WORLD ECONOMIC FORUM

Beyond Fintech: A Pragmatic Assessment Of Disruptive Potential In Financial Services

Part of the Future of Financial Services series | Prepared in collaboration with Deloitte

August 2017

Foreword

Consistent with the World Economic Forum's mission of applying a multistakeholder approach to address issues of global impact, creating this report involved extensive outreach and dialogue with numerous organizations and individuals. They included the Forum's Financial Services, Innovation and Technology communities, professionals from academia and the public sector. The outreach involved over 150 interviews and 10 international workshop sessions, encouraging collaborative dialogue to discuss insights and opportunities concerning fintech disruption within the financial services industry.

The holistic and global perspective of this report would not be as enriched without the support and contributions from the subject matter experts who assisted in driving our thoughts forward about the future of the financial services industry. In particular, we thank this project's Steering Committee and Working Group, introduced in the Acknowledgements section, which played an invaluable role with their expertise and patient mentorship. Also critical has been the ongoing institutional support for this initiative from the Forum and the leadership of our chairman, whose vision of the Fourth Industrial Revolution has been inspirational to this work.

Finally, we are grateful to Deloitte Consulting LLP in the United States, an entity within the Deloitte[1] network, for its generous commitment and support in its capacity as the official professional services adviser to the Forum for this project.

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Members of the Steering Committee

The following senior leaders from global financial institutions provided guidance, oversight and thought leadership to the Future of Financial Services series as its Steering Committee:

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The project team would also like to acknowledge the following executives of global financial institutions who helped define the project framework and shape strategic analyses as its Working Group:

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Editors' Note

The Disruptive Innovation in Financial Services project was launched at the World Economic Forum Annual Meeting 2014 in Davos-Klosters, in a world still consumed with navigating the aftershocks of the global financial crisis. But in the wings, a new challenge for the financial system was growing in the form of fintech – new entrants that promised to rapidly reshape how financial products were structured, provisioned and consumed.

Nearly four years later, as this initiative draws to a close, we take the opportunity to reflect on the changes to the financial system – taking stock of the impacts that fintechs have had and considering their evolving relationships with both incumbents and regulators. More importantly, it presents an opportunity to consider what lies beyond the horizon for financial services. The technologies of the Fourth Industrial Revolution have triggered a seismic shift in the financial system, the implications of which will extend far beyond the fintechs that pioneered their use in financial services. Value chains that have characterized the industry for decades are being disrupted and reshaped with implications for customers, regulators, incumbents and every other stakeholder in the financial system.

In this fourth report of the Future of Financial Services series, we hope to build upon our previous work and provide the many stakeholders of the financial system with a better understanding of the forces transforming financial services, as well as an outlook for its future.

R. Jesse McWaters
Project Lead, Disruptive Innovation in Financial Services
World Economic Forum

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Section 1

Context and Approach

This report represents the culmination of three phases of research into the transformative role of fintechs on the financial services ecosystem

Since December 2014, the World Economic Forum has strived to understand the impact of innovations on the financial services ecosystem, and to determine how all stakeholders would be affected

PHASE 1

Phase 1 laid out a foundation for understanding the transformative potential of new entrants and innovations on business models in financial services. It focused on:

- Establishing a clear taxonomy for understanding which fintech innovations are the most relevant
- Mapping possible futures for the evolutionary paths of emerging fintech innovations
- Exploring the implications of fintech on key stakeholders (consumers, incumbents, regulators, etc.)

Phase 1 outcomes are captured in the report, *The Future of Financial Services*

PHASE 2

Phase 2 aimed to illustrate the role of financial infrastructure in enabling the future of financial services. It focused on:

- Understanding the transformative power of blockchain on shaping the future capabilities and characteristics of financial infrastructure
- Defining a high-level blueprint for fully digital identity protocols that simultaneously empowers users, and simplifies and de-risks identity transactions

Phase 2 culminated in the release of two reports, *The future of financial infrastructure* and *A Blueprint for Digital Identity*

What is a Fintech? *In this document we define a fintech to be a small, technology-enabled, new entrant to financial services. This definition does not include large technology firms that enter financial services (e.g. Apple with Apple Pay), or incumbent financial institutions who increase their focus on technology*

The final phase returns to the structure of the 2015 report, conducting a broad exploration of the forces reshaping the financial services ecosystem

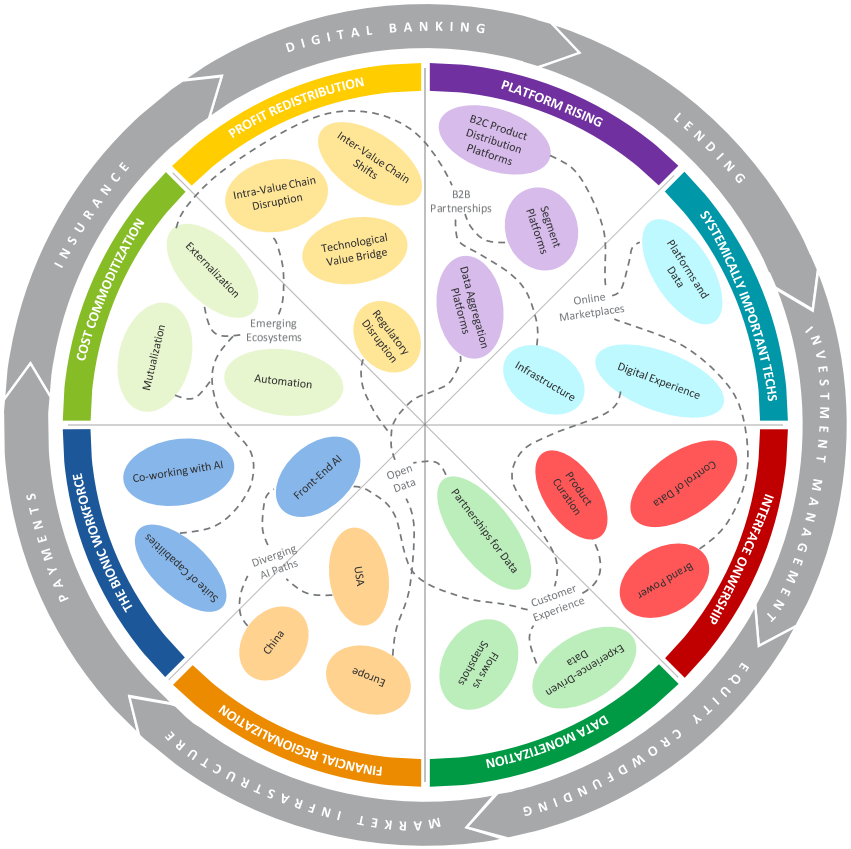
This report builds on the work of the previous reports, exploring the forces reshaping the structure of the financial system. It also considers evolutionary paths for the future of the system, as well as their implications for stakeholders

REPORT QUESTIONS

1. What are the innovations that have made the most impact on the financial ecosystem since the 2015 report, and what are the ideas that have failed to produce impact?

2. How will these innovations impact the ways in which financial services are structured, provisioned and consumed in the future?

3. What will be the implications of these innovations on the broader financial system?



Over the last 10 months, the project team engaged with over 150 experts and held 10 workshops in order to answer pivotal questions

Industry Leaders

- Gained oversight, guidance and thought leadership from **C-suite executives, operating unit leaders of global financial institutions, and industry regulators**

Innovators

- Held in-person and phone interviews with **over 100 innovative new entrants and subject matter experts**

Global Workshops

- Facilitated **10 multistakeholder workshops at six global financial hubs** with over 300 total participants, including industry leaders, innovators, subject matter experts, and regulators

Davos-Klosters, Switzerland	London, UK	New York, USA	San Francisco, USA	Shenzhen, China	Toronto, Canada
January 2017	February 2017	March, April 2017	March 2017	April 2017	May 2017

Section 2

Key Findings and Uncertainties

Fintechs have changed how financial services are structured, provisioned and consumed, but have not successfully established themselves as dominant players

Many fintechs (small, technology-enabled new entrants) came into existence with the goal of overtaking incumbents as the new dominant players in financial services – but have shifted to building partnerships as they struggle with scale and customer adoption

WHERE FINTECHS HAVE SUCCEEDED

Fintechs have seized the initiative – **defining the direction, shape and pace of innovation** across almost every subsector of financial services – and have succeeded as both stand-alone businesses and crucial parts of financial value chains

Fintechs have reshaped customer expectations, setting new and higher bars for user experience. Through innovations like rapid loan adjudication fintechs have shown that the customer experience bar set by large technology firms, such as Apple and Google, can be met in financial services

WHERE FINTECHS HAVE FALLEN SHORT

Customer **willingness to switch away from incumbents has been overestimated**. Customer switching costs are high, and new innovations are often not sufficiently material to warrant the shift to a new provider, especially as incumbents adapt*

Fintechs have struggled to create **new infrastructure and establish new financial services ecosystems**, such as alternative payment rails or alternative capital markets. They have been much more successful in making improvements within traditional ecosystems and infrastructure

CONCLUSION

Fintechs have materially changed the basis of competition in financial services, but have not yet materially changed the competitive landscape

***Caveat:** In geographies where incumbent service providers did not exist and in segments where incumbents where not meeting customer segments' needs, new entrants to financial services have been able to build significant scale*

Although fintechs have failed to disrupt the competitive landscape, they have laid the foundation for future disruption

The success of fintechs in changing the basis of competition, as well as the increasing pace of technology, means that while financial institutions have the potential to improve rapidly, they face rapid disruption both now and in the future

SOME FINANCIAL INSTITUTIONS HAVE TURNED THE THREAT OF FINTECHS INTO AN OPPORTUNITY…

The rapid growth of the fintech ecosystem **allows firms to externalize parts of their innovation function**, as they wait and see which new offerings gain traction before deploying their own solutions

The proliferation of fintechs **provides financial institutions with a "supermarket" for capabilities**, allowing them to use acquisitions and partnerships to rapidly deploy new offerings

…BUT THE ACCELERATING RATE OF CHANGE REPRESENTS A SERIOUS THREAT

The accelerating tempo of the innovation cycle in financial services means that a financial institution's **success is predicated on business model agility and the ability to rapidly deploy partnerships**, neither of which are traditional core competencies of these institutions

The ability to shop the fintech landscape for capabilities is not limited to incumbent institutions; **today, new entrants face significantly lower technological barriers to entering financial services,** with potential long-term implications for the competitive landscape

The project team has identified eight forces that have the potential to shift the competitive landscape of the financial ecosystem

DISRUPTIVE FORCES

1. **Cost Commoditization**: Financial institutions will accelerate the commoditization of their cost bases, removing them as points of competition and creating new grounds for differentiation

2. **Profit Redistribution:** Technology and new partnerships will enable organizations to bypass traditional value chains, thereby redistributing profit pools

3. **Experience Ownership:** Power will transfer to the owner of the customer interface; pure manufacturers must therefore become hyper-scaled or hyper-focused

4. **Platforms Rising:** Platforms that offer the ability to engage with different financial institutions from a single channel will become the dominant model for the delivery of financial services

5. **Data Monetization:** Data will become increasingly important for differentiation, but static data sets will be enriched by flows of data from multiple sources combined and used in real time

6. **Bionic Workforce:** As the ability of machines to replicate the behaviours of humans continues to evolve, financial institutions will need to manage labour and capital as a single set of capabilities

7. **Systemically Important Techs:** Financial institutions increasingly resemble, and are dependent on, large tech firms to acquire critical infrastructure and differentiating technologies

8. **Financial Regionalization:** Diverging regulatory priorities and customer needs will lead financial services in different regions of the world down distinct paths

Financial institutions will accelerate the commoditization of their cost bases, removing them as points of competition and creating new grounds for differentiation

Facing enormous pressure to reduce their cost base, incumbent financial institutions are embracing new technologies, as well as working with long-time competitors and new entrants alike, to commoditize cost drivers that do not provide competitive differentiation

ARCHETYPES

Mutualization

Incumbents are exploring the creation of new utilities and the expansion of existing utilities' roles, in order to standardize processes and avoid duplicating work between companies

MAS
Monetary Authority of Singapore

Example: The Monetary Authority of Singapore is working with several banks to build a national Know Your Customer (KYC) utility, which will reduce duplication and lower costs for all financial institutions

Externalization

The range of activities that financial institutions are comfortable with externalizing has expanded significantly, creating opportunities for both fintechs and incumbents to serve these needs

BLACKROCK

Example: BlackRock's Aladdin platform provides risk analysis, portfolio construction and compliance tools for institutional investors and retail wealth managers. The platform provides technology and support for industry-standard processes

Automation

Seeking to preserve margins, incumbents are turning to process automation tools to streamline processes and lower internal costs of activities, such as error handling

AUTOMATION ANYWHERE

Example: Automation Anywhere is working with a wide range of banks to automate processes such as loan origination, audit compliance and account reconciliation

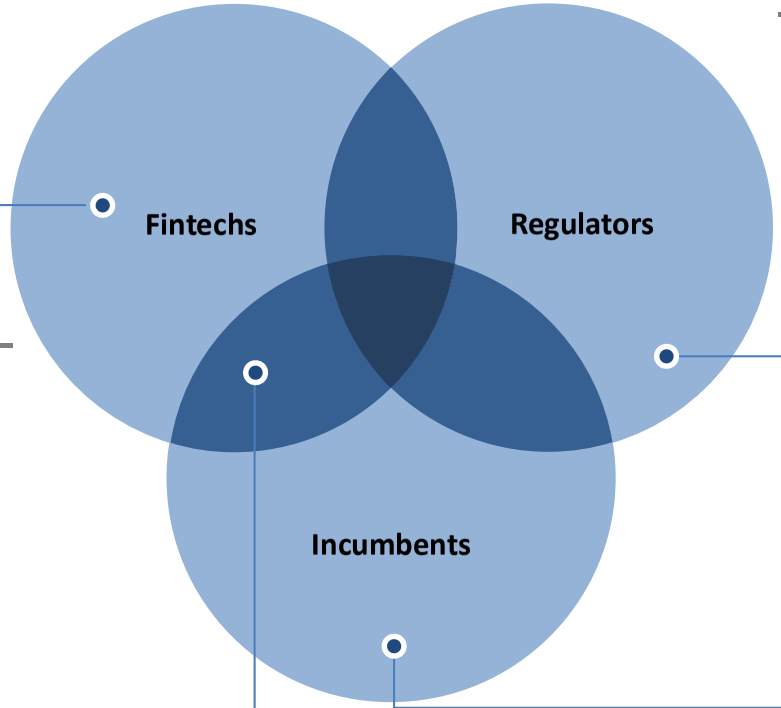
Sharing costs among peers and utilizing industry-standard automation tools will de-verticalize the value chain

Implications for Fintechs

- The rise of cost-sharing utilities and B2B providers lowers the barriers to entry for new entrants

Implications for Regulators

- Regulators need to monitor the growth of utilities and business-to-business (B2B) service providers, and consider their potential systemic risks



Implications for All Financial Institutions

- Organizations must view partnerships and ecosystem management as a company-wide strategic focus
- Organizations will have to start thinking of security and permissions as a jigsaw – each "piece" will have to be treated separately to minimize the threat from any new external connection
- Organizations will need to improve tracking of data flows to protect users, as information is shared with external companies

Implications for Incumbents

- Incumbents will need to differentiate their customer-facing processes, as middle and back offices become commoditized

Technology and new partnerships will enable organizations to bypass traditional value chains, thereby redistributing profit pools

The location of profit pools within and between value chains will shift as technological catalysts enable companies to change their positions and relationships

ARCHETYPES

Intra-Value Chain Disruption

Existing value chain participants are bypassing traditional intermediaries and seeking partnerships directly with customer-facing start-ups, thereby becoming direct competitors with past partners

Munich RE

Example: Munich Re, a large reinsurer, is partnering with product start-ups – including Bought By Many and Trōv – to directly compete with their traditional insurance partners

Inter-Value Chain Shifts

Technology is allowing consumers to easily switch between products in different value chains, migrating profit pools to new organizations

Betterment

Example: Investment firms such as Vanguard and Betterment have started proposing exchange-traded funds (ETFs) as an alternative to savings accounts, shifting customers from bank deposits

Technological Value Bridge

New technologies can simplify connections within large and complicated networks, making companies that focused on connecting participants more vulnerable to disruption

stripe

Example: Stripe offers online merchants an easy and cost-effective way to process payments online, which was previously only accessible to large merchants with merchant bank accounts

As profit pools shift due to value chain movements, intermediaries will face competitive pressure from all sides

ARCHETYPES (CONTINUED)

Regulatory Disruption

Regulators are curtailing financial institutions' control over access to infrastructure, lowering market power and shifting profits away from firms that oversee infrastructure

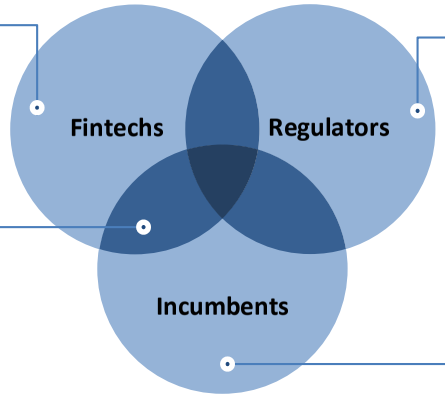
Example: The European Union's revised Payment Services Directive (PSD2) threatens to disintermediate payment networks by mandating that banks allow open, secure connections between merchants and user accounts

Implications for Fintechs

- The pool of potential partners that can provide scale, capital and customer reach will expand beyond traditional adjacencies

Implications for Regulators

- Regulators must monitor the shift in profit pools in order to identify the new value chain, as long-regulated companies become less relevant and new companies grow in importance



Implications for All Financial Institutions

- Technology will reduce the cost of bypassing value chain intermediaries and reaching the end customer
- Companies will need to monitor their adjacencies for potential pressures/shifts from partners

Implications for Incumbents

- Intermediaries that derive value from their position on the value chain will struggle to be profitable – scale will be necessary for survival

Power will transfer to the owner of the customer experience; pure manufacturers must therefore become hyper-scaled or hyper-focused

The rise of platforms means incumbents can no longer rely on controlling both product manufacturing and distribution, allowing product distributors to leverage control of their customer experience and place pressure on manufacturers

ARCHETYPES

Brand Opportunity

Distributors' ownership of the customer relationship places them in a position to grow their brand while de-emphasizing that of the manufacturer, particularly in cases where products are commoditized

Example: Customers of robo-advisors such as Wealthfront purchase ETFs from a wide range of companies, but likely have limited awareness of the assets in their portfolio

Product Curation

Distributors control which products are distributed and how customers view products, and can even steer customers towards certain products via recommendations

Example: The Apple App Store allows almost all apps that pass a set of rules, but stringently controls the front page – crucial for visibility, with over 1,600 apps launched per day

Control of Data

The distributor's location in a value chain allows it to collect data that is both deep (across the entire value chain) and broad (data on all product manufacturers)

Example: Mastercard offers retailers advisory services with benchmarks and recommendations, drawn from its visibility into data collected from comparable retailers

Customers will interact with fewer and fewer distributors in the future, as the market consolidates and major firms gain market share

Implications for Fintechs

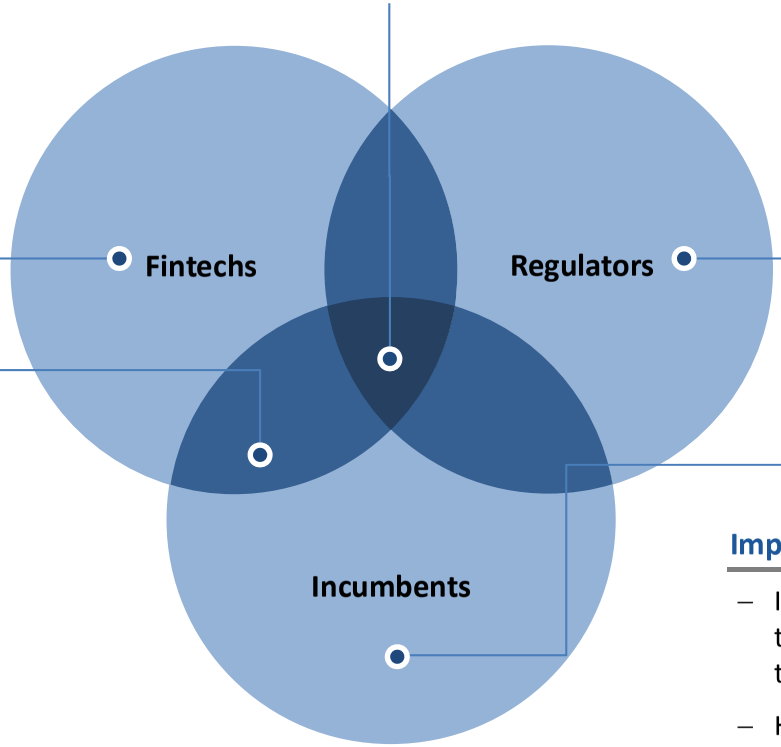
- Fintechs, lacking both an existing customer base and the ability to scale quickly, will have to find niches if they wish to become distributors
- In contrast, distributors may help fintechs compete with incumbents as manufacturers of specialized financial products

Implications for All Players

- Product distribution represents a likely point of entry for large tech firms, due to their expertise

Implications for Regulators

- Regulators will have to guard against product distributors abusing their market power, especially in open platforms where distributors control the customer shopping experience
- Questions about how distributors and manufacturers share liability will have far-reaching consequences



Implications for All Financial Institutions

- All firms will seek to be distributors of both their products and those of others; their success will depend on the existing market and whether they can capture mindshare
- Product distributors may struggle to achieve ubiquity and consistency of experience across an increasingly fragmented universe of connected devices

Implications for Incumbents

- Incumbents will have advantages in the race to become distributors due to their existing customer base
- However, incumbents that fail to become product distributors will see a decline in product profit margins due to cost commoditization

Platforms that offer the ability to engage with different financial institutions from a single channel will become the dominant model for the delivery of financial services

The shift to multiple-provider platforms as a channel to distribute and trade is gradually emerging across geographies and throughout a wide range of financial products – here are just a few examples of what has been developed

ARCHETYPES

B2C Product Distribution Platforms

Retail distribution of financial products will take place within digital platforms, either open or curated, where customers will have the ability to choose between multiple providers

Example: Tencent's Webank platform acts as a storefront, allowing retail customers to purchase products from multiple competing vendors of credit and asset management services

Segment Platforms

Pre-existing platforms that cater to specific business needs and audiences will add financial products, in effect becoming distribution channels for financial services

Example: Wave's accounting, invoicing and reporting platform for small businesses offers key financial services such as payments or lending directly, as well as through partners like ADP and RBC

Data Aggregation Platforms

Platforms that aggregate customer data from different financial institutions will increase in number and scope, reaching all sectors and allowing customers greater control over their data

Example: The United Kingdom is developing a "pensions dashboard", aggregating information from insurers and asset managers to allow customers to view and manage all their savings in one location

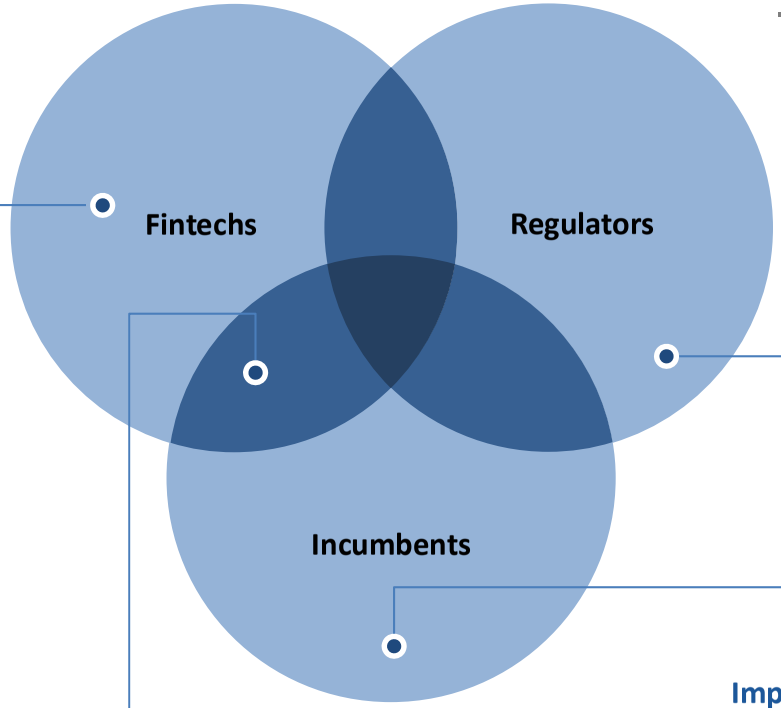
The rise of customer choice will have profound implications on the design and distribution of products, and will force companies to shift roles

Implications for Fintechs

- Platforms allow product-focused fintechs the opportunity to scale quickly

Implications for Regulators

- Uncertainties around who is the responsible party will need to be resolved in both B2C and B2B markets for issues such as product suitability and liability



Implications for All Financial Institutions

- Product differentiation will become critical where institutions do not control the sales/distribution channel
- Platform owners will need to become capable ecosystem managers, balancing the needs of the product manufacturers with customer demand
- Platforms will naturally capture market data from all participants, adding to the platform owner's market power
- Platform owners and product owners will need to address open questions about the liability of products placed on platforms

Implications for Incumbents

- Products will need to be stand-alone profitable to be sustainable in a platform environment (no more loss leaders)
- Improved price comparability will favour large incumbents where product economies of scale exist

Data will become increasingly important for differentiation, but static data sets will be enriched by flows of data from multiple sources combined and used in real time

Organizations will have to use a combination of data strategies to collect the depth and breadth of data needed to follow the lead of tech firms in data monetization

ARCHETYPES

Flows vs Snapshots

Institutions are starting to collect real-time data flows in order to utilize advanced analytics and target customers who change their behaviour (and needs) over time

VISA

Example: Visa collects location data from its customers on an ongoing basis (using customers' phones) instead of on a snapshot basis (via transactions) in order to better detect fraudulent transactions

Experience-Driven Data

In order to expand their customer data sets to collect new streams of data, institutions are designing their digital experience to offer more customer value, thus engaging customers more frequently

facebook

Example: Facebook continually improves and adds features to its mobile app to increase customer engagement and collect more data points

Partnerships for Data

Partnerships with other companies solely for the purpose of data collection will increase, allowing banks (and nonbanks) to collect complementary data they otherwise would not have access to

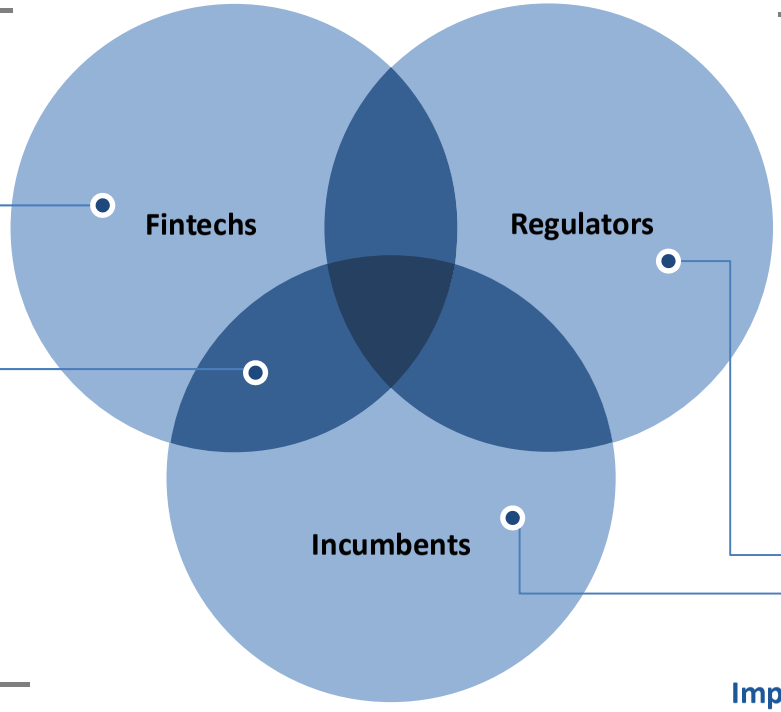
AIB Allied Irish Bank

Example: AIB is partnering with retailers to offer cashbacks to customers; in return, retailers receive customer data, which they can use to provide targeted offers

As financial institutions seek to increase the amount and variety of data they collect, ownership and control of data will become a key issue for all stakeholders

Implications for Fintechs

- Incumbents will need help to manage, use and secure their data, creating a new business line for fintechs



Implications for Regulators

- Regulators must carefully monitor the sharing of data to ensure that the risk of hacking is as low as possible
- Regulators must also be aware of how banks use the additional data they collect, and whether customers understand the impact of sharing their information
- Regulators must decide how much consumers can control their own information that they have shared with institutions

Implications for All Financial Institutions

- Data security will be crucial in establishing and maintaining trust with the customer
- New partnerships based on data will create an imperative for a company-wide partnership strategy
- National data regulators will play a larger role in financial services

Implications for Incumbents

- Incumbents will have to decide on the value of migrating existing data in legacy systems to environments where it can be more effectively maintained, versus implementing tools and strategies for collecting new data

The arrival of new technologies, such as artificial intelligence, will mean major shifts in financial institutions' workforces as the definition of "talent" evolves

Organizations will need to manage talent as a collective set of employees and machine-enabled solutions, especially as cognitive technologies continue to develop and increase in relative importance

ARCHETYPES

Front-End AI

The public face through which customers interact with financial organizations will be AI, similar to the AI now dominating interactions between customers and tech firms

Bank of America

Example: Bank of America is launching Erica, a chatbot, in order to engage with customers and offer answers in the mould of Apple's Siri or Amazon's Alexa

Coworking with AI

Humans and computers working together will have a "force multiplying effect" compared to humans or AI alone, given enough training and role definition

AYASDI

Example: Ayasdi worked with a major bank to improve its stress testing, from a nine-month process requiring hundreds of employees to a three-month process using less than 100 specialists

Suite of Capabilities

As an organization's workforce shifts from being solely human to a human-AI mix, leadership will shift its focus from managing teams of people to managing suites of capabilities

Harvard Business Review MITSloan Management Review

Example: While this idea has yet to be tested, academia is gradually accepting the need to manage AI similarly to humans[4,5]

Sources: 1. HBR 2. MIT Sloan Management Review

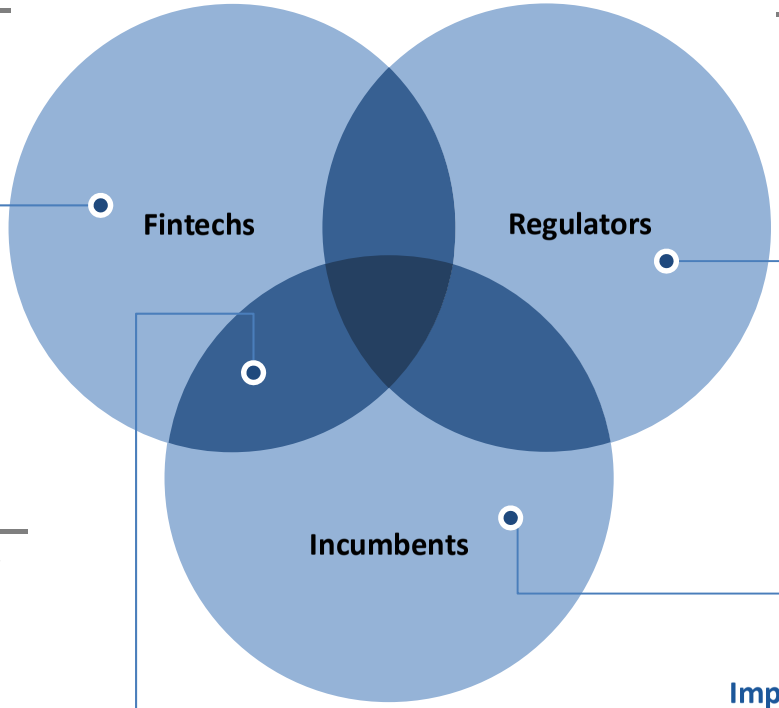
The evolution of talent will fundamentally shift the role of human capital within financial institutions

Implications for Fintechs

- AI and automation-focused fintechs will be in demand as companies seek to quickly gain expertise

Implications for Regulators

- Regulators will need to develop new strategies for dealing with AI, including enforcement and punishment of non-compliant actions by AI



Implications for All Financial Institutions

- AI risk management will be a priority – AI represents a single point of failure
- Technological improvements are likely to come in waves, meaning that changes from AI will impact some parts of the organization at different rates than others
- Companies will need to manage the balance between human-AI interactions, and train their employees to effectively coexist with AI

Implications for Incumbents

- Incumbents will have to figure out how to communicate their culture through customer-facing AI
- Incumbents will need to have a strategy on how to acquire AI expertise

Financial institutions increasingly resemble, and are dependent on, large tech firms to acquire critical infrastructure and differentiating technologies

The rise of digital interfaces and data in financial institutions means that those institutions increasingly focus on developing large tech capabilities, which is accompanied by an increased reliance on large tech firms

ARCHETYPES

Infrastructure

Financial institutions of all sizes are increasingly dependent on large techs' cloud-based infrastructure to scale and deploy processes and to harness artificial intelligence (AI) as a service

Example: Amazon Web Services (AWS) is forming the backbone of the financial services ecosystem, with a diverse set of firms – from JP Morgan to start-ups such as Xignite – adopting AWS for data storage and processing

Platforms and Data

Financial institutions have used the example of large techs successfully unlocking data and revenues from customer platforms to guide and shape their own efforts

Example: JP Morgan is investing in the collection and analysis of its customers' data with a new customer management and analytics tool, enabling cross-selling – "a little bit like how Amazon suggests what you might like to buy next"[2]

Digital Experience

Large techs have focused for years on making their customers' digital experience simple and pain-free, and financial institutions are now moving to match this standard

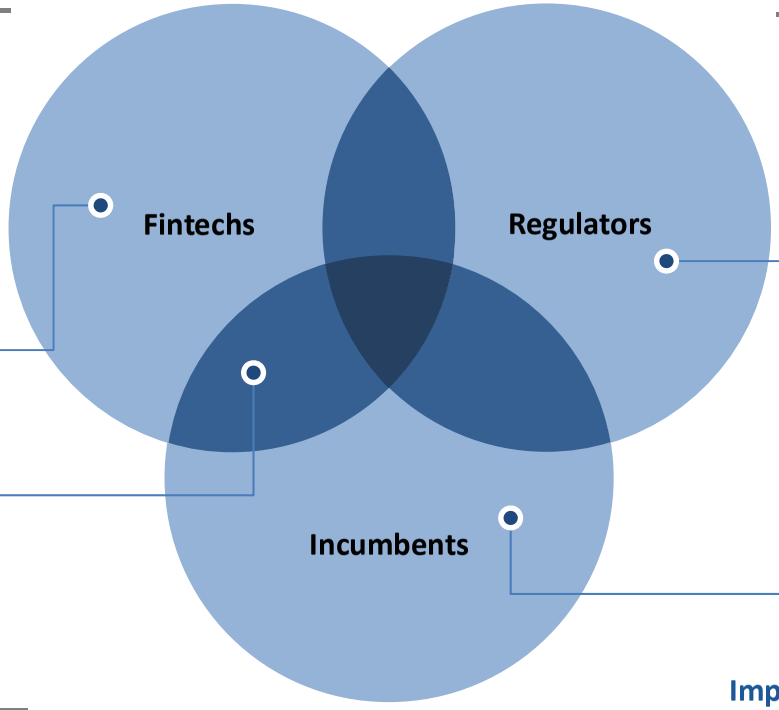
Example: Macquarie Bank is using Uber and Google as guides for its digital experience: "You as a customer should be interacting with a bank in the same way you interact with the rest of your life"[3]

Sources: 3. FT 4. CMO

The coming collision between financial institutions and large techs leads to tough choices for all firms: become dependent on large techs or risk falling behind

Implications for Fintechs

- Fintechs may have opportunities to work with large techs to broaden their reach, while also helping large techs enter financial markets
- Fintechs may be attractive targets for incumbents seeking to acquire technical talent



Implications for Regulators

- How large techs are treated under traditional regulatory frameworks will have a large impact on their interactions with financial institutions

Implications for All Financial Institutions

- All financial institutions will need to find ways to partner with large techs without losing their core value proposition
- All firms risk becoming dependent on large techs, which necessitates the loss of some control over both costs and data

Implications for Incumbents

- Incumbents will have to compete with large techs for talent, driving up the cost of technology talent
- Incumbents risk falling far behind on technological offerings if they minimize engagement with large techs to protect independence

Differing regulatory priorities, technological capabilities and customer conditions are challenging the narrative of increasing financial globalization

The trend towards financial globalization is giving way to regional models of financial services suited to local conditions, led by the complexity of differing customer needs and differences in solutions around the world

ARCHETYPES

Europe

A strong regulatory impetus for open data and consumer protection is driving the development of platform ecosystems in many verticals, with incumbents under growing pressure

MiFID
Markets in Financial Instruments Directive

Example: The European Markets in Financial Services Directive is designed to introduce more transparency to capital markets; trade execution firms must show clear evidence of "best execution"

China

A mobile-based connectivity ecosystem, the absence of major consumer-focused bank offerings and a largely innovation-friendly regulator all lead to large techs capturing significant market share

Alipay™

Example: In the absence of a mature payments system, the Alipay mobile payment app now owns over 50% of the $5.5 trillion Chinese mobile payments sector, with tech giant Tencent as its only major competitor

USA

Unclear regulatory direction, as well as the presence of a mature financial ecosystem and well-served customers, means that changes to the current ecosystem will likely be incremental

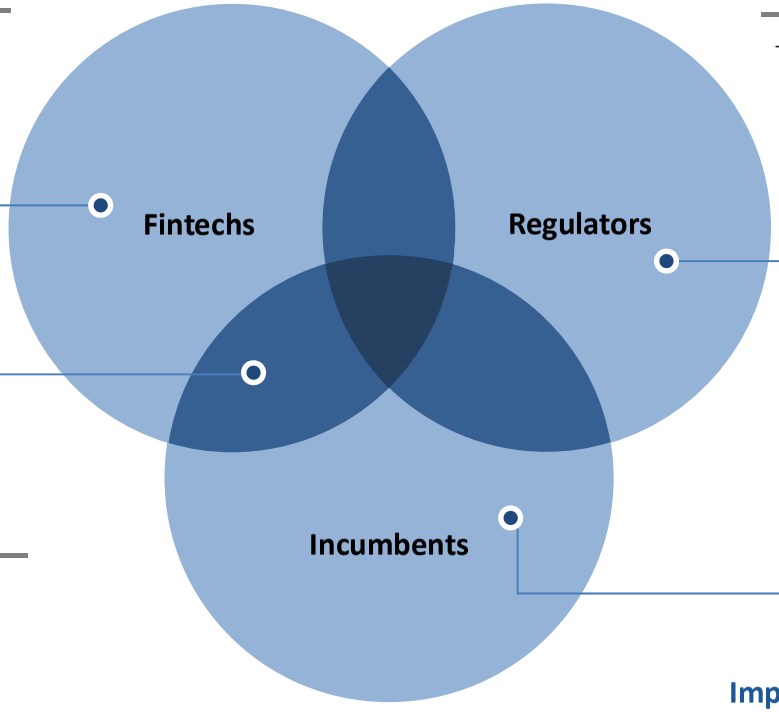
NACHA
The Electronic Payments Association®

Example: The Automated Clearing House (ACH) Network is moving to same-day payments, but progress remains slow compared to other countries (such as the United Kingdom, which adopted real-time payments over a decade ago)

Increasingly divergent regional financial systems mean that local players could quickly gain market share, but international growth is difficult

Implications for Fintechs

- Fintechs will face serious obstacles to establishing themselves in multiple jurisdictions, even as technology theoretically lowers barriers to entry



Implications for Regulators

- Regulators will face two opposed pressures: large incumbents will push for global convergence, and local firms will press for localized regulations

Implications for All Financial Institutions

- The breeding ground for fintech innovation may become even more multipolar, as firms with offerings specialized to their locale will strengthen regional fintech hubs
- New ideas can be tested in one geography and introduced to other areas once conditions change
- Regionalization of emerging capabilities will force the creation of different solutions to similar problems

Implications for Incumbents

- Global firms will need distinct strategies to cultivate regional competitive advantages and integrate with local ecosystems
- Incumbents may become attractive partners for fintechs seeking to enter new markets as they look for opportunities to rapidly scale

In addition to the key findings, the following open questions will shape the industry's development – the path forward, however, is uncertain

These questions will influence the future of all financial services sectors, and are thus often subjects of discussion – but the current discussion holds more questions than answers

UNCERTAINTIES

Role of Identity

How will the rise of digital identity impact its use in financial services around the world?

Monetization of Data Flows

How can firms extract the most revenues from the data available to them? How much will it cost?

Technology – Governance Gap

How will financial services firms mitigate risk when technology races ahead of management's ability to understand the consequences?

Systemic Transparency

How will the transparency built into new systems impact their design, participants' roles or their profit models?

Cooperation Problems

Can financial services firms use technology to solve long-running partnership and collaboration issues that lie at the heart of the industry?

References

1. "How Artificial Intelligence Will Redefine Management". *Harvard Business Review (HBR)*. Retrieved from https://hbr.org/2016/11/how-artificial-intelligence-will-redefine-management
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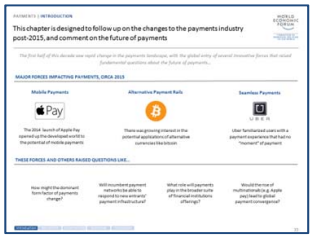
3. "JPMorgan Chase in push to mine customer data". *Financial Times (FT)*. Retrieved from https://www.ft.com/content/1eaf6436-e4a2-11e6-9645-c9357a75844a
4. "CDO interview: Macquarie Banking Group's digital leader on delivering customer trust". *CMO from IDG.* Retrieved from https://www.cmo.com.au/article/609962/cdo-interview-macquarie-banking-group-digital-leader-delivering-customer-trust/?pp=2

Section 3

Sector Deep Dives

Reading Guide for Sector Deep Dives

Each sector deep dive is organized according to a common structure: context on the sector and recent innovations, an analysis of key trends and uncertainties, and several potential end states illustrating evolutions of the sector in coming years



Introduction

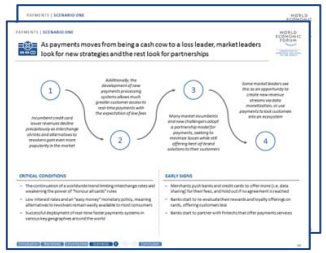
- A high-level overview of the key innovations within the sector that have emerged in recent years

Findings

- An overview of the key findings shaping the sector and the underlying drivers of each finding
- Supporting evidence for the finding, as well as illustrative case studies

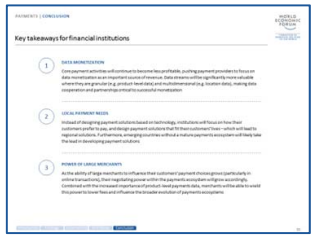
Uncertainties

- An overview of key uncertainties whose resolution will shape the sector's future



Potential End States

- Description of several plausible but divergent potential end states for the industry
- Critical conditions and early signs for each possible end state
- Implications mapped to key ecosystem stakeholders



Conclusion

- Key takeaways for financial institutions and all members of the sector ecosystem

A tracker on each page illustrates the reader's position in the sector deep dive

Introduction | Findings | Uncertainties | End States | Conclusion

Section 3.1

Payments

Payments have greatly evolved in the last several years. This section examines the key trends shaping the industry and the uncertain path forward

The first half of this decade saw rapid change in the payments landscape, with the global entry of several innovative forces that raised fundamental questions about the future of payments

CIRCA 2015, THE MAJOR FORCES IMPACTING PAYMENTS WERE…

Mobile Payments

The 2014 launch of Apple Pay opened the developed world to the potential of mobile payments

Alternative Payment Rails

Interest grew in the potential applications of alternative currencies, such as bitcoin

Seamless Payments

Uber familiarized users with a payment experience that had no "moment" of payment

CIRCA 2015, THE BIG UNCERTAINTIES ABOUT THE FUTURE OF PAYMENTS WERE…

How might the dominant form factor of payments change?

Will incumbent payment networks be able to respond to new entrants' payments infrastructure?

What role will payments play in the broader suite of offerings from financial institutions?

Will the rise of multinationals (e.g. Apple Pay) lead to global payment convergence?

Note: For the purposes of distinguishing online and in-person brick-and-mortar shopping, all instances of "retail" refer to brick-and-mortar shopping

Payments have continued their migration to digital channels in the face of geographically varied adoption of mobile payment and declining profitability

WHERE DID DISRUPTION OCCUR?

A — Payments have continued to migrate away from cash and become less visible to the customer as consumers shift purchases to online and mobile channels

B — Payments businesses are experiencing intense pressure on margins in the face of competition and a challenging regulatory environment

C — Regional distinctions between payments ecosystems are growing, as both customer behaviour and regulatory environments diverge

WHERE HAS DISRUPTION NOT OCCURRED?

D — Mobile payment solutions have not sufficiently exceeded the functionality of pre-existing solutions in card-based markets, thus limiting their adoption

E — Customer acceptance of nontraditional payment schemes (e.g. alternative currencies) remains almost non-existent

Payments have continued to migrate away from cash and become less visible to the customer as consumers shift purchases to online and mobile channels

On the back of global shifts in commerce patterns from in-person to online, payment volumes and channels have naturally shifted away from cash towards simple, frictionless solutions, which are often operated by large tech firms

SUPPORTING EVIDENCE

Dominance of Online Sales

The global online shopping market is growing quickly at the expense of in-person shopping, and therefore online-based (cashless) solutions will dominate the overall transaction landscape

Increase in Mobile Connectedness

Especially in emerging economies, the near ubiquity of mobile phones combined with the lack of development in traditional financial solutions is driving the development of technologically advanced, mobile-based solutions for payments

Growing Role of Online Platforms

Large tech firms are driving the development of online payment platforms in e-commerce, causing payments to become less visible to the customer; the action of logging in to an online platform is sufficient to enable a transaction, with actual payment details stored in the background

Payments have continued to migrate away from cash and become less visible to the customer as consumers shift purchases to online and mobile channels (continued)

CASE STUDIES

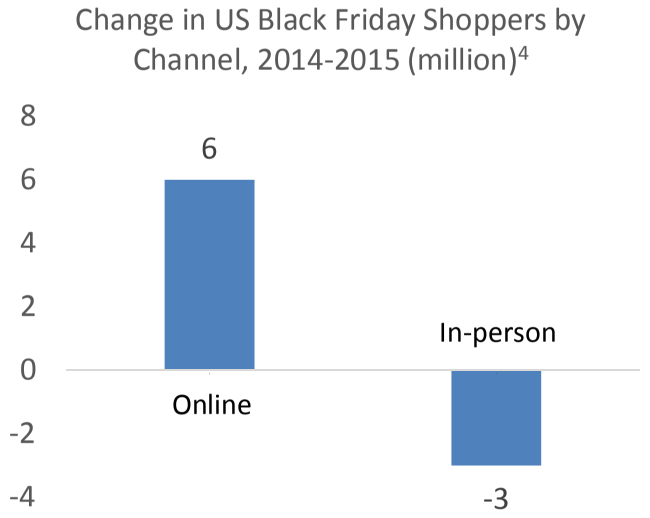
Growth of online payment platform

Amazon's online store growth represented 53% of overall US e-commerce growth in 2016,[1] driven by the success of Amazon Prime, which now has 80 million subscribers. Amazon is also creating an ecosystem around its one-click payment service by rolling it out to other merchants (in direct competition with PayPal, for example).

Shift to online sales

The growth of China's in-person retail shopping market slowed to 10% in November 2016,[2] its lowest level of growth in over a decade, as customers shifted their shopping from retail to online channels. Sales on Singles' Day, which represents the biggest one-day sale in China's online shopping market, grew more than 32% in 2016.[3]

QUANTITATIVE EVIDENCE



Shift from retail to online shopping

KEY UNCERTAINTIES

The incompatibility between cash and digital marketplaces means that payments will only continue to move towards cashless solutions

1. Will dominant online payment processors (e.g. Amazon, Stripe) expand into in-person retail and if so, can they achieve scale?
2. How will card networks react to the rising importance of large techs in online payments?
3. In emerging markets, can incumbents enter and overcome locally built solutions?

Sources: 1. Slice Intelligence 2. FT 3. CNBC 4. Fortune.com

Payments businesses are experiencing intense pressure on margins in the face of competition and a challenging regulatory environment

Increasing competition, coupled with regulatory forces and the rise of new solutions on top of the traditional ecosystem, means that payment profitability will decline in the future

SUPPORTING EVIDENCE

Interchange Caps

Several jurisdictions, including Europe, Canada and Australia, have either passed or are passing legislation limiting the fees charged on transactions, thus limiting profitability for all intermediaries. Europe, specifically, is implementing the EU Interchange Fee Regulation (IFR), and weakening "honour all cards" rules (which forbid merchants from selective card acceptance), making high-fee credit cards unattractive for merchants to accept

Eroding Lending Revenue

Revolvers – customers who use credit cards as short-term loans with high interest rates – are a major source of card profits. This market is facing serious pressure with the increase in alternative lenders, who target the same customers and offer more attractive interest rates

Faster Payment Schemes

The development of national-level faster payment schemes will lead to a decrease in revenues from other payment sources (wire transfers, cheques, etc.) as customers move to new platforms. Also, where national-level faster payment schemes exist, fees to the end consumer are non-existent, conditioning customers to expect low-fee payments in all transactions

New Foreign Exchange Solutions

Technologically advanced fintechs are moving into both the retail and B2B areas, lowering revenues that financial institutions can earn on foreign exchange (FX). Several banks have decided to partner with a fintech solution to offer FX services instead of operating their own, forgoing that income entirely

Payments businesses are experiencing intense pressure on margins in the face of competition and a challenging regulatory environment (continued)

CASE STUDIES

TransferWise

New FX solutions

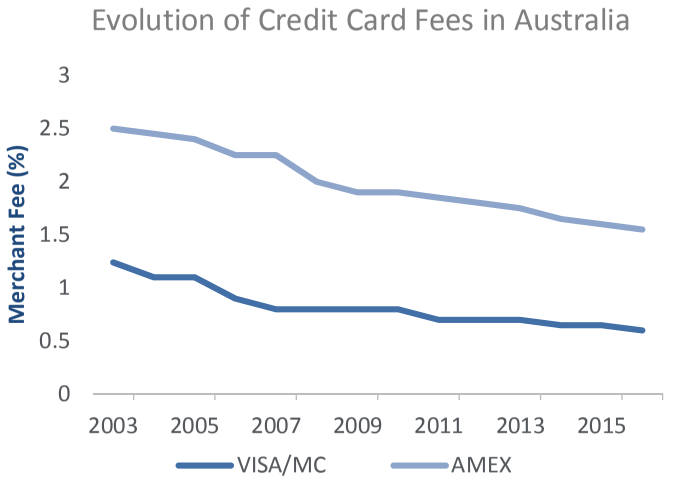
TransferWise, a retail FX platform, originally branded itself as an alternative to high bank fees, but in recent years has begun to work with select banks to expand its customer base. It has announced partnerships with N26 in Germany, Starling in the United Kingdom and LHV in Estonia (the country's largest bank).

LendingClub

Fintech competing on lending

Lending Club, as well as many of its competitors in the alternative lending sector, has long advertised to the revolving credit market – highlighting lower interest rates, the absence of additional fees and the ability to raise credit scores. As of 2017, Lending Club claims it has already "converted" over 300,000 revolvers.[5]

QUANTITATIVE EVIDENCE



Declining credit card average merchant fees[6]

KEY UNCERTAINTIES

The decline in payment profitability will force incumbents to look elsewhere, including at payments data, to bridge the profit gap

1. Will cards become less important parts of the payments ecosystem as fees decrease?
2. Can banks/payment providers generate alternative forms of revenue from faster payment schemes?
3. Will traditional FX solutions compete or partner with new fintech-enabled solutions?

Sources: 5. LendingClub.com 6. Finder.com.au

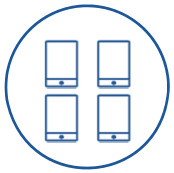
Regional distinctions between payments ecosystems are growing, as both customer behaviour and regulatory environments diverge

Standardized global payments systems remain elusive as location-specific pain points and regulations lead to localized improvements in payments systems

SUPPORTING EVIDENCE

Level of Unmet Needs

Countries without modern payments systems benefitted greatly from mobile payment technology, whereas the benefits are more marginal in countries with modern payments systems. As a result, adoption has differed considerably by region, depending on the degree of unmet needs



Ubiquity of Technology

Whether new payment technology is ubiquitous also greatly affects the adoption of payment solutions. The adoption of mobile payment solutions has been much higher in Africa and Asia (where merchants have supported new technologies) compared to the United States, where merchants have resisted adoption

Open Payments Regulation

The coming roll-out of PSD2 will advance the development of new payment schemes in Europe (and other jurisdictions that adopt similar legislation, such as Australia), but it is highly unlikely that changes to European payments will influence the regulation of US markets

Demonetization

Countries that embrace demonetization will force the adoption of mobile wallets, which has the effect of giving mobile-based solutions the needed critical mass to succeed – a critical mass that may be a long time in coming in countries where regulators do not act as innovation drivers

Regional distinctions between payments ecosystems are growing, as both customer behaviour and regulatory environments diverge (continued)

CASE STUDIES

Demonetization by the Indian government

At the end of 2016, India's demonetization of 500 and 1,000 rupee notes led to mass adoption of mobile wallets in record time – the compound annual growth rate (CAGR) for 2016 was expected to reach 160%, and the share of total transactions is expected to reach 57% by 2022, up from about 20% in 2016.[7]

Similar markets – different adoption rates

Payment experiences can differ significantly even in similar markets. In Canada, regulation drove much earlier adoption of EMV ("smart", or chip, cards) compared to in the United Sates where retailer pressure slowed roll-out. As a result, only 18.6% of 2016 US point of sales transactions used EMV in compared to 90.7% in Canada.[8]

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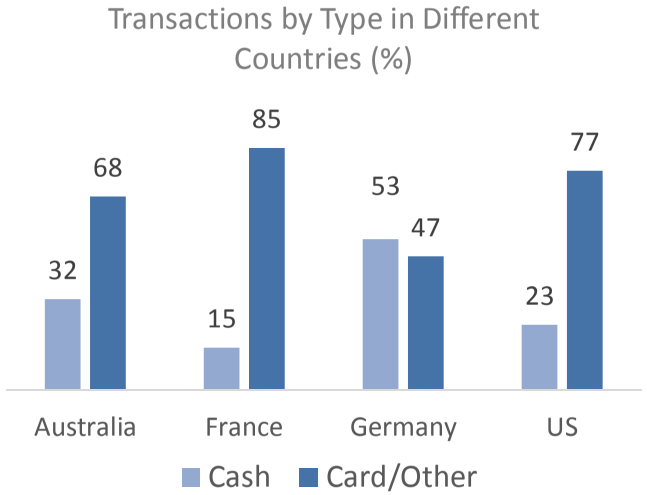


Varying importance of cash in different countries[9]

KEY UNCERTAINTIES

The regionalization of payments ecosystems will likely accelerate as legislation and technology continue to diverge

1. How can incumbents and/or regulators encourage ubiquitous technological solutions?
2. Will demonetization schemes catch on in other parts of the world?
3. How will the diverging payments ecosystem affect online transactions, if at all?

Sources: 7. Technavio 8. TSYS 9. International Journal of Central Banking

The coming application of the European Union's revised Payment Services Directive (PSD2) by January 2018 will greatly shift the payments landscape in Europe

PSD2 represents a host of changes to the original Payments Services Directive (PSD) passed in 2009, focusing on four broad themes: market efficiency, consumer protection, competition and choice, and security

KEY CHANGES

The main change to the original PSD consists of two new entities, with banks creating a model of simple and secure access:

Payment Initiation Services

These allow users to initiate payments directly from their bank accounts to merchants

Account Information Services

These allow users to authorize services to access their bank account information

Concurrently, the European Union is rolling out two major payments-related changes as part of IFR (Interchange Fee Regulation):

- Interchange fees are capped at 0.2-0.3% of transaction value for debit and credit, respectively
- The "honour all cards" rule (forbidding merchants from selective card acceptance) no longer applies; instead, cards are now sorted by category, and retailers can choose which category of cards to accept

EFFECT ON PAYMENTS

Payment initiation services allow merchants to link directly to the customer's bank account, bypassing a series of traditional intermediaries to lower costs

Account information services will allow services that are dependent on customer info, such as account aggregation services like Mint and Yodlee, to operate without bank account passwords, increasing security

KEY UNCERTAINTIES

1. What will the PSD2 implementation timeline be, and how will banks react?
2. How will EU regulators monitor and enforce the degree of institutional compliance with PSD2, and will this differ by country?
3. Will this drive innovation at the merchant/intermediary level, and will customers adapt?

Mobile payment solutions have not sufficiently exceeded the functionality of pre-existing solutions in card-based markets, thus limiting their adoption

Mobile payment solutions have not become as pervasive in the United States and Europe as in other parts of the world, due to the overwhelming dominance of card-based solutions

SUPPORTING EVIDENCE

Switching Costs vs Incremental Value

Customers are reluctant to try a new method of payment (mobile) without a clear, demonstrated improvement. Ingrained behaviours mean that the less significant of an improvement a new solution represents, the less patience customers will have with it

Lack of Ecosystem Support

The ubiquity of card-based technologies has meant that many vendors simply do not support mobile payments, and it is often difficult to identify vendors that do. This creates a negative loop around the technology – the less support, the less customers will want to adopt, which leads to less support

Lack of Single Standard

Many card-based markets also lack one consistent mobile payment standard, meaning that even if stores accept mobile payments, it is often unclear which one of several solutions will work/not work, further clouding the seamless customer experience

Mobile payment solutions have not sufficiently exceeded the functionality of pre-existing solutions in card-based markets, thus limiting their adoption (continued)

CASE STUDIES

Gradual growth, but low usage

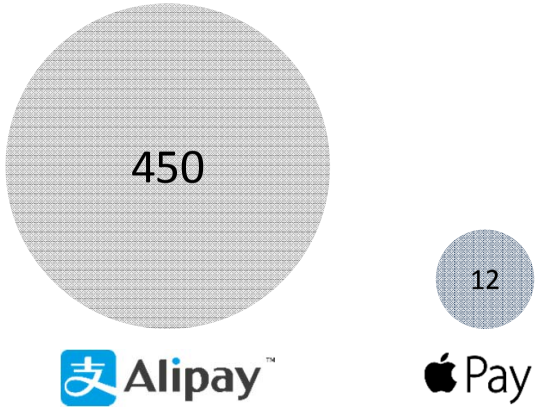
Apple Pay has grown since its introduction, with Apple's Chief Executive Officer Tim Cook announcing that the worldwide number of transactions rose by 450% year over year. However, third-party adoption studies paint a more mixed picture, with decreasing same-user usage and frequency since Apple Pay was launched in 2014.[10]

Failure of retailer-backed solution

CurrentC, a mobile payment app backed by retailers including Walmart, Target and Wendy's, shut down mid-2016 as a result of low adoption and retailers pulling out of its service.[11] Fractures in the retailer group due to different loyalty programmes, as well as low adoption and usage, ultimately led to its demise.

QUANTITATIVE EVIDENCE

Apple Pay Users vs Alipay Users as of 2016 (million)[12]



Mobile payment solution adoption in different markets

KEY UNCERTAINTIES

Until mobile-based solutions can demonstrate sustainable advantages over cards, their adoption in card-based markets will remain gradual

1. How will major players in mobile payments convince customers to switch from cards?
2. Does using a mobile payment solution have additional advantages yet to be unlocked?
3. Will successful incumbents from emerging markets be able to enter card-based markets?

Sources: 10. PYMNTS.com 11. Ars Technica 12. Forbes

Customer acceptance of nontraditional payment schemes (e.g. alternative currencies) remains almost non-existent

Despite rising in value, no alternative currency or payment scheme has made inroads into the traditional payments ecosystem or set up an alternative ecosystem, especially as traditional payment solutions are quickly being modernized

SUPPORTING EVIDENCE

Security Concerns	Concerns around the inherent insecurity of alternative currency transactions have only been magnified by a number of negative shocks, including hacks, freezes and their use as a tool for capital flight, all of which reduce trust
Lack of Central Oversight	Alternative rails have been difficult for regulators to track/oversee, which has held back buy-in and thus limited adoption rates. On the other hand, traditional rail replacement technologies have received regulatory buy-in
Real-Time Becoming Reality	Countries around the world are following the lead of the United Kingdom's faster payments system and modernizing their domestic payments systems to move to real-time (or close-to) processing, improving the value proposition of traditional payment schemes compared to alternatives
More Tools for Traditional Payments	New features, such as expanded data transmission and messaging (ISO 20022), transaction tracking and transparency, and flexibility (both for add-ons and cross-border convenience) are being added to traditional payments systems, minimizing the need for an alternative

Customer acceptance of nontraditional payment schemes (e.g. alternative currencies) remains almost non-existent (continued)

CASE STUDIES

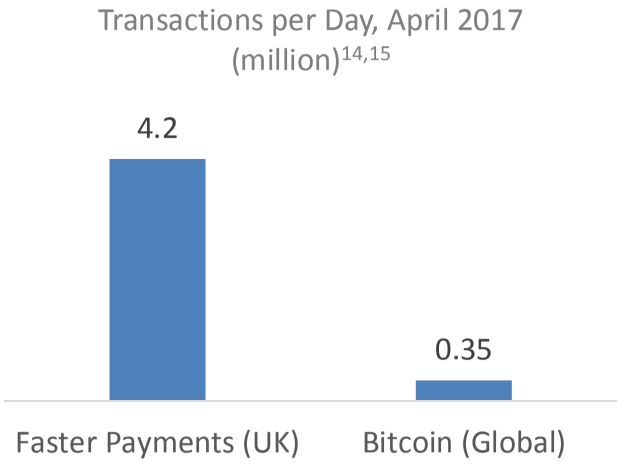
Expansion of real-time system for businesses

The United Kingdom's Faster Payments system was developed to allow money transfers to move cheaply between accounts in a matter of hours, considerably faster than previous solutions. Recently, the limit for processing has been raised to £250,000 for business payments, allowing the system to handle the vast majority of business transactions.

Bitcoin exchange hacks

Concerns regarding the security of exchanges and wallets are pervasive among users of bitcoin and other digital currencies. In 2016, Bitfinex, the world's second-largest coin exchange, was hacked to the value of over $60 million; to recover, all customers were subject to a more than 30% haircut.[13]

QUANTITATIVE EVIDENCE



Popularity of traditional vs alternative payments systems

KEY UNCERTAINTIES

The technology behind alternative payment schemes may be added to traditional schemes, but a significant market shift would need to occur for true payment alternatives to gain traction

1. How will regulators regulate and support digital currency development in the future?
2. Will different payment modernization standards affect the development of cross-border solutions?
3. How will banks continue to justify high payment fees once modern systems are implemented?

Sources: 13. The Wall Street Journal 14. Faster Payments 15. Blockchain.info

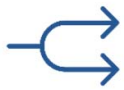
Uncertainties around payments largely concern the move to digital and online, with the effects of regionalization also playing a role

1 WHAT WE KNOW

The five payment findings illustrate the massive pressures on the payments industry. On the one hand, heightened competition and a challenging regulatory environment are leading to steadily declining profits. On the other, customers are reluctant to switch to nontraditional payment schemes without seeing significant benefits, thereby limiting adoption of new technologies.

Through these findings, the following key uncertainties about the future of payments emerged:

2 UNCERTAINTIES



Will the future of payments diverge into two worlds (retail and online), or can they be bridged?

Who is best positioned to benefit from the monetization of payments data?

Will PSD2 successfully create new payments value chains in Europe?

Will mobile payments ever capture a major (double-digit) share of retail payments in card-based countries?

What will the first national digital currency look like, and how far away is it?

3 POSSIBLE FUTURES

The resolution of these five key uncertainties paints three diverging pictures of the future of the payments industry:

Loss Leader

Two Ecosystems Post-PSD2

Increasing Fragmentation

Depending on how the key uncertainties are resolved, the potential end states have very different evolutionary paths and implications for all firms

LOSS LEADER

The first end state paints a world where:

- Issuers face lower interchange revenues
- Customers turn to alternatives for revolving credit
- Customers are conditioned to expect free payments
- Payment choices for customers decline

TWO ECOSYSTEMS POST-PSD2

The second end state paints a world where:

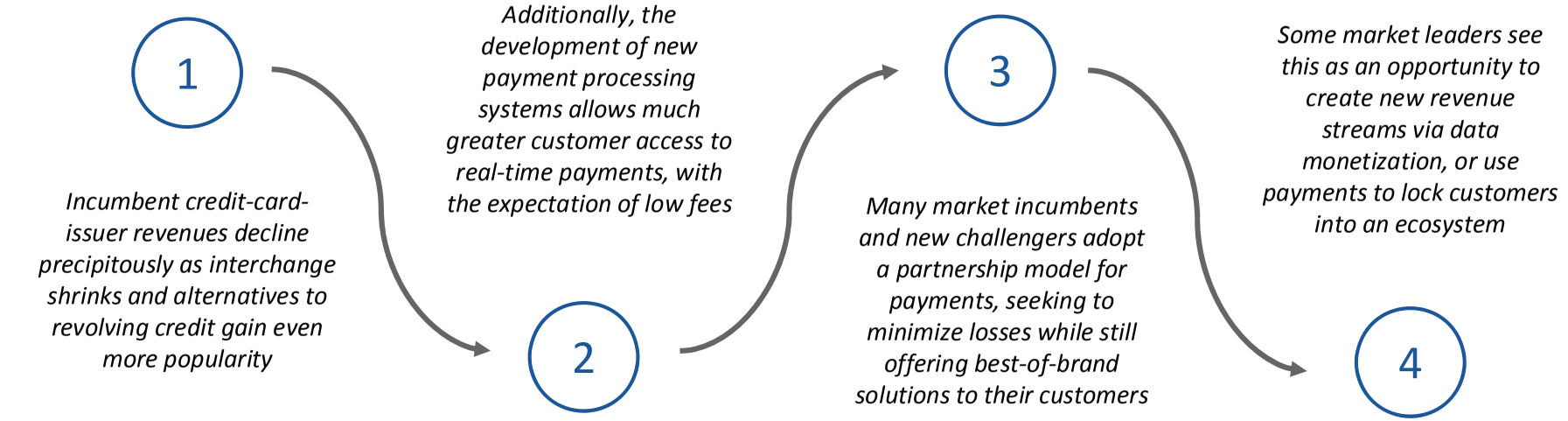
- Banks develop open payment Application Programming Interfaces (APIs)
- Merchants develop online payment tools that bypass intermediaries
- The online and retail payments ecosystem diverges
- Customers are entrenched in online ecosystems

INCREASING FRAGMENTATION

The third end state paints a world where:

- Merchants and intermediaries create personalized payment solutions
- Customers adopt a wide variety of payment tools
- Aggregated flows of data become difficult to acquire
- Monetization of data becomes much more difficult

As payments move from being a cash cow to a loss leader, market leaders look for new strategies, and the rest look for partnerships



CRITICAL CONDITIONS

- The worldwide trend of governments limiting interchange rates and weakening the power of "honour all cards" rules continues
- Low interest rates and an "easy money" monetary policy means that alternatives to revolvers remain easily available to most consumers
- Real-time faster payments systems are successfully deployed in various key geographies around the world

EARLY SIGNS

- Merchants push banks and credit cards to offer more (i.e. data sharing) for their fees, and hold out if no agreement is reached
- Banks start to re-evaluate their rewards and loyalty offerings on cards, offering customers less
- Banks start to partner with fintechs that offer payment services

Merchants benefit the most from this world, and customers may benefit, while intermediaries will likely suffer the most

Implications for Customers

- Fewer issuers means fewer credit card choices
- The remaining choices often represent better value for money – solutions will increasingly be free of charge
- Where allowed by law, data may be shared with multiple parties as an alternative revenue stream

Implications for Merchants

- More bargaining power means less fees paid to card issuers and intermediaries
- The opportunity exists to negotiate for more data/other benefits in return for fees

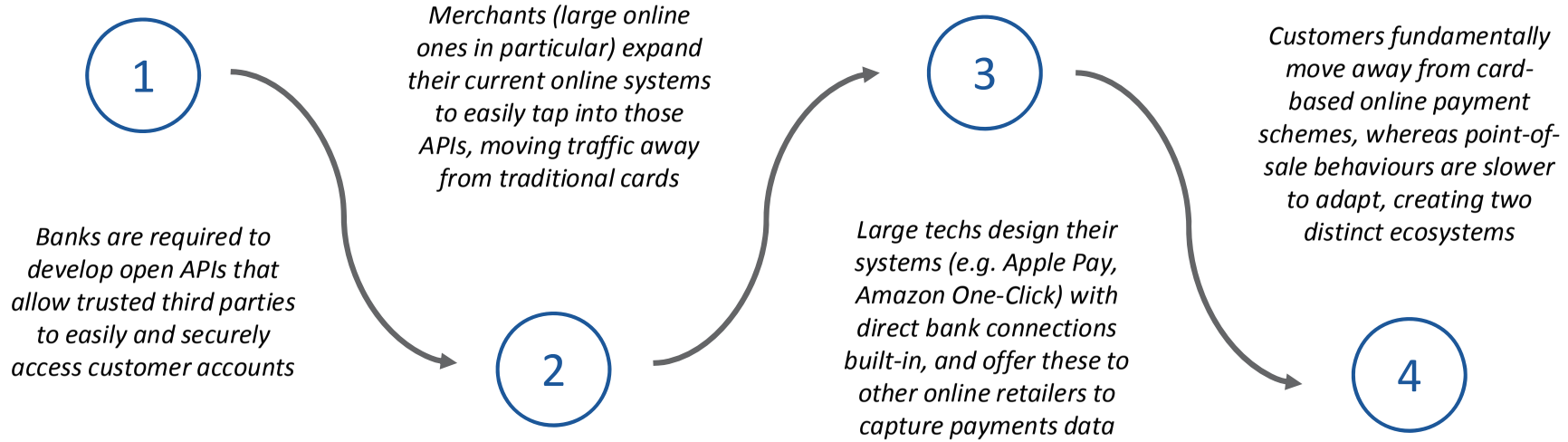
Implications for Intermediaries

- Less interchange means less profit per transaction
- Intermediaries have the opportunity to gain market share as banks withdraw from payment-related activities in favour of partnerships

Implications for Card Issuers

- Regulations and the appearance of alternatives mean that revenues associated with the issuing of cards will decline
- An opportunity to gain market share arises as some card issuers will stop issuing cards
- Data increases in importance as a profit driver

Post-PSD2, the world of online and retail payments could diverge significantly, creating two distinct ecosystems



CRITICAL CONDITIONS

- "Hard" PSD2 or other regulations exist that force banks to develop simple, secure and effective APIs open to third parties
- Large tech solutions are developed that easily tie into these APIs and allow for some information sharing
- The continued absence of a comprehensive digital identity scheme prevents the online ecosystem from easily integrating with retail payments

EARLY SIGNS

- Banks comply with PSD2 in Europe on time, to EU specifications
- Parties from any two of three groups (merchants, banks and large techs) form partnerships to develop solutions that allow easy consumer adoption
- Post-PSD2 credit card usage holds steady in retail stores

The implications for customers are unclear, but merchants benefit greatly on the back of shrinking profits for intermediaries

Implications for Customers

- Direct connections with banks for online purchases mean less justification for credit card fees
- Adoption of online solutions may mean customers are more deeply entrenched in large tech ecosystems

Implications for Intermediaries

- Volumes and margins decline as some retailers and banks bypass traditional intermediaries
- Consolidation is therefore likely, as players fight for a larger share of a smaller pool of profit
- Lack of online business forces a shift of focus to retail shopping to retain profits

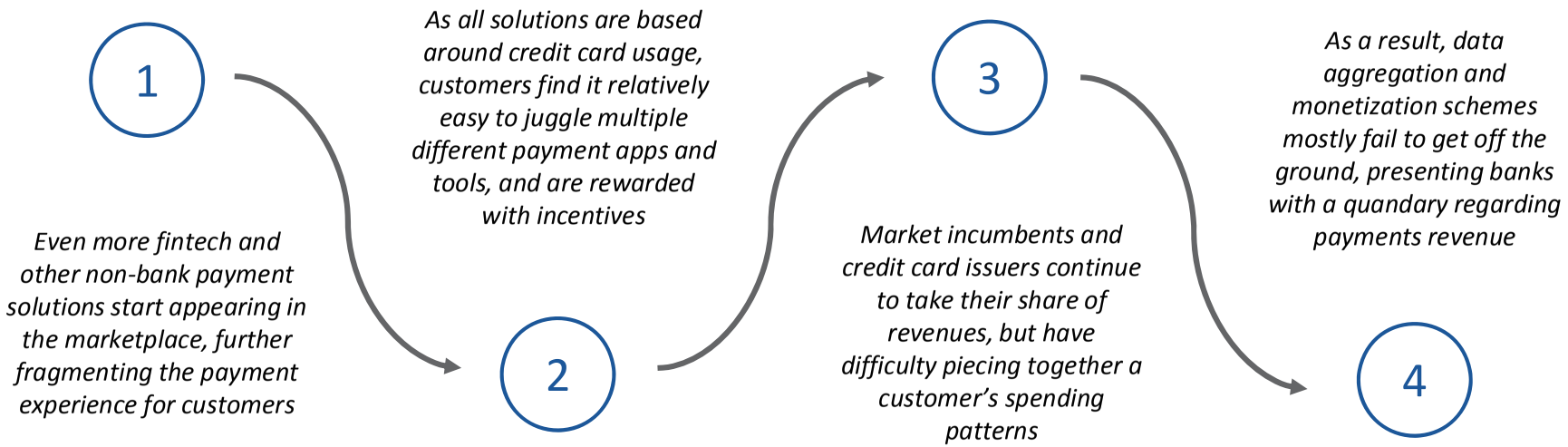
Implications for Merchants

- Less fees are paid to card issuers and intermediaries as more customers use direct solutions
- The opportunity exists to choose partnerships with issuers/intermediaries if benefits align

Implications for Card Issuers

- Use of revolvers may decline somewhat as customers charge less to the card
- Issuers may ally with partners to push the use of their credit cards, driving up usage

Instead of convergence in payments, the field of payments may fragment as merchants, intermediaries and schemes all seek to differentiate



CRITICAL CONDITIONS

- Retailers, both in-store and online, continue to develop customized payment solutions and invest in reward/loyalty schemes to get customers to use those solutions
- Banks fail to bridge the SKU-level data gap

EARLY SIGNS

- The number of retail apps on a typical customer's smartphone continues to increase
- Credit card usage online does not decline
- No predominant payment channel appears out of the competitive landscape

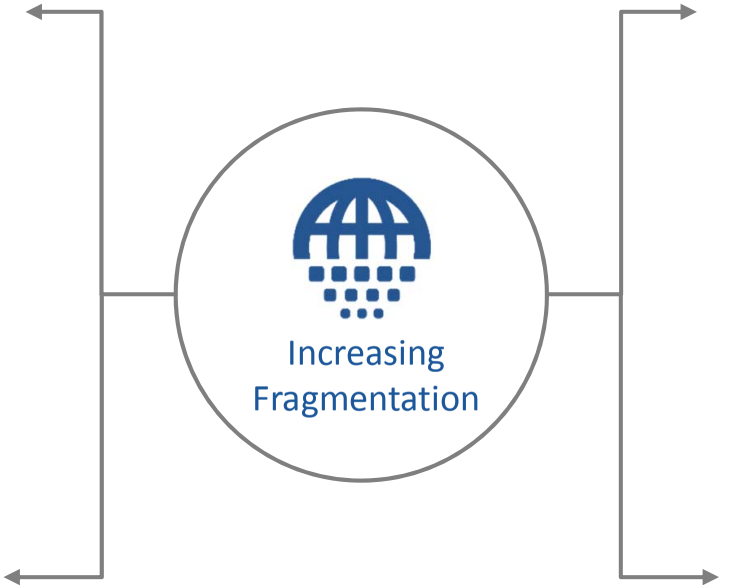
Customers enjoy individually tailored experiences but may lose track of spending, while banks gain power as they track a customer's entire payment profile

Implications for Customers

- More bespoke solutions lead to individually tailored payment experiences
- However, more fragmentation may lead to difficulty tracking spending due to many sources of payments

Implications for Merchants

- Tailored payment experiences with loyalty rewards encourage app usage, and may lead to more customer adoption



Implications for Intermediaries

- Credit card fees continue or even rise, as more credit card usage gets built into apps
- However, nascent data monetization platforms largely fail due to a lack of information sharing
- As a result, consolidation may occur, as it is required to collect/make sense of customer data
- As customers struggle to manage spending habits, tools that offer tracking and advice could thrive

Implications for Card Issuers

- The base act of card issuing does not largely decline in revenue – cards continue to compete on rewards
- Banks have the only complete picture of the customer's spending, thus retaining control over data

Key takeaways for financial institutions

1

DATA MONETIZATION

New competition and increased regulation will continue to make core payment activities less profitable, pushing payment providers to focus on data monetization as an important source of revenue. Data streams will be significantly more valuable where they are granular (e.g. product-level data) and multidimensional (e.g. location data), making data cooperation and partnerships critical to successful monetization

2

LOCAL PAYMENT NEEDS

Instead of designing payment solutions based on technology, institutions will focus on how their customers prefer to pay, and design payment solutions that fit their customers' lives – which will lead to regional solutions. Furthermore, emerging countries without a mature payments ecosystem will likely take the lead in developing payment solutions

3

POWER OF LARGE MERCHANTS

As the ability of large merchants to influence their customers' payment choices grows (particularly in online transactions), their negotiating power within the payments ecosystem will grow accordingly. Combined with the increased importance of product-level payments data, merchants will be able to wield this power to lower fees and influence the broader evolution of payments ecosystems

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Section 3.2

Insurance

Insurance has greatly evolved in the last several years. This section examines the key trends shaping the industry and the uncertain path forward

The first half of this decade signaled the start of major disruption in insurance, and the global entry of several innovative forces with the potential to dramatically change its future

CIRCA 2015, THE MAJOR FORCES IMPACTING INSURANCE WERE …

Value Chain Pressure

From sales to claims, insurers faced pressure on all sides of the value chain

New Product Needs

New risks linked to changing lifestyles and technology meant new insurance product needs

Increasing Connectivity

Insurers' ability to connect with and monitor their customers' risks was increasing

CIRCA 2015, THE BIG UNCERTAINTIES ABOUT THE FUTURE OF INSURANCE WERE …

- Would the pressures on the insurance value chain continue, and would they lead to changes?
- Would insurance products change due to changing customer lifestyles?
- Would connected products reach mass adoption across all types of insurance?
- How would the development of life insurance evolve as growth markets shift?

Note: For the purposes of distinguishing between property and casualty (P&C) insurance and life insurance, all findings and potential end states will specify their relevant sector, or if they are equally applicable to both sectors

Insurers are challenged by the rise of "insurtechs" and a structural transformation of their customer base, forcing them to adopt to new technologies more quickly

WHERE DISRUPTION OCCURRED

A. Increased modularity in the insurance value chain is enabling new combinations of players and threatening the position of incumbents

B. Usage-based, on-demand and object-specific insurance products are emerging in response to shifting customer lifestyles

C. Life insurers face pressure to reinvent their product strategies to meet the needs of their next generation of customers

D. The development of products to insure emerging risks is becoming critical to carrier profitability, particularly as margins in traditional products erode

WHERE DISRUPTION DID NOT OCCUR

E. Connected devices are proliferating, but insurers have failed to convince customers that connected insurance serves their interests

Increased modularity in the insurance value chain is enabling new combinations of players and threatening the position of incumbents (P&C/Life)

A rise in the number of insurtechs, coupled with external forces, is driving the disaggregation of insurance value chains – forcing insurers to adapt to the new world by partnering and investing in innovation

SUPPORTING EVIDENCE

Changing Purchasing Patterns

Customers are purchasing insurance in new ways. Some customers are choosing different channels, such as online and mobile, while others are changing their purchase occasions, including purchasing microinsurance products as needed and purchasing insurance directly tied to a product

Shifting Underwriting Responsibilities

The continued development of self-driving cars and the sharing economy has started to shift the responsibility of insurance away from the insurer to both distribution platforms and product manufacturers (e.g. Uber, Airbnb or Tesla), creating new engagement models for insurers and necessitating a shift in insurance product design

Overcapitalization

The insurance industry is overcapitalized as a whole, leading to lower returns. Thus, the recent growth of non-catastrophe insurance-linked securities (ILS), as well as partnerships between ILS and risk underwriters/product designers, will lead to additional return depression, forcing firms to find other ways of unlocking profit

Rise of Partnerships

With the rise of external forces, insurers and reinsurers are increasingly partnering with outside organizations (such as insurtechs and large tech firms) to acquire expertise and hedge against disruption, without risking direct product cannibalization by innovating internally

Increased modularity in the insurance value chain is enabling new combinations of players and threatening the position of incumbents (P&C/Life) (continued)

CASE STUDIES

Munich RE BOUGHT BY MANY

Partnership with insurtech

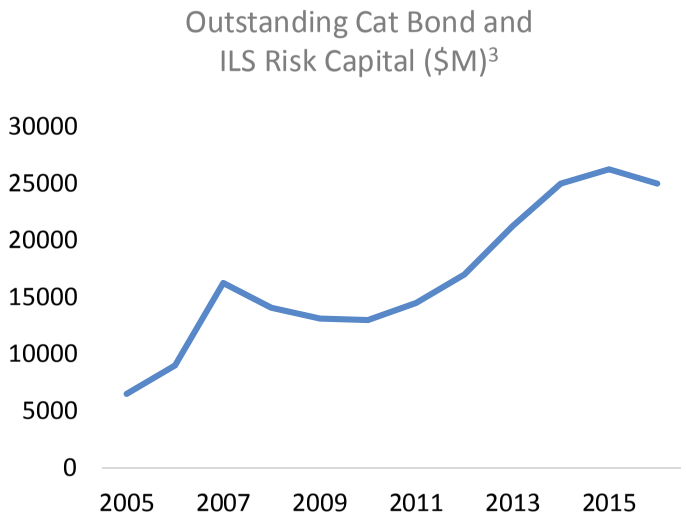
Bought by Many, an insurtech focused on using the web to meet previously underserved affinity needs, recently partnered with Munich Re to offer insurance products directly. This gives Bought by Many the balance sheet of Munich Re for support, and provides Munich Re exposure to products without a traditional carrier intermediary.[1]

TESLA

Lifetime auto insurance

Tesla has quietly rolled out lifetime auto insurance for the majority of its cars sold in Asia.[2] The insurance is provided by a third-party insurer (varies by geography), and the lifetime cost is included as part of the vehicle price at point of sale. Tesla believes that with its improving autopilot and safety features, the risk profile of its cars will only improve over time.

QUANTITATIVE EVIDENCE



The rise of alternative capital in insurance

KEY UNCERTAINTIES

The rise of insurtech and the transformational effect of technology shifts will force insurers to redefine their product design and distribution strategy

1. How will insurers change product design and pricing in a world where they sell through multiple channels?
2. How will insurers guard against the erosion of their profitability from institutional money?
3. To what extent will insurance get subsumed within the actual product or service being purchased?

Sources: 1. FT 2. Mashable 3. Swiss Re

Usage-based, on-demand and object-specific insurance products are emerging in response to shifting customer lifestyles (P&C)

Insurers are designing new products around their customers' changing needs, especially as people from all walks of life change their work and consumption patterns. However, questions remain about how needs will be measured and risks assessed

SUPPORTING EVIDENCE

Rise of the Prosumer

The line between the consumer and a business is blurring, with the rise of the prosumer meaning that consumers need different coverages depending on what they're doing. As a result, insurers must shift their delineation between personal and commercial insurance in order to meet customer needs

Micro-Insurance

Insurtech start-ups are offering ever smaller "slices" of insurance for individual products (e.g. customers' mobile phones), or for smaller amounts of time that customers can choose (e.g. for a potentially delayed flight). This will test the limits of insurance product design and necessitate on-demand sales

Adaptable Insurance

Consumers are demanding modularity for their insurance in different locations, for different use cases (e.g. coverage for high-value items), and for different usage patterns (e.g. coverages that can easily be turned on and off). As a result, incumbents will have to adapt their "one-size-fits-all" products to remain competitive

Usage-based, on-demand and object-specific insurance products are emerging in response to shifting customer lifestyles (P&C) (continued)

CASE STUDIES

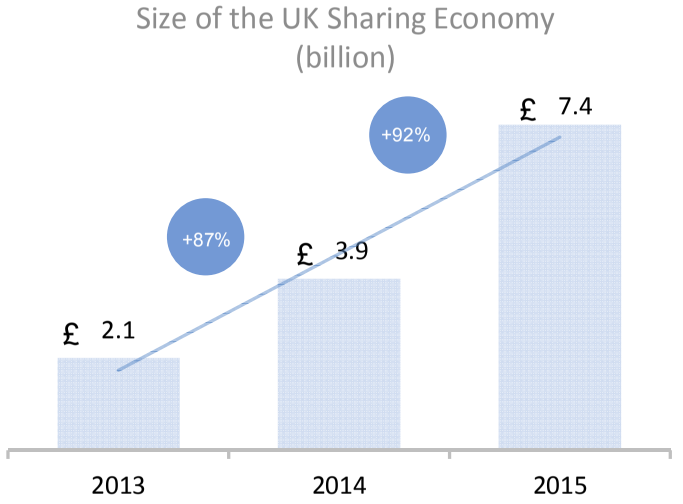
Blurring lines for all

The fastest-growing segment of hosts on Airbnb in the United States are seniors (102% year-over-year growth vs 85% overall), and 64% of them are women over the age of 60.[4] The growth of this segment suggests cross-cultural participation in the sharing economy, and the subsequent need for insurance products targeted to customers' individual lifestyles.

Serving the prosumer

Slice is an insurtech targeting the grey area between consumer and business insurance, in order to meet the needs of the prosumer.[5] Slice has created a product where homesharers are covered on top of a traditional homeowner's policy, but at much cheaper prices than those for a commercial policy.

QUANTITATIVE EVIDENCE



Transaction value growth of the UK sharing economy[6]

KEY UNCERTAINTIES

Customers' purchasing behaviours are influenced by the blurred lines between work and personal time, and the subsequent demand for flexibility and individuality

1. How will insurers bridge the gap between personal and commercial operations within their operations?
2. Micro-insurance presumes an increased level of engagement between customers and the insurer – do customers want this?
3. How will the roll-out of adaptable insurance impact customers who previously benefitted from non-modular products?

Sources: 4. Airbnb 5. Insurance Journal 6. PwC

Life insurers face pressure to reinvent their product strategies to meet the needs of their next generation of customers (Life)

The life insurance market is growing fastest in areas where the population is much younger as a whole, which leads to changes in product demands and customer purchasing behaviour that insurers must take into account

SUPPORTING EVIDENCE

Emerging Markets Growth

The vast majority of growth in life markets is in emerging markets, such as South-East Asia, the Middle East or Africa, and those younger customers seek to purchase term coverage more than retirement-related products

Comfort with Digital Channels

In many emerging markets, the traditional agent network is weak and the population is much more invested in digital (including mobile) technologies, as opposed to mature markets where traditional life insurance depends on in-person interactions with both an agent and a doctor

Rise of Digital Distribution

Several platforms started in 2017 sell simple life products online, using available information to bypass the medical check; this represents the start of a shift of rigid, fixed-term policies towards more flexible, consumable chunks for easy digital consumption

Life insurers face pressure to reinvent their product strategies to meet the needs of their next generation of customers (Life) (continued)

CASE STUDIES

Emerging market life insurance

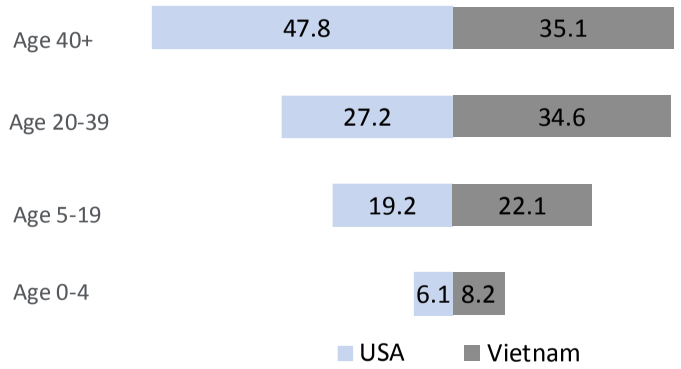
Bima is a company delivering a wide range of mobile health coverages to customers in the emerging world, using a model where consumers can pay for insurance using prepaid mobile credit.[7] They still require verification by an agent, but target low-income individuals (typically not a target of life insurance) in several markets in Africa.

Online-based life products

Ladder and Haven Life are US insurers that have recently started to offer term life products without a medical check for the majority of applicants.[8] Ladder is an insurtech start-up, whereas Haven Life is a wholly owned subsidiary of MassMutual. As a result, they represent two paths for the life insurance industry to offer digital products.

QUANTITATIVE EVIDENCE

Population Distribution in the US vs Vietnam, 2016 (%)[9]



Different demographics, different needs

KEY UNCERTAINTIES

Life insurance companies will have to adopt P&C insurance traits, such as digital platforms and automated processes – omnichannel, simple experiences will be a differentiating factor in customer decision-making

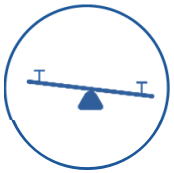
1. Will emerging market patterns spill over into developed markets with a traditional understanding of life insurance?
2. How will insurers acquire the information they need to bypass the medical check, and how will this differ by region?
3. How will traditional insurers manage the shift to simpler term products in their core businesses, without cannibalization?

Sources: 7. Business Insider 8. NerdWallet 9. PopulationPyramid.net

The development of products to insure emerging risks is becoming critical to carrier profitability, particularly as margins in traditional products erode (P&C)

While risk homogenization has pushed margins down for traditional insurance coverage, this decline is balanced by growth in emerging markets, value-added connected services and new products to address emerging risks

SUPPORTING EVIDENCE



Global Market as Seesaw

P&C insurance premiums in the developed world have flatlined or declined due to the homogenization of risk. This has been offset by growth of traditional insurance products in emerging markets, where penetration rates for insurance remain low

New Risks Equal New Products

The insurance market is starting to build products that protect against emerging tech-related risks, such as cyber insurance, AI and self-driving cars. Cyber insurance is already a $2.5 billion market in the United States and is projected to grow quickly; the financial services sector itself represents a significant driver of growth for these products

Change of Role

In the commercial lines space, insurers are starting to shift to offering products that include sensor-based coverage, which reduce claims by monitoring for changes 24/7. The rise of connected insurance and sensor technology will lead to an increasing share of business focused on prevention

The development of products to insure emerging risks is becoming critical to carrier profitability, particularly as margins in traditional products erode (P&C) (continued)

CASE STUDIES

GUY CARPENTER Symantec

Joint cyber aggregation model

Guy Carpenter, one of the world's largest reinsurers, recently established a partnership with Symantec to create a cyber aggregation model.[10] Guy Carpenter is hoping that by partnering with Symantec, it will be able to model extreme cyberevents more accurately and deliver better pricing and risk management for its customers.

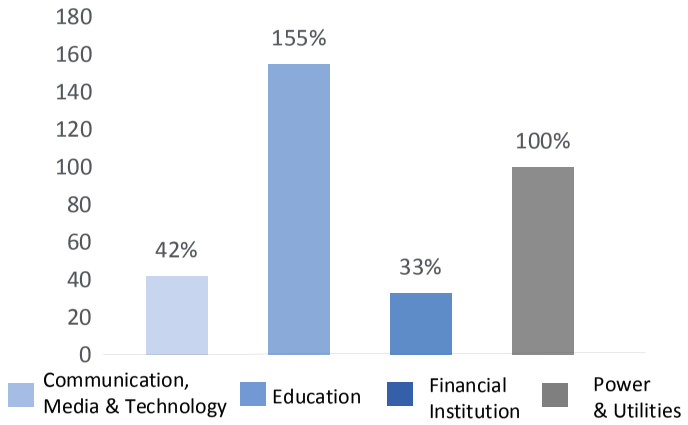
Church Mutual Insurance Company
Listening. Learning. Leading.

Connected monitoring for churches

A commercial insurance company recently launched a product with Church Mutual to protect churches against frozen pipe leaks (churches are especially vulnerable due to low occupancy). The initial pilot saved customers close to $1 million in claims, and the product has been rolled out in over 1,500 churches across the United States.[11]

QUANTITATIVE EVIDENCE

Growth in Total Cyber Insurance limits Purchased for Marsh Clients', Q1/2015[12]



Fast and broad growth of cyber insurance products

KEY UNCERTAINTIES

While traditional products remain profitable in emerging markets, finding new sources of revenues is increasingly important in the developed world

1. How long will emerging markets be able to grow rapidly, and how does that timeline contrast with the homogenization of risk?
2. Will the rise of insurance premiums on new risks and in new markets balance out the loss of traditional risks and markets?
3. With the shift to prevention, insurers will move into areas currently occupied by large techs – how will this affect partnerships?

Sources: 10. Insurance Journal 11. Yahoo Finance 12. Risk Management Monitor/Marsh Analysis

Connected devices are proliferating, but insurers have failed to convince customers that connected insurance serves their interests (P&C/Life)

The number of connections between the consumer and the insurer has risen, but consumers do not feel comfortable volunteering their information as insurers have not convinced the customer of the benefits of connectedness

SUPPORTING EVIDENCE

Customer Data Ownership

As the amount of data from connected insurance rises, regulatory bodies have started to mandate consumer data protection policies, which put control of data in the customer's hands. Moreover, regulators in some locales are working directly with companies in order to ensure data security

The Rise of Time-Measured Insurance

Traditionally, insurance products have worked on a fixed-time basis, where the price would be directly linked to the customer's risk profile. As technology advances, connected insurance products can measure both a risk and a time variable, making more targeted and accurate pricing possible

Ease of Connection

To simplify the process of connected insurance and to reach out to sometimes hesitant consumers, insurers can work with product manufacturers to build the connection into the product. In most instances, however, that connection requires customer agreement

Role of Assistants

With increasing use of virtual assistants by Amazon, Google and Microsoft, and as such assistants collect more information about their owners, they may become a virtual insurance agent for households. However, insurers would have to build relationships with large tech firms to use those channels effectively

Connected devices are proliferating, but insurers have failed to convince customers that connected insurance serves their interests (P&C/Life) (continued)

CASE STUDIES

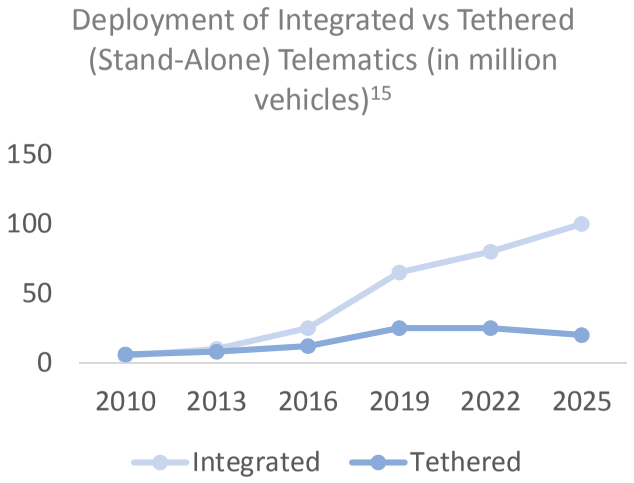
Lifestyle rewards

The John Hancock Vitality programme rewards customers with premium savings and retail discounts for living a healthy lifestyle. Customers have the choice to opt in to the programme, earning "vitality points" by tracking daily, health-related activities. Customers benefit because they receive savings by going about their daily activities – no lifestyle change required.[13]

Integrated telematics

At Liberty Mutual, customers can receive a free Nest Protect smoke detector and discounted insurance premiums upon installation and verification.[14] Nest notifies Liberty Mutual of the device's battery levels and working sensors – no additional effort required. Customers save just by having a required home safety device, making adoption pain-free.

QUANTITATIVE EVIDENCE



Rise of integrated telematics vs opt-in telematics

KEY UNCERTAINTIES

Before customers are willing to adopt connected products, adequate data-sharing agreements and premium incentives need to be in place

1. How will insurers come together to build standards around data sharing, and how will those standards differ internationally?
2. What will be the impact of time-based insurance on the per-unit price of insurance?
3. How will the development of assistants around closed ecosystems (Siri, Alexa) impact the purchase of insurance?

Sources: 13. John Hancock 14. Nest 15. EY

The resolution of these uncertainties will shape the future development of insurance and the roles of insurers

1 WHAT WE KNOW

The insurance findings illustrate the scale of the challenges facing insurers. The value chain is under enormous pressure, and changes in purchasing patterns are forcing insurers to move away from the traditional "one-size-fits-all" model towards a flexible, customizable range of products. At the same time, insurers must change from being reactive to being proactive, with the rise of connected insurance and the need to monitor customer risk on an ongoing basis.

Through these findings, the following key uncertainties around the future of insurance emerged:

2 UNCERTAINTIES

- How will the insurance consumption model change as the sources and nature of liability changes in the future?
- Will the industry be able to develop guidelines for the use of data, and how will those guidelines differ around the world?
- Do customers want to engage with their insurer more often (as would be needed for micro-insurance)?
- How will insurers match their life products to fit the different conditions in emerging markets?
- Will increasing integration and a focus on prevention lead to success for connected products?

3 POSSIBLE FUTURES

The resolution of these five key uncertainties paints four diverging pictures of the future of the insurance industry:

- Challenging the Channel
- Underwriting by Machine
- Rise of the Flexible Product
- E-Z Life Insurance

Depending on how the key uncertainties are resolved, the potential end states have very different evolutionary paths and implications for all firms

CHANGING THE CHANNEL

The first end state paints a world where:

- Insurers improve their customer-facing digital experiences
- Insurance becomes increasingly integrated with products
- Consumers benefit from products tailored to their needs
- Advertising for mindshare decreases in importance

UNDERWRITING BY MACHINE

The second end state paints a world where:

- Underwriting becomes increasingly complicated, strengthening the role of AI
- Third-party underwriting (for AI expertise) becomes the industry standard
- Two diverging paths are created for customers
- Insurers face a battle to differentiate themselves

RISE OF THE FLEXIBLE PRODUCT

The third end state paints a world where:

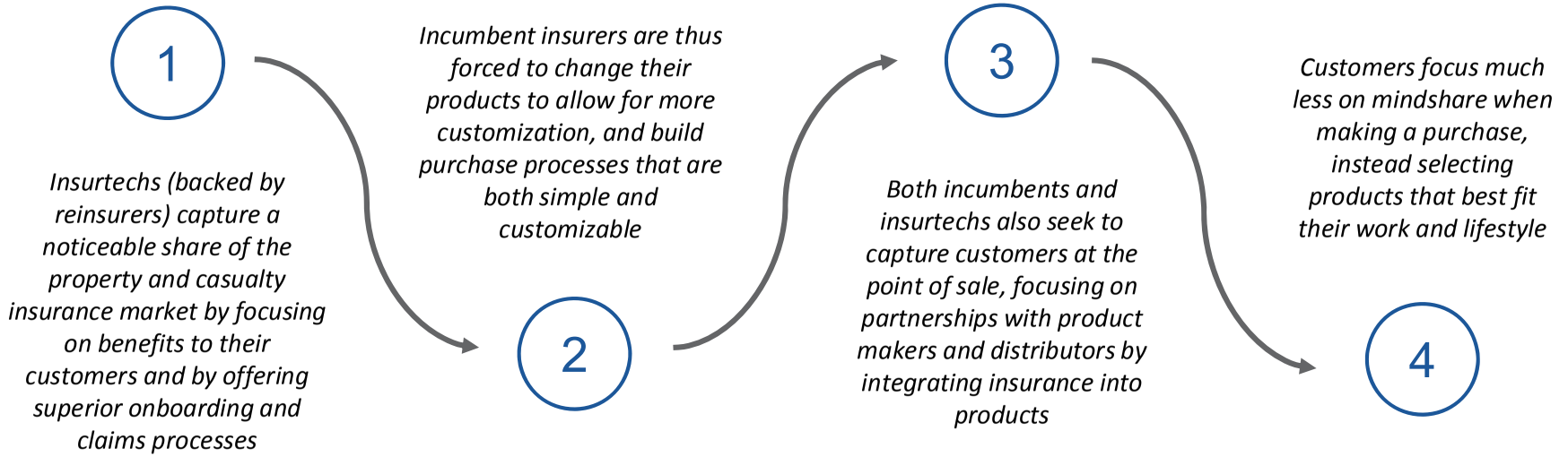
- Prosumers force insurers to connect business and personal insurance
- Insurers use technology to enable time flexibility
- Insurers engage with consumers to monitor coverage
- Customers may be caught off guard by inconsistent coverage

E-Z LIFE INSURANCE

The fourth end state paints a world where:

- Insurers develop digital channels for product distribution
- Term products rise in popularity as demographics shift
- Life insurers deprioritize agents and investments
- Life insurers thus increasingly resemble P&C firms

As customer purchasing patterns start to shift, insurers emphasize benefits, digital channels and integration at point of sale (P&C)



CRITICAL CONDITIONS

- Digital channels for purchase continue to rise in popularity, led especially by insurtechs
- A majority of customers overcome apathy to consider switching insurance providers more actively
- Significant demand exists for insurance tied to specific products

EARLY SIGNS

- A variety of insurtechs that offer different types of P&C insurance appear, driving competition
- Incumbents start offering modular products on more lines of business

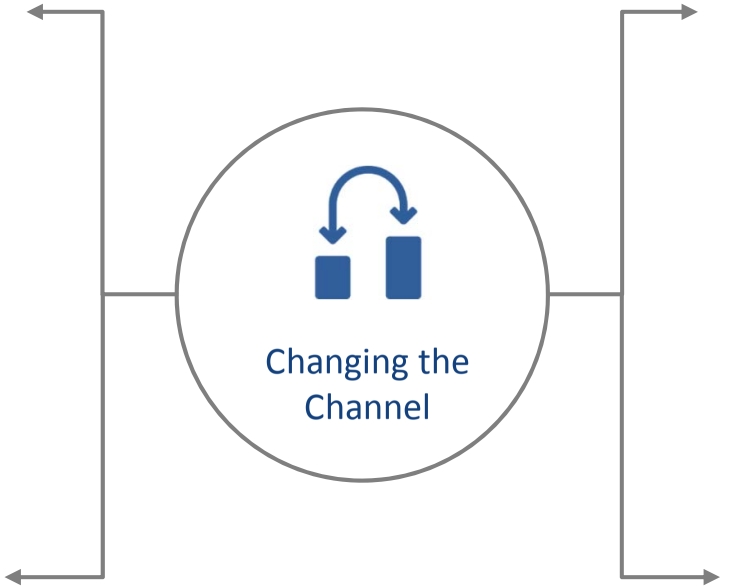
As a result, product design and marketing will shift considerably, and customers will benefit from having products more tied to their needs

Implications for Incumbent Insurers

- Insurtechs will set customer expectations on digital purchase and claims experiences
- Tie-ins with products create opportunities for lucrative partnerships for leading insurers in this area
- As products become targeted to customer needs, using advertising to secure mindshare will become less important to customer acquisition

Implications for Regulators

- The rise of insurance tied to product sales compels regulators to answer questions about whether exclusive partnerships are good for customers



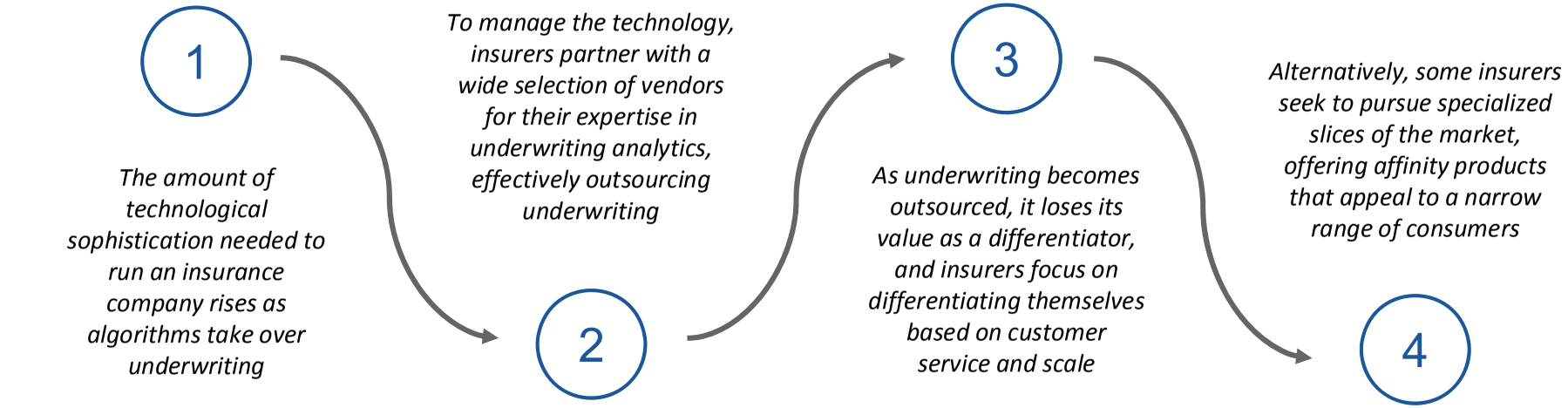
Implications for Insurtechs

- The mainstreaming of insurtechs focused on customer-specific experiences will benefit customer choice, but may force the insurtechs into niches
- Mainstreaming will also attract willing partners and create opportunities to white label products

Implications for Customers

- Customers will benefit from products tailored to their needs
- Customers who are heavy users and thus benefit from one-size-fits-all insurance may have to pay more

Insurers find it hard to keep up with rapid developments in AI, and thus outsource underwriting, causing a bifurcation of the market (P&C)



CRITICAL CONDITIONS

- AI development in underwriting advances significantly
- Insurers work with B2B vendors/utilities instead of in-house, especially to drive advancements in underwriting

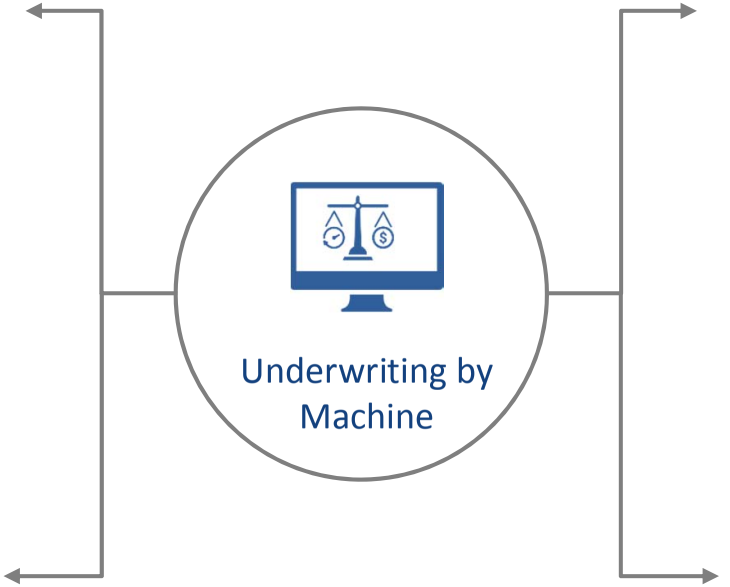
EARLY SIGNS

- Insurers start cutting staff in underwriting departments as they outsource/depend on vendors
- Insurers start offering affinity policies

Customers benefit, but new entrants (especially affinity players) may suffer from lack of scale; in addition, insurers have to find new ways to differentiate themselves

Implications for Incumbent Insurers

- Distribution and scale are more important than ever, increasing the likelihood of consolidation
- Pooling of risks ceases to exist as pricing sophistication leads to individualized, risk-based pricing
- Non-scale incumbents must find ways of differentiating themselves



Implications for Insurtechs

- Insurtechs catering to affinity customers face competition from insurers that seek to specialize
- Some insurtechs may evolve to become B2B underwriting and claims processing providers

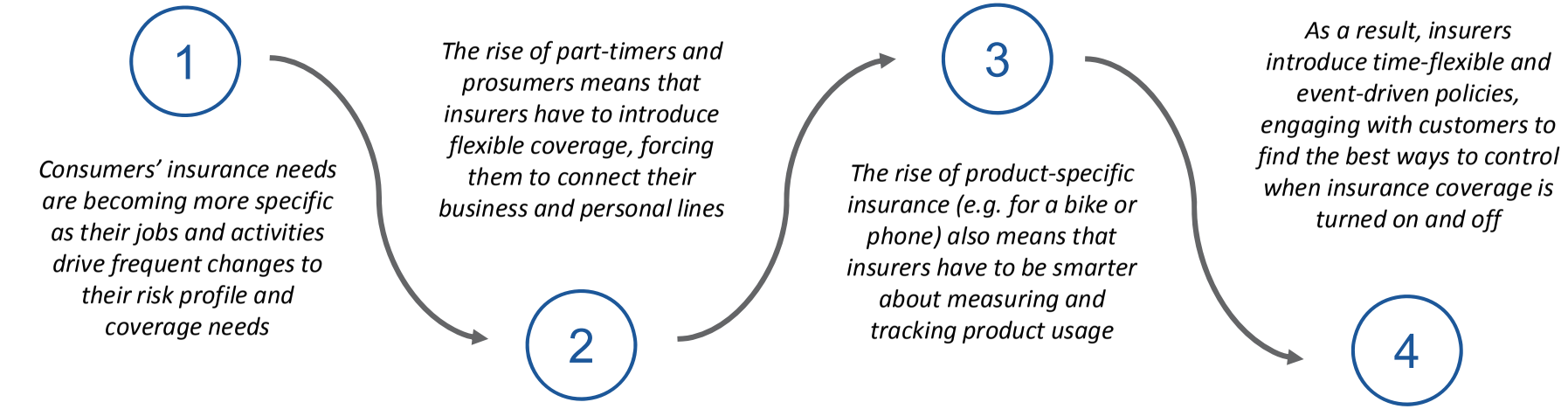
Implications for Regulators

- The externalization of underwriting could mean fewer models to monitor, but it also creates the risk of a "single point of failure"

Implications for Customers

- Customers either benefit by paying less or by being served better under an affinity

The rise of insurance that covers changes in behaviour, role and risk profile over time means insurers must solve how to monitor products (P&C, Life)



CRITICAL CONDITIONS

- The shift towards self-employment continues around the world
- Connected products that allow monitoring of "turn on, turn off" insurance grow in popularity

EARLY SIGNS

- Insurers start entering into partnerships or acquisitions with prosumer-focused insurtechs
- Insurers and gig economy firms launch partnerships to cover workers
- Insurers work to build in coverage for internet-enabled products

Incumbents and insurtechs would have to invest in tracking and digital solutions to protect against customer mistakes that lead to miscoverage

Implications for Incumbent Insurers

- The increase in monitoring signals a fundamental shift in the role of insurers from risk transfer to risk monitoring and management
- "Turn on, turn off" insurance means insurers will have to invest in monitoring technologies

Implications for Insurtechs

- The rise of flexible insurance means that insurtechs specializing in prosumers or connected products will have many partnership opportunities
- Insurtechs will have to carefully measure claims rates for fraud detection

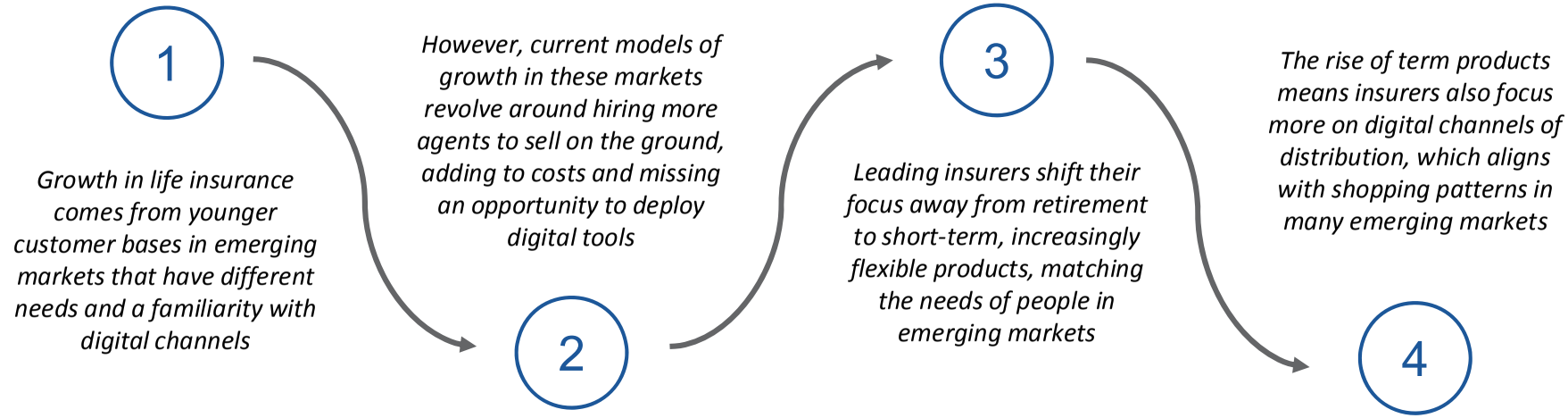
Implications for Regulators

- Using connected tools for monitoring customers will create new data concerns for regulators focused on consumer protection

Implications for Customers

- Customers will benefit from flexible insurance products that can be modified to suit their needs
- Insurance that can be turned on and off may lead customers to struggle with inadvertent coverage gaps

Demographics and market maturity mean emerging markets will provide the bulk of life insurance growth, and digital distribution is key (Life)



CRITICAL CONDITIONS

- Increasing demand for life insurance in Africa, South-East Asia and South America drives life insurers' profits
- The lack of knowledge about complicated life insurance products persists
- Current demographic patterns continue

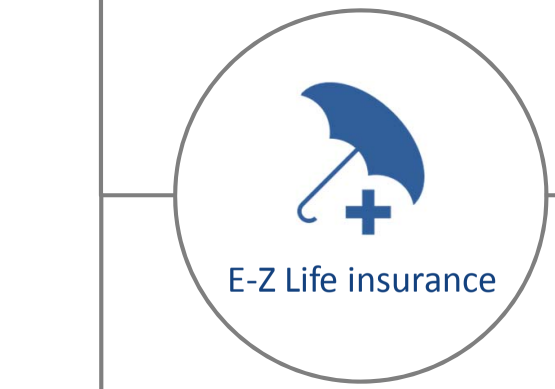
EARLY SIGNS

- Insurtechs push incumbents by offering digital life insurance products in key locales
- A global life insurer undergoes major restructuring (i.e. de-emphasizing agents) in key locales
- "Simple" term products become increasingly popular

Insurers that can offer digital distribution without compromising underwriting stand to capture market share, and provide customers with additional coverage

Implications for Incumbent Insurers

- The shift to term products and digital distribution means life insurers will start looking much like P&C insurers in their structure
- This shift will foster industry consolidation as companies seek scale to drive profits from lower-margin term products



Implications for Insurtechs

- Insurtechs will have a competitive advantage in emerging markets due to their local nature, and could represent good targets for acquisition
- They can be a useful tool for spreading innovations between borders, either organically or with a partner's help

Implications for Regulators

- The rise of digital channels may mean a more attractive target for data theft – regulators will have to ensure adequate data protection

Implications for Customers

- Customers will benefit from products that better suit their age demographic (e.g. term life products)

Key takeaways for financial institutions

1

VALUE CHAIN SHIFT

Once tightly vertically integrated, the insurance value chain is rapidly being modularized by new technologies that allow for splitting activities across many different players. Leading organizations are using this modularity to their advantage, pursing flexible partnerships that allow them to aggressively compete for adjacent profit pools

2

COMPLEX PRODUCTS, SIMPLY DISTRIBUTED

To remain competitive, insurers need to simultaneously achieve two seemingly contradictory objectives: on the one hand, they must develop complex and highly personalized products to meet customers' needs; on the other, they will need to significantly simplify the origination process, enabling even highly complex products to be sold directly through online and mobile channels

3

CONNECTIONS CHANGING THE INSURER

Connected insurance will fundamentally change the way insurers operate, shifting their focus from risk assessment to risk prevention and creating the imperative to work with original equipment manufacturers to build in connections. To achieve this, however, insurers must overcome existing perceptions of connected insurance products, convincing customers that they represent an improvement over current products

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Section 3.3

Digital Banking

Digital banking has greatly evolved in the last several years. This section examines the key trends shaping the industry and the uncertain path forward

The first half of this decade saw the start of a shift in digital banking, with the entry of several new forces that changed the online and mobile banking ecosystem and had the potential to change the way customers bank

CIRCA 2015, THE MAJOR FORCES IMPACTING DIGITAL BANKING WERE …

Virtual Banks

Virtual banks improved their offerings to differentiate themselves from incumbents

Mobile Channels

All banks developed mobile channels, though incumbents often struggled

Banking Platforms

Banks began to use technology to enable third-party applications

CIRCA 2015, THE BIG UNCERTAINTIES ABOUT THE FUTURE OF DIGITAL BANKING WERE …

Would virtual banks be able to capture market share from incumbents?

How would the emergence of banking platforms affect developments in digital banking?

How would banks be able to deploy digital solutions with legacy architecture?

Banking is on the cusp of significant disruption as regulations and technology begin to lay the foundations of a fundamental shift in the business model

WHERE DID DISRUPTION OCCUR?

A. Traditional bank distribution models and economics are at risk of being deeply disrupted by the drive towards platform models of banking

B. Banks no longer define customer expectations of the banking experience; instead, fintechs and large technology companies set the standard

C. Incumbents are starting to migrate core systems to the cloud, as legacy infrastructure creates challenges in meeting customer needs

WHERE HAS DISRUPTION NOT OCCURRED?

D. Few customers have moved away from traditional deposit accounts despite significant efforts from online and mobile challenger banks

Traditional bank distribution models and economics are at risk of being deeply disrupted by the drive towards platform models of banking

Catalysed by regulators and driven by a desire to more efficiently satisfy customer needs, platform banking business models – where banks offer connections with other firms in addition to their own – are gaining momentum

SUPPORTING EVIDENCE

Increasing Technology Capacity

APIs, as software intermediaries that allow programmes to connect and interact, provide exposure-specific functionality while protecting the rest of the application. This technology, which has achieved broad adoption in recent years, allows banks to seamlessly integrate with third parties and is necessary for developing platform models of banking

Increasing Regulatory Pressure

Regulators in a number of jurisdictions have begun mandating that banks share data and access with third-party organizations via open APIs. These open banking standards, such as PSD2 in Europe, are expected to weaken banks' control over customer data and allow customers much greater control over third-party access to their accounts

Shrinking Margins

Margins on banking products are declining due to increased competition, lowering the profitability of product manufacturing. This incentivizes banks to refocus on distribution and seek partnerships with specialized product and service providers – in effect, creating platforms for their customers

CAVEATS

Uncertain Economics

Platform banking business models are nascent, and little is understood about what the model and economics will ultimately look like. The uncertainty has discouraged incumbents and financial services software providers from investing in platform banking solutions, particularly as the incremental scale required to offset potential cannibalization is unclear

Traditional bank distribution models and economics are at risk of being deeply disrupted by the drive towards platform models of banking (continued)

CASE STUDIES

N26

Curated platform new entrant

A German digital-only bank, N26 has clearly identified its user-centred digital experience as its key differentiator. The bank engages "best-of-breed" providers, from Allianz to TransferWise,[1] to offer products that N26 itself does not focus on, thus creating a highly curated platform.

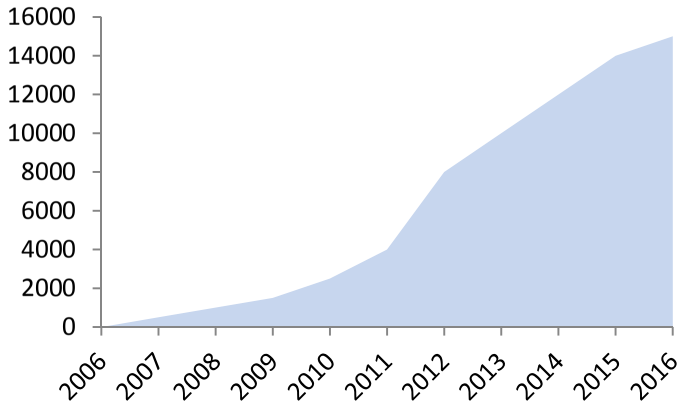
CRÉDIT AGRICOLE

Open platform incumbent

Crédit Agricole, Europe's third-largest bank by assets, provides an app store for its customers to download a wide range of functionalities which complement core products. To do this, the bank exposes its API to all external developers and cultivates a community that encourages customers to suggest ideas.[2]

QUANTITATIVE EVIDENCE

Total Number of Publicly Available APIs on the ProgrammableWeb Directory[3]



Rise of APIs in financial services

KEY UNCERTAINTIES

The degree of platform "openness" will depend on how many regulators enforce open banking standards and how strongly they do so

1. Will other governments pass regulations requiring the open sharing of data?
2. Will there be a "hard" or "soft" enforcement of PSD2?
3. Absent regulatory pressures, how strongly will banks seek to curate their platform offerings?

Sources: 1. The Investment Observer 2. American Banker 3. Nordics APIs

Banks no longer define customer expectations of the banking experience; instead, fintechs and large technology companies set the standard

Experiences with non-incumbents are raising the bar for banks, as customers expect more value-driven, personalized and seamless service than ever before. Incumbent banks, focused on recapitalizing their post-crisis balance sheets, are playing catch-up

SUPPORTING EVIDENCE

Client Comfort with Digital Channels

Customers' use of digital channels for banking has risen, as adoption of smartphones and other internet-enabled devices increases worldwide. Customers are also becoming more trusting of digital channels when conducting monetary transactions, as illustrated by the global rise of online shopping

Experiences with Non-Financial Firms

Customers now demand the same immediate access, frictionless experience and low-fee or free offerings from their mobile banking apps as they receive from Uber, Starbucks and other leading mobile applications, forcing banks to learn lessons from outside the banking ecosystem

Real-World Cost-Cutting

As revenues plateau, incumbent banks have sought to lower their costs by eliminating in-person services, driving customers to lower-cost channels and jettisoning unprofitable customer segments. These efforts, while necessary to maintain profitability, have meant that banks have had to learn alternative methods of customer engagement wherever they can, including from fintechs and large technology firms

Banks no longer define customer expectations of the banking experience; instead, fintechs and large technology companies set the standard (continued)

CASE STUDIES

Bank/fintech trade-off deal

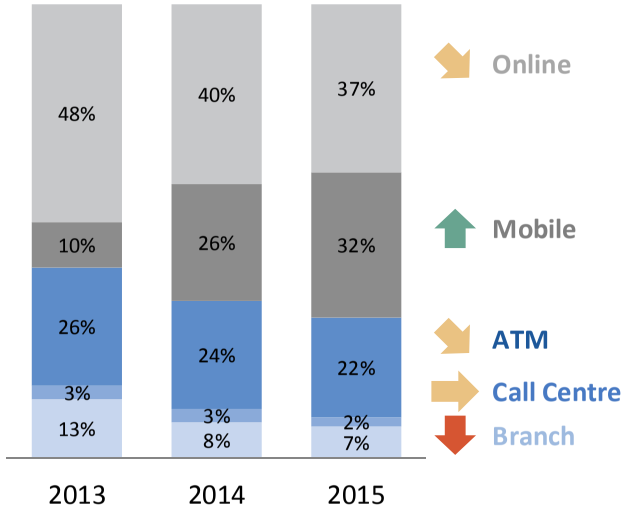
JP Morgan and Wells Fargo recently signed agreements with Intuit that will give the latter easy access to banking customers' data in exchange for new limits on how Intuit uses the data. The banks have indicated they want the agreement to be a model for contracts with other tech firms, as the fight for data monetization ramps up.[4]

Simple digital P2P payments

Fintech firm Venmo allows users to make P2P payments at no cost, and share their transactions within their social network. It has been so successful (transferring over $5 billion in the last three months of 2016) that major US banks have launched Zelle, a competitor offering free payment transfers and links directly with bank accounts, in the hope of taking back market share.[5]

QUANTITATIVE EVIDENCE

Share of Most Common Banking Channels (US)[6]



Dominance of digital channels

KEY UNCERTAINTIES

Banks are investing heavily in direct digital sales and service channels to lower their costs and better meet customer expectations

1. How will customer preferences of distribution channels evolve?
2. How, if at all, will large tech firms move into the digital banking area?
3. How will the move to digital impact the attractiveness of mass and mass-affluent clients?

Sources: 4. The New York Times 5. The Verge 6. The Boston Consulting Group

Incumbents are starting to migrate core systems to the cloud, as legacy infrastructure creates challenges in meeting customer needs

Banks have undertaken significant efforts to move to a newer, cloud-based architecture, but still struggle with legacy infrastructure that weighs down profits and limits banks' ability to meet customer needs

SUPPORTING EVIDENCE

Infrastructure Issues

Core technological systems of financial institutions are largely built on decades-old infrastructure (using extinct languages, e.g. COBOL) and are riddled with inefficiencies. As a result, many incumbents are investing in "integration layers" to bridge the needs of client-facing systems with their core system. While these layers have proven valuable, banks are also aware of the need to migrate away from legacy cores

Patchwork Solutions

Start-ups are able to begin with the client experience and build an infrastructure specially designed for the client. In contrast, incumbent financial institutions must often build ad-hoc solutions to meet specific needs, providing a short-term solution but adding to the complexity of subsequent changes and the eventual modernization of their systems

Gradual Shift to Modernization

Incumbent financial institutions are shifting away from strategies to "rip and replace" legacy systems towards a gradual migration of functions to the cloud, in order to improve flexibility and reduce costs. However, the process of migrating away from legacy systems will take years and large amounts of capital, and may prompt reliability issues

Incumbents are starting to migrate core systems to the cloud, as legacy infrastructure creates challenges in meeting customer needs (continued)

CASE STUDIES

MX

B2B fintech focused on infrastructure

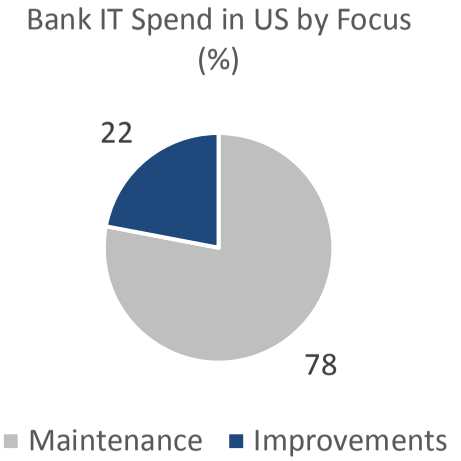
MX provides modern, external solutions to incumbents for data collection, enrichment, analysis and money-management tools. MX partnered with BBVA to develop BBVA's Compass Financial Tools,[7] a suite of financial management and account aggregation tools.

Capital One

Migration to the cloud

Capital One has been a leader in migrating its core systems to the cloud. It adopted a cloud-based infrastructure approach for all new applications by 2015, and in recent years has been focused on migrating its core systems to Amazon's AWS platform, with the aim of cutting over 50% of its data centres by 2018.[8]

QUANTITATIVE EVIDENCE



Maintenance of core information technology (IT) systems in financial institutions represents 78% of all IT spending[9]

KEY UNCERTAINTIES

Defining an overall long-term digital strategy requires incumbents to create compatibility and efficiency from the front to back end

1. Will the shift to cloud-based infrastructure create opportunities for a new data strategy?
2. How will the shift to new infrastructure affect data and privacy concerns?
3. Will infrastructure strategies of financial institutions become more divergent in the long run?

Sources: 7. PR Newswire 8. Amazon Web Services 9. The Financial Brand

Few customers have moved away from traditional deposit accounts despite significant efforts from online and mobile challenger banks

A number of these banks have appeared in recent years; however, these challenger banks have largely failed to gain market share, especially with more profitable customer segments

SUPPORTING EVIDENCE

Value of Physical Presence

Customers' preferences are quickly shifting to digital channels, but physical branches remain a critical component of the banking experience. Many customers have banking needs which only physical locations can currently fulfill (e.g. getting a same-day wire transfer for a home purchase), while other customers prefer a channel based on human interaction

Poor Challenger Bank Economics

Because challenger banks are unable to meet more complex needs, they tend to be used as secondary bank accounts by most customers, causing them to lose out on a large share of revenue. Also, to attract customers, they often provide either lower fees or higher returns on deposits than incumbents, both of which lower profitability

Incumbents Targeting Attractive Customers

The profitability of many customer segments declined following the financial crisis, as wealth levels fell and interest rates approached zero. In response, incumbents refocused their efforts on optimizing their client base – retaining their most profitable customer segments, and ensuring that only less profitable customers would be tempted to switch to challenger banks

Ability to Fast Follow

Very few technological barriers to entry affect the development of an online or mobile challenger bank (the majority of the barriers concern regulation). Thus, if customer defections to challenger banks accelerate, incumbents can quickly follow with visually appealing front-end offerings or an online bank of their own

Few customers have moved away from traditional deposit accounts despite significant efforts from online and mobile challenger banks (continued)

CASE STUDIES

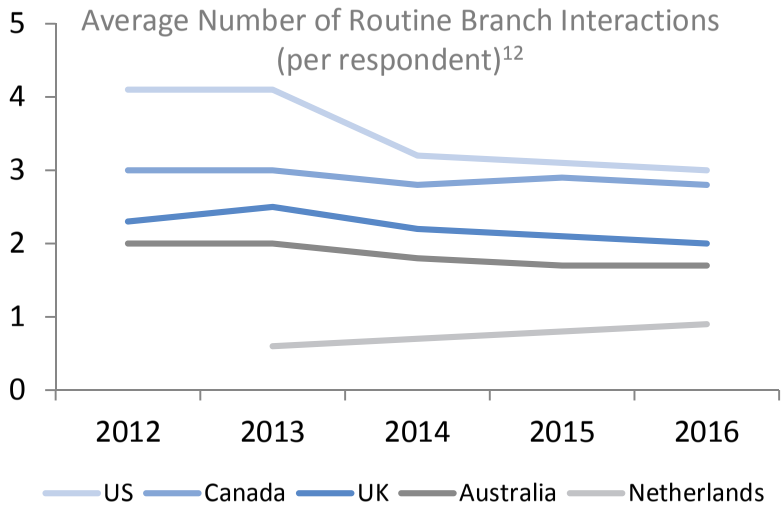
Mini robo-branch

Bank of America recently tested the idea of automated branches by opening three mini bank branches that have ATMs and videoconferencing, but no employees. In addition to the ATMs, the new robo-banks – called automated centres – allow customers to make a videoconference call to a Bank of America employee at another location.[10]

Guide to digital banking

Santander's new Walk Out Working (WOW) initiative allows customers who open an account at a Santander branch to set up their digital banking tools on-site.[11] Bank employees ensure that clients' mobile and online accounts are fully activated and accessible on the first day, so they can "walk out working" and are not tempted to switch.

QUANTITATIVE EVIDENCE



Use of branches is declining – but slowly

KEY UNCERTAINTIES

Incumbents are starting to embrace the new era of digitization while building on their core competitive advantages

1. Will platform banking aid challenger banks in their battle to become primary institutions?
2. How can digital-only banks overcome their lack of physical locations?
3. As technology decreases the cost of serving clients, will banks begin to re-target less desirable clients?

Sources: 10. The Washington Post 11. PR Newswire 12. Bain & Company

The future of digital banking will be impacted by the unravelling of uncertainties around regulation, increasing digitization and the behaviour of technology giants

1 WHAT WE KNOW

Fintechs are now setting the level of expectations that customers have for banks. With the emergence of platform banking models, banks are trying to evolve, but are weighed down by legacy systems. However, though fintechs may offer superior digital experiences, consumers have yet to shift away from incumbent banks to online and mobile challenger banks.

Through these findings, the following uncertainties around digital banking emerged:

2 UNCERTAINTIES

- Will PSD2 be a game changer for the industry in Europe?
- Will customer interest in open banking models continue in light of growing cyberinsecurity?
- What are the business models for large tech companies expanding into banking?
- How can incumbent banks transfer their competitive advantages to the digital world?
- What partners will banks choose to set out their long-term digital strategy?

3 POSSIBLE FUTURES

The resolution of these five key uncertainties paints three diverging pictures of the future of the digital banking industry:

- Controlled, Curated Platforms
- Tech Aggregation Platforms
- Open Platform World

Depending on how the key uncertainties are resolved, the potential end states have very different evolutionary paths and implications for all firms

CONTROLLED, CURATED PLATFORMS

The first end state paints a world where:

- Banks outsource product design for less profitable products
- Banks form collections of best-of-breed products from various sources
- Customers benefit from diverse and customized offerings
- Fintechs focus on white-label and co-branded products

TECH AGGREGATION PLATFORMS

The second end state paints a world where:

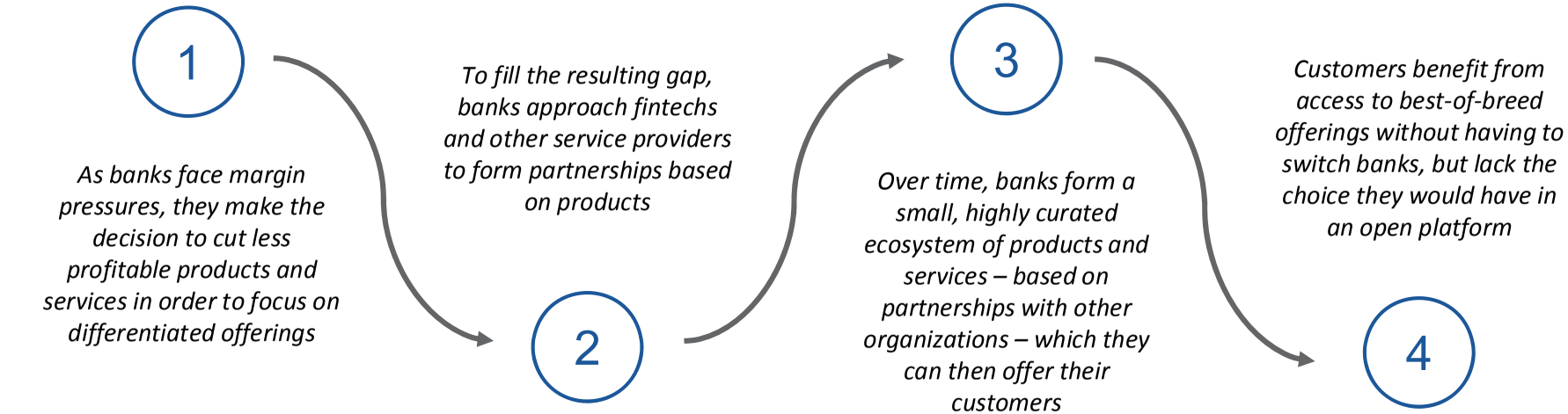
- Large tech firms create distribution platforms
- Fintechs and smaller banks extend partnerships with large tech firms
- Customers embrace the ability to purchase from large tech firms
- Incumbents are forced to decide whether to join tech platforms or stay isolated

OPEN PLATFORM WORLD

The third end state paints a world where:

- Legislation or customer pressure forces banks to use open APIs
- Third parties use APIs to develop their own products
- New entrants directly compete with traditional bank products
- Financial institutions choose to focus on single segments of the value chain

As banks focus on cost-cutting, they start embracing controlled, curated platforms as a cost-effective way of offering services



CRITICAL CONDITIONS

- Banks are not forced to develop open data solutions by regulators
- Banks make the decision to offer outside products to their customers instead of building in-house
- Product designers are willing to make partnerships with banks for greater access to customers

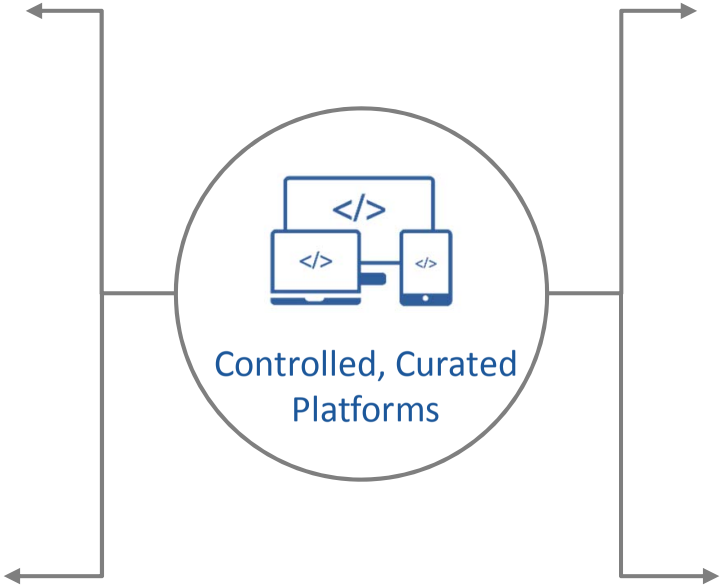
EARLY SIGNS

- Banks form product-level partnerships with fintechs to use the bank as a platform
- Open data regulations are not broadly adopted or are weakly enforced

Controlled, curated platforms give much greater power to the curator, at the expense of customer choice

Implications for Banks

- Banks get to choose the areas of banking they want to specialize in, and can offer other features to their customers via partnerships
- Banks will need to ensure that they and their partners, whether platforms or manufacturers, provide a unified experience for customers



Implications for Regulators

- Regulators must closely consider the market power of platform owners to ensure they are not using their position to distort market forces
- Regulators must also track the spread of customer data between platform owners and product manufacturers to ensure the data is handled and stored properly

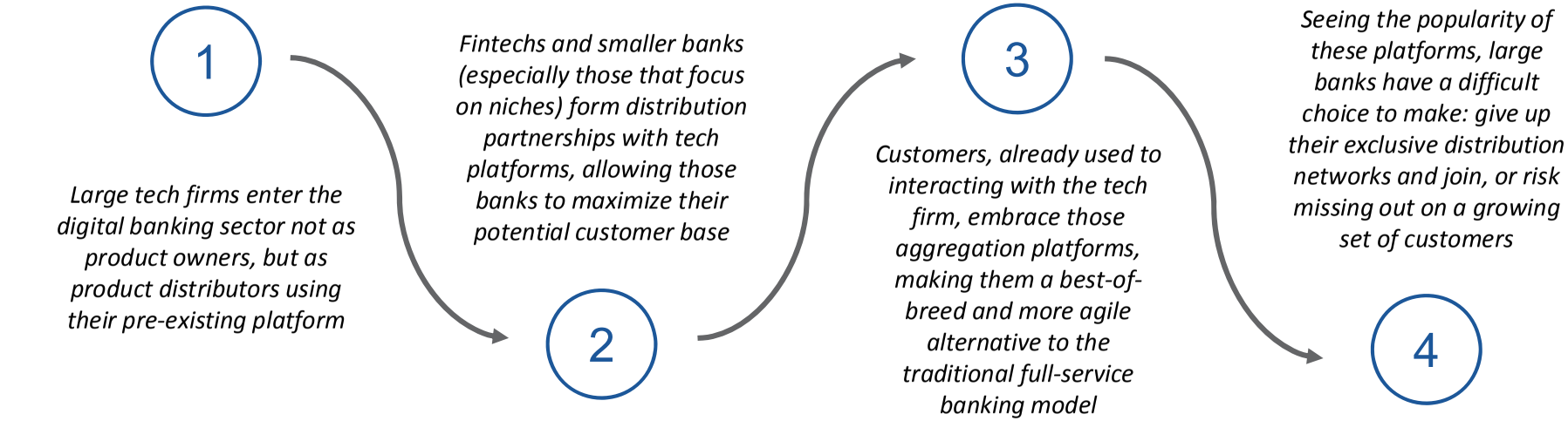
Implications for Customers

- Customers benefit from best-of-breed products, but have less choice than in other platform end states
- Customers face higher switching costs between product ecosystems

Implications for Fintechs

- Fintechs can partner with banks to extend their reach, but lose out on control over distribution
- Fintechs can also use partnerships to broaden their suite of offerings and compete directly with banks more effectively

As fintechs and banks seek partners to optimize their value chain, large tech firms start hosting significant distribution platforms



CRITICAL CONDITIONS

- Big tech players choose to enter the distribution side of financial services
- Big tech players are not plagued by a major scandal or data breach, and remain trustworthy to engage with
- Regulators accept a more oligopolistic distribution of financial services products by tech firms

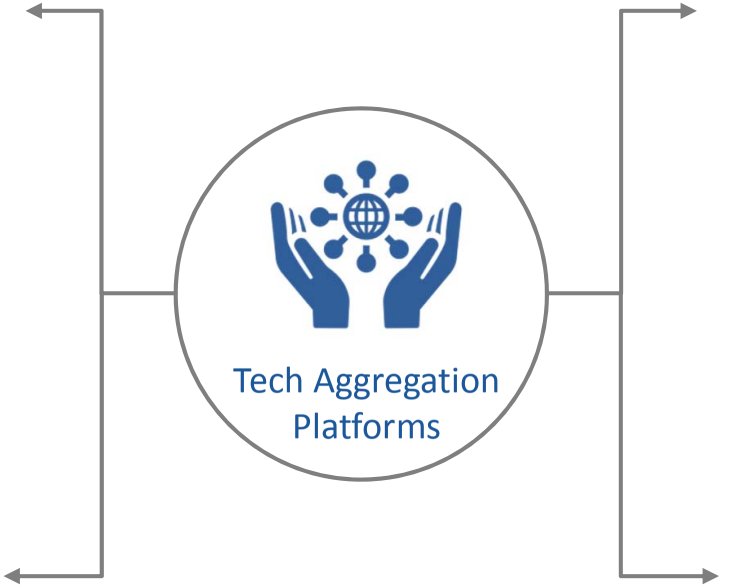
EARLY SIGNS

- Large tech players move upstream from infrastructure to providing software
- More regulatory sandboxes begin to develop and allow firms like Facebook to operate in the financial area
- Tech firms (e.g. Facebook) begin to offer simple financial services products, backed by one or two partners

Large techs expand into the financial services area, intensifying their customer relationships and challenging regulators in preserving competition

Implications for Customers

- Buying financial products from the tech provider of choice increases convenience for customers
- As the aggregation platforms represent a shelf of cross-entity products, comparability and, thus, product quality may decrease



Implications for Banks

- Banks would face a retail competitor with potentially broader reach and more resources, meaning they would have to find competitive advantages
- Products and services previously bundled under the banking umbrella would become unbundled, with only the regulated pieces staying with the bank

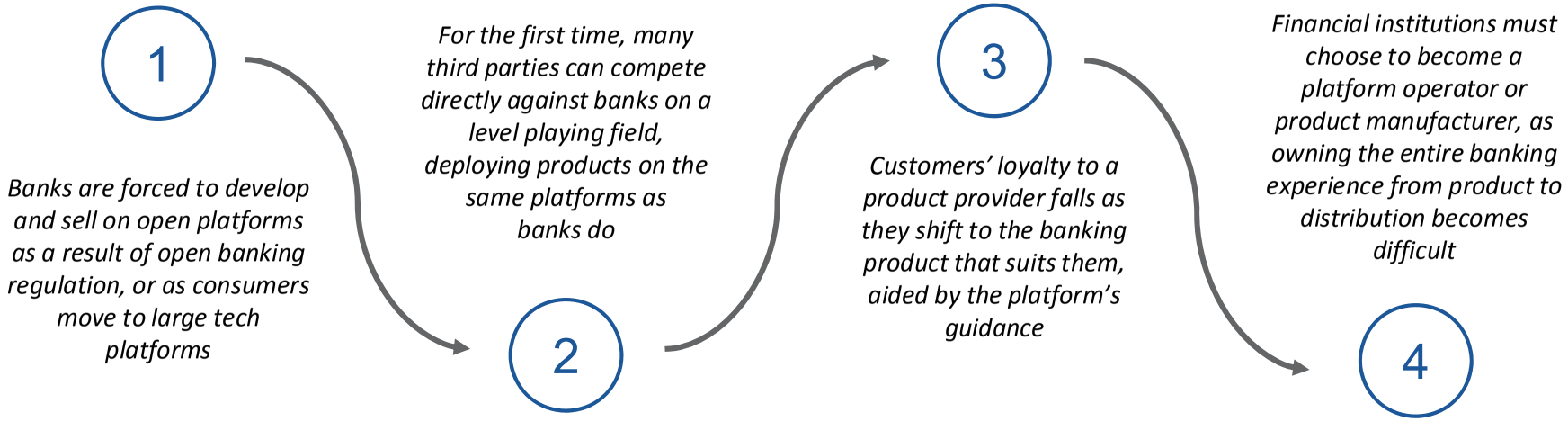
Implications for Regulators

- As the dominance of large tech firms extends into finance, regulators need to consider the risk of market dominance even more strongly

Implications for Large Tech Firms

- Large tech firms would significantly increase their access to customer data sets

Pressures force an open environment, increasing competition and compelling incumbent institutions to focus on the most valuable segments



CRITICAL CONDITIONS

- Regulations force the development of open platforms; newly created open platforms gain enough customer support to force incumbents to participate
- Banks develop digital identity solutions and consistently deliver them
- Customers embrace platform banking, overcoming their stickiness to one provider

EARLY SIGNS

- Regulators push back against the formation of closed, curated platforms
- Customers flock to the development of open distribution platforms, perhaps created by large tech firms
- Fintechs appear that are only focused on product design

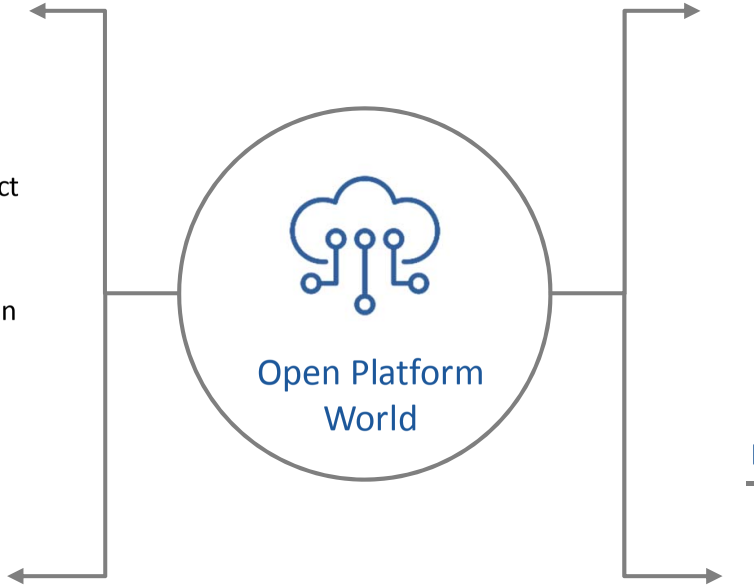
Power dynamics are shifting due to a more fragmented value chain, as customers are benefitting significantly from increasing competition

Implications for Banks

- Banks would be pushed to decide what role they wanted to play in the value chain: product distributor or platform manager
- Banks would lose the ability to cross-subsidize any of their products and thus would have to ensure profitability, product by product
- Open platforms would mean that brand image becomes even more important than before, and banks would have an advantage

Implications for Customers

- As the market becomes more competitive and client-centric, customers would be the main beneficiaries
- However, customers may be confused and overwhelmed by the choice of products



Implications for Regulators

- As legislations open up the playing field, regulators need to clarify regulations for, and grow comfortable with, a materially different business model
- The shift to open platforms raises the question of who is liable – the distributor or the product owner

Implications for New Entrants

- Open platforms allow fintechs to bypass the problem of scale, as platforms can provide access to many customers
- New entrants without strong branding must find ways for their products to stand out

Key takeaways for financial institutions

1

DISTRIBUTORS OR MANUFACTURERS?

The rise of product platforms in digital banking will force market participants to make a choice between a strategic focus on product distribution (i.e. becoming the platform) or a focus on product manufacturing. This choice will have far-reaching implications for their businesses and customer interaction models, as well as for their competitive landscape

2

FEWER, BIGGER WINNERS

The advantage of being the market leader will increase significantly for both product manufacturers and product distributors. Platforms will offer customers improved transparency into products, significantly increasing the advantage for the best products. For distributors, significant economies of scale in access to data and customer awareness will feed a virtuous cycle of growth

3

ECOSYSTEM IMPERATIVES

Under all possible end states, digital banking institutions will forge more relationships with other financial services and, increasingly, non-financial services firms – meaning that within the digital banking ecosystem, a proficiency for establishing partnerships and a willingness to create win-win, symbiotic relationships will lead to more partners

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Section 3.4

Lending

Lending has greatly evolved in the last several years. This section examines the key trends shaping the industry and the uncertain path forward

The first half of this decade saw rapid developments in lending, with the entry of several new forces that threatened to change the lending landscape and the future centres of power

CIRCA 2015, THE MAJOR FORCES IMPACTING LENDING WERE …

Mass P2P Lending

P2P services were growing quickly, reaching a significant number of customers across the globe

Alternative Adjudication

New ways to measure and track credit worthiness were being developed

Lean and Automated Processes

Automation was transforming adjudication and loan origination

CIRCA 2015, THE BIG UNCERTAINTIES ABOUT THE FUTURE OF LENDING WERE …

Would incumbent lenders react to fintechs' speed and digital prowess?

How would low-credit or "thin-file" customers around the world benefit from alternative adjudication?

Would P2P lending be able to grow and compete with traditional banks?

New entrants are significantly disrupting the lending market, but do not appear poised to bring innovations to scale

WHERE DID DISRUPTION OCCUR?

A. New adjudication techniques have significantly expanded access to credit for underbanked, "thin-file" and subprime customers

B. Individual and small-business borrowers expect their lender to deliver the seamless digital origination and rapid adjudication pioneered by leading fintechs

C. Non-financial platforms are emerging as an important source of underwriting data and a point of distribution for credit

WHERE HAS DISRUPTION NOT OCCURRED?

D. Funding economics put marketplace lenders at a cost disadvantage compared to traditional banks, raising questions about the model's sustainability

New adjudication techniques have significantly expanded access to credit for underbanked, "thin-file" and subprime customers

New data and analytical techniques have proven valuable in adjudicating credit, especially for "thin-file" customers with insufficient credit bureau history to qualify for most loans, driving a rapid expansion of credit to underserved markets

SUPPORTING EVIDENCE

New Sources of Data

New sources of data have emerged for use in adjudicating credit, such as social and mobile data for individuals, and payments or accounting data for businesses. While this data has had limited effectiveness in improving the underwriting of established customers, it has proven to be valuable for "thin-file" borrowers (with insufficient credit bureau history) and small businesses

Using Data More Effectively

Incumbent lenders are looking to their existing stores of data to bolster their underwriting models, especially for underbanked customers. However, that data is often unstructured and siloed, making it difficult to be put to use. To address these challenges, incumbents are investing heavily in data transformation, automation and new analytics

More Agile Credit Models

New entrants improve on their credit models using short iteration cycles, while incumbents are constrained to making adjustments much more slowly. This lag in implementing best-in-class methodologies provides new entrants a temporary competitive advantage in understanding the credit risk of underbanked and "thin-file" customers, especially as new sources of data become available

CAVEATS

Lack of Credit Cycles

While credit models have improved since the financial crisis, many alternative approaches were developed following the crisis, making it unclear how alternative models for subprime customers will fare over the full life of the next macro-credit cycle

New adjudication techniques have significantly expanded access to credit for underbanked, "thin-file" and subprime customers (continued)

CASE STUDIES

LendUp

Payday loan alternative

LendUp, a US direct online lender and financial education company, offers a proprietary underwriting model to serve subprime borrowers who lost access to credit following the financial crisis. The company offers loans at lower rates than payday lenders and progressively lower rates as borrowers repay.

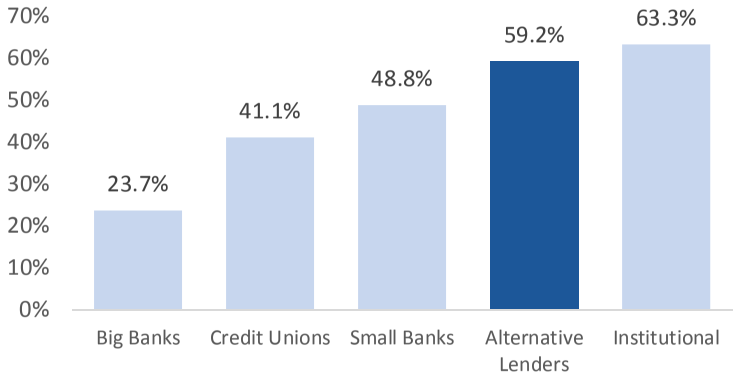
zestfinance

Artificial intelligence for underwriting

ZestFinance provides machine-learning underwriting technology to financial institutions that assists with analysing and processing complex, disparate data to improve pricing decisions. Following an investment from Chinese internet search giant Baidu in 2016, it is developing a credit scoring platform for Chinese borrowers, based on Baidu's search data.[1]

QUANTITATIVE EVIDENCE

Approval Rates of US Small-Business Lenders, 2016 (% of applications)[2]



Increased lending to small businesses through alternative lenders

KEY UNCERTAINTIES

New credit adjudication techniques have proven to be effective, demonstrating strong approval and loss rates

1. How will new credit adjudication methodologies perform during a severe credit contraction?
2. What new sources of data will prove to be the most valuable to credit decisions, and who will own the data?
3. What new techniques and sources of data will regulators deem appropriate to use?

Sources: 1. Yahoo Finance 2. Deloitte

Individual and small-business borrowers expect their lender to deliver the seamless digital origination and rapid adjudication pioneered by leading fintechs

New fintechs' ability to deliver faster and less onerous application processes is placing pressure on incumbents to deliver similarly streamlined experiences

SUPPORTING EVIDENCE

Improved Processes

New online lenders have cut loan adjudication times to minutes, forcing incumbent lenders to improve and automate internal loan processes in order to compete. As a result, many loan processes that previously needed human intervention are now auto-adjudicated, allowing incumbents to offer digital origination and rapid loan origination

Legacy Technology Increasing Costs

Constrained by decades-old mainframes, incumbents must add technological bridges to connect legacy infrastructure with the digital front ends demanded by customers. This additional effort increases development time and costs compared to fintechs, but is necessary for incumbents to compete

Partnerships as Cost-Saver

Improving processes and building middleware have both proven to be relatively expensive. Incumbents have thus looked at partnerships with marketplace lenders, allowing them to access fintech-driven technological solutions without fully overhauling their infrastructure

Individual and small-business borrowers expect their lender to deliver the seamless digital origination and rapid adjudication pioneered by leading fintechs (continued)

CASE STUDIES

Quicken Loans

Fully digital mortgage process

Quicken Loans, an incumbent lender, now offers Rocket Mortgage, a fully digital home loan origination service where users can view their credit reports online; digitally verify asset, property and income information; and receive full approval in minutes. Rocket Mortgage uses algorithms to analyse a borrower's creditworthiness, reducing latency and human errors.[3]

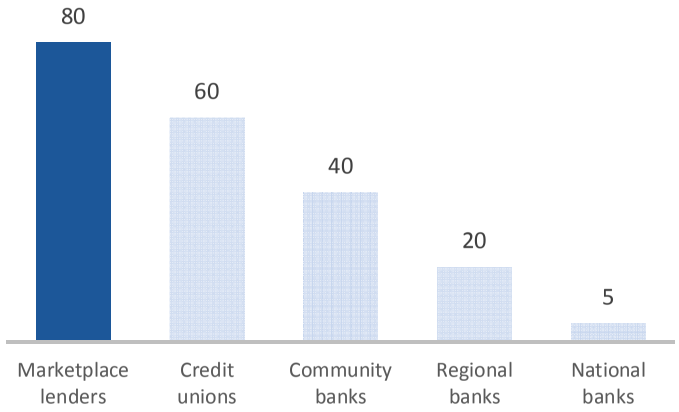
ondeck

Fintech-bank partnership

JP Morgan partnered with online lender OnDeck to improve its loan origination to the bank's roughly 4 million small-business customers. The partnership, and its near-term profitability, has driven OnDeck to reorient its strategy to focus on delivering a highly scalable OnDeck-as-a-Service model.[4]

QUANTITATIVE EVIDENCE

Average Net Promoter Score by Lender[5]



Superior customer satisfaction from marketplace lenders

KEY UNCERTAINTIES

New distribution channels and more demanding customer expectations are raising the bar for incumbent lenders, necessitating significant investment

1. To what degree will platform lending models proliferate?
2. Will incumbents be able to address their legacy system without materially impeding their competitiveness?
3. How will borrower preferences for distribution channels continue to evolve?

Sources: 3. Money 4. The Wall Street Journal 5. EY

Non-financial platforms are emerging as an important source of underwriting data and a point of distribution for credit

New distribution channels are being created as financial institutions embed lending products into third-party online platforms. As they seek to capture customers in moments of need, non-financial institutions are also jumping into the fray

SUPPORTING EVIDENCE

Increasing Customer Engagement

Lenders are targeting non-financial platforms because they provide access to the exact moments when customers need credit the most, such as during supply chain management or the settlement of accounts receivable. Thus, lenders can pre-emptively underwrite loans at “decision moments”

Increasing Data Collection

Lenders are also turning to non-financial platforms as distribution channel partners because of the particular data sets many of these platforms hold. This data can provide valuable forward-looking insights into a company’s performance, as well as enable detailed comparisons between similar businesses and individuals. As such, this data helps to lower both underwriting risk and the cost of underwriting

Risk of New Entrants

Non-financial platforms have also begun their own exploration into providing lending products directly to their users as a new line of business. Whether these loans are funded directly from the platform’s balance sheet or via a funding partner, they represent direct competition with financial institutions for credit distribution

Non-financial platforms are emerging as an important source of underwriting data and a point of distribution for credit (continued)

CASE STUDIES

amazon lending

Non-financial player offering loans

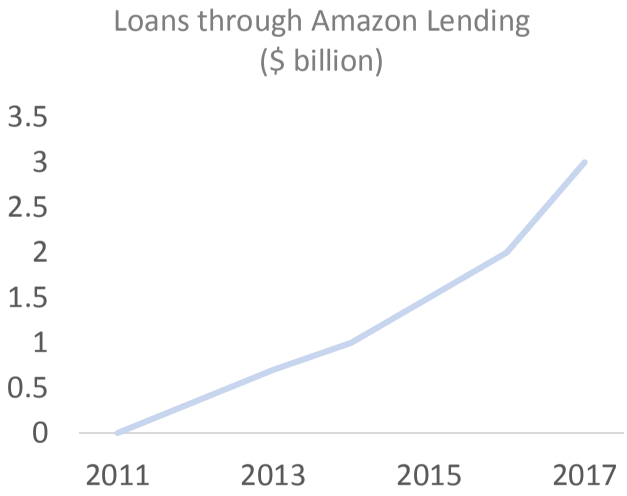
Amazon offers credit to merchants that sell on its platform, using sales data to measure risk. If a merchant defaults on the loan, Amazon can choose to withhold sales on its platform. The company has already made loans worth over $3 billion using this platform, and is expanding the offering to reach even more merchants.[6]

TRADESHIFT®

Platform-based trade financing

Tradeshift's B2B supply chain platform connects financial institutions with suppliers to offer trade financing directly through its platform. Once a borrower requests the loan, incumbent lenders receive access to granular data that enables them to underwrite the loan. Tradeshift benefits from improved client service and origination fees.[7]

QUANTITATIVE EVIDENCE



Accelerating growth in Amazon Lending[6]

KEY UNCERTAINTIES

Lending at the source (i.e. the platform) has the potential to dramatically shift the balance of power towards customer platforms

1. How can financial institutions create a symbiotic lending relationship with non-financial platforms?
2. What is stopping other non-financial platforms from offering their own lending products?
3. Are there other non-financial platforms that make sense as an origination vehicle?

Sources: 6. TechSpot 7. City A.M.

Funding economics put marketplace lenders at a cost disadvantage compared to traditional banks, raising questions about the model's sustainability

Despite operating cost advantages, marketplace lenders suffer from higher funding costs, creating challenges in price-sensitive segments and forcing them to explore other models

SUPPORTING EVIDENCE

High Customer Acquisition Costs

Building a client base from scratch has proved to be expensive for new entrants, particularly where they have relied on high-cost analog channels such as direct mail. These higher customer acquisition costs have created particular challenges in segments where incumbents are well established and margins are low, as incumbents already have a well-defined client base and therefore a large cost advantage

High Funding Costs for Marketplaces

While the absence of a branch network creates certain cost advantages for new entrants, they are more than offset by significantly higher funding costs than for banks. While incumbent banks are able to deploy low-cost deposits, new entrants have relied on private investors, who demand higher premiums to reflect a higher credit risk (perceived or otherwise) and a lesser-known brand

Funding Instability

Maintaining liquidity in a two-sided marketplace has proved to be difficult. Marketplaces initially sought hedge fund capital to fund growth, but found this capital to be unstable as hedge funds pulled back due to broader market volatility. In response, marketplaces are now exploring alternatives, including acquiring banking licences, which would give them access to lower-cost funding sources such as demand deposits

Funding economics put marketplace lenders at a cost disadvantage compared to traditional banks, raising questions about the model's sustainability (continued)

CASE STUDIES

PROSPER

Major institutional funding

Prosper marketplace closed a deal in February 2017 with a consortium of institutional investors to purchase up to $5 billion of loans through the lender over the following 24 months.[8] The deal included warrants to purchase 35% of the lender's equity, highlighting its desire to secure long-term funding.

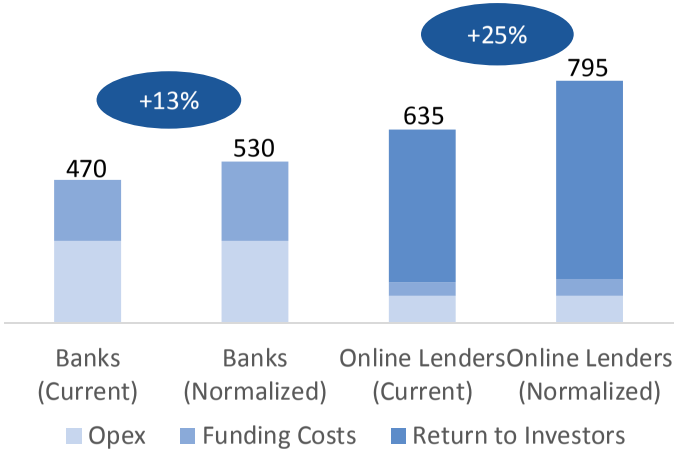
SoFi

Online lender seeking deposit licence

SoFi, a major US online lender focused on student and mortgage loans, applied for a banking licence in June 2017 to diversify funding.[10] The move comes after similar actions by several other major lenders, including Zopa, the United Kingdom's first online lender.[10]

QUANTITATIVE EVIDENCE

Total Cost of Attracting Funds in UK
Current vs Normalized, in Basis Points (bps)
(200 bps base rate)[10]



Online lenders pay more to attract funds, especially in a normalized environment

KEY UNCERTAINTIES

A strategy of funding diversification and cost optimization is critical to marketplace lenders, but it blurs the line with traditional banking

1. Will marketplace lenders be able to drive down their funding cost sufficiently to compete for price-sensitive clients?
2. How will marketplace lenders attract deposits if they become banks?
3. How will marketplace lenders resolve their funding instability issues?

Sources: 8. The Wall Street Journal 9. TechCrunch 10. CNBC 11. Deloitte

Five key uncertainties arise from the lending findings which will shape this industry's direction

1 WHAT WE KNOW

The lending findings illustrate how fintechs have altered customer perception of the lending experience. Fintechs are using data to provide customers with pain-free lending services, and customers want the same efficient, seamless experience with their banks. Additionally, consumers can choose from a multitude of financial and non-financial providers. However, fintechs are struggling to find a sustainable business model in the face of funding instability.

Through these findings, the following uncertainties around lending emerged:

2 UNCERTAINTIES

- How much more effective will underwriting become with new sources of data and analytical techniques?
- Will platform-based lending emerge to become a relevant distribution channel?
- What is the long-term impact of marketplace lenders licensing their underwriting technology?
- Will marketplace lenders move to provide direct lending?
- How will the borrower's preference of distribution channels continue to evolve?

3 POSSIBLE FUTURES

The resolution of these five key uncertainties paints three diverging pictures of the future of the lending industry:

- Different Evolutionary Paths
- Shared Service Providers
- Distribution 2.0

Depending on how the key uncertainties are resolved, the potential end states have very different evolutionary paths and implications for all firms

DIFFERENT EVOLUTIONARY PATHS

The first end state paints a world where:

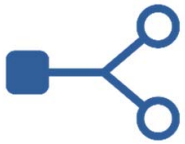
- Marketplace lenders are challenged as funding costs rise
- Marketplaces further specialize and target niche areas
- Other marketplace lenders seek to become banks
- Customers benefit, especially in niche areas

SHARED SERVICE PROVIDERS

The second end state paints a world where:

- Certain marketplace lenders become B2B service providers
- Banks find service providers more capable and cost-effective than their own internal functions
- Service providers flourish and become indispensable
- The industry's cost base becomes commoditized

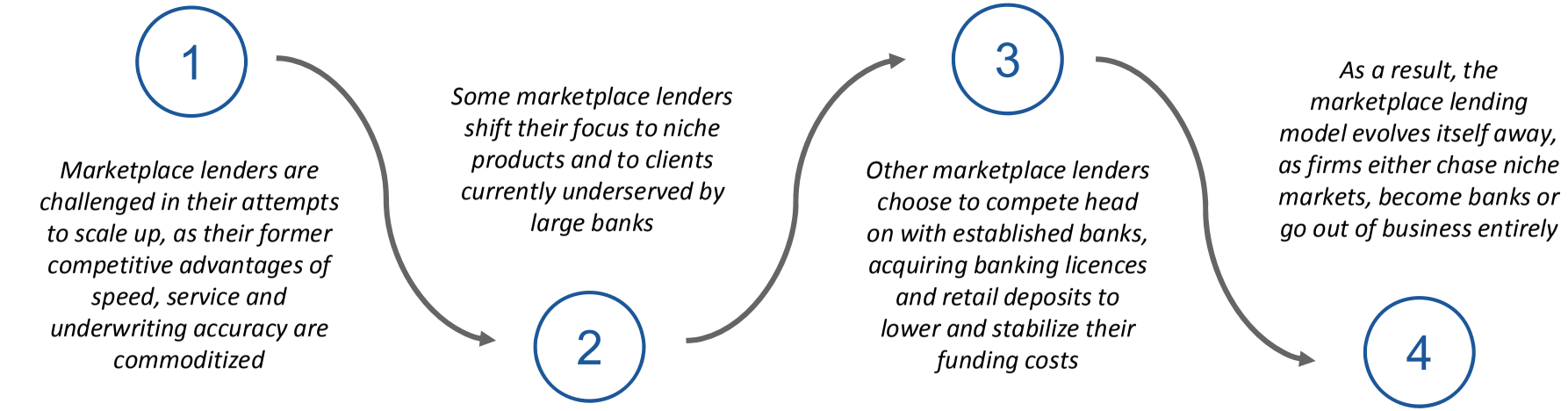
DISTRIBUTION 2.0



The third end state paints a world where:

- Lenders form partnerships with non-financial firms
- Non-financial firms use their platforms to originate loans
- Lenders begin to offer more customized products using additional data
- Consumers benefit from loans at the point of need

Marketplace lenders have to further develop sophisticated capabilities or compete on price with established banks



CRITICAL CONDITIONS

- Marketplace lenders fail to emerge as dominant players in non-niche markets
- Incumbent banks are able to sufficiently lower operating costs quickly enough to outperform marketplace lenders

EARLY SIGNS

- The growth of marketplace lenders continues to be weak
- Some marketplace lenders expand into new products and customer segments
- Other marketplace lenders shift to acquire banking licences

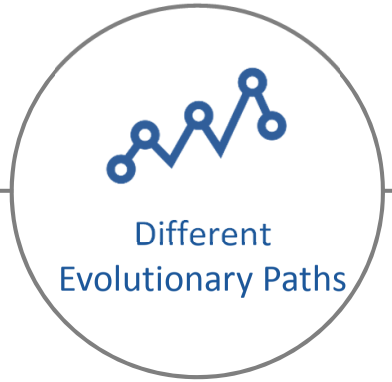
Clients will benefit from more sophisticated niche lending and increased competition as the lending landscape becomes more fragmented

Implications for Incumbents

- Competition increases for niche areas, but overall competition decreases as marketplace lenders become less competitive
- Marketplace lenders become a regular venue for banks to deploy excess capital

Implications for Alternative Lenders

- Alternative lenders have access to much smaller sections of the market as they cede market share to banks
- Convergence with digital banking fintechs could lead to increased competition
- Significant growth occurs across new niche markets



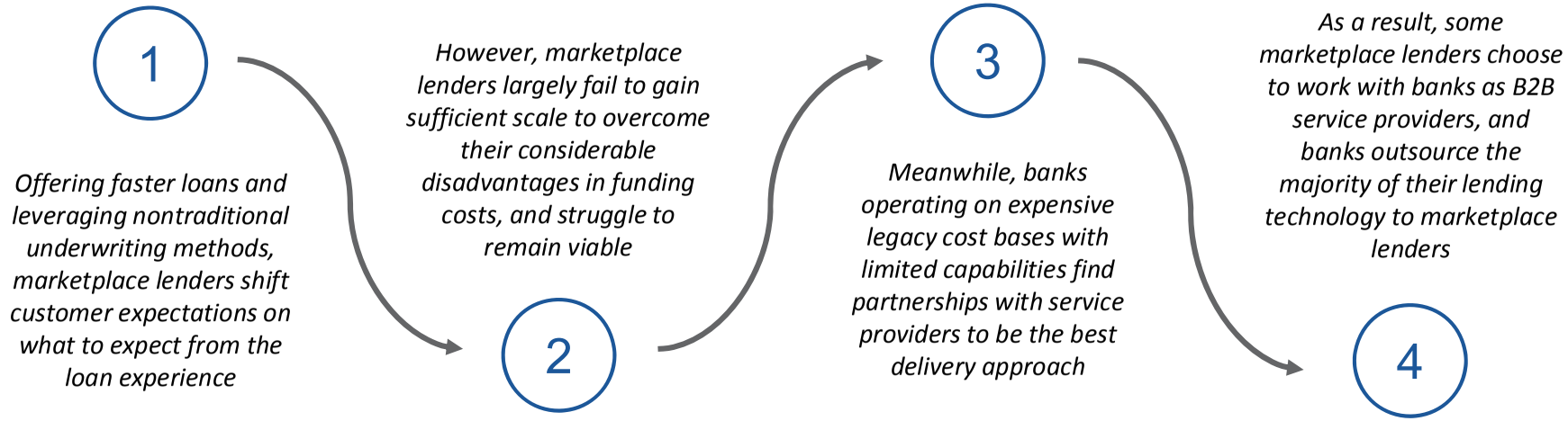
Implications for Regulators

- Awareness is required of risks stemming from increased consolidation as incumbents gain market share
- Regulators must define the rules for edge cases as lending firms try to adapt their business model, becoming more like a bank

Implications for Customers

- Customers benefit from expanded availability of credit to underserved markets

The desire for cost-commoditization drives growth in B2B service providers, as two needs come together in one solution



CRITICAL CONDITIONS

- Regulators buy in to shared-service models between competitors
- A critical mass of financial institutions using shared service and external providers is reached
- Connectivity between capability providers and banks becomes standardized

EARLY SIGNS

- Lending margins continue to erode
- Specialized capability providers that successfully deliver absolute cost advantages proliferate
- Businesses develop adjacent to shared services (e.g. “rating agencies” for vendors)

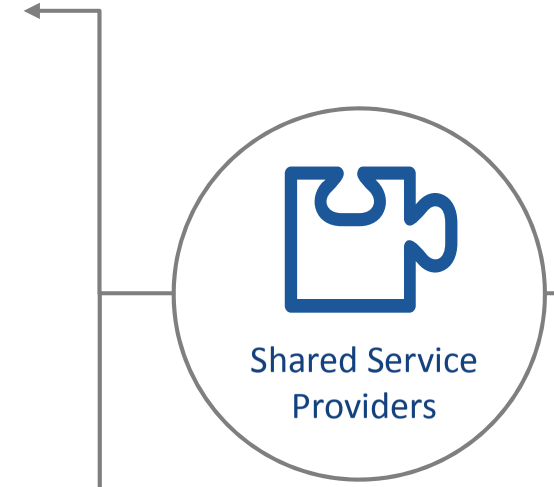
Increasing externalization improves industry cost bases, but creates potential new points of systemic risk

Implications for Incumbents

- Externalization leads to significant reductions of in-house middle and back office functions
- Many in-house capabilities that have set apart banks from competition are no longer differentiators
- Increased capacity from software-as-a-service providers makes IT expenditures more of a variable cost, decreasing the benefits of scale

Implications for Regulators

- The rise in B2B providers potentially increases the systemic risk of a single point of failure
- Granularity increases, and service providers face more intense regulatory scrutiny



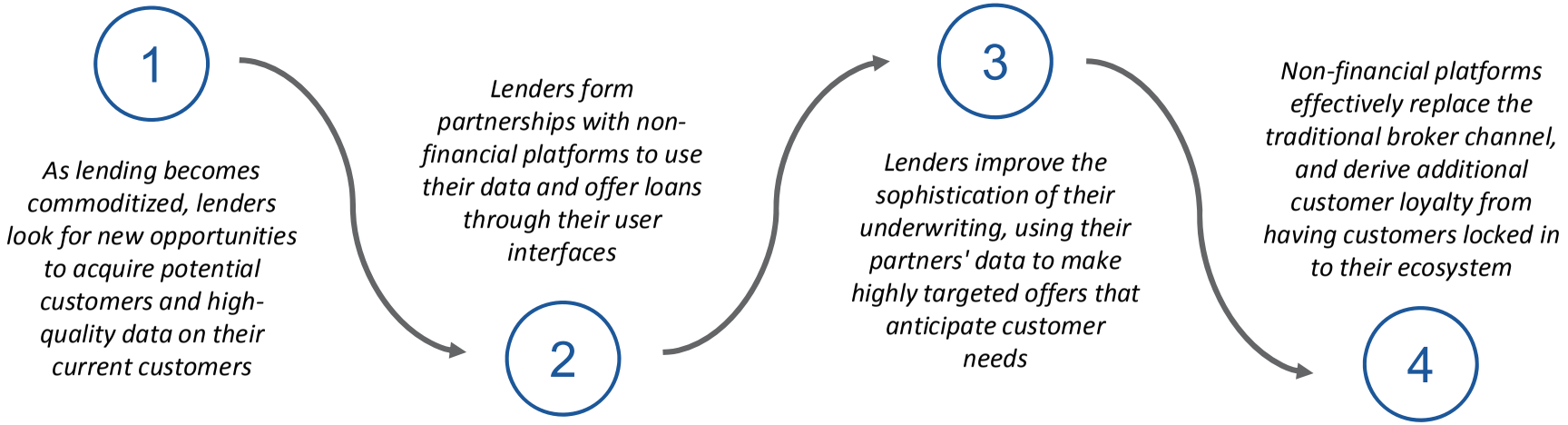
Implications for Alternative Lenders

- As lenders' business models move from B2C to B2B, the capabilities required for success shift significantly
- Non-financial firms expand into lending as barriers to entry fall, potentially leading to a return to the era of personal credit issued by retailers

Implications for Customers

- More competition on service and costs as "high-quality execution" becomes commoditized
- Lower loan costs as bank operating expenses decrease
- Market fragmentation drives an intense battle for mindshare

Non-financial firms move horizontally into financial services and disintermediate the traditional broker channel



CRITICAL CONDITIONS

- Connectivity between the non-financial firm and the bank allows banks to receive data from, and to offer loans through, the platform
- Data provided by non-financial firms is considered better than from other sources in adjudicating credit

EARLY SIGNS

- Small and medium-sized businesses increasingly adopt cloud-based software solutions
- More non-financial firms begin to move into the financial services area, either on their own or through partnerships with existing lenders

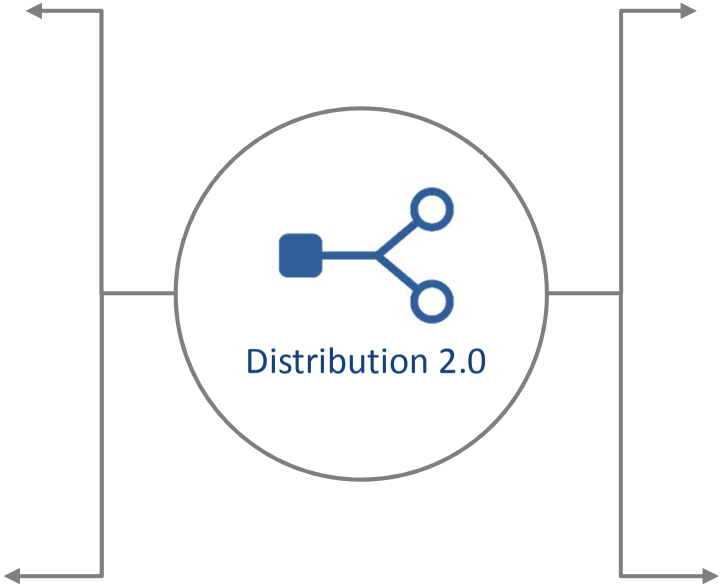
As partnerships between banks and non-financial firms proliferate, customers' experience improves and choices become numerous

Implications for Incumbents

- The rise of platforms as intermediaries means incumbents move further away from their customers
- Some platforms may act as aggregators and allow for comparisons, thereby increasing price competition
- Incumbents acquire a better understanding of clients as they gain access to a new and deeper pool of non-financial data

Implications for Regulators

- Regulators need to monitor new non-financial distribution channels and potentially regulate previously unregulated parties



Implications for Non-Financial Firms

- Such firms develop a new source of revenue, as platforms receive fees in exchange for access and data
- They proactively provide funding to clients directly "in-app", thereby increasing customer interaction and providing more pull into the platform
- The firms have a deeper relationship with their banks and more bargaining power in negotiations

Implications for Customers

- Customers benefit from an improved experience: loans are available directly in app, and customers know in advanced whether they are approved
- Customers have improved comparability of financial products and access to multiple providers

Key takeaways for financial institutions

1

THE LOWEST FUNDING COSTS WIN

Despite innovations in origination and adjudication, the online lending model is fundamentally limited by high and unstable funding costs in its ability to compete with banks. The need for a consistent funding source at a cost similar to that of deposits for banks will drive online lenders to acquire banking licences – unless an alternative funding source can be found

2

LENDING GOES DIGITAL

Marketplace lenders and technology firms have reoriented customer expectations. Leading lenders are expected to offer simple credit origination experiences, where a combination of design and automation provides customers with a frictionless application experience and a swift response

3

LENDERS USE DATA EFFECTIVELY

Leading lenders are using data to improve both the effectiveness and the efficiency of their adjudication processes. They employ new sources of data to underwrite applications whose risks could not previously be assessed (e.g. ”thin-file” customers), and reduce underwriting costs by automating the collection and analysis of key data (e.g. using data collected directly from a small-business accounting platform). Moving forward, lenders will increasingly look for new signals/data to inform lending decisions

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Section 3.5

Investment Management

Investment management has greatly evolved in the last several years. This section examines the key trends shaping the industry and the uncertain path forward

The first half of this decade was marked by profound changes to the investment management industry, including the entry of several major forces that held the potential to fundamentally shift the industry's course

CIRCA 2015, THE MAJOR FORCES IMPACTING INVESTMENT MANAGEMENT WERE …

The Rise of Robo-Advisors

wealthfront

Automated advisers that use trading formulas based on low-fee ETFs were capturing attention

Big Data-Driven Analysis

AYASDI

Fintechs were beginning to tap into the potential of big data for investments

Increasing B2B Externalization

FUNDAPPS

Firms were starting to outsource back office processes, such as regulatory monitoring

CIRCA 2015, THE BIG UNCERTAINTIES ABOUT THE FUTURE OF INVESTMENT MANAGEMENT WERE …

Was robo-advisory service truly the right answer for the vast majority of customers?

How would companies look at B2B externalization as margins continued to decline?

Would monoline fintechs be able to capture significant market share?

Note: "Wealth managers" are defined as organizations that provide advice and distribute products to customers in investment management. "Asset Managers" are companies that "manufacture" the financial product itself, which forms the basis for the investment

Four trends in the investment management industry have shaped its future, and incumbents, not innovators, look poised to benefit

WHERE DID DISRUPTION OCCUR?

A — As individuals become more responsible for their investments, robo-distribution has become the most compelling tool for customer engagement

B — Scaling the delivery of investment advice requires fewer resources, as middle and back office functions are increasingly being automated or externalized

C — The growth of low-cost products has increased the importance of scale in product manufacturing, driving pressures for consolidation

WHERE HAS DISRUPTION NOT OCCURRED?

D — New entrants to investment management have struggled to gain market share in the face of customer stickiness and high customer acquisition costs

As individuals become more responsible for their investments, robo-distribution has become the most compelling tool for customer engagement

As employers abandon traditional defined benefit (DB) plans in favour of defined contribution (DC) plans, individuals are becoming more responsible for managing their own investments, driving a need for low-cost investments and advice on asset allocation

SUPPORTING EVIDENCE

Shift from Institutional to Individual

Baby boomers are drawing down on defined benefit plans (guaranteed benefits), while younger workers are predominantly limited to defined contribution investment plans (benefits based on investment returns). These trends are increasing the share of total investments that are self-managed, driving demand for products and services targeted to individuals as opposed to institutional investors

Increasing Regulation Raising Costs

Regulators have stepped up efforts to protect retail investors, citing mis-selling scandals, rising investor dissatisfaction and the shifting of retirement burdens from institutions to individuals. An unintended consequence of these polices has been to increase the cost of providing customers with individualized offerings through traditional channels, making robo-advisors a compelling solution

Rising Client Expectations

Customers have become accustomed to customer-centric offerings and service in non-financial settings, and expect their financial services experiences, including wealth management, to exhibit similar characteristics. Robo-advisory products offer a digital and customer-centric experience at a low cost and are thus attractive, particularly for younger customers

As individuals become more responsible for their investments, robo-distribution has become the most compelling tool for customer engagement (continued)

CASE STUDIES

Robo-advisory product for the masses

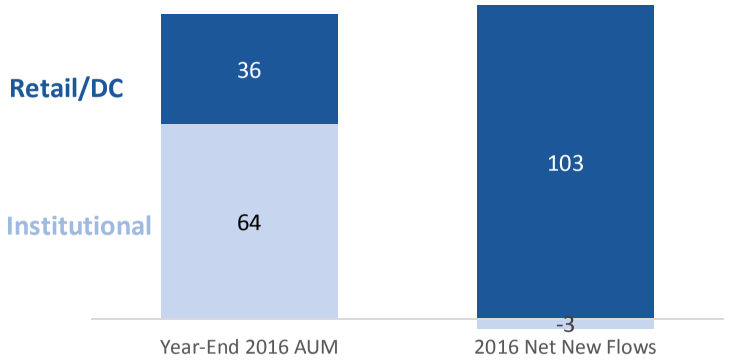
Charles Schwab has rolled out its Intelligent Portfolio robo-advisory product focused on mass and mass-affluent customers. With minimums of $5,000 and no fees apart from ETF product fees, as well as 24/7 access to investment professionals, Charles Schwab is aiming to compete against fintechs such as Wealthfront.[1]

New standards for advice

The US Department of Labor Fiduciary Rule will elevate all financial professionals who provide retirement planning advice to the level of a fiduciary, bound legally and ethically to meet the standards of that status. This rule and others like it, including the UK Financial Conduct Authority's rules on investment management, raise the cost of advisory service and make robo-investors more attractive.[2,3]

QUANTITATIVE EVIDENCE

Global Asset Management Industry Net New Flows by Investor Type (%)[4]



Shift from institutional to retail

KEY UNCERTAINTIES

To win over individual investors, incumbents are seeking to differentiate their offerings through product development and the delivery of bespoke services

1. How will firms differentiate their robo-advisory offerings from similar offerings throughout the industry?
2. How far will regulators push in mandating transparency and fiduciary duty in advice?
3. How will a prolonged period of low market returns continue to shift industry economics?

Sources: 1. Charles Schwab 2. Investopedia 3. Forbes 4. Deloitte (Casey Quirk)

Scaling the delivery of investment advice requires fewer resources, as middle and back office functions are increasingly being automated or externalized

Asset and wealth managers are seeing margins decline and are turning to externalization and automation to lower costs. As non-core functions become externalized and commoditized, the industry value chain threatens to shift considerably

SUPPORTING EVIDENCE

Margin Compression Forcing Cost-Cutting

Manufacturing margins are declining as demand shifts from high-cost to low-cost products, and distribution margins are falling as robo-advisors gain popularity. This pressure is driving incumbents to search for savings, especially in the areas of the value chain that add the least value – the middle and back office

Growth in External Service Providers

Enabled by technological advancements, external service providers are growing and building a track record of success in driving efficiency. As these firms proliferate and allow asset managers to focus on the strategic aspects of investing, they will be trusted with more and more functions that are central to the asset manager's operations

Automation and AI Replacing Processes

Automation and AI are becoming more capable and may soon be able to replace complex human activities across the front, middle and back office. As they do so, competitive advantages derived from excellence in process execution will deteriorate, leading to even more process externalization

Scaling the delivery of investment advice requires fewer resources, as middle and back office functions are increasingly being automated or externalized (continued)

CASE STUDIES

KENSHO

Real-time analytics

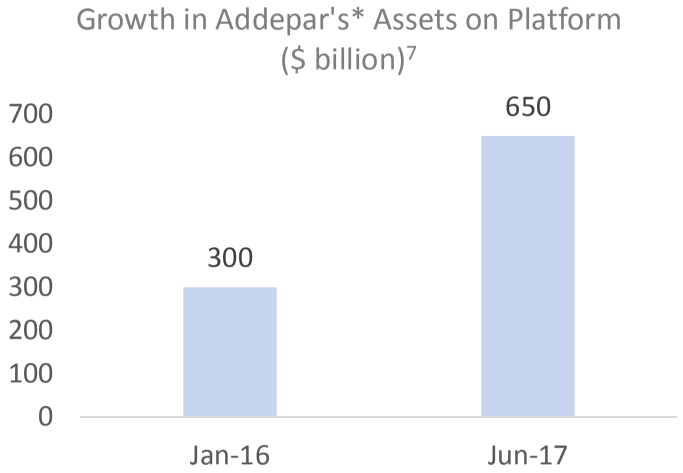
Kensho drastically reduces the manual analytics required to explore futures for capital markets and allows users to express those futures using natural language. Media network CNBC used Kensho's tool to analyse the impact of recent political events (e.g. WannaCry cyberattack) on stock prices.[5]

robinhood

Zero commission discount broker

Robinhood is a digital discount brokerage that allows users to trade securities with zero commissions.[6] Recently, it announced partnerships with other wealth management innovators, such as Quantopian, OpenFolio and StockTwits, to provide customers of those online tools access to additional services through its platform.

QUANTITATIVE EVIDENCE



Massive growth in external service platforms

KEY UNCERTAINTIES

As innovative vendors provide economical access to sophisticated capabilities, high-quality process execution is becoming a commodity

1. Where will firms strike the balance between automating and maintaining manual processes?
2. How does commoditization of back office functions affect an institution's ability to differentiate itself?
3. How does the division of regulatory responsibilities change as functions are externalized?

Sources: 5. CNBC 6. Robinhood 7. Finextra

The growth of low-cost products has increased the importance of scale in product manufacturing, driving pressures for consolidation

As the demand for low-cost investments grows, utilizing economies of scale to lower product costs and offering differentiated products at low cost become major competitive priorities

SUPPORTING EVIDENCE

Alpha Becoming More Elusive

For asset managers, excess returns over the market (alpha) have proven elusive to generate in the post-crisis environment, making it difficult for managers to justify their higher fees and diminishing their appeal in favour of low-cost products

Low Fees, High Economies of Scale

As the popularity of low-cost products has grown, providers have primarily competed on the basis of price, with the lowest-cost US equity ETF charging just three basis points. This significant advantage of scale in the production of low-cost products means industry consolidation is inevitable

Rise of Smart Beta

The growth of low-cost ETF products has created a gap in the market for investors that are attracted to active strategies but are also looking for low costs. As a result, “smart beta” products that employ active strategies but use low-cost beta products have risen in popularity, and are also helping to drive the push for additional scale to lower costs

The growth of low-cost products has increased the importance of scale in product manufacturing, driving pressures for consolidation (continued)

CASE STUDIES

Vanguard

Passive products as competitive advantage

As an early proponent of index funds, Vanguard has benefited greatly from the ongoing shift to low-cost investments while its competition grapples with declining margins. Vanguard attracted net mutual fund flows of $823 billion over the last three years, 8.5 times as much as its competitors combined.[8]

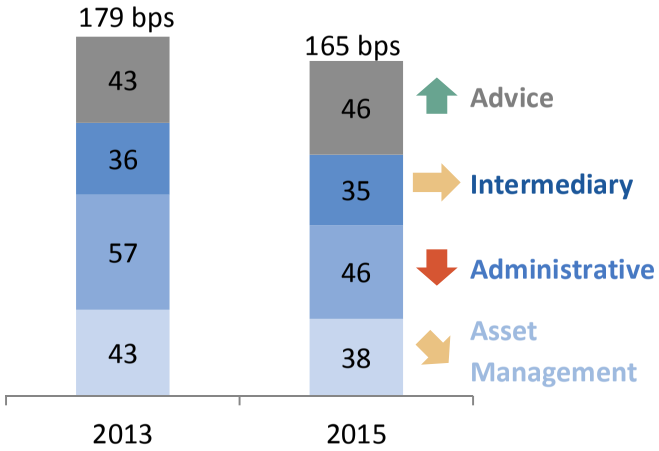
BLACKROCK

Consolidation of human-managed funds

Continuing 30 years of R&D and strong investment performance of its quantitative investing team, BlackRock laid out an ambitious plan to consolidate a large number of human-managed mutual funds that rely on algorithms and models to pick stocks. These funds focus on quantitative and other strategies that adopt a more rules-based approach to investing.[9]

QUANTITATIVE EVIDENCE

Investor Average Fee Budget (in basis points)[10]



Significant decline in fees due to low-cost products

KEY UNCERTAINTIES

As the asset management industry consolidates, large manufacturers are capturing the vast majority of new flows

1. How will low-cost products perform in a complex and volatile macro environment?
2. How will rising interest rates affect choices of investment methodologies?
3. Will active managers be able to generate sufficient alpha to stem the flow to low-cost products?

Sources: 8. The New York Times 9. The New York Times 10. Casey Quirk

New entrants to investment management have struggled to gain market share in the face of customer stickiness and high customer acquisition costs

Incumbents have quickly co-opted the robo-advisory model, driving monoline robo-advisors to explore new business models, such as licensing their technology to incumbents

SUPPORTING EVIDENCE

Challenging Per-Customer Economics

Monoline robo-advisors have primarily attracted mass or mass-affluent customers. Coupled with their low fees, these clients generate relatively low per-customer revenue. These economics have proven challenging, as customer acquisition costs are high relative to each customer's value, making it difficult to be profitable

Low Barriers to Entry

Robo-advisory offerings have proven to be relatively quick and economical to develop. The low cost of entry has allowed incumbent wealth managers to fast follow new entrants and build their own offerings, which they can then offer to their existing customer base to keep customer acquisition costs low

Value Added Services

Traditional wealth management services are becoming commoditized as new entrants automate advice and cash flow management services. However, this commoditization has underscored that clients value highly intangible "human" capabilities and bespoke services, especially as they increase in net worth. Incumbents' ability to provide these services can foster customer stickiness

New entrants to investment management have struggled to gain market share in the face of customer stickiness and high customer acquisition costs (continued)

CASE STUDIES

FutureAdvisor

Early digital advice platform bought by asset manager

In August 2015, FutureAdvisor was the first major customer-facing "robo-advisory" product bought by one of the leading global asset managers (BlackRock).[11] FutureAdvisor now provides tech-enabled digital advice for investors through banks and wealth managers in an open architecture platform.

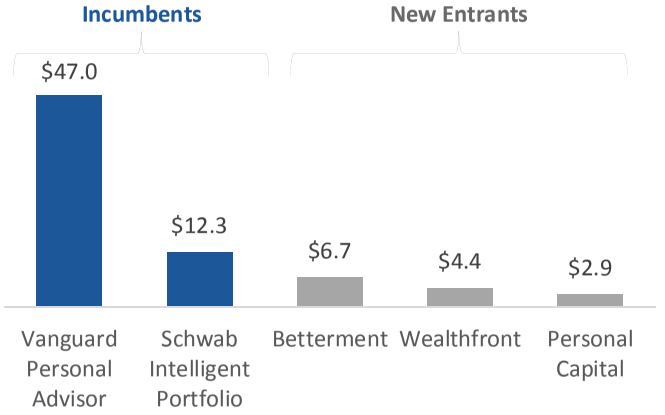
OWNERS ADVISORY BY MACQUARIE

Flat-fee digital investment advice

Macquarie, a leading asset management and investment banking firm from Australia, launched OwnersAdvisory in 2015, offering flat-fee digital investment advice service that empowers self-directed investors across various asset classes.[12]

QUANTITATIVE EVIDENCE

Top Robo-Advisors by Assets under Management, 2016 ($ billion)[13, 14, 15, 16, 17, 18]



Rapid consolidation of the market by incumbents

KEY UNCERTAINTIES

Benefitting from their strong brands, both distributors and manufacturers are quickly and successfully co-opting the robo-advisory model

1. How will the role of human advisers be affected by increased automation and the shift to robo-advisors?
2. Will the majority of wealth managers choose to build, buy or partner to offer robo-advice?
3. How can wealth managers differentiate their robo-advisory offerings?

Sources: 11. Forbes 12. Macquarie 13. Charles Schwab 14. Business Insider 15. Business Insider 16. Forbes 17. Bloomberg 18. Investopedia

Uncertainties in investment management largely revolve around the nature of future investment products and the composition of the related value chain

1 WHAT WE KNOW

These findings illustrate increasing client expectations and the importance of a personalized customer experience. As middle and back office functions are automated or externalized, firms are forced to differentiate on high-quality process execution and distinct, tailored advice. Customer stickiness and the high cost of new customer acquisition allow incumbents to benefit, as successful fintech offerings, such as robo-advisors, are quick and easy to replicate.

Through these findings, the following uncertainties around investment management emerged:

2 UNCERTAINTIES

- To what degree will product manufacturers move upstream and disrupt distributors?
- How will wealth managers differentiate their robo-advisory offerings?
- Will clients continue to prefer low-cost investments, or will "guaranteed outcome" products become popular?
- How will the role of human advisers and their job requirements change?
- Will product manufacturing be characterized by more or less scale?

3 POSSIBLE FUTURES

The resolution of these five key uncertainties paints three diverging pictures of the future of the investment management industry:

- Certainty-Based Offerings
- Advice as a Differentiator
- Quality Externalization

Depending on how the key uncertainties are resolved, the potential end states have very different evolutionary paths and implications for all firms

CERTAINTY-BASED OFFERINGS

The first end state paints a world where:

- Retail clients have less access to traditional pensions
- Retail clients become a more attractive segment than institutional clients
- Robo-advisors condition clients to expect certainty
- Asset management develops and delivers “guaranteed outcome" products

ADVICE AS A DIFFERENTIATOR

The second end state paints a world where:

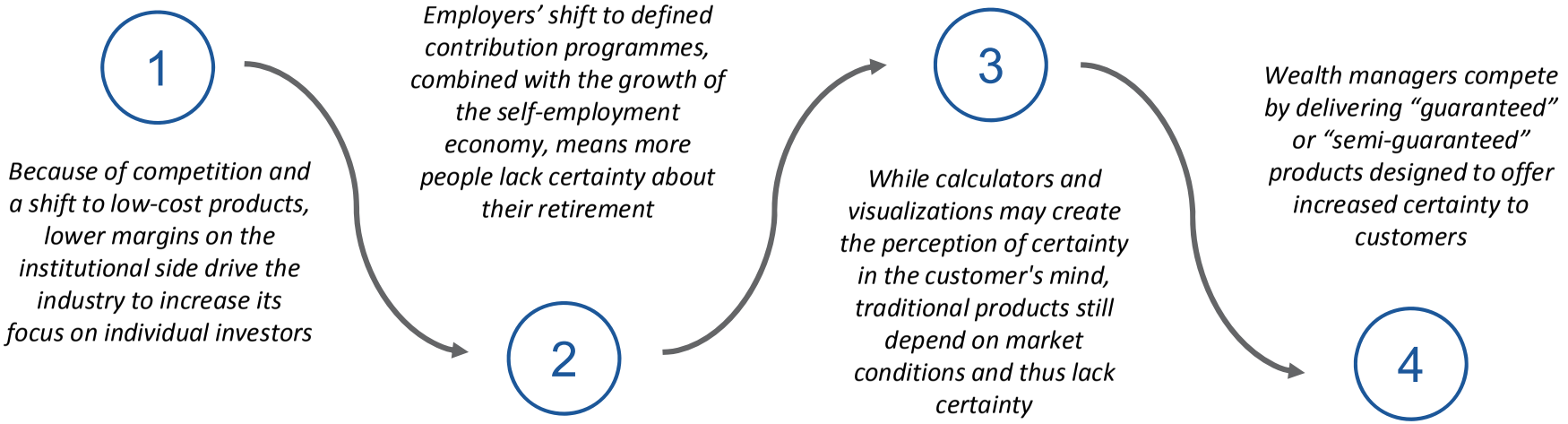
- Clients, especially millennials, flock to robo-advisors
- Algorithm-driven interfaces expand across multiple asset categories
- Wealth becomes the primary point of interaction with financial institutions
- Data-sharing agreements become much more important to understand consumers

QUALITY EXTERNALIZATION

The third end state paints a world where:

- More and more cloud and platform-as-a-service providers emerge
- Benefits of scale erode as high-quality execution becomes the norm
- Much of the market gets consolidated into large firms that can afford differentiated technology
- Many specialized smaller wealth managers thrive by appealing to niche markets

Growing profit pools in retail wealth lead to a renaissance of products guaranteeing a predefined outcome



CRITICAL CONDITIONS

- Improvements in analytics and risk management provide more granular insights into the liabilities associated with guaranteed products
- Institutions and manufacturers would need to be comfortable taking risk on some balance sheets and holding capital against it
- An operating model for breaking down barriers between insurance and wealth management/banking is accepted by regulators

EARLY SIGNS

- The shift of pensions from defined benefit to defined contribution continues
- Partnerships form between product manufacturers, insurers and gig-economy firms

Customers will profit from products offering increased certainty, but strong partnerships are needed to manage risks

Implications for Customers

- Products that offer guaranteed outcomes increase customer certainty about retirement
- Predefined and guaranteed outcomes prevent severe losses and are thus better options for risk-averse individuals
- The duality of goal-based and value-based propositions creates different segments of clients

Implications for Wealth Managers

- The increasing importance of individual clients requires significant investment to distribute via mobile/online channels
- Human factors (e.g. synthesis, decision-making) are becoming more important

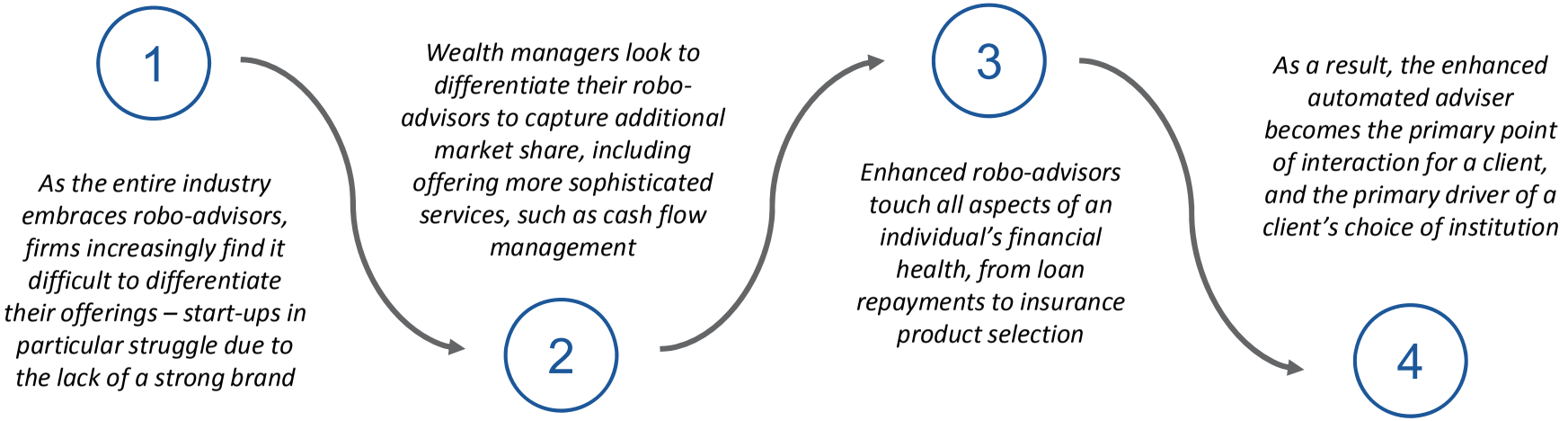
Implications for Asset Managers

- Individual demands allow product development and brand to become more important
- The offering of guarantee-based products makes proprietary risk management practices a key differentiator
- Increased risk requires stronger collaboration with wealth managers (distribution) and insurers (risk management)

Implications for Regulators

- The offering of guarantee-based products requires corresponding regulation and supervision
- More individual decision-making requires more comprehensive financial education

Based on significant improvements in robo-advice, investment advice becomes the primary driver of a client's choice of institution



CRITICAL CONDITIONS

- The capabilities of robo-advisors (e.g. cash flow management) are significantly improved
- Interoperability is established between products and services to allow for managing them through a single enhanced robo-advisory system
- Advisers are able to secure access to a full view of relevant customer data, including external data

EARLY SIGNS

- Core banking margins narrow, increasing the relative importance of wealth management business units as a profit driver and a differentiator
- The number of partnerships and acquisitions between incumbent institutions and robo-advisors, or other technology providers, increases further

Investment services will become more convenient but also less transparent for customers, while the role of wealth managers becomes more critical

Implications for Customers

- Sophisticated robo-advisors, coupled with customized advice and services, improve experiences and outcomes for digitally savvy customers
- The relationship with financial institutions becomes service-based instead of product-based

Implications for Asset Managers

- Power dynamics shift away from manufacturers and towards distributors, as they control the customer relationship and mindshare

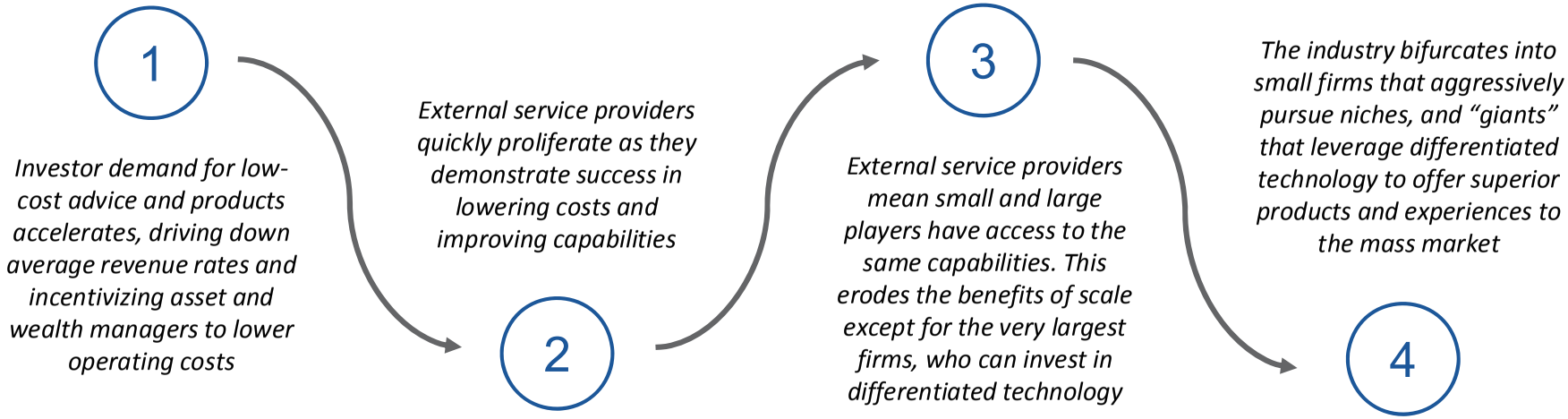
Implications for Wealth Managers

- Highly automated, AI-driven advice requires significant investment in system integration for information
- Core competencies shift from process execution to more human factors (e.g. synthesis, decision-making)
- The importance of data will lead to a focus on third-party data-sharing agreements

Implications for Regulators

- The need to interpret and regulate behaviour of algorithms and AI in the retail area increases, especially regarding recommendations

Increasing cost pressures force firms to either rely on external service providers or gain the scale to invest in differentiated technology



CRITICAL CONDITIONS

- Capability providers demonstrate the ability to offer similar levels of service at substantially lower cost
- Regulators are comfortable with increased outsourcing of core business functions
- Capability providers exhibit the necessary level of interoperability to make externalization efficient

EARLY SIGNS

- Incumbents are comfortable with cloud/platform-as-a-service solutions
- Increasing numbers of utilities or B2B capability providers emerge
- Incumbents partner with capability providers as opposed to acquiring them

Increasing standardization and industry bifurcation create new opportunities as well as new threats for all industry stakeholders

Implications for Customers

- The emergence of sophisticated capability providers increases the speed of and reduces errors in client onboarding
- Asset management products, as well as interactions with distributors, become undifferentiated from a customer perspective

Implications for Asset Managers

- Human capital needs and organizational structure will change in order to manage a portfolio of capabilities as opposed to a portfolio of talent
- The use of capability providers makes middle and back office functions more efficient
- The ability to differentiate based on process is reduced, as externalization becomes an imperative

Implications for Wealth Managers

- The use of capability providers makes middle and back office functions more efficient
- The reduced ability to differentiate based on process means scale becomes a major differentiator

Implications for Regulators

- Visibility increases due to natural standardization created by externalization
- The potential for systemic risk, created by single points of failure, needs to be contained

Key takeaways for financial institutions

1

DIFFERENTIATION OF OFFERING

The ongoing industry-wide automation and externalization of middle and back offices, combined with the ubiquity of robo-advisory offerings, are commoditizing the investment advisory value proposition. Consequently, leading firms will seek to identify and invest in other ways of differentiating themselves to stand apart from competition, in particular through deeper personalization of customer offerings

2

ADVICE-DRIVEN CUSTOMER GUIDANCE

As robo-advisors become more ubiquitous and more sophisticated, leading investment management companies will look to use these capabilities to deepen their engagement with robo-advisory customers, drawing on new sources of data to deliver advice on all aspects of their financial lives. This will mark the start of a change in their role from robo-investors to true robo-advisors

3

ROLE OF HUMAN ADVISERS

The human adviser will still be crucial when differentiating products, especially for high-net-wealth customers, but the role of such advisers will shift in leading companies from product selection to a focus on customer engagement, emotional intelligence and decision support

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Section 3.6

Equity Crowdfunding

Equity crowdfunding has greatly evolved in the last several years. This section examines the key trends shaping the industry and the uncertain path forward

The first half of this decade saw a change in how start-up businesses raise capital, with the entry of new forces that could potentially change the future of venture fundraising

CIRCA 2015, THE MAJOR FORCES IMPACTING EQUITY CROWDFUNDING WERE …

Mass Crowdfunding

UK-based crowdfunding platforms were opened to unaccredited investors for the first time

Expert-Led Crowdfunding

Platforms advertised expert-backed rounds to signal trustworthiness

Crowdfunding-as-a-Service

Crowdfunding platforms began on a white-label basis

CIRCA 2015, THE BIG UNCERTAINTIES ABOUT THE FUTURE OF EQUITY CROWDFUNDING WERE …

Could crowdfunding platforms prove that the "wisdom of the crowd" is superior to individual investors?

Could crowdfunding platforms continue to grow absent successful company exits?

How could crowdfunding platforms attract larger (i.e. institutional) investors?

Note: In this chapter, Equity Crowdfunding is considered to be early-stage/seed investments in unlisted companies. It does not include crowdfunding models such as pre-sales or the relatively recent appearance of initial coin offerings (ICO's)

Equity crowdfunding is growing, but the industry is still in its infancy and regulation will dramatically shape its future

WHERE DID DISRUPTION OCCUR?

A Crowdfunding platforms have grown rapidly, driven by strong demand from both investors and entrepreneurs

B The quality of regulation has been a defining factor in the success of the equity crowdfunding ecosystem

WHERE HAS DISRUPTION NOT OCCURRED?

C The crowd has proven less wise than expected, highlighting the need for further education and commercial due diligence tools to assist investors

D Equity crowdfunding remains disconnected from the broader financial system, limiting its long-term scalability

Crowdfunding platforms have grown rapidly, driven by strong demand from both investors and entrepreneurs

The venture fundraising market is more competitive than ever, driven by a growing number of start-ups and private market investors seeking alternatives to venture capital

SUPPORTING EVIDENCE

Strong Private Market Returns

Established start-ups, finding a more liquid venture capital market, are choosing to remain private for longer to avoid burdensome disclosures and market scrutiny. This delay has resulted in greater returns flowing to private investors, ultimately driving others to look for opportunities to participate in the area

Low Seed-Stage Funding Rates

Venture capitalists are paying more attention to the growing pool of private companies with valuations above $1 billion, and overlooking smaller firms, creating a strong need for seed capital from individuals

Rise in Entrepreneurship

Shifting attitudes towards entrepreneurship and the availability of new technologies that lower barriers to entry for start-ups have resulted in an explosion in the number of tech-based start-ups, driving the need for additional sources of funding

Crowdfunding platforms have grown rapidly, driven by strong demand from both investors and entrepreneurs (continued)

CASE STUDIES

SEEDRS

Participation of unaccredited investors

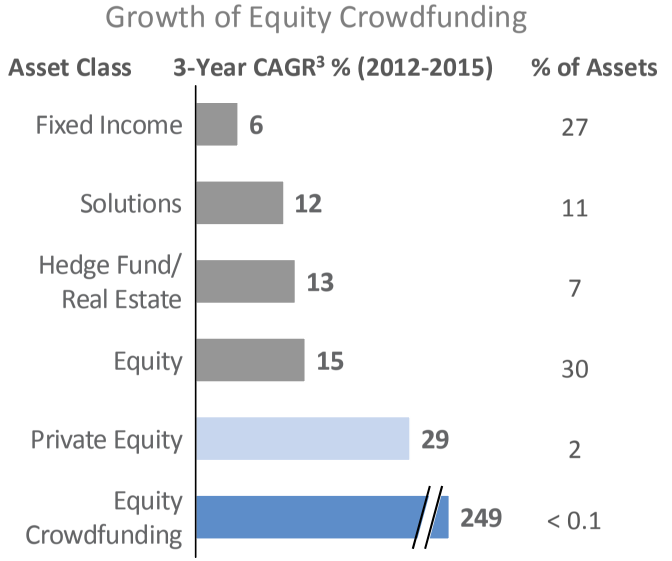
A UK platform launched in 2012, Seedrs allows all types of investors to invest as little as £10 in a start-up. Firms listed on Seedrs raised £85 million in 2016 (up 33% vs the previous year), funding 159 deals with 45,000 individual investments.[1] The average investor demonstrated strong platform engagement with nine investments.

AngelList

Invest alongside prominent investors

Founded in 2010, AngelList is a US platform for accredited investors investing alongside prominent angel investors. AngelList raised $190 million in 2016 (up 17% vs the previous year) and invested in 460 start-ups with funds from over 3,500 investors.[2]

QUANTITATIVE EVIDENCE



Equity crowdfunding is growing rapidly, but is still a very small market

KEY UNCERTAINTIES

The industry is maturing, albeit slowly, as individual investors embrace previously inaccessible investment opportunities

1. How would increased investor risk aversion impact demand for private equity?
2. How will distributed fundraising sources using blockchain technology affect the market for equity crowdfunding?
3. As more capital flows to equity crowdfunding, how will this affect venture capital firms?

Sources: 1. Seedrs Blog 2. AngelList 3. Casey Quirk analysis

The quality of regulation has been a defining factor in the success of the equity crowdfunding ecosystem

New regulations around the globe are helping to structure and add transparency to the crowdfunding industry, as regulators attempt to balance investor protection with a desire to make platforms an attractive and accessible source of capital

SUPPORTING EVIDENCE

Relaxed Suitability Requirements

Many regulators are encouraging the industry by relaxing private market suitability requirements to allow non-accredited investors to participate. This ensures that limits against investment sizes and wealth levels do not unreasonably limit the pool of potential capital

Differing Disclosure Requirements

Regulators have generally taken a light-touch approach with respect to disclosure requirements, allowing for a process significantly less onerous than for public firms. However, certain jurisdictions have imposed harsher rules, deteriorating the caliber of start-ups on platforms as only those truly desperate for capital put themselves through such a process

Regulatory Divergence

Crowdfunding regulations have diverged globally as different jurisdictions view equity crowdfunding very differently, and thus treat its risk profile differently. This hampers the ability of platforms to expand and operate internationally

Limited Deal Size

Regulators have capped deal sizes to allow platforms to lead Seed and A rounds. If set too low, these risks significantly reduce crowdfunding's value to entrepreneurs seeking larger funding rounds

The quality of regulation has been a defining factor in the success of the equity crowdfunding ecosystem (continued)

CASE STUDIES

pebble

Crowdfunding enthusiast turned to alternatives

Pebble is a smartwatch start-up that raised over $10 million in non-equity crowdfunding on Kickstarter (funding was raised on a pre-sale rather than equity basis).[4] Pointing to burdensome disclosures, Pebble chose to raise its next round of $15 million from traditional investors as opposed to equity crowdfunding.

crowdengine

Crowdfunding compliance utility

CrowdEngine provides white-label compliance tools to streamline investor accreditation, due diligence and core back office processes for crowdfunding websites. The platform incorporates cloud-based automation technology to make the process 100% digital, increasing the quality of due diligence and thus investors' trust in platforms.[5]

QUANTITATIVE EVIDENCE

Equity Regulations by Country[6]

			
Suitability Requirements	Non-qualified investors may invest up to 10 % of their net assets		Accredited investors only
Disclosure Requirements	Start-ups must release audited financial statements	Platforms need to certify that disclosures are accurate	No regulation
Fundraising Limit	$1M	£5M	No limit

KEY UNCERTAINTIES

Crowdfunding has been most successful in markets that balance early market growth with investor protections

1. What will be the next region to create equity crowdfunding regulation?
2. Will regulation converge to a specific standard that allows for the development of international crowdfunding markets?
3. How will governments balance crowdfunding platform growth with consumer protection?

Sources: 4. National Bureau of Economic Research 5. CrowdFundingBeat 6. European Commission, The Asian Business Lawyer

The crowd has proven less wise than expected, highlighting the need for further education and commercial due diligence tools to assist investors

The crowd has driven valuations higher than those seen in venture capital markets, creating the risk that investors become disillusioned due to disappointing returns in the future

SUPPORTING EVIDENCE

Lack of Resources and Time

Unlike angel and venture capital investors, crowdfunding platforms do not have the institutional knowledge and time to invest a sizeable amount of effort in due diligence, instead performing simpler diligence and relying on the wisdom of the crowd

Inexperienced Investors

Many large platforms allow non-accredited investors to participate in equity fundraising. Those inexperienced investors drive valuations high in early rounds and are more likely to invest in less viable start-ups, creating problems in later rounds. Moreover, investors' personal affiliations with brands can often play an outsized role in their investment decisions

AI and Cognitive Solutions

There is strong interest in leveraging new forms of data and the powers of automation and AI to perform commercial due diligence, analogous to the credit analysis performed by lending marketplaces

The crowd has proven less wise than expected, highlighting the need for further education and commercial due diligence tools to assist investors (continued)

CASE STUDIES

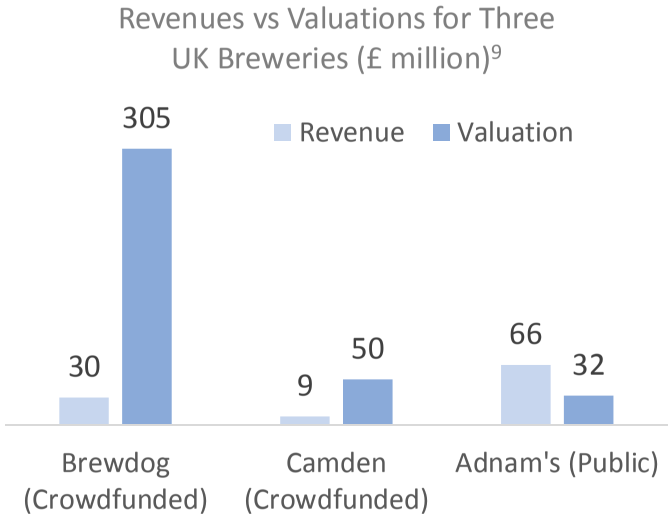
Overvalued brewery?

BrewDog, a Scottish craft brewery, leveraged brand advocates to have the most successful equity crowdfunding campaign to date (raising over £15 million in 2016). However, its valuation was almost 10 times higher than similar breweries, and concerns have been raised about inaccuracies in promotional materials.[7]

Investor-led due diligence on crowdfunding

SyndicateRoom pioneered the investor-led model, where investment rounds are led by professionals who validate the investment opportunity by leading the funding round with their own money. Online investors then join in under the same economic terms.[8]

QUANTITATIVE EVIDENCE



Funded start-ups priced much higher than publicly traded start-ups

KEY UNCERTAINTIES

Start-ups are raising capital at much higher valuations on crowdfunding platforms than through traditional sources, raising concerns about the accuracy of crowdfunding valuations

1. How can crowdfunding platforms best provide educational and commercial due diligence tools to empower investors?
2. Will the "wisdom of the crowd" model continue, or will the investor-led model eventually take over?
3. What new technologies and sources of data are most valuable to improve the accuracy of pricing?

Sources: 7. The Telegraph 8. SyndicateRoom 9. Forbes

Equity crowdfunding remains disconnected from the broader financial system, limiting its long-term scalability

Although crowdfunding is an increasingly meaningful part of the SME funding landscape, its momentum has recently slowed. To sustain growth, platforms need to broaden their distribution strategies to institutional funding

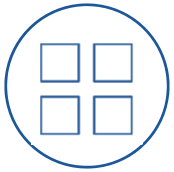
SUPPORTING EVIDENCE

Limited Track Records

Due to the immaturity of the platforms and the lack of an established track record, investors have limited ability to gauge the risks and return expectations of their investments. Thus, they are reluctant to invest or, in many jurisdictions, are limited by investor protection laws

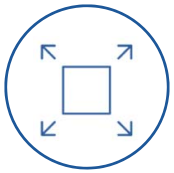
Lack of Liquid Secondary Markets

Early-stage venture capital investments are highly illiquid, with investors unable to realize a return until the company goes public or is sold – often years after the initial investment. A liquid secondary market would allow investors an opportunity to exit; it also creates "signaling issues" for the start-ups, as stock temporarily trading down could impact the business's prospect of raising future rounds of investment



Demand for Pooled Products

Researching and investing in individual stocks is largely a cottage industry for retail investors, as the majority of individuals desire the simplicity and accessibility of pooled products. Platforms have not yet developed more accessible products, and could work with asset managers to do so



Wider Distribution Networks

The majority of wealth is invested through financial advisers (both automated and human) and not through direct channels. Equity crowdfunding platforms have not yet accessed wealth management distribution channels

Equity crowdfunding remains disconnected from the broader financial system, limiting its long-term scalability (continued)

CASE STUDIES

crowdcube

Secondary market launch

In June 2016, Crowdcube announced its plans to launch a secondary market that enables investors to trade crowdfunded securities. The platform has also committed to building products and services that allow start-ups to improve transparency and better manage equity investors.[10]

iCapital NETWORK

Asset manager partnership with institutional platform

In December 2016, iCapital received an investment from BlackRock, highlighting the startup's desire to partner with incumbents for scale and the market leader's interest in investing in new entrants. iCapital connects accredited investors and their advisers to private equity and venture capital funds through a digital-first process.[11]

QUANTITATIVE EVIDENCE

Equity Crowdfunding Track Record (2011-2016)[12]

The industry has not had time to successfully exit many firms and establish a track record

KEY UNCERTAINTIES

While the equity crowdfunding model has proven workable, the industry needs to demonstrate scale and performance in order to be viable

1. What will the track record of equity crowdfunding investments be over the next five years?
2. How important are secondary markets for attracting new investors, and what technology is needed to enable such markets?
3. How can platforms collaborate with professional managers to develop products and access distribution networks?

Sources: 10. Forbes 11. Business Wire 12. AltFi Data

Five uncertainties will determine to what degree the industry can demonstrate stability and legitimacy while continuing to grow

1 WHAT WE KNOW

The four equity crowdfunding findings illustrate the rise in demand for crowdfunding platforms, the imperative role of regulation on crowdfunding success, the challenges faced with the lack of investor knowledge, and the difficulty of equity crowdfunding to integrate into the broader financial ecosystem.

Through these findings, the following key uncertainties around the future of equity crowdfunding emerged:

2 UNCERTAINTIES

How can platforms use emerging technologies (e.g. AI and machine learning) to educate investors and provide due diligence tools?

What partnerships are important to developing new products and expanding distribution?

How will regulators balance investor protection with ensuring that platforms remain an attractive source of capital?

How will rates of entrepreneurship evolve as macroeconomic conditions change and industries mature?

Will shifting market conditions (e.g. rising interest rates) significantly impact investor demand for early-stage equity?

3 POSSIBLE FUTURES

The resolution of these five key uncertainties paints three diverging pictures of the future of the equity crowdfunding industry:

 Social Driver

 International Expansion

 Shooting Star

Depending on how the key uncertainties are resolved, the potential end states have very different evolutionary paths and implications for all firms

SOCIAL DRIVER

The first end state paints a world where:

- Equity crowdfunding for profit-oriented companies never achieves profitability
- Social impact-oriented crowdfunding builds on the success of debt instruments like social impact bonds
- Platforms differentiate themselves based on social returns and affinity groups
- Projects get sources of community support and feedback

INTERNATIONAL EXPANSION

The second end state paints a world where:

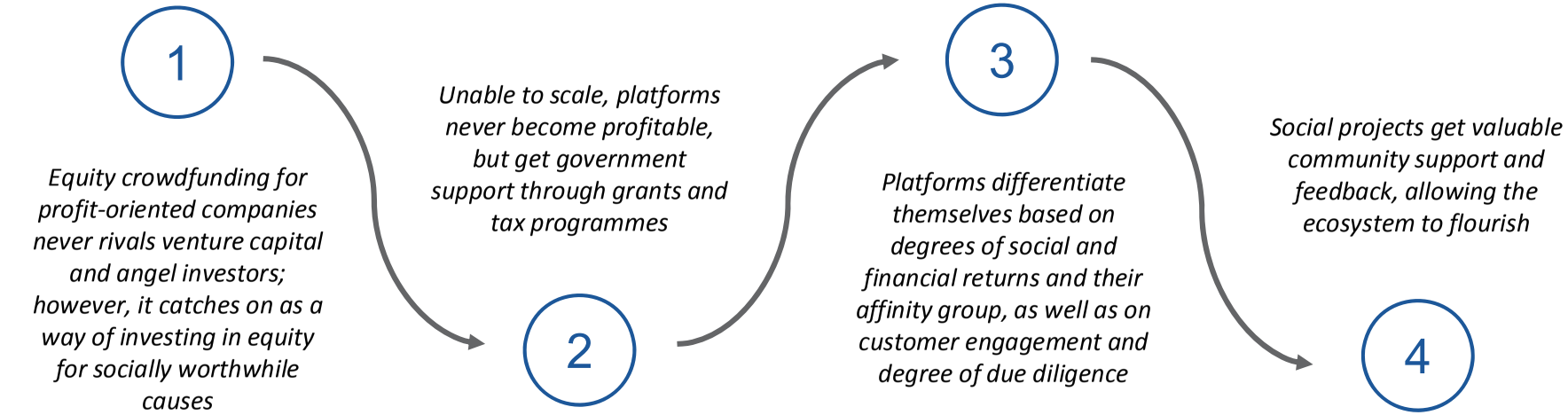
- Regulations across jurisdictions are standardized
- Platforms start expanding internationally
- New technologies allow inter-platform connectivity
- Secondary market trading allows platforms to attract additional investors and grow

SHOOTING STAR

The third end state paints a world where:

- Continued low interest rate environments drive wealth managers to seek yield
- Partnerships with equity crowdfunding platforms are developed
- AI and automation is used to analyse firms and investments
- The crowdfunding market grows considerably as institutional money arrives

Platforms fail to scale in profit-oriented industries, but catch on as vehicles to deliver social impact



CRITICAL CONDITIONS

- Venture capital funds remain the dominant source of early-stage start-up funding
- The number of investors interested in providing equity to social enterprises grows
- Government support for platforms continues through grants and tax advantages

EARLY SIGNS

- High valuations and/or poor track records stifle platform growth and drive investors away from the industry
- Poor equity crowdfunding regulations are not fixed
- Quality start-ups turn away from the crowdfunding platform and opt for venture capital funding instead

Social enterprises attract more funding and are more impactful as the ecosystem becomes developed and dedicated

Implications for Individual Investors

- Individual investors receive access to a platform to invest equity in social causes they truly care about
- They give valuable input to affinity and social-focused projects that other sources of investment do not provide

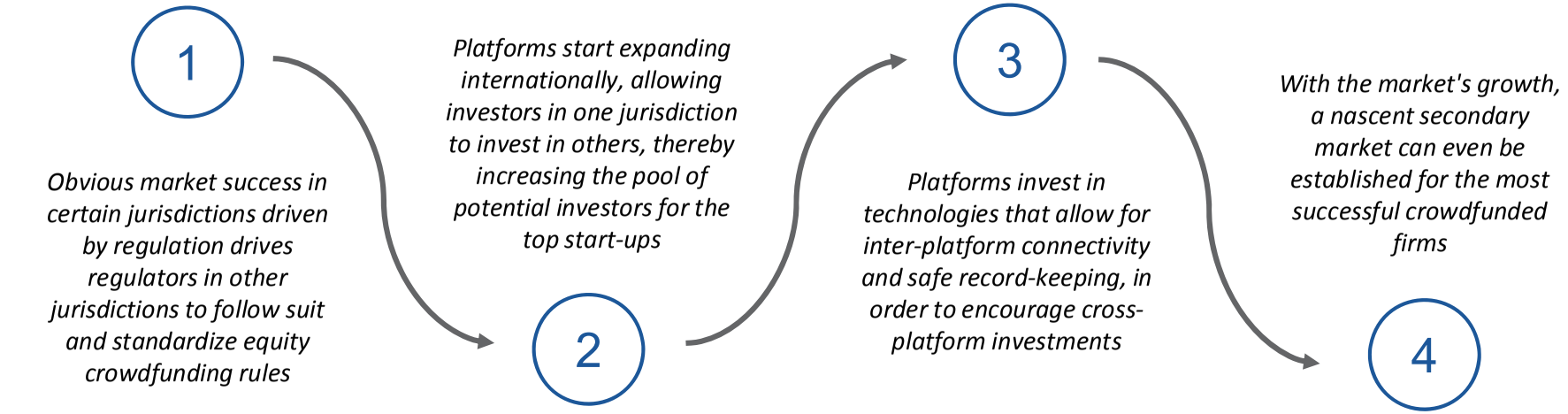
Implications for Incumbents

- Angel investors and venture capital firms remain the dominant source of investment for private equity

Implications for Entrepreneurs

- Start-ups providing a social good have increased access to capital
- Start-ups operating in less popular sectors for venture capital have fewer funding sources, and/or are located in less liquid venture capital markets

Regulator convergence allows for cross-border investment and crowdfunding platform growth



CRITICAL CONDITIONS

- Increased collaboration between crowdfunding platforms and regulators across jurisdictions will help create standardized regulation for equity crowdfunding
- Investment in technology leads to building inter-platform connectivity and due diligence tools for investors

EARLY SIGNS

- Increased pressure to regulate the industry results in new regulations and improved investor confidence in platforms
- Interest grows for firms in emerging markets to use crowdfunding because of limited venture capital opportunities, and for investors in mature markets to invest in them
- New tools emerge that allow investors to conduct due diligence

International expansion by crowdfunding platforms levels access to venture capital across geographies

Implications for Individual Investors

- Investors have increased access to both domestic and global equity opportunities
- Portfolio diversification is improved by adding high-risk and potentially high-return global investments

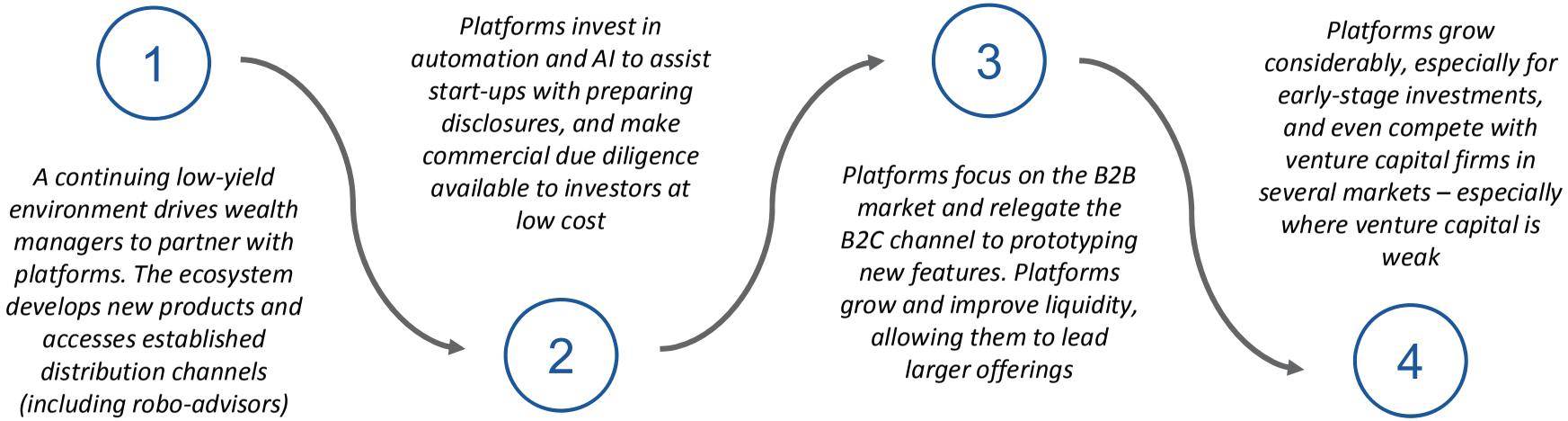
Implications for Incumbents

- The number of later-stage emerging market investment opportunities available to venture capital funds grows as equity crowdfunding supports firms through early-stage growth
- Increased competition for venture capital firms is focused on underdeveloped markets

Implications for Entrepreneurs

- Improved access to early-stage capital in markets traditionally underserved by venture capital levels the playing field between established and emerging markets

Crowdfunding platforms forge partnerships and gain scale to successfully lead late-stage offerings traditionally done by venture capital firms



CRITICAL CONDITIONS

- A prolonged low-return environment leads wealth managers to look for other higher-yield opportunities
- Technology start-ups develop advanced analytics tools that help wealth managers perform due diligence
- Platforms demonstrate some early successes and build track records
- Regulators accept partnerships with wealth managers

EARLY SIGNS

- Early tentative partnerships between wealth managers and platforms are successful
- Technology start-ups emerge that focus on improving the early-stage due diligence process

Crowdfunding plays an increasingly large role for seed stage funding, but individual investors only interact with crowdfunding through their wealth managers

Implications for Individual Investors

- Investors gain the ability to allocate to high-risk, high-return crowdfunded equity
- Engagement in the investment selection process decreases due to intermediation
- Early-stage equity becomes a common source of diversification

Implications for Incumbents

- Crowdfunding platforms gain scale through partnership with wealth managers
- Due diligence technology leads to higher-quality opportunities through better detection of "bad eggs"
- Venture capital firms focus on later-stage opportunity because of increased competition at the seed stage

Implications for Entrepreneurs

- Both early- and late-stage start-ups have improved access to venture capital/liquidity
- Barriers are lower when accessing platforms because due diligence is cheaper (handled by platforms), but more information is needed to pass due diligence

Key takeaways for financial institutions

1

IMPROVED LIQUIDITY AT SEED STAGE

Leading crowdfunding platforms will increase the amount of seed-stage funding available to entrepreneurs, thus filling a valuable niche in the fundraising ecosystem, especially in parts of the world with less venture capital investment

2

REGULATOR BALANCE

Regulation plays a significant role in shaping the equity crowdfunding industry across all possible end states, whether crowdfunding platforms go direct to consumers or partner with incumbents. Regulators must balance encouraging crowdfunding and ensuring adequate due diligence

3

INTEGRATION WITH BROADER FINANCIAL ECOSYSTEM

In order to achieve a sustainable level of scale, equity crowdfunding platforms will need to grow their scope of funding through integration with the broader financial ecosystem (e.g. incorporation into wealth management platforms) and will need to establish secondary markets with sufficient liquidity

Note: Due to their relative recency, ICOs were not in the scope of this initiative, but they represent a new mechanism for crowdfunding that warrants further research

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Section 3.7

Market Infrastructure

Market infrastructure has greatly evolved in the last several years. This section examines the key trends shaping the industry and the uncertain path forward

The first half of this decade saw the beginning of rapid change in the infrastructure underlying capital markets, with the global entry of several innovative forces that had the potential to change how transactions were conducted

CIRCA 2015, THE MAJOR FORCES IMPACTING MARKET INFRASTRUCTURE WERE …

Capital Requirements

BANK FOR INTERNATIONAL SETTLEMENTS

Basel III capital requirements challenged the engagement models of traditional sell-side firms

New Platforms

ALGOMI

Technologically enabled platforms were starting to appear in traditional over-the-counter-driven markets

Market Regulations

esma European Securities and Markets Authority

Led by Europe, many regions implemented additional controls around the exchange of assets

CIRCA 2015, THE BIG UNCERTAINTIES ABOUT THE FUTURE OF MARKET INFRASTRUCTURE WERE …

How would electronic platforms develop, and what assets would be electronified?

What effect would continued regulation have on the development of new trading tools?

How would incumbents seek to respond to new technologies used by start-ups?

Note: In this chapter, a "platform" is an electronic environment that facilitates trading of financial products by offering one or more services along the continuum from price discovery to post-trade settlement

The role of platforms in capital markets is growing, if unevenly, but regulatory changes and new technology will influence their adoption and capabilities

WHERE DISRUPTION OCCURRED

A — Traditional over-the-counter (OTC) products continue their journey towards electronification, driven by regulation and the promise of improved economies of scale

B — The efforts of electronic platforms to scale up are complicated by an uncertain and regionally fragmented regulatory environment and political instability

C — Market infrastructure providers are disrupting themselves to preserve a pivotal role in future processes and unlock new revenue streams

WHERE DISRUPTION DID NOT OCCUR

D — New market platforms have rarely challenged incumbents, and instead see joint ventures and partnerships as the most successful path to scaling up

Traditional OTC products continue their journey towards electronification, driven by regulation and the promise of improved economies of scale

The electronification of traditional OTC asset classes (e.g. fixed income), has continued in recent years, following the path of equity markets. However, this process has been uneven with some product types moving away from OTC faster than others

SUPPORTING EVIDENCE

Data and Standardization

Platforms are collecting demand/supply data to create an aggregated market view and aid discovery of suitable counterparties, and are even providing additional market analytics to better inform buyers, sellers and intermediaries. However, securing data standards and cross-platform interoperability remains key to avoid fragmentation and secure liquidity during the electrification process

Regulatory Push

Some post-financial crisis regulations have required particular asset classes to move their trade and post-trade processes to trading platforms (e.g. interest rate swaps). Other regulations have provided indirect nudges towards trading platforms, such as the European Union's Second Markets in Financial Instruments Directive (MiFID II), increasing the cost of traditional OTC trading under the best-execution imperative

Asset Class Characteristics

Certain asset classes have characteristics that naturally make them better suited for trading platforms. Products that are relatively homogenous and have low trade sizes are particularly good fits for trading platforms, and have migrated quickly. Asset classes that lack those characteristics have struggled to reach a critical mass of supply and demand on the marketplace level

Traditional OTC products continue their journey towards electronification, driven by regulation and the promise of improved economies of scale (continued)

CASE STUDIES

Deutsche Börse Group

TRUMID

Bet on bond electronification

In July 2017, Deutsche Börse Group has bought a $10m stake in Trumid, a young bond trading platform. Trumid's platform focuses on bringing electronic trading to corporate debt, an asset class where most trading today is still conducted over the phone[1].

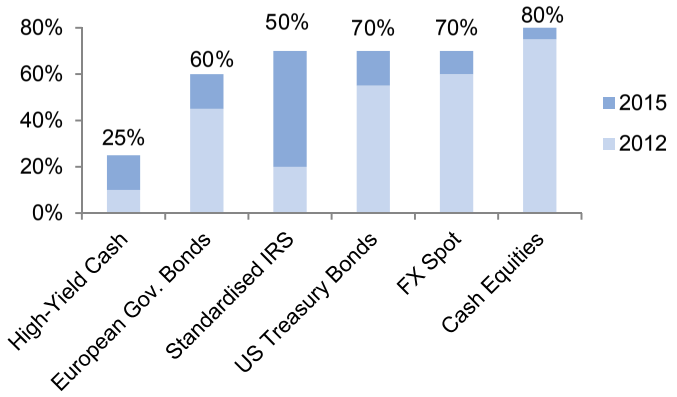
Bloomberg

Move into regulated trade execution

Bloomberg is in the final stage of shifting trading in cash bonds and derivatives from its existing AllQ platform to the Bloomberg Trading Facility, which launched in 2015 and is the company's first regulated European venue.[2] The AllQ platform accounted for 37% of European government bond trades in late 2016.

QUANTITATIVE EVIDENCE

Electronification of Various Asset Classes (%)[3]



The level and growth of electronification across asset classes varies considerably

KEY UNCERTAINTIES

While the move to electronic platforms has been uneven, it will likely continue in the push for transparency and liquidity

1. How can stronger cross-platform cooperation be achieved to further improve access tools and standardize "market language"?
2. Will regulators further expand the scope of asset classes which need to be traded via electronic trading platforms?
3. Can buy-side firms adjust to the requirements of direct platform access, disintermediating the sell-side?

Sources: 1. Financial Times 2. Financial News 3. BIS

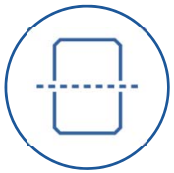
The efforts of electronic platforms to scale up are complicated by an uncertain and regionally fragmented regulatory environment and political instability

Post-financial crisis regulation has generally upheld the themes of cross-border equivalence, transparency and capital efficiency, all of which support the electronification of trading; however, recent events are calling this trend into question

SUPPORTING EVIDENCE

Post-Crisis Regulation

Platforms have been able to achieve scale quickly in the last few years by taking advantage of regulatory reforms (such as MiFID, or Dodd-Frank in the United States) that were enacted in response to the financial crisis. As the crisis becomes a relic of the past, regulatory bodies around the world are starting to revisit financial crisis-era policies



Political Instability

The widespread political uncertainty that enveloped many developed markets post-2016 has introduced new risks to capital markets, slowing investments as financial institutions wait for clear signals on the priorities of newly formed governments

Regionalization

The global regulatory trend over the last few decades has been one of increasing global interconnectivity and standardization, which benefitted platforms' journeys to scale. However, due to geopolitical factors and the regionalization of financial ecosystems, the trend for the future is likely to be regionalization of regulatory policies

The efforts of electronic platforms to scale up are complicated by an uncertain and regionally fragmented regulatory environment and political instability (continued)

CASE STUDIES

New regulatory path

At the 2017 Annual International Futures Industry Conference, J. Christopher Giancarlo, Acting Chairman of the US Commodity Futures Trading Commission, laid out the future agenda of the regulatory body by emphasizing the need to right-size the regulatory footprint, particularly with respect to the Dodd-Frank Act.[4] He laid out the main objective as the reduction of excessive regulatory burdens.

Political-derived uncertainty

The impact of Brexit on capital markets is still unclear. Several EU regulators have indicated[5] they will not allow brokers based outside the European Economic Area (including a post-Brexit United Kingdom) to offer third-country end users electronic access to exchanges residing under the European Union's jurisdiction.

QUANTITATIVE EVIDENCE

Growth of political instability as a major issue

KEY UNCERTAINTIES

The exact impact of a regulatory pivot on capital market economics is very difficult to predict, but will likely have a large (if localized) effect

1. Will regulatory protection, in particular in the United States, trigger a global regulatory competition?
2. Will freed-up capital flow back into old business models, or will it contribute to further platform innovation?
3. How does regional fragmentation reshape the business models of platform providers?

Sources: 4. CFTC 5. Risk.net 6. Skadden Arps Slate Meagher & Flom

Market infrastructure providers are disrupting themselves to preserve a pivotal role in future processes and unlock new revenue streams

The industry has long known the potential benefits of disruptive technologies, such as AI and distributed ledger technology (DLT), and has started to invest in the development of new business models around those technologies

SUPPORTING EVIDENCE

Erosion of Margins

As technological improvements lower economies of scale, the profitability of operating a utility is declining. Additionally, utilities are under pressure from a prevailing low interest rate environment and increasing capital costs, causing them to explore new profit opportunities

Data and Data Flow as Key Resources

As profitability in core businesses erodes, the data flows of incumbent market infrastructure providers could create new sources of revenue. However, doing so will require extensive industry cooperation between different data providers, including complementary infrastructure and data-sharing agreements

Value Chain Disruption Capabilities

New technology could lead to significant changes in the architecture of capital markets by enabling real-time processes and more direct connectivity. This could drive the elimination of many existing roles and the creation of new ones, upending the traditional value chain

Market infrastructure providers are disrupting themselves to preserve a pivotal role in future processes and unlock new revenue streams (continued)

CASE STUDIES

DTCC

Infrastructure improvements

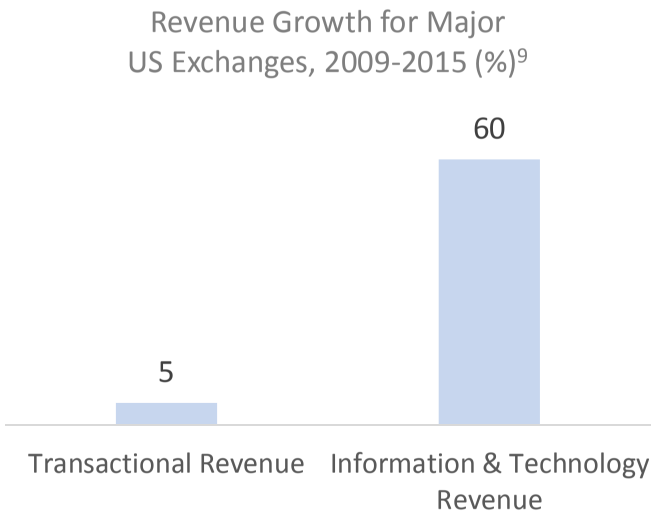
The Depository Trust & Clearing Corporation (DTCC) is using blockchain technology to rebuild its platform responsible for processing $11 trillion worth of credit default swaps. The new platform will aim to align processing including execution and risk management along the trade life-cycle, so as to make usage and reconciliation of multiple databases obsolete.[7]

THOMSON REUTERS

Betting on blockchain

In June 2017 Thomson Reuters launched BlockOneIQ, a "smart oracle" that provides users with cryptographic proof of the source of external securities pricing data – a perquisite for many "smart contract" use cases of blockchain in financial services. The product is one in a suite of potential opportunities currently being explored to provide enabling services for those use cases[8]

QUANTITATIVE EVIDENCE



Growth in information-related revenues

KEY UNCERTAINTIES

New revenue models are emerging, but unlocking – and profiting – from them will require co-operation and time

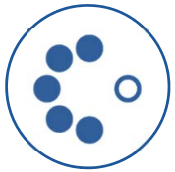
1. How far away are new technology-enabled business lines from applicability, scalability and maturity?
2. Will disruption attract capital-heavy technology firms like IBM or Google to the areas of market data and infrastructure?
3. What are prerequisites for regulatory buy-in to new business models around disruptive technologies?

Sources: 7. Forbes 8. Thomson Reuters 9. Business Insider

New market platforms have rarely challenged incumbents, and instead see joint ventures and partnerships as the most successful path to scaling up

Many fintechs have entered the trading platform area (23 new corporate bond platforms alone between 2010 and 2015), but a review of the survivors suggests that a mix of fintech technological innovation and incumbent scale is the winning bet

SUPPORTING EVIDENCE



Monoline Challenges

Trading platforms with a narrow asset class or value chain focus (i.e. most start-ups) are struggling to meet the needs of incumbents, who operate in many differentiated markets and thus look for efficiency and cross-product synergies from their platforms

Incumbent Adaptation

Incumbent banks, brokers and platform providers can use available resources (both talent and financial) and the industry's high switching costs to their advantage. Rather than adopt fintech solutions, they can either develop their own or acquire promising start-ups to bridge the gap

Stickiness

Even when significant efficiencies exist on new trading platforms, two factors have created a strong stickiness for traditional trading methods: the desire of incumbents to limit the integration of new technology platforms due to switching costs, and a reluctance to disturb the complex network of individual and institutional relationships characterizing capital markets

Ongoing Need for Improvement

Incumbents who provide market access to investors remain slow at improving customer-friendly and cost-efficient, technology-driven relationship models due to inertia and a lack of expertise. Therefore, fintechs represent an ideal partner for enriching and improving core technology, as well as continuously improving customer interfaces

New market platforms have rarely challenged incumbents, and instead see joint ventures and partnerships as the most successful path to scaling up (continued)

CASE STUDIES

Expansion of joint venture

In March 2017, Euronext announced the global expansion of its joint venture with fixed-income technology provider Algomi.[10] It will create a network of centralized information venues, turning disparate data into trade opportunities between counterparties yet maintaining the current client-to-dealer market structure.

Monoline platform failure

In 2015, Bondcube, an electronic fixed-income trading system that had just received regulatory approval to trade in Europe, filed for liquidation. According to the chief executive officer, liquidity was not the problem, but Bondcube lacked the capability to "follow through from converting matches into trades".[11]

QUANTITATIVE EVIDENCE

Development of US Fintech-Run Swap Execution Facilities (SEFs) [12]

4 SEFs launched in 2013 by fintechs

2 SEFs launched by fintechs still operating

>1% Fintech SEF market share

Fintechs have struggled to capitalize on the regulatory drive towards SEFs

KEY UNCERTAINTIES

The popularity of joint ventures and partnerships may mean that future market infrastructure development is slower, albeit more predictable

1. Should new fintech platforms focus directly on business models around partnering and filling B2B gaps?
2. Will the trend towards partnerships lead to further consolidation in the platform universe?
3. Can a monoline product offering be a sustainable business model for platforms at all?

Sources: 10. Algomi 11. Bloomberg 12. FIA

Uncertainties around market infrastructure largely concern the future direction of regulation, and the impact of new technologies on the industry

1 WHAT WE KNOW

The four market infrastructure findings illustrate the increasing role of platforms in capital markets. Traditional OTC products are becoming more and more electronified, but are hindered in their efforts to scale up due to fragmented regulatory and technological environments. In order to scale up and garner success, joint ventures and partnerships between fintechs and incumbents are key.

Through these findings, the following key uncertainties around the future of market infrastructure emerged:

2 UNCERTAINTIES

What will political disruption and potential deregulation mean for platform trading and proliferation?

How will buy-side investor demand for innovation and new business models shape the platform universe?

How far away are disruptive technologies, such as AI and DLT, from applicability and scalability in a production environment?

What will drive the necessary cooperation to embed new business models into the existing ecosystem?

How will disruptive technologies affect the value chain and individual roles in market infrastructure?

3 POSSIBLE FUTURES

The resolution of these five key uncertainties paints three diverging pictures of the future of the market infrastructure industry:

Platform Proliferation

Data-Infrastructure Collision

New Post-Trade Value Chains

Depending on how the key uncertainties are resolved, the potential end states have very different evolutionary paths and implications for all firms

PLATFORM SUCCESS

The first end state paints a world where:

- Market platforms enhance their tools and standardize languages
- Trading in many asset classes becomes easier
- Market participants adopt platforms en masse
- Platforms continue to innovate as usage rises, thus consolidating their market position

DATA-INFRASTRUCTURE COLLISION

The second end state paints a world where:

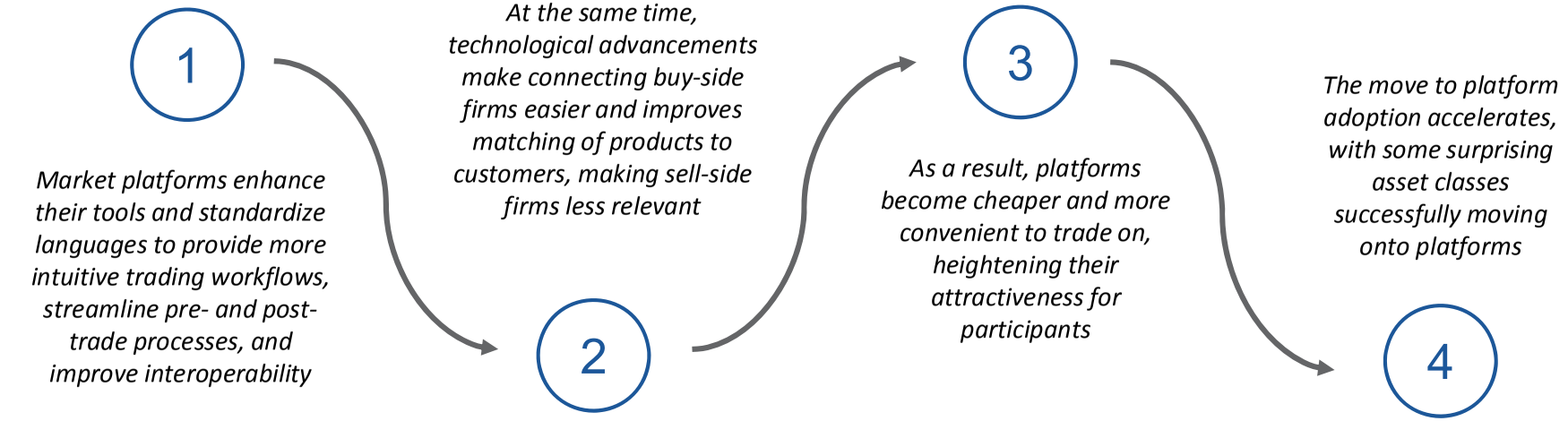
- Data-focused firms expand within the platform area
- Infrastructure providers leverage information custody to provide data services
- As a result, those players find themselves on a collision course
- Users increasingly have fewer providers for both data and infrastructure

NEW POST-TRADE VALUE CHAINS

The third end state paints a world where:

- Infrastructure providers disrupt the capital markets value chain
- Improvements (e.g. real-time settlement) lead to new market structures
- Some entities leave the ecosystem while others redefine their role
- Additional resources are freed up by improvements to processes

New platform capabilities, including pre- and post-trade processes, will accelerate their adoption across asset classes



CRITICAL CONDITIONS

- A stable regulatory environment is favourable for market providers
- Buy-side clients adopt and use platforms on a significantly larger scale

EARLY SIGNS

- Buy-side firms start to partner directly with platform providers
- Increasingly more platforms create significant liquidity in production, as volumes of transactions executed via platforms grow further and for more asset classes

The rise of additional platforms to facilitate trading increases pressure on incumbents to continue to improve, benefiting the buy side

Implications for Incumbent Infrastructure Providers

- More platform usage means incumbents must further develop their existing platform solutions to protect market share
- Alternatively, they could partner with emerging platforms or acquire them

Implications for Regulators

- Regulators would increase their visibility into the market as platform usage grows, allowing for greater tracing of activities

Implications for New Entrants

- Higher platform usage would direct traffic to innovative new entrants, allowing them to gain market share
- More platform usage would also contribute to platform interoperability and multilateral relationships, benefitting new entrants

Implications for Buy-Side Customers

- Platforms would allow customers to become less dependent on sell-side participants in the longer term

As infrastructure and data providers encroach on the other's core businesses, customers will likely have to choose between them

1

Traditional providers of data platforms (e.g. Bloomberg) continue their expansion into execution and post-trade processing, deploying platforms for new asset classes

2

Meanwhile, as margins in their core businesses erode, traditional market infrastructure providers deepen their focus on monetizing their data flows

3

With data platforms and market infrastructure providers on a collision course, new points of competition will appear between them

4

The competition creates both incentives and pressures for customers to reduce the number of partners, as their data provider would likely operate the platforms they use

CRITICAL CONDITIONS

- The trend towards electronification of asset trading continues, and even increases in pace
- The platform environment remains highly competitive, and pure access to standard products represents a commoditized service
- New technologies can be applied in enhanced data science (e.g. AI) and are coupled with robust monetization strategies

EARLY SIGNS

- Platform infrastructure providers start focusing on hiring employees with a data background
- Data and/or platform providers start offering customers incentives to use their company for trading and data

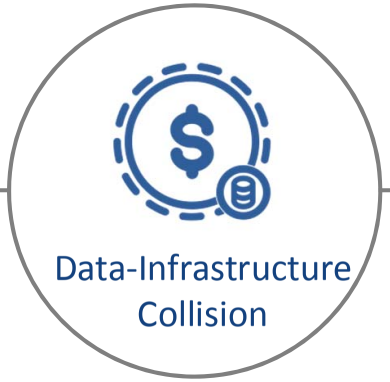
Customers may have additional choice regarding partnerships, leading to lower costs, and will likely work with fewer partners

Implications for Incumbent Infrastructure Providers

- Expansion may mean more partnerships with or acquisitions of data-heavy fintechs to acquire competencies
- Regulatory questions may mean more partnerships to ensure easier risk management

Implications for Regulators

- Additional data means more opportunities to monitor the market
- However, regulators will have to build connections with data providers, an entirely new set of constituents



Implications for Incumbent Data Providers

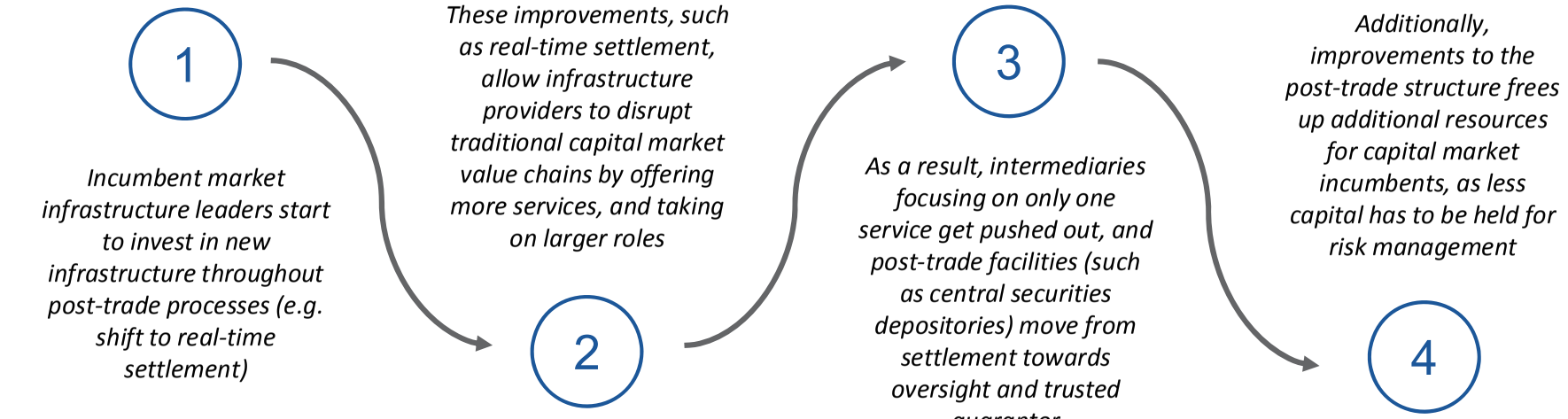
- Moving into the infrastructure field may mean new infrastructures with data at their core
- Additional competition may mean more partnerships with or acquisitions of platform fintechs to gain competencies

Implications for Buy-Side Customers

- Additional service providers may mean lower prices and additional benefits, but one provider for both infrastructure and data
- However, the rise of data means some level of acceptance is needed that their data is no longer solely theirs to use

WORLD ECONOMIC FORUM

As incumbents invest in market infrastructure improvements, the value chain will naturally shift, leading to consolidation and role changes



CRITICAL CONDITIONS

- Significant investment in new technology by market infrastructure providers moves markets towards real-time and flexible settlement
- Regulators accept new technology-based business models or even ecosystems, embed them into existing regulatory frameworks and define the nature of the relationship to existing ecosystems
- New ecosystems are complementary on an international scale to reflect the global nature of capital markets

EARLY SIGNS

- Investment share in new infrastructure technologies rises constantly over the next five years
- Cooperative models on DLT ecosystems embrace growing numbers of industry stakeholders
- The first distributed ledger system is launched in production by a bank or an exchange organization and linked to post-trade activity

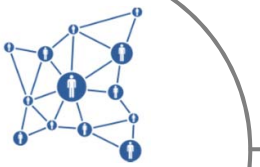
These improvements to the value chain will lead to significant savings for buy-side investors, as cash flow management and risk management costs decline

Implications for Incumbent Infrastructure Providers

- New technologies allow incumbent providers to revamp existing business models, playing a bigger role in the value chain
- The need to offer more services (as they play a bigger role in the value chain) may mean consolidation to acquire expertise
- Ongoing consolidation is likely to result in an increasing number of utilities and consortia, aimed at cost mutualization for non-differentiating and commoditized activities (e.g. KYC or Risk Compliance)

Implications for Regulators

- Improvements, such as real-time settlement, may mean a more difficult role for regulators, as there is less time for review



New Post-Trade Value Chains

Implications for Fintechs

- The changes to infrastructure mean that blockchain-related or other real-time focused firms will find many partners
- However, incumbents' ability to own more of the value chain may make it harder for fintechs to gain market share

Implications for Buy-Side Customers

- Improvements to post-trade settlement will allow for simple cash flow management and streamlined operations, increasing profits in the long run

Key takeaways for financial institutions

1

INSUFFICIENCY OF TECHNOLOGY ALONE

New technological solutions alone are insufficient to enable the creation of new market infrastructure or to drive significant changes in existing infrastructure; this will make “minimum viable ecosystems” of cooperating stakeholders critical to development. Leading players from both the public and private sphere will seek to actively participate in and shape the direction of these stakeholder groups

2

NAVIGATING REGULATORY UNCERTAINTY

Differing regulatory direction around the world will likely lead to both regionalization and uncertainty in the short and medium term. Financial institutions will need to develop the flexibility to rapidly adapt to both large-scale regulatory changes and regionally divergent regulatory treatment of emerging-market infrastructure technologies

3

NEW VALUE CHAIN PRESSURES AND OPPORTUNITIES

Regulation and technological advancements are driving efficiencies, which will put pressure on incumbents to consolidate their positions and thus shorten the value chain. Forward-looking firms will seek to position themselves in areas that will continue to add value, including areas currently occupied by other firms

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The World Economic Forum expresses its gratitude to the following individuals on the project team:

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Special thanks for contributions from:
Dominik Hermann, Deutsche Börse

Additional thanks
The project team expresses gratitude to the following individuals for their contributions and support:

Shrija Bajpai	Alexandra Durbak	Vlad Victor Oncescu
Kerry Butts	Abel Lee	Christine Robson
Alexander Carbone	Jack Luan	Max Seltzer
Julia Di Spirito	Alonzo Neese	Elaine Smith

And to:
Deloitte Digital UK (Facilities)
The Barclays Accelerator at Rise New York
Visa One Market Center
AIG Global Innovation Center
Peking University, HSBC School of Business

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The project team would also like to express its gratitude to the following subject matter experts who contributed their valuable perspectives through interviews and by participating in workshop and roundtable discussions (in alphabetical order):

Mikaal Abdulla	8 Securities
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Sam Allen	CompareAsiaGroup
Billy Alvarado	Stripe
Sean Amato-Gauci	RBC
Andy Ambrose	Liveoak
Giles Andrews	Zopa
Tim Attia	Slice
Peter Bailey	Dataminr
Andre Bajorat	Figo
Rachel Bale	Mastercard
Luc Beaudry	FINTRAC
Peter Berg	Visa
William Black	Moody's
Brock Blake	Lendio
Tom Blomfield	Monzo Bank
Anne Boden	Starling
Francis Bouchard	Hamilton Place Strategies
Mary Kay Bowman	Square
Eli Brill	Mastercard
Bart Brouwer	ING
Ryan Caldwell	MX
Claire Calmejane	Lloyds Banking Group
Norm Cappell	Borrowell
Bill Cecil	State Farm
Sean Chai	AIG
Libby Chambers	Western Union
Sonika Chandra	Western Union
Donald Chapman	Modo Payments
Tim Chen	NerdWallet
Ron Chiong	Hong Kong Securities and Futures Commission
Raju Chithambaram	Intuit
Richard Colucci	Algomi
Pat Cronin	BMO
Chris Cruzado	Western Union
Michael Cyprys	Morgan Stanley
Giovanni Dapra	MoneyFarm
Lee Davidson	Morningstar
Chip Dempsey	OCC
Rodger Desai	Payfone
Ken Dewoskin	Deloitte Services LP
Dan Dickinson	Equitable Bank
James Dixson	NASDAQ
Andrew Dresner	JPM Chase
Kirk Dudtschak	RBC
Scott Dueweke	IDPay
John Egan	Anthemis Group
Scott Ellison	PayPal
Christian Faes	Lendinvest
James Faucette	Morgan Stanley
Daniel Feichtinger	Digital Asset Holdings
Benjy Feinberg	Behalf
Pol-Erwan Fritz	ING
Debbie Gamble	Interac
Jennifer Gever McKellar	CME
Liam Gillligan	Commonwealth Bank of Australia
Beatriz Gimenez Monlleo	BBVA
Rasmus Goksor	Bison
Jared Goldstein	Deloitte Consulting LLP
Kellie Goodwin	Visa
Daniel Gorfine	OnDeck
Andrew Graham	Borrowell
Betsy Graseck	Morgan Stanley
Joe Guastella	Deloitte Consulting LLP
Manu Gupta	Lakestar
Julien Hammerson	Calastone

Contributing Subject Matter Experts (2 of 4)

The project team would also like to express its gratitude to the following subject matter experts who contributed their valuable perspectives through interviews and by participating in workshop and roundtable discussions (in alphabetical order):

Kevin Hanley	Royal Bank of Scotland
Naureen Hassan	Morgan Stanley
Catherine Havasi	Luminoso
Jörg Hessenmüller	Commerzbank
Taavet Hinrikus	TransferWise
Bianca Ho	Clare.ai
Kent Ho	Spectrum28
Jon Hocking	Morgan Stanley
Brent Homan	OPC
Sunsy Hong	Bank of America/Merrill Lynch
Chuck Hounsell	TD
Huan Hu	Morgan Stanley
Tom Hutton	XL Innovate
Jurgen Ingels	SmartFin Capital
Andrew Ireland	HSBC
Sriram Iyer	ICICI Bank Canada
Cedric Jeannot	APrivacy
Cai Jian	Peking University
Zhou Jing	Du Miao
Garri Jones	Numis
Bjorn Jungerkes	Savedo
Ankur Kamalia	Deutsche Börse AG
Richard Kang	PayNearMe
Adam Kansler	IHS Markit
Bob Kelly	Bank of America
Elizabeth Kelly	United Income
Karen Kerrigan	Seedrs
Andrew Keys	Consensys
Shirine Khoury-Haq	Lloyds
Hwan Kim	Deloitte Canada
Daniel Kimerling	Silicon Valley Bank
Doug King	Deloitte MCS Limited
Charaka Kithulegoda	ATB
Daniel Klier	HSBC
Alex Kong	TNG Wallet
Ling Kong	Dianrong.com
Norris Koppel	Monese
Dinesh Krishnan	Zafin
Amar Kuchinad	Electronifie
Claude Kurzo	JPMorgan Chase
Mary-Catherine Lader	BlackRock
Caroline Lamaud	Anaxago
Joel Lambert	PayPal
Chris Larsen	Ripple
Laurence Latimer	IEX
Wei-Lin Lee	PayPal
Jiang Lei	China Science Acadamy Incubator
Winnie Leung	Moneris
Zhong Li	Shulaibao
Marc Lipman	AIG Canada
Caitlin Long	Symbiont
Jorge López-Aranda	Wells Fargo
Jeff Lynn	Seedrs
Colm Lyon	Fire
John MacKinlay	OMERS Ventures
Kevin Mak	Ironfly Technologies
Mehdi Manaa	ECB
Chris Manners	Morgan Stanley
Emmanuel Marot	LendingRobot
John Martini	Generali
Heather Masterson	Travelers Canada
Richard Matthews	Augmentum Capital
Todd McDonald	R3
Kirill Menshov	Otkritie
Jeff Merkel	Ladder
Douglas Merrill	ZestFinance

Contributing Subject Matter Experts (3 of 4)

The project team would also like to express its gratitude to the following subject matter experts who contributed their valuable perspectives through interviews and by participating in workshop and roundtable discussions (in alphabetical order):

Max Mesny	Morgan Stanley
Rob Moffat	Balderton Capital
Brody Mulderig	Wells Fargo
Zaydoon Munir	Revolution Credit
Huy Nguyen Trieu	The Disruptive Group
Ramin Niroumand	FinLeap
Benedicte Nolens	Hong Kong Securities and Futures Commission
Sharon Olexy	LendUp
Iliana Oris Valiente	ColliderX
Sasha Orloff	LendUp
Henrik Otterson	Invesdor
Robert Palatnick	DTCC
Kai Pan	Morgan Stanley
Jennifer Peve	DTCC
Benjamin Phillips	Casey Quirk, Deloitte Consulting LLP
Jan Pilbauer	Payments Canada
Marta Plana	Digital Origin
David Polonsky	FundApps
Dan Preston	Metromile
Dan Quan	CFPB
Shameez Rabdi	Ontario Ministry of Finance
JP Rangaswami	Deutsche Bank
Glenn Regan	UBS
Peter Renton	LendIt Conference LLC
Paul Riley	Bank of America/Merrill Edge
Catherine Roche	BMO
Lynn Roger	BMO
David Rosa	Neat
Shawn Rose	Scotiabank
Faye Sahai	AIG
Ketan Samani	UBS
Kate Sampson	Lyft
Scott Sanborn	Lending Club
Jean-Luc Savignac	Eurex
Andreas Schertzinger	Swiss Re
Mike Sha	SigFig
Beth Shah	Digital Asset Holdings
Michael Sidgmore	Broadhaven Capital Partners
Siddharth Singh	Bank of America
Shivani Siroya	Tala
Travis Skelly	Citi Ventures
Chris Skinner	The Finanser
Gordon Smith	Deloitte Consulting LLP
Jared Smith	HSBC
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Benoit Speybrouck	Belfius
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Sam Tidswell-Norrish	Motive Partners
Edward Twiddy	Atom
Luis Valdich	Citi Ventures
Greg van den Bergh	MiCai
Katleen van Gheel	ING
Geert van Mol	Belfius Bank
Huw van Steenis	Shroders
Paul Vienick	Morgan Stanley
Philipp von der Schulenburg	Munich Re
Scott Walchek	Troy

Contributing Subject Matter Experts (4 of 4)

The project team would also like to express its gratitude to the following subject matter experts who contributed their valuable perspectives through interviews and by participating in workshop and roundtable discussions (in alphabetical order):

Paul Wan	Standard Chartered
Harry Wang Wei	Linear Ventures
Andrew White	FundApps
Darryl White	BMO
Ivar Wiersma	ING
Grant Wilson	etrading Software
James Wise	Balderton Capital
Ray Yang	Marathon Ventures
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