

E-kronan

Handelshögskolan
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Agenda

- What is a CBDC (Central bank digital currency)
- How is the Riksbank working with a potential e-krona
 - Technical pilot/research – a base for learning!
 - Legal research
 - Policy research/analysis
- Road ahead!
- Questions?



What is a CBDC?



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- A digital payment instrument, denominated in the national unit of account and a direct liability of the central bank. (The digital money we use today is a claim on a private bank.)
 - Exchangeable 1:1 with other forms of svenska kronor
 - Retail CBDC – available for general public.
 - Wholesale CBDC - restricted to wholesale, financial market payments.
 - **NOT Crypto! The opposite**
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Why is this interesting for the Riksbank?



Payments report 2022

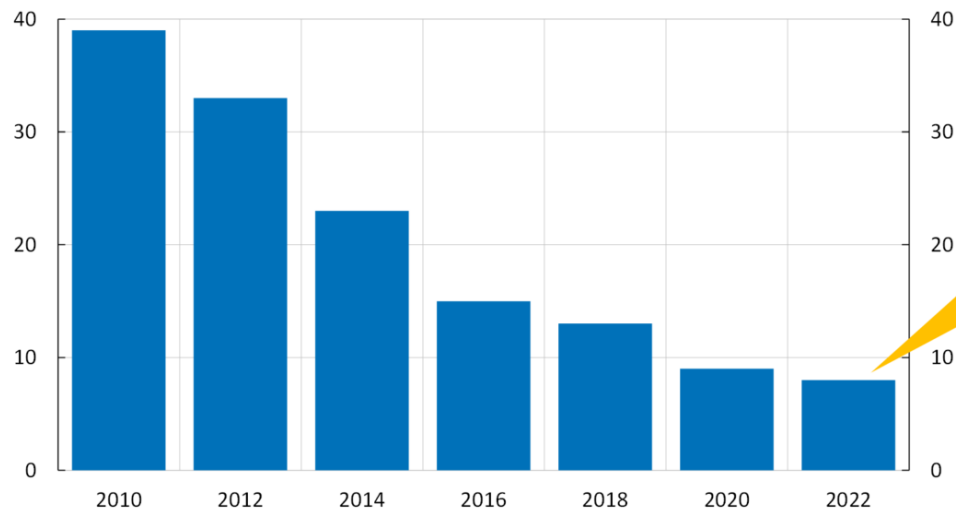
Making payments have become easier...for the majority

Cash is used less and less



- The usage of Swish is increasing
- More integrate their payment card in the mobile phone
- More and more elderly shop online and use digital payment methods

Percentage that has used cash in their latest payment

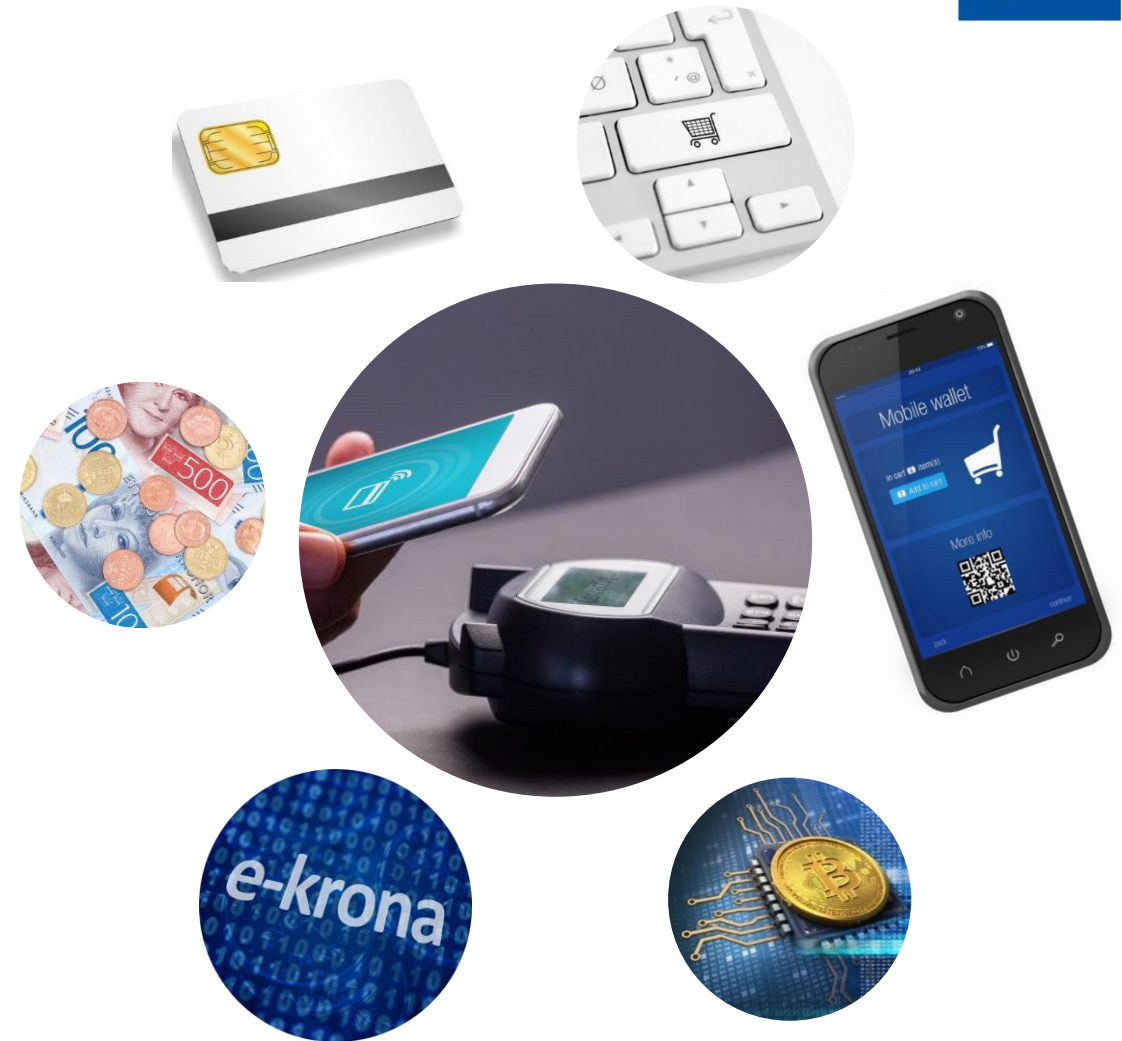


2022:
8%

Source: Riksbanken

This can be problematic

- A public good with network externalities. State issued money as role of an anchor
- Vulnerable groups have problems with daily payments
- Crisis preparedness and resilience
- Competition in market with natural monopoly



The Riksbank's mandate

The Riksbank is Sweden's central bank and a public authority under the Riksdag (the Swedish parliament). The Riksbank is responsible for conducting monetary policy, the objective of which is to maintain a low and stable level of inflation over time. We shall also contribute to the stability and efficiency of the financial system, including the ability of the public to make payments. The Riksbank is also responsible for issuing banknotes and coins.

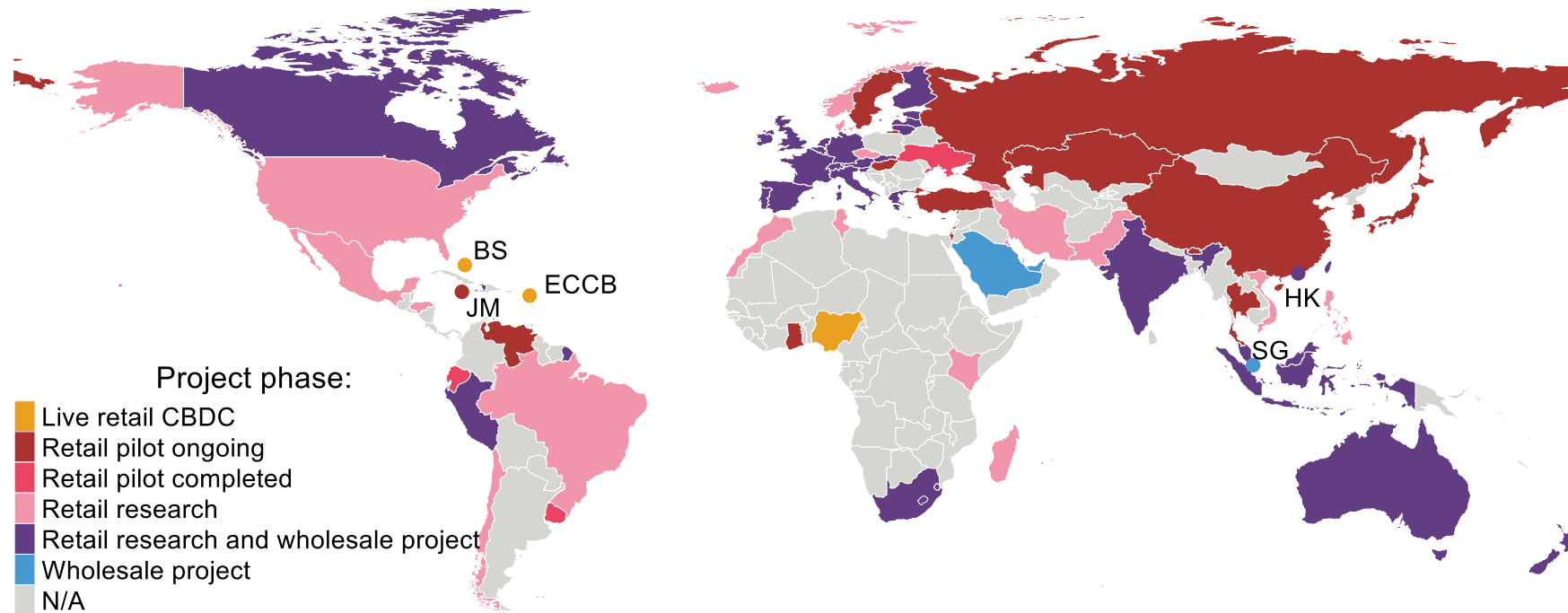
- An e-krona is evolution of the money we offer the public. Not revolution!

”What is going on at the Riksbank?!”

- Cecilia Skingsley 2016: *Should the Riksbank issue an e-krona?*
- We were quite alone in the beginning when we started looking at these questions
- Then came Libra/Diem & rise of stable coins which raised the interest at other central banks



Today almost every central bank is looking at it



BS = The Bahamas; ECCB = Eastern Caribbean Central Bank; HK = Hong Kong SAR; JM = Jamaica; SG = Singapore. The use of this map does not constitute, and should not be construed as constituting, an expression of a position by the BIS regarding the legal status of, or sovereignty of any territory or its authorities, to the delimitation of international frontiers and boundaries and/or to the name and designation of any territory, city or area.

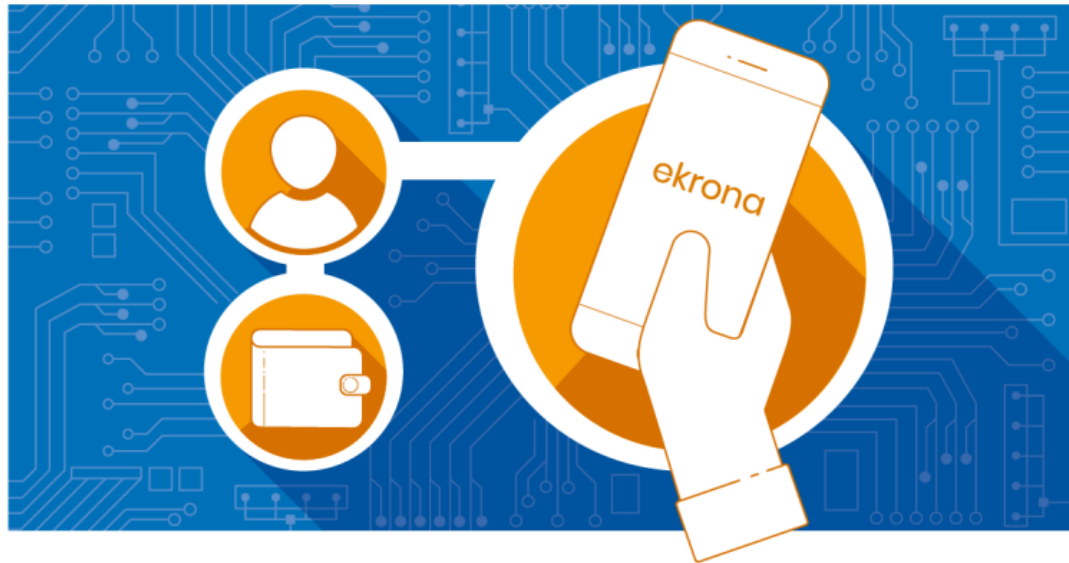
Source: R Auer, G Cornelli and J Frost (2020), "Rise of the central bank digital currencies: drivers, approaches and technologies", *BIS working papers*, No 880, August.

Motives for CBDCs differ across jurisdictions

Motivations	Explanation
1. Continued access to central bank money	Where cash is in decline, end-users may lose access to risk-free central bank money . A CBDC could act as a digital banknote and ensure that.
2. Resilience	Where cash is marginalised, its role as a backup payment method will be impaired. A CBDC system could improve operational resilience.
3. Increased payments diversity	High entry barriers dominate the payment market. A CBDC can increase competition , especially if it becomes interoperable with other systems.
4. Encouraging financial inclusion	Certain end-users have troubles in accessing private payment solutions. A CBDC may ensure that those end-users are able to make payments .
5. Improving cross-border payments	Cross-border payments are costly, slow, opaque and hard to access. Interoperable CBDCs could play a role in enhancing those payments .
6. Supporting public privacy	Today, only cash offers privacy when making payments. A CBDC could bring about some level of anonymity for electronic payments .
7. Facilitating fiscal transfers	In some situations (e.g. Covid-19) an efficient facility to quickly transfer funds to the public is beneficial. A CBDC system could offer this.

Source: Group of seven central banks and BIS, *Central bank digital currencies: foundational principles and core features*, October 2020.

E-krona objectives

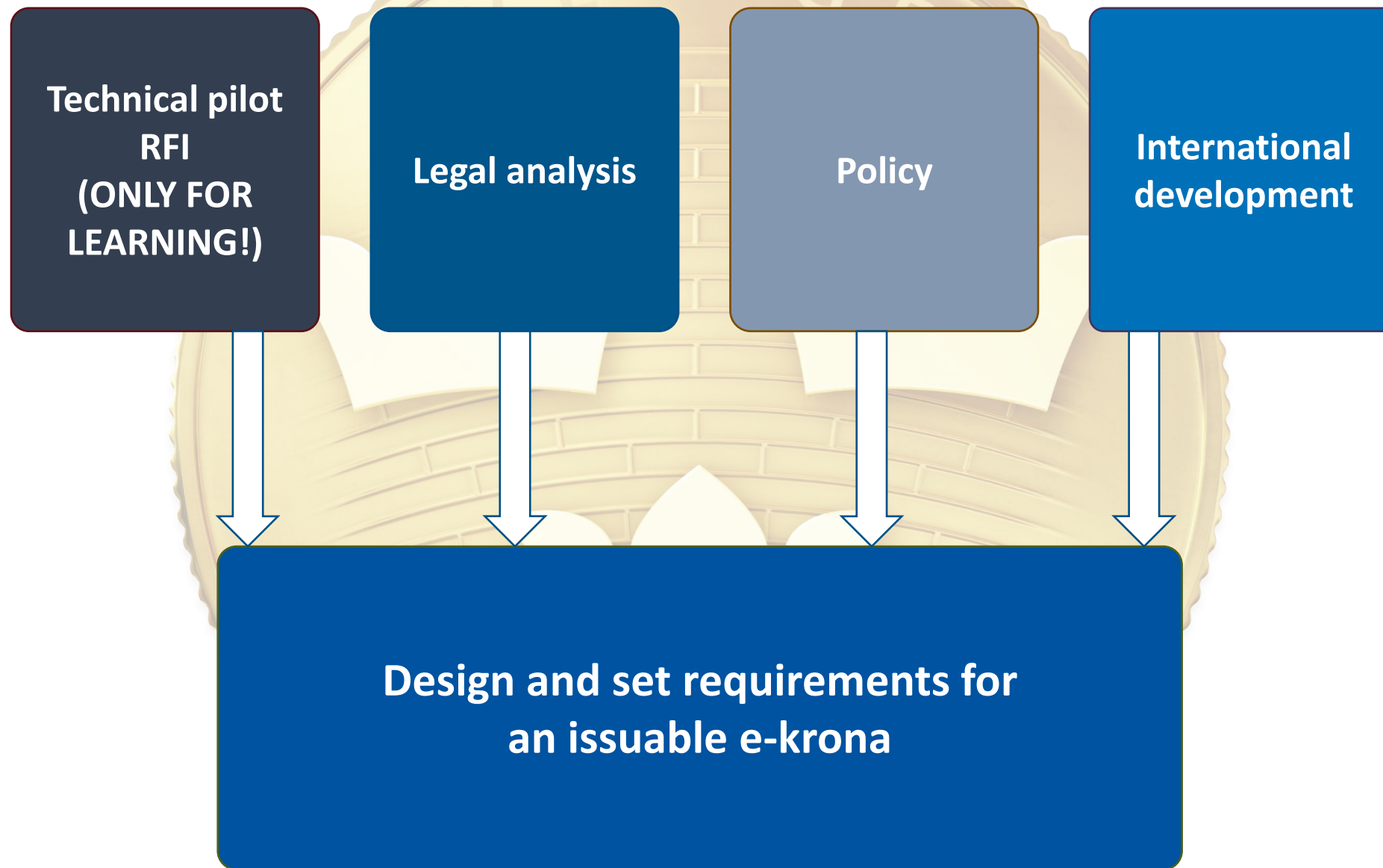


- To ensure **continued access to central bank money** for the general public
- To strengthen the **resilience** of the payment system
- To contribute to **innovation and competition**

Common policy principles the CBDC must take into account



- **'Co-exist'** with private forms of money within the existing payment infrastructure.
 - The e-krona must be exchangeable 1:1 with other forms of kronor
 - Design interoperability with other forms of money
- **'Two –tier model to promote innovation and efficiency'** in payments, fulfilling user needs
 - The Riksbank does not want any end user relations
 - Private actors on the market should distribute the CBDC and design payment services on it.
 - Open up the payment market for a broader group of actors
- **'Do no harm'** to other policy objectives beyond safe and efficient payments.
 - Avoid financial turbulence by introducing a CBDC
 - Safeguard monetary policy tool (ability to have low/negative interest rates)
 - ➔ Must be able to steer demand or cap supply of e-krona or control who can hold e-krona



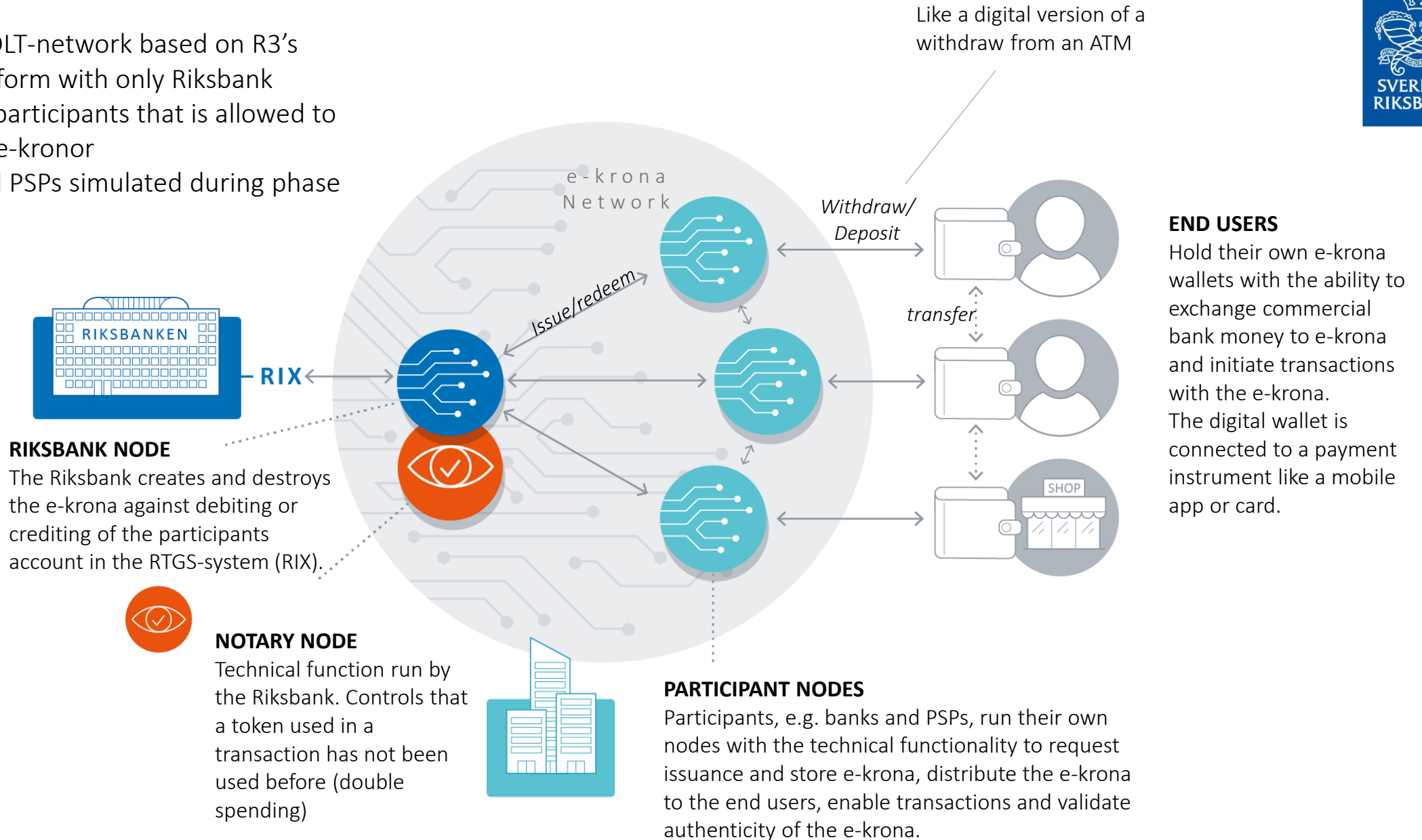
The E-krona pilot



- Develop and test a possible **technical solution (pilot)**
- Investigate **legal issues**
- Main objective is to gain knowledge of the **opportunities and challenges**
- **No decision** on whether to issue an e-krona or on how the e-krona would be designed and which technology would be used

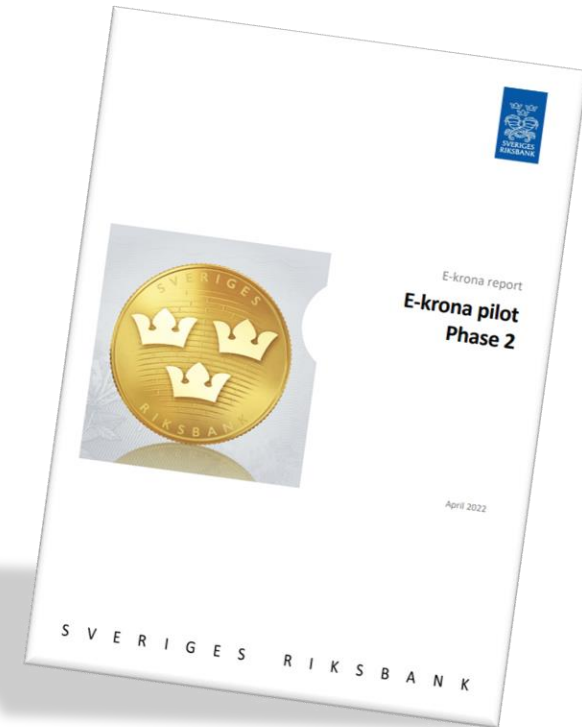
Distribution model and technical solution pilot

A private DLT-network based on R3's Corda platform with only Riksbank approved participants that is allowed to distribute e-kronor (banks and PSPs simulated during phase 1)



Main technical activities so far

- Integration of **external participants**
- Development of support for addressing e-krona payments **using alias'**
- Test possibility for **offline**
- E-krona POS payments with **payment terminal integration**
- Evaluation of **performance** and **scalability**
- **Test of programmability with smart contract**
- **Instant cross currency payments with Bank of Norway, Bank of Israel and BIS**



Policy question (some of them!)

- How should the e-krona be designed to meet the stated objectives (*Ensure access to central bank money for the public, strengthen resilience on the payment market and increase competition & innovation*)
- What should a retail e-krona offer to the end users? Functions and way of usage.
- How should we design the e-krona to guarantee "do no harm"? A steering model that doesn't kill the usability of the e-krona.
- How should the two tier model work?
 - Who should be allowed to design payment services on an e-krona platform?
 - How do we ensure business models for the intermediaries that design payment services on the e-krona?
 - What responsibilities should the intermediaries and the Riksbank have? AML for example...
- Given all policy choices → what technique should a potential e-krona platform use?



The Road ahead:

Internal:

- Working on the design document covering everything from policy goals, collaboration model, technical requirements, legal framework etc → "This is the e-krona"

External:

- An inquiry of the states role on the payment market (finished march 2023)
 - What role should the state have in the payments market?
 - What is the role of the central bank?
 - Should the Riksbank issue an e-krona?
- ...And what happens at other central banks (ECB, FED & bank of England etc.)?



”Sveriges Riksbank Economic Review 2, 2022”: <https://www.riksbank.se/en-gb/press-and-published/notices-and-press-releases/notices/2022/new-issue-of-the-riksbanks-journal-economic-review2/>

”E-krona webpage” <https://www.riksbank.se/en-gb/payments--cash/e-krona/>

Thank you!

