Digital Freedom meets Digital Payments

Özgür Kesim

GNU Taler

NGI Forum 2025

Digital Freedom meets Digital Payments

How GNU Taler will help funding FLOSS

Özgür Kesim

GNU Taler

NGI Forum 2025

Thesis

Digital Payments via GNU Taler will help strengthen Digital Freedom

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Digital Freedom

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Digital Freedom
Stregthening

Strengthening Digital Freedom includes

- enabling (creating & funding)
- sustaining (maintaining & funding)
- protecting (legal)

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We will focus on FLOSS as representative of Digital Freedom

FLOSS
from 20.000ft

FLOSS = Free/Libre Open Source Software
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How is it funded?

FLOSS Funding

The Supply Side

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LARGE COMPANIES: longterm, large teams commitments.
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Large variance, 0–10.000EUR/month/developer

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Large Companies: longterm, large teams commitments.
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Volunteers: Hobby projects, Students
Probably majority of the contributions

FLOSS Funding

The Demand Side

Well-funded projects

Sustainable projects

Underfunded projects

FLOSS Funding

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Well-funded projects

- Linux kernel, Kubernetes, major frameworks
- Corporate backing, multiple revenue streams
- 1M+ EUR annual budgets, for sure.

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- 50K-500K EUR annual budgets

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Underfunded projects

- Critical dependencies maintained by volunteers
- Occasional small donations
- <10K EUR annual budgets

Wake up calls

Underfunding Desasters

Notable underfunding desasters in the past:

Wake up calls

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OpenSSL — Core library for cryptography and secure communication

In 2014, a security vulnerability in OpenSSL affected 17% of all web servers globally. Only one full-time developer secured billions of e-commerce.

Wake up calls

Underfunding Desasters

Notable underfunding desasters in the past:

OpenSSL — Core library for cryptography and secure communication

Apache Log4j — Widely used logging framework for Java

In 2021, a security vulnerability in Log4J affected millions of Java application world wide. Maintained primarily by unpaid volunteers.

Wake up calls

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Note:

- those were also severe **security incidents**
- many more examples exist

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Note:

- those were also severe **security incidents**
- many more examples exist
- not only funding, but also problems of **governance** and **non-financial needs**.

The Sustainability Paradox

Fundamental Tension in FLOSS model

+ generates enormous value for society and the economy
– struggles to capture sufficient value to sustain itself

Thesis

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Why should that help?

Gedankenexperiment

Let’s assume: new Digital (online) Payment scheme enters the market and reaches critical mass.

How much more funding will it generate?

Gedankenexperiment

4 cases

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Scheme A)
Account based

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Let’s assume: new Digital (online) Payment scheme enters the market and reaches critical mass.

Scheme A)	Scheme B)
Account based	Anonymous

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21% of donors require anonymity

How much more funding will it generate?

Gedankenexperiment

4 cases

Let's assume: new Digital (online) Payment scheme enters the market and reaches critical mass.

Scheme A)	Scheme B)	Scheme C)
Account based	Anonymous	Micropayments

How much more funding will it generate?

Gedankenexperiment

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Let's assume: new Digital (online) Payment scheme enters the market and reaches critical mass.

Scheme A)	Scheme B)	Scheme C)
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Market not even captured yet

How much more funding will it generate?

Gedankenexperiment

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Let's assume: new Digital (online) Payment scheme enters the market and reaches critical mass.

Scheme A)	Scheme B)	Scheme C)	Scheme D)
Account based	Anonymous	Micropayments	Microeffort

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Gedankenexperiment

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Let's assume: new Digital (online) Payment scheme enters the market and reaches critical mass.

Scheme A)	Scheme B)	Scheme C)	Scheme D)
Account based	Anonymous	Micropayments	Microeffort

Login loses 25%, a form field 5% of users

How much more funding will it generate?

Gedankenexperiment
formula

Combined Scheme

- anonymous (for buyers)
- micro payments (and still economical)
- micro effort (easy to use, easy to integrate)

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Expected Effect size

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Anonymous Micro–{Payment & Effort} $\Longrightarrow$ **Macro Effect**

Thesis

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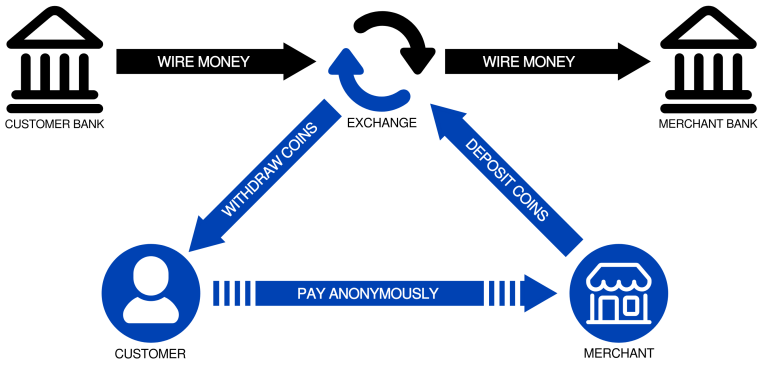
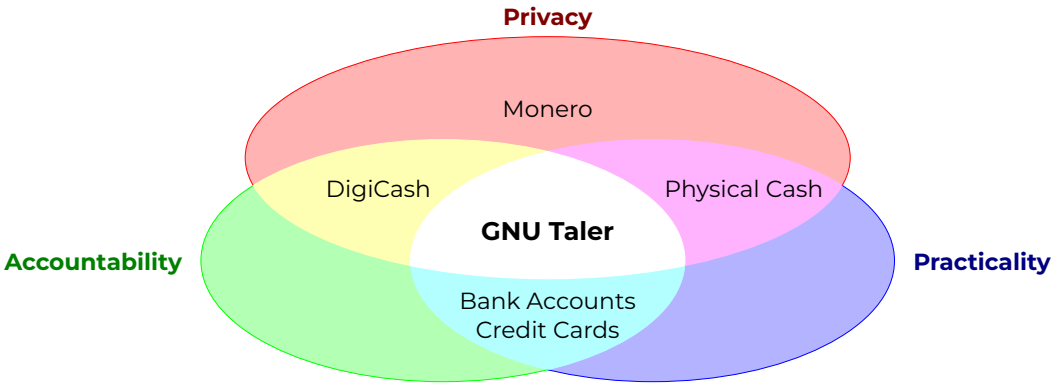
GNU Taler
overview



- Chaum ’85, Dold ’19, Pioldi&Levin ’25
- Set of open procotols
- FLOSS implementation

GNU Taler
unique position



Micro Effort
with GNU Taler

Let me show you.

Micro Effort
with GNU Taler

Let me show you.

taler://pay-template/backend.demo.taler.net/instances/merchant-8f68f1a7/ngi-forum-2025-support

Strengthening FLOSS

Enabling cascade funding

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Once GNU Taler becomes operational,

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- upstream developers can share donations via links to downstream,

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Enabling cascade funding

Once GNU Taler becomes operational,

- FLOSS developers can add a donation link to Release Notes,
- upstream developers can share donations via links to downstream,
- and this can be fully automated and fully transparent.

Strengthening Digital Freedom
needs your support

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Once GNU Taler becomes operational,

- **Users** can help by using GNU Taler

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Success is then Inevitable! :-)

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NGI TALER project consortium

and your help!

Announcement

My Talk in 2030

How GNU Taler has strengthened Digital Freedom in the EU

Thank you!

Questions?

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