

# **Banking & Finance: How technology changes the future of the financial services industry.**

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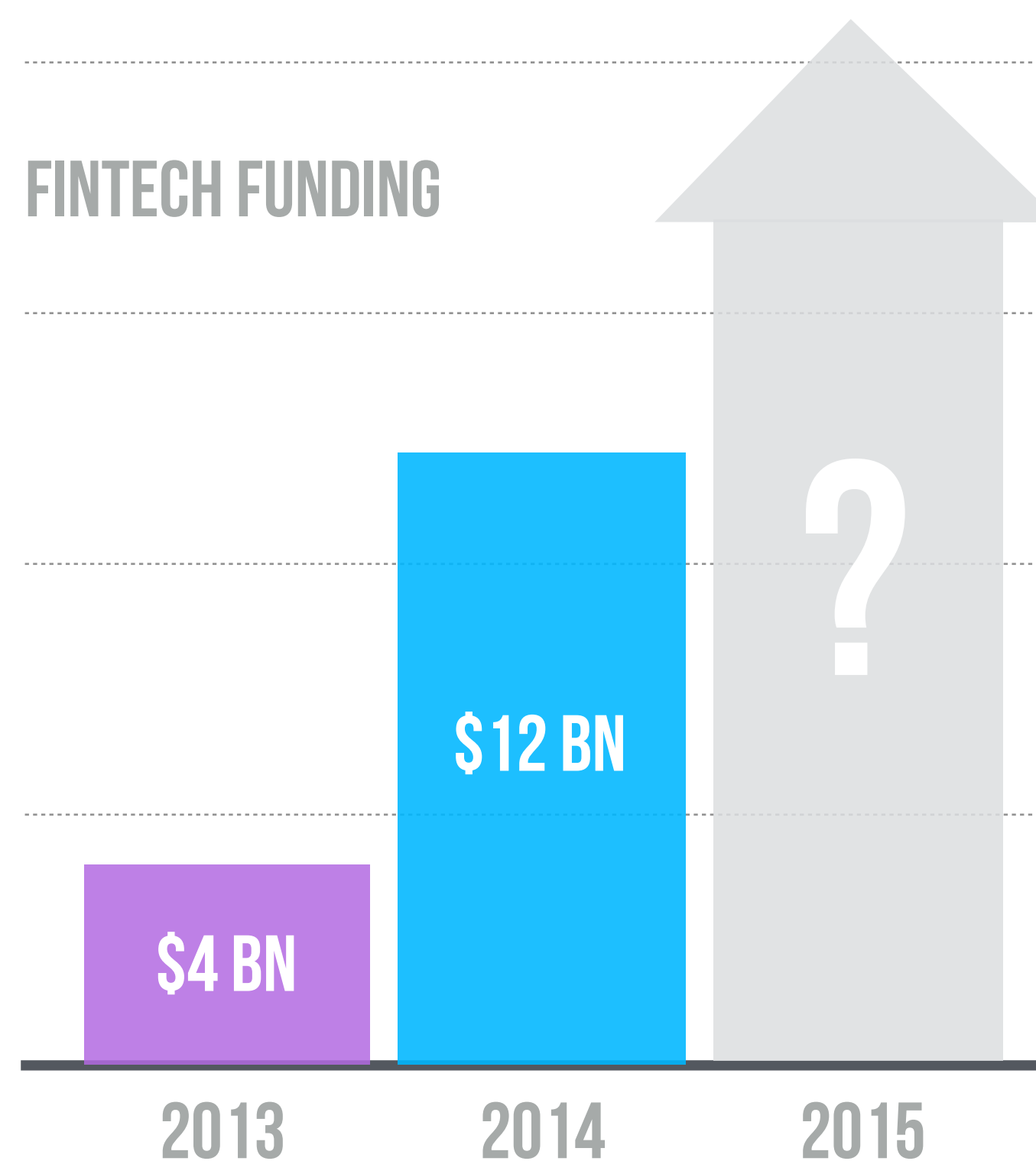
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# Global investment in FinTech ventures tripled to \$12.21 billion in 2014.

The financial services industry is facing a wave of digital disruption that is reshaping the entire industry.

Right now, FinTech companies are the fastest growing area of venture capital financing. VCs have tripled the global FinTech funding, which has grown from just over \$4 billion in 2013 to over \$12 billion in 2014.

Compare that to 63% growth in overall venture-capital investments and you get the idea how hot the industry is.



VCs, innovative companies and entrepreneurs realise that present day finance is an archaic industry that has a lot of problems.

More importantly, the current state of the technology allows development of solutions to many of these problems..

Considering the fact that the entire sector receives more of the average profits than any other sector of the economy, the market is clearly attractive and ripe for disruption.

**Future of Banking: Banking sector has not yet felt the ‘full disruptive force’ of technology – but it will.**

Barclays CEO: "Banking sector has not yet felt the 'full disruptive force' of technology – but it will."

## Industry Ripe for Disruption

According to a survey done by Millennial Disruption Index, 71% of millennials in the US would rather go to the dentist than visit a bank. 53% don't think their bank offers anything different than other bank.

This demographic are also the heaviest tablet and mobile users. And that's currently the technology that's going to disrupt banking.

For example, in the UK alone, almost £1 billion of mobile and internet transactions are being processed every day, according to British Banker's Association. This year, more than 15,000 people a day have downloaded banking applications in the UK. And UK is just a sample of what's happening around the world.

In the US, 1 in 3 millennials are open to switching banks in the next 90 days. 73% would be more excited about a new offering in financial services from technology firms like Google, Apple, Amazon or Square than from their own nationwide bank

All these data are not very surprising. There are many problems in the banking industry starting from hidden fees to an awful customer service.

## Banks Are Not Ready

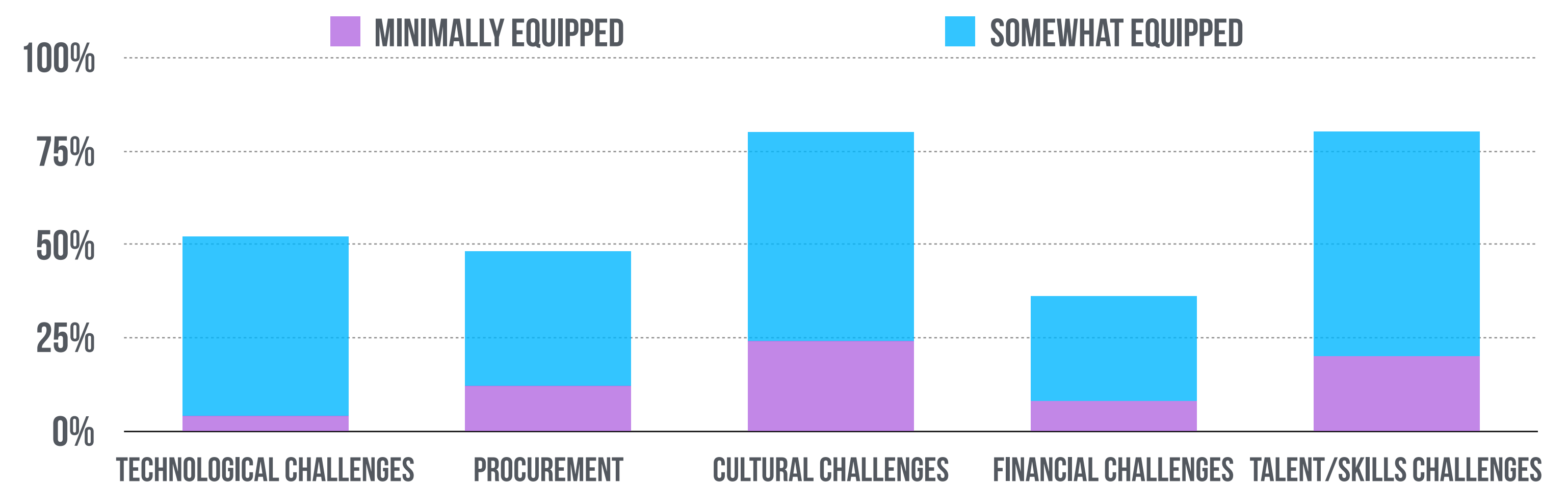
The top concern in the financial services industry is that established players are not doing enough to keep up to speed with the surge in new-innovation investment.

Accenture's survey of the senior industry executives reveals that 72% feel their bank has only a fragmented or opportunistic strategy to dealing within digital innovation.

The part of the reason is the legacy technology and the difficulty of deploying new tech faster.

Less than a 25% of the \$180bn that banks spent on IT last year was for new investment, according to Celent. The rest was for maintaining the existing systems. Asian banks devoted the highest proportion of all IT spending to new investments at 30%, followed by US banks at 24% and European banks at 13%.

Skills and culture are also big challenge. 80% of the respondents in the Accenture survey felt that they're only "somewhat" or "minimally" equipped for the digital age in terms of culture and talent.



Accenture: How equipped do banks feel to address the challenges associated with the next wave of digital innovations?

# Key Challenges Facing Banking Technology

## Business Model

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To start a bank, you need a banking license. Those are expensive and hard to get. Unless you have extremely deep pockets, you may need a banking partner.

Startup banks like Simple and Number26 are not really banks. There's an FDIC-insured bank behind Simple and so is the case with Number26. What they do however, is offering a simple service and great user experience.

## Regulations

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Obviously, banking and finance are among the most regulated industries. Because of the 2008 crisis, the requirements for offering banking services got even more demanding.

You'll need to keep high capital reserves, hire a compliance team and get various licenses and approvals depending on where you register your business. Apps like Simple bypass this obstacle by working with a banking partner such as Wells Fargo or HSBC.

## Trust & Security

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When it comes to money, everyone is extremely cautious. Giving a trust to an unknown brand can be difficult for many new customers. Naturally, for most new entrants the tactic to overcome this is to focus on more adventurous early adopters.

However, scaling to mainstream requires excellent security. A relatively minor security breach can damage your reputation and even ruin your business.

## Cost of Legacy IT

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Legacy IT maintenance is typically as much as 70% of the IT budget at financial services firms.

That means you'll need to get it right straight from the start as scaling a bank is a technologically demanding task and having a bad code may cause you a lot of trouble in the future.

## Customer Acquisition

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High customer acquisition cost (CAC) is the number one killer of most newly founded companies. Using standard methods such as AdWords can cost as much as \$400 per acquired customer. Financial services have some of the highest CACs among all industries.

Depending on how fast your app can make that money back you may or may not be limited in growing fast.

## Customer Service

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Most customers today are used to a very personal approach when it comes to financial services. Especially when something goes wrong, such as credit card theft, the chances are they won't be interested in browsing customer support forums.

FinTech companies and banking apps have no other choice than to deliver an excellent customer service that is personal and scalable at the same time.

**Future of Insurance: The insurance industry is begging for disruption!**

# The Insurance Industry is Begging for Disruption!

## Trillion Dollar Opportunity

Global insurance premium volume increased by 3.7% to \$4.8 trillion in 2014 compared with 2013, according to a Swiss Re Ltd. That makes insurance one of the world's largest markets.

But somehow, it has remained largely untouched by technological change. In 2015, the vast majority of consumers are still picking up the phone to call their local agent when they want a new policy.

Thanks to its backwardness, insurance is the next opportunity for a revolution in financial services.

Just look at the cost structure of a typical property & casualty (P&C) insurance company. For every premium dollar they get, only \$0.65 comes back to policyholders as claims. The other \$0.35 is spent on agent commissions, Super Bowl commercials, and hundreds of thousands of paper-pushers in their back offices.

And the 4% net profit? That's before investment income, which can push net profit margins to 10-15%.

Simply put the future of insurance technology is bright. Yes, there are challenges, but every problem worth solving comes with challenges, and the insurance industry is crying out for change.

## Antiquated Industry Ripe for Disruption

Insurance represents a huge opportunity for disruptive innovation. It's an antiquated industry known for its poor customer satisfaction and limited technological innovation.

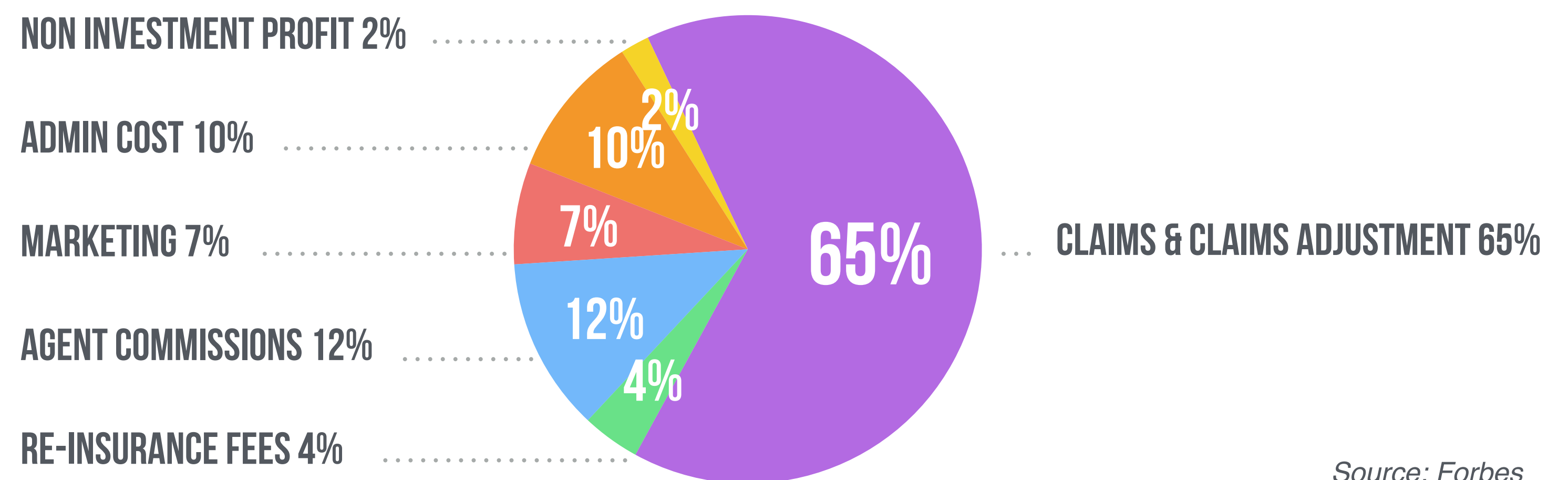
U.S. insurance companies have the highest revenue in the world (\$1.3 trillion). Yet, some of the major players have the lowest Net Promoter Score ratings among all industries. The companies simply don't inspire satisfaction or loyalty in their customers.

People don't like or trust insurance companies. They're notoriously rife with moral hazard and fraud. It's no surprise that majority of Americans are uninsured and 67% of homes are underinsured.

Just consider how insurance products are delivered to consumers today when almost anything can be purchased in a matter of few taps.

According to a recent Accenture study, 67% of consumers are interested in receiving insurance offers via mobile devices and prefer digital interactions in most situations, including receiving advice or updating personal data.

Moreover, almost 50% find it frustrating when an insurer is not using the information it already has about them across all channels. And 80% of consumers are prepared to switch for a more personalised service.



Source: Forbes



# Key Challenges Facing Insurance Technology

## Slow Changing Industry

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Outside of the Affordable Care Act, next to nothing has changed in the insurance industry for years. Besides the existing outdated regulation, for some lines of insurance, pricing is regulated at the state level, with regulators controlling how much a company charges for a given product.

For all these reasons, it is a difficult and slow process to bring a new insurance product to market in the U.S.

## High Barriers to Entry

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High barriers to entry are the main reason why the insurance industry has it been so slow to change. It is complex and expensive from a regulatory standpoint.

New carriers are required to have unencumbered stores of cash to satisfy the regulators, and have to grow those unencumbered assets in proportion to the amount of risk they have underwritten, which is ever-increasing.

## Lobbyists

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The insurance industry is highly fragmented with many huge and influential players who are at a risk of losing business. For example, Zenefits charges a 5% commission of the overall premium, and that lets small-business owners bypass traditional insurance brokers, who charge hefty commissions every month.

Not too long ago Utah's Insurance Commissioner declared Zenefits illegal under the pressure of local insurance lobbyist who were clearly about to lose business.

## Trust

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People do not like or trust insurance companies. The industry is notoriously rife with moral hazard and fraud. At the same time, the major players have some of the lowest Net Promoter Score (NPS) ratings of any industry, meaning the companies do not inspire satisfaction or loyalty in their customers.

For a new market entrant this can mean both, a big challenge and a big market opportunity.

## Customer Acquisition Risks

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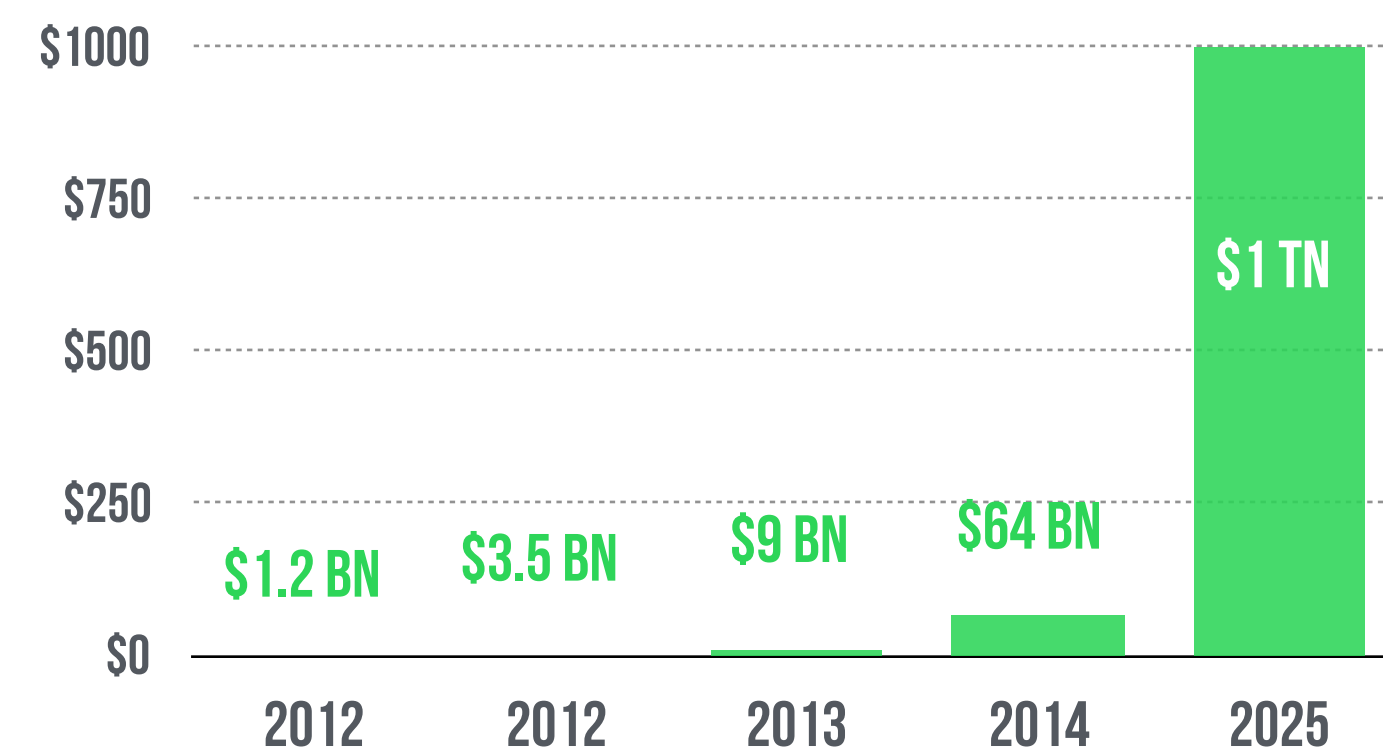
There's also the adverse selection problem — the first people who need a new product are usually the highest risk, and that increases the risk of getting much higher claims than the industry average once you launch.

For a new service without brand recognition, this can be a huge challenge to tackle.

**Future of Lending: P2P lending is a “full-fledged mega trend and a brand-new legitimate asset class.**

CEO Prosper: P2P lending is a “full-fledged mega trend and a brand-new legitimate asset class.

### Phenomenal Growth



Growth of P2P market, according to Statista

The total size of the global debt is an unbelievable \$230 trillion. Most of this debt is originated by banks, whether is central, commercial or retail banks. The non-banking sector represents a measly \$15 trillion.

Some of the major problems in the consumer loans market are lack of access, complex system, lack of transparency, and slow application process.

Not surprisingly, following the 2008 crisis, P2P companies took advantage of the limited access to banking capital.

### Trillion Dollar Debt Markets

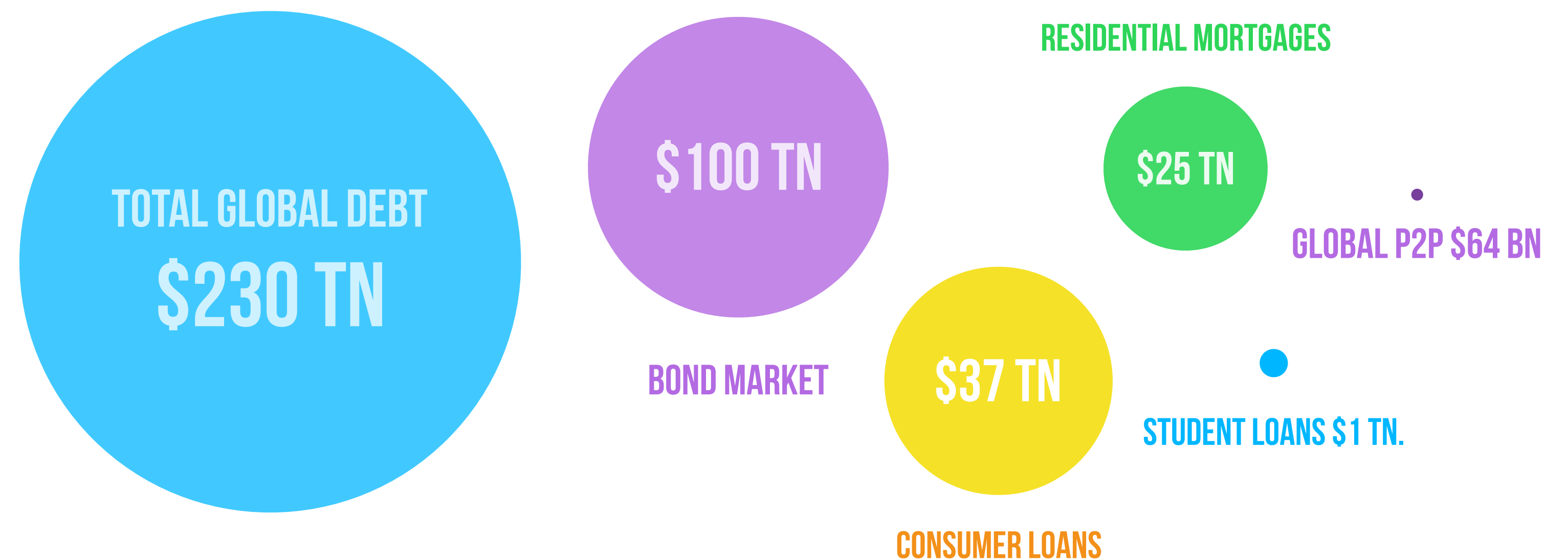
Most of the FinTech apps in the loans market are doing a simple job. They connect buyers and sellers through peer-to-peer lending marketplaces.

Governments are supporting P2P companies because they failed to make banks lend money to finance mortgage or business projects.

One of the best competitive advantages of P2P marketplaces is that they do not have the same balance sheet risk than traditional lenders.

However, P2P is only one aspect of the global debt market. There are issues in credit rating, small business loans, student debt, mortgage market and even \$100 trillion bond market.

This opens opportunity for various kinds of market entrants and technologies such as big data, marketplaces or investment apps. Companies like Affirm, KreditTech or ZestFinance are attacking credit rating while others such as Market Invoice managed to bring P2P model to invoice finance.



# Key Challenges Facing P2P Lending

## Banks

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One of the main reasons why P2P lending marketplaces have become so popular was 2008 financial crisis that squeezed the money out of most banks. As a result, it was more difficult for consumers to get a loan, as banks were not lending.

If an appetite of banks for lending returns, some of the emerging providers of P2P finance may find it harder to compete.

## Chicken & Egg Problem

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Chicken and egg problem is a classic marketplace problem. To find lenders, you need borrowers and to get borrowers, you need lenders. If you attract one group without the other, they'll leave. And vice-versa.

Finding a big lending partner to start with might be the solution. It's worth studying how some of the big marketplaces solved this problem so that you can learn from them.

## Loan Performance

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The P2P lending sector has developed quickly over the past few years when many of the traditional investment vehicles have struggled to deliver anything other than minimal yields. This increased the appeal of P2P investments and contributed to the growth of the market.

But the economy is volatile, and so a returns. Higher yields on savings could leave P2P options facing a tougher fight for investor attention.

## Credit Quality

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Amid all the enthusiasm, the performance of lending platforms has not exactly been stellar. According to the review of LendingClub loans since January 2012 by Orchard, there are large fluctuations in recoveries.

The percentage of accounts paying some amount of recovery ranged from a high of 79.5% of charge-offs in October 2012 to a low 11.6% in June 2013.

## Customer Acquisition

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Finding credible and willing lenders is definitely a tough challenge. Especially for a new market entrant with no history. Having a credible VC or a business partner on board might be critical for being able to convince lenders to risk their money with you. Obviously, with lenders, you'll need to attract borrowers who will not default.

Another question is, will you make enough profit to cover the customer acquisition costs?

## Competition

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Like it is in most industries, providers of P2P lending services have to compete with other forms of financing that are available to small businesses in US and around the world.

**Future of Personal Finance:  
Financial Planning and Budgeting  
Apps are Poised for Growth.**

# Financial Planning and Budgeting Apps

## Strong Customer Need

For the past few decades, Americans have spent billions of dollars on personal finance coaches and gurus. The net result is that they're making almost everyone poorer.

A lot of these services are overpriced, selling a 'get rich quick' fantasy. Many advisors just sell a product that make improve their finances, not the client's.

However, keeping track of personal expenses helps many people to stick a budget. Finance apps thus became very successful category.

For example, the total revenue among 60 personal finance software vendors has reached over \$1 billion dollars according to research firm IBIS.

And there have been many successes too. Mint, one of the pioneers of personal finance software was acquired for \$170 million by Intuit. French company LearnVest scored a \$250 million acquisition, few years after it's founding.

Clearly, this category is very attractive as it solves a real problem. One of them is the fact that about 20% of Americans spend more money than they are capable of making, according to a study by the FINRA Investor Education Foundation.

## Plenty of Problems to Solve

Keeping track of finance is something most people need to do. Few banks offer visualisations of your current account but most will merely send you a text reminder when your funds drop below a specified level.

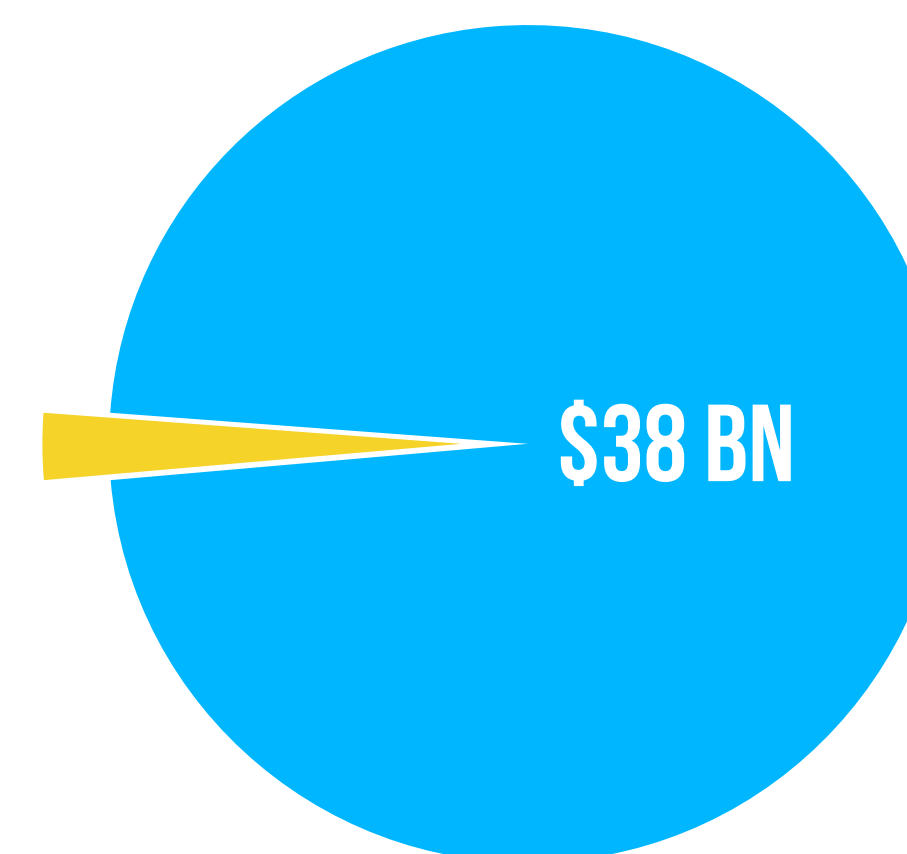
But when you hold accounts at different banks and have multiple credit cards, store cards and all the rest, the usefulness of these services pales. That's a huge opportunity for personal finance apps. There are different kinds of apps starting such as manual entry, receipt scanning and apps that are linked to the user's account.

The biggers category so far are aggregation apps. They make everything automated using services such as Intuit and Yodlee, but also CashEdge, Finicity, ByAllAccounts and others.

Yodlee is the leader as covers finance accounts not only in the US, but also in the UK, France, Spain, South Africa, Australia, New Zealand and India. Intuit, on the other hand, is a little cheaper.

Nevertheless, the opportunities are unlimited. Clearly there is no killer app yet and there are many angles to take in solving the personal finance problem. Likewise, there are many problems to solve.

**PERSONAL FINANCE & MONEY  
MANAGEMENT SOFTWARE  
REVENUES: \$1 BILLION**



**FINANCIAL PLANNING &  
ADVICE INDUSTRY REVENUES:  
\$38 BILLION**

**Financial Planning & Advice in the US vs. Personal Finance & Money Management Software. Source: IBIS**

# Key Challenges Facing Personal Finance Technology

## Market Timing & Strategy

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Personal finance category is a relatively saturated market. The revolution started years ago with Mint.com. However, the mobile revolution offers many opportunities to help individuals take control of their personal finances.

It's all about finding the right problem and the angle you take to attack it. The demand for personal finance management is always there, and it's huge. You'll just have stand out of the crowd or come up with a superior customer acquisition strategy.

Luckily, most of the hugely successful apps and products were not a new idea. For example, Google came after 14 other search engines and Facebook after Friendster and Myspace. The reason they succeeded was that they entered an existing market and killed the competition by building a product that's 10x better than anything else.

Likewise, the personal finance market is established and huge. As a result, there's plenty of competition. That means the only thing to focus on is building a product that stands out. Or as Peter Thiel points out, don't be the first mover, be the last mover.

## Monetization

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Since finance and accounting apps are mostly free, and the price for customer acquisition and account aggregation services is high, you'll have to find an efficient way to monetize.

Most personal finance apps sell data and/or generate leads for other financial services firms such as banks or credit card companies. In other words, they make money by selling insights into user spending habits and referring third party products.

But not all personal finance apps monetize user data. Xero, a cloud-based accounting software provider, promises to save small-business owners time and headaches by storing their bills, invoices, and account data in its cloud for a monthly fee.

A similar model can easily work with personal finance apps if they're able to provide a unique value proposition.

## Retention

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Retention is a huge problem for the most mobile app categories. Even games and social apps that are built around user engagement.

However, when it comes to personal finance management, most people don't exactly think "fun" when they hear the words. Or in other words, it's no secret that most mobile users are lazy, and it takes time to get them use an app that's actually useful.

Although most users realize the importance of tracking finance, getting them to use the app on a regular basis requires making the experience as easy and engaging as possible. You'll also have to find a way to make it more fun and remind users to come back on a regular basis.

Another important aspect to consider is the lifetime value of a customer (LTV). If your business model relies on collecting data, the longer they stay around, the more value you get.

And even if you have a paid business model like Xero, your customer acquisition costs (CAC) will be much higher. That means, again, you'll have to keep them long enough to generate enough revenue to cover the CAC.

**Future of Wealth Management:  
Automated Advisors Will Manage  
\$255 Billion Within 5 Years**



# Automated Advisors Will Manage \$255 Billion Within 5 Years

## Wealth Management

Investment management is experiencing a radical change. Customers are reluctant to use traditional investment firms to invest their money as the crisis of 2008 made them lose trust in the financial system.

Financial investment apps like Wealthfront and Betterment are currently managing over \$14 billion, 83% of that in the US, according to Swiss research firm MyPrivateBanking.

In the next five years, that number is expected to skyrocket to about \$255 billion worldwide.

While it sounds like a lot of money, it's worth noting that it's only a small fraction of the assets managed by traditional wealth-management firms who control around \$17 trillion according to Aite Group.

These automated advisers charge much less and provide a better service thanks to big data and other technologies an average adviser doesn't have.

Most importantly, they're fully automated allowing users to focus on their work and life with a peace of mind.

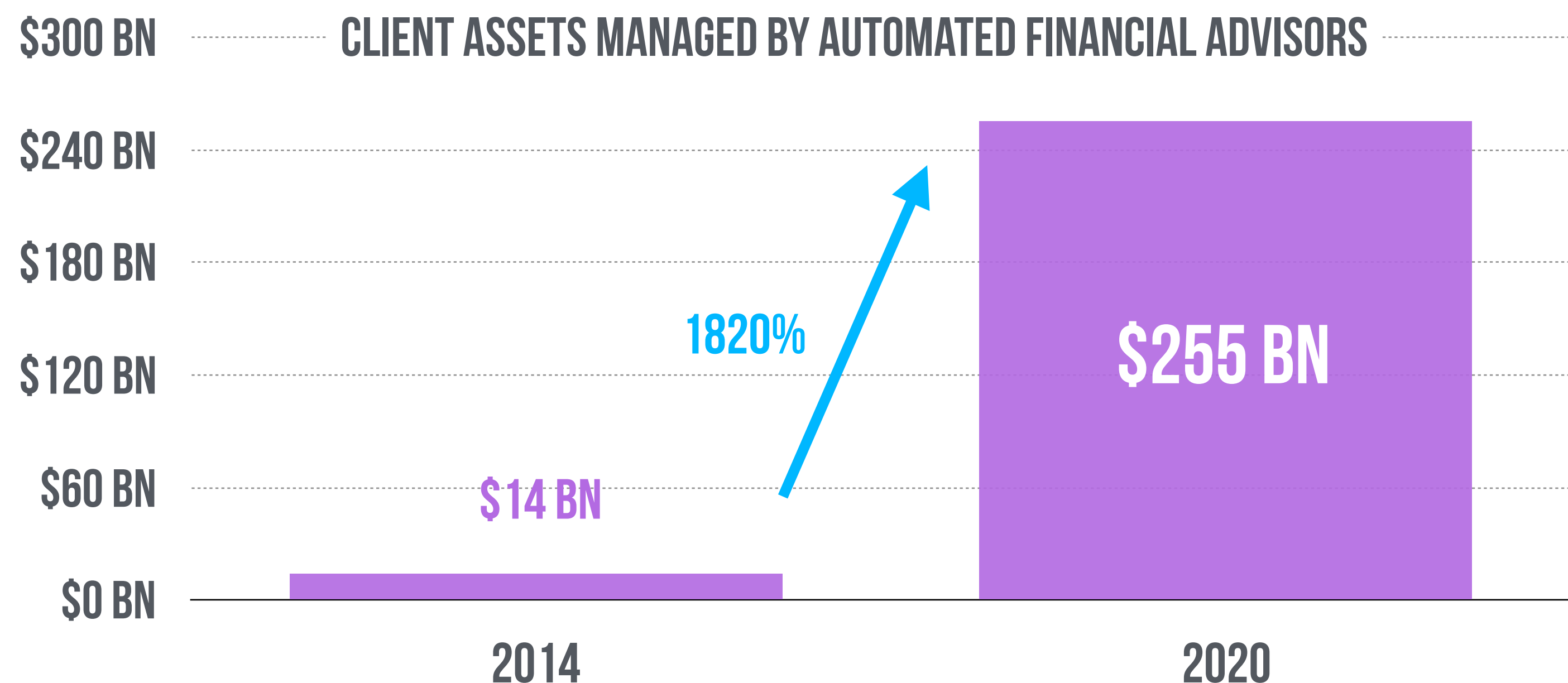
## Disrupting Wall Street

Likewise, data-driven apps are moving financial services from Wall Street to the hands of retail investors. Using artificial intelligence and scalable web platforms, they are leveraging operational efficiencies to drive new business models.

Changes to the regulatory environment following the financial crisis now make it possible for new entrants to offer financial services targeted to Millennials and the middle-class. Thus, FinTech services are poised to disrupt this massive multi-trillion dollar market.

A great example is the Robinhood app which offers zero commissions for US securities with a freemium model and it does not require any minimum deposit. This company raised millions from VC investors such as Google Ventures and Andreessen Horowitz as well as celebrity investors Snoop Dogg and Jared Leto.

Another example is Quantopian, which is democratizing the algorithmic trading by allowing traders to crowd-source algorithms, back-test and deploy them. Effectively it disrupts the trillion dollar hedge fund industry.



# Key Challenges Facing Wealth Management Technology

## Risk & Compliance

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To become an investment management firm, you'll have to comply with some of the toughest regulations. Regulatory bodies such as FINRA typically require prospective members to strictly follow a lengthy application process.

Depending on the amount of money you'll manage you're required to file either with the state or the SEC (or whatever your country's alternative is). You'll also have to determine the type of licenses and credentials required to start a company in your area of business.

## Capital Requirements

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Online brokers and asset management firms have high startup costs. In addition to typical business expenses, you'll need to meet a base capital requirement. Depending on the country your company is registered in, it can be a substantial amount.

To operate properly the firm should have an adequate level of funding to meet necessary overhead and regulatory expenses for at least 3 years or more.

## Customer Acquisition

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Customer acquisition is another issue. You'll likely have a harder time to build trust among new users. That's because financial services are the type of business people are most cautious about. And being a new, unknown brand doesn't help.

Also, because of the high capital requirements, you'll probably have to reach a critical mass of users faster.

## Customer Acquisition Cost

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Customer acquisition costs (CAC) in the financial industry are traditionally among the highest. And finding qualified investors with annual income of at least \$250,000 will run up even higher.

But the viability of your CAC goes hand in hand with the margin you make. If you provide a low margin but high frequency services you must find a way to retain customers for long enough to pay multiples of your CAC. In other words, your lifetime value of customer is high enough to justify CAC.

## Security

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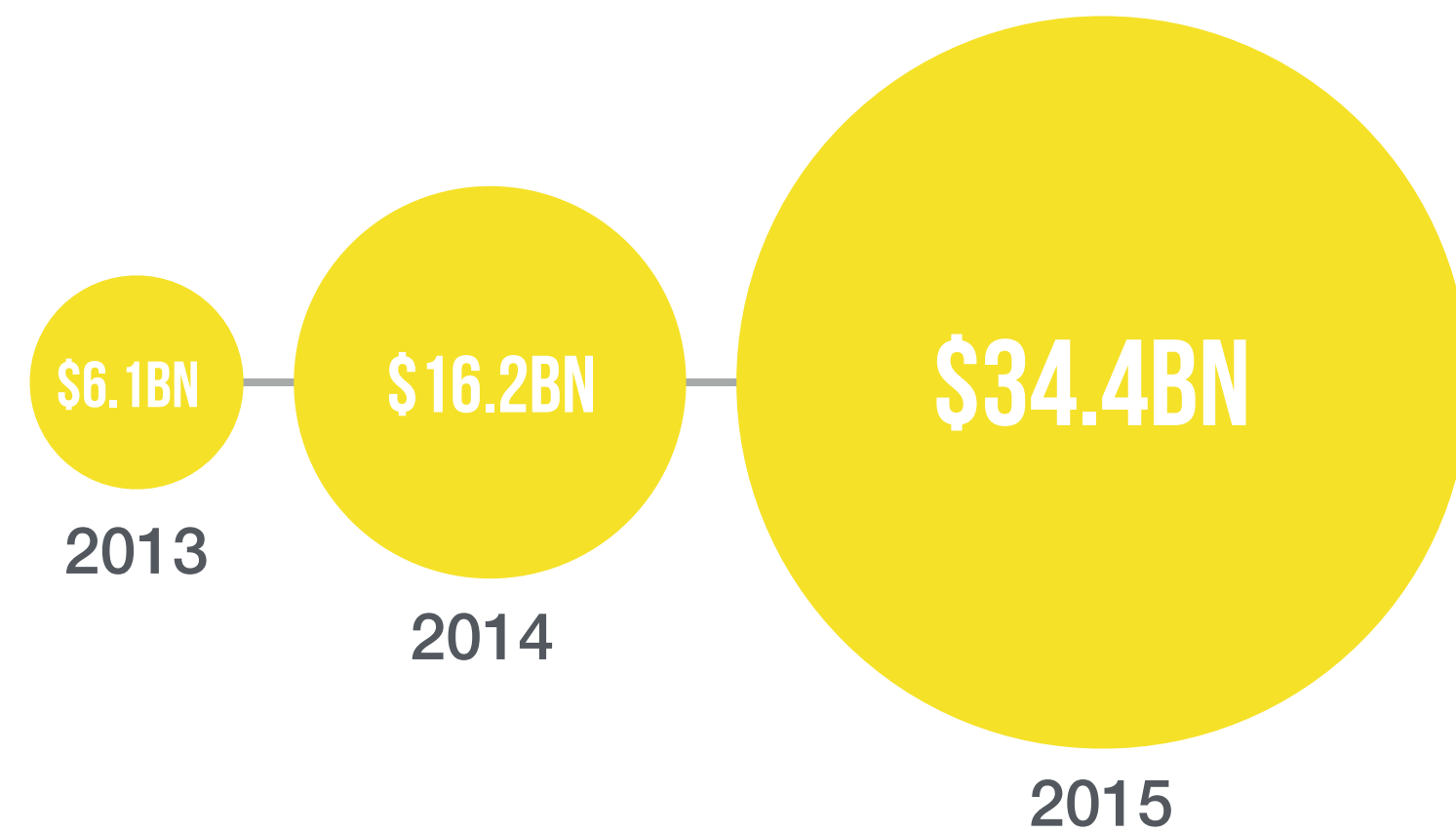
For any business that deals with money management, security must be the number one priority. Even a relatively small-scale breach could wreck the company's reputation and business model.

That means a FinTech company has to go an extra mile to hire people with extreme security experience, who really understand the catastrophic consequences of a breach and can build a state of the art technology to prevent it.

**Future of Equity Financing: In 2015,**  
the industry is set to more than  
double once again.

In 2015, the industry is set to more than double once again.

### Incredible Growth



According to Massolution's 2015CF Crowdfunding Industry Report, global crowdfunding experienced huge growth in 2014, expanding by 167% to reach \$16.2 billion raised, up from \$6.1 billion in 2013. In 2015, the industry is set to more than double once again, on its way to raising \$34.4 billion.

The potential is limitless. Startups no longer need significant startup financing, they can pre-sell their product at no risk. Charities and causes can raise money easily and. Musicians, moviemakers, and artists no longer need to sign a deal with production companies.

Then there's startup investing, real estate pooling and the list goes on.

### Crowdfunding will surpass VC as a funding source in 2016

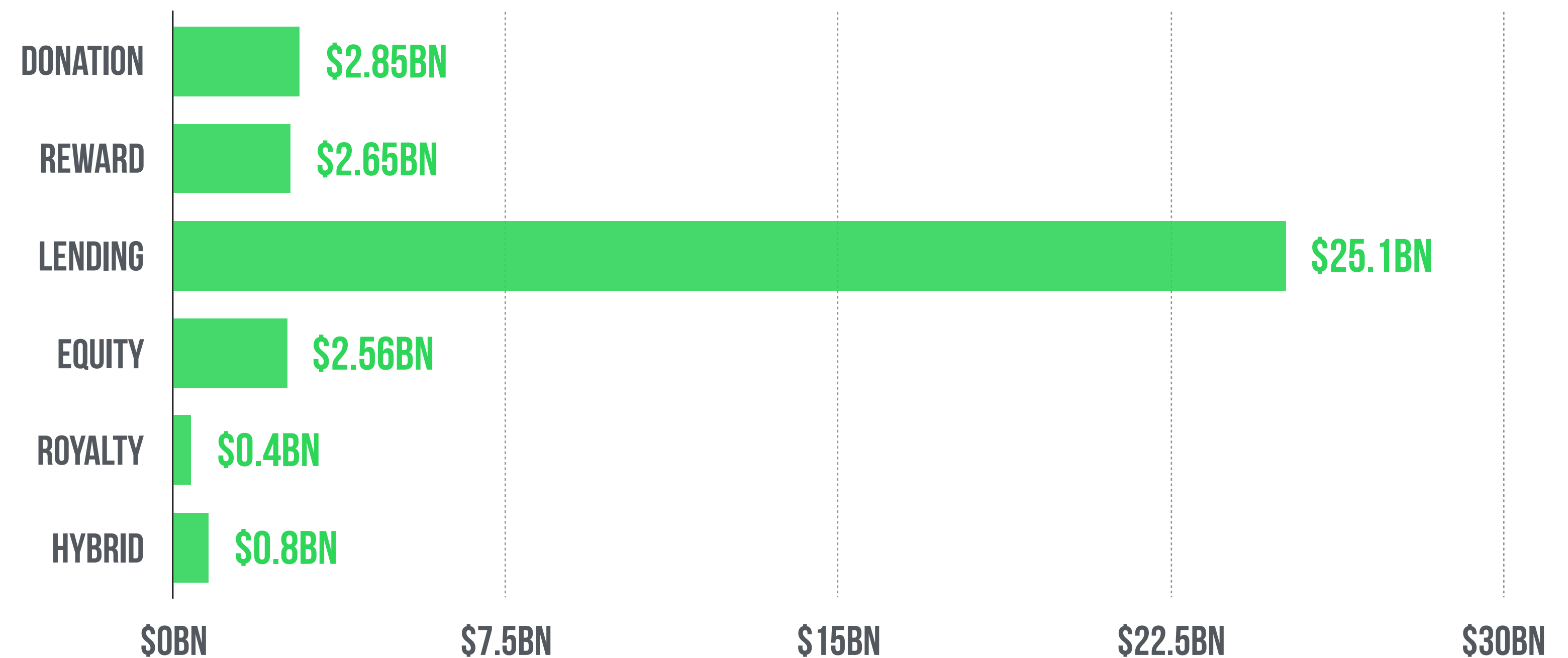
Investors and backers have responded by allocating more than \$16 billion to crowdfunding in 2014, and over \$1 billion in equity crowdfunding, while both are growing at triple-digit rates.

With that said, we're still in the early innings of crowdfunding, and the profound impact it will have on the entire universe of fundraising is still unraveling.

Investors and backers have responded by allocating more than \$16 billion to crowdfunding in 2014, and over \$1 billion in equity crowdfunding, while both are growing at triple-digit rates.

With that said, we're still in the early innings of crowdfunding, and the profound impact it will have on the entire universe of fundraising is still unraveling.

### TOTAL CROWDFUNDING VOLUME 2015



Source: Massolution

# Key Challenges Facing Crowdfunding Technology

## Timing

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While there are many angles in which you can attack equity financing problems, for some markets it might be too late. For example, we probably won't see Kickstarter killer anytime soon (although never say never).

Best products such as iPhone, Facebook or Google were not new ideas nor the first to market. At the right time, they created solutions that were 10x better. Is there something that Kickstarter does terribly wrong? Probably not. What about banks, funds, and seed investors? Probably yes.

## Regulations

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Wherever there's transfer of shares strict regulations will apply. In the US, it's the SEC Regulations. While JOBS Act has made equity crowdfunding much more accessible if there are transaction taking place you will be subject to regulations and requirements.

Luckily, there's plenty of materials online and self-regulatory bodies such as The Crowdfund Intermediary Regulatory Advocates (CFIRA) and European Equity Crowdfunding Association (EECA) were set up to help and educate.

## Chicken & Egg Problem

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The value of a marketplace is proportional to its population, according to Metcalfe's law. And many services in the crowdfunding and equity financing space are marketplaces. That's because wherever investment happens there need to be two parties.

All marketplaces have to deal with chicken and egg problem. To attract buyers you need sellers and sellers won't come where there are no buyers. Ever two-sided market has to solve this.

## Scalability

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As the user-base grows, scalability will become an issue. Many crowdfunding platforms are operated by small teams fulfilling multiple tasks such investor verification and site curation, are performed manually.

As soon as they reach a critical mass, these teams will have to learn to automate these and many other tasks in order to remain competitive in this emerging market.

## Fraud & Trust

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Fraud mitigation is one of the biggest problems every two-sided marketplace will eventually face. There are spammers and fraudsters who will take advantage of other people or try to exploit security loopholes. A scandal like that can easily kill an early stage service.

Luckily, sites like Crowdcheck and Crowdbouncer assist crowdfunding platforms and issuers with investor verification, and CFIRA, the Crowdfund Intermediary Regulatory Advocates, provides up-to-date news and educational material on related topics.

**Future of Payments: Massive industry with a lot of room for innovation.**

# Payments are a massive industry with a lot of room for innovation

## High Activity Market

According to Statista, the worldwide mobile payment volume in 2014 has reached \$235 billion dollars and is expected to grow to 721.4 billion U.S. dollars in 2017.

In the United States, 21.90% of mobile payment users utilized designated online wallets such as PayPal or Google Wallet and only 8.4 percent used carrier billing. That's a massive progress compared to few years ago.

But mobile payments are only part of the story. Companies like TransferWise are now attacking international transactions space, as it turns out most banks are charging hidden fees.

New services like Coin, the YC-backed startup that wants to replace all bank cards with a universal card, are about to launch this year.

And then there are companies like Klarna, Stripe, Square, iZettle the large venture-funded startups gaining an impressive over the past few years.

The market is clearly hot and alive, and with the phenomenal growth in mobile payment, many opportunities are yet to come.

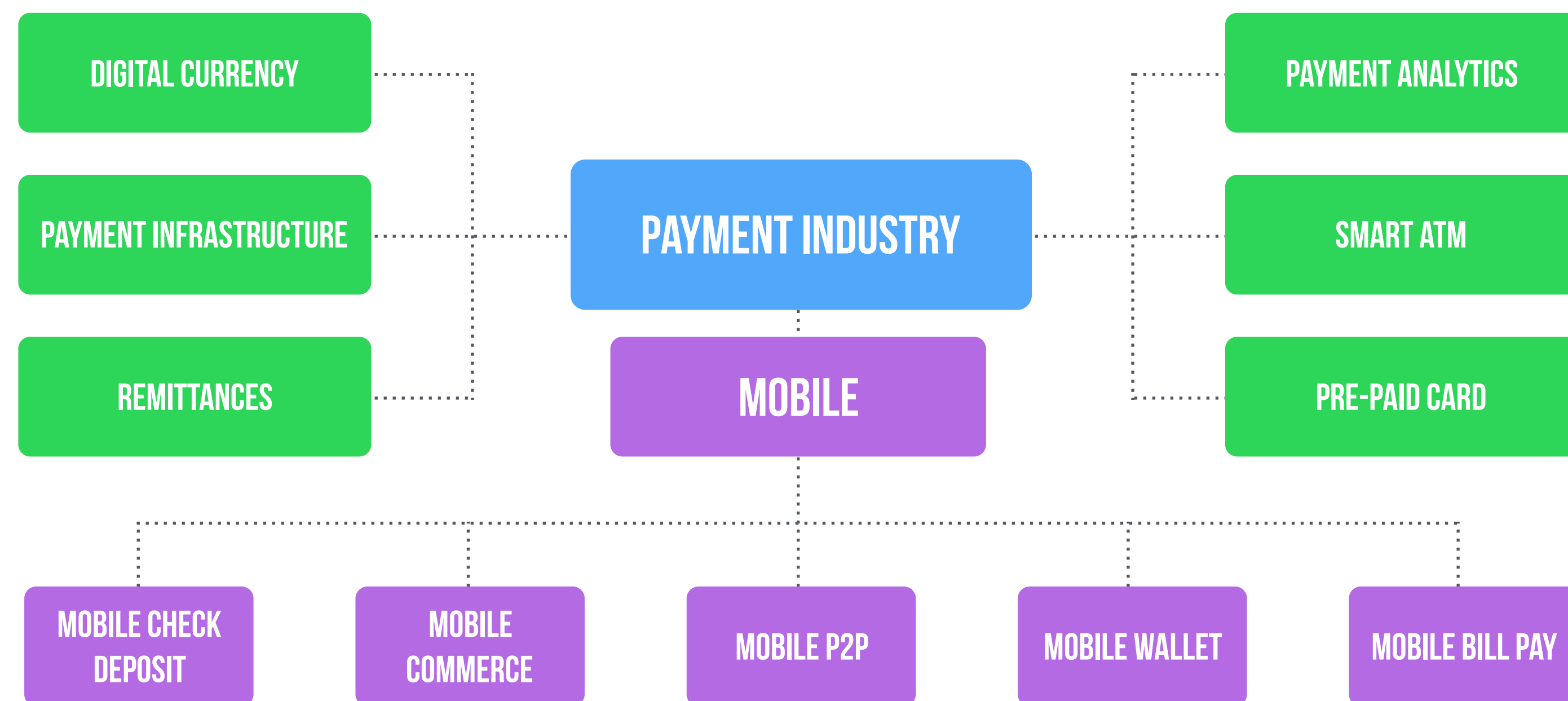
## With Opportunities Come Challenges

But with big opportunities, there are big challenges too. According to Benjamin Ling of Khosla Ventures

*"Payments are a massive industry with a lot of room for innovation, but it is very hard to break through because not only do you have to get consumers, you also need merchants and often third parties like associations behind you to be successful. Consumers want trust and ubiquity in payments."*

*Merchants want to know there are large numbers of consumers. For a startup, none of these is usually true. The chicken and egg problem in payments is one of the hardest to break through."*

While there may not be a single large disruptor, traditional banks and credit unions are being targeted from many sides. There are still no clear winners, and there are a lot of problems to be solved.



Source: TCS Solutions

# Key Challenges Facing Payments Technology

## Monetization

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Behind every FinTech application, there's a wholesale bank. For example, Stripe and Braintree rely on Wells Fargo. These banks have a bad technology and tech culture, and that's what makes payments services hard and costly. For example, for each \$4 BrainTree makes, Wells Fargo takes \$3.

However some companies like Standard Treasury and Seed are trying to tackle this problem by providing commercial and business banking APIs.

## Solving The Right Problem

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Moving from cash to credit cards was a breakthrough. That's because credit cards provided a huge upside relative to the pain of adoption. As for moving from credit card payments to a better payment system, frankly most consumers aren't clamouring for new ways to pay.

The real opportunity may not lie in the consumer market the in helping merchants sell more, cheaper. Likewise, there's big money in saving banks from becoming commodities. Clearly they're about to lose to Amazon, Google and Apple.

## Competition

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The boom in payments technology happened a couple years ago. Since then, VC funding declined, and the market appears to have started to consolidate following the acquisition of BrainTree.

Competition in the payments market is huge. There are cryptocurrencies, services like Square and Stripe with hundreds of millions in funding and a bunch of big players looking to build a payment system on top of credit cards, including Apple, Amazon, or Google.

## Regulations

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In the US to process most financial or money transfer activities online, you must be a licensed Money Service Business ("MSB"). This requires 48 licenses in addition to compliance with Federal laws. Most of the states, mandate their own MSB licensing.

Europe has similar laws, but the European Union has a "passport" system that allows a registered payments company in one E.U. country to get permission to do business in another E.U. country, making it easier to set up business there.

## Capital Requirements

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The setup costs to comply and get required licensing can add up to \$2,000,000 and about \$500,000 a year to maintain. Also, some states take longer than others to process licenses. For example, to perform due diligence in New York, you need: audited financial statements, a certificate of good standing, bank account details, background checks, credit checks, and criminal records from each and every single executive.

Add technology costs to it and your launch costs can run pretty high.

## High Penalties

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Even if your organization is licensed, making a mistake can result in insurmountable penalties. For example, Ripple Labs were recently fined \$700,000 by FinCEN because it rejected one transaction from a suspicious customer and did not submit the required Suspicious Activity Report (SAR).

Another payments company Square has been fined \$507,000 by Florida's Office of Financial Regulation for operating a payment service without a money transmission license.



**Future of Currency: “It’s the blockchain-like technologies and the decentralised ledger that will be source of real innovation.”**

Banco Santander: "Apple pay doesn't change the way payments happen, it's the blockchain-like technologies and the decentralized ledger that will be source of real innovation."

## Misunderstood Opportunity

The opportunity in Bitcoin is often misunderstood. Many people including economists only perceive it an investment tool, while many technologists view bitcoin as the biggest invention of this decade. For example, Marc Andreessen made a big statement when he said "Personal computers in 1975, the Internet in 1993, and – I believe – Bitcoin in 2014."

In fact, it's not the digital currency, but the underlying platform that has the potential to cause an enormous market disruption.

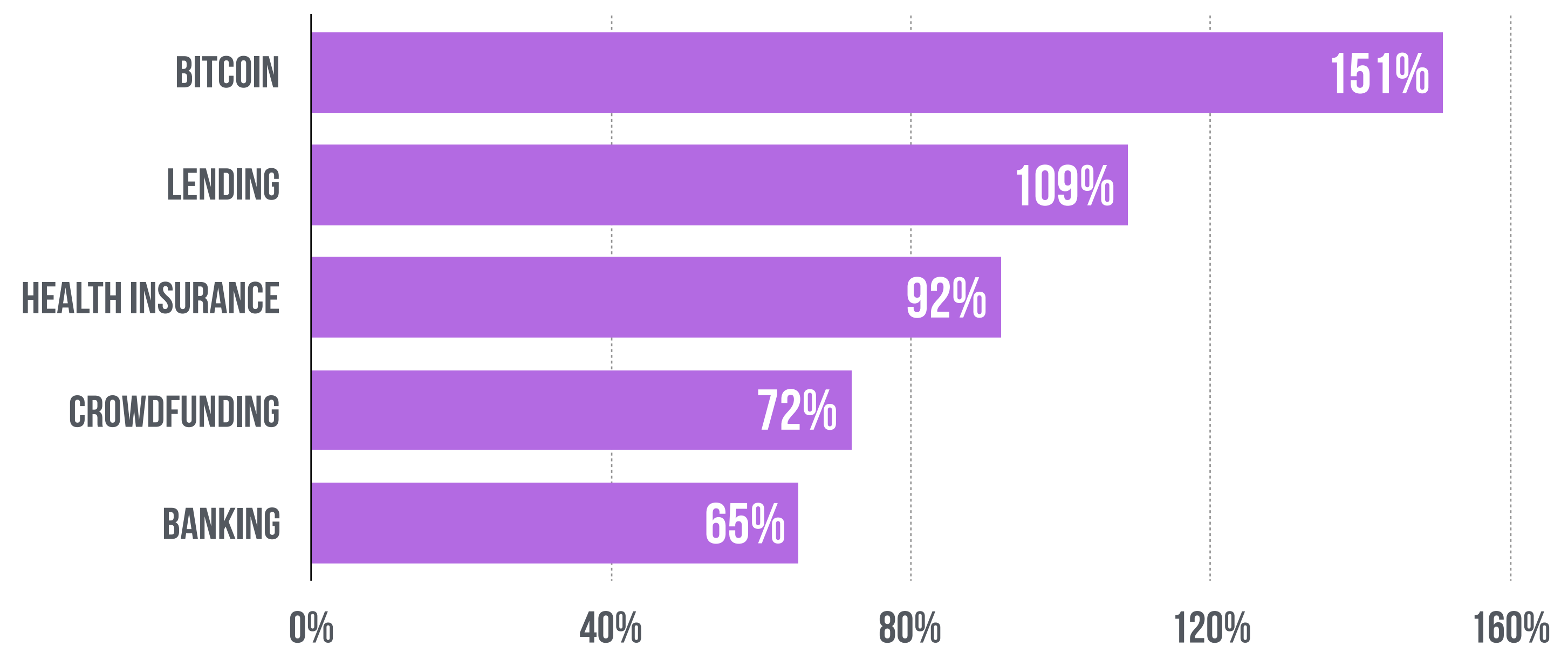
Here's another interesting thing Marc Andreessen said: "We have a chance to rebuild the system. Financial transactions are just numbers; it's just information. You shouldn't need 100,000 people and prime Manhattan real estate and giant data centers full of mainframe computers from the 1970s to give you the ability to do an online payment." Most importantly, they're fully automated allowing users to focus on their work and life with a peace of mind.

## Bitcoin Technology: Fastest Growing Investment Area

But it's not just technologists who realize the disruptive potential of bitcoin. Many high-profile banking executives believe that the financial industry should jump on the digital FinTech bandwagon and appropriate Bitcoin technology for increased efficiency at reduced cost.

The major opportunity lies in efficiency and cost-effectiveness. According to WSJ, Bitcoin technology could slash costs, cut settlement times and reduce default risks. CEO of NYSE Euronext points out: "It's an opportunity for Wall Street to streamline some operations that are pretty antiquated."

THE FASTEST GROWING AREAS OF VC INVESTMENT IN 2015 (FINTECH)



Source: Tom Tunguz

# Key Challenges Facing Cryptocurrency Technology

## Regulations

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Cryptocurrencies are no longer unregulated. They're regulated in many countries and are also used for financial transactions. That means you can classify them financial instruments.

Depending on their status and location, digital currency services may have to comply with many rules or risk fines as high as \$500,000. They may need a designated compliance officer, understand a host of various regulations such Anti-Money Laundering programs, Suspicious Activity Reports, etc.

## Speed of Adoption

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While cryptocurrencies, Bitcoin in particular, show exciting growth in many areas, the adoption is still slow. Frankly they struggle to gain a mainstream consumer traction.

The bitcoin-watching news service CoinDesk recently released a [report](#) looking into the cryptocurrency's performance during the opening months of 2015. It included some data points that demonstrate slowing growth in key bitcoin, and bitcoin-related areas.

## Fraud & Security

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Cryptocurrency platforms such as Mt Gox and BTER have become targets for hackers and cybercriminals. Following their example, it is very important for cryptocurrency service to have a strong encryption and digital security system in place.

That, however, can cost a lot and can't be ignored. If the security of the platform is compromised, it might cost a company lot more than it would cost to have a proper security system in place.

## Usability

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Currently bitcoin is hard to use and that's an important roadblock on the way to mainstream adoption.

Getting mainstream users to understand wallets, cryptography, and blockchains, decimal points, how their money translates to Bitcoin and how to use it. It's definitely a complicated task and probably the main reason why there's still no killer app in the cryptocurrency space.

## Lack of Trust

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For cryptocurrencies to become mainstream, they'll need to become a part of conventional banking services. With shaky reputation, many banks are reluctant to work with cryptocurrencies.

According to M. Belinky of Santander "Bitcoin has the wrong set of advocates. Highlighting the anonymous, untraceable nature of the technology have tarnished its reputation. A bank won't get involved with bitcoin if there's a perception it has links to money laundering or terrorism."

## Product / Market Fit

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Right now it's not clear what consumer problem digital currencies solve. There are online payments, and some others but credit cards and traditional instruments work pretty well.

Just like PayPal succeeded because it helped eBay buyers, new market entrants need to focus on an underserved niche where they can offer something that hasn't been possible before. And instead of trying to replace credit cards and other established payment methods, they should think more about where they have a competitive advantage.

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All information gathered is believed correct at September 2015. All corrections should be sent to the Appster Inc for future editions.