Privacy-enhancing web3 use-cases ideation framework

Mykola Siusko

V 1..0, dec 2022

Web3 tech stack could empower human privacy

Raise awareness about the necessity of privacy protection.

Build tools to enhance privacy.

Advocate for the following business models not based on surveillance capitalism.

Return human agency for data-driven decision making.

Approach

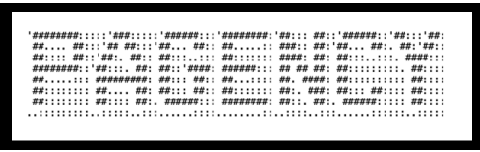
Is a framework that helps to facilitate the most impactful privacy-enhancing ideas & raise privacy-culture in web3

Pagency = Privacy + Agency

Audiences

ecosystems	Help builders come up with feasible ideas
hackathons	Help teams deliver impactful solutions
individuals	Scale up privacy-enhancing services experimentation
educators	Advocate for privacy using a practical tool

The more use-cases would be shipped ->
the better Web3-privacy would progress as a habit, lifestyle & basic human right.



FRAMEWORK

Humans → Data → Challenge

Resources → Success metrics → Threat agents

Partners → Solution → Privacy layers

[illegible]

Who are you building for?
Why should they care?

Create in-depth human-personas based on interviews or research.

Web3 services usage

- What kind of web3 services this human uses?
- What are the data breaches in those services?

Personal data literacy

- Does a person know how his/her/theirs data has been abused?
- Does a person know how to protect himself/herself/themselves?
- What kind of privacy-enhancing solutions does a person use?

Privacy

– How aware is a person of the necessity for privacy protection?
– How easily person would give up privacy in exchange for services or product features?
– Why this human needs privacy protection?
– What would happen with a human without additional privacy?

Empathy

Try to talk with some of those people. Talk broadly about their internet rights, privacy, web3 services, and security. Make products for them & not just for yourself.

Suggestions

Web2 users – help them to convert to Web3
Web3 users – empower their existing services

Hint: focus on humans as communities, not just individuals.

What kind of data are you protecting?
Why does this data matter?

Write down a list of sensitive data you aim to protect or re-design business model.

Data is the fuel of blockchain & surveillance capitalism. It's regularly exploited & used by third parties without your consent. Not just Google or Facebook, but also Web3-services from wallets to CEXs collect personal data.

Exploited data could be presented in different forms:

- transactional data
- IP addresses
- name
- age
- geo
- wallet address etc

Example
Google services track your online behaviour, make look-alike modelling & sell your profile to advertisers. So you become "a product".

References
Data brokers description
Facebook-Cambridge Analytica case

Suggestions

- Explore how Data flows within the internet.

- Explore how Data brokers collect & sell sensitive data.

- Explore how Web2 & Web3 data correspond with each other.

- Analyse how much Data you share with third parties daily.

Hint: think of both on-chain & off-chain data when you are doing research.

What are the main barriers on your way?
How do they compromise the person, you, industry?

Write down a list of challenges that stand between humans & your idea.

Web3 isn't a transparent or regulated market. That's why it's easier to spy on humans. At the same time, humans don't know how to choose the correct privacy-enhancing service.

Examples

- unregulated blockchain-data aggregation
- third party surveillance
- lack of privacy literacy
- "fake privacy" within existing solutions
- existing architecture allows third parties to spy on personal data

Suggestion

Analyse the Tornado Cash case from open-source development & DAO governance perspectives.

Hint: think of the ZK market that solves the challenge of preserving sensitive data while validating parts from KYC to age verification.

Who is threatening privacy-balance?
How do these bad actors use personal data?

Write down a list of multiple actors challenging web3 privacy from the data-analytics companies to marketing agencies.

Specify what threats these actors cause: selling, spying, stealing data etc.

Examples

Corporations – Google is at the heart of surveillance capitalism, selling humans' data to advertisers.
Hackers – exploit vulnerabilities in tech, sell databases with personal data.
Scammers – malicious actors behind stolen funds.
Governments – think of the NSA or Pegasus cases dealing with gov surveillance apparatus.
Data brokers – specialises in collecting personal data or data about companies, mostly from public records but sometimes sourced privately, and selling or licensing such information (Experian, Equifax, Acxiom).

References

- Chainalysis used the block explorer website to collect wallets & other data: click
- ConsenSys revealed that it collects user data: click

Hint: actors could be both web2 or web3 native.

What privacy layer are you contributing to?
What's a trade-off compared to other layers?

Choose one of the different approaches to the web3 privacy-enhancing: from embedded to total anonymity. The approach depends on compliance-readiness & moral beliefs.

Definitions

Embedded – network-level privacy that allows seamlessly deploy privacy within dApps. Privacy by default.
Example: Manta Network

Configurable – is a configurable approach to privacy that lets humans disclose their transactions to third parties.
Example: Aztec

Enterprise ready – enterprise grade & government compliant privacy protection standard.
Example: NYM

Total anonymity – human-centric privacy without compliance compromises & invisible to law enforcement units.
Example: DarkFi

Resource: Web3 privacy layers overview from embedded to total anonymity article

Hint: think of a privacy implication complexity: KYC+AML could be great for accountability in the USA, but it means the death penalty in Iran

How your idea empower humans?
How sustainable is your solution in 1–3–5 years?

Brainstorm the bravest ideas without the limits.
Then, visualise them using traditional or digital surfaces.

Apply the following filters to choose idea you like the most:

Privacy-first: it's in line with privacy-enhancement
Usable: it's easy to use &/or implement
Empowering: it empowers humans' lives
Impactful: it shapes existing surveillance vs privacy balance
Feasible: it's possible to develop an idea from tech, open-source & economic points

Examples (web3-native)
- dVPN hides your actual IP address from third party websites & apps
- Messengers protect your private communication from exploitation
- Private currencies could protect human identity in front of oppressive government

Hint: lots of web3 solutions complement each other – an ecosystem-centric approach simplifies ideation/development

What partners could scale your idea?
What kind of value do these partners add?

Write down actors that could help you to activate or scale the solution.

Make reverse engineering: imagine a time when your solution has been implemented on a broader scale. What kind of partners do you need to make this happen?

Examples

Investors – cover development & marketing costs, scale up market delivery
Developers – implement & adapt the solution to speed up Product-market-Fit
Institutions – could advocate & adopt solutions (think of messenger like Signal here).
Journalists – they could become ambassadors of your solution
Opinion Leaders – both traditional or web3's best actors preaching for change (from Vitalik to Shoshana Zuboff)

Hint: partners should unlock value for you

What resources do you need for a start?
What resources do you need to sustain your idea (1–3 years)?

Write down all potential resources you need to launch your idea & sustain it.

Split idea implementation into phases: MVP, Product–market–Fit, Scaling.
Each phase requires a different amount of resources.

Examples

- Financial expenses
- Human resources
- Partners
- Legal support
- Investments
- Community
- Governance

Suggestions

– Think broadly about missing skills from the team (example: developer doing investment relations).

– Think about the potential business model (grants, sponsorships, subscriptions, fees etc)

Study
How Rotki is trying to find the Product–Market–Fit being open–source + Gitcoin

Hint: resource management could come in handy, helping to understand feasibility of idea for yourself & wider audiences (from hackathon jury to investors)

How would you measure success?
What is the one ultimate metric to track?

Write down a list of metrics that define the success of the product.

Think broadly about metrics: what would they be for humans, partners or hackathon organisers?
Play with the future vision: how metrics would change from MVP to ultimate Product-Market-Fit?

Examples

tech-centric: GitHub-readiness: clean code, ease of fork, compostability;
human-centric: UX/UI-readiness, ease of use, Web2-to-Web3 conversion rate, the total amount of users, recurring users, word of mouth
community: organic growth rate, the value-driven contribution rate

Filter metrics via formula
- the 1 ultimate metric (example: financial sustainability = revenue + organic growth)
- 3 key metrics (example: financial sustainability, DAO autonomy, market penetration)

Hint: always separate product performance metrics from the financial side

Pagency framework template

Humans

Create in-depth human-personas based on interviews or research.

Data

Write down a list of sensitive data you aim to protect or re-design a business model for.

Challenges

Write down a list of challenges that stand between humans & your idea.

Success metrics

Write down a list of metrics that define the success of the product.

Threat actors

Write down a list of multiple actors challenging web3 privacy from the data-analytics companies to marketing agencies. Then, specify what threats these actors cause: selling data, spying etc.

Resources

Write down all potential resources you need to launch your idea & sustain it: money, community support, media coverage, legal, ecosystem activations (development relations, business development).

Solution

Brainstorm the bravest ideas without the limits. Then, visualise them using traditional or digital surfaces.

Privacy layers

Choose one of the different approaches to the web3 privacy-enhancing: from embedded to total anonymity. The approach depends on compliance-readiness & moral beliefs.

Partners

Write down actors that could help you to activate or scale the solution. They could be developers, web3 companies, investors, media & even institutions.

Pagency framework implementation

Simplified to do list to follow

1. Humans. Create in-depth human-personas based on interviews or research.

2. **Data**. Write down a list of sensitive data you aim to protect or re-design a business model for.

3. Challenges. Write down a list of challenges that stand between humans & your idea.

4. Threat actors. Write down a list of multiple actors challenging web3 privacy from the data-analytics companies to marketing agencies.

5. Solution. Brainstorm the bravest ideas without the limits. Then, visualise them using traditional or digital surfaces.

6. Partners. Write down actors that could help you to activate or scale the solution. They could be developers, web3 companies, investors, media & even institutions.

7. Resources. Write down all potential resources you need to launch your idea & sustain it: money, community support, media coverage, legal, ecosystem activations (dev & business relations)

8. Success metrics. Write down a list of metrics that define the success of the product.

Principles of privacy-enhancing development

Human centered	Place humans in the centre of your idea. Care about his/her/theirs emotions, crypto & privacy literacy.
Solve an actual privacy-specific problem	Empower humans with practical privacy solutions that could be used here & now.
Accessible to the future Web3 audience	Think about newcomers using your services in forthcoming years.
Ethical	Don't build services for money laundering, criminal activities or violating human rights.
Open-source	Make your idea accessible to the world via GitHub, Devfolio, GitLab.

Idea valuation

Default state: Decentralisation ethos sync – it redistributes power from centralised actors back to humans.

Problem Importance
How important is the problem being solved? (10: extremely important)

Privacy-solution impact (addressable market)
> thousands, millions

Ease of implementation
How complex is the implementation: budget, team, processes > from 1 to 10

Effectiveness
How effectively does the idea address the referenced problem? (10: ultimate effectiveness)

Product-market-Fit
time vs efficiency

Community contribution
re-usability, compostability

Pagency framework

Humans

People who are using web2 browsers (Chrome, Firefox)

Affected by surveillance capitalism, but without knowing that they are exploited.

Low privacy literacy (different privacy culture: high in the EU, low in underdeveloped countries)

Resources

People: MarTech experts (surveillance tech), copywriter, UX/UI designer, business development manager...
Investors ($100K for an MVP launch)
1 year operational budget (salaries, events, community outreach)

Partners

Investors: strategic investors with access to big web2 audience (for example, via DuckDuckGo or ProtonMail)

Journalists: web2 tech journalists
Civic tech advocates: institutions or influencers

Data

Browsing data (websites, web-services, time, geo, IP, usage; social profiling).

Cookies

Challenges

Human-centric
Low lever of privacy awareness.
Low level of tracking awareness.
Low level of Web3 services understanding.

Success metrics

Product: trackers prevention rate
People: ease of use, understanding of privacy-centric product, conversion rate from web2 to web3 browser
Open-source: ease of fork, ease of pull requests

Threat actors

Corporation from Google to Facebook. MarTech services.

Advertising agencies.

Solution

Native web3 browser that protects user private data & prevents them from reach marketing tracking.

Zero-personal data aggregation policy.

Privacy layers

Embedded privacy – "as a service" to person, "hidden as a service", but explicit via communication and/or proofs.

Access layer (browsing web2 websites).

Pagency framework

Lunar Wallet
https://devfolio.co/projects/lunar-wallet-34c4

Humans

People, who are using existing Ethereum wallets (MetaMask, BlockWallet etc).

Primary audience: people familiar with privacy, but with lack of knowledge how to protect themselves (can't setup their own RPC, use VPN).

All genders, English speaking.

Secondary audience: opinion leader obsessed with privacy, tech literate.

Data

IP addresses, wallet addresses – available wallets do not protect users' sensitive personal data

Challenges

Convince people to switch from non-private or semi-private to full-private solution.

Raise awareness about privacy level within the wallets solutions.

Manage Tor connections

Resources

People: copywriter, UX/UI designer...

Investors: angel investors, ecosystem labs/funds

Success metrics

Product: proven Trustless architecture (within independent opinion leaders)

Experience: ease of use, high consent of the privacy-centric solution, conversion rate from other wallets to Lunar

Open-source: ease of fork, ease of pull requests

Threat actors

Available wallets do not protect users' sensitive personal data.

Third parties: RPCs (Infura, Alchemy), Coingecko, Etherscan, CoinMarketCap...

Wallet servers (BlockWallet) and **third parties servers** are able to link users' IP addresses and wallet addresses.

Partners

Investors: strategic investors with access to huge crypto-native audience

Journalists: crypto journalists

Crypto influencers: Ethereum influencers (devs, Ethereum Foundation team, Vitalik)

Solution

The first privacy native Ethereum wallet based on a **built-in integration of TOR**. This architecture enables users' IP addresses to be isolated from third parties.

Trustless architecture – the user does not need to trust the wallet regarding his personal data as the wallet's third parties cannot see or share its users' IP addresses.

Privacy layers

Embedded privacy – "as a service" to person, "hidden as a service", but explicit via communication and/or proofs.

Access layer (managing cryptocurrencies).

Useful materials

Lectures
Kurt Opsahl “The value of cryptocurrencies in supporting of human rights”: watch
Jaya Brekke (CSO, NYM) “Privacy, the big picture”: watch

Web3 privacy-enhancing projects
Web3privacy now database: explore
Web3 privacy landscape map

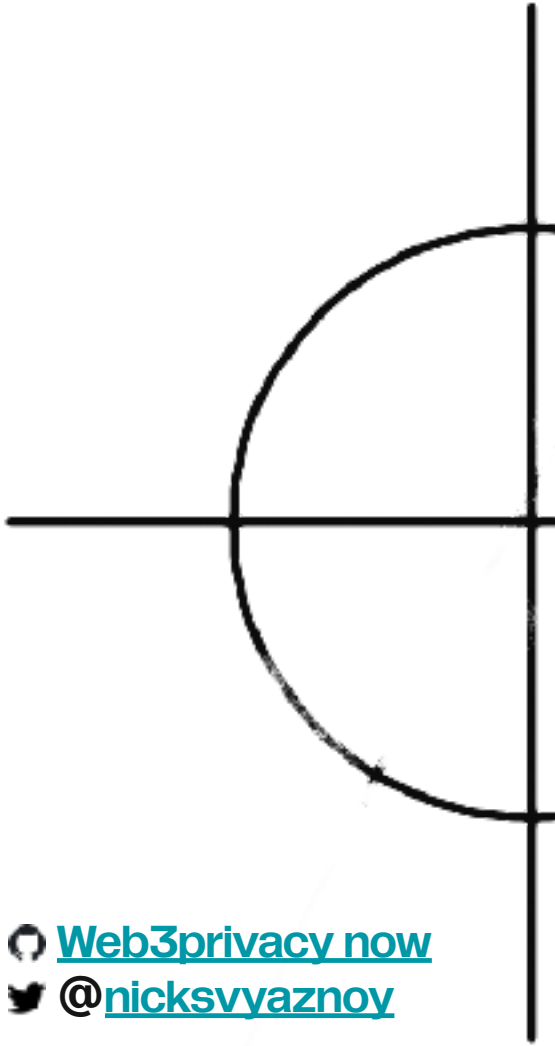
Books
Shoshana Zuboff “The Age of Surveillance Capitalism”: buy
Rebecca Giblin and Cory Doctorow “Chokepoint Capitalism”: buy

Hackathons
ETH Brno privacy & security edition + Devfolio

Press
Coindesk Privacy week materials

Movies
The Social Dilemma

Activate privacy as 1–2–3,



web3 privacy now

Mykola Siusko, 2022

Contribute Web3privacy now

Connect @nicksvyaznoy