Pharmacoin

Mentor:

Virendra Parikh- Founded MobileChamps in 2009. His company provides blockchain advisory services from business model innovation, strategy development, ecosystem development, use case development, implementation strategy, pilot program analysis and more.

Shivam Dave: CS ‘20

Studying Computer Science. Passionate about technology and entrepreneurship. Primarily focused on ML, Data Science, and Computer Graphics. Leading the customer and mentor interactions.

Serena Wu: CS ‘ 20

Double major in Computer Science and Data Science with concentration in Business & Industrial Analytics. Passionate about integrating technology with business. Leading innovation and creativity on team.

Rishi Modi: Econ ‘22

Studying business and enjoy the intersection of tech and the consumer world. Leading the Business Strategy and Development on team.

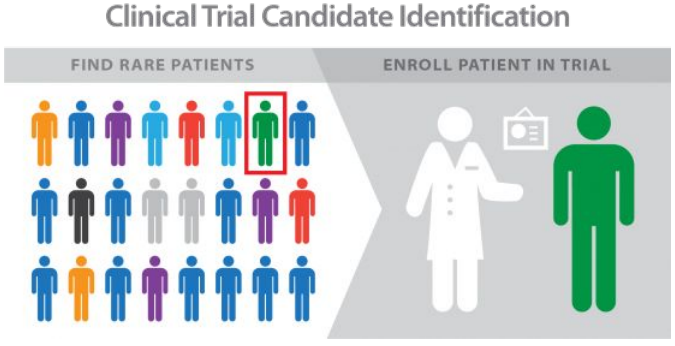
Collin Cao: CS ‘20

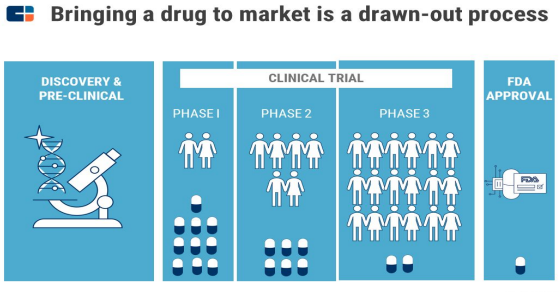
Focused on AI/ML stuff, also interested in Blockchain technologies. Looking forward to integrate and develop our ideas into a good project. Leading tech development.

Problem

3 Pain Points: Inefficient, expensive, time-consuming

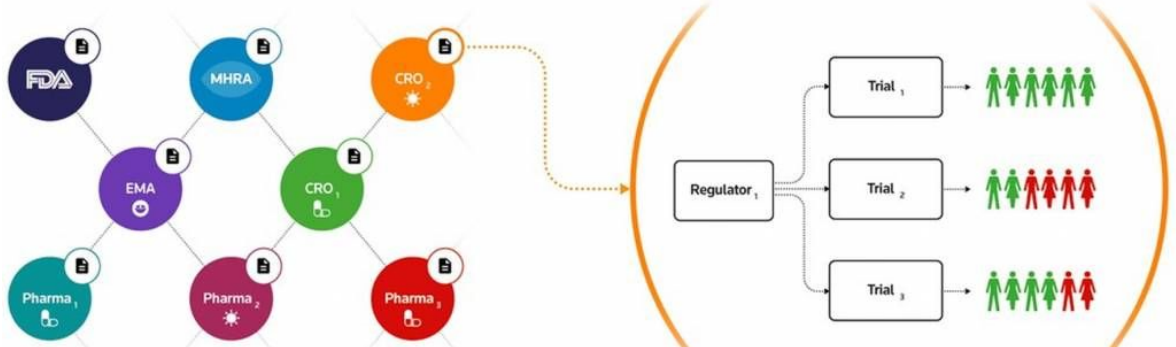
Apart from costs of patient acquisition, a major problem in the pharmaceutical industry is patient data and its accessibility. It is imperative for investigators to have the ability to locate individuals for particular studies in order to streamline the costs of drugs, which have increased dramatically over the past decade. As clinical trials are often so narrow on the eligibility criteria and matching is very time-consuming, these challenges are responsible for the increasing costs and difficult access of medications. The entire process of bringing forth these new drugs to the market can cost up to hundreds of millions to a billion dollars. Seeking and vetting patients at various phases can cost millions upon millions.





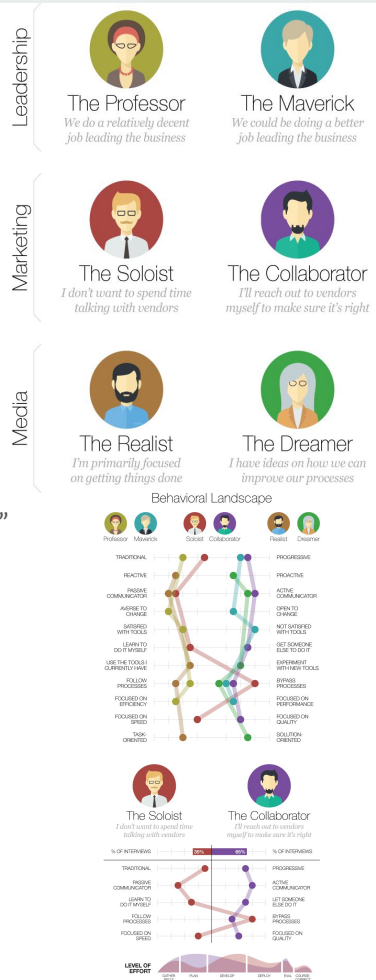
Solution

Our Solution allows pharmaceutical corporations and clinicians to not only increase the number of patients recruited (improving participation), but we also aim to improve the overall processes, streamlining the currently inefficient process. Essentially, we create an AI- based algorithm on the blockchain that connects particular patients and volunteers with trials in an efficient, automated process that reduces risk for error and shortens the length of time needed. We will store individual patients medical data via anonymous methods, and provide the data to trial recruiters who may then reach out to patients, who are incentivized by receiving tokens in return for providing the data and connecting with.

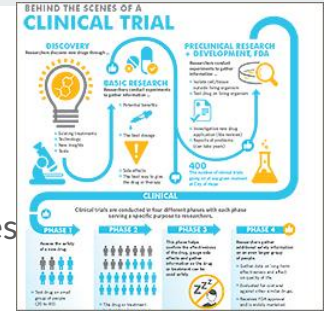


Customer Archetype / User Persona:

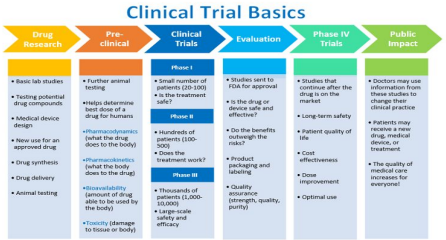
- **Persona**
  - Male/Female
  - Ages 18-65
  - Students/Employed/Unemployed/Deployed
  - Would like to contribute to expediting the drug-development process
  - Seeking paid or unpaid opportunities
- **Archetype**
  - *The Dreamer*- Seeking to participate in clinical trials for the well-being of others
    - “I’m looking create real impact in the healthcare space by volunteering on my own good will”
  - *The Patient*- Patient interested in volunteering for trial based on their own predicament
    - “I want to assist researchers in expediting the search for a cure for my ailment”
  - *The Soloist*- Individual looking to score some quick money by participating in experiments
    - “I would like to participate in these experiments for the quick and easy compensation”



Value Proposition and Revenue Model:



- **PharmaCoin**- "LinkedIn For Clinical Trials"
- To address the costly inefficient process of acquiring patients for clinical trials, Pharmacoin provides time-efficient, confidential, intuitive platform for individuals to apply to trials hosted by Medical Institutions and be efficiently vetted and matched. "Get vetted, get cured"



Business Model: Institutions pay ($50) per patient (reduction from average of $288)

- Average (150 patients per trial) +- depending on study ... 18755 clinical trials per year

Fixed Cost: Website ($50000) + Transaction Infrastructure ($3800) + Tokenization/smart contracts ($1200) + IP / Algorithms ($10000) + Engineering (750000) + Outreach (100000) = $915000

Variable Costs (Cost of Goods Sold): Engineering ($75000) + IP Protection ($1000) + Marketing ($10000) + Consumer Incentives ($11000) + Salaries (100000) = $197000

Revenue = $50 *150 *(% of Market) → Year 5 Profit (5% market) = (50*150*934) - (197000) = $6808000 →
RUNWAY: 2 Years (Profitable)

The Business Model Canvas

Key Partners

Ethereum
Blockchain
Community
IOS + Android
Developers +
BlockStack (dAPPs)
Advisors
Healthcare
Institutions / NIH

Key Activities

Data Compilation
R&D
Software
Development
AI - Integration
Operations/Testing

Key Resources

Ethereum Platform
BlockStack Platform
Collective Intelligence
Crowdfunding
Campaigns
Language for Smart
Contracts

Value Propositions

Linkedin for clinical trials: Essentially, enable pharmaceutical companies to efficiently vet high quality and quantity of patients, where we improve participation in trials, and improve processing alongside recruitment

Customer Relationship

Democratize
healthcare industry,
Transparency
Community
Control of Data

Channels

Website,
Social Network
API
Medical Database
Healthcare Record

Customer Segments

IT Community
Developers
Cryptocurrency
community
Enterprise software
companies
Permissioned Ledgers
Working with end
patients and
connecting via
healthcare startups

Cost Structure

Research and Development, Time, Software Development and Maintenance, Cost of customer acquisition, as well as developing partnerships with institutions, marketing/brand awareness, Compensating patients for data

Revenue Streams

Medical Institutions, Clinics, Pharmaceutical companies pay for access and automation of user data -> streamlined
-> Pay $50 per patient (Avg was $288/patient)
-> Return fixed amount to consumer for inputting data

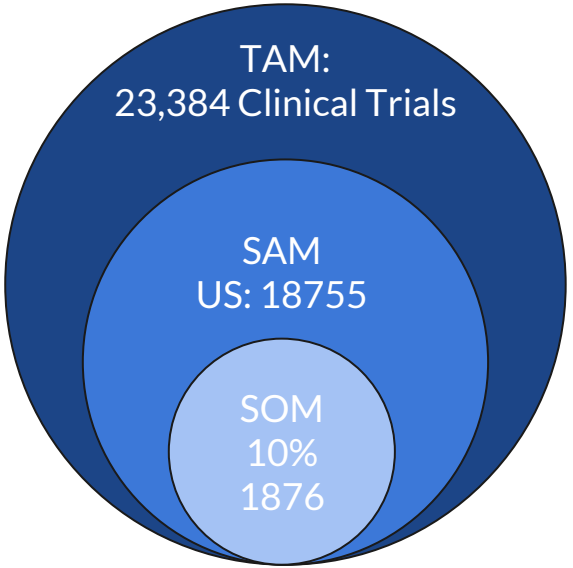
Competitive Analysis and Market Opportunity

Currently there is no company is using healthcare/clinical trial on blockchains. But there are already a mature system of healthcare providers. And many ongoing researches on medical field that share their patient data.

One of the example is VETTED, a Memorial healthcare System that is implemented in 2012. The system potentially save million dollars for hospitals, but it is still a traditional record system that does not have advantages of our blockchain network.

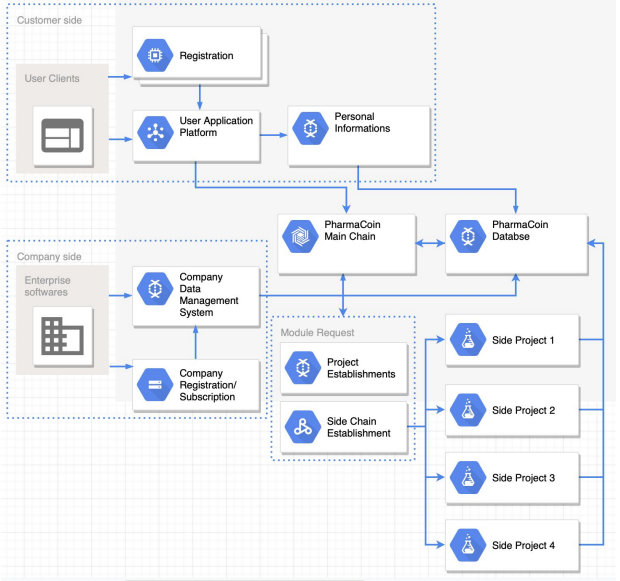
Another competition comes from the open sourced research communities. Many hospitals, especially university hospitals start sharing their dataset for free. Especially in the area of cancer researches. If many of the researchers can get clinical trials/data for free, they would not use our blockchain.

Despite variation, average clinical trial size is 150 patients
-> Clinical Trials: $69B buy 2020



Blockchain Use and Technology

We have drafted our whitepaper for our PharmaCoin to explain everything including the use of blockchain and technologies that is being used. A simple diagram is on the right, for detailed architecture and technical design, please see our white paper: (https://docs.google.com/document/d/1Ri1JQmTe8TYorreaGCUomEObMsn0H_LNCXZeHcj2W84/edit)



An important feature from the project is that we will have a secured, centralized database that is closely connected to our blockchain/sidechains. This database would allows the registered user/companies from the PharmaCoin to access their permissioned/owned data.

We will also use Machine Learning algorithms to match between patient and company. If a company is registered on the blockchain, our algorithm would recommend users that satisfy the company requirements. Ranking the users from the most needed to less needed records.

Go To Market Strategy and Timeline:

Once we finish and finalize our technical design from user/mentor feedback, our team will start to focusing on market strategy and actual implementations.

For users, our primary objective is to deliver exceptional user experiences leads to loyalty and advocacy of the customer. Building credit for our project, including security and useability.

For medical companies, we will have a simple system for demonstration and competitive pricing. Defining our project's vision and what kind of impact it is trying to create on the clinical trials.

We will start the implementation in May and hopefully deploy testnet for our blockchain in late-May to June if details are finalized. We will keep review our current design and receiving feedbacks to decide the official launch of our PharmaCoin.