challenge. Clear communication to users, active accountability measures (inter alia using humans to verify results) and regular external audits are necessary to simultaneously ensure customer privacy and AI transparency. Furthermore, secure guard rails are essential to build consumer trust. Here regulation, even if sometimes constraining, has an important role to play. From a European perspective the strong reliance on third-party systems may negatively affect transparency. A company that does not train the model it employs, will find it very hard to ensure transparency in terms of training procedures, data, and fairness[13] criteria.

Systemic bias issues require a multiple level approach focusing on the data, as well as the choice and implementation of algorithms. Mitigation measures include effective data collection and pre-processing practices, the selection of algorithms with the appropriate fairness constraints, development of (and adherence to) guidelines prioritising fairness, ongoing monitoring with established metrics and regular external auditing. Employing diverse teams with the experience to recognise potential biases early is also key. User training and education can enhance the ability to recognise and address biases as well as foster a wider understanding of AI, its risks and potential mitigation methods.

Perspectives on the EU AI Act

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[10] A ML security threat where a model's output is used to deduce its parameters or architecture.

[11] A type of cyberattack involving manipulation or corruption of the training data used to develop AI/ML models.

[12] The process of running AI models on a local device, such as a smartphone, tablet, or computer (rather than relying on remote servers or cloud-based systems) thus avoiding external data transfer.

[13] Fairness in AI refers to the principle and practice of ensuring that AI systems operate without bias and provide equitable outcomes for all users.

The participating fintechs weighed the impact of the EU AI Act on payment related business development in Europe, and agreed in principle on the necessity of at least a modicum of guidelines as a prerequisite for the creation of a level playing field. As in the case of the Markets in Crypto-Assets Regulation (MiCAR), the EU AI Act can provide clarity and build a solid regulatory perimeter for European businesses. In the long-term, European companies are seen as having the potential to lead the way in ethical AI by balancing regulation and innovation.

Nevertheless, some concerns were raised about the European payments industry being left behind and unable to effectively compete globally because of heavy regulatory constraints. Due to its large scope, the Act is perceived by some as too open for interpretation, thus introducing additional uncertainty. This should be mitigated via the introduction of specific payments related guidelines (e.g. testing procedures and clear fairness metrics). The fintechs also suggested applying stricter controls in critical areas (e.g. credit scoring, biometric authentication and deep financial decision making) while limiting regulatory barriers for lower risk use cases (e.g. compliance optimisation and fraud detection). Additionally, any regulatory efforts need to be complemented by increased technical expertise and hiring of staff with experience in the operational field.

Insights: how can Europe catalyse the use of AI in payments?

Concluding the meeting, the participants proposed the following actions aimed at catalysing the further development and use of AI in payments by the European payments industry:

- Fostering data-based approaches in payments.
- Reducing regulatory complexity and creating specific guidelines for the EU AI Act in payments.
- Providing (cross-border) regulatory sandboxes.
- Adopting a proportional approach to AI regulation: different rules for different use cases.
- Implementing strategies and practices that prioritise safety.
- Driving and supporting innovation by focusing on open-source foundational models.
- Building technical expertise to expand knowledge and trust.
- Collaborating as an industry beyond just fulfilling the required regulatory obligations.

Annex 1 – Discussion questions

Participants were invited to answer and discuss the following questions:

- How do you apply artificial intelligence in payments? What could be future use cases? Do you anticipate a difference in the usability of artificial intelligence between front-end and back-end aspects of payment transactions?
- What are the dominant business models in the market today? To what extent are payment Fintechs dependent on third-party AI providers? Do you see barriers related to scaling AI solutions or integrating them with existing payment gateways?
- What are the risks in the use of artificial intelligence and how can these be balanced: what are risks for privacy and security? What are the risks related to systemic bias? What are the challenges when sourcing training data for AI models? How is transparency ensured?
- How do you foresee the EU AI Act influencing the development and deployment of AI technologies in payments? Will you have to adapt your existing business model(s) following the AI Act? Which EU regulation do you consider having the most significant impact on business development? What would you ideally expect from the ECB/Eurosystem regarding developments in AI?

Annex 2 – List of participants

Chair

Mr. Dirk Schrade	Deutsche Bundesbank

Fintech Participants

Mr. Mateusz Jakitowicz	Autopay
Ms. Monika Liikamaa	Enfuce
Mr. Nuno Sebastião	Feedzai
Mr. Stefan Christensen	Pleo
Mr. Baldur Kubo	Cybernetica
Mr. Niall Dennehy	AID:Tech
Mr. Richard Müller	Senacor
Mr. Antonio Navarro	Senacor
Mr. Tobias Jünemann	Senacor
Mr. Andreas Werner	Senacor

National Central Banks Participants

Mr. Marcus Clausen Brock	Danmarks Nationalbank
Ms. Inga Schultze	Deutsche Bundesbank
Ms. Linda Lelumees	Eesti Pank
Ms. Heloise Rosset	Central Bank of Ireland
Mr. Pierre Bienvenu	Banque de France
Ms. Androniki Deleva	Banque de France
Ms. Iva Kopecki	Hrvatska narodna banka
Mr. Tomislav Mišić	Hrvatska narodna banka
Ms. Stella Ioannidou	Central Bank of Cyprus
Mr. Andreas Antoniou	Central Bank of Cyprus
Mr. Jūratė Butkutė	Lieutuvos bankas
Mr. Denis Hui	Banque centrale du Luxembourg
Mr. Stefano Savo	Central Bank of Malta
Mr. Jorgen Eijlander	De Nederlandsche Bank
Mr. Christoph Gluszko	Oesterreichische Nationalbank
Mr. Robert Klepacz	Narodowy Bank Polski
Mr. Rui Pimentel	Banco de Portugal

Ms. Denisa Iatan	Banca Națională a României
Ms. Rebeka Reven	Banka Slovenije
Ms. Iveta Behunova	Narodna banka Slovenska
Ms. Maria Huhtaniska-Montiel	Suomen Pankki
Ms. Karine Themejian	European Central Bank
Mr. Stylianos Chrysomallis	European Central Bank
Ms. Magdalena Zajac	European Central Bank
Ms. Elsemargien Constance Naudts	European Central Bank