

How do we want to pay?

A WIP report for Datenspuren 2026

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2026-09-19

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Are these the trade-offs we want to make?

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(This is our WIP report)

1. How do we want to **pay**?



What is payment?

Payment is a **process** to transfer funds from one person to another, often with intermediaries inbetween.

Payer → (**Intermediaries** →) **Payee**

A payment system is often called a **payment instrument**.
It is **not** necessarily a store of value.

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On first approximation:

1. Clearing



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Note: What characterizes the phases is a **failure mode**

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- taxability vs. anonymity
- monopoly vs. competition
- offline vs. double-spending risk
- etc.

3. **How** do we want to pay?



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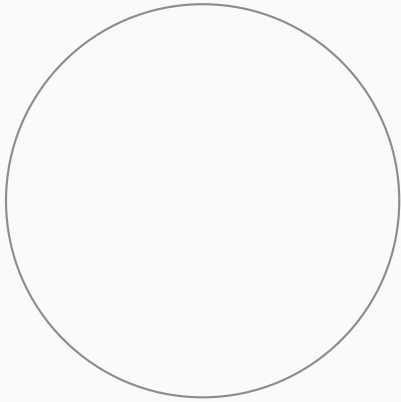
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Q: What makes an aspect **relevant**?

A: When a payment can **fail** because of it.

Failure modes

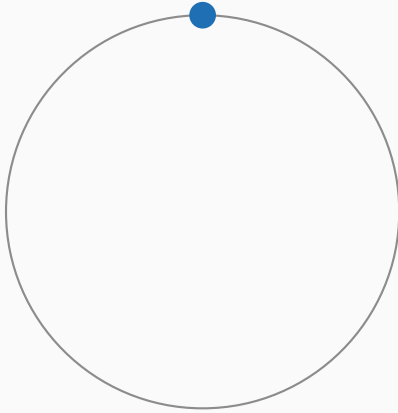
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Technical



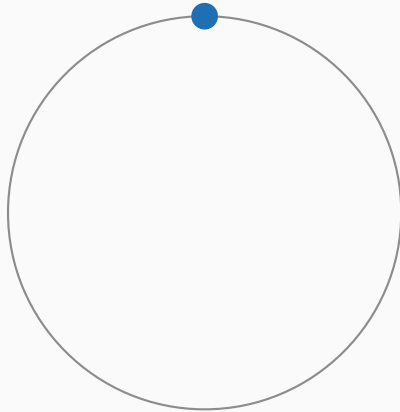
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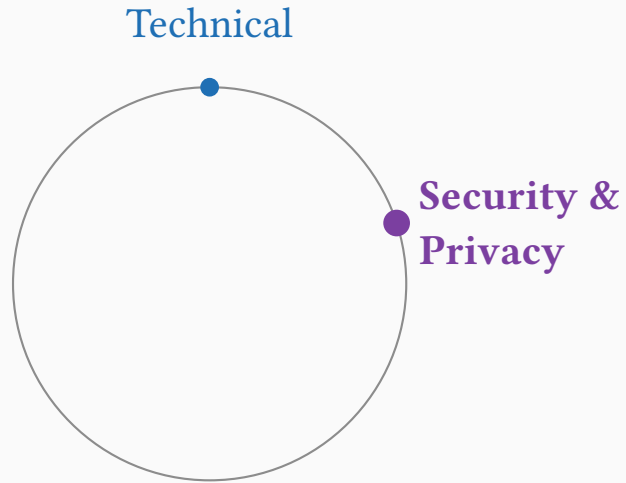
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Failure aspects, f.e.:

- no network or power
- unsupported device
- lost keys or cards
- double spending

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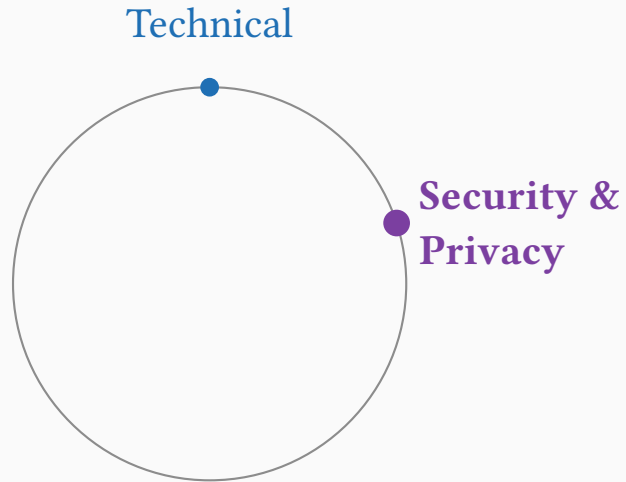


Security & Privacy

What holds when a participant is hostile?

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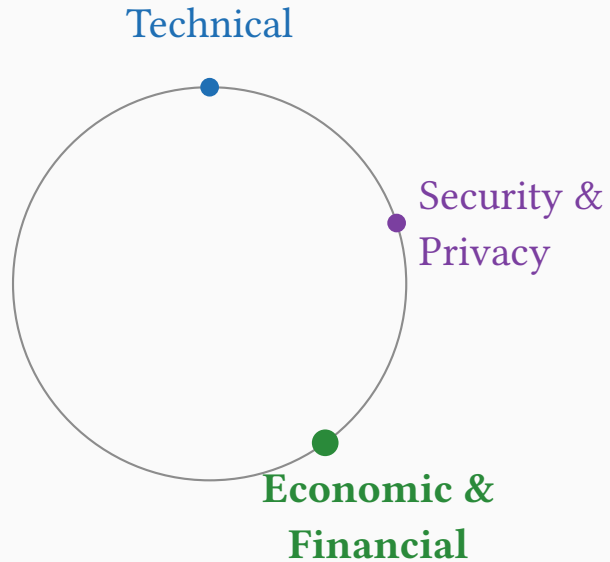
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Failure aspects, f.e.:

- fraud, phishing, stolen credentials
- user profiling
- data leaks

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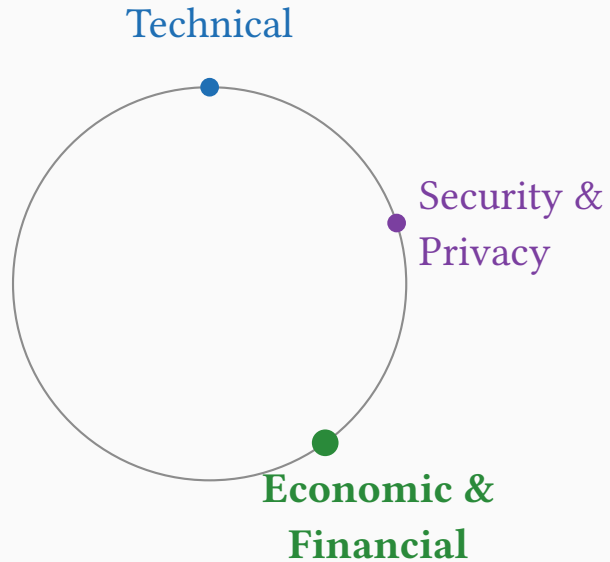


Economic & Financial

Who pays for running it, and is it actually economical?

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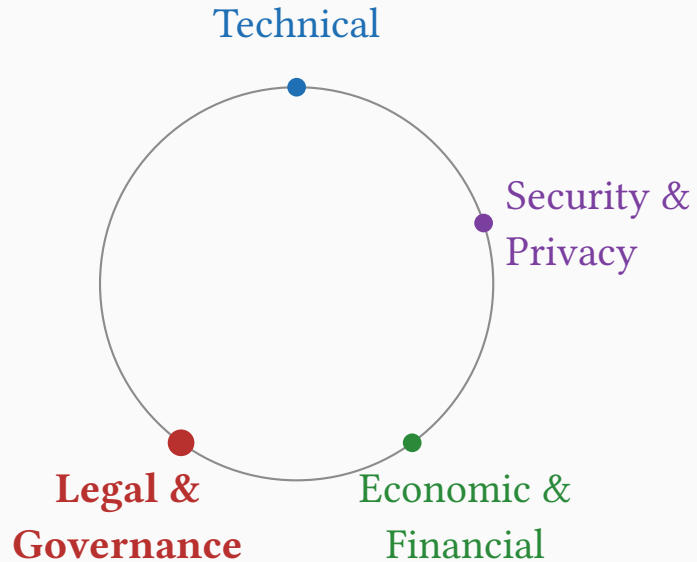
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Failure aspects, f.e.:

- no micropayments
- fees or operating cost too high
- chargeback losses

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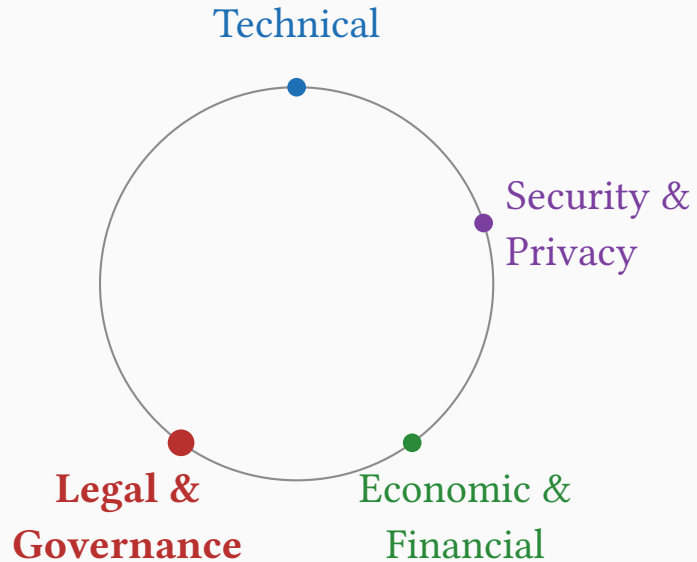


Legal & Governance

Under which rules may it operate, who sets them, who carries a loss?

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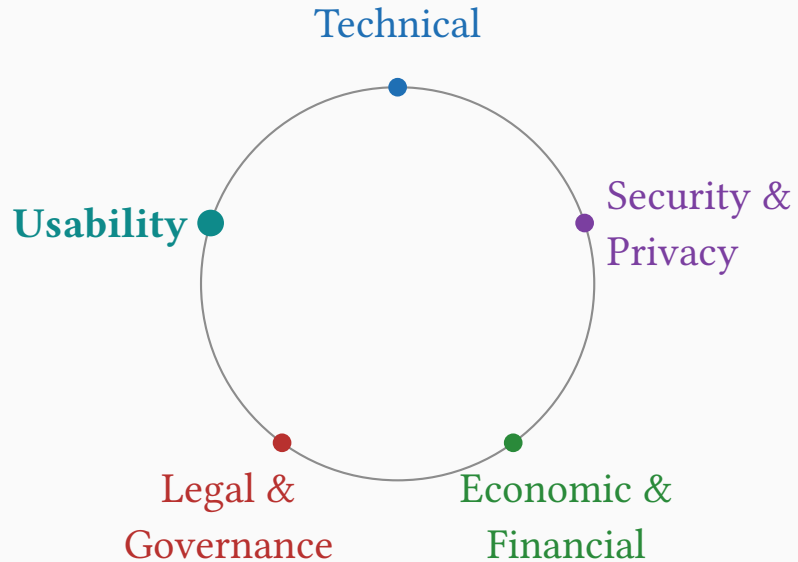
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Failure aspects, f.e.:

- frozen accounts
- blocked transactions
- foreign rule changes
- no recourse

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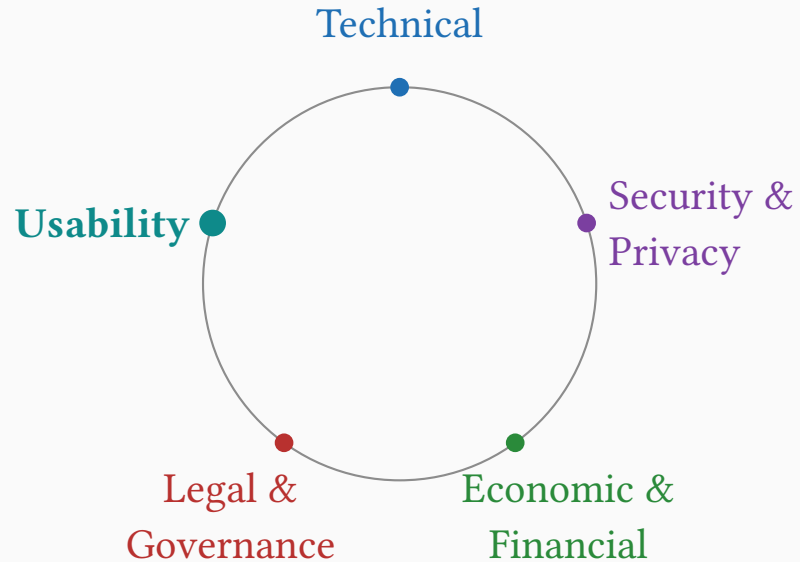


Usability

Can the intended payers, payees and adjacent systems actually use it?

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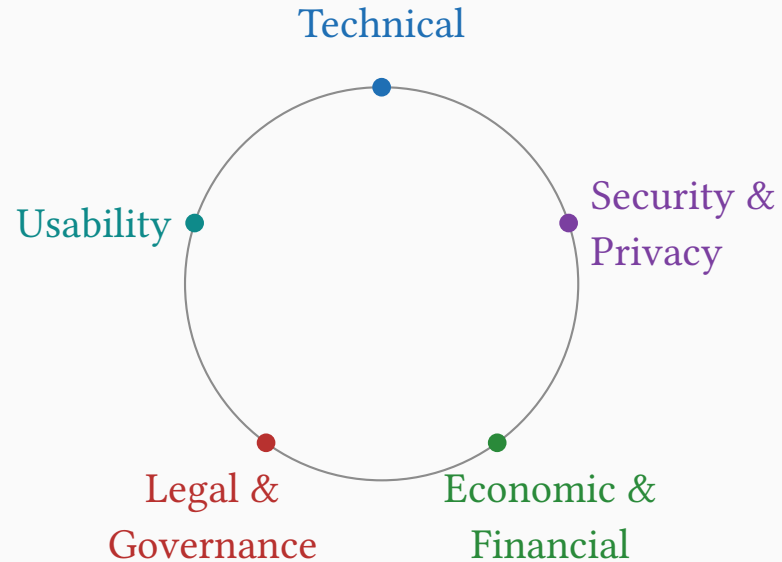
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Failure aspects, f.e.:

- too many steps
- abandoned or misdirected payments
- excluded users
- no interoperability

Failure modes

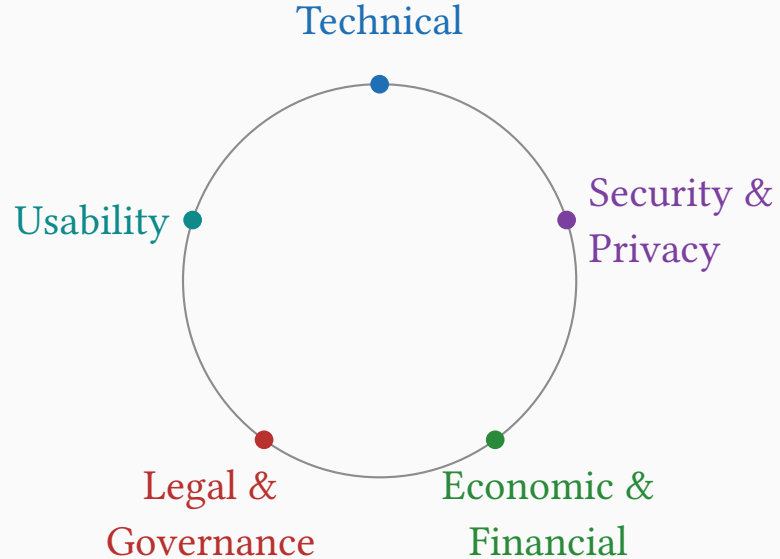
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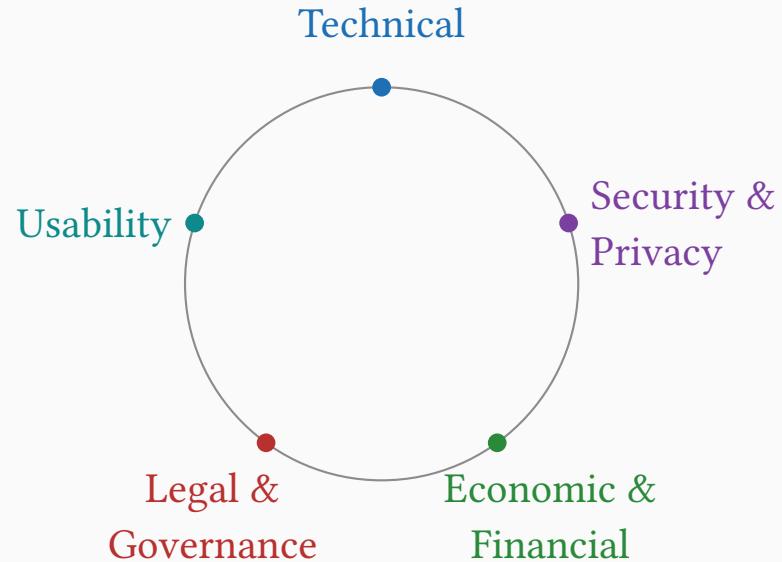


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Rules and designs decide which failures to avoid or accept, and who bears them.

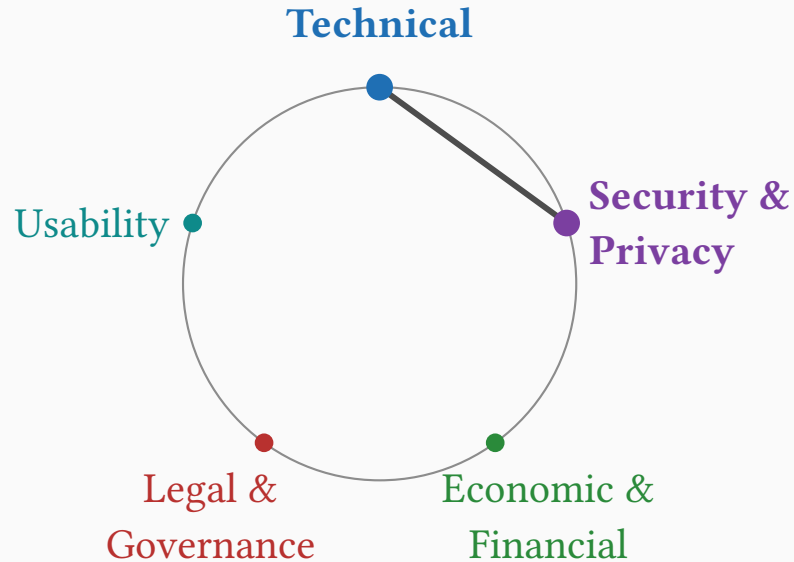
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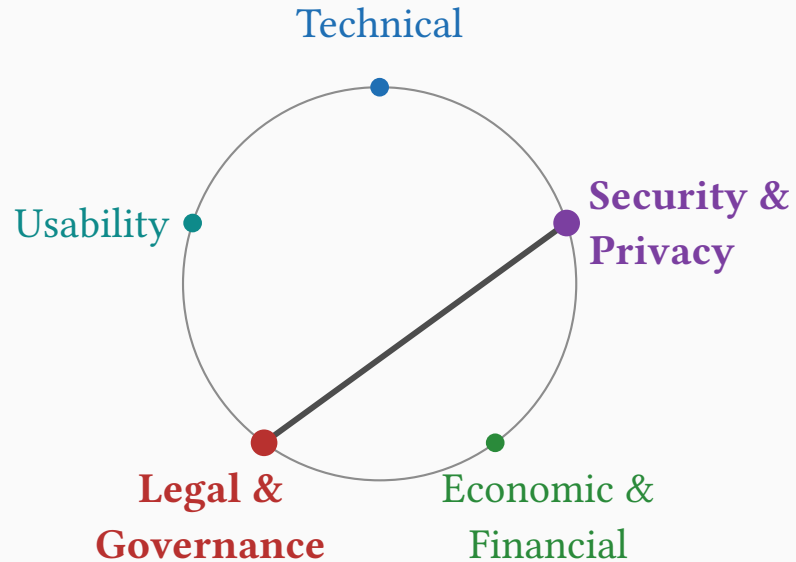


Offline payments
vs. **double spending**

Without a connection nobody can check whether the same funds were spent before.
→ trusted hardware, spending limits, or detection and liability afterwards.

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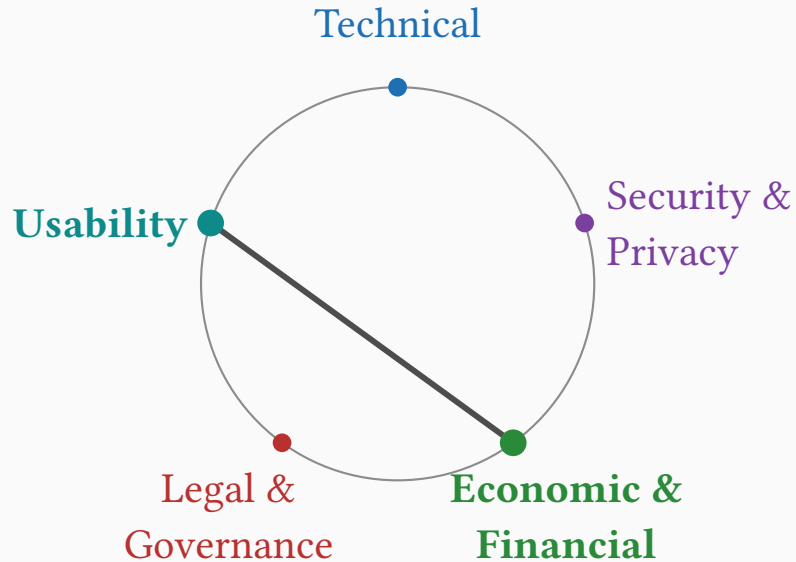


Full anonymity
vs. **taxability**

If neither side is known, income cannot be taxed and laundering cannot be traced.
→ anonymity for the **payer**, transparency for the **payee**?

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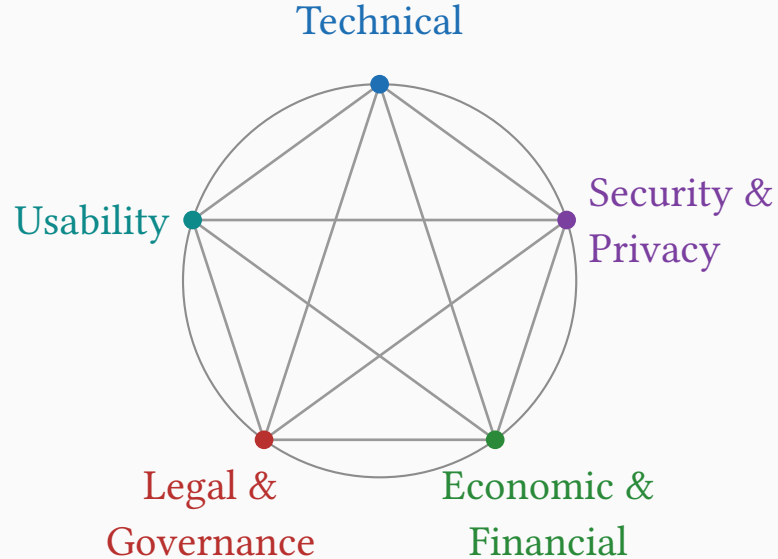


Ease of use
vs. **overspending**

One-click payments raise conversion, but also impulse purchases and debt.
→ some friction is a **feature**, not a bug.

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Note: Making trade-offs means making **design choices**
We just started to map out all the interactions.

What's available?

A first, very coarse comparison of payment systems along some of the relevant aspects:

	Payer private	Payee taxable	Low fees	Offline	Control
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Bank transfer	×	✓	(✓)	×	domestic banks
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Also: What are **actually measured values** of all the aspects in existing systems?

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(Not spoiled for choice: Non-anonymous CBDC's are still very successful, see Brazil, India)

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- Comprehensive list of relevant aspects and their interactions is still WIP
- Available Systems often lack measurements for certain aspects

References

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Acknowledgements

With funding from the:



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