Analytics on Cryptocurrencies
BUSINESS UNDERSTANDING DOCUMENT
Team: DS707 - 2017 - 01

Business Background

A *cryptocurrency* is a digital or virtual currency that uses cryptography for security. With the growing value of cryptocurrencies(market capitalization=$158.5 Billion as of Aug, 2017), the trading market around them is increasing. We look to analyse different cryptocurrencies and provide data backed insights.

Target users

Investors, speculators,customers and miners of cryptocurrencies will be target consumers of our analytics. We want to keep them aware of trends in cryptocurrencies. Determine factors that help profit maximization so that traders can make data driven decisions while investing.

Definitions

Investors :People and organisations that invest in cryptocurrencies with the expectation of gaining a profit.

Speculators:Short term investors in cryptocurrencies who take larger risks in the hope of quick gains.

Customers:People who buy goods/services using Bitcoin.

Miners:Individuals, groups and companies who provide computer power to mine and record the transactions within the Bitcoin blockchain. They receive mining rewards (Bitcoins) in exchange for the resources they provide.

Objectives

Analytic milestones	Users	Tasks	Business Benefits
Descriptive and Exploratory Analytics	Investors/Speculators	Summarize about the different cryptocurrencies.	Based on historical data, help the traders gain insight into the market and making them aware of the risk & trends.
	Customers	Summarizing factors affecting their transactions	Identify considerations during transaction like selecting the transaction fee, approval time among others.

	Miners	Analyse the attributes of Bitcoin.	Understanding the domain and considerations on bitcoin.
Data mining - classification	Customers/Speculators	Finding directional movement of bitcoin's historical market values.	Build a decision support framework that can be used by traders to provide suggested indications of future bitcoin price direction.
	Miners	Predict the revenue of miners	Helps miners in capital-profit analysis.
	Investors/Speculators	Finding the volatility of cryptocurrencies	Helps in making informed decisions while investing
Data mining - clustering	Speculators/Investors	Correlation between cryptocurrencies: Tackling the problem of selecting well diversified cryptocurrencies.	Better understanding of how the cryptocurrencies are correlated with each other. Risk minimization during investment.
Data mining - association rules	Speculators/Investors	Identify associations between price and market cap/day of week/ unique users/ no of transactions.	The rules helps traders in making informed decisions.
	Miners	Associations between miners revenue and number of transactions, hash rate, number of unique addresses etc can be mined.	Maximizing the miners revenue

Success Criteria
- An accuracy of >70% in predicting the directional movement of bitcoin price.
- Identify correlation between prices of all currencies.
- Find out unintuitive patterns in data.

Risks and Contingency schemes
- Data issues:
  - Sample the data.

- ○ Fill in missing values.
  - ○ To reiterate business objectives.
- ● Results are not as expected:
  - ○ Using more sophisticated machine learning algorithms.
- ● Project is not deliverable on time:
  - ○ Use the buffer week for completing project.

Project Plan

Phase	Time	Risks
Business understanding	1 week	Economic change
Data understanding & Data preparation	1 week	Data problems, technology problems
Modeling & Evaluation	4 weeks	Technology problems, inability to find adequate model.