

**MBA-  
622**

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# **BITCOIN – THE FUTURE OF DIGITAL PAYMENTS**

Take home case analysis

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# I. ANALYSIS & EVALUATION

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## 1) GENERAL ENVIRONMENT

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### ECONOMY

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In 2014, the economy is still in recovery after the 2008/9 recession. In the US, GDP Growth is stable between 2-3%; inflation remains well within the Fed target; below 2%

### INTEREST/EXCHANGE RATES

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US Fed fund rate has been flat at ¼% since it dropped abruptly at the start of the 2008 recession. Global economic slowdowns have kept international economic activity at stagnant, at fairly low levels. Even China's record growth has slowed down, due to reduced US consumption.

### DEMOGRAPHICS

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As time evolves, we observe the entry into adulthood of the millennials. These new adults were raised in an environment where they have always had access to the internet. This generation is typically tech savvy, extremely active on the web and typically fairly open to new technologies and online trends. As they slowly enter the workforce, they are starting to influence business decisions, in particular technology driven ones.

### GLOBALIZATION

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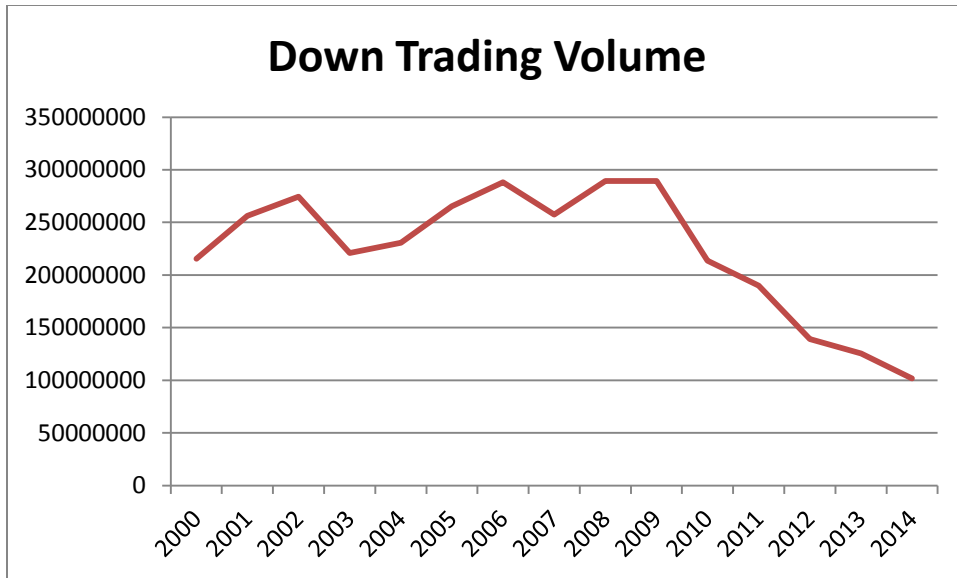
With the evolution of the internet, global boundaries are melting. Historically, international payment remittance services for individuals were operated by large international corporations such as Western Union and MoneyGram. The growth of online purchases transcending across borders creates a need for money to flow freely across borders.

### CAPITAL MARKETS

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Because of stagnant economic growth internationally, global capital markets are offering minimal returns. Most central banks worldwide are keeping lending rates at historical lows. The slow economic activity is reflected by poor investment performance of stocks, low yields on bonds and rock bottom returns on T-Bills.

Dow Jones trading volumes have not yet returned to pre-recessionary volumes. This could indicate that liquidity is lacking in stock markets and that investors are looking at alternative investment vehicles (bonds, derivatives and others, such as potentially Bitcoins).



In terms of returns, even though the Dow has been performing with double digit growth, it does not even compare with the astronomical gain in value of Bitcoins, so far apart in terms of scale comparatively that both growth rates can barely be plotted on a same graph:

YEAR	US Inflation (%)	US GDP Growth	Dow Growth	Bitcoin Value Growth
2000	3.4%	1.0%		
2001	2.8%	1.8%	-5.1%	
2002	1.6%	2.8%	-9.5%	
2003	2.3%	3.8%	-0.6%	
2004	2.7%	3.3%	13.1%	
2005	3.4%	2.7%	2.0%	
2006	3.2%	1.8%	9.0%	
2007	2.8%	-0.3%	15.0%	
2008	3.8%	-2.8%	-15.0%	
2009	-0.4%	2.5%	-21.1%	
2010	1.6%	1.6%	19.7%	
2011	3.2%	2.3%	14.1%	3935.6%
2012	2.1%	2.2%	7.5%	46.9%
2013	1.5%	2.2%	16.0%	2180.8%
2014	1.6%	2.4%	11.8%	178.7%

Down jones historical close and volumes from: <https://finance.yahoo.com/>  
 GDP Growth taken from: <http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG>  
 US Inflation taken from: <http://www.usinflationcalculator.com/inflation/historical-inflation-rates/>  
 Bitcoin close prices taken from: <http://www.coindesk.com/price/>

## IMPACT OF TECHNOLOGY

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Moors law predicts that computing power doubles every 18/24 months. As far as Bitcoin is concerned, additional computing power facilitates the Bitcoin mining process. This is one of the reasons that motivated the bitcoin creators to retain the ability to adjust the difficulty level of algorithm solving, to compensate not only for increases in adoption, but also increased computing power.

Since the '2000, dedicated hardware used to process repetitive computer intensive tasks has greatly gained in popularity. Most notable applications are for Big Data analytics, where dedicated hardware can now be used to run data analysis for extremely complex application such as weather prediction, stock market analysis and internet/social media trends. Such computing power is not used to increased efficiency of bitcoin mining operations.

## GOVERNMENTS

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Typically governments are fairly slow to adapt in comparison to the speed of evolution and adoption of new technology such as bitcoin.

Because of the anonymity it provides, Bitcoins were initially often used to transact illegal merchandize and services, like the ones offered on the Silk Road before it shut down, which helped create a sentiment of caution amongst some government officials. Although some government officials would prefer to stop Bitcoins, other influencers like Fed reserve chairman see the positive potential for the economy, such as faster and more efficient payments systems.

Most countries with strong democratic institutions and a tendency towards free trade are more open to Bitcoin. For example in the US, even though there are some pressures to outlaw Bitcoins with the argument that it's use is primarily to support money laundering and drug trafficking, using the digital currency as means to conduct transaction is still legal.

Other slightly less democratic countries such as China, India and Russia have adopted a more conservative approach by restricting the use of bitcoins.

## LEGAL ISSUES

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Since it is a new industry, Bitcoin is currently fairly unregulated. Besides the few states which have chosen to ban or restrict the usage of bitcoins, the ecosystem is mostly unregulated.

This poses a serious risk for business since they are playing in a market that will eventually be regulated, without knowing how regulation will affect them. Any Bitcoin business runs the risk that a law gets passed which completely destroys their business model (as an extreme example, banning the use of Bitcoins in the US). The lack of legislation also leaves companies mostly to themselves, with no frameworks or civil protections when it comes to bitcoins; like in the early days of the internet.

## SOCIAL ISSUES

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The biggest social issue faced by Bitcoin is the lack of social acceptance and trust, and general fear of new technology/trends.

The entire global financial system relies entirely on trust. This explains the extremely conservative and professional attitude of all worldwide central banks. Building trust in a new currency can be accelerated if it is backed by strong and old institutions, such as when the Euro was created backed by the European Bank. But bitcoin is not backed by any large institution; but rather operated by a community. As such, people are skeptical in terms of Bitcoin's ability to retain its value; which is observable by the heavy fluctuations in prices.

Furthermore, Bitcoin is not just a new currency like the Euro, but rather a new type of means to transmit value, following a natural evolution from barter to gold, coins, paper money, checks and credit cards. As such, it is anticipated that adoption will be as tedious; just like people didn't see any value in paper and took years before paper currency was widely accepted, it is likely that the adoption of Bitcoins as a mode of transferring value will take time to be fully accepted and trusted by the general public.

## 2) INDUSTRY & MAJOR PLAYERS

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The bitcoin ecosystem is spread across multiple distinct industries, some of which are more penetrated by Bitcoin, some others still relying on "traditional" companies to perform business functions. The main industries are:

- Merchant Services & Payment Processing
- Bitcoin Wallets
- Exchanges
- Miners
- International Remittance
- Speculators

### MERCHANT SERVICES & PAYMENT PROCESSING

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#### COMPETITIVE LANDSCAPE

This space is focused on helping merchants acquire the technology required to accept Bitcoin payments, such as Bitcoin protocol integration into POS systems.

When it comes to payment processing, the Bitcoin industry is somewhat similar to the credit card industry, where a 3<sup>rd</sup> party (bitcoin or credit cards) is used as an intermediate between a merchant and customer to conduct a transaction.

The following outlines the size of the credit card market:

Card	#cards (M)	Purchase Volume (%)	Purchase Volume (M\$)
Visa	277	44%	968,000
MasterCard	178	27%	594,000
Discover	61	24%	528,000
Amex	52	5%	110,000
<b>TOTAL</b>	<b>568</b>	<b>100%</b>	<b>2,200,000</b>

With wallets being the equivalent of cards, although Coinbase grew it's number of user wallet 75 folds in a year from 13k in 2013 to over 1M in 2014; the number of wallets is manages only represent less than ½% of the total number of credit cards issued in the US.

In terms of \$ volumes of transaction, even though Overstock.com received roughly 1M\$ in bitcoin payments during the first month of adoption (representing roughly 1% sales with total sales near 1.3B\$), compared to the \$2.2 trillion dollar credit card industry, this volumes is insignificant.

Even with the total of \$5.6B value of bitcoins in circulation, all bitcoins in circulation would need to be traded 392 times in a year to cover the total transaction value of the credit card marker, yet it is estimated that currently 64% of bitcoins have not been spent.

If bitcoins are to eventually compete with credit cards for payment processing, the industry is at a stage of extreme infancy with tremendous growth potential.

Credit cards typically charge 1.5-3% processing fee, making it a 3-6 billion dollar industry.

Strategy adopted by credit cards is to focus both on the merchant as well as the customer, and to share a common standard (such as magnetic strip or chip) to facilitate adoption by merchants.

The benefits credit cards offer customers are mostly credit based, therefore would be difficult to replicate by bitcoins to generate adoption:

- Delayed payments: Since bitcoins are a form of currency, they need to be purchased immediately
- Revolving credit: Bitcoins are a cash, not a credit instrument
- Rewards: Bitcoin might be able to offer some type of reward for its usage, but with double digit volatility in value, the 1-2% typical value of credit card rewards might not be sufficient to compensate the price fluctuation risks
- Consumer protection: Since bitcoin ownership is wallet based, and not consumer based, consumer protection might be difficult to implement. Although it is a trivial task to track a bitcoin to a wallet, identifying the owner of that wallet is almost impossible. If consumer protection is to be offered by a company, a high level of fraud is to be expected.

The merchant side benefits of credit are mostly based on payment processing therefore could more easily be transferred to bitcoin should a company decide to focus on payment processing:

- Fast payment: If the bitcoin markets eventually stabilize in terms of volatility, merchants might even start holding to bitcoins like regular currency to finance operations.
- Assurance of payment: As long as wallets are protected from hackers, conversion of bitcoins to currency should be safe

- Increased consumer spending: The anonymous side of bitcoins might generate additional sales for customers who wish to transact yet remain mostly anonymous. This feature was fully leveraged by the Silk Road, one of the earliest adopter of bitcoins, which was primarily focused on exchanging drugs, hacking services and weapons.

Typically merchants will post prices in fiat currency, and when accepting Bitcoins as payments, will convert the currency price into Bitcoin, accept Bitcoins then cash them out back to Fiat currency in order to be protected against volatility.

Bitcoin hasn't yet reached a point of adopting a common protocol; every merchant service provider has its own API which requires integration with merchant POS. In order to compensate, the industry is leveraging its relatively low costs of digital assets to compete on price:

- Coinbase offers merchant services with over 30,000 merchants, including Overstock.com. Transactions are performed at no cost but Coinbase charges 1% fee for cashing out. Since most merchants cash out immediately to protect themselves against Bitcoin price volatility, this is an excellent pricing model for the current environment. Currently Coinbase offers the first M\$ of cashout free of transaction fee.
- Bitpay, which rose 30M\$ in VC funding charged a 1% fee on transactions. They have also signed up 30,000 merchants including Tiger Direct.
- BIPS focused on international transactions, offering to convert Bitcoins into over 150 fiat currencies. Their pricing model relies on a 9\$ flat fee per transaction.

Another advantage that bitcoin has to offer is to allow for broader greater customer for merchants. For example, Overstock estimates that 60% of bitcoin sales which reached \$1M in 2 months were from new customers, whereas TigerDirect received over \$500,000 Bitcoin sales in just 3 days.

There are other big players in the payment processing industry:

- PayPal, with over 148M registered accounts and processing \$180B in transactions will potentially start accepting Bitcoins.
- Amazon payments is also trying to play into the online transaction processing field, with similar fees as PayPal, but has only acquired some 1000 websites.
- Apple currently does not have digital payment product, but there are speculations that it may enter that field.

Volatility is great for business models such as Coinbase which charges commission on cashing out, but causes issues for merchants. For example in the first 11 months of 2013, as bitcoins were appreciating, the value of goods sold for bitcoins decreased by 98.5%. Having to constantly adjust prices based on the value of the currency can be a tedious (and potentially costly) task for merchants. Not adjusting prices on time could also result in unexpected losses.

## TRENDS

- Many online retailers such as Amazon and potentially Apple are entering the market
- Bitcoin players are entering the market with significantly lower prices than traditional processors, which should drive prices downwards
- Merchants are tend to cash out immediately to protect against volatility

## LIFE CYCLE STAGE

Reaching Maturity for established players in traditional means (and oligopoly for credit cards)  
Early stages for Bitcoins

## PORTER ANALYSIS

- Threat of new entrants: This space seems to be the target of many extremely resourceful companies, weather operating in typical payment processing like Visa/MC, or internet giants such as Google, Apple, Amazon and PayPal.
- Threat of substitute: Payment processing is a service already provided by many traditional methods. When transacting online, customers have an extensive choose of services from which to choose from.
- Bargaining power of customers: Since account setups are typically free, there are not too many barriers for customers to change payment provider. As such, they have a lot of power not so much to force behavior of provider, but to simply change service provider.
- Bargaining power of suppliers: Since payment processing is a service, there aren't really suppliers like for manufacturing processes with input.
- Intensity of competitive rivalry: The industry is currently run as an oligopoly, with few extremely large players sharing the market. With such low barriers to entry, it is to be expected that Bitcoin (as well as other alternative online payment services) will come disrupt the industry and create potential price wars.

## KEY SUCCESS FACTORS

- Attempt to "lock in" consumers and merchants to avoid having them switch to another payment processor
- Keep costs low in case of price war
- Since competing with extremely large companies, be extremely cautious not to "awaken the giants"
- Ensure well-structured API to facilitate Merchant integration
- Stabilization in price volatility could incentivize merchants to keep currency in Bitcoins

## SUMMARY OF OPPORTUNITIES AND THREATS

### Opportunities:

- Multibillion dollar market; even a small % capture could translate in significant revenues
- For merchants, accepting Bitcoins seems to attract new customers. This could be a great selling pint to attract new customers
- Payment processor offering Bitcoin could fairly easily capture online business of a merchant, or even offer a platform for brick and mortar merchants to trade online

### Threats:

- Space is already occupied by many "giants" which could easily destroy any new entrant
- Customer loyalty is questionable
- Customers might have trust issues with new payment providers using Bitcoins; a "non-proven" currency
- With Bitcoin processors entering at much lower prices than traditional processors, there is potential for costly price wars
- Lots of already existing substitutes and potential new ones to soon be created
- Volatility causes difficulty when it comes to pricing for goods traded in Bitcoins



## WALLETS

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### COMPETITIVE LANDSCAPE

Coinbase rose over 30M\$ in venture capital to deploy a cloud based Bitcoin wallet; the company has over 1.2M consumers.

Circle is also another startup in consumer wallets, providing entirely free service and theft insurance.

To allow for enhanced security and/or anonymity, some providers offer wallets that can be installed on their own computers, such as MultiBit and Armory which are both open source.

Some wallet companies such as Xapo offer cold storage where private keys are stored offline for maximum security from hackers. Although this provides “virtual security”, these companies still need to invest heavily in physical security.

The 4 largest Bitcoin wallet providers collectively reported having 5M wallets as of now.

Google has also ventured into the digital wallet, but even with \$300M invested, it has yet to reach 10M users.

### TRENDS

- Multi service wallets offering cold storage and backups
- More focus on user friendliness

### LIFE CYCLE STAGE

Startup/infancy

### PORTER ANALYSIS

- Threat of new entrants: Even though there is a low barrier to entry, trust is a major factor when customers choose a wallet provider. As such, having to build an image of trust might constitute a barrier to entry of new players.
- Threat of substitute: Some substitutes include physical wallets, but although they may offer more security, are not very practical (they lose all competitive advantages over physical conventional currencies)
- Bargaining power of customers (buyers): Customers have many wallets to choose from
- Bargaining power of suppliers: Once a customer is setup with an online wallet, there should not be much compelling reason to switch to another provider
- Intensity of competitive rivalry: As the industry is still in its infancy, although there are many new entrants, the market seems to be able to absorb them.

### KEY SUCCESS FACTORS

- Security: Wallet providers should be as cautious to protect themselves against hackers as banks protect against thieves
- User friendliness: In order to facilitate user conversion, wallet platforms should be as user friendly as possible
- Reputation/trust: Since customers will be entrusting their money into bitcoin wallets, it is critical that wallet companies establish trust and showcase a good reputation

## SUMMARY OF OPPORTUNITIES AND THREATS

### Opportunities:

- With the industry at infancy, there is lots of room for new entrants, growth and innovation

### Threats:

- Success might be difficult: even with strong brand and 300M\$ investment Google did not manage to succeed in this space
- There has been an emergence of PC based open source wallets, which are completely free of use.
- With such high value fluctuations, some customers might not be willing to hold on to Bitcoin currency for long term thereby eliminating the need to wallets

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## MINING

### COMPETITIVE LANDSCAPE

The bitcoin ledger is maintained by minors, who provide computing power to compute verification hashes of new transactions. Minors are rewarded Bitcoins for each blocks processed. As the number of bitcoins increases, the amount of bitcoins rewarded for a block of mining diminishes.

Bitcoin has created a new industry of specialized microprocessors engineered for mining. The technology of hashing the block chain has become so commoditized that the most significant cost to consider when deciding to open a mining operation is no longer the fixed cost of hardware, but the variable cost of energy. Hence hardware vendors are now focusing on energy efficiency rather than increased hashes/seconds.

There are currently roughly 13M bitcoins in circulation, but the quantity of bitcoins will eventually cap at 21M.

### TRENDS

- With the increased demand in computing power required for mining, there is a trend towards distributed computing associations and dedicated hardware
- As the cost of technology devaluates, the significance of the energy costs related to computing increases. As such, there is a trend towards energy efficient hardware for mining purposes

### LIFE CYCLE STAGE

Emerging & Growing

### PORTER ANALYSIS

- Threat of new entrants: Although anyone can setup a mining bot on a laptop, the quantity of computing power required to earn a significant amount of \$ requires some investments in technology. Besides the initial investment, there are no particular barrier to entry, making it easy for new competitors to enter the industry
- Threat of substitute products or services: There could potentially be enhancements in mathematical algorithms or quantum computing that would completely change mining operations, but the likelihood of this happening is extremely low. Besides that, the creation of new derivative markets could reduce the demand on actual Bitcoins, thus reducing the value of mining output.

- Bargaining power of customers (buyers): Since Bitcoins is a currency; customers can purchase the currency as a commodity therefore has full bargaining power. No differentiation and extreme price sensitivity is to be expected.
- Bargaining power of suppliers: No mining supplier offers a unique service; they simply provide computational power. As such supplier have no particular power,
- Intensity of competitive rivalry: The mining industry should be fairly competitive because of the low barrier to entry and cost driven nature of the success of selling the output (Bitcoins)

#### KEY SUCCESS FACTORS

- Keeping costs as low as possible because of the competitiveness
- Ensure to have quick payback period on capital investments to mitigate risks
- If possible, invest in future Bitcoin contracts to mitigate currency fluctuation risks
- Ensure that the company has enough cash to survive extended periods when the value of bitcoins might fall below the variable cost associated with production
- Invest in areas where cost of energy is low

#### SUMMARY OF OPPORTUNITIES AND THREATS

##### Opportunities:

- There are still 8M bitcoins to be minted. At \$400 each, this represents a \$3.2B industry

##### Threats:

- With ever increasing computing power, mining operation will most likely require frequent (And potentially expensive) hardware refreshes in order to remain competitive.
- The greatest cost associated with mining is energy, and energy prices are fairly volatile. Miners should invest in future contracts to stabilize energy costs and establish data centers where energy prices are low (like QC for example).
- Since new Bitcoins are issued as a reward for miners and the quantity of bitcoins is limited to 21M, it is unclear how miners will be rewarded with newly minted bitcoins once the maximum has been reached.
- Constant price fluctuations make it difficult to business case mining operations

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## INTERNATIONAL REMITTANCES

### COMPETITIVE LANDSCAPE

The size of the international remittance market is estimated at \$500B a year. The industry is led by Western Union with over 500,000 locations, transferring \$82B a year person to person. With MoneyGram as a main competitor, they typically charge a fee of 8.5% per transactions and payment clearance takes roughly a day.

There already exist a few international remittance startups such as Kipochi and BitPesa. Kipochi focuses on the African market and offers SMS based service. Integrated with M-Pesa, Bitcoin remittance can be executed via the carrier.

BitPesa is another company that plans to operate in this field. Although they are not yet operating, they plan to charge a 3% fee.

## TRENDS

- Some companies moving towards cell phone based transaction to facilitate user integration
- Most likely decreases in costs with the advent of Bitcoin competitors

## LIFE CYCLE STAGE

Mature for traditional remittance companies, infancy for bitcoin

## PORTER ANALYSIS

- Threat of new entrants: While Bitcoins are still widely unregulated, there is fairly little barrier
- Threat of substitute products or services
- Bargaining power of customers (buyers)
- Bargaining power of suppliers
- Intensity of competitive rivalry

## KEY SUCCESS FACTORS

- International presence
- Security
- Low cost structure to maintain price advantage over traditional providers
- Brand equity/trust since dealing with international money transfers

## SUMMARY OF OPPORTUNITIES AND THREATS

### Opportunities:

- Very few players in the industry, lots of room to grow
- Extremely low cost structure compared to traditional remittance providers can provide a great competitive edge

### Threats:

- New regulation could appear in currently unregulated countries, restricting commercial activities
- Established players in traditional remittance market could venture into Bitcoin and leverage their scale, financial resources, brand strength and established presence.

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## EXCHANGES

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## COMPETITIVE LANDSCAPE

The primary role of exchanges is to process Bitcoin transactions. Typically accounts are funded via fiat currency and withdraws can be made within 1-5 days. Transaction fees typically range between 0.2 and 0.5%, which is considerably low, and there can be significant spreads between the bid/ask prices of various exchanges; the most significant one having been observed when rumors started to spread about Mt Gox's hack and bids dropped below \$100 while remaining above \$500 on other exchanges.

Name	Base	Trade Volume Processing
BTC-e	Bulgaria	27%
Bitstamp	England	23%
Bitfinex	Hong Kong	22%
Others		28%

There might be opportunity to open a US based exchange. Some companies are offering ATMs services, where fiat currency can be deposited in exchange for a private bitcoin address.

One of the best strategies to monetize speculation would be to establish derivative markets for Bitcoins. A company could create and sell derivative products, and act as a broker making money on transactions. This would be a great horizontal expansion for a company already operating exchanges.

### TRENDS

- Consolidation towards a few large players
- Increased size providing tighter spreads and increased liquidity
- After many failures, increased security

### LIFE CYCLE STAGE

Potentially nearing breaking point

### PORTER ANALYSIS

- Threat of new entrants: Very difficult to establish new entrants because of size required to generate sufficient liquidity as an exchange
- Threat of substitute products or services: There could eventually be potential for open source peer-to-peer systems to be developed which could disrupt established exchanges
- Bargaining power of customers (buyers): Customers are focused on trust/security. Besides that, there is very little differentiation for actual Bitcoins
- Bargaining power of suppliers: Since exchanges act as brokers between people, customers also act as suppliers
- Intensity of competitive rivalry: Industry ran as an oligopoly with 3 major exchanges sharing most of the market. With ever increasing demand, there isn't yet fierce competition

### KEY SUCCESS FACTORS

- Security: as was seen with the downfall of Mt Gox, exchanges are a prime target for hackers and should be extremely focused on security
- Fast transaction processing times
- Scale: Just like for any exchanges, smaller spreads can be offered to customers when there are enough traders on the exchange to support bid/ask volumes

### SUMMARY OF OPPORTUNITIES AND THREATS

Opportunities:

- With increase in Bitcoin usage, transaction volumes should also increase, thus offering great growth potential

Threats:

- Exchanges are bit targets for hackers/thieves

## SPECULATION

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### COMPETITIVE LANDSCAPE

One way to profit from Bitcoin is to speculate on price fluctuations. With annual volatility reaching as high as close to 4000% appreciation in a single year, and constantly fluctuating prices, there is a business opportunity to make money speculating on future value of bitcoin.

Since Bitcoin is not backed by a central bank's monetary policy, nor tied to any government's fiscal policy, fundamental analysis strategies used to speculate on traditional currencies would be difficult to re-use for bitcoin. If a company wishes to venture in speculation, they will either need to develop new trading strategies or focus on technical analysis.

In the past 16 months, the value of a single Bitcoin increased from \$13 to \$438, and the value of total bitcoins in circulation increased from \$141M to \$5.6B. Although such sudden increase in value can attract speculators, the volatility in the value of Bitcoins makes it difficult to use as a currency. The downside of such volatility was observed with the value of bitcoins decreasing 61% after its \$1,126 historical high.

Since 64% of Bitcoins have never been used for transactions, it seems that until now the majority of bitcoins have only been used for speculative purposes.

### TRENDS

- Recent development of Bitcoin derivatives
- Bitcoin prices seem to have somewhat stabilized compared to the quadruple digit growth seen in the past

### LIFE CYCLE STAGE

Early/infancy

### PORTER ANALYSIS

\*The model does not apply adequately for the business model of currency speculation

- Threat of new entrants: It is extremely easy for new entrants to start speculating on bitcoins
- Threat of substitute products or services: Although derivative markets are being created, Speculators could also trade on those markets.
- Bargaining power of customers (buyers): N/A
- Bargaining power of suppliers: N/A
- Intensity of competitive rivalry: Increased number of speculators generates increased volatility in prices, which eventually causes some player to run out of cash and exit the market

### KEY SUCCESS FACTORS

- Lots of cash and tolerance to risk
- Analytics and models to help predict price fluctuations

## SUMMARY OF OPPORTUNITIES AND THREATS

### Opportunities:

- Arbitrage between exchanges
- With \$5.6B worth of bitcoins in circulation, every 1% change in price is worth \$56M change in market cap; with double digit historical growth this represents tremendous capital gain potential

### Threats:

- There are no fundamental analysis models existing to help predict Bitcoin price changes since currency fluctuations, unlike Bitcoins, are tightly couples to central banks and nations

## 4) GENERAL OPPORTUNITIES & THREATS

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### Opportunities:

- Emerging market; lots of growth and potential for innovation
- Digital product has low variable costs so fairly east to compete on price against established traditional player
- New digital currency leverages the internet; has no borders and is extremely mobile

### Threats:

- Regulation: Since new, some countries have not yet legislated the use of Bitcoins, There is a risk that new regulation restrict or ban certain commercial activities
- Trust: consumers have not yet fully built trust in Bitcoins
- With consensus based ledger, there is a potential for hackers to acquire (or compromise) enough computing capacity to commit theft
- Without backing of central bank, the currency is unprotected against speculative attacks and there are no monetary policy being adjusted to protect/stabilize the currency
- The concept of Bitcoin is still miss understood; public and companies tend to initially mistrust what they do not understand
- Security/theft: Instead of protecting currency against physical theft, a new industry is required to protect digital currency against hackers
- Although there has been lots of media buzz around Bitcoins, use cases and sustainability of both the currency and associated business models are not yet proven
- Bitcoin could be replaced by the “next” online fad and become obsolete
- There is still significant price volatility, which motivate people and companies to not hold on to bitcoins in order to protect themselves against price fluctuations
- With a predetermined money supply, Bitcoins could be subject to deflationary pressures.

## 5) INTERNAL AUDIT

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The point of view of Coinbase will be taken.

### SUPPLY SIDE

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N/A: Since Coinbase provides a service, supply side analysis doesn't really apply.

### CONVERSION PROCESS

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For wallet services, customers simply have to setup an online account on the cloud service so create a wallet. The wallet can then be used either via web browser or smartphone app.

For merchants, integration is required between merchant payment processing services and Coinbase's API.

### DISTRIBUTION NETWORK

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N/A: Since it is operating online, sales are done directly without a distribution network.

### RISK EVALUATION

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One of the most significant risks is security/hackers. Coinbase seems to have mitigated that risk by storing 97% of currency offline, but this now makes them exposed to physical security. No information was provided as to the types of security measures they are taking.

Another risk is the potential entry into this space by a giant like PayPal or Apple. Such company would have much more financial resources than Coinbase's \$31M of capital (most of which might already have been spent on capitalized development).

Bitcoin price volatility is a risk which is passed on to customers since Bitcoins are not owned by Coinbase. The risk is actually monetized; by charging 1% fee only on cashouts, and customers afraid of volatility will have the tendency to cashout, thus paying the 1% fee.

### CUSTOMERS

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#### Growth

Coinbase has grown customers of wallets from 13k to over a million in about a year. With 1.2M customers in an estimated 5M wallets market Coinbase roughly a 25% market share.

#### Selection

For wallets, no particular selection is performed.

Coinbase has also signed up over 30,000 merchants including:

- Overstock.com
- Chicago Sun Times
- CheapAir.com
- OkCupid



Although no information is provided on the nature of the other merchants in their customer portfolio,  $\frac{3}{4}$  of the ones listed are online based retailers and service providers.

#### Attraction

For wallets, attraction is based on ease of use of the cloud services. Customers do not have to install any software to use Coinbase, and can access their wallet via Android Application.

For merchants, Coinbase is competing on price against traditional processors offering 0% transaction fees. Even though they charge 1% for cashout, the fee is waived on first \$1M converted bitcoins, making it an extremely attractive proposition for merchants to try (cost free besides integration costs).

#### Retention

Although no information is provided, with such a young company and large growth, it is safe to assume that customer retention currently is fairly high.

### FUTURE ORIENTATION

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Since Coinbase is still a new/young company, it most likely is still focused on defining its present orientation and acquiring as many customers as possible for the time being.

### CSR /ETHICS/LEGAL

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Since Bitcoin is mostly unregulated, legal aspect is currently not really relevant. No information provided in terms of Ethics and CRS.

### HUMAN RESOURCES / LEADERSHIP

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No information provided.

### CORPORATE CULTURE

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No information provided.

### IT SYSTEMS

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Coinbase has a cloud based wallet infrastructure and developed smartphone apps to allow easy access to wallets.

### KSF PERFORMANCE

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Wallet:

- Security: With offline storage, Coinbase can provide adequate security from virtual threats to its customers
- User friendliness: Coinbase has one of the most user friendly platforms and Aps
- Reputation/trust: No recent major incidents have affected Coinbase's reputation. Rapid growth and wide adoption has contributed to building solid reputation

Merchants:

- The 1% fee associated with cashouts can incentivize customers to keep Bitcoins in their Coinbase account and postpone payment of this commission
- Coinbase maintains low variable costs and is able to aggressively compete based on price
- The company is focused on rapid expansion to gain early market share before giants enter the market

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## COMPETITIVE ADVANTAGE

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First Mover:

Coinbase has the advantage of being one of the first movers in an emerging industry. This provides them the potential for fast customer growth. The company should emphasis focusing on ways to lock in customers to protect their position once more competitors enter the space.

Cost:

Extremely low variable cost enables Coinbase to provide low cost fee structure to compete against traditional payment processors, and even free service for the first \$1M withdrawals.

Ease of use:

Helps build trust amongst new potential customers and avoids customers leaving the service because they do not understand how to use it.

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## STRATEGY SO FAR

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Up to now, Coinbase's strategy has been to secure virgin markets by focusing on rapid customer volume growth, implemented by offering free usage for the first 1M\$ of cashouts.

Since the industry is at an extremely early stage and profitable business models have yet to be proven, this has been a great strategy, and its success is proven by the rapid customer growth experienced.

It also developed a pricing model that takes advantage of bitcoin price volatility by monetizing cashouts, which protect bitcoin users against volatility.

As for its merchant business division, it has also focused mostly on acquiring online merchants. This has proven a success with the 30k merchants signed up so far. Bitcoins is a more natural extension of existing business practices for online than for brick and mortar traditional merchants. In terms of customer reach, it is also assumed that online customers are more likely to be bitcoin users than traditional merchant customers.

With an industry still at early stages, it is likely that current strategies will continue to work for the next few years, but focusing on fast growth of virgin market will only work as long as the space remains virgin. As new entrants enter the market and the industry stabilizes itself, strategy will need to change.

## 6) SUMMARY OF STRENGTHS & WEAKNESSES

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### Strength:

- Extremely fast customer growth (first mover advantage)
- Fee structure that seems attractive (0% transaction) and takes advantage of Bitcoin price volatility (charge on cashout)
- Offline storage of bitcoins provides security against hackers
- Extremely low variable costs of performing transaction enables them to provide free services as promotions
- Pricing strategy that motivates customer retention

### Weaknesses:

- Small startup, does not have resources to fight potential new large competitors like PayPal
- No options in pricing structure (like BitPay), could be less attractive for some customers who prefer flexibility

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## II. IDENTIFICATION

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### Problems/Issues:

- There is still a general lack of trust in the Bitcoin ecosystem, leading to resilience in adoption
- Although Coinbase claims that 97% of its customer's bitcoins are stored offline, security threats remain a great concern
- The existing pricing model might become problematic once Bitcoin price volatility stabilizes and customers and merchants start maintaining Bitcoin currency for the long term
- Customer acquisition is driven by heavy discounting, this might not be sustainable long term
- There remains a significant threat the online giants enter the market
- Coinbase has yet to clearly define what its long term competitive advantage will be

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## III. ALTERNATIVE OPTIONS

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### FOCUS ON AGGRESSIVE GROWTH

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Continue growth by further developing and penetrating the wallet and merchant markets  
Essentially Coinbase could stay on course and continue to focus on rapid growth. This is great because the market is still at infancy and expected to continue to grow rapidly.

The only downside is the risk that a giant enters the industry and steals most of Coinbase's business because of more appealing offerings.

## BUY MARKET SHARE BY M&A

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The advantage of such an approach would be to consolidate the market in order to protect against entry of giants. Since the industry is still in early stages, capital might be better invested in organic customer acquisition in order to secure growth. Having just raised VC, it might be difficult for Coinbase so find required financial resources to finance M&A activity. Furthermore, with such a small and immature market, finding adequate acquisition target might be difficult since company cultures of potential acquisition targets are not yet fully defined.

## SOLIDIFY POSITION

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Coinbase could refocus on solidifying its current position and finding new ancillary products that could be used to help lock in customers. This would be a great strategy to protect against the entry of giants in the industry, but since the market is in full expansion might not yet be required. It should remain on the radar of the company because the market will eventually reach a level of maturity when competition will be fierce.

## PRODUCT RATIONALIZATION

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Coinbase could exit either the wallet or merchant markets to focus all its efforts solely on one or the other (e.g. provide only merchant or wallet services). The issue with such a strategy is that both operations are currently in full expansion, and the reduction of revenues from giving up one might not translate into greater or equivalent revenues from the other.

## EXPAND IN NEW INDUSTRIES IN THE BITCOIN ECOSYSTEM

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Coinbase could state operating in ancillary industries:

- Mining: This requires heavy investments in infrastructure and does not leverage Coinbase's strength of being user friendly. Coinbase is a customer and business facing operation, whereas mining required low costs and heavy upfront investments
- International payment processing: This could be fairly profitable endeavor, but it would require Coinbase to spend a lot of resources to build and maintain international presence. It would also open competition with other giants currently operating in this market. With existing competition against credit card, and potentially soon to compete against giants such as Google, PayPal and Amazon, making new such competitors might not be the best approach.
- Develop an exchange: This might be a great profit opportunity, but being both a wallet/payment processor and an exchange might be perceived as a conflict of interest. It would greatly increase the risk that regulation would eventually be created that would restrict such a practice, as is currently the case in other traditional exchanges. It would also increase the exposure of the company to security threats.
- Start speculating: Speculation is not at all aligned with Coinbase's core competencies, and carries significant amount of risk. Although it could potentially generate great rewards, because of lack of knowledge and misalignment it is likely that such a strategy would fail.

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## IV. RECOMMENDATION

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### 1) RECOMMENDATION

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Short term:

Remain focused only in wallet and payment processing markets.

- Wallets: Maintain focus on rapid growth, both organic and via new partnerships
- Merchants: Focus on ease of integration and growth, focus on online retail and anonymity

For both segments:

- Start focusing not just on signing customers/merchants, but on incentivizing usage
- Attempt to lock in customers to protect against competitors
- Focus on enhancing public image and building trust in brand

### 2) ANTICIPATED COMPETITIONS' REACTION

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Since the industry is still at infancy, it is anticipated that competitors will also be focused on aggressive growth.

It is also important to avoid entering in direct competitions with potential new entrants to the Bitcoin industry such as PayPal and Apple in order to prevent triggering their precipitated entry into the market, thereby leaving more time to grow and lock in customer base.

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## V. IMPLEMENTATION

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### SHORT TERM

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#### MERCHANT SERVICES

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Coinbase should seek to establish partnerships with existing payment processing companies. The advantage for the establish payment processing company would be to instantly gain the ability to offer Bitcoin processing to its customers without significant direct costs and risks. The advantage for Coinbase would be to immediately gain access to customers who are already boarded with these existing payment processors.

One of the best targets for such a partnership would be PayPal, but it is likely that PayPal might prefer to implement Bitcoin processing internally rather than via partnership. As such, Coinbase could target PayPal's competitors; smaller online payment processors to form partnerships.

The advantage of this approach is that although there might be more effort required to sign a payment processor than a merchant, the partnership would yield access to thousands of accounts rather than a single merchant.

To accomplish this, Coinbase should hire a manager of strategic partnership as part of the salesforce team; whose mandate is to sign partnerships with established merchants.

For direct merchant targeting, Coinbase should continue to focus on online merchants since online shoppers are more likely to have Bitcoins than traditional shoppers. And since one of the added value bitcoin can bring to merchants is attracting new customers and that bitcoins offer anonymity, they could focus on industries where customers wish to remain anonymous. Some examples of prime targets as far as merchants goes are internet pornography sites, online dating sites (already signed OkCupid, great new target would be Ashley Madison), and any online gaming sites. In order to circumvent potential negative publicity that could further negatively impact the reputation of bitcoins, Coinbase should also focus on integrating charitable organizations to enable them to receive donations in Bitcoin, and focus publicity and PR efforts on those acquisitions.

The company should also start collecting, aggregating and publishing statistics on new customers acquired via Bitcoin. Such statistics would be a great promotional tool to sign new merchants. If they do not have it already, they will require hiring a BI analyst/developer to generate the statistics and IT systems. Initially, KPIs could be generated via Simple Access/Excel reports.

In terms of pricing policies, Coinbase should enhance its current offerings to offer more variety. They could potentially replicate similar pricing schemes as some of their direct competitors, offering capped transaction volumes for monthly fees. Such pricing models could help attract new customers. Developing of new pricing model can be done by the pricing/marketing department as part of BAU activities, therefore should not generate additional costs.

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## WALLETS

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In the short term, Coinbase need to continue acquiring as many customer wallets as possible. A great way to do this would be to leverage its extensive merchant network. With over 30,000 merchants, each of which with thousands of customers, they have a potential to reach millions of new customers.

The following promotion could be setup; for a given merchant:

- Coinbase creates a wallet for every merchant's registered customer
- The wallet is pre-populated with a nominal bitcoin balance, in the 5-10\$ range
- Customers are notified and can take advantage of the free balance if they spend it at the merchant's online store providing their order is larger than \$20
- Both wallet gift and minimal purchase should be adjusted such that the merchant covers its variable costs
- After the transaction, the original gift amount goes to Coinbase, and the additional amount paid by the customer goes to the merchant
- The result is:
  - Customer gets a discount and had a positive experience with bitcoin
  - Merchant makes a sale; could be used to liquidate inventory
  - Coinbase gets a new wallet created at no cost
  - The new wallet will most likely be used for a transaction

Coinbase should also setup a referral program for wallet users. For every referral provided by an existing user, Coinbase would wave all wallet related fees for a year; and if a customer refers 10 new wallets; fees are waived forever. Since variable costs associated with providing a wallet are negligible, this promotion would essentially be cost free for Coinbase, and has the potential to grow user base exponentially. Potential revenue losses from giving out free wallets could indirectly be recuperated on the merchant side due to heavier usage of Bitcoins.

The cost associated with this program is actually not a direct cost but rather lost revenues from the free cashouts given away.

They also need to focus on building a trustworthy and reputable brand, both for Coinbase and for Bitcoins in general. This could be accomplished by hiring a PR firm to constantly publish positive reviews on forums and online review sites. They should also attempt to hire high profile bloggers/influences in the online industry and have them write positively about Coinbase.

Another great way to build trust would be to offer a Bitcoin theft guarantee, whereby Coinbase guarantees the content of wallets against theft. Offering such a warranty absolutely needs to be associated with stringently strict security measures to protect its bitcoins.

In terms of products, they should continue to offer both cloud and PC based personal wallet. The cloud based wallet appeals to customers who like ease of use, and PM base wallet is good for customers whom might still have trust issues with Bitcoins.

## LONG TERM

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### MERCHANT SERVICES

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In the long run, Coinbase needs to focus on locking in merchants into their services in order to protect themselves against arrival of new competitors. One way to do this would be to put together a reward system for bitcoin customers, like Gyft. Since the reward system would increase sales volume for the merchants, rewards could be implemented as partner merchants discounts on products, therefore not costing anything to Coinbase. Funding the reward system could be done by increasing the commission on Bitcoin cashouts, thus making it more expensive for merchants to take their Bitcoins elsewhere or simply financed by incremental sales that the initiative will generate.

This reward system will not only help grow merchant and wallet base, but should also incentivize consumption.

As Bitcoin price volatility decreases, it is likely that merchants will eventually start holding on to Bitcoins for extended (or even permanent) time periods. Then prices do eventually stabilize, Coinbase should review its pricing strategy of only collecting on Cashouts, since some if not many merchants might simply never cashout their Bitcoins. They could potentially start charging a monthly fee that at least covers their variable costs.

## WALLETS

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Online wallets could be extended to also contain traditional currencies, thus competing directly against PayPal. The reason to wait before implementing this is to avoid competing directly with PayPal immediately, which could trigger a massive response.

Instead, Coinbase should wait for PayPal to enter the Bitcoin space (and declare war), and use this as a defensive measure whereby Coinbase would offer all the same benefits to its customers as PayPal.

## KPIS

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In order to measure success, the following KPIs should be monitored:

Wallets:

- # Wallets: To evaluate customer base growth
- % Active Wallets = # Wallets used in the past year/# Wallets: To know if people have a tendency to simply sign up as a novelty or are actually active. Lower % indicate that Coinbase should focus on incentivizing usage rather than just growth
- Average Bitcoin transaction volume per wallet / Average Cashout per wallet: To evaluate monetization potential of transaction based pricing model

Merchants:

- # Merchants: to evaluate growth
- Avg annual sales / merchant account: To evaluate usage
- For Bitcoin sales, # new customers / # existing customers: If merchants can provide this data, aggregation and publication would be a great promotional tool for Coinbase
- Total annual transactions / Total annual cashout to evaluate various pricing models
- Average daily Bitcoin balance in account: To evaluate tendency of merchants to retain Bitcoins

## BUDGET

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Item	One Time Costs	Ongoing (Annual)
Partnership manager Salary/Travel		\$150,000
BI systems for KPIs	\$25,000	\$100,000
Referral program		\$100,000
PR Campaign	\$100,000	
Blogger/Online influencer		\$150,000
Additional security	\$500,000	
<b>TOTAL</b>	<b>\$625,000</b>	<b>\$500,000</b>