

A Cross-Border Payments, Exchange and Contracting Platform

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18th Annual NBP-SNB Joint Seminar – November 2022

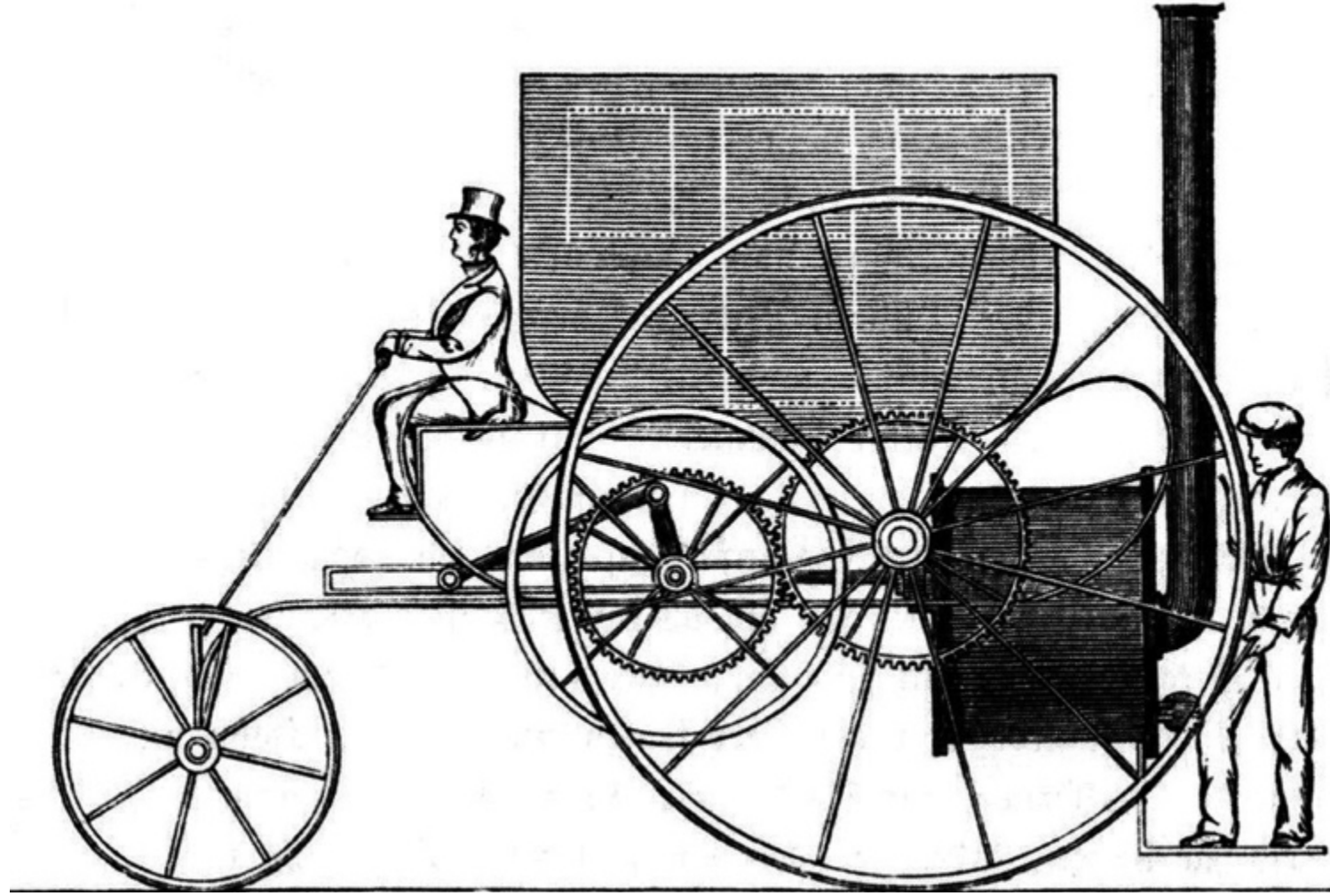


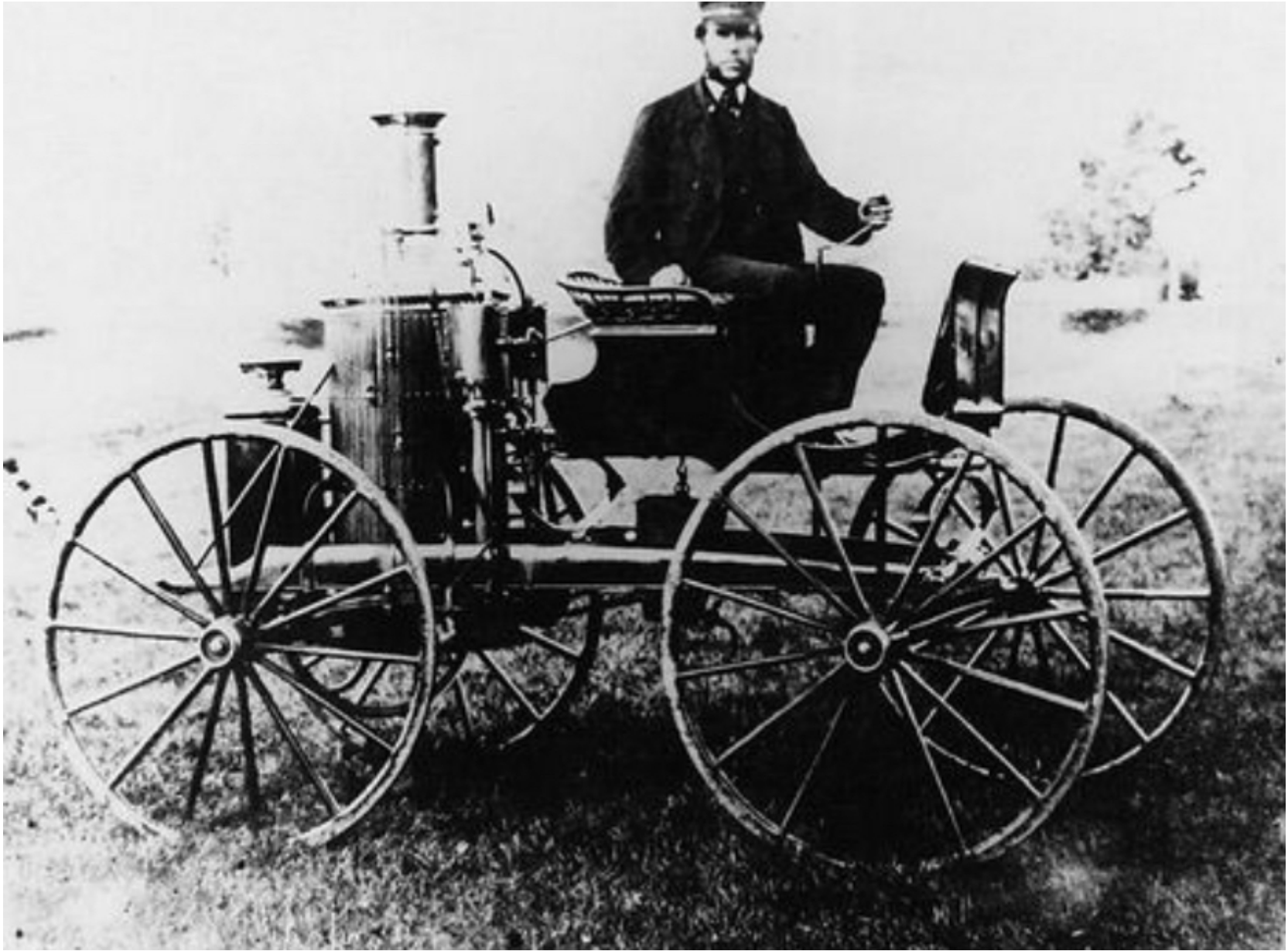
Innovations

— the engine —









Useless
Awkward
Dangerous!

Cars

Roads

Rules

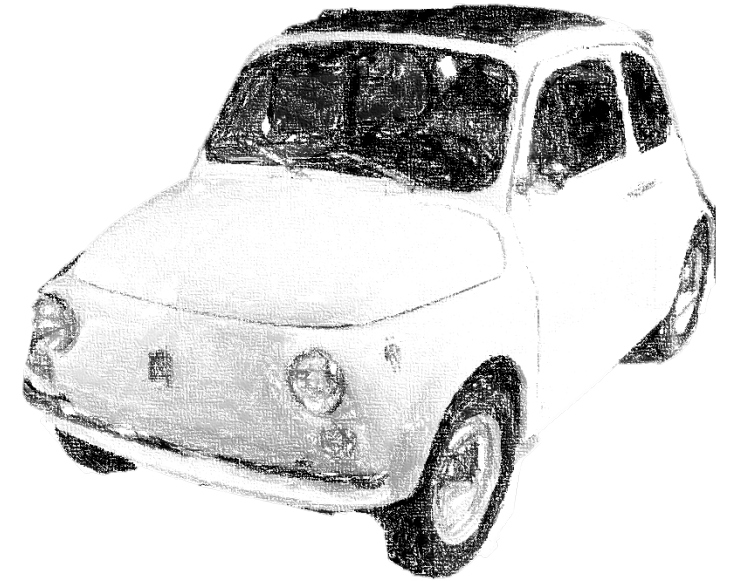


Useless
Awkward
Dangerous!

Cars

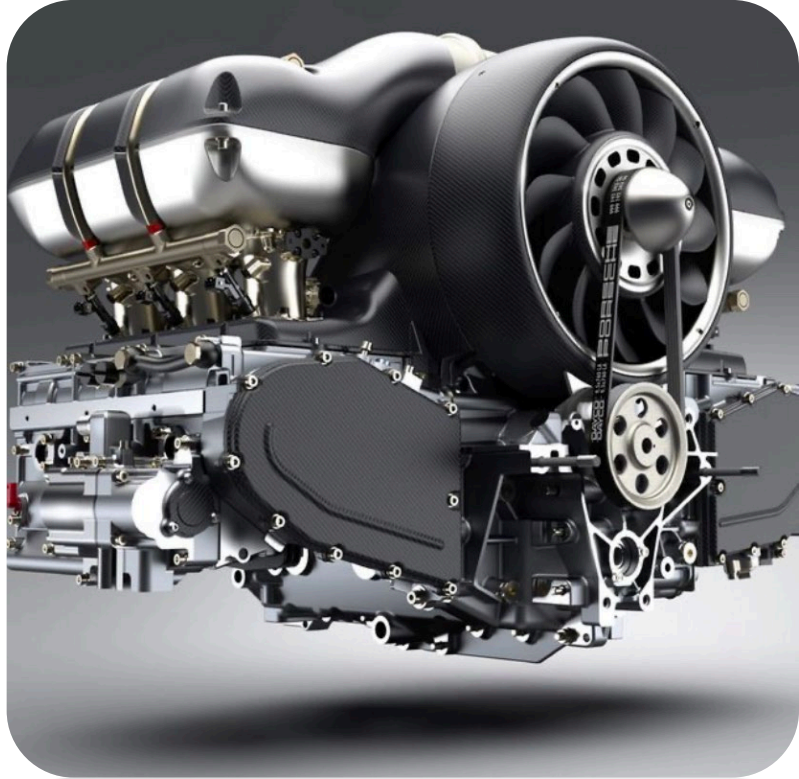
Roads

Rules



Can we build infrastructure
that leverages new technology,
and guides the adoption of technology
for public policy goals?





Tokenization

Cryptography

Programmability



Tokenization

Cryptography

Programmability

Unbacked crypto

Stablecoins

Defi

Other...



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Tokenization

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Unbacked crypto

Stablecoins

Defi

Other...

Unstable value

Runnable

Pseudonymous

No clear issuer





Prudential, conduct, payment, disclosure,
governance, financial & market integrity

Consistent across risks and activities

Comprehensive across all entities

Coordinated across countries

Prudential requirements on banks



Unstable value

Runnable

Pseudonymous

No clear issuer

Consumer, invest-
-or protection

Financial stability

Financial
integrity

Macro
& other...

Interoperability

Safety

Efficiency



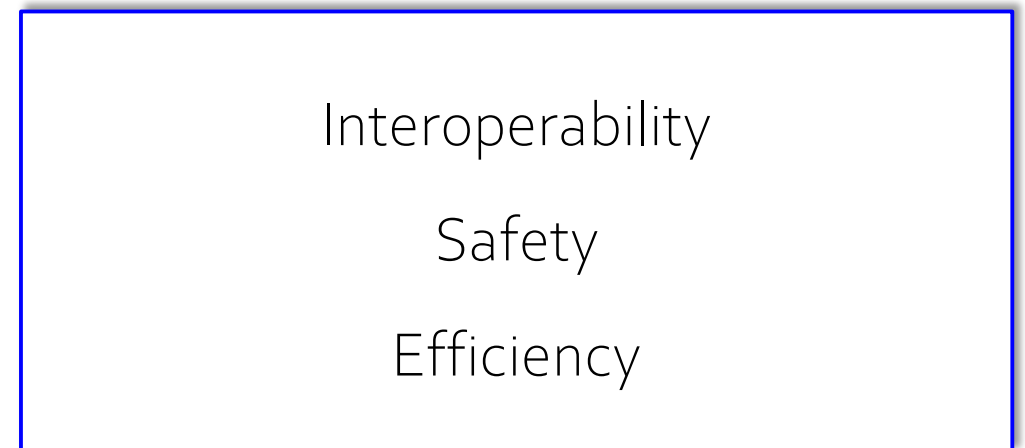
We know how to deal with these problems...
... in domestic payment systems



ALICE...

wants to pay...

BOB



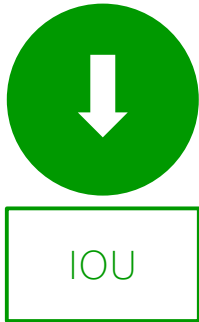
Can we do the same for cross-border payments?



ALICE...

wants to pay...

BOB



Risks and costs favor few large players...
... underly today's limitations

Cross-border payments, exchange, and contracting
platform (X-C platform)



Tokenization



Exchange of escrowed central bank reserves

Cryptography



Information management & compliance

Programmability

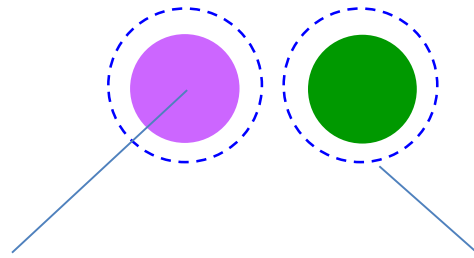


Automation of contracts

Governance & rules (by central banks)



X-C Platform – Feature 1: Single ledger tokenization



National money

CB reserves

Escrowed on platform

Public good

A token representation
of escrowed money

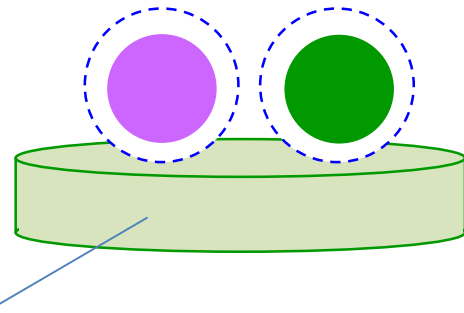
On single ledger

Not necessarily DLT

Advantages

- Safety & funding liquidity
- Enlarged access to CB money...
- ... while retaining oversight
- Known settlement assets
- Interoperability among multi currencies...
- ... and with legacy systems

X-C Platform – Feature 2: Contracting



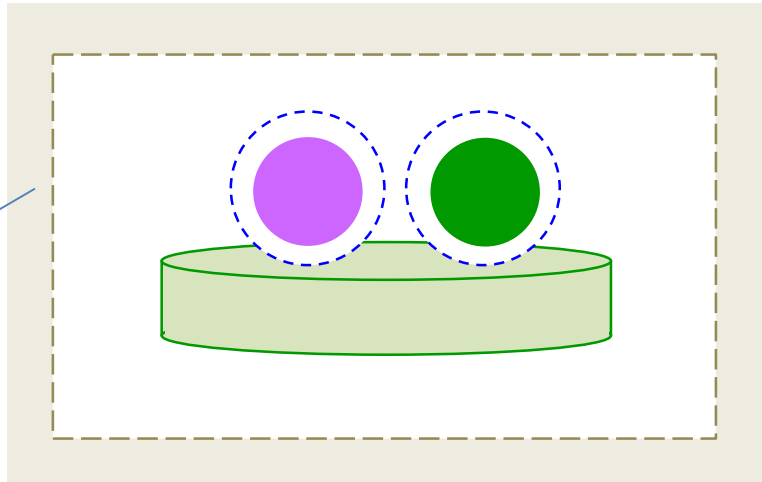
New public good

Common programming
interface/ language

Advantages

- Spot: payment-vs-payment
- Future: pledge-vs-pledge
- Interoperability/ consistency of contracts
- Liquidity savings
- Automatic execution (commitment)
- No need for “trusted third party/ auctioneer”
- Lower counterparty risk/ trade fails
- Extensions by private sector

X-C Platform – Feature 3: Encryption



Credentials

CDD

AML/CFT

CFMs

Advantages

- Data nationally controlled
- Straight-through tagging of credentials
- Privacy preserving
- Truthful bidding...
- ... and no aversion to revealing, incentive to mislead, fear of being exploited
- Aggregate transparency (eg order book)
- Efficiency: size & access to info matters less

X-C Platform – Ecosystem

Financial firms

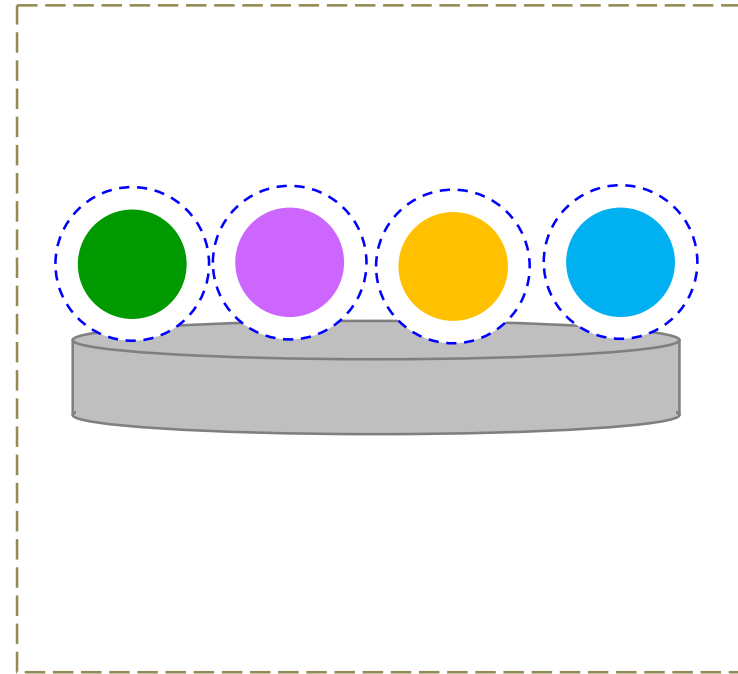
Link end-user

Banks

Provide liquidity, FX
Innovate (program)

Credential providers

Do KYC, AML/CFT
Check (off platform) CFMs



Same in country B

Same in country C

Same in country D

Possible X-C applications

Hedging, risk sharing, insurance

Monitoring and oversight

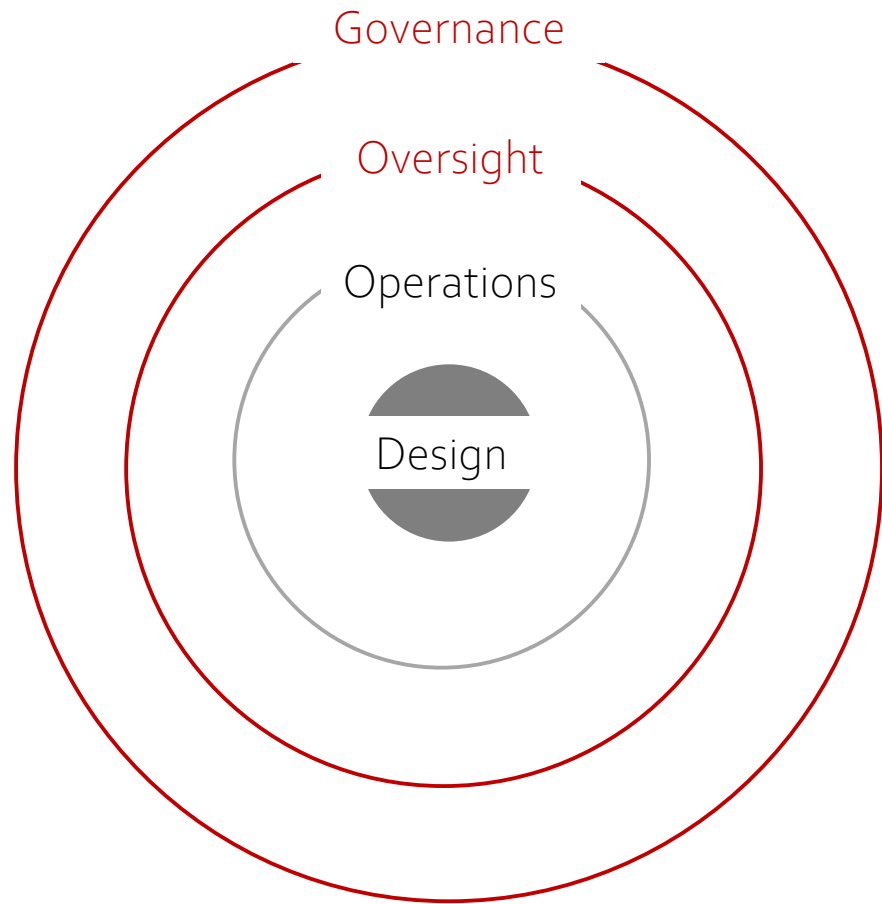
FX auctions

CB swaps & backstops

Extendibility by private sector

Automatic CFMs





Design

From vision to testing

Operations

Public sector provided or private sector under license

Governance & oversight

Who? Global body

What? Participation, legal treatment, recourse, data...

How? Rules vs. discretion

One more step...



Extension of public goods

Domestic
(RTGS)

- Rules & governance

- Settlement assets
- Infrastructure

- Single programming & contracting language

Cross-border
(X-C platform)



Safety, efficiency, interoperability



Tokenization of money

Tokenization of assets

Automation

Congestion & externalities

Finality?

Closed networks



At risk: Efficiency, safety, interoperability



Domestic
(RTGS)

- Rules & governance

- Settlement assets
- Infrastructure

- Single programming & contracting language

Cross-border
(X-C platform)

CBDC as a platform

To tokenize, pay, exchange, and program... on which the central bank can also issue

- Rules & governance
- Settlement assets
- Infrastructure
- Single programming & contracting language



Safety, efficiency, interoperability
of money & asset tokenization and automation



A CBDC platform stack

Smart contracts & innovation

API or other access

Compliance, access, tokenization
rules

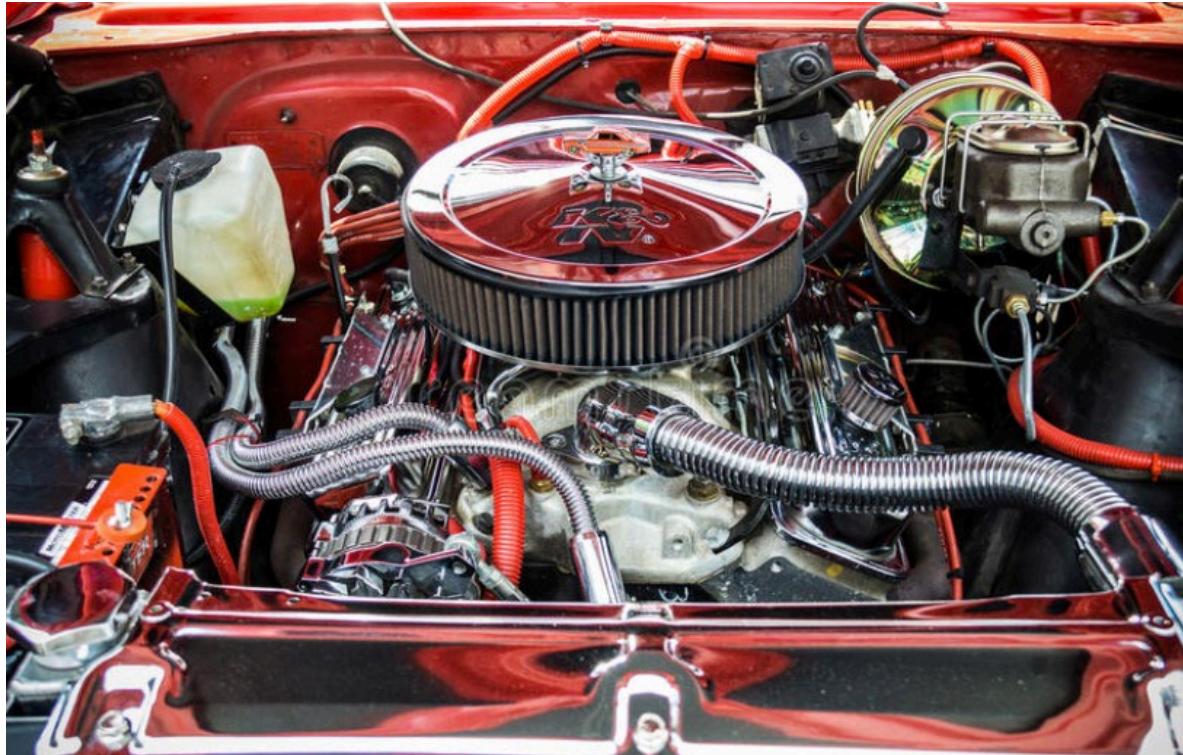
Common programming language

Safe settlement asset (*r* or *w*)

Unique shared ledger



What will the cars of tomorrow look like?



Much depends on the roads deployed



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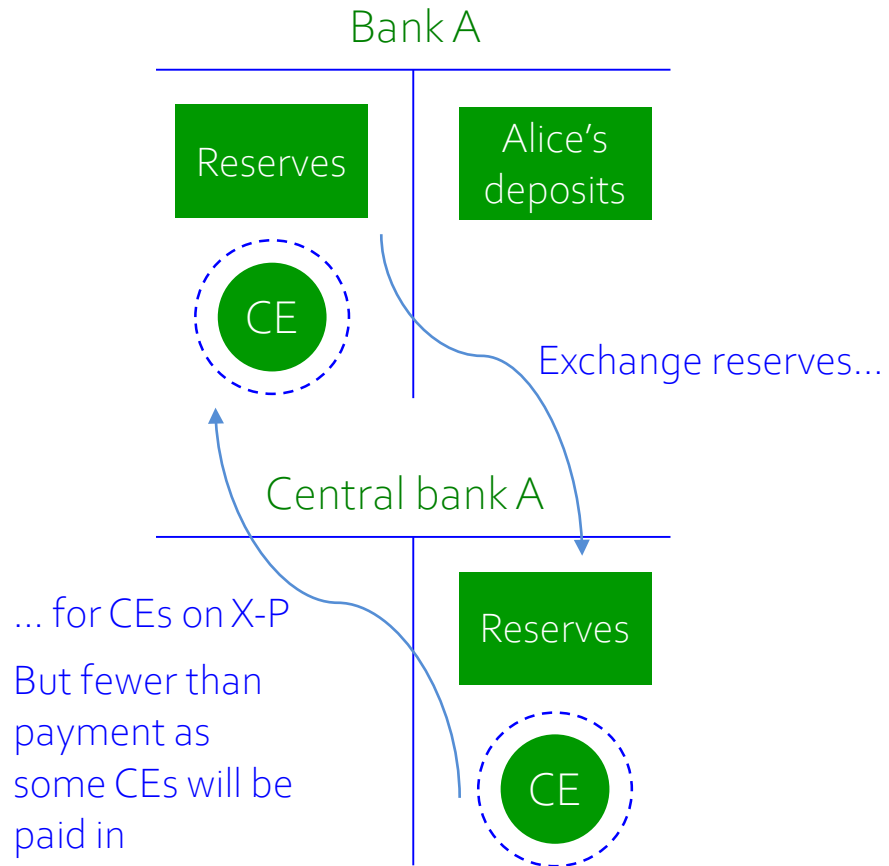


Appendix

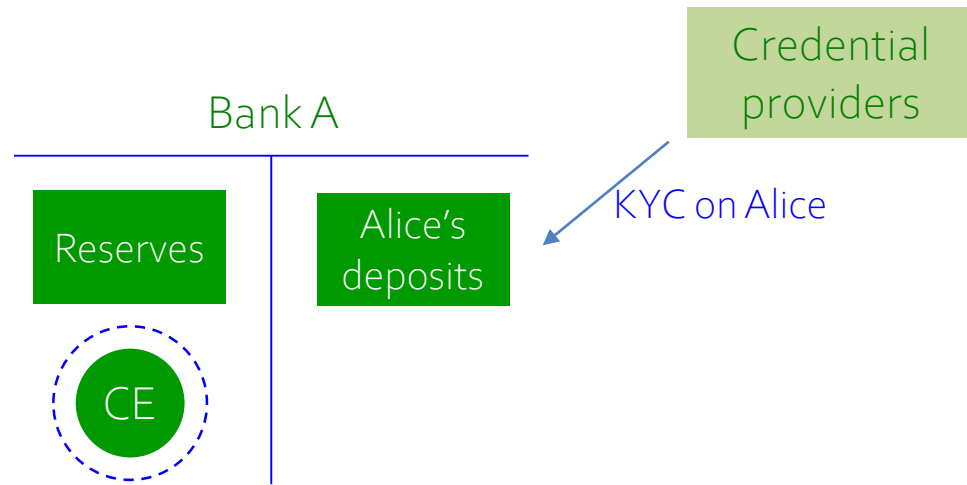
An example



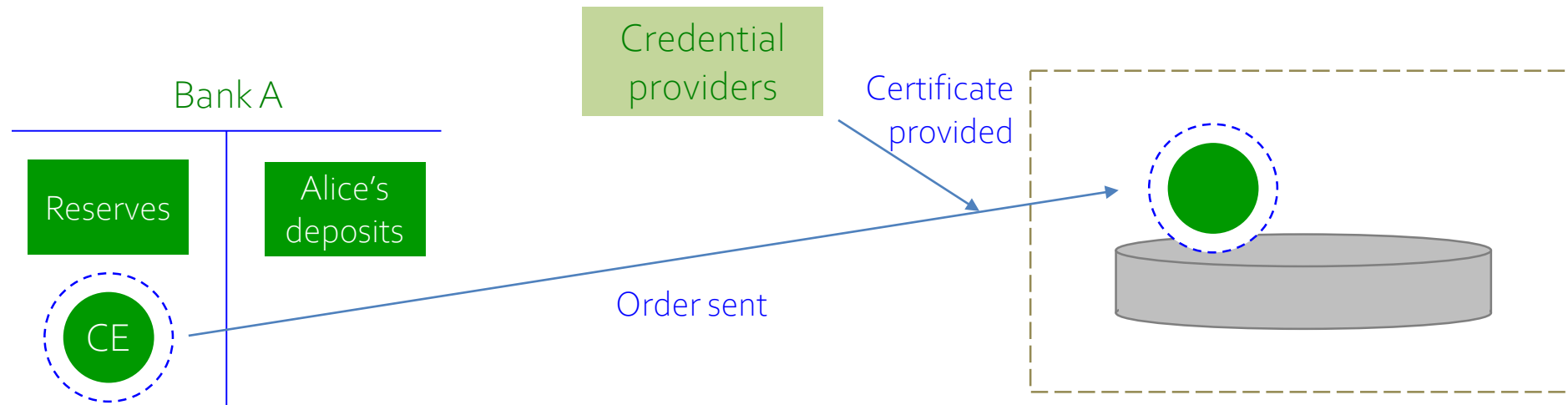
X-C Platform in action: Alice pays Bob



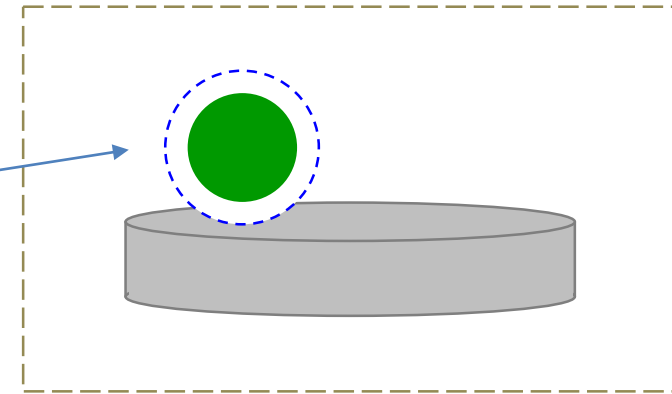
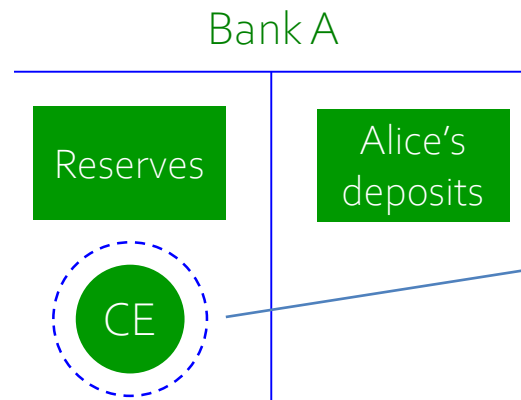
X-C Platform in action: Alice pays Bob



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X-C Platform in action: Alice pays Bob



Automated FX auction (green for purple)

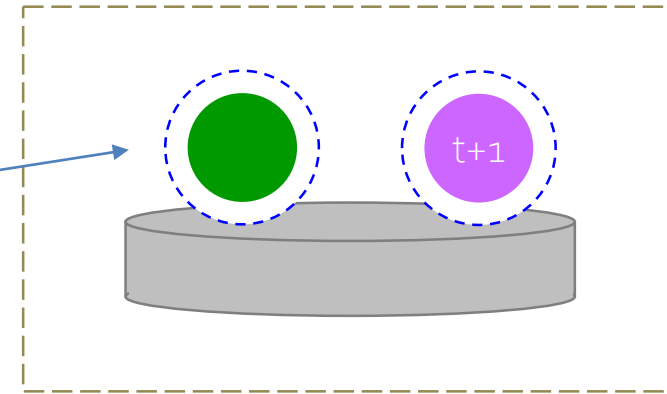
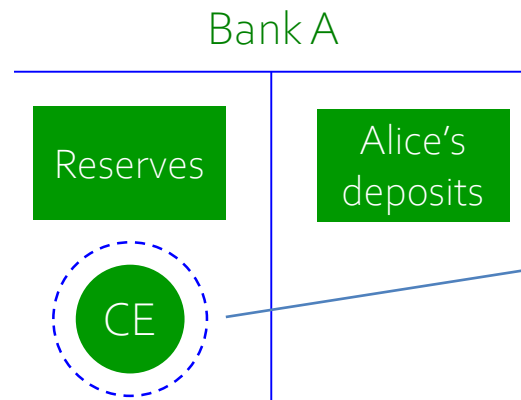
... open to all participants

... send (privacy preserving) bids

... can hedge, manage risks

... might even benefit from backstops (CB can participate)

X-C Platform in action: Alice pays Bob



Automated FX auction (green for purple)

... open to all participants

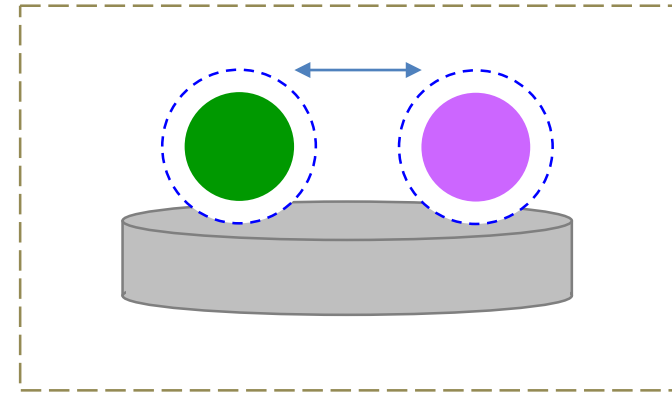
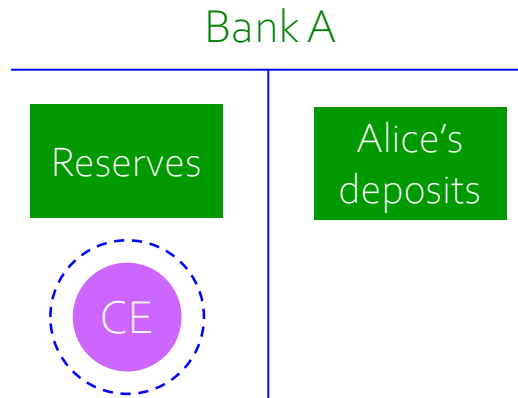
... send (privacy preserving) bids

... can hedge, manage risks

... might even benefit from backstops (CB can participate)

... can bid future receivables (consistent contracts)

X-C Platform in action: Alice pays Bob



On-platform CFMs checked
Green for purple CEs exchanged atomically

X-C Platform in action: Alice pays Bob

