

Growr: a global, decentralized, open and fair lending protocol

Growr On-chain Team – Bitcoin Bankathon 2021

Abstract

Growr is a decentralized protocol for providing open access to peer-to-peer lending services, in which institutional and individual investors can fund lending pools according to their risk/reward appetite, and borrowers can apply for and receive unsecured loans (loans without collateral).

The Growr protocol incentivizes good financial health – that is, improving financial literacy and behaviors that lead to better life situation and ultimately, to financial independence. Financial health metrics are combined with other off-chain and on-chain data to create a new type of decentralized identity that we call the Self-sovereign Financial Identity. It contains verified credential from different sources and is presented in front of the lending pools to assert creditworthiness.

By building Growr, our team is addressing grand global challenges such as access to financial services at fair conditions, gender inequality and bad financial health.

Problem statement

Financial health is an important factor in our daily life. However, bad financial health is plaguing the world. More than half of the global population is living paycheck-to-paycheck without any savings¹. In addition, almost 2 billion adults in the world do not have access to financial services² or if they do, they receive loans at a very high interest rate.

In the same time, even people who have savings in cash or in a bank account are not save. On the one side, macroeconomic events, such as high inflation, are literally “eating their money” and the other side, they are not able to acknowledge the disruptive change that is happening to the financial system.

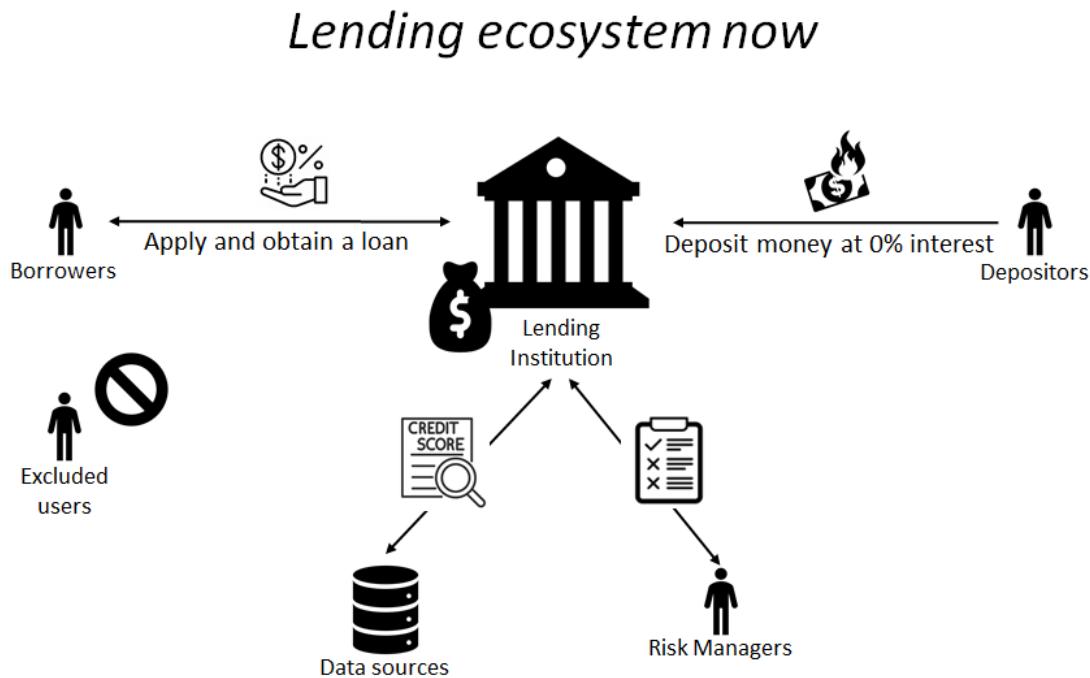
¹ Global Findex 2017, chapter 5

https://globalfindex.worldbank.org/sites/globalfindex/files/chapters/2017%20Findex%20full%20report_chapter5.pdf

² <https://ufa.worldbank.org/en/ufa>

³ <https://www.prnewswire.com/news-releases/global-8809-55-billion-lending-markets-2015-2020--2020-2025f-2030f-301244454.html>

Who is profiting from this situation? The lending institutions enjoy a profitable 7-trillion market³, with revenues increasing between 5 and 15% each year. Below is a diagram that illustrates the current lending ecosystem:



Enter **Growr**. A bridge to a new global environment where people around the world are empowered to improve their lifestyle and benefit from the latest financial technologies.

During the Bitcoin Bankathon 2021, we are particularly focused on empowerment of women and merchants. We care especially for vulnerable populations such as victims of violence and micro merchants from poor communities, to whom we aim to provide support using digital tools and mentor network.

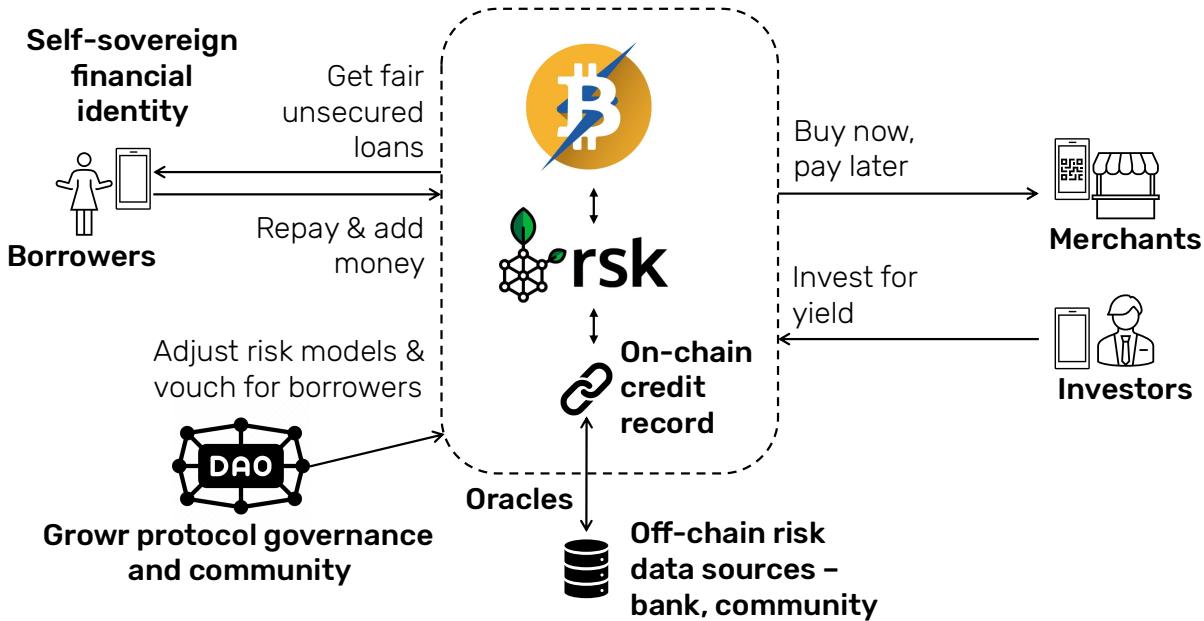
Solution

Growr address the problems stated above with the following components:

- **Growr DAO** – a Decentralized Autonomous organization for transformative empowerment of people around the world in achieving more in their lives through better financial health
- **Growr open lending protocol** – a decentralized architecture for funding and consuming loans on top of the Bitcoin network

- **Peseta application** – a simple and secure way for consumers and merchants to easily apply and obtain fair loans at low interest rates

Below is a diagram that illustrates our vision of the financial future:

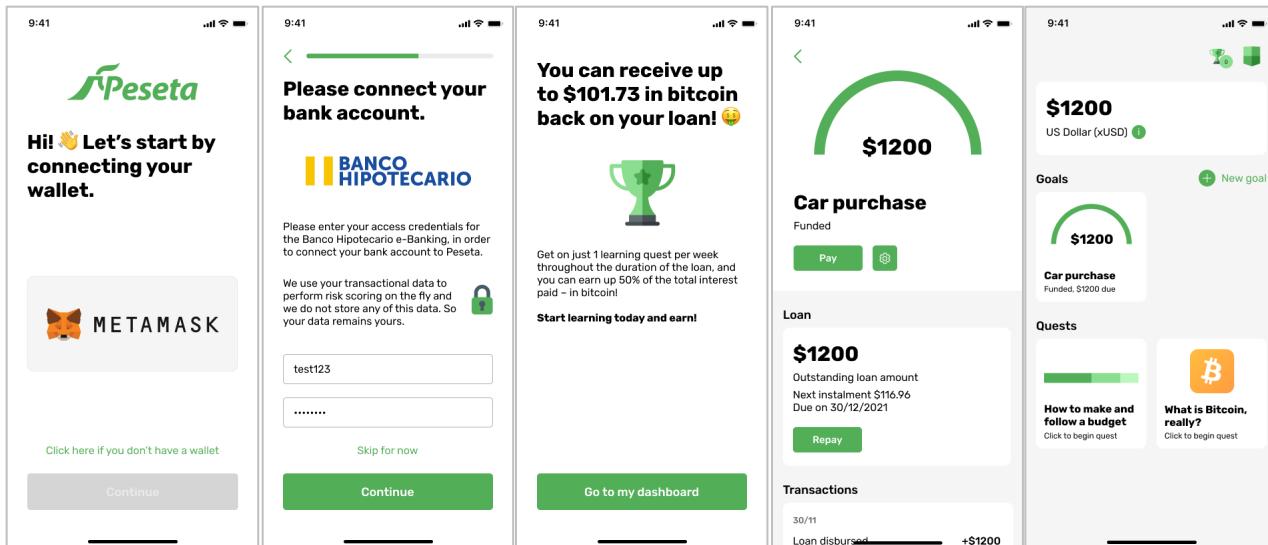


The described ecosystem above aims at transferring value from the centralized institutions back to the people.

- **Borrowers** will get easy access to fair loans and gradually receive better conditions for positive behavior and improved financial health.
- **Investors** will keep the value of their savings by converting them to crypto and receiving a profit.
- **Contributors** will get fair rewards based on their performance and the behavior of the borrowers.

How it works

Let's now see how Peseta application works to enable easy access to the Growr Open Lending Protocol:



- 1) **Link account:** Connect your RSK account to create your self-sovereign financial profile, then link your bank account through the Open Banking Project API. In addition, you can link other social profiles to Peseta and provide some additional details about your finances and goals in order to enrich your profile.
- 2) **Apply for loans:** Based on this data, a credit scoring is performed and sent to the Growr Lending Pool smart contract, which takes an automated decision to propose a loan. Use the Peseta app and your financial identity to sign and receive the loan. Currently, we have developed loans in RBTCs, but we plan to actually have a product based on USD-denominated stablecoin.
- 3) **Manage your loans:** The Peseta app has all the tools to manage every aspect of your loan transactions, withdraw amount and easily pay it off to build your credit score.
- 4) **Learn and earn:** You can earn back part of the interest you pay through learning and improving your financial health. We use gamification to engage you and get you embark on short learning quests every week.
- 5) **Bonus:** We have made a link to the local payment system in El Salvador. If you are from El Salvador, we enable you to pay directly from your RSK account to a merchant using any Lightning Network clients such as the Chivo wallet. Boom! The payment is processed within seconds!

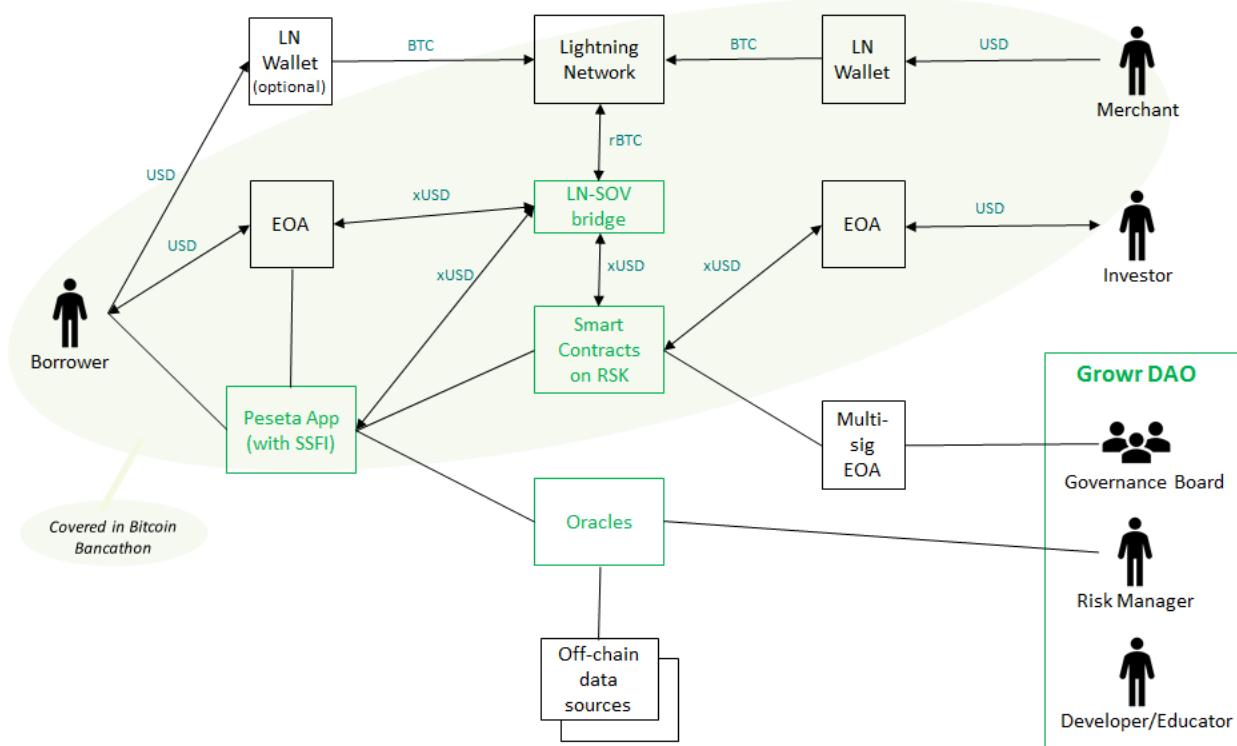
Some of the key features of Peseta app are:

- Blockchain-based financial ID combining off-chain and on-chain data
- Self-sovereign profile with superb privacy and security
- Traditional credit score mixed up with alternative risk assessment data
- Fair interest rates in stablecoins
- Lightning Network integration / connection to Chivo wallet via submarine swaps (RBTC/ ⚡ BTC)

- Learn-and-earn approach driven by our unique gamification engine
- User-friendly and streamlined user experience

Technology

We aim at building a fully decentralized architecture for funding and consuming loans on top of the Bitcoin network. The diagram below illustrates the high-level architecture of Growr Open Lending protocol:



We are building **Smart contracts on the RSK chain** that match supply and demand on the Growr peer-to-peer platform, matching investors to borrowers with their preferred risk profile, based on data from the Open Banking Project API.

We are building a **Peseta mobile application** to provide borrowers with the access to the smart contracts, and storing securely on-device the self-sovereign financial identity of the user.

We are building a **bridge to the Lightning network** to empower users and merchants to easily collaborate on top of Bitcoin network. We utilize a technique called submarine swap than enables payments directly from an RSK account to a merchant using any Lightning Network clients.

As next steps, we plan to:

- Building **Oracles** connecting various third-party off-chain data sources and indexing on-chain credit history to generate tamper proof credit score.
- Establishing a **DAO** to govern the protocol, allocate work to the community of contributors and reward them according to their role and contribution.

Developing Growr protocol, we leverage the following technology stacks:

Component	Technology Stack	
	Bitcoin Bankathon	Target architecture
Peseta web site	HTML, Tailwind CSS, static-i18n	HTML, Tailwind CSS, static-i18n
Peseta application	JavaScript (Reactjs, Nextjs), CSS	React Native (multi-platform mobile app), on-device data storage
Peseta backend	JavaScript (Nodejs) MongoDb, GraphQL	N/A (we plan to decentralize the architecture)
Lightning Network bridge (LN-SOV bridge)	Testnet hosted solution of: https://github.com/pseudozach/lnsovbridge	Locally hosted solutions of the same or similar Boltz-based bridge. Local entrepreneurs can earn on fees.
Oracles	N/A	Airnode + connection to Open Banking and other institutional API3 airnodes (e.g. credit bureaus) Oracles for social graph data
Smart Contracts	Solidity on RSK Testnet	Solidity on RSK Mainnet

Business plan

We plan to develop the Growr protocol and the DAO in 3 waves:

1. **Local launch of Peseta in El Salvador**, with the potential to reach 1.15M people (based on population of 6.5M with 70% unbanked and 51% internet native and assuming 50% microloan potential users)
2. **Regional expansion with partnerships** (microlenders, telcos, merchants/retailers in LatAm and potentially SEE), aiming to reach 120M users out of population of 662M with 72% internet natives and 50% unbanked or underserved.

3. Global expansion powered by the Growr DAO, aiming to reach 640M+ of users out of 7.8B population with 51% internet natives and 32% unbanked or underserved.

Team



Esmeralda Orellana
Originally from El Salvador, but living in Phoenix, AZ since 1989. She has experience in marketing and graphic design and specializes in contract negotiations for hospitals on a national scale.



Radoy Stoyanov
After spending 15+ years as executive in banking and fintech, he is on a mission to empower people to achieve more in their life through financial health. He specializes in strategy, product and decentralized business models.



Valentin Genev
Believes the future belongs to chains and networks of people, things and systems bound together with respect of participant's will and choice. He is working – on the backend – towards achieving this vision.



Shankar Rao Mata
A full stack software engineer working in US. He likes to try out new technologies such as blockchain development and Solidity.



Zhivko Angelov
Experienced financial technology expert with diverse development, analytical and management skills. In a mission to improve people's life by building an ecosystem with easy access to fair financial services.



Gancho Stoychev
Simple, carrying human being. He is an expert in trying stuff until it works.

Resources

<https://www.peseta.xyz/> - website to present Peseta application on the Bitcoin Bankathon

<https://app.peseta.xyz/> - access to Peseta application (requires MemaMask account)

<https://github.com/gowr-xyz/gowr-on-chain-landing> - source code of Peseta presentational website, developed by the Gowr On-chain team for the Bitcoin Bankathon

<https://github.com/gowr-xyz/gowr-on-chain-web> - source code of Peseta Web Application, developed by the Gowr On-chain team for the Bitcoin Bankathon

<https://github.com/gowr-xyz/gowr-on-chain-backend> - source code of Peseta Backend, developed by the Gowr On-chain team for the Bitcoin Bankathon

<https://github.com/gowr-xyz/gowr-on-chain-smart-contracts> - source code of Gowr lending smart contracts, developed by the Gowr On-chain team for the Bitcoin Bankathon

<https://devpost.com/software/gowr-on-chain> - short introduction of the project in Bitcoin Bankathon