Virtual Currencies

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Agenda

- How does virtual currency work?
- Why is virtual currency around?
- What are some of the risks?
- What can you do?
- 2015 Outlook
- Questions
How Does Bitcoin Work?

How do you get coins?
- Create a wallet
- Mine for coins
- Purchase and/or exchange coins
How Does Bitcoin Work?

How do you get coins?

♦ Create a wallet
  ♦ Can be done on the web or with PC software
  ♦ You still just need some basic info like an email address
How Does Bitcoin Work?

How do you get coins?

♦ Create a wallet
  ♦ Then need to create an address where you want your Bitcoins sent
    ♦ Addresses are set up automatically for several systems
    ♦ Addresses can be changed by the user
      ♦ Bitcoin.org encourages that for security, addresses are only used once
    ♦ Think of addresses like a PO Box
How Does Bitcoin Work?

How do you get coins?

♦ Mine for coins
  ♦ Mining pools are generally the only way now
    ♦ Some firms will lease mining capacity in Gigahashes per second + electricity
      ♦ Genesis Mining
      ♦ KnCMiner
  ♦ Mining machines also maintain the public ledgers of exchanges
    ♦ Called blockchains
How Does Bitcoin Work?

♦ Purchase coins
  ♦ Go to many sites and purchase with credit card, PayPal, or bank account
  ♦ KYC has come a long way in a year...
How Does Bitcoin Work?

♦ Or, go locally and buy with cash
How Does Bitcoin Work?

Exchange

- Over 100 exchanges in place today
  - MtGOX was breached and closed, recent analysis concludes it was an insider that did most damage
  - BitStamp was breached and halted exchange

- Common purchase/sell exchanges include:
  - Kraken
  - CoinBase
  - CoinMKT
  - BitPay
  - [https://en.bitcoin.it/wiki/Category:Exchanges](https://en.bitcoin.it/wiki/Category:Exchanges)

- Exchanges can do FX but FinCEN does not consider these Dealers in Foreign Exchange
How Does Bitcoin Work?

Payments
How Does Bitcoin Work?

- Merchant Services
  - Payment processing
  - Escrow
  - QuickBooks Integration

= 3rd Party Payment Processors

0%

Payment processing that will add to your bottom line.

No Fees.
Your first $1,000,000 in payment processing is free on Coinbase. After that, pay just 1% to cash out bitcoin. more...

No Chargebacks.
There is no need to worry about chargebacks when using Bitcoin - they don’t exist.

No Exchange Rate Risk.
You receive the exact amount of local currency you price your products at, guaranteed.
How Does Bitcoin Work?

sender sends bitcoin to receiver; miner validates the transaction and records it to the blockchain....

receiver gets bitcoin from sender and can spend it after the blockchain is confirmed by other miners....

sender

miner

blockchain

receiver

anyone

anyone can see the transaction in the blockchain....
Why Virtual Currencies?

- Very fast settlement
- Low fees
- No chargebacks
- No financial institutions involved
- Transparency in the payment chain
Why Virtual Currencies?

How is this different than currency today?

- Fiduciary Currency: value is derived from government fiat or acceptance by someone else
- Trust that the currency will continue to have value
  - USD $ is backed by US Government
- Virtual currency is only backed by the trust people give it to buy goods and services for now
  - No government
    - Tulip mania?
    - Baseball cards?
Virtual Currencies

- Last year, http://coinmarketcap.com/ listed 97 virtual currencies, today it lists 663 currencies
What Are Some of the Risks?

♦ Price fluctuations
  ♦ Legitimacy
♦ 51% attack/selfish miner flaw
♦ Address Anonymity—AML?
♦ Loss of wallets/wallet hacks
What Are Some of the Risks?

- Price fluctuations/legitimacy

<table>
<thead>
<tr>
<th>Currency</th>
<th>Circulation</th>
<th>Value as of 1/20/15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bitcoin</td>
<td>14.46 million (12.3 million a year ago)</td>
<td>$282 USD ($852 USD a year ago)</td>
</tr>
<tr>
<td>Ripple</td>
<td>31 billion (almost 1 billion a year ago)</td>
<td>$0.008 ($0.02 a year ago)</td>
</tr>
<tr>
<td>LiteCoin</td>
<td>41.4 million (25 million a year ago)</td>
<td>$4.34 ($23 USD a year ago)</td>
</tr>
</tbody>
</table>
What Are Some of the Risks?

♦ Address Anonymity—AML?
   ♦ Getting better with KYC in place now
   ♦ FinCEN says if you are a virtual currency exchange or processor, you are an MSB
What Are Some of the Risks?

Botnet Infrastructure

welcome to botnet all in one shop! here I will be offering you the services regarding the botnet field.

// webinjects
i can code any kind of webinject for any kind of botnet to grab all the info that you require. professional work you can rent you can check my work, l inject i coded here

// exploit packs
i can rent you access to my already hosted, live exploit packs. packages that i have available:
1 week access for BlackHole
1 week access for Phoenix Exploit pack

// FUD crypter
custom coded from scratch on VC++, Fully Undetectable on all antivirus, anti malware engines, bypassing KIS.

// installs
at the moment I’m selling clean US, CA, UK and EU mix, Asia mix and Australia installs. min 1k

// BP hosting and domain
i present you the opportunity of hosting your botnet or spam project, child porn etc on true offshore hosting. contact me for details. Linux VPS starting from $50, VDS from $100 domain registration for all extensions $70 per year

// botnet turnkey solution
latest version of Citadel botnet can be setup and configured for any kind of work you want, we discuss in private. if you want basic idea of botnet you can refer to my little tut here

My only JID is [redacted] at jabber dot org
accept all forum escrows and payment by LR WU

looking forward to working with you!

Citadel botnet Setup:
www.[redacted]
What Are Some of the Risks?

♦ 51% attack/selfish miner flaw

♦ What if the miners who act as payment processors decide not to allow confirmations on all transactions?
  ♦ Double spend
  ♦ Fork the chain

What if the miners who act as payment processors decide not to allow confirmations on all transactions?

Double spend

Fork the chain
What Are Some of the Risks?

♦ Loss of wallets/wallet hacks
♦ MTGox
What Can You Do?

♦ Educate your consumers and businesses on the risks
  ♦ Risk of investment
  ♦ Account takeover

♦ Educate your internal staff on virtual currencies
  ♦ Buy throwaways
  ♦ Open some accounts and take screen shots
  ♦ Get a PC with the Tor browser outside of your network
What Can You Do?

♦ Look for people buying and selling using large deposits with cash for money laundering
  ♦ Look at the exchange list here:
  ♦ Run a keyword search on these exchanges

♦ Look for people buying and selling using large deposits with ACH/Wire for Third Party Payment Processing
  ♦ Run a keyword search on the exchanges

♦ Conduct Due Diligence at account opening
  ♦ Ask if they plan on using virtual currency and why
2016 Outlook

♦ VCs will still invest in the idea behind virtual currencies (Coinbase $75 million Series C)
  ♦ KYC will continue to improve
♦ Exchanges will come an go
♦ Breaches will become more sophisticated
♦ More Silk Roads with Tor
♦ Keep an eye on Ripple
time for questions