

Homework on digital currency

Exercise statement:

Design an innovative Retail CBDC Use Case

Your task is to propose a **precise and commercially meaningful** use case for a retail central-bank digital currency (CBDC) in the Eurozone. The aim is to identify a real-world payment problem and show how a retail CBDC—distributed through intermediaries, subject to holding limits, and capable of instant settlement—could solve it more effectively than today's payment systems.

The proposal must be **specific**. It should:

- define the target users and involved stakeholders;
- describe the payment journey;
- outline the incentives of all parties involved, from consumers and merchants to payment providers and public authorities;
- demonstrate **business value**; and
- explain why the idea cannot be replicated easily with other or existing tools such as card networks, SEPA credit transfers, mobile wallets, or stablecoins.

Form

Submissions should include a **3–5 page brief** and two visual elements (for example, a system diagram or user-journey sketch). Make sure to include a short analysis comparing the proposed solution with the current landscape, highlighting the features that make a CBDC genuinely advantageous.

Instructions & guidelines

The best proposals are the most concrete and the most focused. Here are some instructions that help you guide towards a good brief.

- **Start with inspiration from your day-to-day life:** What currently causes you troubles when making payments? What could be made more efficient?
- **Focus on a specific scenario or environment:** Examples include public transport or other city services; a festival or concert; a school, university or cafeteria; a farmer's market.
- **Think creatively and identify root causes:** For example, if a payment fails, is it because of a lack of convenience or a technical issue? Technical issues are often

easier to address than user experience. Therefore, the latter may result in higher impact in the real world.

- **Do not try to solve all problems, but only one:** Often, an iterative approach is best. Start small and work from there.
- **A picture says more than a thousand words:** User journeys and flows are often best explained with a diagram.

When working on your proposal, keep the following guidelines in mind:

1. **Intermediated model:** distribution of wallets via regulated PSPs/intermediaries; end-users hold CBDC in wallets provided by intermediaries.
2. **Retail CBDC only** (no wholesale settlement use).
3. **Offline, small-value payments** are possible (assume realistic scenarios).
4. **CBDC is not “programmable money” but supports programmable payments** (conditions and workflows around a payment, not altering the currency itself).
5. **Compliance:** adherence to AML/CFT, GDPR, and strong consumer protection.
6. **Eurozone focus.**

But feel free to deviate if you can give a good reason!

Suggested homework structure

Executive Summary: one-sentence value proposition, target user and the pain point being solved, CBDC-specific feature(s) that make it possible, expected impact (e.g., cost reduction, inclusion, resilience).

Problem & Context: who is the user, where/when does the need occur, quantify today's problem (friction, latency, reconciliation pain, fraud/privacy gaps, fees, failed payments, offline gaps, cross-system fragmentation), why does it matter.

Stakeholders & Incentives: map all relevant parties, show incentive alignment (who gains what; who pays; win-win dynamics).

Why CBDC: compare with other options, what cannot be done today or is materially inferior?

User Journey & Payment Flow: step-by-step user journey (happy path and edge cases), sequence diagram, if applicable handling of offline mode.

Business Model & Compliance: provide a basic outline of the pricing model, potential cost drivers, user value, adoption, AML approach, and consumer protection, explain how your idea could be rolled out successfully and what partners would be required.