

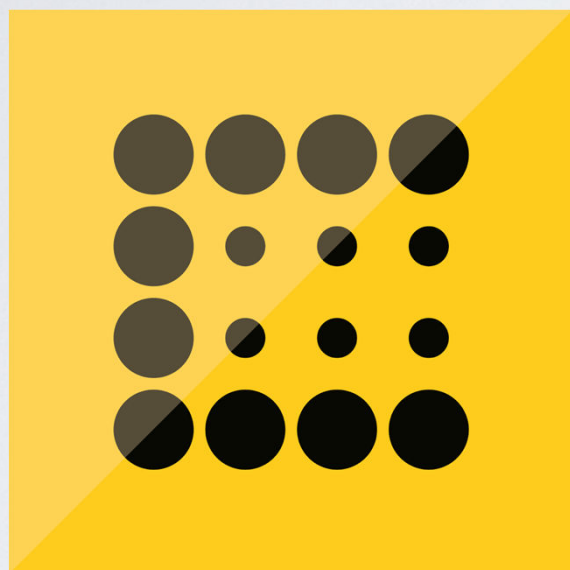


CoinDesk

State of Bitcoin 2014

26 February 2014

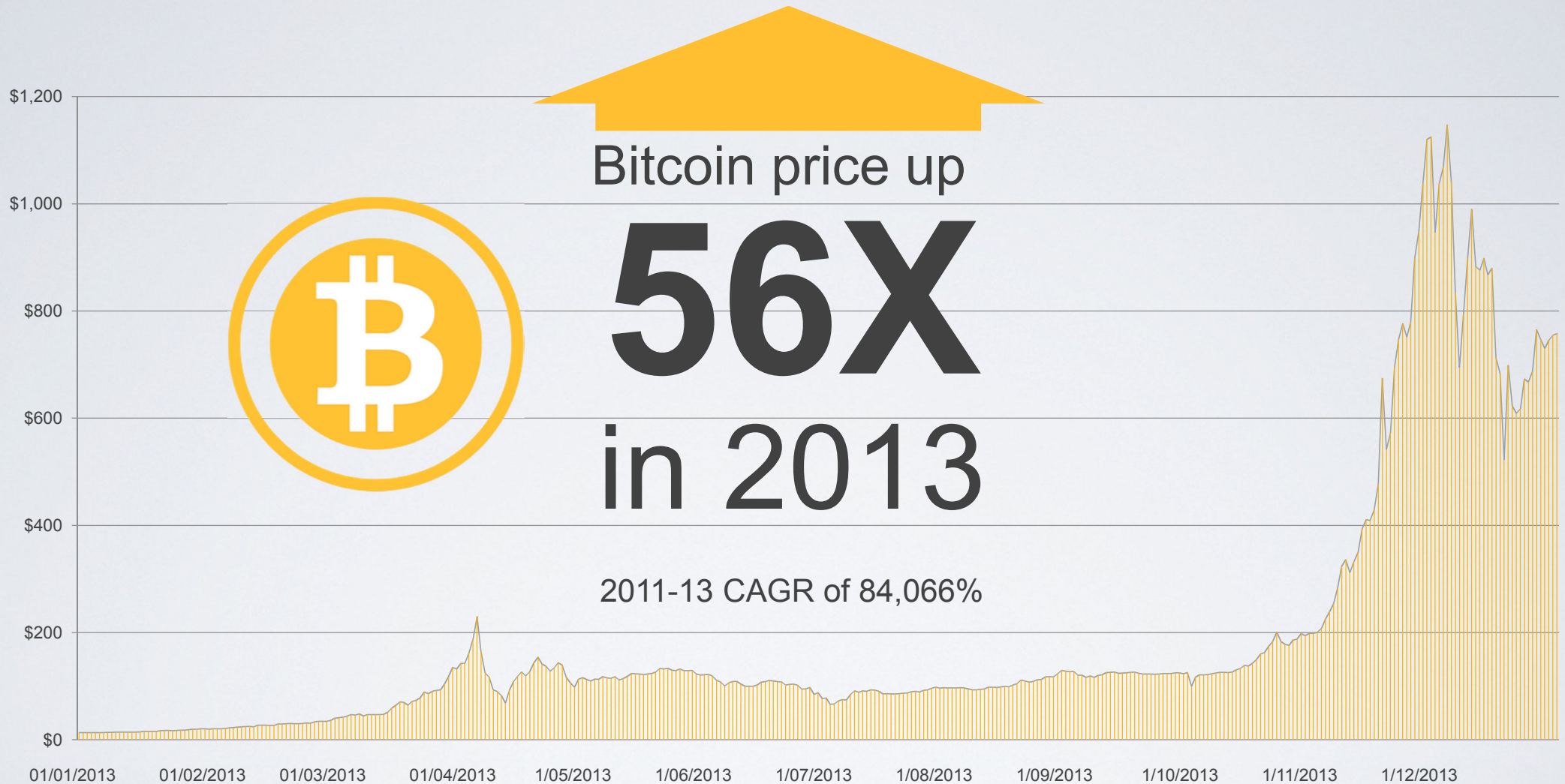
Contents



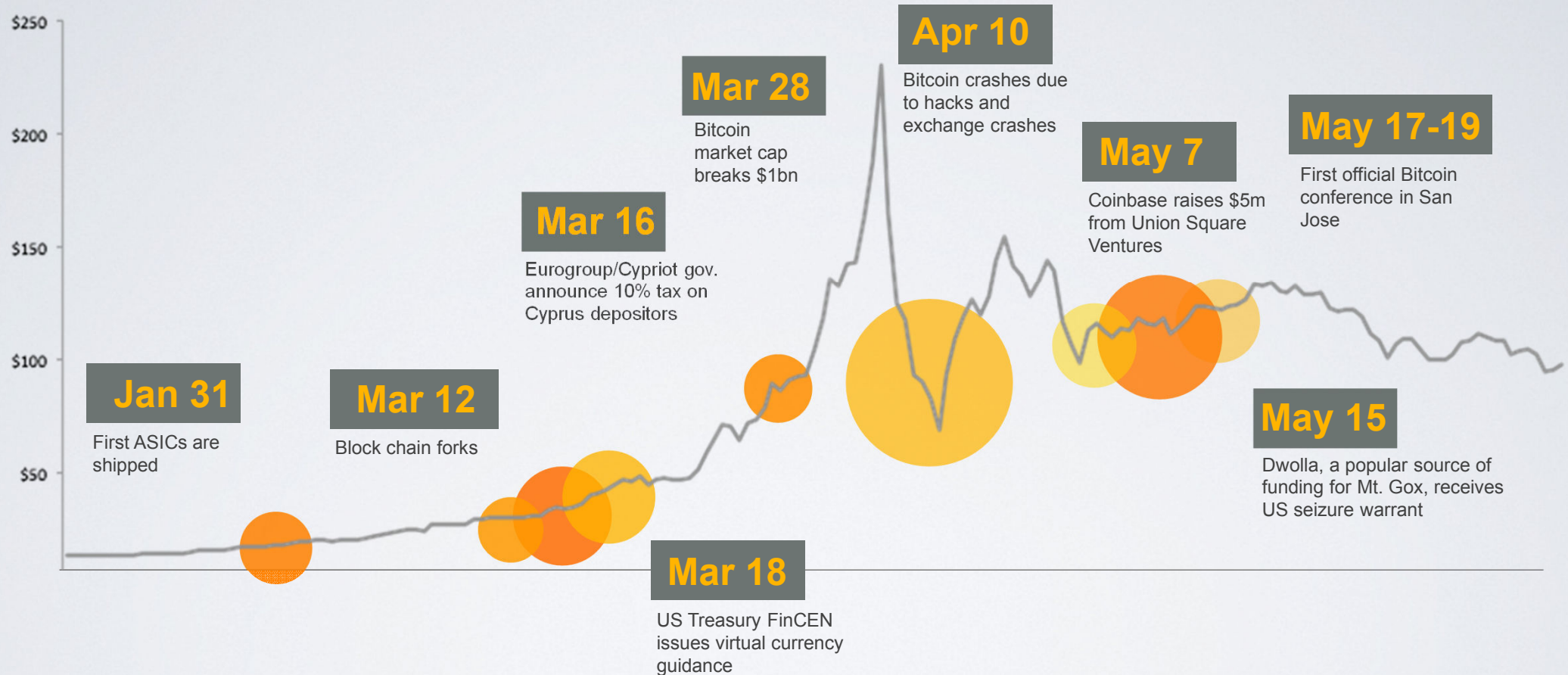
1. Overview	Page 3
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Overview

The largest annual asset price appreciation in history



Key Bitcoin events and price response Jan – Jun 2013



Source: CoinDesk Bitcoin Price Index daily closing price (taken at 00:00 GMT)

Key Bitcoin events and price response Oct – Dec 2013



Source: CoinDesk Bitcoin Price Index daily closing price (taken at 00:00 GMT)

Venture capital interest in Bitcoin is growing



Total VC investment
in cryptocurrency
startups of >

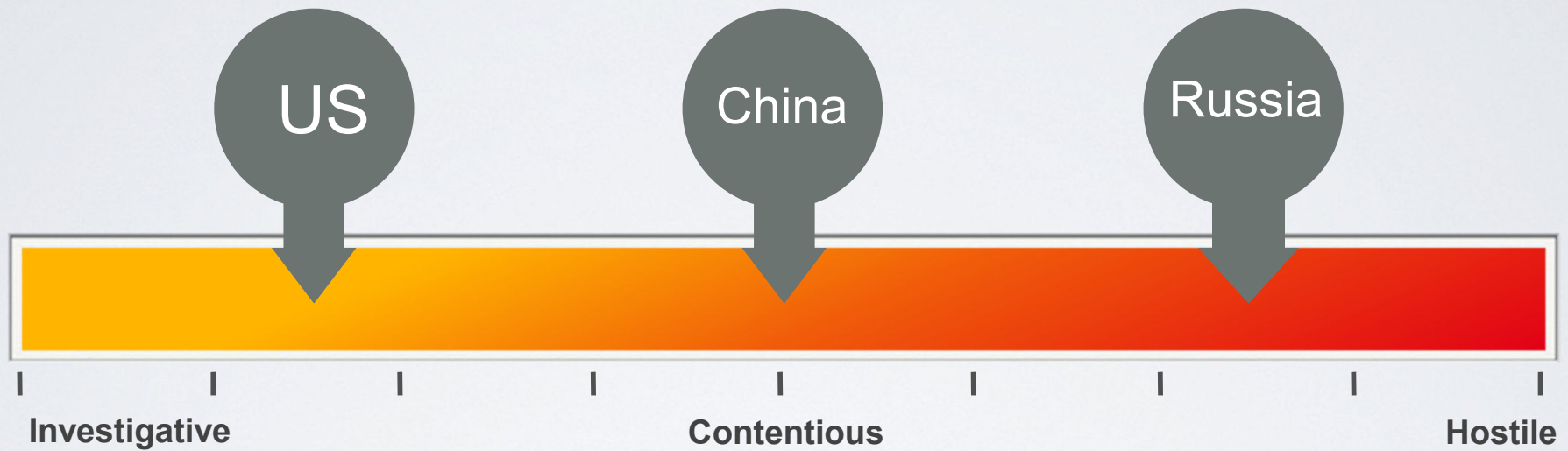
\$98M



\$25M

Largest VC deal to date
(Series B) in November 2013

Mixed global regulatory picture for Bitcoin



Bitcoin's ecosystem is evolving rapidly with many new entrants

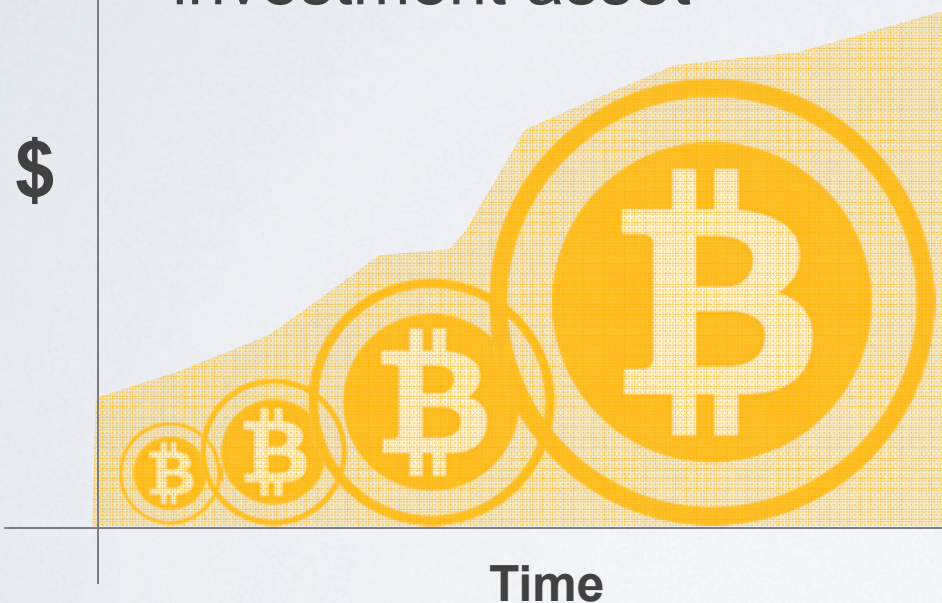
Battle for bitcoin exchange supremacy



Mt. Gox was dethroned by BTC China,
which was then dethroned by Bitstamp

Bitcoin's progress as medium of exchange vs store of value

Early interest in bitcoin was primarily as an investment asset



Recently there has been growing merchant/consumer adoption

Bitcoin teething pains still garner widespread media attention



Bitcoin Exchange CEO Charlie Shrem Arrested on Money Laundering Charge

By Alistair Charlton, January 27, 2014 16:58 PM GMT

f 19 t 33 in g+ d +



Twitter: Charlie Shrem
Charlie Shrem, 24, is CEO of New York-based bitcoin exchange BitInstant.

CoinDesk 2014 outlook

Adoption by more large consumer-facing companies (eg Overstock and Zynga) will introduce Bitcoin to a wider audience

'2nd generation' Bitcoin startups, more Series-B rounds, ecosystem M&A (eg Blockchain acquires ZeroBlock)

Growing interest in other altcoins (eg Litecoin, Dogecoin)

General Bitcoin bullishness (eg 56% of CoinDesk survey respondents feel bitcoin price will reach \$10,000 this year)

More institutional money interest (eg Fortress fund)

Regulatory uncertainty remains and will influence adoption and price

As big as the PC and Internet?



“Eventually mainstream products, companies and industries emerge to commercialize it; its effects become profound; and later, many people wonder why its powerful promise wasn't more obvious from the start.

What technology am I talking about? Personal computers in 1975, the Internet in 1993, and – I believe – Bitcoin in 2014.

”

- **Marc Andreessen**, Andreessen Horowitz

Price and Valuation

CoinDesk Bitcoin Price Index: 2013 by the numbers

2013 Open	\$13.51
2013 Close	\$756.79
2013 % Δ	5,507%
2013 YE Market Cap	\$9.2bn



\$756.79
▲ 0.27%



Open	\$754.76
High	\$759.72
Low	\$733.19
Change	\$2.02
MCAP	\$9.23B
BTC	12,199,850

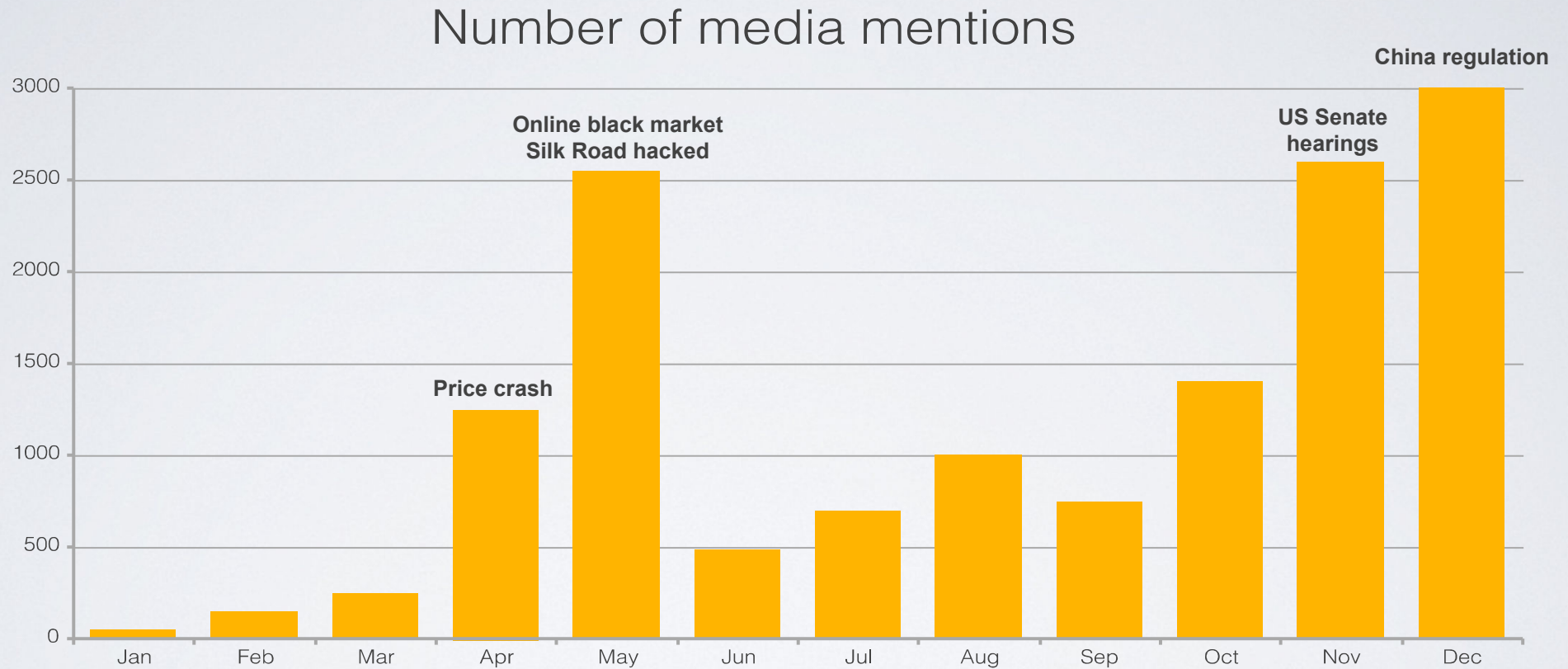
Dec 31 2013 23:59 GMT

 coindesk.com/price

2013 High (4 Dec)	\$1,147.25
2013 Low (2 Jan)	\$13.28
2013 Average	\$188.58
2013 Median	\$112.01

Source: CoinDesk Bitcoin Price Index

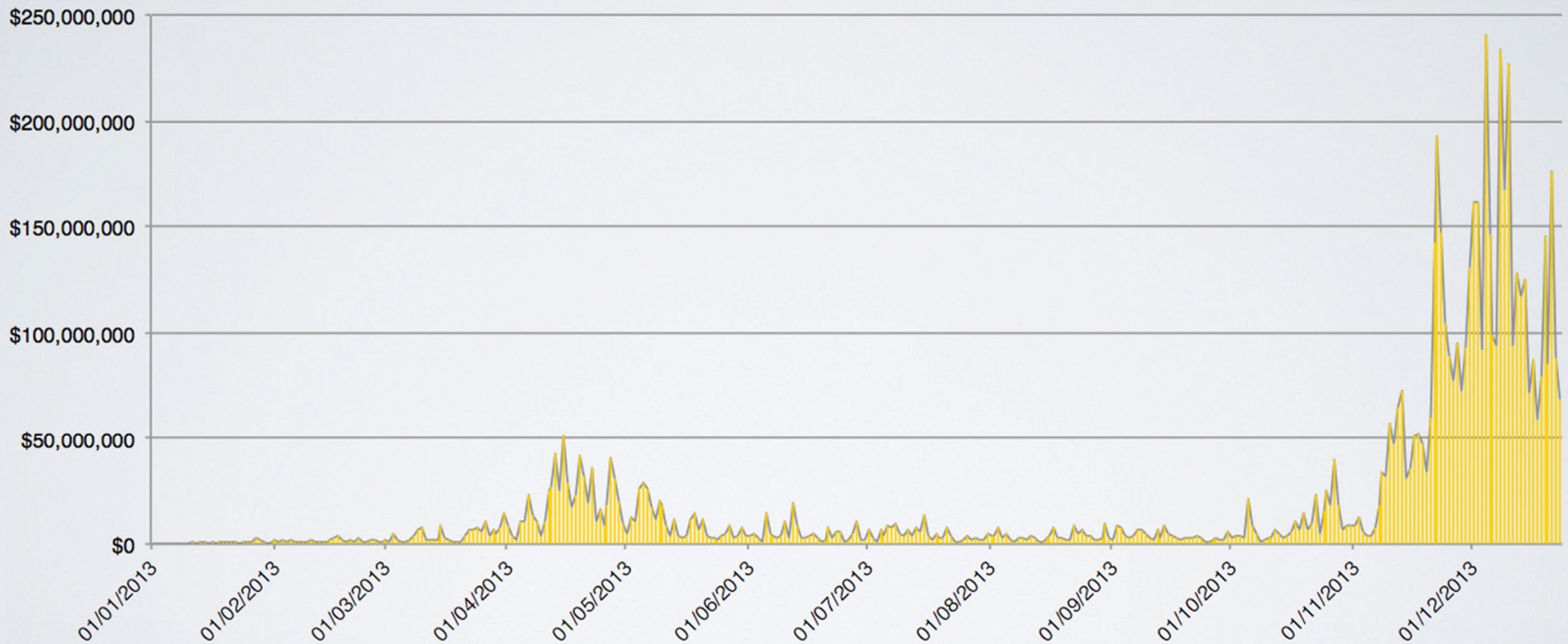
Strong correlation between media publicity and bitcoin's price swings



Source: LexisNexis, BBC <http://www.bbc.co.uk/news/magazine-25332746>

Value of bitcoins exchanged daily grew markedly towards end of 2013

Total daily volume



Source: CoinDesk Bitcoin Price Index exchange volume

Wall Street is taking notice of Bitcoin



5 Dec 2013

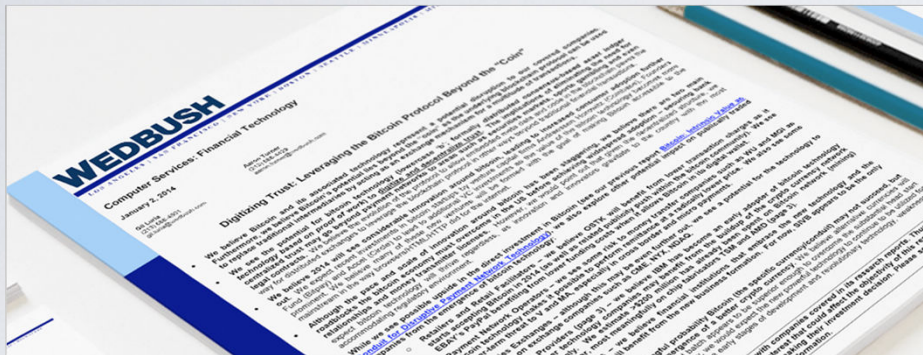
“ We get a (market capitalization) number that is somewhere around \$15bn.

Although this does not mean that bitcoin price cannot rise further (as an object of speculation), we think the recent rise of bitcoin price could soon run ahead of its fundamentals.

Our current view implies a maximum fair value of bitcoin = 1,300 USD. ”

David Woo
Bank of America Securities

Wall Street is taking notice of Bitcoin



1 Dec 2013

“Scenarios exist by which a bitcoin could be worth 10-100X its current price.”

Gil Luria & Aaron Turner
Wedbush Securities

Figure 1: Implied 1-Year Bitcoin Price Years to achieving peak penetration

Figure 1: Implied 1-Year Bitcoin Price

	Years to Achieving Peak Penetration			
	20	10	5	1
1%	\$520	\$1,041	\$2,081	\$10,407
5%	2,602	5,204	10,407	52,035
10%	5,204	10,407	20,814	104,070
20%	10,407	20,814	41,628	208,141

(in millions)

Global Foreign Currency Reserves	\$7,453,736 (1)
Money Supply in High Inflation Countries	\$4,305,488 Figure 2
Gold as Financial Asset	\$1,900,000 (2)
Total Potential Aggregate Demand	\$13,659,224

Estimated supply in 2014 13 million BTC

(1) Source: IMF

(2) Source: WGC

Source: IMF, WGC, Wedbush Securities, Inc.

Ancillary Bitcoin financial services

Hedge funds – Exante (\$45m AUM), Pantera Bitcoin Advisors (Fortress; \$150m AUM)

Bitcoin Exchange Traded Funds (ETFs) – Winklevoss Twins, and others

Investment Trusts - SecondMarket Bitcoin Investment Trust (BIT) has amassed \$61.1m (67,300 BTC) as of Dec 2013

Derivatives exchanges – Predictionis (Ireland), ICBIT (Russia); German bank Fidor recently announced interest



Junior Bitcoin Execution Trader –
Hedge Fund – San Francisco
January 2, 2014 at 8:21 PM

Glocap

Junior Bitcoin Execution Trader – Hedge Fund – San Francisco
Jan 02, 2014



E X A N T E



Bitcoin now 20x larger market cap than closest altcoin, up from 10x in December

#	Name	Market Cap	Price	Total Supply
1	 Bitcoin	\$ 7,325,438,767	\$ 589.69	12,422,525 BTC
2	 Litecoin	\$ 381,154,460	\$ 14.73	25,876,404 LTC
3	 Peercoin	\$ 81,376,553	\$ 3.85	21,162,999 PPC
4	 Dogecoin	\$ 67,509,022	\$ 0.0013	52,200,841,969 DO
5	 Namecoin	\$ 28,129,072	\$ 3.48	8,084,292 NMC
6	 ProtoShares	\$ 26,250,247	\$ 17.45	1,504,494 PTS
7	 Quark	\$ 15,378,447	\$ 0.062	247,588,515 QRK

Bitcoin represents 76% of total altcoin market cap

Market capitalization

\$7.3bn - bitcoin

\$9.6bn - all altcoins

Source: CoinMarketCap.com 20 Feb 2014

Bitcoin aiming to disrupt an industry with \$314bn+ in total market cap

Processors	Market Cap
Visa Inc	112,253
MasterCard Inc	97,690
Alliance Data Systems Corp	12,615
Total System Services Inc	6,213
Global Payments Inc	4,822
Euronet Worldwide Inc	2,325
Heartland Payment Systems Inc	1,814
Netspend Holdings Inc	1,158
Green Dot Corp	912
TOTAL	239,803

Bank Software	Market Cap
Fidelity National Information Services Inc	15,436
Fiserv Inc	15,118
Jack Henry & Associates Inc	5,115
ACI Worldwide Inc	2,433
S1 Corp	577
Online Resources Corp	146
TOTAL	38,824

Money Transfer/ATMs	Market Cap
Western Union Co	9,421
Euronet Worldwide Inc	2,325
Cardtronics Inc	1,936
MoneyGram International Inc	1,061
TOTAL	69,682

Payment Hardware	Market Cap
NCR Corp	5,837
MICROS Systems Inc	4,391
VeriFone Systems Inc	2,898
Diebold Inc	2,119
Outerwall Inc	1,904
INGENICO	1,454
WINCOR-NIXDORF	1,006
RETALIX LTD	732
Agilysys Inc	333
ON TRACK INNOVATIONS LTD	116
TOTAL	20,789

Source: CoinDesk, Wedbush Securities. Market caps (\$m) as of 10 Jan 2014

Media and Brand

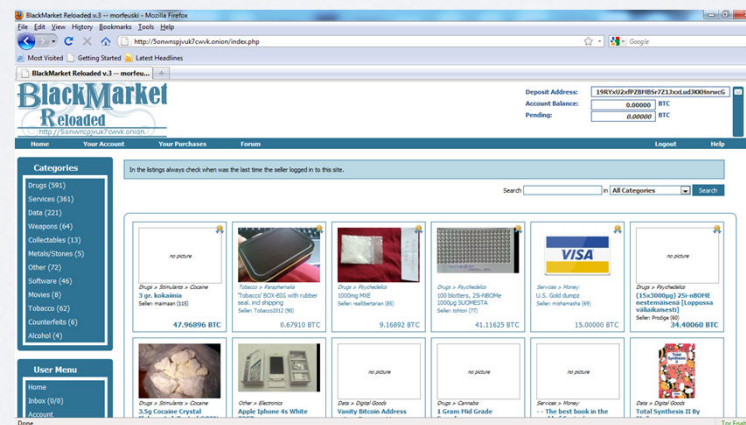
From this ...



Silk Road
 www.silkroad.com/shop
 Tokyo 739W2011
 Harukiyo City, Akita



BitCoin: 1KeBs4HBQzkdHC2ou3gpyGHqcl7aKzwTve
LiteCoin: Lh9p3Dg11N58gV8qKW42ubSZXfmjD8yyjoV



by the Federal Bureau of Investigation,
in conjunction with the IRS Criminal Investigation Division,
ICE Homeland Security Investigations, and the Drug Enforcement Administration,
in accordance with a seizure warrant obtained by the
United States Attorney's Office for the Southern District of New York
and issued pursuant to 18 U.S.C. § 983(j) by the
United States District Court for the Southern District of New York



In 2013, the narrative surrounding Bitcoin began shifting (contd.)

To this ...

Bitcoin “may hold promise”

Farmers help bitcoin grow organically in Argentina

David Gilson (@davidgilson) | Published on November 4, 2013 at 18:33 GMT | Companies, Lifestyle, Merchants

[Tweet](#) 68 [Share](#) 53 [Google+](#) 10 [20 points](#) [Share](#) 13

Organic farmers in Argentina are finding bitcoin to be a compelling solution when selling their produce through a website called Tierra Buena. The website has been highlighted in a new short film by Jacob Hansen.

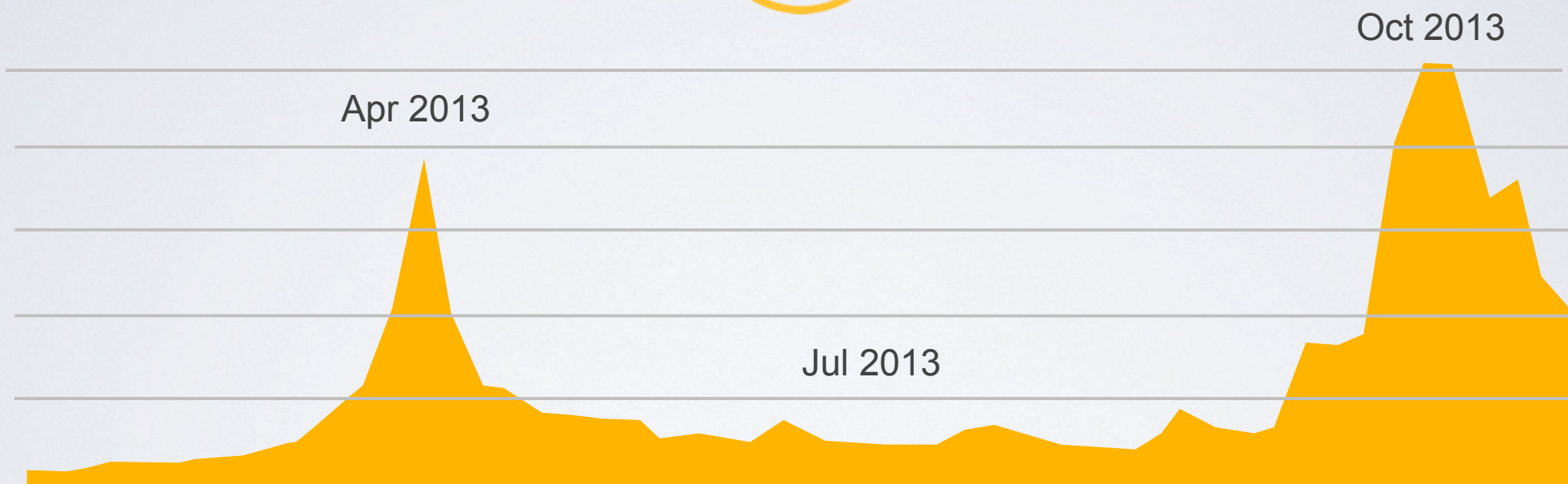
The film tells the story of how Nubis



“Economists say small-business owners — especially farmers dealing in high volume and low profit margins — are more likely to accept a volatile currency like bitcoin than bigger businesses.”



Search interest in 'bitcoin' spiked in April 2013, and again near the end of the year



Source: Google Trends

2013 top 'bitcoin' related and rising search terms

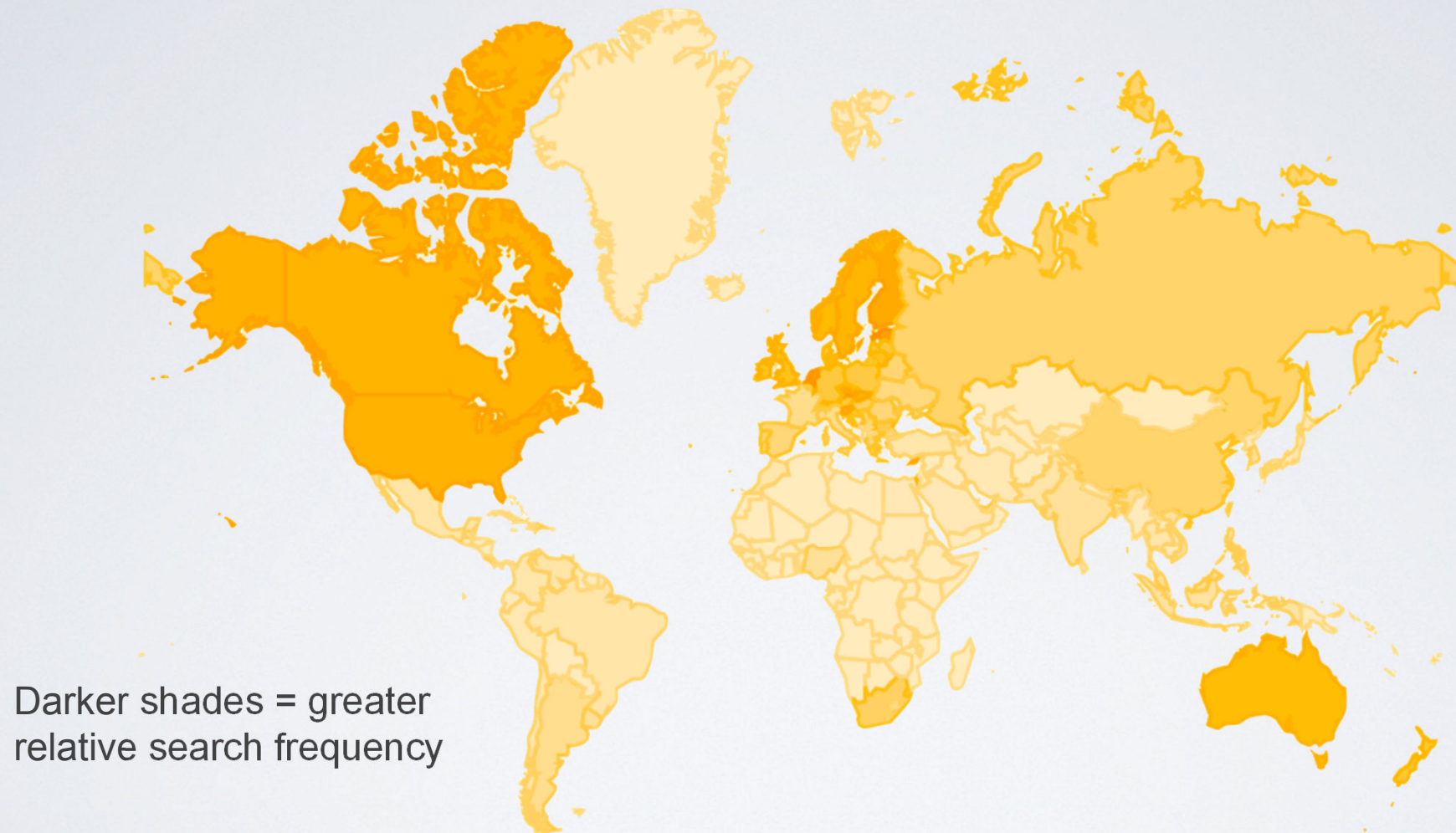
Queries	Top	
bitcoin mining	100	
bitcoins	55	
bitcoin price	45	
bitcoin miner	35	
bitcoin exchange	35	
bitcoin value	35	
what is bitcoin	30	
buy bitcoin	30	
bitcoin wallet	30	
bitcoin calculator	25	

Queries	Rising (%)
coinbase	450
litecoin mining	450
litecoin	400
bitcoin price	200
bitcoin asic	130
bitcoin stock	110
bitcoin value	90
bitcoin chart	80
bitcoin news	80

Above numbers represent search volume relative to the highest point, which is 100

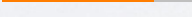
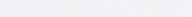
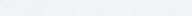
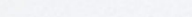
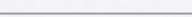
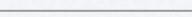
Source: Google Trends

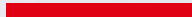
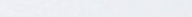
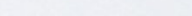
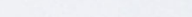
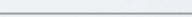
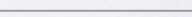
2013 'bitcoin' search interest by region



Source: Google Trends

2013 'bitcoin' search interest by location

Queries	Top	
Estonia	100	
Netherlands	96	
Hong Kong	88	
Czech Republic	88	
Finland	87	
United States	79	
Canada	77	
Slovenia	76	
Sweden	74	
Slovakia	72	

Queries	Top	
Vancouver	100	
Amsterdam	99	
San Francisco	90	
Austin	79	
New York	73	
Toronto	71	
San Diego	69	
Seattle	68	
Stockholm	66	
Sydney	63	

Numbers represent search volume relative to the highest point, which is 100

Source: Google Trends

Bitcoin is becoming something people can see and touch



Bitcoin has gained a foothold in pop culture



College football TV payday: \$24,000

“The first time in history that you could see someone holding up a sign, in person or on TV or in a photo, and then send them money with two clicks on your smartphone.

Bitcoin is a financial technology dream come true for even the most hardened anti-capitalist political organizer.”

- Marc Andreessen

Source: <http://www.dailymail.co.uk/news/article-2516708/Savvy-student-gets-24-000-strangers-holding-sign.html>

The number of noteworthy Bitcoin conferences ...

2013 

May

Bitcoin 2013
The Future of
Payments
San Jose, US

Jul

BTC London
London, UK

Inside Bitcoins
New York, US

Sep

European
Bitcoin
Convention

Amsterdam, The
Netherlands

Dec

Inside Bitcoins
Las Vegas, US

... has increased significantly in 2014

2014

Jan 25th

North American
Bitcoin
Conference

Miami, USA

Feb 12th

Inside Bitcoins
Berlin, Germany

Feb 15th

Coinfest 2013
Vancouver, Canada

Mar 3rd

Financial
Cryptography
and Data Security
2014

Barbados

Mar 5th

2014 Texas
Bitcoin
Conference

Austin, US

Mar 25 – 26th

CoinSummit
San Francisco, US

May 15 – 17th

Bitcoin 2014
Amsterdam, The
Netherlands

Jun 4th

Financial Inside
Bitcoins NYC
New York, US

Nov 2 – 6th

BitcoinWorld
2014
Las Vegas, US

Nov 4th

Bitcoin Expo
2014
Toronto, Canada

Ecosystem

Bitcoin companies can be grouped into distinct categories

Payment processors



Exchanges



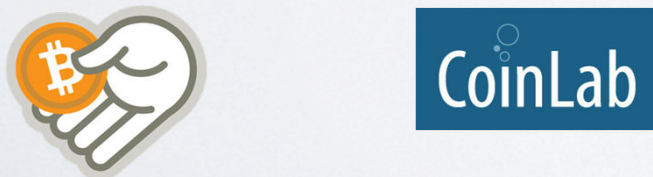
Mining hardware



Wallets



Financial services



Unknown



Top bitcoin exchanges by volume

China

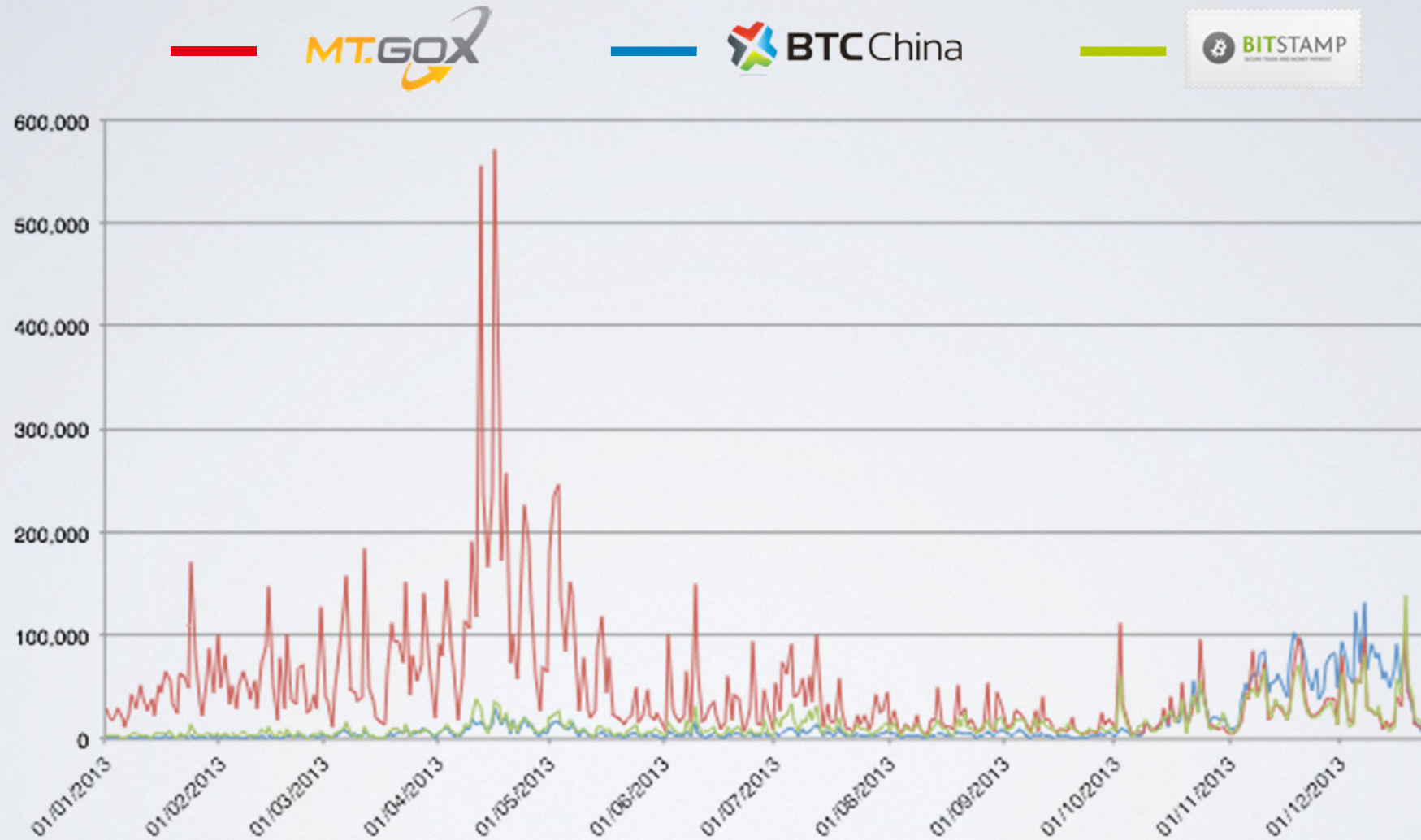


Rest of World



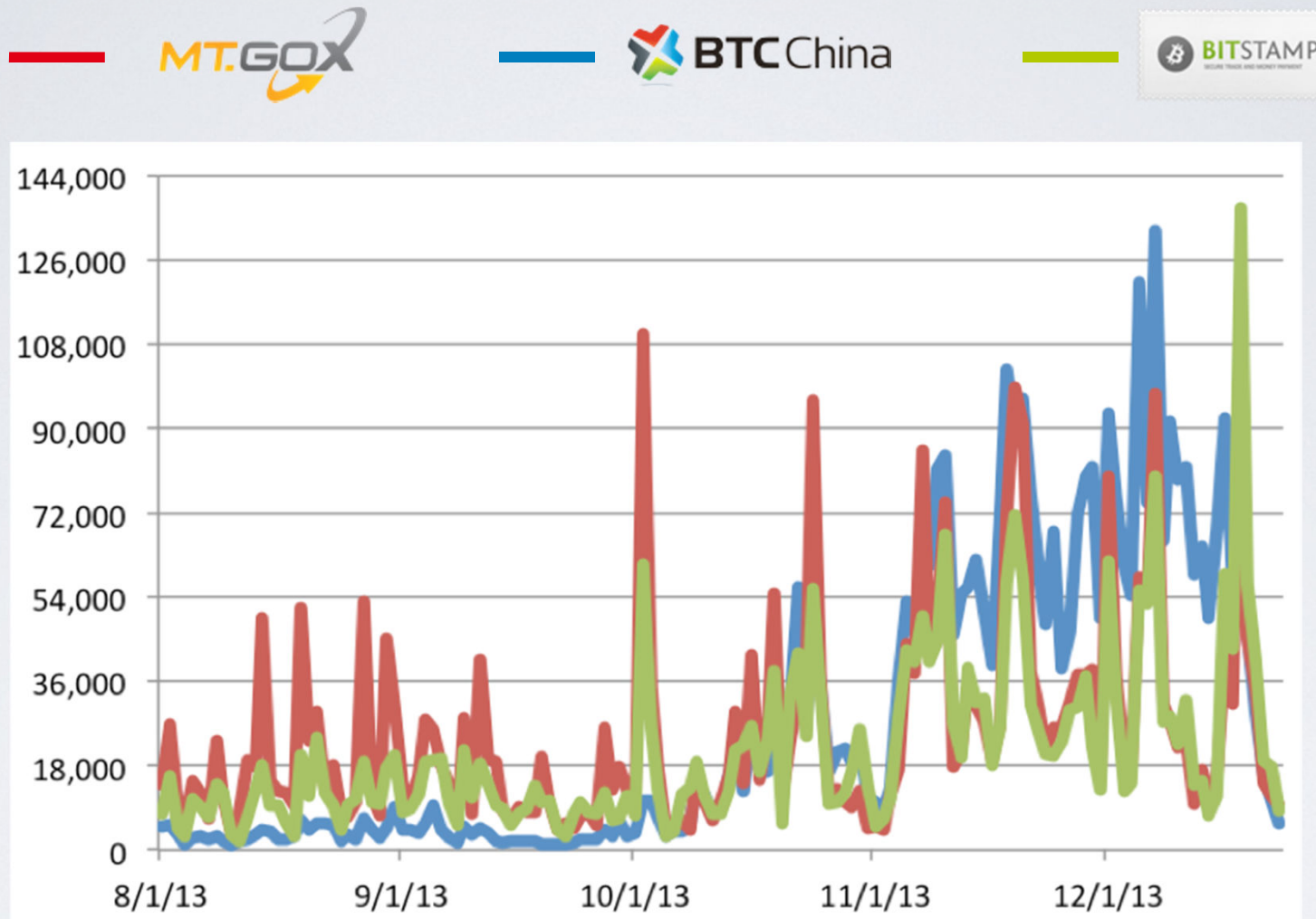
Sources: CoinDesk, Bitcoincharts.com, Bitcoinity.org

Mt. Gox dominated volume trading in first six months of 2013, but ...



Sources: CoinDesk, Bitcoincharts.com

... was dethroned in Nov by BTC China, which was then ...



Sources: CoinDesk, Bitcoincharts.com

... dethroned by Bitstamp in December

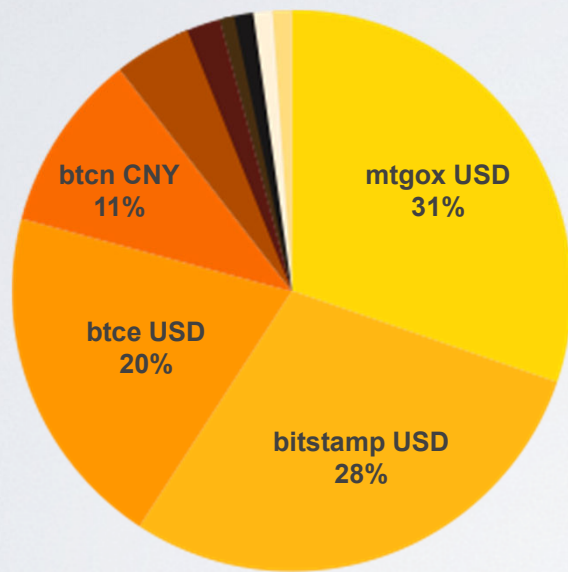
		Average*	Median*
1		23,936	14,997
2		20,327	12,782
3		15,209	7,051

*Average and median daily bitcoin volume for the period from 18 Dec 2013 - 6 Jan 2014

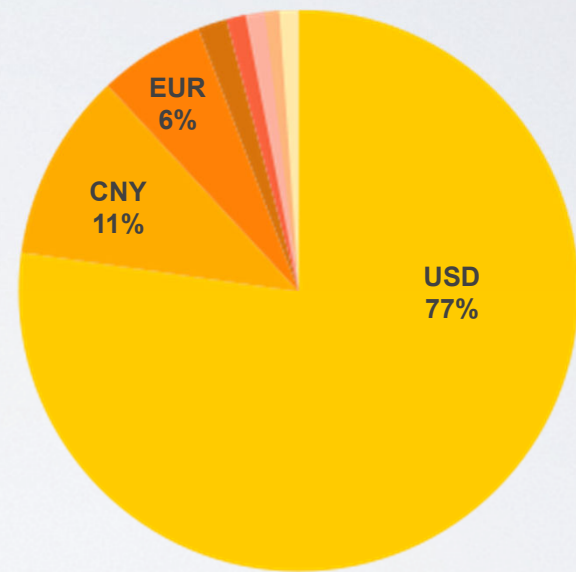
Sources: CoinDesk, Bitcoincharts.com

Exchange volume distribution by market and currency value

By market



By currency



Sources: CoinDesk, Bitcoincharts.com 18 Feb 2014. Note that Mt. Gox halted all trading as of 25 Feb 2014.

Different types of bitcoin wallets

Desktop



Bitcoin-Qt



MultiBit



Armory



Electrum

Mobile



Bitcoin Wallet



Mycelium



Blockchain



Coinbase

Cloud



Coinbase



Blockchain

Top consumer bitcoin wallets

			Installs
1		Blockchain	1,277,618
2		Coinbase	970,000
3		Bitcoin Wallet*	500,000
4		Mycelium*	10,000 - 50,000

Sources: Blockchain.info, Coinbase. *Bitcoin Wallet figures provided by developer; Mycelium figures obtained from Google Play Store Jan 2013

Bitcoin hacks and fraud are still significant problems

Oct 2013

\$4.1m goes missing as Chinese bitcoin trading platform GBL vanishes

Nov 2013

Hackers steal \$1.2m of bitcoins from Inputs.io, a supposedly secure wallet service

Nov 2013

Czech bitcoin exchange Bitcash.cz hacked and up to 4,000 user wallets emptied

With many more ...

Total number of merchants around the globe accepting bitcoin recently tripled to 3,000+



Source: CoinMap.org Jan 2014



Offline



overstock.com®



Online

Top bitcoin payment processors



-
- 24,000 merchants (including Overstock.com)
 - 960,000 consumer wallets
 - 4,000 API applications
 - US bank integration
 - \$31.7m in VC funding



-
- 20,000 merchants
 - \$2.51m in VC funding

Sources: Company websites 18 Feb 2013

>\$200 million has been invested in mining equipment

ASIC mining manufacturers

21e6 - raised \$5 million in April
from Silicon Valley Who's Who

ASIC Miner

Avalon

Bitburner

Bitfury

BitMain

Bitmine

Black Arrow

Butterfly Labs

Cointerra – \$20 million
in presales

HashFast – presold \$15
million worth of mining rigs

KnCMiner

Mitten Mining

Virtual Mining

Visionman



Source: Mining equipment investment estimate from Wedbush Securities

Top bitcoin ATM operators



Lamassu

*Introducing,
BTM*



BitAccess



Robocoin

VC and M&A activity

What VCs are saying about Bitcoin

“We believe that bitcoin represents something fundamental and powerful, an open and distributed Internet peer to peer protocol for transferring purchasing power. It reminds us of SMTP, HTTP, RSS, and BitTorrent in its architecture and openness.”

Fred Wilson
Union Square Ventures



“I'm confident you will see major worldwide retailers adopting systems built on bitcoin.”

Jim Breyer
Accel Partners



What VCs are saying about Bitcoin



“If the technology industry wants to change the financial services industry, it can't just build new services on top of existing financial services companies.”

Chris Dixon
Andreessen Horowitz

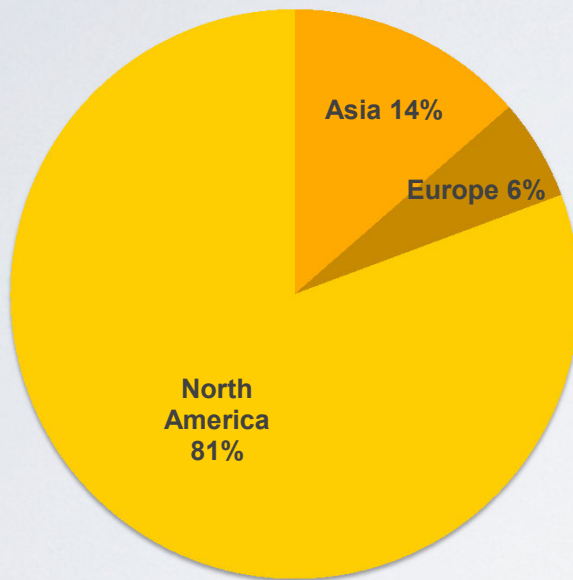


“It is worth thinking about money as the bubble that never ends. There is this sort of potential that bitcoin could become this new phenomenon.”

Peter Thiel
Founders Fund

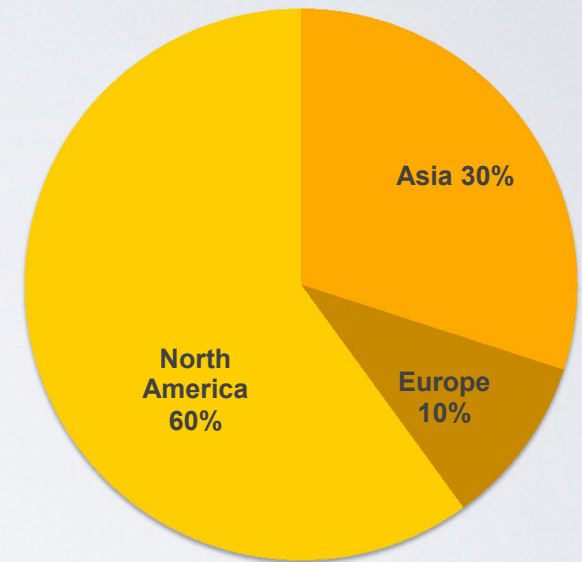
Geographic distribution of Bitcoin VC investment: regional analysis

USD invested



Regions	Value (\$m)	No. of companies
Asia	13.3	9
Europe	5.6	3
N. America	78.6	18
Total	97.5	30

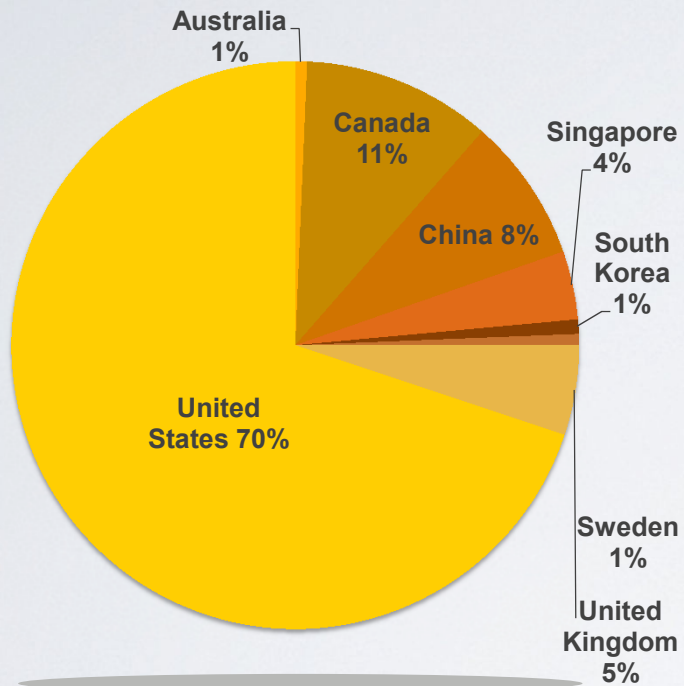
No. of companies



81% of all bitcoin VC \$s have been invested in North America to date, but only 60% of the companies are based there

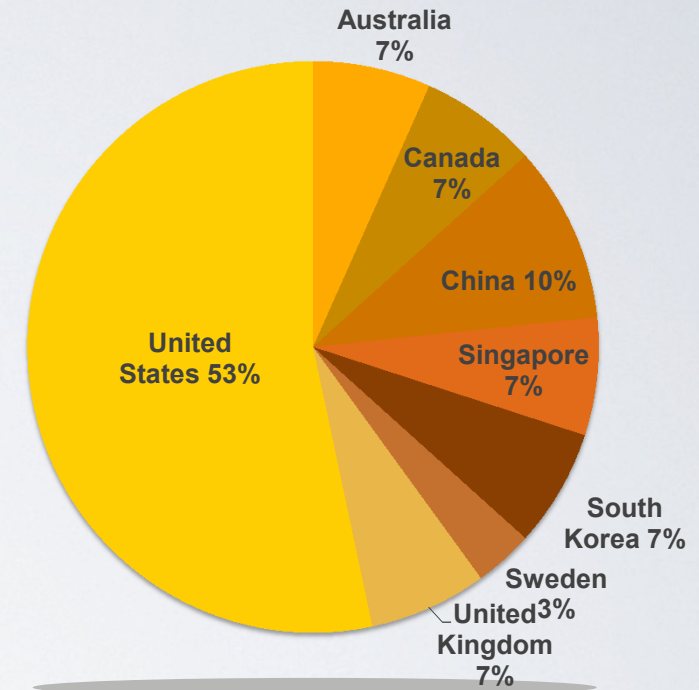
Geographic distribution of Bitcoin VC investment: country analysis

USD invested



Countries	Value (\$m)	No. of companies
Australia	0.7	2
Canada	10.5	2
China	8.0	3
Singapore	3.8	2
South Korea	0.8	2
Sweden	0.6	1
United Kingdom	5.0	2
United States	68.1	16

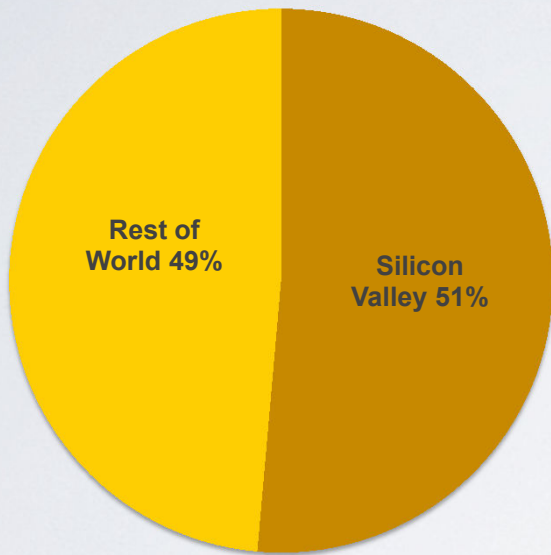
No. of companies



*Greatest number of Bitcoin companies are in the US and China,
over two-thirds of all Bitcoin VC investment is in the US*

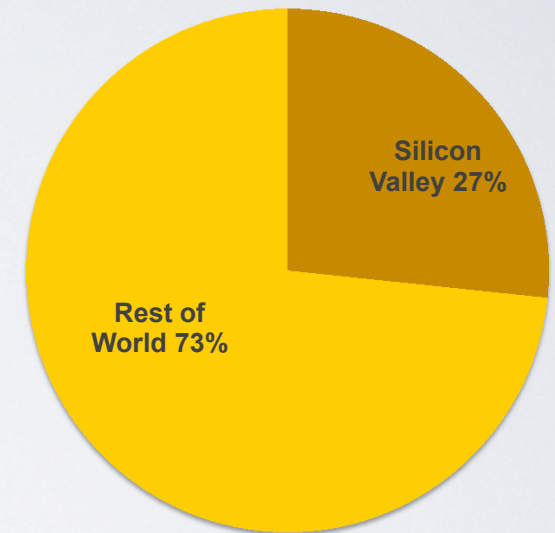
Geographic distribution of Bitcoin VC investment: Silicon Valley vs rest of the world

USD invested



Tech Hub Concentration	Value (\$m)	No. of companies
Silicon Valley	50.1	8
Rest of World	47.4	22
Total	97.5	30

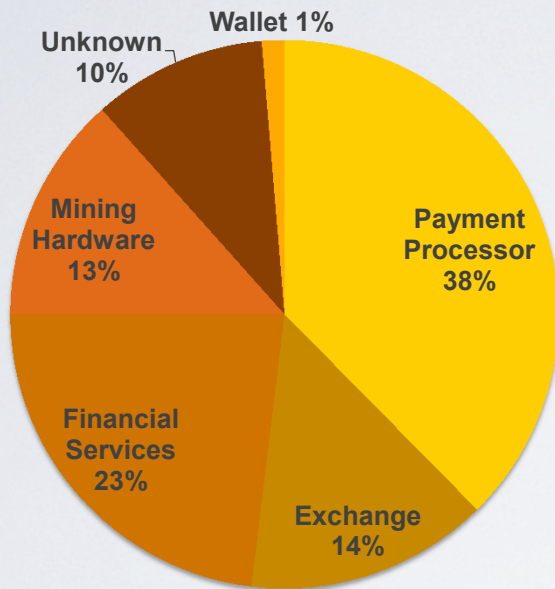
No. of companies



While nearly 75% of VC-backed Bitcoin companies are based outside Silicon Valley, more than half of all Bitcoin VC money has been invested in the Valley

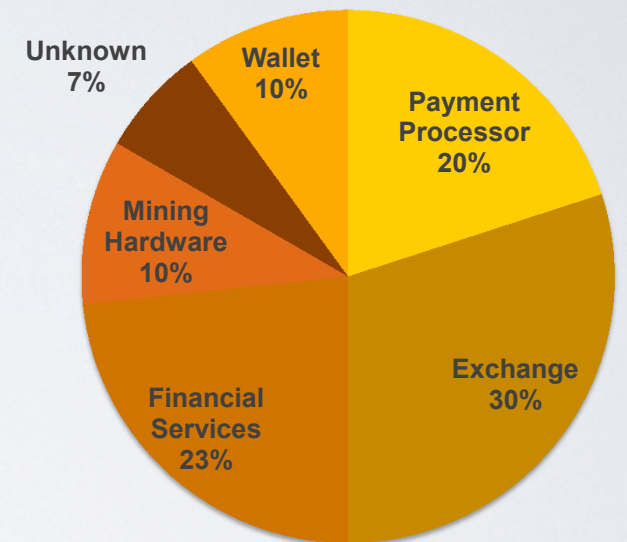
Sector distribution of Bitcoin VC investment

USD invested



Sector	Value (\$m)	No. of companies	Avg./ company (\$m)
Payment Processor	36.7	6	3.62
Exchange	14.0	9	4.9
Financial Services	22.5	7	3.9
Mining Hardware	13.1	3	0.4
Unknown	10.0	2	0.3
Wallet	1.3	3	0.8
Total	88.5	30	3.25

No. of companies



- 38% of all VC investment is in payment processors
- Mining hardware has only received 13% investment even though there is over \$200m in mining hardware revenue to date

2014 YTD Bitcoin venture investment of \$18.6m

Close Date	Company	Round	Size (\$m)	Select investors	Headquartered
17/2/2014	Safello	Seed	0.60	Individual Investors	Stockholm
5/2/2014	BitAccess	Seed	10.00	BiT Capital	Ottawa
31/1/2014	HKCex	First	2.00	Individual Investors	Hong Kong
24/1/2014	BitFury	Seed	5.00	Undisclosed Venture Investor(s)	Bristol
20/1/2014	Korbit	Seed	0.40	Dream Bank, SK Planet, Strong Ventures, Individual Investors	South Korea

*2014 VC investment annual run rate of \$112m,
or 144% of total 2013 VC investment in Bitcoin startups*

Source: CoinDesk, Dow Jones VentureSource, VentureScanner.com

\$77.5m in 2013 Bitcoin venture investment; \$97.5m all time

Close Date	Company	Round	Size (\$m)	Select investors	Headquartered
27/12/13	BitPay Inc.	First	N/A	A-Grade Investments, Founders Fund, Heisenberg Capital	Atlanta
23/12/13	Spawngrid Inc.	Seed	0.50	CrossPacific Capital Partners, Individual Investors	Vancouver
13/12/13	Coinsetter Inc.	Seed	0.26	Undisclosed Debt/Loan	New York
12/12/13	Coinbase Inc.	Second	25.00	Andreessen Horowitz, Ribbit Capital, Union Square Ventures	San Francisco
2/12/13	CoinJar Pty Ltd.	First	0.50	Blackbird Ventures, Individual Investors	Richmond, Australia
25/11/13	Coinplug Inc.	Seed	0.40	Silverblue Inc.	Seoul
18/11/13	BTC China (Shanghai Satuxi Network Co. Ltd.)	First	5.00	Lightspeed China Partners, Lightspeed Venture Partners	Shanghai
Nov-13	21E6	First	5.1	Individual Investors	San Francisco
11/11/13	itBit PTE. Ltd.	First	3.25	Canaan Partners, Individual Investors, Liberty City Ventures, RRE Ventures	Singapore
11/4/13	Ripple Labs Inc.	Bridge	3.5	Camp One Ventures, Core Innovation Capital, Google Ventures, IDG Capital Partners, Individual Investors, Venture51	San Francisco
7/11/13	GoCoin Pte. Ltd.	Seed	0.55	BitAngels, Demarest Ventures, Individual Investors, Ruvento Ventures	Singapore
31/10/13	Circle Internet Financial Inc.	First	9.00	Accel Partners, General Catalyst Partners, Individual Investors	Boston
29/10/13	Coinfloor Ltd.	N/A	N/A	Passion Capital, Individual Investors	London

Source: CoinDesk, Dow Jones VentureSource, VentureScanner.com

2013 venture investment (contd.)

Close Date	Company	Round	Size (\$m)	Select Investors	Headquartered
Oct-13	GogoCoin	Seed	0.005	Dream Ventures	San Francisco
19/9/13	Gliph Inc.	First	0.20	Boost Fund LLC, Individual Investors	Portland
4/9/13	Beijing Lekuda Network Technology Co. Ltd.	First	1.00	Centralway AG, Floodgate, Google Ventures, Individual Investors, Initialized Capital, Y Combinator	Beijing
1/9/13	Vaurum	First	2.00	Boost Fund LLC	San Mateo
1/9/13	Buttercoin	First	1.25	Alexis Ohanian, Centralway, FLOODGATE, Google Ventures, Initialized Capital, Rothenberg Ventures, Y Combinator	Palo Alto
1/9/13	Armory Technologies	Seed	0.60	Individual Investors	Baltimore
19/8/13	Digital Currencies FinTech Co.	First	1.25	A-Grade Investments, Founders Fund, Heisenberg Capital	Palo Alto
Jul-13	Avalon Clones	First	3.00	Undisclosed Investors	Scottsdale
16/5/13	BitPay Inc.	Seed	2.00	Camp One Ventures, Core Innovation Capital, Google Ventures, IDG Capital Partners, Individual Investors, Venture51	Atlanta
14/5/13	Ripple Labs Inc.	Bridge	3.00	Ribbit Capital, Union Square Ventures	San Francisco

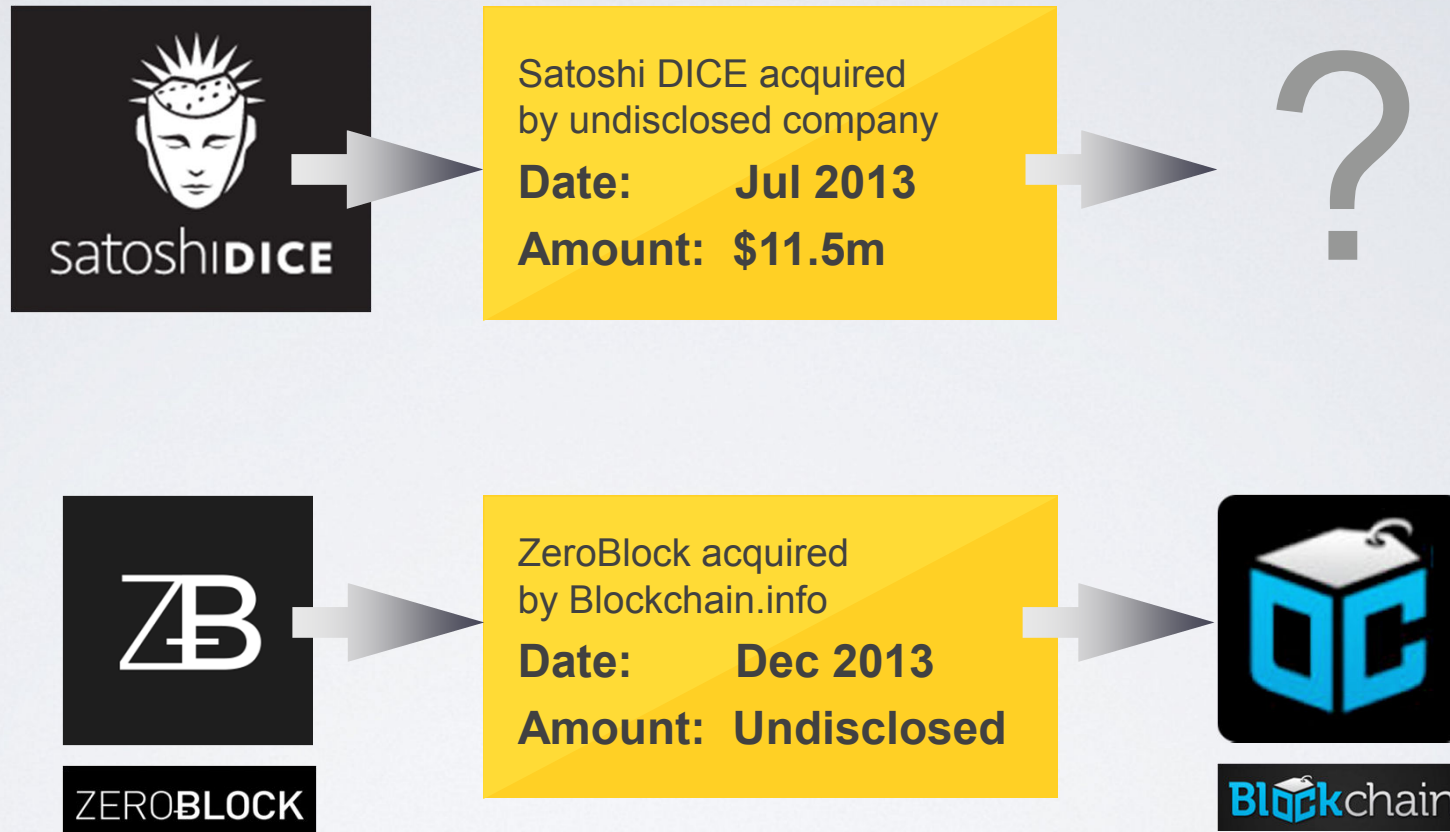
Source: CoinDesk, Dow Jones VentureSource, VentureScanner.com

2013 venture investment (contd.)

Close Date	Company	Round	Size (\$m)	Select investors	Headquartered
26/4/13	Coinbase Inc.	First	6.10	Andreessen Horowitz, Bitcoin Opportunity Fund, FF Angel IV, Lightspeed Venture Partners, Vast Ventures	San Francisco
11/4/13	Ripple Labs Inc.	Bridge	2.5	Bitcoin Opportunity Fund, Individual Investors, Tribeca Venture Partners	San Francisco
31/3/13	Coinsetter Inc.	Seed	0.50	Undisclosed Venture Investor(s)	New York
22/3/13	CoinLab Inc.	Bridge	0.58	Individual Investors	Seattle
Mar-13	BTC.sx	Seed	0.15	Joe Lee	Sydney
Mar-13	TradeHill	Seed	0.40	Individual Investors	San Francisco
7/1/13	BitPay Inc.	Individual	0.51	BitAngels, Demarest Ventures, Individual Investors, Ruvento Ventures	Atlanta
Oct-12	Bitinstant	First	1.50	Winklevoss Capital	New York
N/A	COINFIRMA	Seed	0.50	Undisclosed Venture Investor(s)	Atlanta

Source: CoinDesk, Dow Jones VentureSource, VentureScanner.com

Only two noteworthy Bitcoin M&A deals to date ...



... but as the current land-grab subsides and the winners and also-rans become clear, we anticipate further consolidation

Technology and Mining

Features in forthcoming Bitcoin software release (version 0.9)

Payment protocol

Replaces tortuous bitcoin addresses with human-readable addresses; also enables refunds and memos (eg 'payment received' message)

Autotools protocol

Makes it easier for experienced open source developers to contribute to the project

Provably prune-able outputs

Provide users the ability to add some new data (such as a distributed contract) to be included via a hash

*“0.9 will be released ...
when it is ready”* - Gavin Andresen

Sources: <https://bitcoinfoundation.org/blog/?p=290> and <https://bitcointalk.org/index.php?topic=300809.msg3225143#msg3225143>

Bitcoin software development roadmap (contd.)

Gavin Andresen:

The below will “hopefully make it into the 0.9 release”

Headers-First, parallel download chain sync

Further optimizing downloading the block chain, will enable future work that makes downloading the entire chain optional

No-wallet mode and “bitcoin-cli”

“Disablewallet” mode, which lets bitcoind run entirely without a wallet, making startup faster and using less run-time memory

Smarter transaction fees

Dynamic, streamlined approach to determining transaction fees paid to miners; fees will be based on the lowest fee that will be accepted

Sources: <https://bitcoinfoundation.org/blog/?p=290> and <https://bitcointalk.org/index.php?topic=300809.msg3225143#msg3225143>

Other innovative uses of Bitcoin technology and the block chain

Notary service

Provides proof that a given document existed at a particular date/time

Bonded identity service

Secure identities verified by the block chain and backed by 'fidelity bonds'

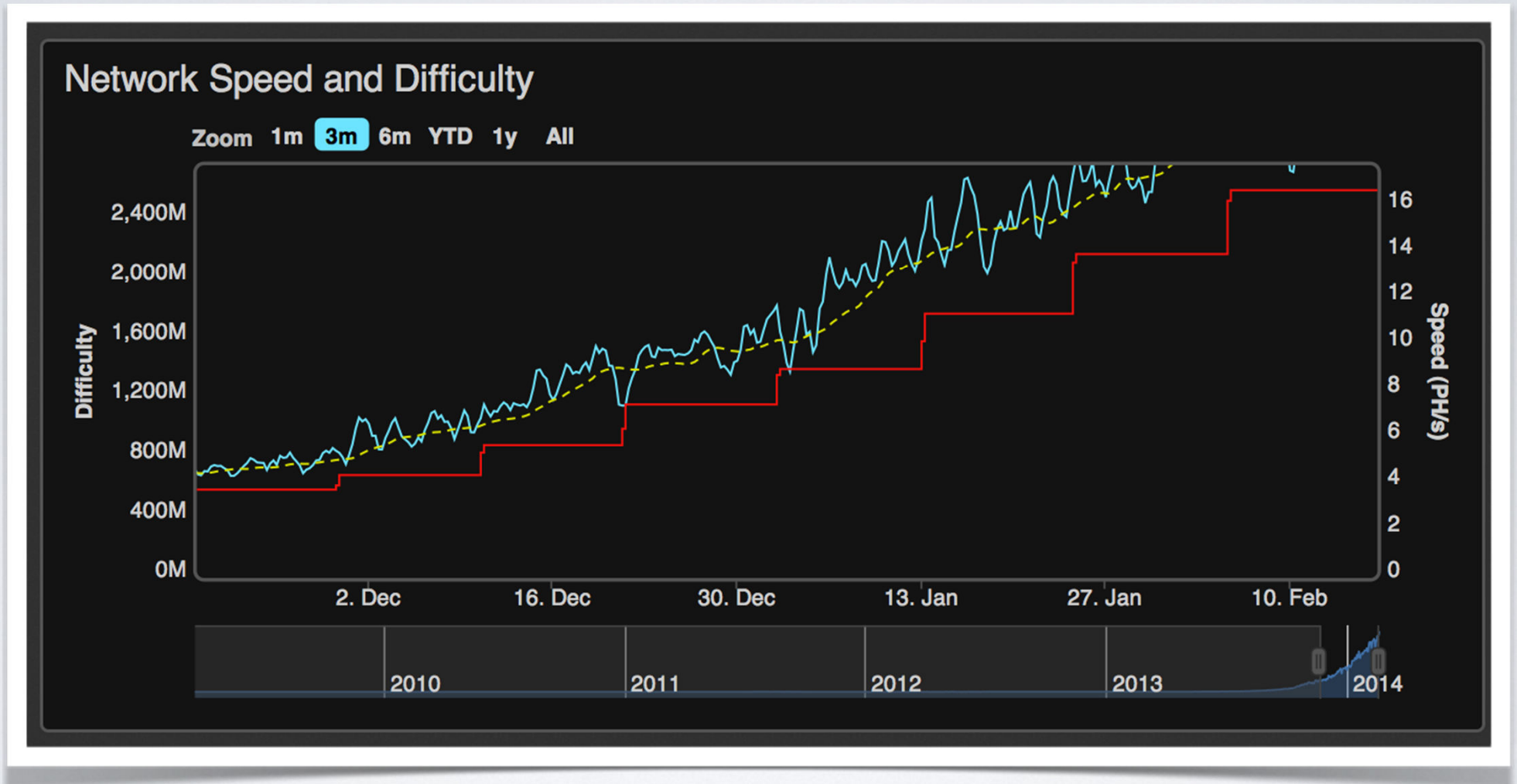
Smart contracts

Computer protocols that facilitate, verify, or enforce the negotiation or performance of a contract

Smart property

Property that can be atomically traded and loaned via the block chain

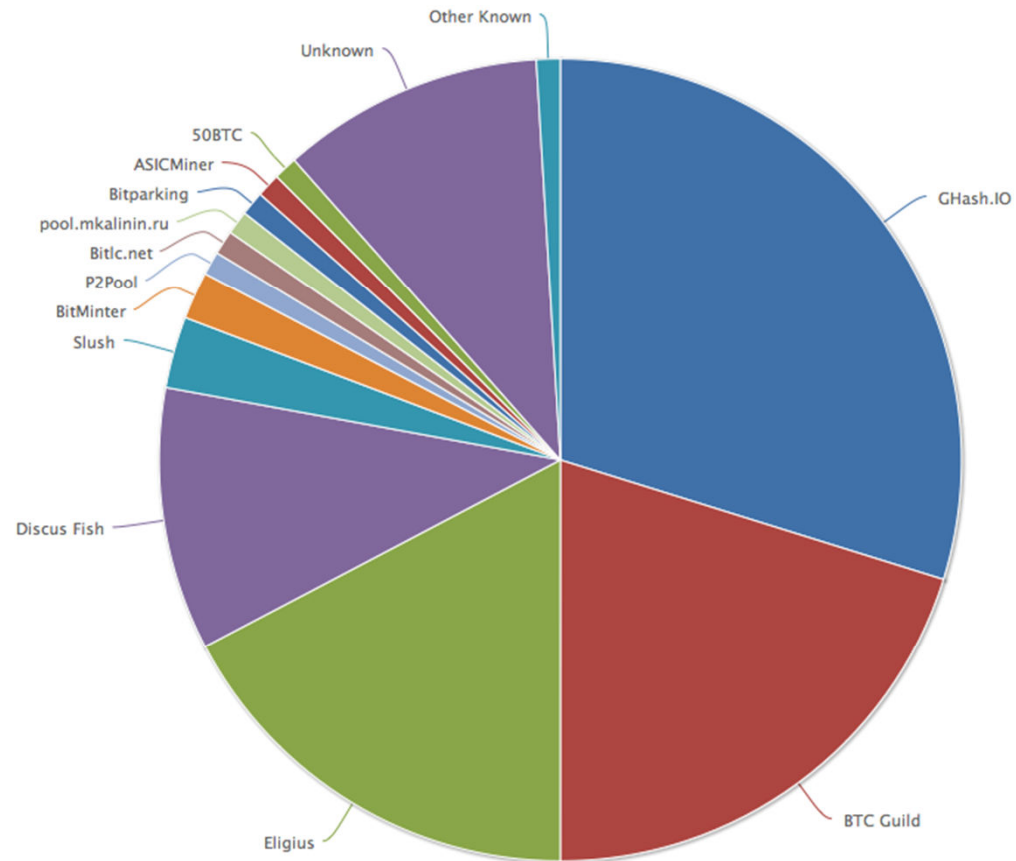
Network speed exceeds 14 petahashes per second,
up 560x from a year ago



Source: The Genesis Block Jan 2014

Bitcoin mining pool market share

Hashrate distribution of
largest mining pools



Source: Blockchain.info 10 Jan 2014

\$319.4m total mining revenue in 2013 ...

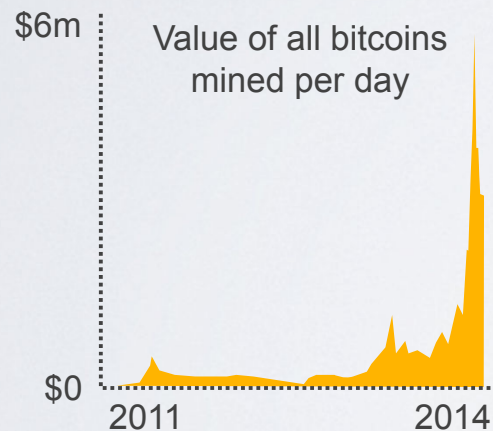


Historical chart showing (number of bitcoins mined per day + transaction fees) * market price. Source: Blockchain.info

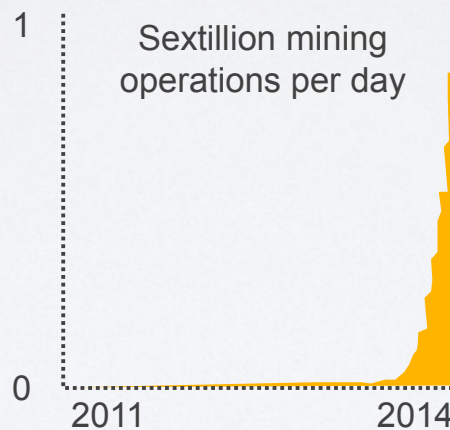
... but mining revenue/operation is falling

$$\text{Mining revenue} \div \text{Mining work} = \text{Revenue per operation}$$

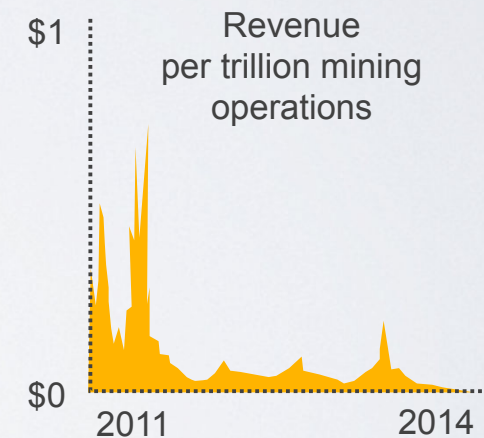
Has risen dramatically
with bitcoin's price



Has risen even faster, as
more miners enter the fray



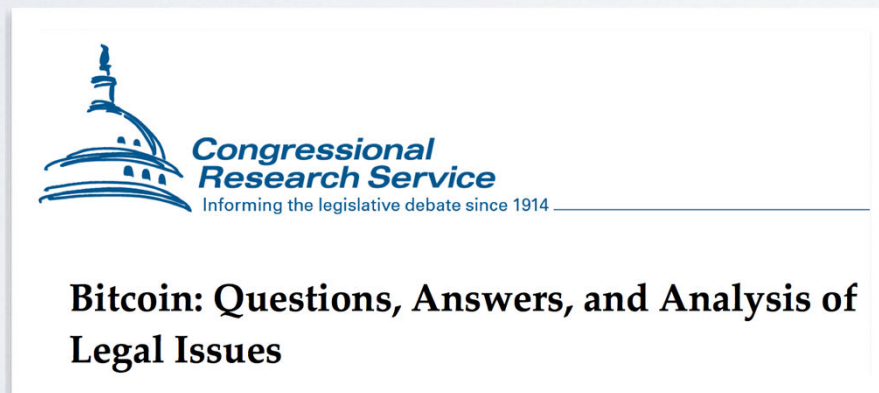
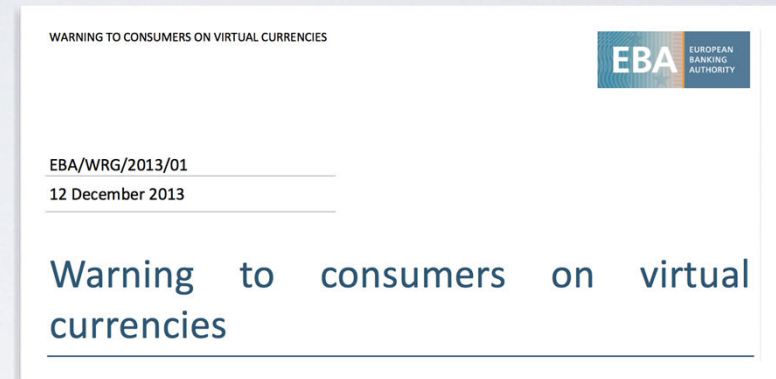
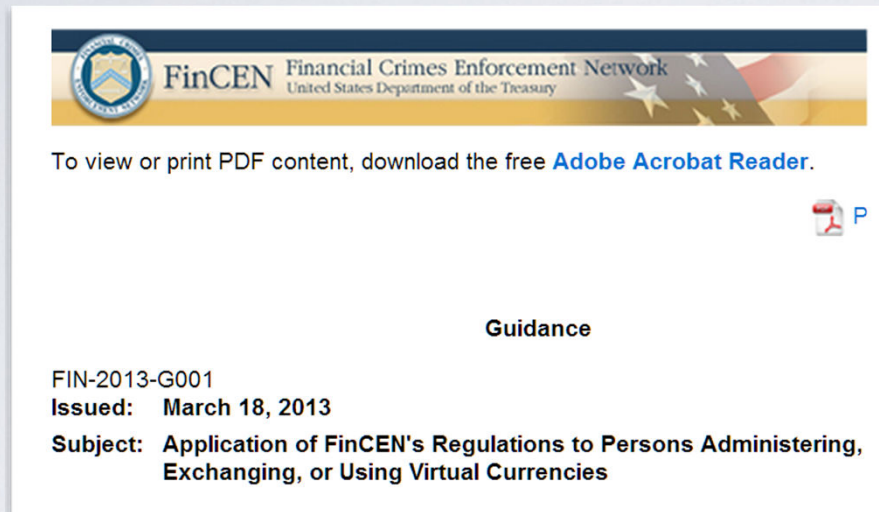
Has fallen



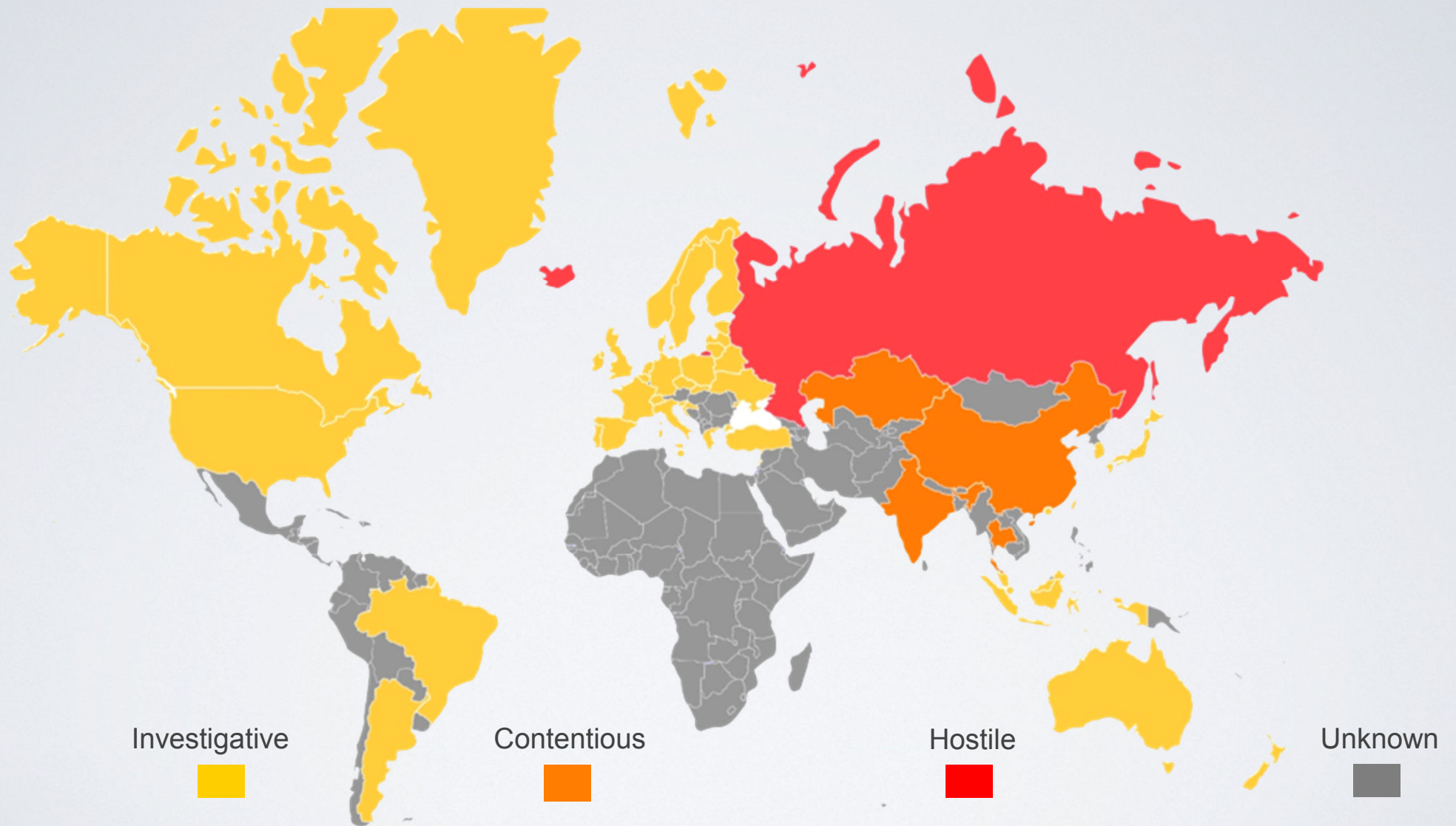
Source: Bloomberg BusinessWeek, Blockchain.info

Regulation and Risk Factors

Bitcoin is attracting significant regulatory attention around the globe



Bitcoin regulatory heat map



Source: CoinDesk, BitLegal.net

Only 13% of countries which have issued Bitcoin regulatory guidance can be described as hostile or contentious

Australia	Investigative	Malaysia	Investigative	United Kingdom	Investigative
Belgium	Investigative	Netherlands	Investigative	United States	Investigative
Canada	Investigative	New Zealand	Investigative		
China	Contentious	Norway	Investigative		
Czech Republic	Investigative	Poland	Investigative		
Denmark	Investigative	Russia	Hostile		
Finland	Investigative	Singapore	Investigative		
France	Investigative	Slovakia	Investigative		
Germany	Investigative	South Korea	Investigative		
Greenland	Investigative	Sweden	Investigative		
Hong Kong	Investigative	Switzerland	Investigative		
Iceland	Hostile	Taiwan	Investigative		
India	Contentious	Thailand	Investigative		
Ireland	Investigative	Turkey	Investigative		

Source: BitLegal.net

Bitcoin faces numerous challenges ...

Regulatory uncertainty

Avoidance by traditional financial institutions

Slower adoption by consumers/merchants

Switching costs

Both real and perceived

Convenience

Convenience trumps anonymity for most consumers

Few women involved

Very few women involved in Bitcoin to date, yet women have significant and often dominant influence on financial decisions in many households

Infrastructure

Bitcoin technical infrastructure (ie cost, latency)

Hoarding

Desirability of bitcoin as a store of value works against use as a medium of exchange

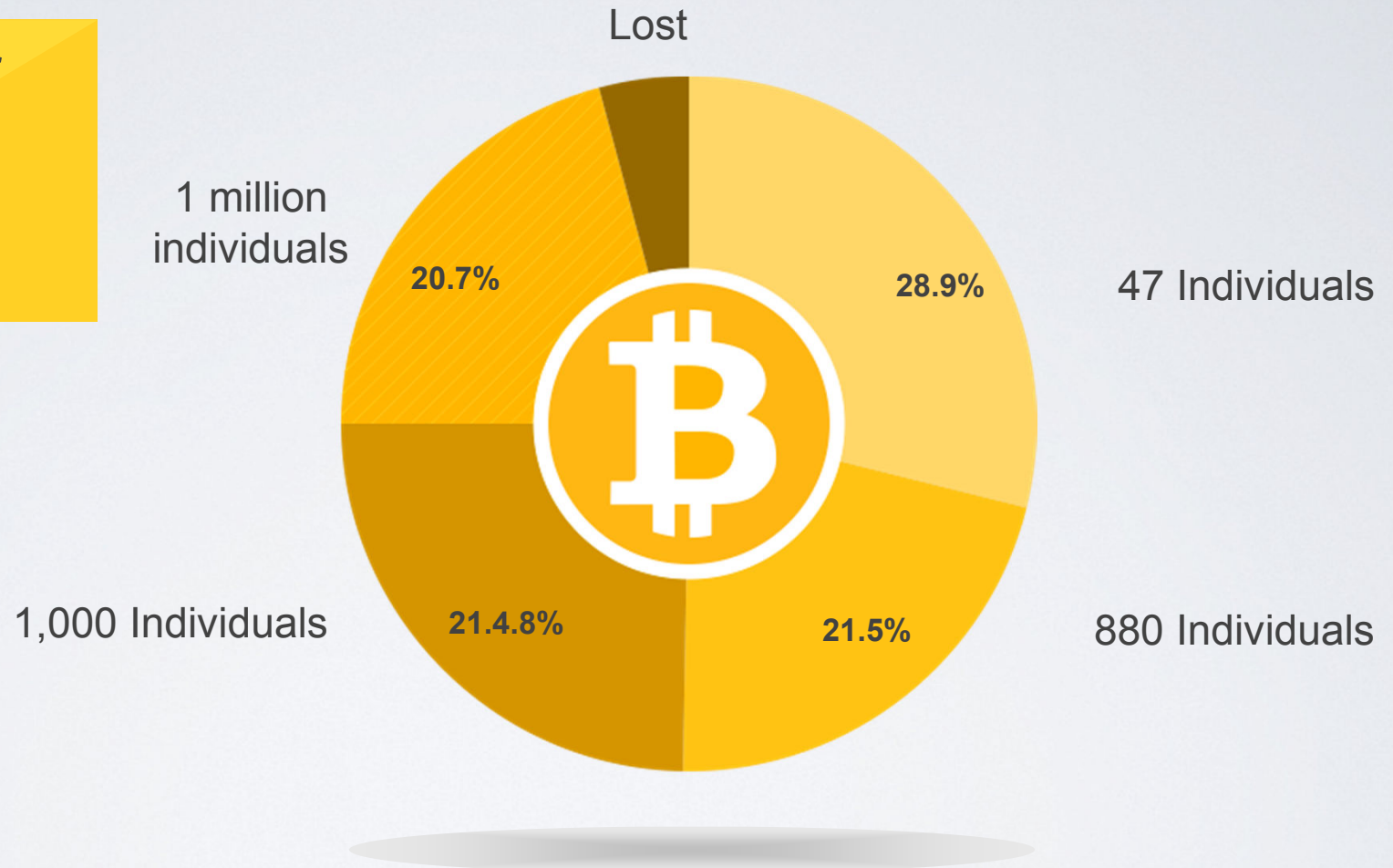
Source: Hileman (2013) 'History and Prospects for Alternative Currencies', LSE working paper

... sentiment and movements can be difficult to sustain ...



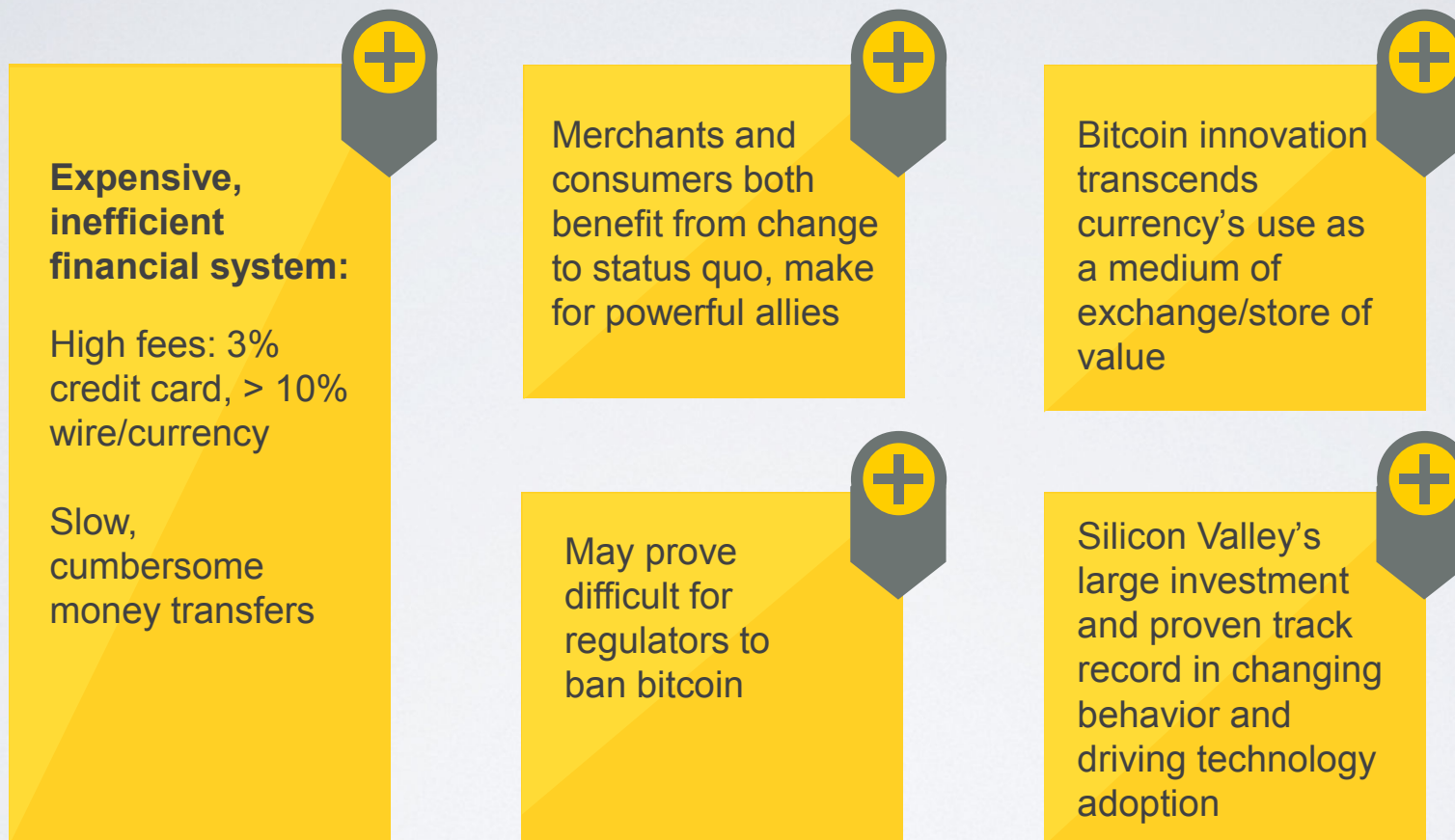
... highly concentrated ownership could lead to significant price swings and feelings of inequity ...

**Distribution of
the 12m
bitcoins in
circulation**



Source: Business Insider

... but Bitcoin can draw on many positives



Source: Hileman (2013) 'History and Prospects for Alternative Currencies', London School of Economics working paper

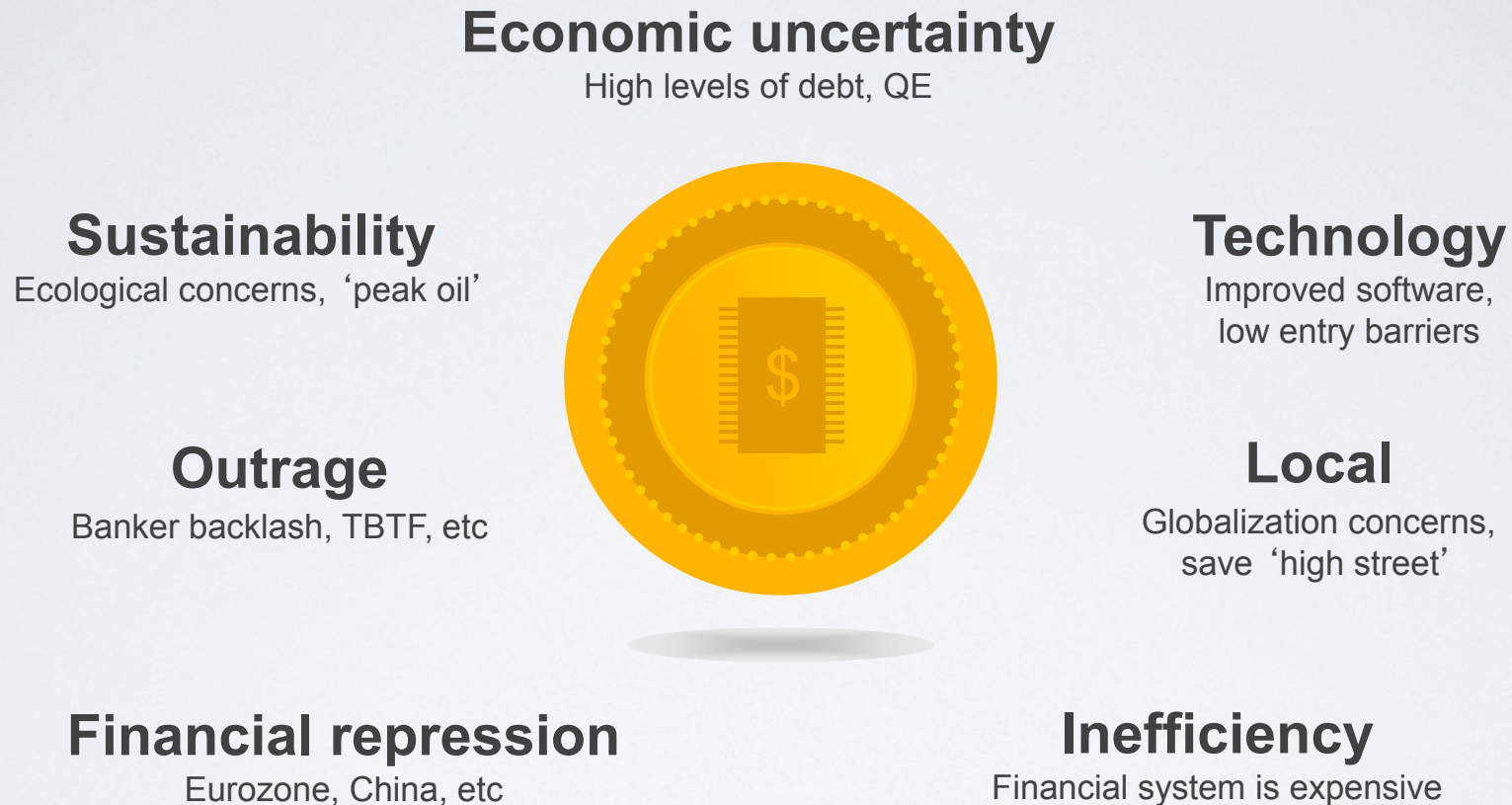
Other Alternative Currencies

Four types of alternative currencies

		Type	Historical	Contemporary
Physical	Intrinsic value			
	Token		 	 
Digital	Closed Centralized			 
	Open Decentralized		N/A	

Source: Hileman (2013) 'History and Prospects for Alternative Currencies', London School of Economics working paper

Seven forces driving alt-currency growth



Source: Hileman (2013) 'History and Prospects for Alternative Currencies', London School of Economics working paper

What can Bitcoin learn from the Brixton £?



Brixton £ overview

- London-based, started five years ago
- A 'complementary currency'
- Digital and physical currency
- 10% bonus for converting £ into B£

Unusually...

- **Local government officials collect part of salaries in B£s**
- **Can be used to pay some local taxes and fees**

The Brixton £ has made government into a friend, not foe

Source: Hileman (2013) 'History and Prospects for Alternative Currencies', London School of Economics working paper

Top 10 mineable cryptocurrencies

#	Name	Market Cap	Price	Total Supply	Volume (24h)	% Change (24h)
1	 Bitcoin	\$ 7,325,438,767	\$ 589.69	12,422,525 BTC	\$ 36,745,683	-5.48 %
2	 Litecoin	\$ 381,154,460	\$ 14.73	25,876,404 LTC	\$ 6,876,621	-6.12 %
3	 Peercoin	\$ 81,376,553	\$ 3.85	21,162,999 PPC	\$ 644,115	-4.64 %
4	 Dogecoin	\$ 67,509,022	\$ 0.0013	52,200,841,969 DOGE	\$ 2,488,994	-5.35 %
5	 Namecoin	\$ 28,129,072	\$ 3.48	8,084,292 NMC	\$ 709,419	-7.65 %
6	 ProtoShares	\$ 26,250,247	\$ 17.45	1,504,494 PTS	\$ 1,725,700	+16.34 %
7	 Quark	\$ 15,378,447	\$ 0.062	247,588,515 QRK	\$ 147,102	-6.00 %
8	 Feathercoin	\$ 8,989,074	\$ 0.26	33,978,300 FTC	\$ 252,298	-3.27 %
9	 Primecoin	\$ 8,407,558	\$ 1.87	4,505,975 XPM	\$ 115,424	-5.87 %
10	 Megacoin	\$ 7,854,020	\$ 0.35	22,255,375 MEC	\$ 207,603	-5.72 %

Source: CoinMarketCap.com 18 Feb 2014

Litecoin – the silver to bitcoin's gold

4X more potential currency units than Bitcoin (84m vs 21m).

Litecoin mining is more accessible than bitcoin mining – only requires a relatively low-end graphics card.



Litecoin's biggest advantage over Bitcoin may be sentiment derived from its creation story – creator did not try to personally profit by retaining litecoins.

Dogecoin – the cute coin

Created as a joke but jumped more than 300% in value.

Has spawned an active development community.

Highlights how people are seeking to form an emotional connection to currency and money.



Namecoin – the dark web coin

Acts as an alternative, decentralized Domain Name System (DNS).

Avoids domain name seizure and or censorship by making a new top level domain outside of ICANN control.

Has suffered from significant technical problems.



namecoin

WorldCoin – a faster coin

30-60 second transaction confirmation time significantly improves on Bitcoin's 10-minute confirmation time.

However, neither WorldCoin's nor Bitcoin's times are as fast as cash or a credit card.

Involved with PhenixCoin and FeatherCoin in UNOCS, the abortive attempt to create a bridge between altcoins.



Peercoin – not just a Bitcoin clone

Uses modified 'proof-of-stake' protocol vs Bitcoin's 'proof of work'.

Mints new coins based on the number of coins a person already has in their possession.



Arguably more energy efficient than Bitcoin.

No limit on number of possible coins.

Designed to eventually attain an annual inflation rate of 1%.

Ripple – a new payment network (and coin)



Backed by Andreessen
Horowitz, Lightspeed
Venture Partners, and
Founders Fund.

Payment network
and currency
(XRP).

Different security
features - every
Ripple transaction
destroys a tiny
amount of XRP.

No mining
required – all 100
billion coins
already created.

Controversial
profit model –
retained 50 billion
coins.

Appendix

CoinDesk.com: news, data and analysis

**CoinDesk**
The Voice of Digital Currency

CoinDesk Bitcoin Price Index ⓘ
\$613.87 £368.25 €446.53
Last updated: Feb 19, 2014 at 12:40 GMT

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Bitcoin News

All the latest news on bitcoin, cryptocurrencies and virtual currencies. We report on bitcoin exchanges, merchants, regulation, mining and prices. If you have a bitcoin news tip, [email us](#).



Dubai Pizzeria Becomes First Merchant in the UAE to Accept Bitcoin

Feb 19, 2014 at 11:24 | Dan Palmer

The Pizza Guys in Dubai is one of the first merchants to accept digital currency in the Middle East.



eBay Building Digital Wallet That Stores 'Multiple Types' of Currency

Feb 19, 2014 at 10:17 | Nermin Hajdarbegovic

CEO John Donahoe has confirmed the company is building a digital wallet for PayPal that can take multiple currencies.



Coinkite Promises to Offer Secure Storage For Bitcoin Companies

Feb 19, 2014 at 06:14 | Danny Bradbury

Bitcoin companies face problems holding a suitable balance in hot storage. Coinkite says it has the answer.



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Bitcoin news, delivered daily

Must Read **Most Popular**

**Bank Cuts Cointrader Accounts Amid Hostile Government Rhetoric**

**The First US Bitcoin ATM Arrives in New Mexico**

**Coinkite Promises to Offer Secure Storage For Bitcoin Companies**

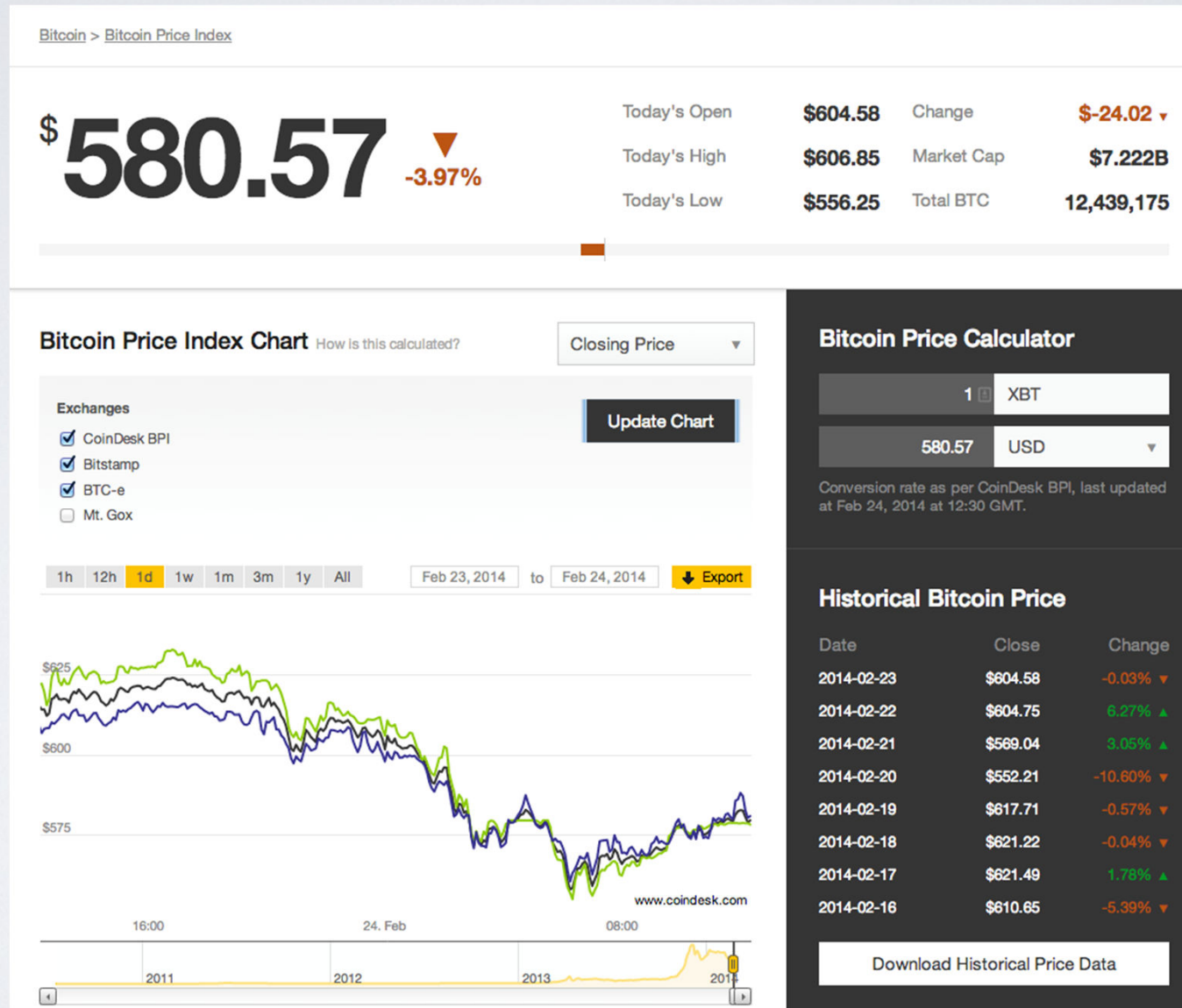
**Bitcoin's Recent Price Plunge Could Have Been Worse, Wedbush...**

**Bitcoin Foundation Opens Nominations for Empty Board of Directors Seat**

**Ben Lawsky: Friend or Foe?**



CoinDesk Bitcoin Price Index



CoinDesk Beginner's Guide to Bitcoin



CoinDesk

A beginner's guide to bitcoin

Bitcoin is a digital currency that is being used increasingly all over the world. Find out more about how it works and how you can use it with our straightforward guides.



What is bitcoin?
It's a decentralized digital currency



How to set up a bitcoin miner
Generate bitcoins yourself



How can I buy bitcoins?
From an exchange or an individual

