



Sikka

*A digital asset transfer platform
designed for the financially
marginalized.*

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Overview

Sikka is a digital asset transfer platform designed for the financially marginalised, at-need population. With Sikka, community members can receive cash transfers on their feature phones through local vendors or a local financial cooperative in their village, thus allowing both unrestricted as well as restricted cash-based transfers (CBTs). Sikka is designed such that it can provide unrestricted CBTs through local financial cooperatives or restricted CBTs and distribution of humanitarian aid goods through vendor networks. In this way, Sikka's asset transfer platform opens the benefits of blockchain-based services to those lacking either the knowledge, technology or resources generally required of other similar services.

Cryptocurrencies like Bitcoin and Ether have been gaining a lot of media attention, which sometimes highlighted certain regulatory concerns that has resulted in some national governments and central banks issuing laws restricting the use of cryptocurrencies. Blockchain technology, however, is distinct from cryptocurrency: A blockchain is a form of distributed ledger technology (DLT) that creates a trust protocol between a network of system nodes for communicating information that is inherently secured and validated.

Sikka can be used to represent any currency or commodity as per the aid organization's need. The Sikka token will hold its value only within a well-defined ecosystem comprising the aid organization, beneficiaries, vendors and/or financial cooperatives. The Sikka system creates an equivalent number of tokens for each unit of fiat currency (or commodities) held in trust for the system. In the case of CBTs, all the money distributed in the system remains within the traditional banking system with Sikka functioning as a trust protocol representing money in the bank.

Sikka requires Ether to operate on the Ethereum blockchain in order to pay for the transfer of asset tokens between beneficiaries and implementing partners within aid programs. At no point does Sikka use cryptocurrency to transfer money to or from any country, nor does Sikka distribute cryptocurrency to its beneficiaries. At Sikka, we are committed to applying technological solutions for the benefit of communities. This commitment extends to complying with and upholding all relevant local and national laws concerning the use of cryptocurrency. As such, Sikka employs blockchain technology to manage the transfer of digital assets on the Ethereum blockchain, but does not sell or trade in cryptocurrencies.

The Problems: Payments Infrastructure and Financial Services

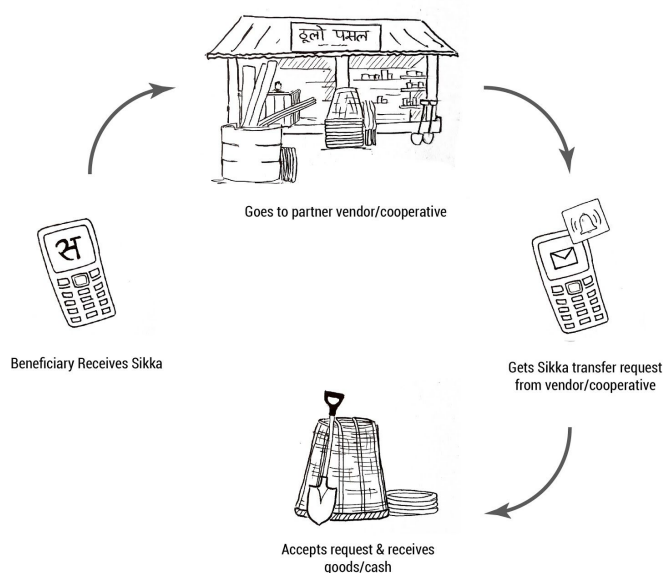
After a disaster, the distribution of aid in the form of cash is often complicated due to a lack of infrastructure and services in remote and rural areas. Blockchain technology delivered over cellular networks can play a key role in implementing Cash Transfer Programs (CTPs) through the use of smart contracts and digital token transactions that directly address the needs of rural communities. Sikka helps in enabling communities to recover from disasters and reinvest in their families.

Some of the problems in existing cash transfer interventions are identified as follows:

1. Organizations do not want to share beneficiary's private information with external stakeholders.
2. High cost associated with other technologies or means of aid distribution
3. Intense trainings and long implementation timeline required before the distribution.
4. Numeracy among beneficiaries and traders is very low
5. High service charges associated while acquiring services from banks.
6. Extra costs associated with logistics and staffing during distribution.

The Solution: What is Sikka?

Sikka in Nepali means "coin", which is an apt name for a currency-backed token. Sikka forms the core of an e-voucher system that incorporates blockchain technology over cellular networks to provide a CBT solution for aid agencies to reach remote communities with limited access to financial services. The CTP model of Sikka is designed to facilitate and monitor both cash and commodity based aid operations.



A user's perspective of Sikka's funds pathways

The system will be largely decentralized, semi-automated and easily scalable, allowing significantly reduced administration costs.

Further, Sikka can also act as a surrogate system for accessing other vital services during a disaster (emergency cash distribution, cash for work in response, recovery and reconstruction, etc.), which provides an added layer of functionality for the application among the target communities with established financial services partners.

Sikka makes use of cellular networks to build upon its users' knowledge base, resulting in an easy to use interface that can be accessed through a simple feature phone (not just smartphones) to send and receive SMS messages that allow users to interact with the blockchain.

At Sikka, we are also exploring possibilities of implementing Interactive Voice Response (IVR) services to further increase accessibility and ease the process of purchase and transaction.

Why Sikka?

As an overall solution, the benefits of using Sikka can be understood as benefits accruing from accessibility, network resilience and accountability:

1. **Accessibility** : Sikka makes use of cellular networks to provide its service which can be accessed through the use of a simple feature phone. Since this is based on a SMS service, there is no restriction to the kind of phone that can be used to access Sikka's services.
2. **Network Resilience** : SMS service is one of the most resilient services provided by any mobile network operator, making Sikka's services more readily available and with reduced downtime. After a disaster like an earthquake, SMS is the first service to be made available by the network operator which makes it easier and more reliable for the organizations to disburse aid to affected beneficiaries with reduced connectivity.
3. **Accountability** : Sikka, being built on blockchain technology, ensures accountability, transparency, and trust within and among organizations. Each transaction happening between beneficiaries, vendors and cooperatives within a given program can be tracked in real time as it happens. Since the transaction logs existing in a blockchain are essentially tamper-proof, organizations can rely on the system in a virtually trustless manner.

The main benefits from an organizational perspective for using Sikka are:

- **Reduced Overhead**: Sikka supports significant portions of Monitoring and Evaluation processes by virtue of blockchain transaction records. In addition to that, organizations are not required to be continually present in the field, or at least not in the large numbers required by similar systems, because Sikka allows greater levels of operational capacity through local partners within a transparent operational environment.
- **Real-time data visualization**: Sikka provides a dashboard to Program Managers that allow them to monitor the use of Sikka and track deployment in real-time. Each transaction is time stamped and displayed on the dashboard with information including sender, receiver and the amount transferred.
- **No additional equipment required**: Sikka does not require organizations to distribute any additional hardware or materials (such as debit cards) to the beneficiaries.

From the beneficiaries perspective:

- **Simple and intuitive end user interface and experience:** Beneficiaries are able to use sikka using SMS service with simple and intuitive steps that can be memorized easily. For beneficiaries it's easier than adding credit to their phone through a scratch card.
- **Available in local language:** In addition to using a feature phone the overall user interface is done through local language further reducing barrier for usage. Currently, the system supports English and Nepali language.
- **Utilizes local vendors and local Financial Services Providers (FSPs) :** Sikka uses existing service providers like local shops and local cooperatives for redemption and/or exchange of Sikka thus reducing the hassle for beneficiaries to travel long distances to receive support.

Service

Bulk Disbursement

Program managers can use the bulk disbursement functionality of Sikka to distribute tokens to beneficiaries simply by uploading a CSV file containing the following for each beneficiary:

- a unique program ID number,
- a mobile phone number, and
- the amount to be disbursed

This process automatically creates a wallet for each beneficiary to hold Sikka and then sends out the amount of tokens as specified in the CSV file. Different amounts of Sikka can be disbursed to each beneficiary across various timeframes, as per the organization's needs.

Mobile Payments and Transactions

Sikka allows users to securely trade through their digital Sikka wallets, as each wallet is tied to a mobile phone number. Through the use of SMS, Sikka tokens can be sent to purchase goods and services or to redeem Sikka for cash at a local financial cooperative. The beneficiaries using Sikka do not need to have their own bank account because token wallets are created by Sikka during the enrollment process; however, Sikka can be used in conjunction with savings or current accounts at local financial cooperatives.

Visualization

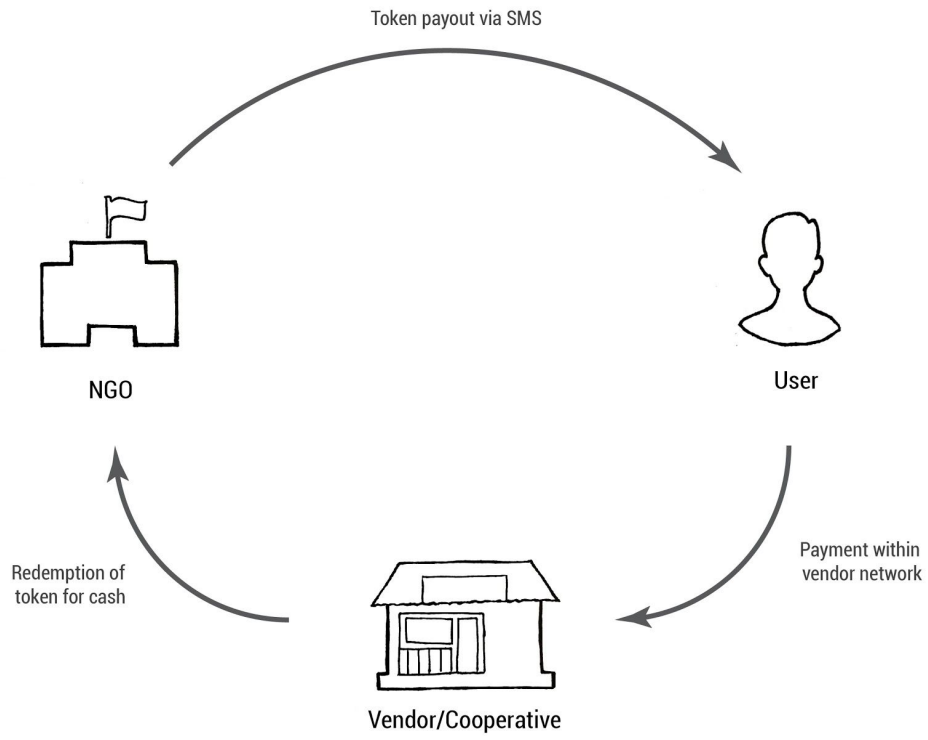
Program managers can see the transactions between beneficiary, vendors and cooperatives as they happen in real time. Sikka provides organizations with access to a simple dashboard that displays the time-stamped transaction logs in real-time. The dashboard displays the number of beneficiaries served through Sikka, the amount of tokens that have been disbursed by the organization to date, and the amount of Sikka that has been redeemed by the beneficiaries at a local vendor or a cooperative, as well as other custom reports as required. This information provides organizations with a valuable element of transparency and accountability in CBT programs. In addition, Sikka has partnered with FieldSight to

develop a point of sale (POS) system for restricted CBTs that provides an itemized list of goods purchased.

Human-Centered Innovation

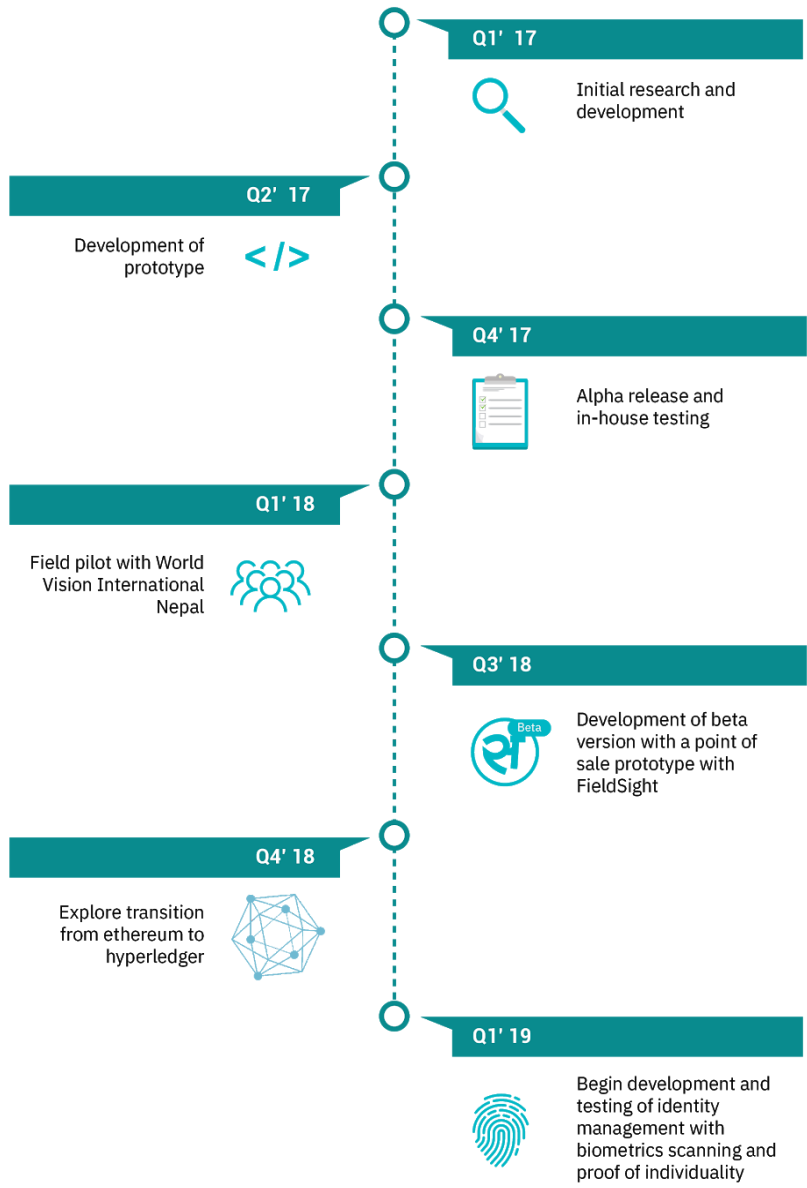
Sikka deploys a user interface system that does not require more than a basic knowledge of how to operate a feature phone and will not need a smartphone. The design of Sikka follows the principles of Human Centered Design (HCD) thus allowing designers and developers to create a system aligned with and around the needs of the users. Focus group discussions (FGDs) with beneficiaries were held in earthquake affected districts of Nepal to understand the experience and problems involving digital transactions and the existing Cash Transfer Programs (CTPs) programs that they were part of. It also allowed us to understand the means of accessing financial services, penetration of mobile networks and peoples' familiarity with devices that support basic features like SMS and USSD. Similar discussions were held with multiple International NGOs that conduct CTPs with special input and support from the cash transfer team of World Vision International Nepal.

Prior to actual development, service design of the system was conducted. For this, 6 user (service receivers) personas were designed focusing on nuances of each character in order to strike balance between customizable as well as replicable services of the system. This helped us design the architecture and interface of our system in a much more modular manner thus resulting in a simple user interface to provide the services to non-technical users. This allowed us to identify and explore relative importance of key drivers for adoption of Sikka's services. Legal due diligence was conducted to assess the compliance of the services provided by Sikka with the current regulatory environment, both national as well as international. Over the period of 3 months of service design, the overall system structure was designed to suit the needs of rural population with limited digital and numeracy literacy



An overview of the system network interactions

Sikka Roadmap



Sikka FAQs

- What is a digital asset token?

A digital asset token is an information software product created by through a smart contract, which can be traded electronically among users. As these tokens are deployed on the blockchain, they have several highly advantageous cryptographic security features, such as being immune to counterfeiting and having an inherent element of transparency and verifiability of funds transactions.

- Why is Sikka a Nepali Rupee-pegged token?

In its early stages of testing and development, Sikka will be a currency-backed token in order to peg its value to the Nepali Rupee. The reasons for doing this are:

- 1) tokens that are not asset-backed can be very volatile, which introduces uncertainty and a great deal of risk to Sikka's users; and,
- 2) the ability to easily convert Sikka to Rupees on a 1:1 exchange makes calculating transfers and purchases simple and convenient for both users and vendors.

Just as a smart contract is deployed to the Ethereum public blockchain to create the Nepali Rupee-pegged token, additional token contracts can be created to track other national currencies or other humanitarian aid goods, as required.

- What is Sikka's pricing model?

Sikka's pricing model is tailored to meet the requirements of the clients and adapt to their project design. For more details, please contact us at info@sikka.me

- Will Sikka run an ICO?

No. The ICO process is intended to provide investors with an opportunity to profit off of the appreciated value of a utility token used within an application; however, there is currently no such need for a token of that type for Sikka. The tokens we create are not market-traded commodities themselves but, rather, they represent items of value being tracked within humanitarian and aid programs. Sikka is fully owned by World Vision International and conducts its own fundraising through traditional methods according to established organizational rules and policies.

- What happens to my Sikka once I redeem them?

Sikka held by vendors and financial cooperatives are redeemed for cash at agreed-upon time intervals. Tokens that are redeemed for cash are returned to Sikka and destroyed. The reason for this process is to maintain a strict 1:1 ratio of tokens to program assets within the ecosystem. At any given point, the total number of existing tokens represents the amount of outstanding funds or goods that have not yet been fully processed by the program.

- What happens to my Sikka if I lose my mobile phone?

Sikka has established procedures to recover funds associated with a lost SIM card. Luckily, tokens are stored on the blockchain and not on any one device, which makes tokens secure from loss or theft. If you are unable to replace your SIM through your mobile provider, contact a social mobilizer in your local area to complete the recovery process.

- Does my Sikka have an expiry date?

Sikka cannot operate as a bank account and Sikka wallets are not alternatives to electronic mobile money solutions operated by financial services providers. In order to ensure this, tokens issued within the ecosystem must be redeemed before the end date of a specific program. Failure to do so will require the beneficiary to arrange alternate means of payment through the organization's social mobilizers in the field.

- How does Sikka keep my wallet funds safe?

All Sikka digital wallets are securely stored on Sikka's servers, with redundancies built-in to ensure 100% network uptime. Sikka wallets are associated with the user's SIM card and funds can only be accessed at approved network vendors or financial cooperatives. All data is backed up and securely stored to prevent loss of records in the event of hardware failure.

- Can I send money outside of Nepal with Sikka?

No. Funds can only be transferred between users located within Nepal. Only registered Nepali mobile numbers will be able to receive funds transfers or payments. Programs deployed outside of Nepal will operate on the same model within the appropriate country or countries, as required by each program.

- What kind of purchases and transactions can I do with Sikka?

Transactions within Sikka's payment system include transfers to other Sikka users within Nepal for private use or for payment of goods and services with partner vendors. Approved network vendors and financial cooperatives allow Sikka to be redeemed directly for cash or goods in local communities, which supports livelihoods and sustainable development objectives.

- How does Sikka comply with regulations concerning payments systems and payment providers?

Sikka is an asset-backed digital token, which means that while it functions much like a currency and a traditional payment system it actually is neither. As a software system that facilitates trades of digital tokens, the transfer of Sikka between users and the redemption of Sikka for Nepali Rupees is similar in nature to using an e-voucher within existing humanitarian programs. Thus, Sikka is not a payment medium, but an asset transfer network.

- How does Sikka comply with regulations concerning cryptocurrencies (where prohibited)?

Sikka is aware that certain central banks have issued regulations that ban the use of cryptocurrencies like Bitcoin and Ether. While Sikka is built on the Ethereum blockchain, the system does not transfer Ether to any of its users and each Sikka token (whether for cash transfer or receipt of goods) has no market value outside of the strictly-defined ecosystem created between Sikka and its program partners.