* Village Bank
  + <https://www.youtube.com/watch?v=5_gwLrd_Lss>
  + Early village banking methods were innovated by Grameen Bank and then later developed by groups such as FINCA
  + At least 31 microfinance institutions (MFIs) that have collectively created over 800 village banking programs in at least 90 countries
  + A village bank is an informal self-help support group of 20-30 members, predominantly female heads-of-household
  + These women meet once a week in the home of one of their members to avail themselves of working capital loans, a safe place to save, skill training, mentoring, and motivation
  + Loans normally start at $50–$100 and are linked to savings such that the more a client saves the more she can borrow.
  + The normal loan period is four months and is repaid in 16 weekly installments.
  + To eliminate the need for collateral (the poor man's obstacle to receiving bank loans), village banks rely on a variation of the solidarity lending methodology. It relies on a system of cross-guarantees, where each member of a village bank ensures the loan of every other member.
  + This system gives rise to an atmosphere of social pressure within the village bank, where the cost of social embarrassment motivates bank members to repay their loans in full. The admixture of cross-guarantees and social pressure makes it possible for even the poorest people to receive loans. This method has proven very effective for FINCA, yielding a repayment rate of over 97% in its worldwide network.
  + Village banks are highly democratic, self-managed, grassroots organizations. They elect their own leaders, select their own members, create their own bylaws, do their own bookkeeping, manage all funds, disburse and deposit all funds, resolve loan delinquency problems, and levy their own fines on members who come late, miss meetings, or fall behind in their payments.
  + Most village banks in operation today are directly supervised by the staff of a local NGO or microfinance institution, from which they receive much of their loan financing.
    - Worldwide FINCA’s 21 affiliates have about 3,300 staff, of which about 2,600 are field staff (credit officers and supervisors). Each credit officer (CO) attends the weekly meeting of each of her 10-15 village banks to coach its leadership committee and monitor the bank’s activities.
    - In turn, each village bank is managed by its elected officers—a president (who leads the bank’s democratic decision-making process), secretary (who takes attendance and keeps minutes) and a treasurer (responsible for accurately handling all cash transactions).
* Village Savings and Loan Association
  + <http://www.vsla.net/aboutus/vslmodel>
  + A Village Savings and Loan Association (VSLA) is a group of people who save together and take small loans from those savings. The activities of the group run in cycles of one year, after which the accumulated savings and the loan profits are distributed back to members.
  + Groups usually hold annual elections. The roles and responsibilities of the five-person management committee are clearly defined and highly decentralized. This is to encourage the participation of all members in the operations of the group; and, moreover, to protect the group from being dominated by a single individual.
  + Each group is composed of 15 to 25 self-selected individuals. Groups meet weekly and members save through the purchase of shares. The price of a share is decided by the group. At each meeting, every member must purchase between 1 and 5 shares. The share-price is set by the group at the beginning of the cycle and is fixed for the entire cycle.
  + Savings are maintained in a loan fund from which members can borrow in small amounts, up to three times their individual savings. Loans are for a maximum period of three months in the first year and loans may be repaid in flexible installments at a monthly service charge determined by the group.
  + Each group may also have a social fund, which provides members a basic form of insurance. The social fund serves as a community safety net and may serve a number of purposes – such as emergency assistance, festivals and funeral expenses – for the entire community, including group members and non-members.
  + Each group agrees upon a contribution made by all members at every meeting. The social fund is not intended to grow, but to be set at a level that covers basic insurance needs. It is not distributed back to the members at the end of the annual cycle, but remains a group asset.
  + The materials, passbooks, loan fund and social fund of the VSLA are maintained in a lock-box, which is safeguarded by the group box-keeper between meetings. The lock-box has three padlocks and the keys are held by three members of the group who are not members of the Management Committee. The system is robust and ensures that there can be no manipulation of the group’s passbooks or funds outside of group meetings.
  + Groups operate in annual cycles. At the end of every cycle, the accumulated savings plus service charge earnings are shared out amongst the membership according to the amount each member has saved. The annual share-out resolves any outstanding issues and builds member confidence. It is an action audit that provides an immediate verification to all members that their money is safe and the process is profitable.
  + After the share-out, members who do not wish to continue may leave the group and new members may be invited to join. Members who plan to continue to the next cycle may all agree to use some of their savings to make a contribution to the loan fund for the next cycle. This initiates lending activities with a useful amount of money on hand.
  + When a new cycle begins, members conduct new elections, review their constitution and may make changes to the terms and conditions that apply to savings, lending and the social fund. They may, for example, agree to change the social fund contribution, share price and the monthly loan service charge. However, the share value and loan service charge can never be changed during the cycle. After this process the group then continues to operate independently in its second cycle.
* Goal: Digitization of Village Bank
  + There is definitely a market need for this
    - People already using pen and paper to do this
    - Visa, big banks already researching this
  + Helps the poorest of the poor, breaks the cycle of poverty
  + “Money given has no value, it has to be earned”
    - Gives people opportunity, helps people pull themselves up
  + A lot of village banks are based on grass root efforts
    - Bitcoin is grass roots, so it is a perfect fit
* DAO & Global Crypto Currency
  + Any group can download and create own bank
  + Target: young people, Facebook generation
    - My friend from Nepal has access to Facebook on her smart phone, no computer access
    - Use Facebook, Google+ as ID
  + A stable cryptocurrency will be a lot more stable than many local fiat currencies
  + Carrying around a phone is more secure than carrying around a huge wad of cash
* Current Bitcoin Products
  + Remittances can also be seen as a cross border bank
  + A son or daughter working in a developed nation can deposit money into their wallet using one fiat currency and have parents in developing nation withdraw from it in another fiat currency
  + Companies like bitreserve, coinapult attacking Bitcoin volatility problem with currency locks
  + Goal:
    - people don’t see BTC, just use local fiat currencies to deposit & withdraw
    - use a stable currency to hold value better than some fiats
* Follow on Financial Services
  + Developing nations
    - Savings will earn interest
      * The poor need income smoothing so they can put food on the table year round
    - Money can be relent to people in need
      * Small business loans for farm, shop, etc.
      * Student loans
    - Social fund: A percentage of funds set aside for disbursements for health emergencies, tough times, funerals, etc.
  + Developed nations
    - Local help pool
      * A group of people helping pay each other’s real estate down payments for example
      * Or student loans
    - Local investment pool
* DAO ensures Transparency, Honesty
  + Two levels of use
    - Financial advisor level
      * sophisticated computer/smart phone access, full banking privileges
      * **needs to meet with each villager every week to track progress**
        + “tech is the easy part, the human component is the hard part”
        + The human element facilitates loan repayment & is essential; the tech portion just makes the entire process easier
      * provides educational component
        + definite need for financial education, developmental services
        + health services: constant reminders in text & voice for pregnant women, guidance on food
      * last mile fiat exchange? Ripple/stellar ‘gateway’? lockbox/safe for cash?
    - Regular user level
      * feature phone wallet or credit card
      * keeps track of amount in savings & loans
      * ideally wallet can be used for payments like Mpesa
  + Automated accounting: blockchain ledger for account balance, transactions
  + Multisig voting mechanisms can be used to add people to the group, approve loans/disbursements
    - Elect a group of ‘elders’
    - Multisig & smart contract system helps reduce the chances of thievery
  + Trust has to be implicit with the members of the group
* Account Structure
  + Savings
    - interest bearing accounts
  + Loans
    - Savers can borrow up to X times their savings
    - Village elders can lend up to X% of pool?
      * X determined by village
      * What about bank runs?
  + Social fund: emergency disbursements
    - X% of pool set aside for emergency disbursements like health emergencies, hard time fund, funerals
    - Optional
* Bank Structure
  + Savers
    - Can vote for elders
    - Savings provided X% interest
    - Can request loans, disbursements
      * Savers can borrow up to ?x of their savings at Y% interest
    - Some random non-elder savers for multisig transactions
  + Elders
    - Must be a saver, anyone can vote for
    - Can possibly specify different roles among the elders: President, Secretary, Treasurer, etc.
    - Financial advisor job
      * Needs all elder’s signatures to approve transactions?
      * Gets paid?
    - Bank leadership & guidance
      * Sets interest rates on savings accounts & loans
      * Due diligence on loan, disbursement requests
      * Researches other investment opportunities for pooled money
* Village Bank Programmable Rule Set
  + Minimum number of savers
  + New saver approval rules
  + Number of elders, length of service
  + Election rules
    - Rules for voting in elders, etc.
    - Annual elections?
  + How often does each group meet?
  + Store meeting notes on the blockchain?
  + Multisig rules
  + Need reputation, voting system for people
  + Interest rate for savings account
  + Loan rules
    - Length of loan
    - Repayment schedule
    - Min/max loan amount
    - Interest rate
  + Fees for bad actors, rules for kicking them out
  + Rules for social fund
    - Majority vote for disbursement?
  + Rules for retiring accounts
  + Rules for disbursing funds if bank closes, goes into bankruptcy
* The Software Product
  + People just set up accounts & use
    - Create local bank like slack.com creates local chatroom, e.g. blockchainu.slack.com
    - Microfinance banks, local investment pools also can be end users
  + Charge fees depending on total size of monetary pool
    - Small pools free for developing nations, microfinance applications
    - The larger the pool, the more lending power it has
    - People can possibly create multiple small pools to avoid fees
  + Outside organizations (banks, NGOs, grants, etc.) can inject capital into each pool
    - Like FINCA [www.finca.org](http://www.finca.org)
      * FINCA also helps manage each local village bank
    - CDOs: Bundle up loans & sell them?
* Possible Future Financial Services
  + Ecommerce integration
  + Insurance
  + Retirement account that can invest money in crypto stocks, crypto funds, etc.
  + Wills, trusts
* Product Design
  + Technologist should visit developing area in order to design products
  + Need to see the needs of the people
  + Needs to keep software simple, easy to use for developing nations
  + Top 3 needs for women in developing countries
    - 1. Privacy of funds from their husbands
    - 2. Ease of use – lives of women in developing countries very busy
    - 3. Security – they have to feel secure withdrawing their money and carrying it around
* Problems/Challenges
  + Low tech areas
    - Many areas don’t have electricity, running water, basic hygiene
    - Not targeting these areas, leave them to professionals like FINCA
  + Illiteracy
    - Many poor illiterate in their own language, so how can they possibly use a phone?
    - Financial illiteracy
  + Need a stable cryptocurrency
    - Too much friction/fees from trading from one currency to the other
    - Really need a stable cryptocurrency
    - bitUSD, nubits, pebble
    - use ripple/stellar to transact in fiat like USD?
  + Competition
    - Other NGOs, microfinance orgs, current village banks
      * Opportunity to help them upgrade
        + currently have long loan ledgers, a large paper trail
      * Different target market: they are targeting areas w/no electricity
    - Local loan sharks, predatory lenders
      * Village banks can provide lower loan rates, better community trust
    - ‘Neobanks’ branchless banking from current banks
      * GoBank (Greendot), Simple, Acorns, Moven, Ixaris, Numoni, Balance Financial, etc.
    - <https://coinkite.com/>
      * Cryptobank, BTC debit cards
  + Last mile problem: fiat to crypto
    - Ripple/Stellar gateway?
      * Local Village Bank has lockbox where fiat is stored
        + Safety concerns
      * But BTC has much larger network effect, more fiat exchanges around the world
    - Feature phone to ATM
    - Use your phone as your wallet – Mpesa?
  + Legal concerns in each country
    - A lot more regulation in developed nations
    - Get legal advice before launch!
* More Videos & Links
  + <https://www.youtube.com/watch?v=IFR0DUhQfM0>
  + <https://www.youtube.com/watch?v=o-xshW39_ac>
  + <https://www.youtube.com/watch?v=0etL9c-gsTI>
  + <https://www.youtube.com/watch?v=SG0wzszjxIQ>
  + <http://www.gdrc.org/icm/model/model-fulldoc.html>
* Goal from BlockChainU project
  + Proof of concept
  + Need help brainstorming the Ethereum architecture of this project & with coding