

Digital Disruptor

How Bitcoin is Driving Digital Innovation in Entertainment, Media and Communications (EMC)

Feb. 7, 2014

PwC

#DigitalDisruptor



4 key points on Bitcoin

A Bitcoin is a peer-to-peer currency that is gaining momentum in multiple marketplaces. New and emerging companies are Bitcoin-centric and a handful of larger, established companies are experimenting with it. While it's one of 70 digital currencies available, Bitcoin is generating considerable buzz and activity, even though it is not a government-backed currency or legal tender in the United States. So what should executives know about Bitcoin and its potential impact? Our point of view:

1. *Bitcoin can be part of an innovation strategy for products, services and payment systems. Some entertainment companies are experimenting using Bitcoin for new music downloads.*
2. *Early adopters enjoy a public relations and marketing advantage. Being noted as a Bitcoin innovator can potentially generate favorable press and social media mentions. In 2014, social gaming company Zynga added Bitcoin to its most popular games and garnered thousands of media mentions.*
3. *The value of Bitcoin is frequently fluid and roller coaster-like. Dynamic pricing of products is needed with daily cash-outs and a trusted payment partner. In the tourism sector, CheapAir.com has partnered with Bitcoin merchants to leverage those features.*
4. *Like other consumer-facing technologies, companies experimenting with Bitcoin should monitor the evolving regulatory landscape and execute due diligence to mitigate potential exposure to illicit activities.*

This PwC Consumer Intelligence Series report explores the emerging impact of Bitcoin on entertainment, media and communications companies. It is based on our analysis of Bitcoin's 3.4 million online mentions in 2013 plus a PwC-commissioned online consumer survey to gather awareness, attitudes and behaviors about Bitcoin.

Risks and benefits for companies, consumers

Benefits for companies

- Low transaction fees
- Daily cash outs
- No payment reversals
- Merchant tools exist to simplify experience

Risks for companies

- Pseudo-anonymous transactions
- No central entity backing it
- Not legal tender in some countries
- Uncertain and evolving perspectives of regulators
- Network security
- Volatile trading market
- Dynamic product pricing a must
- Slow transaction processing time

Benefits for consumers

- Typically no fees to send Bitcoin globally
- Pseudo-anonymous transactions
- Value fluctuations (when rising)
- Financial institutions don't control currency

Risks for consumers

- No payment reversals
- Complexity of buying Bitcoin
- Complexity of cashing out
- Niche adoption by major brands
- Complexity of carrying a digital wallet
- Uncertain and evolving perspectives of regulators

Bitcoin's evolution into a brand

If it seemed like a lot of people were suddenly talking about Bitcoin in 2013, that's because they were. Bitcoin had 3.4 million online mentions in 2013, according to our research, equaling General Motors and *all* of its brands during the year.¹ Those conversations translated to media mentions, too; Bitcoin was the subject of some 11,200 traditional media stories in 2013.² In November alone, it was featured in 14,179 online stories.³

Bitcoin's growth has been swift: Two leading U.S. banks have met to discuss Bitcoin; one of them became the first U.S. institution to initiate official analyst coverage of the digital currency.⁴

Bitcoin's growth has spawned a rash of supporting companies, including exchanges such as Mt. Gox and Cryptsy, which allow users to exchange Bitcoin into local currencies. There are startups for buying Bitcoin, such as Coinbase, which received \$25 million in venture capital in 2013,⁵ as well as Coinmkt and Campbx. Other companies are creating digital wallets to store and use Bitcoin at brick and mortar locations.

All of this growth signals that Bitcoin has grown into a brand, a decentralized one at that, supported by a digital ecosystem of entrepreneurship. The history of digital shows that when that ecosystems form, disruption follows.



Bitcoin in social media

3,400,000

Number of social mentions 'Bitcoin' generated in 2013. Mentions occurred on social networks, microblogs, forums, mainstream news, images, videos and blogs.

96% male

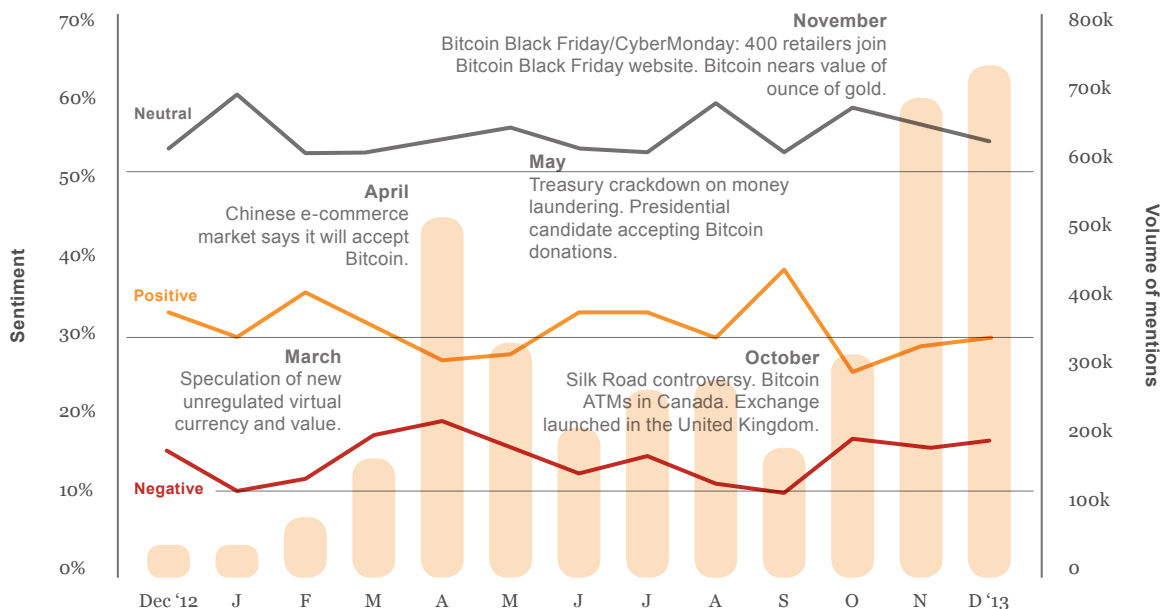
Percentage of gender mentioning Bitcoin. The majority of discussions happen in the United States and China, and participants are typically ages 26-50.

21%

Percentage of Bitcoin mentions about online gambling and video games.

Source: Online mention data via Sysomos MAP, 2013

2013: The year of Bitcoin



Source: Online mention data via Sysomos MAP, 2013.

Note: While regulators have publicly stated they do not wish to stifle innovation, federal agencies continue to advance their own understanding of Bitcoin and its technology. It is likely that the regulatory environment for users, miners and exchangers will evolve over time. Companies considering Bitcoin should monitor regulatory developments and how they shape the market in coming years.

The open-source monetary system

While Bitcoin quickly becomes part of the business vernacular, does it have what it takes for enterprise-level security?

Since its release in 2009, Bitcoin has differentiated itself by solving for the nagging problem of double-spending, when one token is spent twice. The solution: A public ledger that logs every Bitcoin transaction, allowing users to agree on who owns how many Bitcoins at any time. Bitcoin has also seemingly solved for issues around online system security, too; each transaction is encrypted while all of its governing code is publicly accessible. Hundreds of

developers voluntarily update and monitor the open-source code, contributing to its common good.

As a digital currency, Bitcoin is not backed by physical commodities such as gold, or a centralized government authority and its credit; instead, it relies on peer-to-peer distribution and trust in that network, which is nearly frictionless. That makes for a low-to-no fee system.

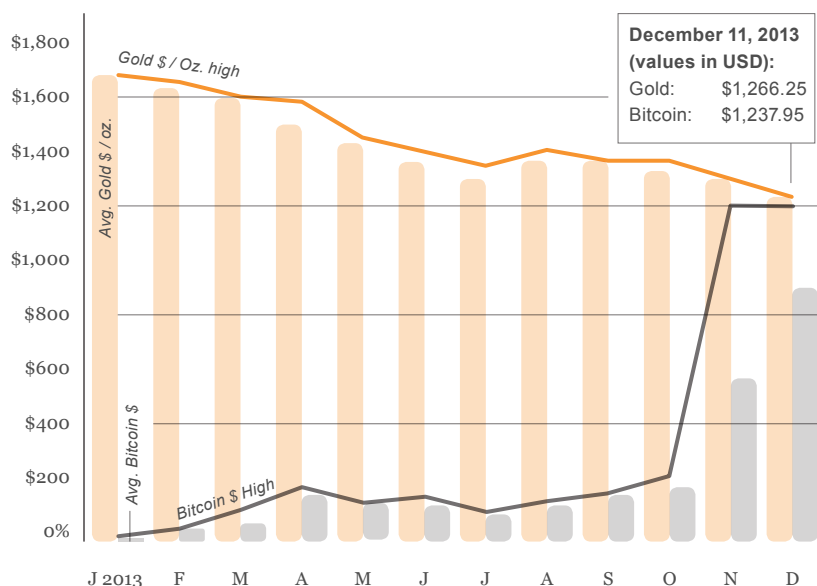
With 1,000 brick-and-mortar businesses and 10,000-plus online merchants accepting Bitcoin, early adopters are creating roadmaps for the enterprise to understand and adopt the digital currency.⁶



A brief history of Bitcoin

- **2008:** Bitcoin.org is registered.
- **2009:** The first transaction using Bitcoin occurs.
- **2010:** The tech news site Slashdot covers Bitcoin.
- **2011:** One Bitcoin is valued at roughly \$10.
- **2012:** The Bitcoin Foundation is formed.
- **2012:** First Bitcoin exchange licensed as a bank in EU.
- **2013:** At U.S. Senate hearings, Department of Justice calls Bitcoin a "legal means of exchange."
- **2013:** Canada and Slovakia introduce Bitcoin ATMs.
- **2014:** Overstock.com has 840 orders on first day of taking Bitcoin. The company estimates \$500,000 worth of Bitcoin business since January 9.
- **2014:** Kings become first NBA team to announce Bitcoin acceptance.
- **2014:** Canada and the Bank of France say Bitcoin isn't legal tender.

The value of Bitcoin vs. gold



Source: The Wall Street Journal, "Bitcoin Vs Gold: A Tale Of Two Manias," 2013.

Source: PwC Research, 2014.

Bitcoin: Digital payment disruptor

Bitcoin's value proposition includes global, peer-to-peer money transfers, nearly anonymous payments, low transfer fees and higher-level security protocols based on open standards.

Four types of organizations face increased challenges if Bitcoin continues its growth pattern as a digital currency: Banks, governments, payment processors and payment gateways.

BitPay and BIPS are payment gateways for Bitcoin transactions, and they are creating merchant tools that enable online businesses to accept Bitcoin on hosted check-out pages, shopping carts and point of sale systems for brick and mortar stores. The upshot: transaction fees are typically low. Some Bitcoin merchant tools offer recurring billing and fees of 1% or less to cash out Bitcoin daily (see column on right).

Bitcoin enables companies to skip the "middle man" of

central financial institutions and their fees, not unlike how peer-to-peer file sharing of music enabled today's consumers to download music from artists directly. Bitcoin is a bit like the 1999-era of Napster in that way, but today's scenario involves consumers sending digital payments directly to other users, or companies with goods and services to sell, with minimal fees and no float time.

Added to this proposition is that consumers who use a decentralized, peer-to-peer payment system can be shielded from fluctuations caused by local government politics and their influence on central banks. In this potential scenario, Bitcoin has the potential to disrupt currency models.

Bitcoin may cause financial institutions to update or add to their current technologies, adjust fee structures, add services or new layers of specialists to monitor and understand governmental regulatory issues.



DATA POINTS

Bitcoin fees vs. other fees

Payment method transaction fees, from highest to lowest:

3.1%	American Express
2.7%*	Visa, MasterCard, Discover
2.9%	PayPal
2.75%	Square
Free **	Coinbase
Free ***	BitPay

66 % of all point-of-sales transactions that are done with credit, debit, or gift cards.

\$6.9 trillion

VISA 2013 users' total dollar volume. Visa had the largest marketshare of all credit cards.

26.2 billion

Total number of credit card transactions in the U.S. in 2012.

55,000

Average number of Bitcoin transactions every day in 2013. Daily average was less than 100 in 2009.

* Variable as set by the acquirer (bank).

** No fee for first \$1 million in payment processing. After that, 1% charge.

*** No transaction fee with \$30 / month subscription.

Sources: Kimbia.com Interview, 2013. Congressional Research Service, "Bitcoin: Q+A and Analysis of Legal Issues," 2013. NerdWallet.com, 2011. BlockChain.info, 2013. CreditCards.com, 2013.

U.S. Government viewpoints on Bitcoin

Government entity	View on Bitcoin
Securities and Exchange Commission	Considering options on Bitcoin as a security.
Commodities Future Trading Commission	Considering options on Bitcoin as a commodity, or a "marketable good produced to satisfy wants or needs."
Internal Revenue Service	Considering options on Bitcoin as a taxable currency.
Treasury	Companies deemed to exchange Bitcoin for traditional fiat currencies and vice versa as a business must register as money transfer businesses.
Congress	Considering the effect of Bitcoin on the Federal Reserve and weighing consumer protection options.

Source: Congressional Research Service, "Bitcoin: Q+A and Analysis of Legal Issues," 2013.

Bitcoin growth and trust issues

Successful traditional currencies typically have two success factors: They function as a medium of exchange and maintain their value over time.

To maintain value, a currency must be trusted by those using it. A medium of exchange means a currency has to be divisible, easily transferable and valued.

While Bitcoin is divisible and has an increasing number of way to spend it, including acceptance at online retailers such as Overstock.com, its value swung wildly in 2013.⁷ The value of one Bitcoin was relatively stable in 2011-12, averaging \$5.44 and \$8.29, respectively; 2013 was a rocket ship ride, reaching a high at one point of \$1,147; it ended the year at \$757 (all prices are in US dollars).⁸

Much like its fiat counterparts, Bitcoin's value fluctuates on the market forces of supply and demand. However, as the currency becomes more

mainstream and more Bitcoins are "mined," its value will be based on actual transactions, not market speculation. That said, the same market forces causing fluctuations in value are also what's driving the popularity, and trust, in the brand of Bitcoin.

Another advantage of Bitcoin over traditional currency is the aforementioned public ledger. Called the "block chain," it tracks every transaction in the Bitcoin network. Transactions are semi-anonymous and ultimately traceable.

Bitcoin has many hurdles before it becomes mainstream, including an infrastructure of consumer-friendly services, regulatory hurdles, licensing regimes, governmental classification of the asset (commodity, security, asset or currency), as well as taxation, measurement and valuation. Those are some of its key challenges ahead.



PwC survey results

- 42** % of all respondents understand the concept of Bitcoin.
- 4** % of all respondents are "very interested" in using Bitcoin.
- 49** % of all respondents are "not at all" or "not very interested" in using Bitcoin.
- 27** % of the previous group cite Bitcoin's lack of trust, security and regulation as why they are not interested.
- 22** % of respondents say "nothing" would increase their interest in Bitcoin.
- 49** % of total respondents would be more likely to trust Bitcoin if it were distributed by a well-known third party.

Key points

1.2 trillion

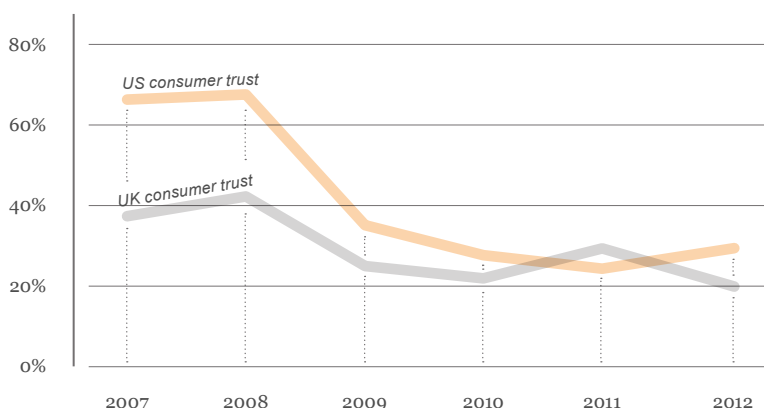
The number of U.S. dollars in circulation in July 2013.

11.3 million

The number of Bitcoins in circulation in July 2013.

Sources: Survey data based on a December 2013 PwC survey of 1,000 geographically-diverse respondents. Sample size was 55% female and 45% male. Other: BlockChain.info, 2013. Board of Governors of the Federal Reserve System, "Money Stock Measures (H.6)," 2013.

Consumer trust in banks



Source: Edelman Trust Barometer, 2012.

Bitcoin & EMC: Entertainment sector

Bitcoin for direct and global selling

In 2013, the prospect of paying for albums, music and movies with Bitcoin drove awareness and positive online sentiment for the digital currency in the entertainment sector.

Although no leading online music or movie platforms have announced Bitcoin acceptance, several alternative sites, such as CoinDL.com and Beatcoin.org, have been launched to allow Bitcoin-based purchases for downloads and streaming of music.

As a payment platform, Bitcoin presents an opportunity for filmmakers, musicians, artists, authors, and other content creators to more easily sell their work directly to fans worldwide, bypassing a maze of country-based currencies, payment networks, gateways and distribution platforms. Given its no-chargeback model, Bitcoin makes global direct selling more attractive as a hedge against credit card fraud.

Entertainment companies or studios could partner with

Bitcoin-accepting services such as Soundcloud or CoinDL, which are audio platforms that enable performers to upload and promote songs. Filmmakers and other content producers are petitioning Indiegogo and Kickstarter to use Bitcoin for crowdsourcing-based funding.⁹


Larger content companies and their partners may find value in experimenting with Bitcoin as a payment system for specific songs, albums or campaigns, especially with artists who have global, tech-savvy followings. It's also an opportunity to partner with or acquire entertainment startups that build momentum with Bitcoin.

As with any new innovation, especially a digital one, there are gray markets. Modern content creators are constantly concerned with piracy; while a Bitcoin transaction is semi-anonymous, its public ledger system allows sophisticated law enforcement agencies to track transactions to IP addresses.¹⁰



Bitcoin in social media

2 % of all 2013 online Bitcoin mentions involved entertainment.

91 % favorable mention sentiment. 

PwC survey results

17 % of all respondents are "very interested" or "interested" in using Bitcoin for internet transactions.

Key points

\$479 billion

2012 revenue generated by the United States' entertainment and media industry.

\$632 billion

Predicted 2017 revenue generated by the United States' entertainment and media industry.

Early innovators

Artist (and Spice Girl) Mel B made her single "For Once in My Life" available to purchase for 0.0012 Bitcoin as of Dec 2013.

BitTorrent, in its new business model as a legitimate content provider, is integrating Bitcoin into its system, encouraging content creators to share music with fans in exchange for Bitcoin. It may also integrate Bitcoin metadata into its code, potentially open-sourcing innovation among the two protocols. BitTorrent's protocols generate roughly 40% of the world's internet traffic each day.

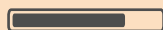
How digital wallets work with Bitcoin: Buying movie tickets



Customer has a smartphone with a digital wallet app installed, and goes to a movie theatre that supports Bitcoin transactions.



To buy a ticket, customer uses phone to scan a Bitcoin QR code on the point of sale machine that matches the price of the ticket.



The Bitcoin network sends money from the customer's online Bitcoin tally to the theatre's account. On average, this takes ten minutes or less.

Source: PwC Research, 2013.

Bitcoin & EMC: Media sector

Going beyond the paywall

In 2013, media companies began to experiment with Bitcoin. Paywall technology was a logical first choice. The ability to wall off certain content for those willing to pay for it is enhanced by the digital nature of Bitcoin and its divisibility.

PwC survey results

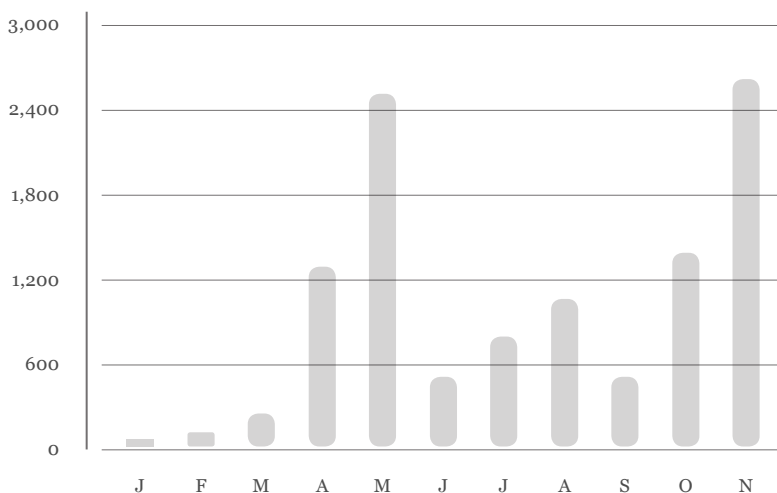
15 % of respondents who were "not interested" in Bitcoin said they would "need to know more about Bitcoin" before they would consider using it.

Micropayments has been a long-imagined and researched future for companies that wish to offer content a la carte, but transaction fees have hindered deployment for anything sold for less than \$1. In lieu of daily or monthly subscriptions,

Bitcoin could make it possible to charge the equivalent of pennies, or nickels, for a la carte content. Bitcoin reduces multiple currency exchange needs with global audiences and out-of-country fees often charged by credit card companies for purchasing goods and services beyond the consumer's home country.

Has Bitcoin usage spread sufficiently to make paywalls and micropayments viable for media companies? The *Chicago Sun-Times*, the ninth largest newspaper in the United States, will test that theory with its paywall in early 2014.¹¹ In the meantime, PwC survey results show that nearly half of the U.S. public is aware of Bitcoin, but have yet to understand its technical aspects, which hinders trust. (See column at right).

2013: Bitcoin mentions in U.S. mass media



Source: BBC News Magazine, "Bitcoin: Price v hype," 2013.



Bitcoin in social media

3 % of 2013 online Bitcoin mentions involved media companies.

95 % favorable conversation sentiment.

PwC survey results

44.5 % of consumers aged 18-34 are aware of Bitcoin.

Key points

42 % of people who correctly identified Bitcoin as a virtual currency during a 2013 Bloomberg survey.

6 % of people from Bloomberg survey who incorrectly identified Bitcoin as an Xbox video game.

94 % of people skip pre-roll advertisements when browsing the internet.

Early innovators

IAC, the parent company of OKCupid.com, accept Bitcoin for subscriptions and premium features.

TheDishDaily accept Bitcoin for various levels of access and subscriptions.

Reddit Gold customers can pay with Bitcoin to access extra features and gift "gold" to other users.

Sources: Online mention data via Sysomos MAP, 2013. PwC Survey, 2013. Bloomberg, "Most Americans Don't know Bitcoin While some Guess Xbox," 2013. eConsultancy, "Pre-roll video ads: is it any wonder why we hate them?," 2013.

Bitcoin & EMC: Video game sector

Bitcoin driving digital downloads

Our research finds that Bitcoin awareness and usage is healthy among men aged 25-40. Given those demographics, video game companies have good potential for benefiting from integrating Bitcoin into their product and payment strategies.

Some niche video gaming companies are experimenting in the space, such as Hundle Bundle, PC Game Supply and Ouya by using Bitcoin as payment for special game or console offerings (see column at right). Companies in this space have the advantage of measuring purchase and loyalty rates of users who pay with Bitcoin vs. traditional payment systems. Mobile gaming companies are well-suited to accept and integrate Bitcoin into their offerings, given their lack of brick-and-mortar sales.

Larger video game companies could incorporate in-game Bitcoin micropayments into their game engines. Specialized video games that use Bitcoin as a theme could be devised, given that Bitcoin awareness and understanding remain relatively low.

Bitcoin seems to make sense for existing online video game economies, where players theoretically cash out existing in-game currency for Bitcoin, or vice versa. While most virtual, in-game currencies can't be cashed out for real-world currency, Bitcoins can be traded for dollars.¹²

Video game companies could build their own, game-based exchange markets or partner with companies for exchange markets that create virtual tools, add-ons, avatars and themes.




Bitcoin in social media

9

% of 2013 online Bitcoin mentions involved video games.

83

% favorable conversation sentiment.  This sentiment level is noticeably lower than other industries in the report, which average at 93.5% favorability.

PwC survey results

82

% of consumers concerned with fluctuation in the Bitcoin market.

Key points

13

Average number of hours people in the U.S. play video games per week.

\$112 billion

Projected 2015 revenue for the global video game industry. It was \$74 billion in 2011.

Early innovators

Humble Bundle accepts Bitcoin for video game packages under a name-your-own pricing model. It splits the profits with developers and nonprofits.

PC Game Supply accepts Bitcoin for digital delivery and for game bundles under a name-your-own price model.

The State of New Jersey settled with an online video game company for \$1 million amid accusations of the company stealing Bitcoin from video game players using malware.

Case study: Zynga

Zynga is an online social gaming company that has faced increased competition, loss of players on social networks and challenges porting its games to mobile devices. Zynga's active daily users went from a high of 72 million in 2012 to 30 million in 2013. In January 2014, it announced Bitcoin global acceptance in their games FarmVille 2, CastleVille, ChefVille, CoasterVille, Hidden Chronicles, Hidden Shadows and CityVille.

Potential benefits:

Improved profitability due to lower transaction costs for in-game purchases of virtual goods, publicity and social media word-of-mouth exposure, closer alignment with core Bitcoin demographics.

Potential challenges:

Extending Bitcoin to mobile devices could prove challenging since Bitcoin wallet apps have been rejected from several leading app stores.

Source: TechCrunch, "Zynga Links Up With BitPay For A Bitcoin Payment Test," 2014. Zynga Game Network, 2013. Inside Network Survey, 2013.

Sources: Online mention data via Sysomos MAP, 2013. GameSpot, "Time spent gaming on the rise," 2010. Gartner, "Forecast: Video Game Ecosystem, Worldwide, 4Q13," 2013. ZDNet, "Video game firm settles Bitcoin mining dispute for \$1 million," 2013.

Bitcoin & EMC: Travel and tourism sector

Bitcoin as a loyalty driver

Since Bitcoin's global and decentralized digital infrastructure is not tied to country-specific currencies, travel and tourism companies could experiment with Bitcoin on multiple fronts.

Tourism and vacation companies could use Bitcoin to supplement traditional payment systems, making it easier for out-of-country tourists to make reservations. Airlines could accept the digital currency for domestic flight purchases in the United States (or low space orbit; see column at right). They could also integrate QR code-based Bitcoin accounts into mobile apps, experimenting with in-flight payments, hospitality lounges or selling frequent flyer miles or points.


Bitcoin could be offered as an enhancement to traditional loyalty programs such as miles or reward points. Leading-edge resorts could experiment with

Bitcoin as part of their payment systems, whether for in-room services, tours or in conjunction with mobile devices and special attractions. For companies wanting to attract technology-savvy consumers, being Bitcoin-friendly could enhance loyalty numbers. Few large companies in the sector have publicly revealed Bitcoin plans, so early innovators are likely to attract traditional and social media buzz.

The travel and tourism industry is poised to face an onslaught of wearable technology that helps users better understand location and context, or personal telemetric data associated with tourism. That means travelers will be more digitally-savvy, presenting opportunities for companies to use Bitcoin to offer real or virtual products, tools and services associated with travel experiences.

**Bitcoin in social media**

1 % of 2013 online Bitcoin mentions involved travel and tourism.

100 % favorable conversation sentiment. 

PwC survey results

49 % of consumers are "not interested" in using bitcoin for purchases online.

Key points

\$129 billion

Travel-generated tax revenue to all governments.

60 million

Number of new travelers entering the world travel market between 2000 and 2010.

\$1.4 trillion

Value of global tourism industry in 2013. Revenue grew an annualized 2.5% over past 5 years.

Early innovators

Virgin Galactic to accept Bitcoin for suborbital spaceflights in 2014. Virgin Airlines may accept the currency afterward.

CheapAir.com accepting Bitcoin for flights.

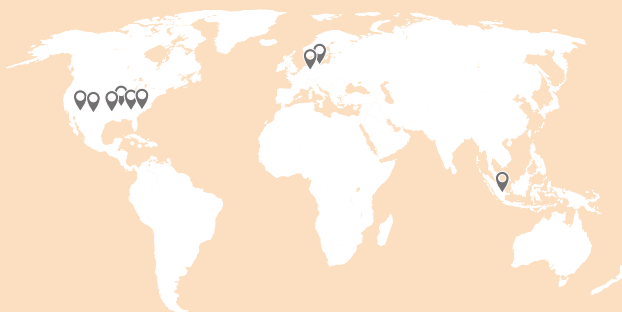
SimplyTravelOnline.com allows booking hotels, rental cars and flights with Bitcoin.

Sources: Online mention data via Sysomos MAP, 2013. U.S. Travel Association, 2013. IBISWorld, 2013. PwC Research, 2013. PwC, "PwC Hospitality Directions: Q3 2013," 2013.

Have Bitcoin, will attempt to travel

A Utah couple completed a 101-day trip across three continents using only Bitcoin. The couple described the experiment as "frustrating, but never impossible." They used Bitcoin to pay for rent, groceries, pizza, rental cars and booking flights with a German travel agency. The couple traveled to:

Provo, US
Chicago, US
Kansas City, US
Pittsburgh, US
New York, US
Berlin, DE
Stockholm, SE



Source: *The Wall Street Journal*, "Bitcoin Couple Travels the World Using Virtual Cash," 2013.

Bitcoin & EMC: Casino gaming sector

Blackjack, roulette and Bitcoin

Bitcoin as the ideal casino chip? Possibly. It provides a high level of user privacy, immediate access to funds and irreversibility — to the casino's and player's benefit.

Online casino startups are embracing Bitcoin, primarily for its ease of crossing national borders, absence of multiple currency conversions and lack of restrictions that banks or credit card companies may place on users for online games of chance. What's more, online Bitcoin casinos typically do not use third-party processors to handle transactions, therefore they are in a gray area regarding legal issues. For now.

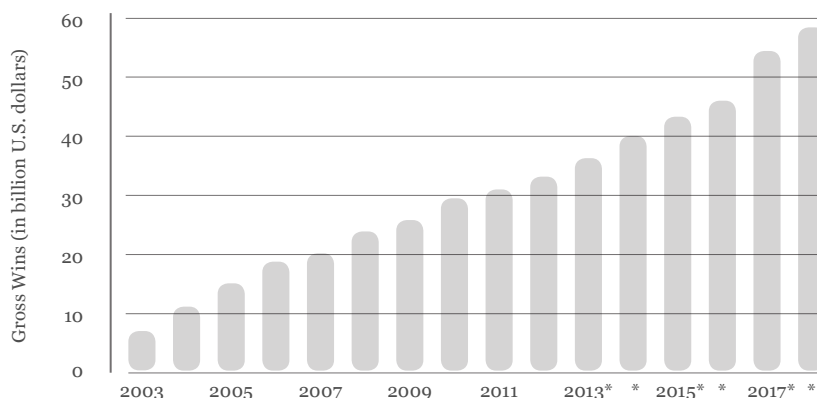
With a market estimated to be worth \$4-6 billion, online casinos have ready and willing customers.¹³ Bitcoin-related innovation thus far has focused on Bitcoin-only games and companies, such as SatoshiDice, named after the mysterious creator of Bitcoin, and bitZino, whose 2012 reported year-end

earnings were 10,137 BTC. In 2012, bitZino players made 3.2 million bets.¹⁴ A Bitcoin-only poker site, Seals With Clubs, allows players to remain completely anonymous. Cash-ins and cash-outs are completed with Bitcoin. Players need not share bank account information or even an email address. Given the acquisition activity and demand for online gaming, expect more Bitcoin-based startups.

Larger, established gaming companies could potentially consider Bitcoin and social gaming part of a unified strategy to attract younger demographics. With online gaming laws approved in Nevada and New Jersey, Bitcoin is likely to be included in ongoing education efforts casinos have with regulators.¹⁵

Bitcoin-based programs might also prove attractive for casinos' "whales," big-spending customers whose money may arrive from other countries.

Global interactive gambling gross wins



Source: H2 Gambling Capital (www.h2gc.com), 2014.

* 2013 value based on quarter-end reports and Q4 forecasts. 2014 - 2018 values projected.



Bitcoin in social media

12 % of 2013 online "Bitcoin" mentions involved casinos.

92 % favorable conversation sentiment.

Key points

\$45 billion

The market revenue for casino gaming in the province of Macau.

\$6.2 billion

Revenue generated in 2012 by casinos located on the Las Vegas strip, in U.S. dollars.

44+ online casinos currently accept Bitcoin.

Early innovators

BitZino, a Bitcoin-only gaming company, offers blackjack, roulette and video poker. During its first year of business, 3.2 million bets were placed, totaling more than 664,000+ BTC.

Seals with Clubs, a Bitcoin-only poker site, paid out 110,000 BTC over nearly 8,000 transactions since opening.

SatoshiDice, named after the creator of Bitcoin, was sold in 2013 for \$11.5 million USD.

Sources: Online mention data via Sysomos MAP, 2013. Statistic Brain, "Casino Market & Revenue Statistics," 2013. *Forbes*, "Bitcoin Casinos Release 2012 Earnings," 2013. PwC Research, 2014. American Gaming Association, "Backgrounder on Online Gambling," 2012.

Bitcoin & EMC: Telecom and Internet sector

Opportunity for early innovators

Telecoms in markets where bank accounts are sparse or underserved could have the most immediate impact with Bitcoin, primarily as a banking substitute. In Kenya, billing providers teamed up with telecom M-Pesa to develop a Bitcoin platform for money transfers.¹⁶ Called Kipochi, it's considered a lightweight version of a Bitcoin digital wallet.

In Belgium, telecom operator Mobile Vikings is accepting Bitcoin for credits on accounts or to purchase new SIM cards and giftcards.¹⁷ The payment choice was driven by subscriber requests. "We try to listen to our community as much as possible, so that's why we decided to implement it," said chief marketing officer Dorien Aerts in an interview with Coinbase.com.

China's government and several Chinese telecom companies had a significant impact on Bitcoin's valuation in 2013 (see box below), but some decisions have made China's acceptance of Bitcoin uncertain.

For telecom companies, incorporating Bitcoin into existing VOIP services (or new ones) may make sense for early experimentation. HushVoice, a U.S.-based VOIP service, promises global calls with bank-level encryption when it launches in 2014.¹⁸ Bitcoin will be its payment engine.

Systemwide, a peer-to-peer digital currency like Bitcoin will likely require updates to telecom payment infrastructure and mobile carrier technology, along with navigating multiple regulatory issues.



Bitcoin in social media

1 % of 2013 online Bitcoin mentions involved internet and telecom.

100 % favorable conversation sentiment.

PwC survey results

41 % of consumers ranked security as a top benefit to Bitcoin.

Key points

\$2.2 trillion

Predicted 2013 revenue for global telecommunications industry.

63%

The search engine marketshare held by China's Baidu in 2012.

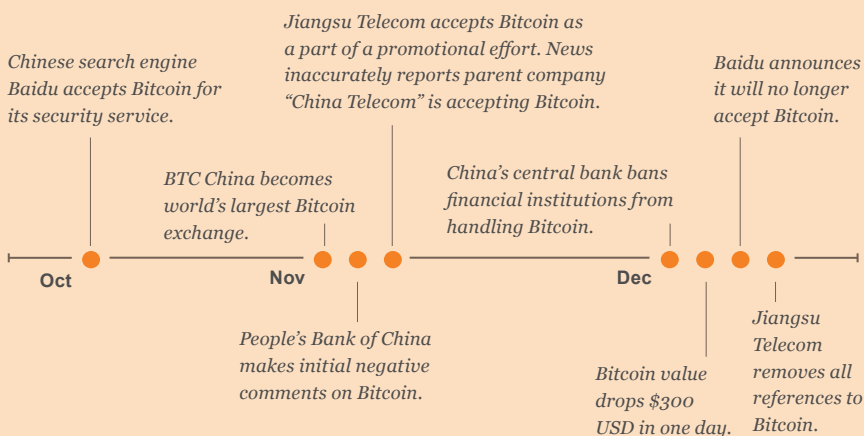
Early innovators

Coinapult is a company that allows customers to direct Bitcoin transfers to mobile phone numbers. It moved operations to Panama to focus on non-U.S. customers.

BahtCoin is a fixed-rate Bitcoin exchange based in Thailand. With BahtCoin, Bitcoins can be used to purchase mobile phone prepaid cards.

Bitcoin fluctuations via news in China

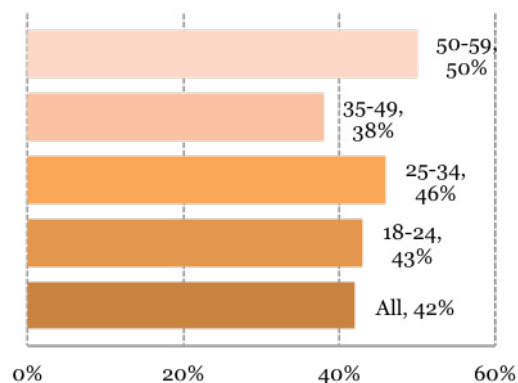
Bitcoin had wild fluctuations in its value in throughout 2013, driven by speculation on Chinese markets, the news media and the People's Bank of China declaring it illegal for banks to use. When that happened in November, Bitcoin fell \$300 USD soon after.



Source: *Bloomberg*, "China Bans Financial Companies From Bitcoin Transactions," 2013. CNBC, "Baidu division now accepting bitcoins," 2013. Mashable, "Bitcoin Prices Plunge...", 2013. PwC Research, 2014.

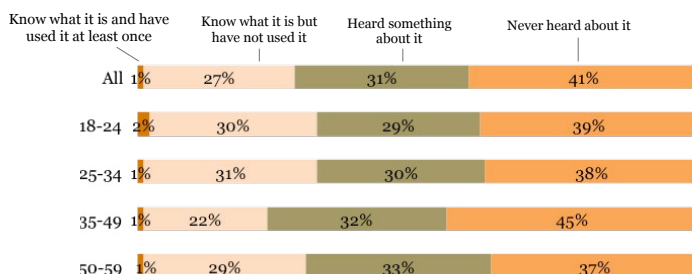
Appendix: Data from PwC survey on Bitcoin

Familiarity with Bitcoin (Breakdown by age group)



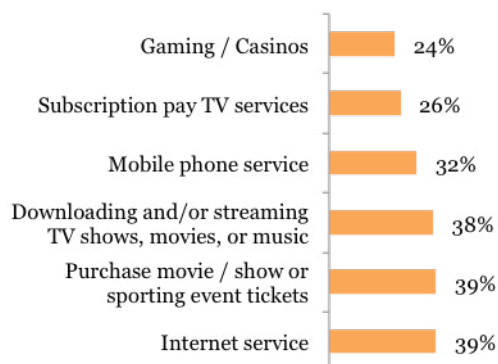
Base: Total Respondents (1000); 18-24 (195); 25-34 (310); 35-49 (388); 50-59 (107)

What best reflects your knowledge of Bitcoin? (Know what it is and have used it at least once)



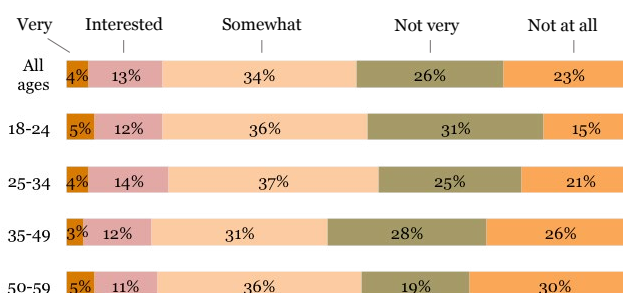
Base: Total Respondents (1000); 18-24 (195); 25-34 (310); 35-49 (388); 50-59 (107)

How interested are you in using Bitcoin for: (Somewhat - Very Interested)



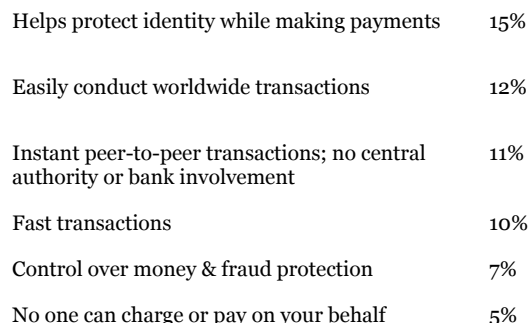
Base: Total Respondents (1000)

How interested are you in using Bitcoin for Internet purchases with your phone, tablet, or laptop?



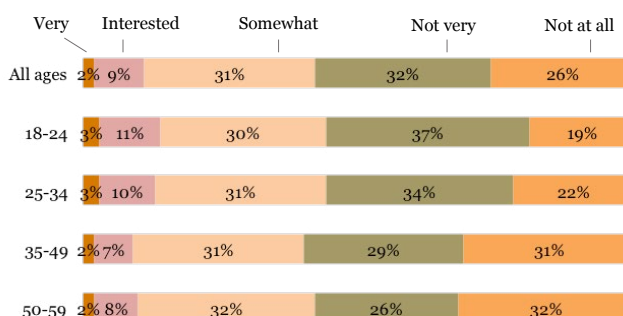
Base: Total Respondents (1000); 18-24 (195); 25-34 (310); 35-49 (388); 50-59 (107)

What do you see as the top five benefits of using Bitcoin for your purchase / sale transactions?



Base: Total Respondents (1000)

How willing are you to actually use Bitcoin to conduct Internet purchase / sales transactions?



Base: Total Respondents (1000); 18-24 (195); 25-34 (310); 35-49 (388); 50-59 (107)

Appendix: Data from PwC survey on Bitcoin

Why are you not very/not at all interested in using Bitcoin for Internet purchase/sale transactions?

	All	18-24	25-34	35-49	50-59
Prefer other methods of payment	17%	28%	14%	16%	10%
Need more information / don't know much about it	16%	15%	14%	18%	10%
No need for it / not useful	11%	12%	11%	10%	12%
Not secure / doesn't seem secure	8%	6%	9%	8%	12%
Shady / fraudulent / sounds illegal	8%	6%	9%	9%	6%
Value fluctuates / value is speculative	8%	11%	7%	6%	10%
No protections / regulations	7%	4%	10%	8%	4%
Untrustworthy / don't trust it	7%	2%	4%	10%	10%
Risky / can't be tracked	6%	2%	6%	7%	10%
No intrinsic value / nothing backing it	6%	6%	5%	6%	4%
Not safe / doesn't seem safe / unsafe	5%	7%	8%	3%	6%
New / unproven / not enough experience / not around a long time	5%	1%	6%	4%	10%

Base: Not Interested in Bitcoin Total (491); 18-24 (91); 25-34 (141); 35-49 (207); 50-59 (52)

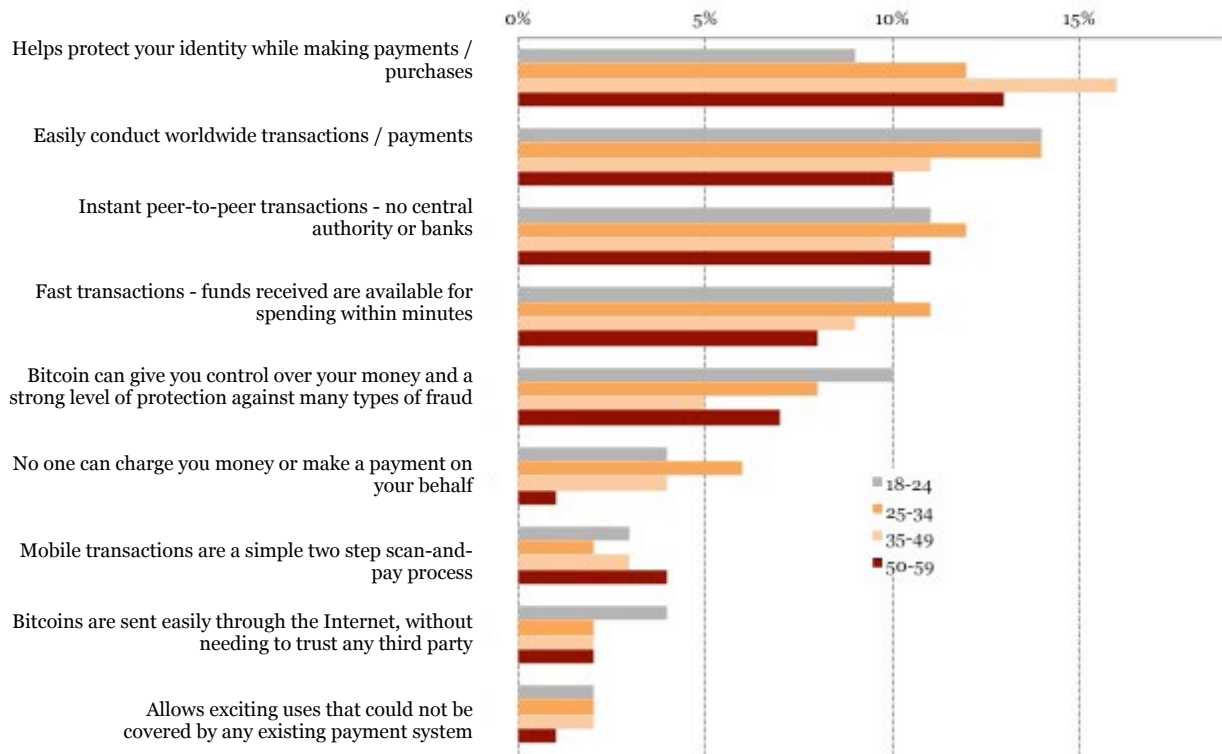
What other feature(s) would make you interested in using Bitcoin for purchase/ sale transactions?

	All	18-24	25-34	35-49	50-59
Better security / fraud protection / credits not stolen	14%	13%	13%	14%	13%
Want / need more information / how it works	8%	5%	7%	10%	11%
Provide examples of how to use	5%	3%	6%	4%	8%
Not interested in Bitcoin	4%	3%	5%	4%	6%
Widely used / accepted by banks / governments	4%	3%	5%	4%	5%
Constant / stable value	4%	4%	4%	4%	2%
Don't know	8%	8%	6%	9%	8%
Nothing	22%	21%	19%	24%	25%

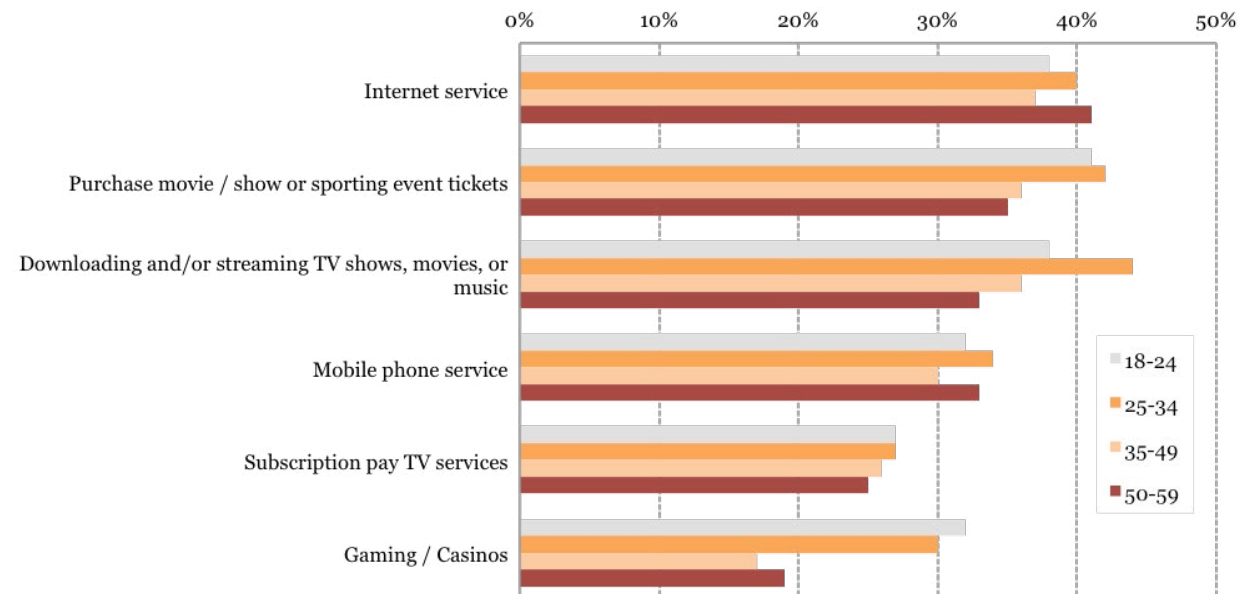
Base: Total Respondents (1000); 18-24 (195); 25-34 (310); 35-49 (388); 50-59 (107)

Appendix: Data from PwC survey on Bitcoin

What would be the top five benefits to using Bitcoin for your purchase / sale transactions?



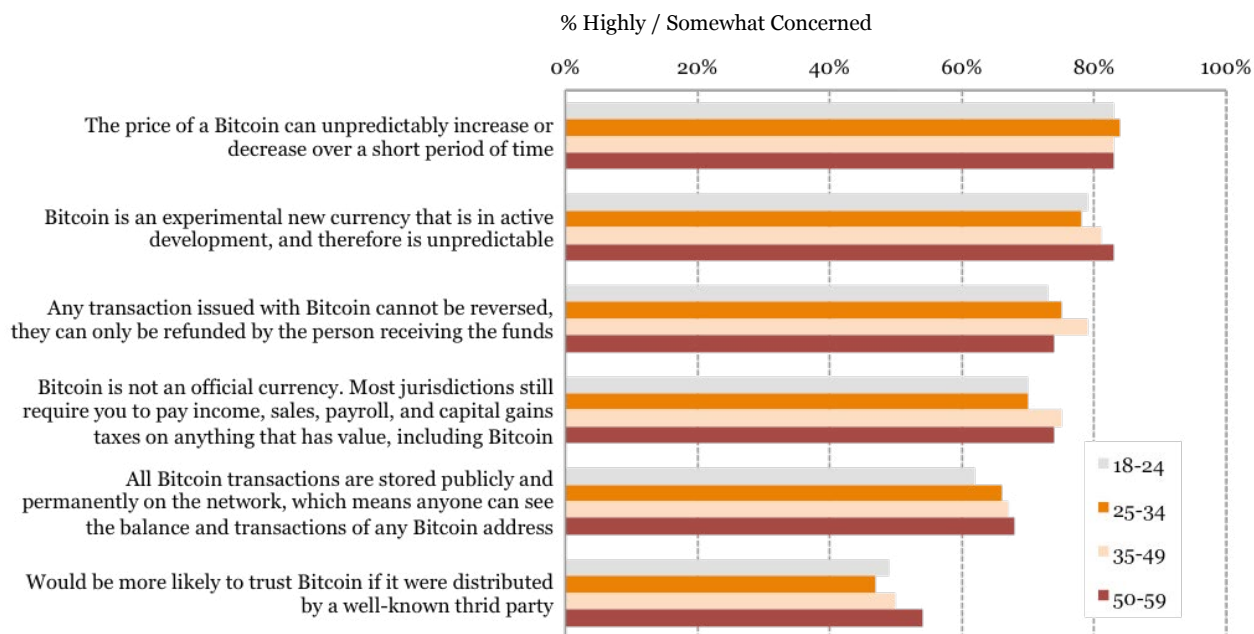
How interested are you in using Bitcoin for:



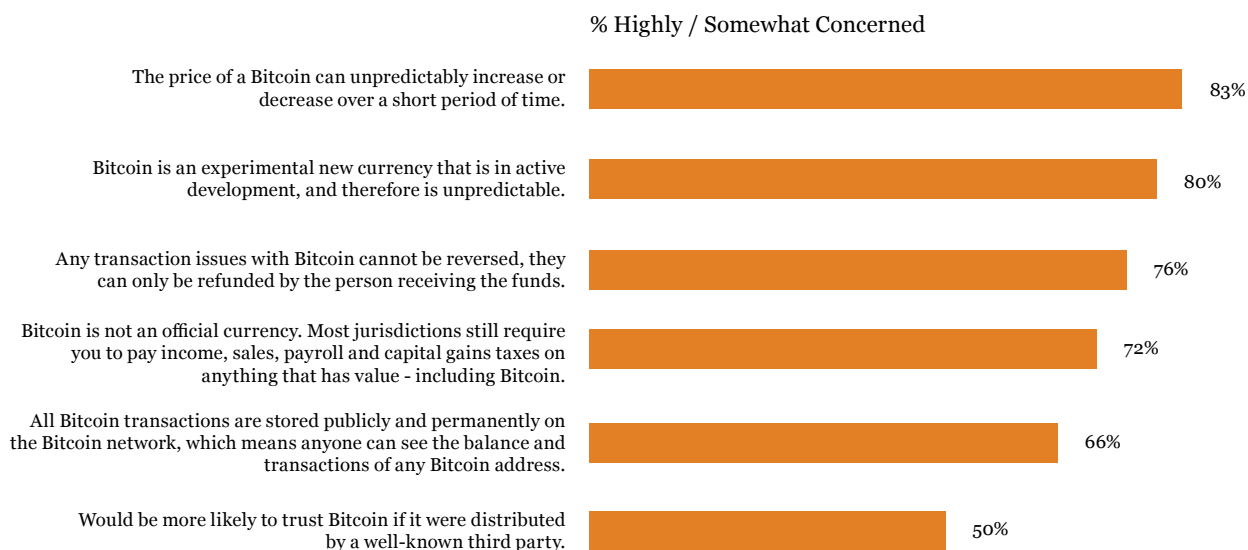
Base: Total Respondents (1000); 18-24 (195); 25-34 (310); 35-49 (388); 50-59 (107)

Appendix: Data from PwC survey on Bitcoin

What potential barriers do you see using Bitcoin to conduct purchase/sale transactions?



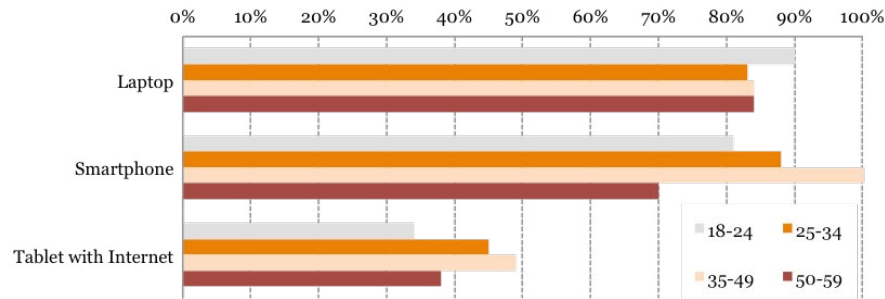
Indicate your level of concern to the following statements reflecting potential barriers / concerns to using Bitcoins to conduct purchase / sale transactions.



Base: Total Respondents (1000)

Appendix: Data from PwC survey on Bitcoin

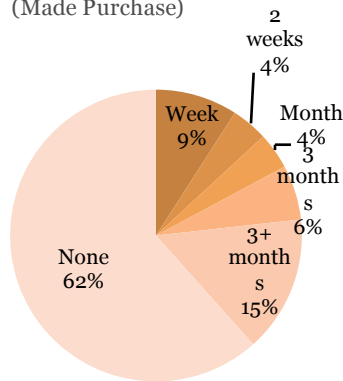
What devices do you own and use regularly? (Breakdown by age)



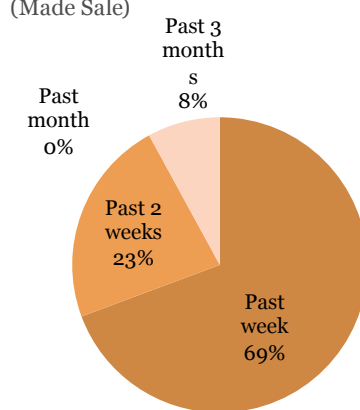
Base: Total Respondents (1000)

When did you last make a purchase or sale online using your laptop or your mobile device? (Overall breakdown)

(Made Purchase)

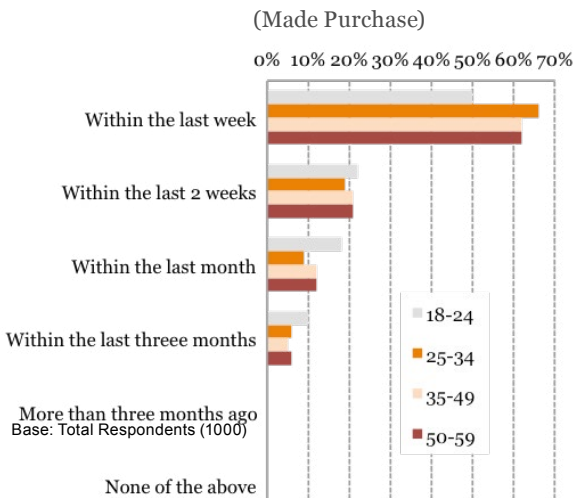


(Made Sale)

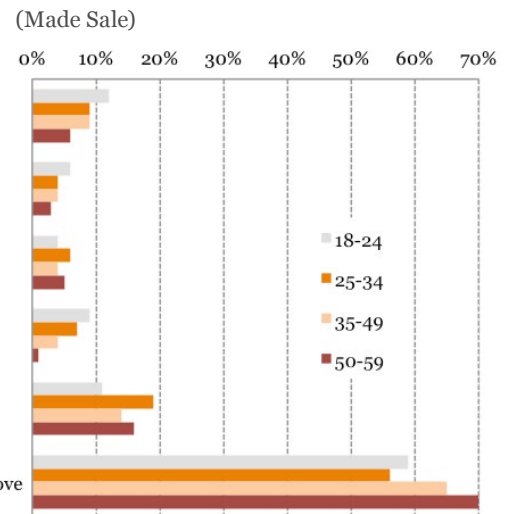


Base: Total Respondents (1000)

When did you last make a purchase or sale online using your laptop or your mobile device? (Breakdown by age)

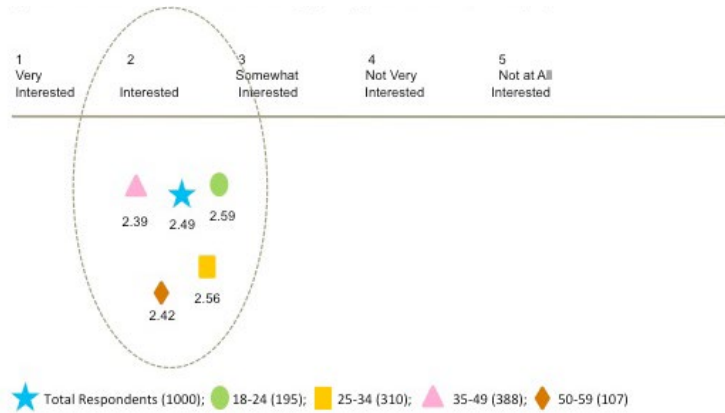


Base: Total Respondents (1000)

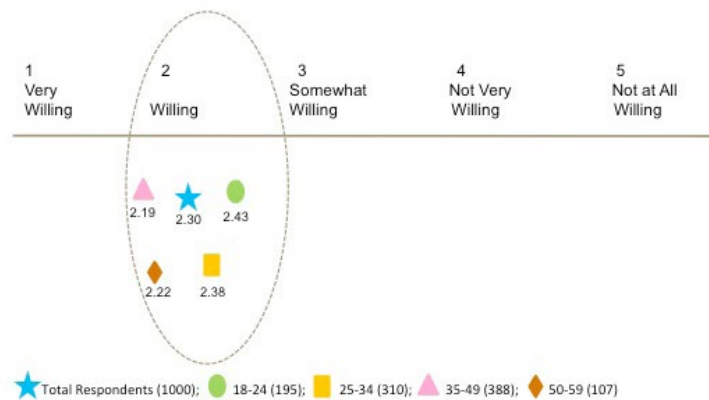


Appendix: Data from PwC survey on Bitcoin

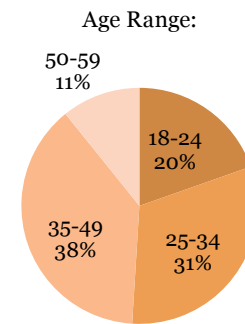
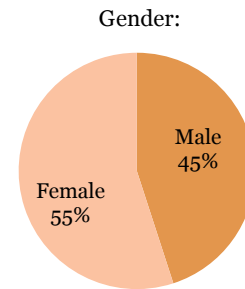
Use the scale to indicate how interested you are in using Bitcoins for your Internet purchase transactions made using your phone, tablet, or laptop.



Based on the description, benefits and concerns addressed, how willing would you be to actually use Bitcoins to conduct Internet purchase / sales transactions?



Survey demographic breakdown:



1,000 Respondents
Geographically Diverse/U.S.

Appendix: Sources

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About PwC

PwC's Entertainment, Media and Communications practice

PwC's practice works with businesses to address the challenges and opportunities presented by digital transformation, assisting them shift from traditional business models to businesses, brands and revenue streams that leverage digital content and platforms. We work with clients across a wide range of key industry sectors including: television, film, music, Internet, video games, advertising, publishing, radio, out of home advertising, sports, business information, casino gaming, and more.

PwC's Digital / Social practice

PwC's practice helps organizations capitalize on the social, mobile and other digital technologies that are transforming the way business gets done, from customer value to revenue growth. With a strong, customer-centric focus, PwC's social and digital practice employs a range of solutions, from operating models, to technology models, to technology solutions, to customer data to global social and digital strategies.

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Social Listening Data

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