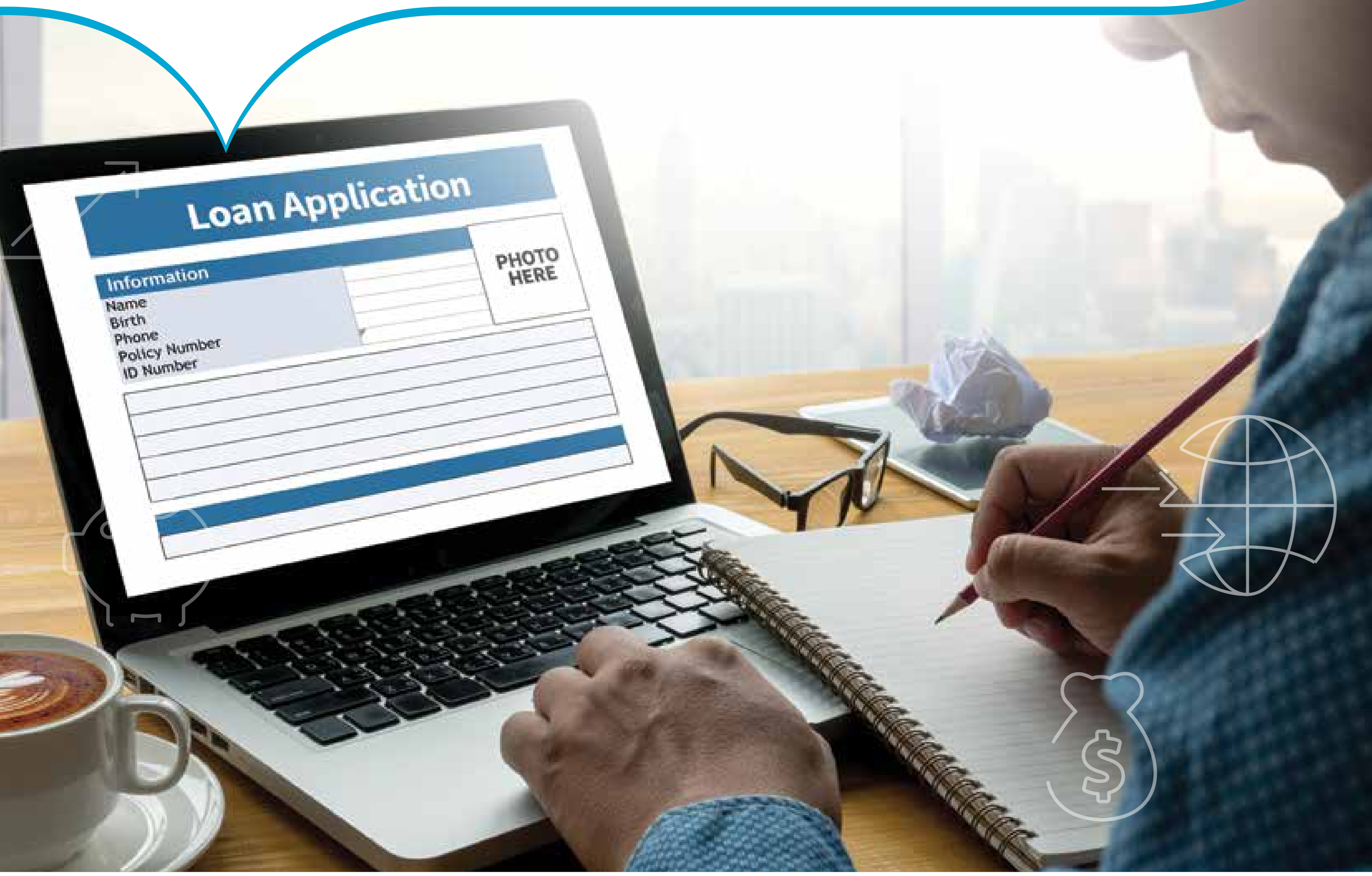
Top 10 Trends in Lending and Leasing – 2017

What You Need to Know



People matter, results count.

Contents

Introduction

Though the global financial crisis of 2008–2009 is far behind us, it changed the financial market dynamics significantly, the impact of which can still be seen. A slew of regulations and reforms followed the crisis, which enhanced capital requirements of traditional lenders as well as put more stringent requirements for ascertaining the creditworthiness. This has left a sizeable gap between lending supply and borrowing demand, thus creating a ripe opportunity for alternative financing.

A number of FinTech firms have taken the opportunity to launch their offerings such as crowdfunding, peer-to-peer lending, and direct lending. While on one hand their business models are new and their market share limited, they have been effective in providing convenience, speed of delivery, and in many cases, a superior customer experience.

Traditional lending and leasing organizations are waking up to the fact that they need to transform their approach and operations in order to maintain market leadership. While large corporations are still heavily dependent on their traditional lending sources, small businesses and retail customers are finding it easier to do business with FinTechs/alternative lenders.

To attract and retain borrowers of all segments, especially millennials, firms need to embrace technology to optimize their operations. More automation, machine learning, data analytics, and smart contracts, and are not only expected to increase operational efficiency but also result in lower costs and am enhanced customer experience.

This document aims to understand and analyze the trends in the lending and leasing industry that are expected to drive the dynamics of the lending and leasing ecosystem in the near future.

Trend 01: Organizations Making Efforts to Consolidate Platforms across Multiple Lending Channels

Large lending organizations are achieving success with consolidating platforms across multiple lending channels

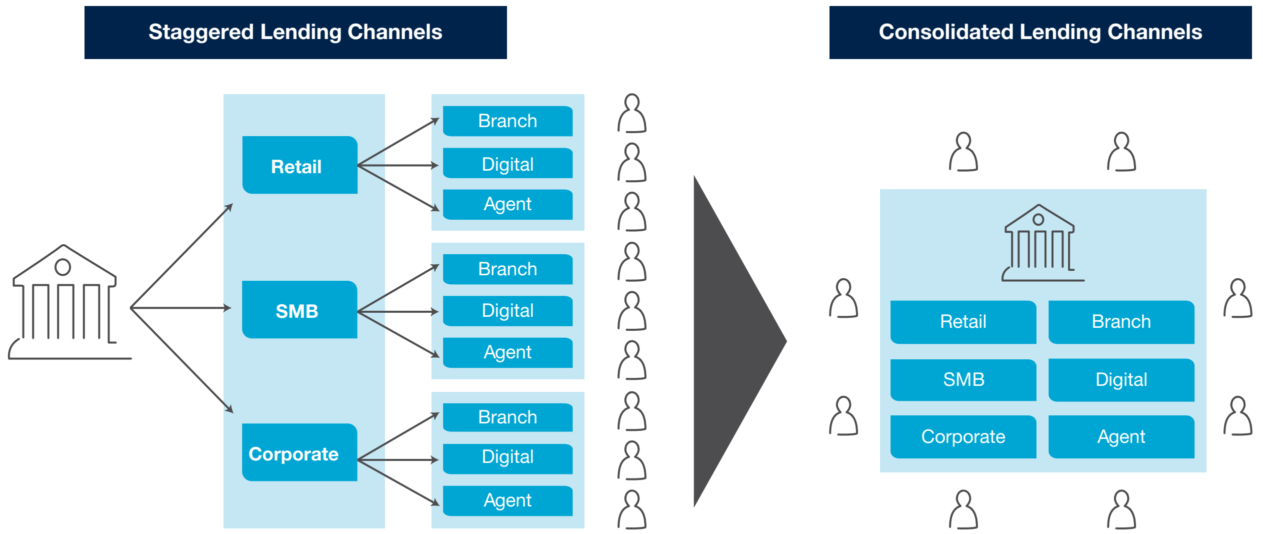
Background

- Over time large financial firms have multiple channels to lend to retail and commercial customers
- But, these financial firms have failed to take a unified approach to the development of operations and systems to support these business activities
- The result is redundant platforms, high costs and challenges with delivering a seamless customer experience

Key Drivers

- Customers are expecting their financial firms to provide a seamless connected experience across channels
- For customer service, risk management, and other operational functions, financial firms require a single customer view must have access to information in real time
- Firms have always been under pressure to decrease their operational run costs,
- Innovation is a challenge when it must be accomplished multiple times, over many redundant systems

Exhibit 1: Consolidation of Multiple Lending Platforms

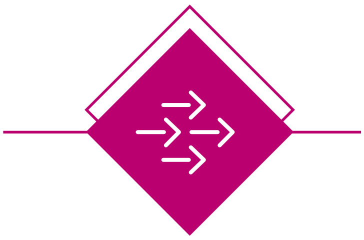


Source: Capgemini Financial Services Analysis, 2016

Trend Overview

- Core platform capabilities are improving and are now better positioned to facilitate multi-channel lending and leasing
- Financial firms looking to harness customer data are also finding consolidating platforms for all channels a better way of storing and utilizing consistent data—leading to better management of important customer, relationship and transaction data
- A consolidated platform for all channels will also be helpful in fulfilling the digital vision of organizations
- Consolidating platforms across channels is a complex and expensive undertaking in the near-term, however the long-term business case benefits are substantial

Implications



- With consolidation of platforms across channels, financial firms will be able to enhance their operational efficiency due to streamlined processes and consistent data availability
- A consolidated platform will provide firms an opportunity to apply better customer analytics to offer relevant products and superior customer service with greater efficiency
- Technology innovation will be less complex and easier to deliver as run budgets costs associated with multiple platforms can be shifted to the development of new capabilities

Trend 02: Enhanced Focus on Optimizing Credit Risk Analysis

Firms are leveraging technologies such as advanced analytics and artificial intelligence to optimize their credit risk analysis

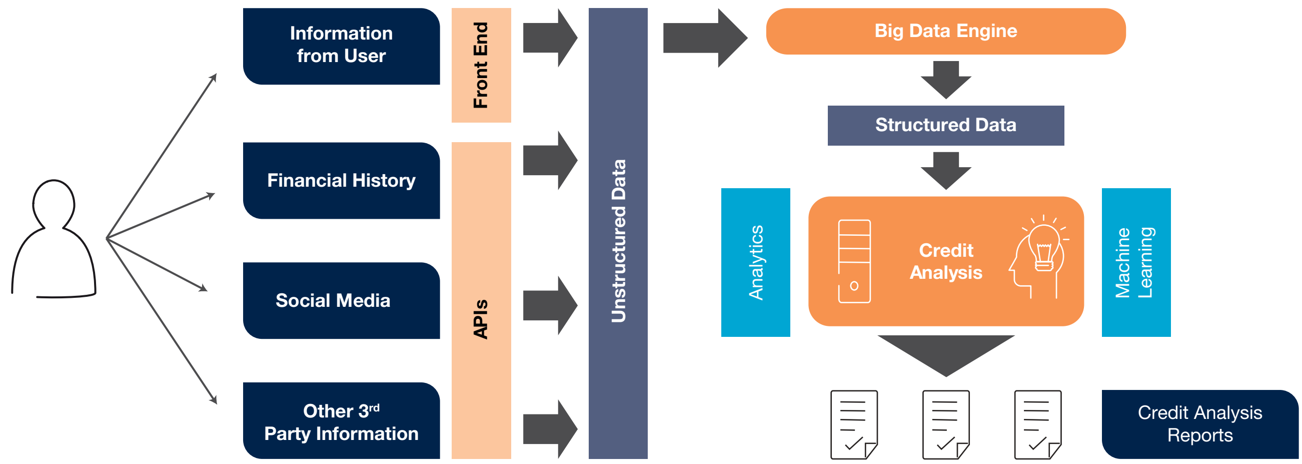
Background

- Historically, credit risk analysis has been a core but complex function for lenders, with a very direct impact on profitability
- While analysis was done manually in the past, a variety of software applications and supporting services emerged later to perform the statistical analysis to check the creditworthiness of customers
- Despite the use of software, process still remained cumbersome, slow, and prone to error leading to less than optimal results

Key Drivers

- Financial firms need to take rational and well-informed credit decisions and they are always searching for improved modeling capabilities
- Credit underwriting subject matter expertise is expensive and difficult to acquire
- Alternative lenders (FinTechs) have made their way in to the lending market and have come up with new underwriting approaches and model, enabling them to process customer requests very fast—often with minimal human intervention
- Firms need to put customer data generated/collected through their interactions with customers or third parties to effective use in credit processes

Exhibit 2: Optimizing Credit Risk Analysis



Source: Capgemini Financial Services Analysis, 2016

Trend Overview

- Firms are heavily leveraging technologies such as Big Data and analytics, and machine learning (artificial intelligence) to optimize their credit risk analysis
- The application of predictive analytics on customers' data can reveal important information about credit-worthiness, improving the decision making process
- Firms are sourcing data from non-traditional sources such as social media to enhance the accuracy of credit profiling
- Advanced analytics is also being applied by firms to detect and prevent frauds, and also to satisfy regulatory obligations such as stress tests
- Advancements in machine learning technology are making it possible for firms to develop deeper insights compared to analytics applications:
  - While predictive analytics follows a defined approach for analyzing data, machine learning analyzes the data in various components with no pre-defined path and then consolidates its results and provides insights to them—making the content more comprehensive and accurate

Implications

- More advanced solutions will help firms in making rational customer segments as well as personalized profiles
- Firms will find enhanced abilities to offer customer-specific products based on their risk profile
- Pricing strategies better tailered to product and customer profiles
- Credit underwriting and decisioning process efficiency will be improved, enabling faster turnaround times and potentially more business won
- Credit portfolio management and risk profiling will become more dynamic and provide information on a real time basis

Trend 03: Lending Organizations are Moving Quickly to Develop Operational Efficiency Solutions

Increased competition, pressures on margins, and ever- increasing customer expectations are forcing lending organizations to overhaul their operations for better efficiency

Background

- In general, traditional lending organizations are slow and inefficient, especially when compared to emerging players such as FinTechs
- While retail loans may have a straight-thru process in place, commercial loans to small and medium-sized businesses (SMBs) and large firms are usually complex · and require multiple touches to process
- Human and physical infrastructure costs have been rising, making it difficult for firms to increase or maintain profitability

Key Drivers

- With the increased usage of digital channels, customers expect best pricing, quick turnaround, and an excellent experience
- Operating costs of online lenders are lower than those of traditional lenders, forcing traditional lenders to reconsider their operational strategies
- Operational risks, such as fraud and human error are expensive and have to be minimized

Exhibit 3: Driving Operational Efficiency

- 79% of Mortgage lenders agree/somewhat agree that industry is innovating to drive operational efficiency
- Ongoing business expenses of online lenders is about 2% compared to outstanding loans and 5-7% for traditional lenders
- Top investment priority areas for lenders are Consumer Borrower Experience and Increased Automation

Solutions and Initiatives Aimed to Improve Efficiency	
Automation	Opportunity to improve operational efficiency especially in areas of compliance, application processing, and administration
Business Process Improvement	Enhancing customer experience by re-designing the customer journey and improving efficiency in business operations
Effective Monitoring	Leverage technology for timely alerts, forewarnings, compliance fulfillment, and fraud prevention

Source: Capgemini Financial Services Analysis, 2016; "Mortgage Lender Sentiment Survey", Fannie Mae, July 2016; "The path to profitable growth in retail lending", Nucleus Software, September 30, 2016

Trend Overview

- Financial firms have realized that to improve profitability, they need to optimize the whole process from origination to risk analysis, approval, pricing, and administration
- Firms will redesign the whole customer journey as well as re-engineer the internal organizational processes by thoroughly leveraging technologies such as, robotic process automation, business process management, and artificial intelligence
- While the retail loan process can be fully digitized larger, commercial loans usually require some manual checks and action:
  - Firms can leverage robotic process automation combined with optimized workflow, which will ensure faster processing and alerts for manual intervention whenever required
- Many firms are utilizing APIs to access third-party data such as social media activity, bill payment history, credit scores, etc., to augment data availability and then apply analytics to it—this may help firms in increasing efficiency, reducing fraud, making better credit decisions, and self-administration of accounts
- More FinTech firms are expected to come up with innovative solutions for credit operations, however, traditional firms will also be a fast follower or can explicity collaborate with or acquire them

Implications

- Automating the repetitive and time-consuming manual processes will increase employees' productivity as well as reduce the chances of error
- Automated and intelligent risk reporting is expected to reduce the operational burdens such as governance and fraud prevention
- Profitability of firms is likely to increase with a higher customer acqusition rate, improved credit risk analysis, more efficient operations, and less fraud and penalties
- Throughput capability of loan processing will increase with more automation, including for both retail and commercial lending
- Operational efficiency solutions have an opportunity to change the perception of retail and SMB customers who find it difficult, expensive, and slow to borrow from traditional lenders

Trend 04: Direct Lending Models Are Delivering Positive Results

Lending/leasing organizations that have developed direct lending models (in historically indirect markets) in response to FinTechs, which are turning the corner from a purely defensive strategy to one where volumes and contributions are positive

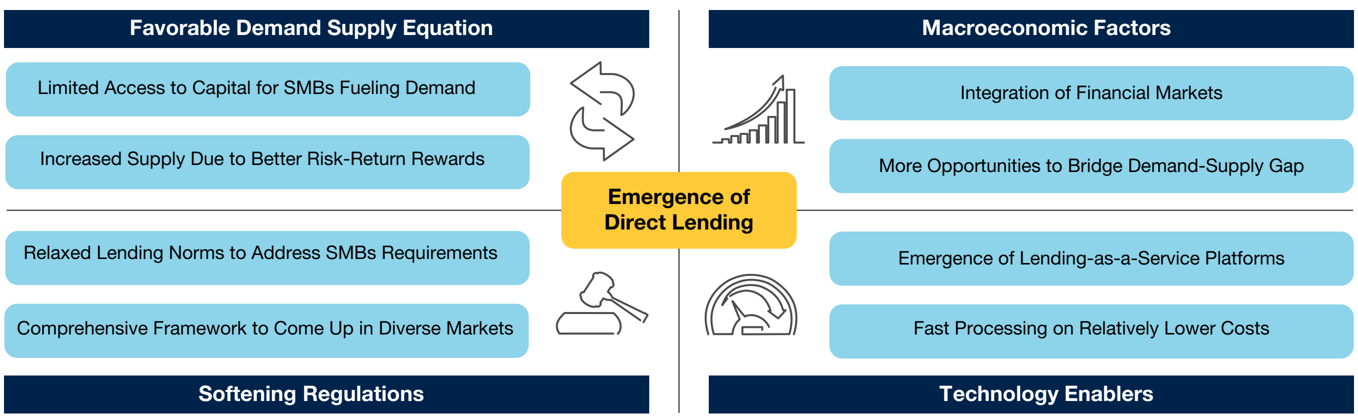
Background

- After the global financial crisis, a slew of reforms followed across the world, pushing up capital requirements of financial institutions and limiting their exposure to risky assets
- As a result, on one hand gaining access to capital became even more difficult for small and medium businesses, and on the other investors were left with limited low-yield options such as fixed income instruments
- This situation created a perfect breeding ground for the rise of direct lending from non-traditional sources

Key Drivers

- Limited access to traditional credit for small and medium businesses is pushing up the demand for alternative credit sources
- Demand for direct lending is outpacing supply in many markets such as Europe
- Regulations in many markets are encouraging institutional investors to invest in direct lending

Exhibit 4: Drivers for the Rise of Direct Lending



Source: Capgemini Financial Services Analysis, 2016

Trend Overview

- Direct lending has emerged strongly as an alternative investment destination:
  - In 2015, European-focused direct lending funds raised $18.8 billion in aggregate capital, a 48% increase from $12.7 billion in 2014, versus $12.9 billion secured by funds focused in North America[1]
  - In December 2015, European-based fund managers had $41 billion ready to deploy in direct lending deals, twice as much as in 2012[2]
- Small and medium businesses will remain the main customers, however, the amount of funding is likely to increase
- Large corporates may also look at direct lending as an option to diversify their capital supply, thus limiting exposure to banks
- Banks are also adopting direct lending through a separate arm—a few have tasted success as well as, e.g., PNC Bank's direct auto lending practice, which has witnessed a significant increase in auto loan volumes[3]
- While direct lending from alternative sources is currently costlier to borrowers, an increased supply of capital is expected to make it more affordable

Implications

- Direct lending is expected to fortify its position as a separate asset class for institutional investors an lenders
- The low interest rate environment will only encourage investors to channel their funds into direct lending for better risk rewards
- There will be continued innovations in product structuring to make direct lending more flexible and affordable to customers
- The emergence of Lending-as-a-Service business models, where the platform provider will take care of all the technology aspects or will offer the platform as a white-label solution

1 2016 Preqin Global Private Debt Report, accessed November 2016 at https://www.preqin.com/docs/samples/2016-Preqin-Global-Private-Debt-Report-Sample-Pages.pdf

2 "Asset managers pour billions into direct lending", David Burton, Financial Times, December 14, 2015, LinkedIn, accessed November 2016 at https://www.linkedin.com/pulse/asset-managers-pour-billions-direct-lending-ft-david-burton

3 "Direct Auto Online Platform Drives Growth in PNC's Consumer Lending", William Hoffman, Auto Finance News, October 17, 2016, accessed November 2016 at http://www.autofinancenews.net/direct-auto-online-platform-drives-pncs-spike-in-consumer-lending/?goal=0_01ace0121c-f60695c3ab-16265765

Trend 05: Banks Are Now Partnering or Collaborating with FinTechs to Nurture Innovation

Banks are collaborating or partnering with FinTech firms to build an environment that nurtures innovation and meets the ever-evolving expectations of customers

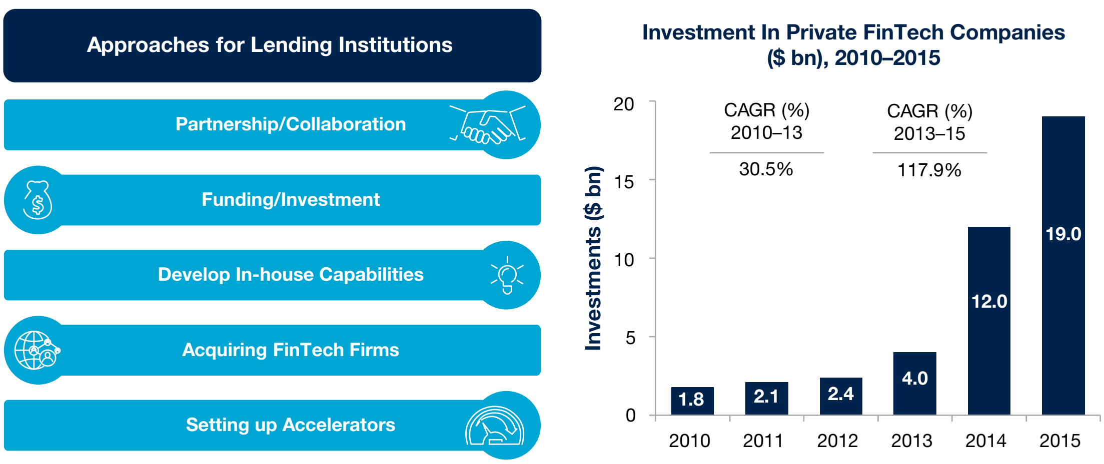
Background

- The past few years have produced many FinTech companies that are threatening to disrupt the financial services industry and change lending, leasing, and other traditional financial services markets
- FinTech companies are building digitized and streamlined platforms, which enable them to gain agility and the ability to innovate
- Banks burdened with their legacy systems are finding it difficult to catch up and compete with these FinTechs due to lack of a favorable environment for innovation

Key Drivers

- Acquiring new customers in the online lending space is difficult, as barriers to entry are low and there is a lot of competition
- Banks partnering with an online lender FinTech will help them lower the cost of acquiring new business, which will boost return on equity
- Smaller banks want to enter online lending, as it will help them to diversify their portfolios both geographically and by type of loan
- Banks want to reach the unbanked and under-banked segment
- Partnership with FinTechs provides a more conducive environment for innovation for the banks free from constraints

Exhibit 5: Building FinTech Capabilities and Driving Innovation



Source: Capgemini Financial Services Analysis, 2016; "Digital Disruption, How FinTech is forcing banking to a tipping point [Citi Report]", Huy Nguyen Trieu, Disruptive Finance, April 1, 2016

Trend Overview

- FinTech investments have increased from $1.8 billion in 2010 to $19 billion in 2015[4]:
  - From a lending perspective, FinTech companies have focused on profitable segments—small business and consumer loans, as 73% of investments is in personal and small business segments
- Banks are turning to FinTechs to help them innovate, and FinTechs are turning to banks to help them scale
- Partnerships can cut back office costs and improve loan processing:
  - Kabbage is offering loans in partnership with banking organizations like ING, Scotiabank, and Santander[6]
  - Around 200 community banks have signed a deal with Lending Club for pitching consumer loans
- Some banks have bought equity in lending platforms:
  - Prosper has received $165 million in funding from banks in April 2015, allowing banks to offer personal loans via the Prosper platform[7]
- Partnership platforms can also take on risk sharing and servicing burdens:
  - JPMorgan Chase & Co's tie-up with OnDeck, will allow the bank to effectively price risk for small businesses by using OnDeck's proprietary technology, while OnDeck managing the servicing of small business loans and underwriting[4]
- Major technology companies like Facebook, Google, Apple, Samsung, and Amazon are entering consumer banking, starting with digital payment apps[8], however consumer and small business lending is likely on the horizon

Implications

- Banks will be able to offer services to small businesses and let the third-party partners share some risk, effort, or expense
- Enables banks to provide an alternative, streamlined and digital way of delivering
- Banks will be able to improve customer engagement and experience
- Partnerships will help both traditional banks and FinTech firms to focus on their respective core competencies and contribute in the areas of their expertise to have a better joint outcome
- FinTechs will have access to a large pool of customers and will be able to scale up their processes

4 "Digital Disruption, How FinTech is forcing banking to a tipping point [Citi Report]", Huy Nguyen Trieu, Disruptive Finance, April 1, 2016, accessed November 2016 at http://www.disruptivefinance.co.uk/2016/04/01/how-fintech-is-forcing-banking-to-a-tipping-point-citi-report/

5 "Kabbage and Scotiabank Ink Partnership", Julie (Schicktanz) Muhn, Finovate, June 22, 2016, accessed November 2016 at www.finovate.com/kabbage-scotiabank-ink-partnership/

6 "Lending Club and Smaller Banks in Unlikely Partnership", James Sterngold, The Wall Street Journal, June 23, 2015, accessed November 2016 at www.wsj.com/articles/lending-club-and-smaller-banks-in-unlikely-partnership-1435015121

7 "The Three Best Options for Banks to Enter Online Lending", Peter Renton, Orchard, March 30, 2016, accessed November 2016 at https://www.orchardplatform.com/blog/three-best-options-banks-enter-online-lending/

8 "As More Pay by Smartphone, Banks Scramble to Keep Up", Steve Lohr, The New York Times, January 19, 2016, accessed November 2016 at http://www.nytimes.com/2016/01/19/technology/upstarts-are-leading-the-fintech-movement-and-banks-take-heed.html?_r=0

Trend 06: Regulations are Picking up Pace in the Online Marketplace Lending

Online lenders have proliferated, leaving gaps in regulations, which has compelled regulators to now have a closer look at the industry

Background

- Online marketplace lending is an emerging segment in financial services industry, and it is growing at a rapid pace—one of the reasons for this growth is the benign regulatory framework in this space
- Online lending targets largely consumer and small business customers, profiles that are heavily regulated in the traditional bank lending space
- Due to the widespread interest in online lending platforms and the potential for misuse, the industry has attracted the attention of federal and state lawmakers and regulators

Key Drivers

- Online lenders are able to charge high rates due to lack of regulations
- Many online lenders use unconventional ways to assess creditworthiness of their borrowers outside of traditional credit scoring methodologies
- The remoteness and anonymity of online transaction raises the potential for misuse
- Online lenders offer a wider variety of credit products which adds to the potential regulatory complexity

Exhibit 6: Regulations in Online Marketplace Lending

Source: Capgemini Financial Services Analysis, 2016

Trend Overview

- The rapid growth of online marketplace lending can be partially attributed to the fact that online lenders did not have to face the regulatory burdens that traditional banks face, but over the last few months we have seen regulatory tremors ripple through the online lending space:
  - In July 2015, the U.S. Treasury department issued a Request for Information on online lending that will allow policymakers to study the various business models and products offered by online marketplace lenders[9]
  - In March 2016,the Consumer Financial Protection Bureau (CFPB) encouraged borrowers to submit complaints when they encounter problems with online lenders[10]
- These regulatory changes may also impact non-bank captive finance companies:
  - In June 2016, the CFPB published the "larger participant rule," where it could oversee any non-bank lender including automakers' captive finance arms, which originates 10,000 or more auto loans or leases annually[11]
- Regulators are also taking action on defaulters who fail to comply with the standards:
  - In November 2015, CFPB's became involved in an administrative lawsuit against online lender Delaware-based Integrity Advance, LLC alleging that it failed to disclose the cost of short-term loans[12]

Implications

- Regulators are likely to take concrete steps related to the risks posed by online marketplace lenders, as an initial step they are trying to understand the full potential of the marketplace and participants before they write laws to regulate it
- The actions by the Regulatory agencies may change the profit equation for these online lenders by increasing their operating costs and in turn may result in limiting their growth prospects
- The actions by regulators are forcing online lenders to emphasize their own proactive efforts to ensure compliance with applicable federal laws such as truth-in-lending laws, anti-money laundering rules, and consumer protection requirements
- Institutions will try to ensure compliance with outstanding Bank Secrecy Act/ Anti-Money Laundering processes, which are designed to detect and report on suspicious activity by analyzing both the lender's and the borrower's information, source/purpose of funds, and related data

9 "Treasury Seeks Public Comments on Marketplace Lenders", U.S. Department of the Treasury, July 16, 2015, accessed November 2016 at Treasury Seeks Public Comments on Marketplace Lenders, Treasury Gov, July 2015

10 "CFPB Increases Scrutiny of Online Lenders", Yuka Hayashi, The Wall Street Journal, March 7, 2016, accessed November 2016 at http://www.wsj.com/articles/cfpb-increases-scrutiny-of-online-lenders-1457390687

11 "5 trends to watch in 2016", Hannah Lutz, Automotive News, December 30, 2015, accessed November 2016 at http://www.autonews.com/article/20151230/FINANCE_AND_INSURANCE/151239992/5-trends-to-watch-in-2016

12 "CFPB Takes Action Against Online Lender for Deceiving Borrowers", Consumer Finance Protection Board, November 18, 2015, accessed November 2016 at http://www.consumerfinance.gov/about-us/newsroom/cfpb-takes-action-against-online-lender-for-deceiving-borrowers/

Trend 07: Millennials Are Driving the Digital Transformation in Banking

Changing expectations and habits of a new generations are causing a paradigm shift in the financial sector—one that favors digital channels, and especially smart phones

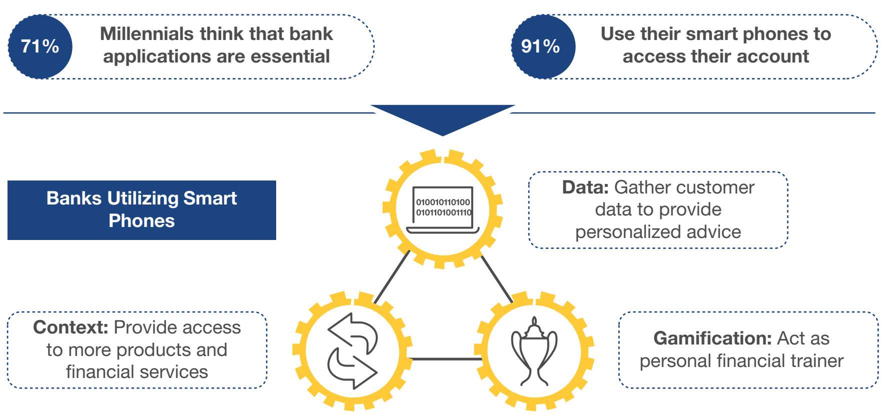
Background

- Millennials are digitally savvy and confident, they are unique in their ability to understand disruptive technologies, and recognize the services with the most substance
- They want to be empowered by lenders to make informed decisions through mobile and digital communication
- They expect options in terms of products and delivery modes and companies need to provide those in order to remain competitive

Key Drivers

- 92% of millennials would make a banking choice based on digital services, according to Morphis[13]
- Millennials are heavy researchers and want to access as much information as possible online to become informed consumers
- They expect banks to provide unbiased personalized recommendations to help them make their final decisions
- They want every information real time and easily accessible at their fingertips

Exhibit 7: Millennials Driving Digital Transformation

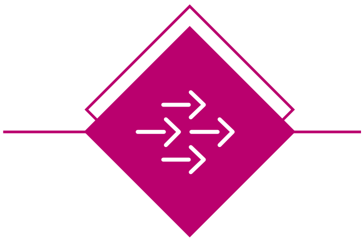


Source: Capgemini Financial Services Analysis, 2016

13 "Eight Illuminating Data Points on Millennials and Banking", American Banker, November 23, 2016, accessed November 2016 at http://www.americanbanker.com/gallery/eight-illuminating-data-points-on-millennials-and-banking-1080983-1.html

Trend Overview

- Banks are collecting personal data from customers and using it to optimize lending decisions:
  - Credit Sesame provides an online tool, which reviews customer debt through analytics and evaluates lending products to give personal recommendations in an unbiased manner
- Online lenders are focusing on data-driven lending factors like social media, online sales tools, account records, and shipping data to check whether a borrower can qualify for a loan
- Borrowers expect immediate access and service as well as to maintain a personal relationship with their loan officer:
  - SimpleNexus allows borrowers to share their information with a loan officer and receive real-time pricing and status updates on loans on a mobile app
- Millennials want access to as much information as possible online to compare products and to choose the best possible alternatives:
  - MortgageCoach provides loan officers with the ability to share and compare purchase and loan options through their total cost analysis app



Implications

- This transformation is driving lending organizations to provide millennials with the information they demand, in the formats and timeframes they expect to receive it
- To have a successful front-end data-driven solution, companies will have to focus on data warehousing and data aggregation techniques and remove technology silos and inconsistencies so that banks and other lenders can work quickly and easily from up-to-date information
- Data-driven lending factors for checking creditworthiness have the potential to open new markets (to the under-banked for instance) and to improve credit information on traditional borrowers

15 "Credit Monitoring And Debt Management Service Credit Sesame Raises $16 Million", Sarah Perez, Techcrunch, May 12, 2015, accessed November 2016 at https://techcrunch.com/2015/05/12/credit-monitoring-and-debt-management-service-credit-sesame-raises-16-million/

16 "Here's where mortgage companies should invest in tech to reach Millennials", Kristin Messerli, MortgageCoach, June 7, 2016, accessed November 2016 at https://mortgagecoach.com/heres-where-mortgage-companies-should-invest-in-tech-to-reach-millennials/

Trend 08: Banks are Investing in Cybersecurity Systems with the Increase in Cyber Threats

Increasing adoption of digitization has made banks vulnerable and has triggered an increase in incidents of data breaches, compelling banks to strengthen their security systems

Background

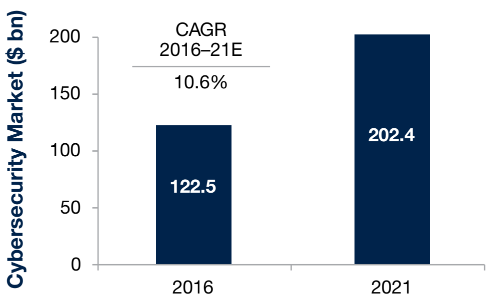
- Due to increased modernization and mobilization of financial services, we are seeing a fundamental shift in which huge numbers of financial transactions are now being done via cyber means, i.e. mobile phone, cloud, etc.
- These new technologies, increased digitization, and connectivity have increased the number of touch points for customers and have also increased lending organization's vulnerability to attacks

Key Drivers

- Apart from the financial incentive, hackers are also attracted to the valuable customer data and sophistication involved in the attack
- New organized crime syndicates, along with state-sponsored groups, insiders attempting to steal information for personal gain, and hacktivists trying to make a point
- Threats realized through digital channels can also target the information financial institutions hold:
  - In 2014, an attack on JPMorgan Chase by hackers compromised 76 million personal accounts and more than 7 million small business accounts[17]

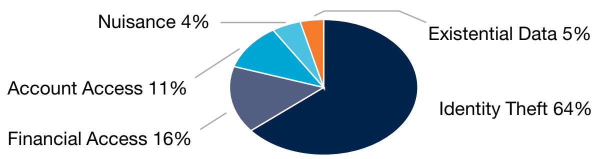
Exhibit 8: Cybersecurity

Growth of Cyber Security Market ($ bn), 2016–2021E

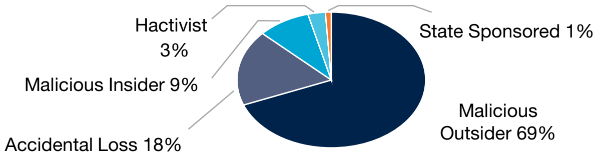


12% Incidents in H1 2016 were related to the financial services, after Health care and Government

Breach Incidents by Type (%), H1, 2016



Breach Incidents by Source (%), H1, 2016



Source: Capgemini Financial Services Analysis, 2016; Data breach statistics 2016: First half results are in", Gemalto, September 20, 2016

17 "JPMorgan Chase Hacking Affects 76 Million Households", Jessica Silver-Greenberg, Matthew Goldstein, and Nicole Perlroth, The New York Times, October 2, 2014, accessed November 2016 at http://dealbook.nytimes.com/2014/10/02/jpmorgan-discovers-further-cyber-security-issues/

Trend Overview

- Lending institutions are quickly adopting new preventive technologies or partnering with new vendors to shield themselves from cyber risks:
  - HSBC is running an innovation investment program that looks for organizations with innovative technology to combat adversaries[18]
  - Barclays is looking into startups, exploring blockchain and its use cases and intelligent authentication technology
- To combat and tackle cyber threats and engage with innovative security technology, banks have assigned a more strategic roles to the Chief Information Security Officer:
  - The financial sector has the highest percentage (88%) of Chief Information Security Officers
- Governments have shown a special interest in ensuring the security of the financial services industry, as the economy depends on the open access to capital and movement of money:
  - In November 2015, the U.S. and U.K. conducted joint offline war games, an exercise focused on public communication, sharing information and incident response handling
- Governments and regulators are also taking measures to increase information sharing within national borders:
  - The Cyber Security Information Sharing Act of 2015 encourages sharing between private entities and the federal government and among private entities[19]

Implications

- More than one-factor authentication may be mandatory for customers accessing their accounts through online lending channels
- Large lending organizations, especially banks will have to appoint a Chief Information Security Officer dedicated to cybersecurity issues
- Lending organizations are investing more heavily in mobile technology and related security measures
- Lenders are looking into alternative security measures such as biometric authentication to combat identity theft and fraud

18 "Cyber security: making banking safer", Joy Macknight, The Banker, April 1, 2016, accessed November 2016 at http://ec2-54-72-50-240.eu-west-1.compute.amazonaws.com/Transactions-Technology/Technology/Cyber-security-making-banking-safer?ct=true

19 Cybersecurity Information Sharing Act of 2015, Congress;gov, accessed November 2016 at https://www.congress.gov/bill/114th-congress/senate-bill/754

Trend 09: Leveraging Smart Contract, Blockchain, and Internet of Things (IoT) to Streamline Lending Processes

Leveraging new and emerging technology can significantly enhance the overall efficiency of the lending process and reduce transaction costs

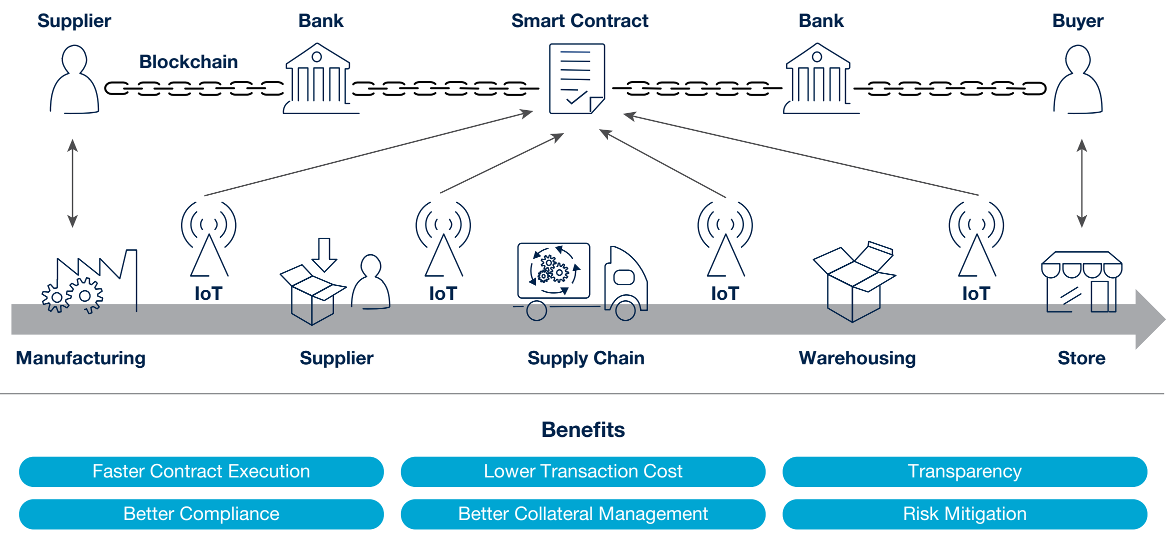
Background

- The banking industry has been facing headwinds with the lower economic activity and slowdown concerns coupled with the low interest rate environment
- These external factors have had a considerable bearing on the margins of the lending divisions of banks, which are starting to look toward innovation to sustain and thrive (Global Trade Review, 2016)

Key Drivers

- With different external stimuli playing out, banks are looking for ways to shore up their bottom lines primarily by reducing overall cost structures
- Increasing demand from customers to streamline processes and reduce turnaround times
- Proliferation of different technologies such as blockchain, Internet of Thing (IoT), and smart contracts are providing the potential to disrupt and completely transform the end-to-end lending process
- Need to enhance transparency in the process, ensure compliance, and implement better manage collateral

Exhibit 9: Use of Technology in Trade Finance



Source: Capgemini Financial Services Analysis, 2016

Trend Overview

- With the emergence of the technology, financial institutions are exploring use cases for smart contracts—which are digital financial contracts codified to be executed based on certain conditions being met
- The increasing use of IoT has led to financial institutions building use cases to effectively capture information such as movement of goods or conditions of warehouses where collateral is stored, etc., in a streamlined manner
- As blockchain has been gaining prominence in other areas of banking, banks have been showing keen interest in leveraging this technology, as it ensures transparency, mitigates fraud, and brings down the overall cost of doing business

Implications

- Streamlined contract execution with smart contracts leading to faster turnaround times for activities such as release of funds—either automatically or through minimal human intervention
- Near real-time information from IoT devices to monitor the compliance of contract conditions leading to risk mitigation and better collateral management
- Increased transparency when using blockchain leading to better capture of information, audit trails, and fraud mitigation
- Using all the new and emerging technologies could help financial institutions to reduce overall costs and has the potential to usher in transformational change into activities such as trade finance, equipment leasing, syndicated loans and auto finance

Trend 10: Open Marketplaces Gaining Prominence

Open marketplaces are gaining prominence as their value proposition is centered on faster services at competitive interest rates

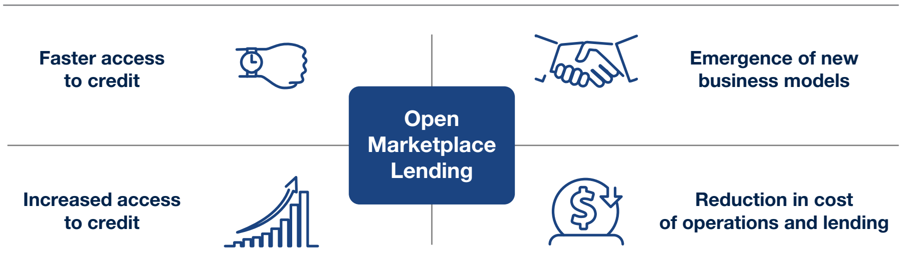
Background

- Post the financial crisis and the subsequent economic turmoil, banks have faced considerable challenges related to new business origination
- Rising regulatory oversight and new regulations made the process of credit approval/ disbursement more stringent, leading to longer turnaround times
- Due to the above factors, access to credit has been difficult for some of the segments customer, especially the small and medium enterprises

Key Drivers

- Need for access to credit at a competitive interest rate, as there was a considerable liquidity crunch in the market
- Increasing customer expectations for less cumbersome streamlined processes and better customer experience
- Providing transparency in the lending process with provisions for customers to get credit on their terms (flexibility in the features)

Exhibit 10: Benefits of Open Marketplace Lending



Source: Capgemini Financial Services Analysis, 2016

Trend Overview

- Online marketplace lending is represented by players providing financial services to customers (both retail and corporate) by connecting them to potential customers using online platforms
- These marketplaces leverage technology and data analytics (varying sources of information not just restricted to credit score) to make faster decisions and tailor products based on customer needs
- While these players emerged focusing on peer-to-peer lending or being balance sheet lenders, funding sources have been diversified to include depository institutions, hedge funds, institutional institutions, venture capital, and leasing organizations
- As these players compete with financial institutions for market share, there is a growing trends of partnerships being developed with traditional banks for loan originations

Implications

- As the scale of operations of online marketplaces increase, we can expect more and more partnerships being built with traditional financial institutions
- Given the rapidly changing market dynamics, hybrid business models will emerge with and the marketplace channel for new customer mining
- Online marketplaces leverage technology, will lead to driving customer expectations and pushing the bar higher for traditional firms to play catch-up role
- Given the risks associated with lending and leasing, regulators may start to play a more active role in monitoring their activities leading to higher compliance costs (compressing the margins—diminishing advantage over traditional firms)

References

1. "The value in digitally transforming credit risk management", Juan Antonio Bahillo, Saptarshi Ganguly, Andreas Kremer, and Ida Kristensen McKinsey, July 2016, accessed November 2016 at http://www.mckinsey.com/business-functions/risk/our-insights/the-value-in-digitally-transforming-credit-risk-management

2. Mortgage Lender Sentiment Survey, Fannie Mae, September 15, 2016, accessed November 2016 at http://fanniemae.com/portal/research-insights/surveys/mortgage-lender-sentiment-survey.html

3. "The path to profitable growth in retail lending", Nucleus Software, September 30, 2016, accessed November 2016 at http://blog.nucleussoftware.com/uncategorized/the-path-to-profitable-growth-in-retail-lending/

4. "Retail Banks Wake Up to Digital Lending", Bain & Company, December 15, 2015, accessed November 2016 at http://www.bain.com/publications/articles/retail-banks-wake-up-to-digital-lending.aspx

5. 2016 Preqin Global Private Debt Report, accessed November 2016 at https://www.preqin.com/docs/samples/2016-Preqin-Global-Private-Debt-Report-Sample-Pages.pdf

6. "Asset managers pour billions into direct lending", David Burton, Financial Times, December 14, 2015, LinkedIn, accessed November 2016 at https://www.linkedin.com/pulse/asset-managers-pour-billions-direct-lending-ft-david-burton

7. "Direct Auto Online Platform Drives Growth in PNC's Consumer Lending", William Hoffman, Auto Finance News, October 17, 2016, accessed November 2016 at http://www.autofinancenews.net/direct-auto-online-platform-drives-pncs-spike-in-consumer-lending/?goal=0_01ace0121c-f60695c3ab-16265765

8. "Digital Disruption, How FinTech is forcing banking to a tipping point [Citi Report]", Huy Nguyen Trieu, Disruptive Finance, April 1, 2016, accessed November 2016 at http://www.disruptivefinance.co.uk/2016/04/01/how-fintech-is-forcing-banking-to-a-tipping-point-citi-report/

9. "Kabbage and Scotiabank Ink Partnership", Julie (Schicktanz) Muhn, Finovate, June 22, 2016, accessed November 2016 at www.finovate.com/kabbage-scotiabank-ink-partnership/

10. "Lending Club and Smaller Banks in Unlikely Partnership", James Sterngold, The Wall Street Journal, June 23, 2015, accessed November 2016 at www.wsj.com/articles/lending-club-and-smaller-banks-in-unlikely-partnership-1435015121

11. "The Three Best Options for Banks to Enter Online Lending", Peter Renton, Orchard, March 30, 2016, accessed November 2016 at https://www.orchardplatform.com/blog/three-best-options-banks-enter-online-lending/

12. "As More Pay by Smartphone, Banks Scramble to Keep Up", Steve Lohr, The New York Times, January 19, 2016, accessed November 2016 at http://www.nytimes.com/2016/01/19/technology/upstarts-are-leading-the-fintech-movement-and-banks-take-heed.html?_r=0

13. “Treasury Seeks Public Comments on Marketplace Lenders”, U.S. Department of the Treasury, July 16, 2015, accessed November 2016 at Treasury Seeks Public Comments on Marketplace Lenders, Treasury Gov, July 2015

14. “CFPB Increases Scrutiny of Online Lenders”, Yuka Hayashi, The Wall Street Journal, March 7, 2016, accessed November 2016 at http://www.wsj.com/articles/cfpb-increases-scrutiny-of-online-lenders-1457390687

15. “5 trends to watch in 2016”, Hannah Lutz, Automotive News, December 30, 2015, accessed November 2016 at http://www.autonews.com/article/20151230/FINANCE_AND_INSURANCE/151239992/5-trends-to-watch-in-2016

16. “Eight Illuminating Data Points on Millennials and Banking”, American Banker, November 23, 2016, accessed November 2016 at http://www.americanbanker.com/gallery/eight-illuminating-data-points-on-millennials-and-banking-1080983-1.html

17. “Moven: From Mobile Banking to Mobile Money”, The Financial Brand, February 17, 2013, accessed November 2016 at https://thefinancialbrand.com/37169/moven-mobile-banking-mobile-money/

18. “Credit Monitoring And Debt Management Service Credit Sesame Raises $16 Million”, Sarah Perez, Techcrunch, May 12, 2015, accessed November 2016 at https://techcrunch.com/2015/05/12/credit-monitoring-and-debt-management-service-credit-sesame-raises-16-million/

19. “Here’s where mortgage companies should invest in tech to reach Millennials”, Kristin Messerli, MortgageCoach, June 7, 2016, accessed November 2016 at https://mortgagecoach.com/heres-where-mortgage-companies-should-invest-in-tech-to-reach-millennials/

20. “CFPB Takes Action Against Online Lender for Deceiving Borrowers”, Consumer Finance Protection Board, November 18, 2015, accessed November 2016 at http://www.consumerfinance.gov/about-us/newsroom/cfpb-takes-action-against-online-lender-for-deceiving-borrowers/

21. “’Millennials’ are driving the digital transformation of the banking sector”, BBVA, July 4, 2016, accessed November 2016 at Millennials’ are driving the digital transformation of the banking sector”, BBVA, July 2016

22. “Cyber Security Market by Solutions - Global Forecast to 2021”, Markets and Markets, July 2016, accessed November 2016 at Cyber Security Market - Global Forecast to 2021, Markets and Markets, 2016

23. Data breach statistics 2016: First half results are in”, Gemalto, September 20, 2016, accessed November 2016 at http://blog.gemalto.com/security/2016/09/20/data-breach-statistics-2016-first-half-results/

24. “Connect everything: trade finance and the internet of things”, Sofia Lotto Persio, Global Trade Review, August 31, 2016, accessed November 2016 at http://www.gtreview.com/magazine/volume-15-issue-1/connect-everything-trade-finance-and-the-internet-of-things/

25. “Landmark transaction merges blockchain, smart contracts and IoT”, Sanne Wass, Global Trade Review, October 23, 2016, accessed November 2016 at http://www.gtreview.com/news/global/landmark-transaction-merges-blockchain-smart-contracts-and-iot/

26. “Internet of Things and Smart Contracts will change the lending world”, Lending Times, January 12, 2016, accessed November 2016 at http://lending-times.com/2016/01/12/internet-of-things-and-smart-contracts-will-change-the-lending-world/

27. “Line Between Banks and Marketplace Lenders Thinner than You Think”, Aryea Aranoff, American Banker, March 11, 2016, accessed November 2016 at http://www.americanbanker.com/bankthink/line-between-banks-and-marketplace-lenders-thinner-than-you-think-1079840-1.html

28. “Marketplace Lending: An Alternate Financing Option to Consider”, Mike Periu, American Express, July 25, 2016, accessed November 2016 at https://www.americanexpress.com/us/small-business/openforum/articles/marketplace-lending-for-small-business-is-changing/

29. “Online Marketplace Lending -- Recently Misunderstood?”, Nav Athwal, Forbes, July 18, 2016, accessed November 2016 at http://www.forbes.com/sites/navathwal/2016/07/18/online-marketplace-lending-recently-misunderstood/#22da2b05412f

30. “Opportunities and Challenges in Online Marketplace Lending”, U.S. Department of the Treasury, May 10, 2016, accessed November 2016 at https://www.treasury.gov/connect/blog/Documents/Opportunities_and_Challenges_in_Online_Marketplace_Lending_white_paper.pdf

31. “Autonomous on Online Lending: Banks Left the Door Wide Open & Digital Lenders Walked Right In”, Crowdfund Insider, February 13, 2016, accessed November 2016 at http://www.crowdfundinsider.com/2016/02/81357-autonomous-on-online-lending-banks-left-the-door-wide-open-digital-lenders-walked-right-in/

About the Authors

Amith Chandrashekar is a Senior Consultant with the market intelligence team at Capgemini Financial Services. He has more than four years of experience in consulting and strategic analysis with a focus on the banking domain.

Amit Kumar is a Senior Consultant with the market intelligence team at Capgemini Financial Services. He has more than five years of experience in consulting and strategic analysis with a focus on the banking domain.

Avinash Saxena is a Senior Consultant with the market intelligence team at Capgemini Financial Services. He has more than six years of experience in strategic market research and IT consulting with a focus on banking and financial services industry.

Vamshi Krishna Suvarna is a Lead Consultant with the market intelligence team at Capgemini Financial Services, with more than seven years of experience in business and strategy consulting, specializing in banking.

The authors would like to thank below SMEs for the contributions to this paper:

- Dion Lisle, Banking and Capital Markets FinTech Unit Head
- Steven Byrnes, Principal
- Michael Donnary, Principal
- Christine Williams, Senior Manager
- Jeffrey Boots, Senior Manager
- Raghunand Bala, Senior Manager
- Suhas Rao, Senior Manager
- Annette Maxwell, Manager
- Joshua Bridge, Manager
- Bryan Parfitt, Manager
- Theresa Eichten, Manager
- Michael Baez, Manager
- William Sullivan, Global Head of Market Intelligence
- David Wilson, Head of Strategic Analysis Group

Learn more about us at:
www.capgemini.com/diversified-lending
or email: assetfinance.fsgbu@capgemini.com.

About Capgemini

With more than 180,000 people in over 40 countries, Capgemini is a global leader in consulting, technology and outsourcing services. The Group reported 2015 global revenues of EUR 11.9 billion.

Together with its clients, Capgemini creates and delivers business, technology and digital solutions that fit their needs, enabling them to achieve innovation and competitiveness.

A deeply multicultural organization, Capgemini has developed its own way of working, the Collaborative Business ExperienceTM, and draws on Rightshore®, its worldwide delivery model.

Learn more about us at
www.capgemini.com

People matter, results count.