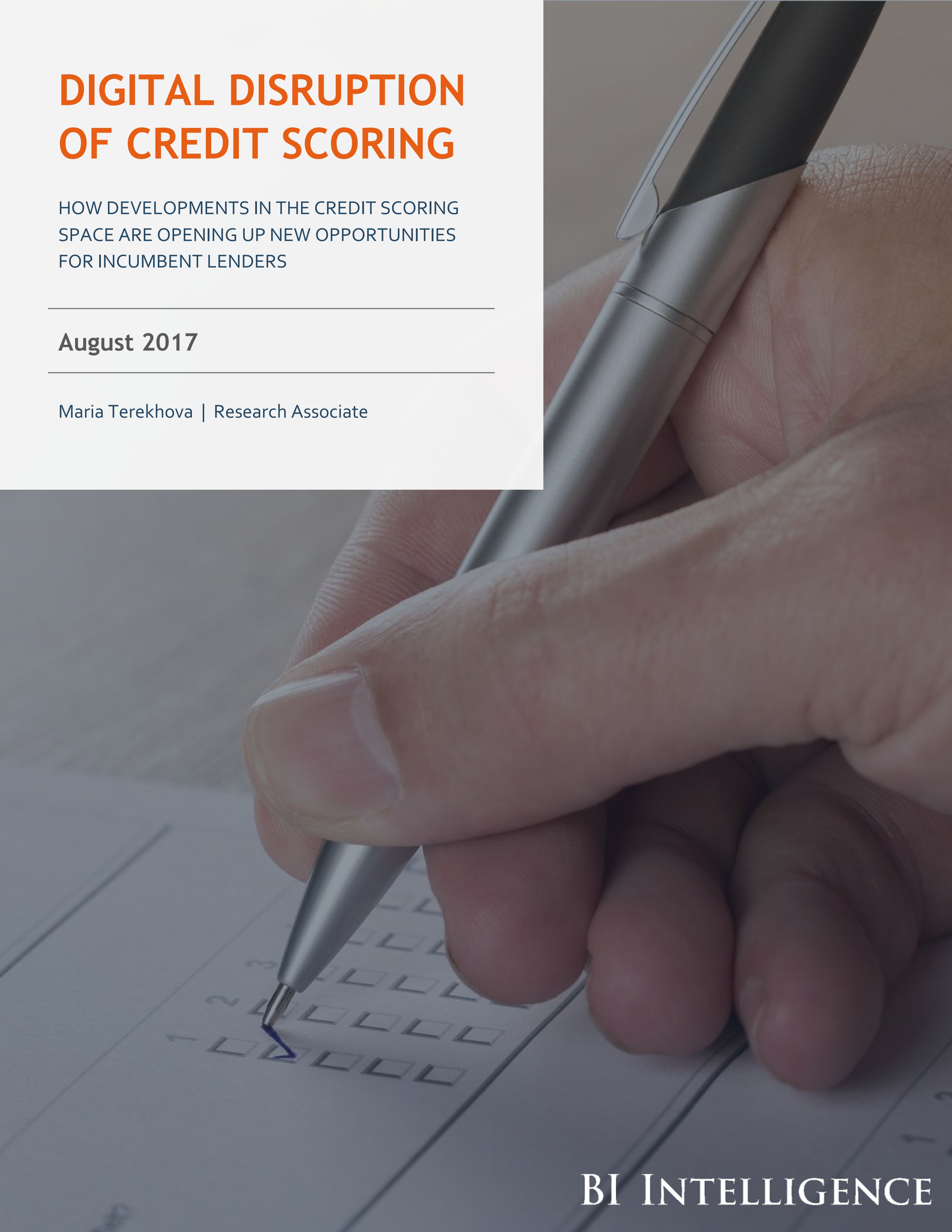

DIGITAL DISRUPTION OF CREDIT SCORING

HOW DEVELOPMENTS IN THE CREDIT SCORING SPACE ARE OPENING UP NEW OPPORTUNITIES FOR INCUMBENT LENDERS

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BI INTELLIGENCE

KEY POINTS

- **Traditional consumer lenders, like banks and credit unions, have historically served segments of the population they can conduct robust risk assessments on.** But the data they collect from these groups is limited and typically impossible to analyze in real time, preventing them from confirming the accuracy of their assessments, confining the demographic segments they're capable of serving, and creating a lengthy, often inconvenient process for potential borrowers.

- **This has hobbled legacy lenders at a time when alternative lending firms — which pride themselves on precision risk assessment and financial inclusion — are taking off.** Alternative lenders are just starting to break into the untapped borrower market, which, even in developed regions, is huge — some 64 million US consumers don't have a conventional FICO score, and 10 million of those are prime or near-prime consumers.

- **Alternative lenders are disrupting the credit scoring space in two key ways:** by using alternate credit scoring methods, like psychometric scoring, which use data besides borrowing history to measure creditworthiness, and by integrating new technologies, like artificial intelligence (AI), to improve the accuracy of conventional risk assessment methods.

- **There's a range of methods and technologies incumbent lenders can choose to implement.** But the solutions that are best suited for a particular lender will vary based on its specific business needs, the demographics it aims to attract, and its jurisdiction's regulatory landscape.

- **If executed correctly, the payoff can be huge for incumbent lenders.** In addition to boosting financial inclusion and enabling lenders to tap into new demographic segments and markets, new methods and technologies can improve returns on existing demographics.

- **Despite this massive opportunity, disruptions carry both short- and long-term risks that both fintechs and incumbent lenders must navigate.** These include inbuilt biases, fraud, conflict with third-party data policies, and poor financial literacy among underserved demographics.

Download the charts and associated data in Excel »

INTRODUCTION

Traditional consumer lenders, like banks and credit unions, have historically served individuals with credit histories and credit scores — in other words, segments of the population they can conduct robust risk assessments on. But the data they collect from these groups is limited and typically impossible to analyze in real time, preventing them from confirming the accuracy of their assessments, confining the demographic segments they're capable of serving, and creating a lengthy, often inconvenient process for potential borrowers. This has hobbled legacy lenders at a time when alternative lending firms — which pride themselves on precision risk assessment and financial inclusion — are taking off, especially in the US and UK.

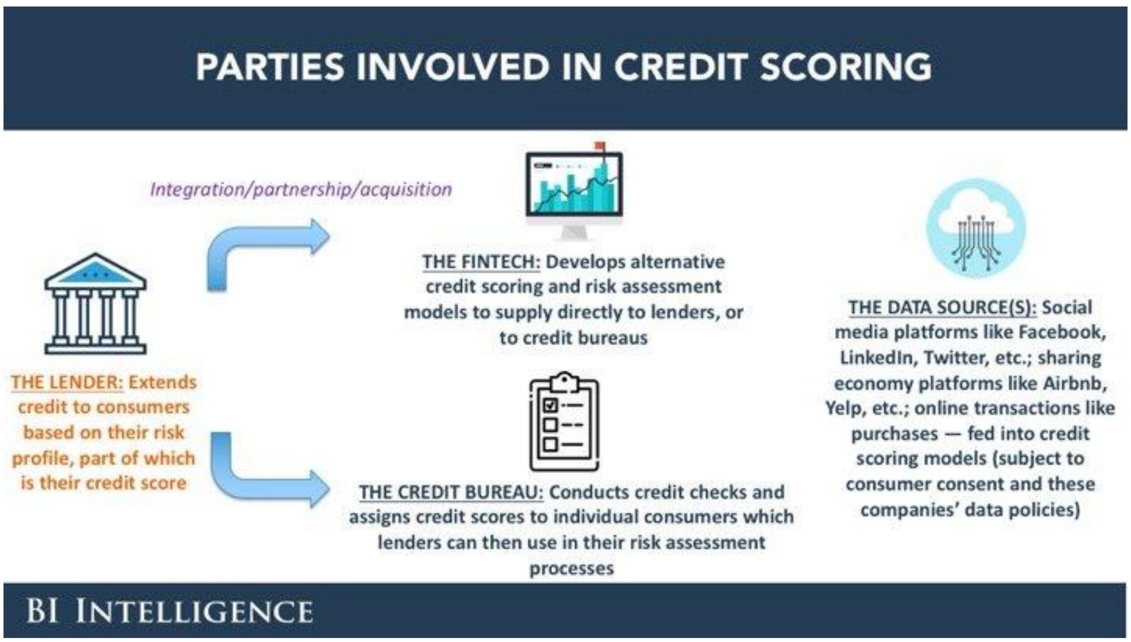
Alternative lenders are just starting to break into the untapped borrower market, which, even in developed regions, is huge — some 64 million US consumers don't have a conventional FICO score, and 10 million of those are prime or near-prime consumers (those with a score of around 720 on FICO's scale of 300 to 850), according to Experian. And they're doing so in two primary ways:

- **By using alternate credit scoring methods**, which use data other than borrowing history to measure creditworthiness.
- **And by integrating new technologies**, like artificial intelligence (AI), to improve the accuracy of conventional risk assessment methods.

Though the alternative credit scoring space is fairly nascent, as it matures, its threat to traditional lenders will heighten. Incumbents must therefore be open to shifting their approach to lending, by either integrating the solutions that fintechs and credit bureaus are developing into their existing offerings, or by partnering with — or even acquiring — these startups. That could help grow their customer bases and improve their underwriting efficiencies, boosting both revenue and influence. And it could enable legacy lenders to identify high default risks more quickly and efficiently, and therefore slash some of their more substantial losses, such as those related to servicing unperforming loans (i.e. loans that consumers have defaulted or on which interest payments are consistently delayed).

Despite the opportunity these disruptions present, alternative methods and emerging technologies haven't been tested extensively in the credit scoring space, and incumbents should be aware of the risks they carry, including regulatory infringement and selection bias, in order to navigate them and reap the most benefits.

This report looks at the drivers encouraging incumbent lenders to consider adopting new credit scoring methods or innovative technologies that make the lending process more seamless. As a note, these factors are also pushing shifts in business lending, but this report focuses on the challenges of obtaining data for, and assessing, private individuals. It also outlines what incumbents stand to gain from adopting alt scoring, the types of models on the market to choose from, the risks still appended to onboarding them, and recommendations on how to mitigate them to add real value to legacy lenders' businesses.



CHANGES IN THE CONSUMER LENDING LANDSCAPE

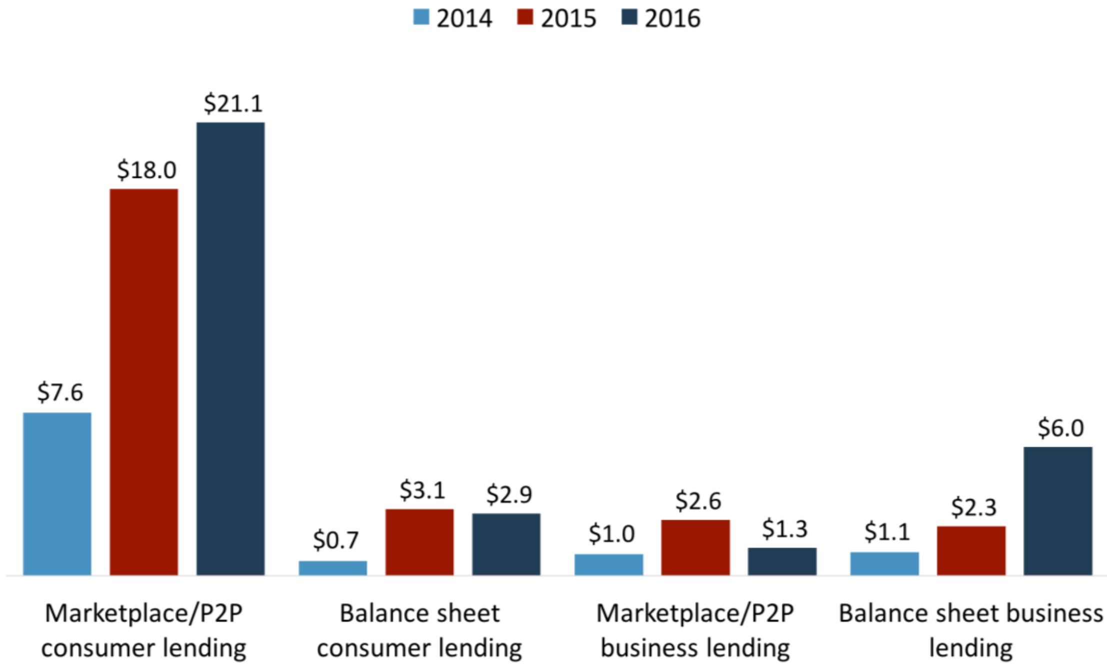
Two drivers are playing a large part in incumbent lenders' growing awareness and adoption of credit scoring disruptions.

The Rise Of Alt Lenders

Over the past decade, alternative, or alt, consumer lenders in the US and UK have managed to carve out a sizeable niche for themselves by spending heavily on robust but exploratory risk assessment methods, and, in some cases, using them to serve subprime consumers. As the largest players' rising origination volumes indicate, this strategy can pay off. The most successful alt lenders not only appeal to subprime borrowers who would likely be turned away elsewhere, but with their low fees, they also attract — and sometimes exclusively — creditworthy consumers. Some of these players are rapidly expanding their product suites, adding even more value for borrowers. Others, including Zopa and SoFi, are even expanding into banking. In the US, market leaders include SoFi, LendUp, and CommonBond; in the UK, names like Zopa, RateSetter, and Folk2Folk are steaming ahead. By contrast, incumbents have considered it unprofitable to cater to "thin file" customers — those with little or no borrowing history. They now have an opportunity to drastically reduce the risk of lending to these previously unapproachable demographics.

US Alt Finance Segments' Origination Volumes

Billions ($), 2017



Source: Cambridge Centre for Alternative Finance

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Total Cumulative Lending By Three Biggest UK Alt Lenders

Millions (£), to May 2017

Source: AltFi

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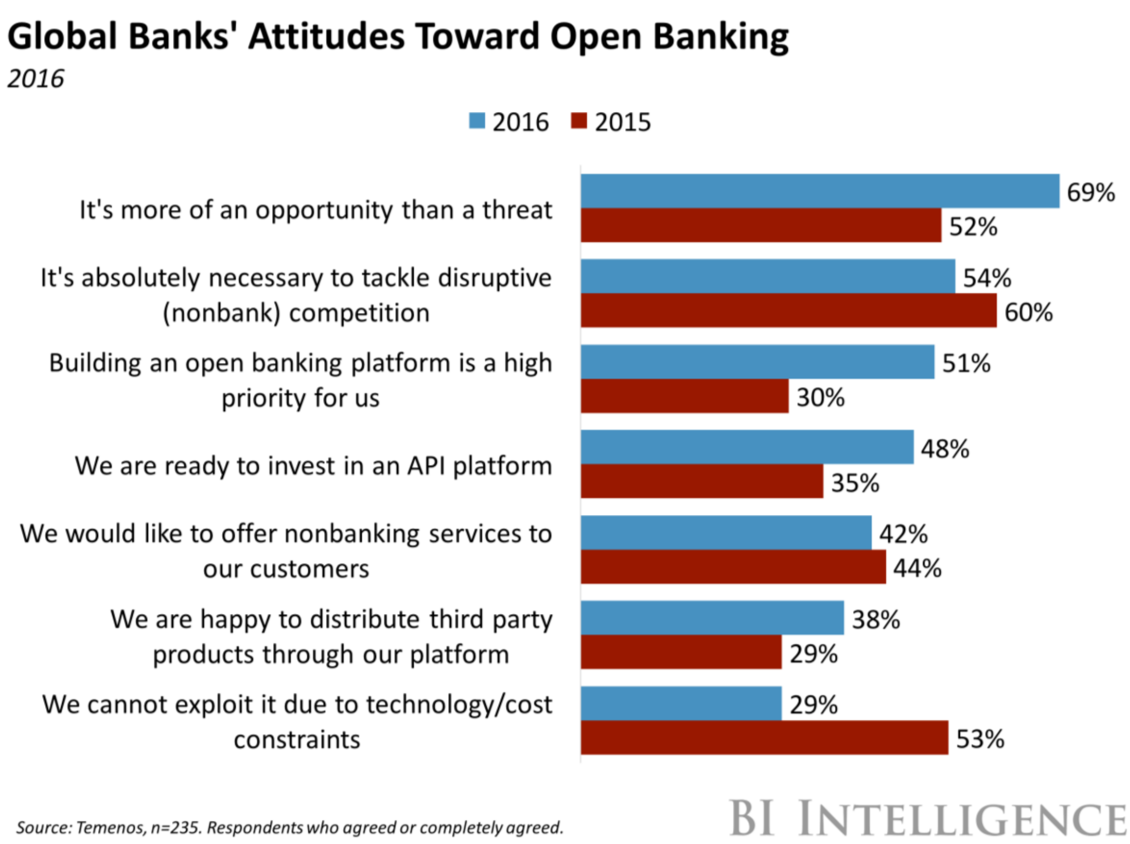
Changes In The Regulatory Landscape

Imminent regulatory changes are also prompting incumbent lenders to consider implementing alternative credit scoring methods. In Europe, the Second Payment Services Directive (PSD2), which will take effect in early 2018, will, among other things, mandate data sharing between financial institutions (FIs), including between incumbents and fintechs. This means lenders will have access to a much wider range of data sources to assess creditworthiness. In the UK, Open Banking regulations, which largely mirror PSD2, will also take effect in early 2018. While no such regulations now exist in the US, data sharing between big banks and fintechs is trend that will proliferate moving forward.

Currently, lenders typically make lending decisions based on outdated financial data, as their systems don't automatically update individuals' information in real time. When PSD2 takes effect, real-time data sharing and updating will become much easier, boosting the accuracy of lenders' risk assessments, according to Cormac Leech, principal at Victory Park Capital, which extends funds to lenders that are issued as loans.



THE METHODS AND TECHNOLOGIES DISRUPTING CREDIT SCORING

There are a range of methods and technologies incumbent lenders can choose to implement based on their particular business needs, the demographics they wish to attract, and their jurisdiction's regulatory landscape. Below, we look at these options, what differentiates them, and potential partners in each subsegment.

Alternative Credit Scoring Methods

Alternative credit scoring methods evaluate loan applicants' creditworthiness using data neglected in conventional models. This "alternative" data — which includes rent and university tuition payments, employment history, and social media posts — is becoming more extensive and accessible as consumers increasingly use connected devices and make online transactions. Credit scoring methods employing the use of alternative data sources can help legacy lenders better identify demographics they can profitably lend to without the need of substantial, or any, financial information.

Psychometric Scoring

This scoring method draws on nonfinancial factors that can influence, or at least give insight into, an individual's creditworthiness. It looks primarily at data from personality tests to gauge thought processes, character traits, biases, and sometimes education level. More commonly, psychometric data is used to complement financial data. Players that specialize in this method of scoring include Coremetrix (UK) and Entrepreneurial Finance Lab (US).

- **Entrepreneurial Finance Lab (EFL).** The EFL has designed an online survey that tests individuals' behavioral traits — such as conscientiousness, extroversion, agreeableness, and neuroticism — and perceptions, and uses that assessment to generate a number that represents the individual's likelihood of repaying a loan, comparable to a conventional credit score. This number is not just based on the specific answers the individual gives, but also on their interaction with the survey — for example, how long it took them to respond, or whether they attempted to cheat. The test includes sliding scales that allow the test-taker to indicate their level of agreement with a given statement, pick from a group of images, and select the option "I don't understand," to prevent potential discrimination against those with lower levels of education.

Reputation And Social Scoring

Like psychometric scoring, social scoring focuses on nonfinancial individual traits that indicate the likelihood of loan repayment. However, such methods tend to make inferences from traces of individuals' online activity, particularly on social media profiles and through interactions and peer reviews on "sharing economy" sites like Yelp, Uber, and Airbnb. Depending on the demographic a lender is addressing, this method can be applied independently, or it can be used to cross-reference existing data. Players include FriendlyScore (UK), Traity (Spain and US), and TrustingSocial (US).

- **TrustingSocial.** Lenders can integrate TrustingSocial's scoring engine into their online loan application forms. TrustingSocial bases its scores, which are assigned to users free of charge, on consented user data drawn from social media, mobile, and web data. Users can decline to share their browsing history — this won't disqualify them from a loan, but it can lower their credit rating. The firm says its methodology looks at social interactions rather than profiles, as the former are harder to falsify. It then cross-references an individual's online behavior against an extensive database of salaries, jobs, and companies to predict the individual's financial stability. Lenders can use this number to make a decision about a loan applicant's creditworthiness.

Indirect Financial Indicators

This method more explicitly focuses on an individual's financial health to determine default risk, but makes inferences using more unconventional or indirect indicators of financial health and habits. These include online shopping behavior and payments, mobile and telecom data, tax settlements, and unpaid traffic tickets. This method is already being adopted, and in some cases pioneered, by incumbent credit bureaus and large tech companies, such as FICO in the US and Sesame Credit in China. Companies active in this space include Aire (UK), Lenddo (Hong Kong), and Scorelogix (US).

- **Scorelogix.** Unlike most large credit bureaus, Scorelogix's credit scoring methodology — the "ability to pay" (ATP) score — takes into account individuals' current income. This means it doesn't require a user's credit history, but merely a snapshot of their real-time financial health. Unusually, Scorelogix also takes applicants' zip codes into account, since macroeconomic conditions in a specific area — such as job markets — have a direct impact on individuals' income and, hence, ATP. The firm says that there's a correlation between job market stability in an area, a sustainable income, and, therefore, an individual's likelihood of repaying a loan on time.

Emerging Technologies

Unlike the alternative credit scoring methods discussed above, players in this category don't use alternative data sources to generate credit scores. Instead, they leverage emerging technologies to optimize risk scoring models already used by both alt and incumbent lenders. This means lenders aren't asked to analyze data sets they're unfamiliar with.

Utilizing AI

Developers working in this space apply AI, such as machine learning and predictive algorithms, to enhance data analysis on both alt and incumbent lenders' existing risk models. This helps lenders derive deeper insights from the data sets they already rely on to determine creditworthiness. A pioneer in this space is US-based James.

- **James.** James applies AI to help FIs better manage their credit risk by improving the accuracy of their existing risk models, and by finding relationships between financial and personal variables more quickly and effectively than a linear model could. It says this capability will become more significant as the economy increasingly digitizes and generates more data points. James also monitors FIs' credit models and sends alerts if it believes a model needs recalibrating, as well as recommendations for how to improve a model's accuracy and regulatory compliance. James is testing its solution with 25 FIs globally (including incumbent and alt lenders), and says the solution has reduced default rates for these firms by 30% and boosted acceptance rates for loan applicants by 10%.

Product Aggregation Through Partnerships

Some fintechs have chosen to partner with incumbent credit bureaus (such as TransUnion, Equifax, and Experian) to analyze their existing consumer credit profiles and reports to conduct a "soft inquiry," which doesn't affect a consumer's official credit score. They use their analysis to give consumers tips on how to boost their credit scores and overall financial health, often with the intention of then recommending them as a borrower to an incumbent lender, and typically acting as third-party product aggregators. The biggest names in this space are US-based NerdWallet and Credit Karma.

- **Credit Karma.** Credit Karma has partnerships with incumbent credit bureaus TransUnion and Equifax, from which it buys its members' credit reports and scores to facilitate access to their own credit information. It doesn't generate its own credit scores — rather, it cross-references the credit bureaus' data against people's behavior on its own platform to give lenders insights into individuals' approval odds and product preferences. Credit Karma also acts as an aggregation platform for third-party credit products, and uses AI to fine-tune the third-party products it shows members on its platform. It says this honing enables lenders to market their products more efficiently to intended demographics, avoiding overspending on wasteful blanket advertising. If an individual onboards the advice, improves their score, and is subsequently approved for a credit product from one of Credit Karma's partners, the FI then pays Credit Karma a fee. Credit Karma members whose files are too slim to generate a credit score can still view their profile to learn why they don't have a score, and how they can begin building a credit history to obtain one. They can also view educational materials on credit scoring.

Incumbent lenders looking into either refining the methodologies they use to assess their existing target audiences, or to serve more diverse demographics, including those previously considered "unscoreable," should consider embedding these players' solutions into their online forms where this option is available, or forming new business partnerships with, or even acquiring, these companies to obtain exclusive access to their technology. For incumbents considering adopting alternative credit scoring methods, compatibility between a specific methodology and an intended target group is paramount.

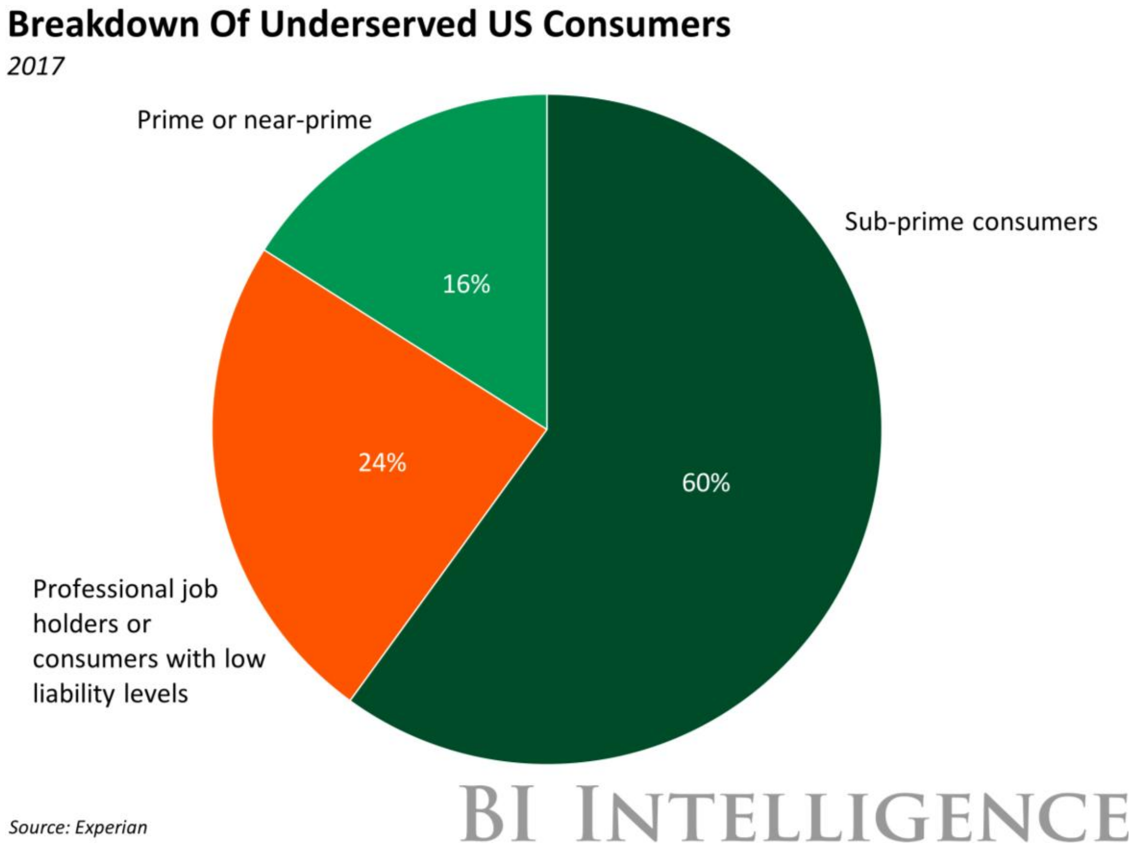
THE OPPORTUNITY FOR INCUMBENT LENDERS

In addition to boosting financial inclusion and tapping into new demographic segments and markets, incumbent lenders stand to gain a plethora of other benefits by taking a gamble on these credit scoring disruptions.

Reaching Underserved Demographics

Despite being developed economies, markets like the US and UK have surprisingly high populations without credit scores. As mentioned, at least 64 million US consumers don't have a credit score from FICO, and 10 million of these individuals have stable, professional jobs and low liability levels, making them prime- or near-prime consumers. Their income levels are also similar to consumers with a FICO score. Much of this demographic segment consists of millennials, professionals who move frequently for work, retirees, and recent highly qualified immigrants. Where borrowing data for these consumers is unavailable, scorers can turn to alternative sources like social media profiles, which generate information such as character insights from posts, information on social circles, and on hobbies and biases.

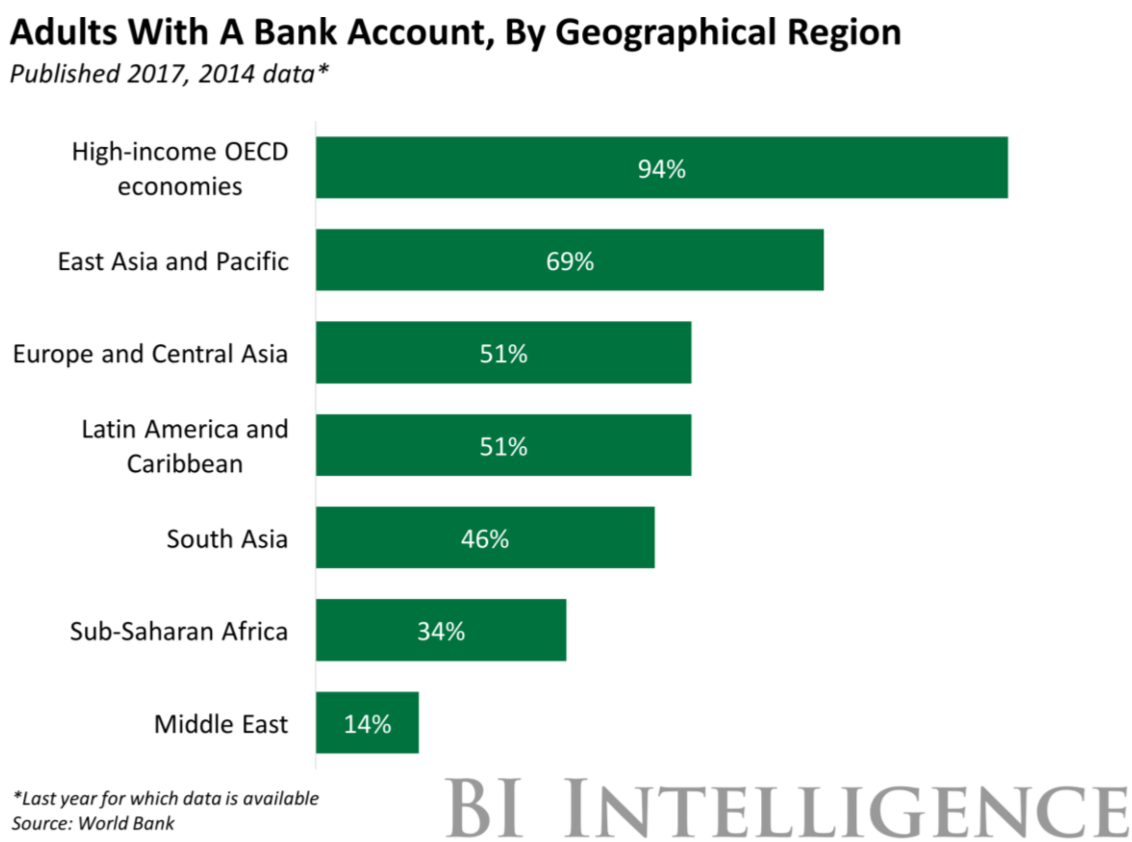
Meanwhile, some 19 million US consumers — 8.8% of the population — have unscored financial records because their data cannot be analyzed within the parameters of commonplace models, according to the Consumer Financial Protection Bureau (CFPB). About 9.9 million of these individuals have sparse, and 9.6 million have no, recent financial data. Sixty-six percent of millennials are categorized as subprime under conventional underwriting models, but these models neglect that this generation is still young, highly entrepreneurial, and just beginning to financially mature, the CFPB adds. By onboarding credit scoring models that take a wider range of data sources into account, lenders can begin capitalizing on these underserved consumers.

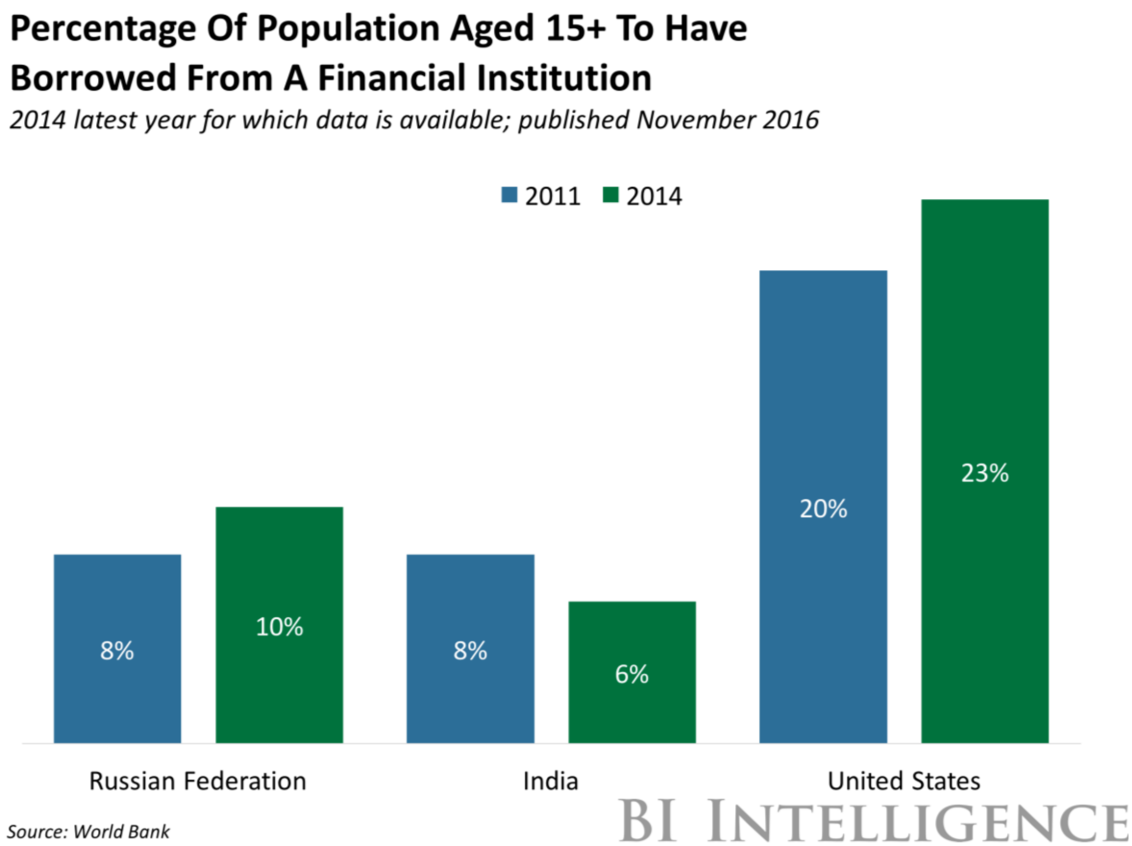


Opportunities In Emerging Economies

Emerging markets, which have high un- and under-banked populations without credit scores, also present an expansion opportunity for incumbent lenders from developed markets. Onboarding methodologies that draw on unconventional data sources successfully in their home geographies can enable credit agencies and lenders to then carry over this expertise to emerging markets, Leech of Victory Park Capital notes. Emerging economies have far higher underserved and unscored populations than developed markets. Because these consumers have traditionally relied more heavily on friends, family, and community when borrowing, they haven't heavily interacted with mainstream financial services, and therefore have generated little or no financial data, making it challenging for mainstream lenders to serve them.

Some fintechs and credit bureaus are already focusing on developing credit scoring methods for emerging markets. For example, FICO has been testing psychometric scoring in markets including Turkey, Russia, Mexico, and India over the past year; and in April, Russia's Sovcombank began trialing a psychometric exam developed by US-based EFL. Incumbents that are still operating only in developing markets but want to expand should consider opening dialogues with such credit bureaus and fintechs to find a path into these economies.



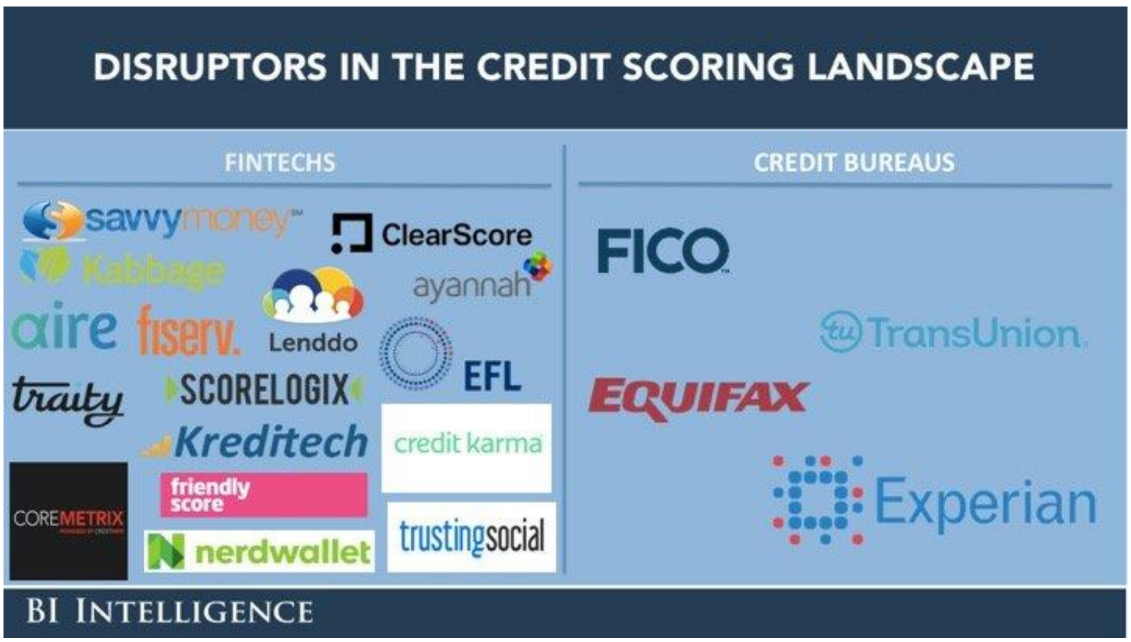


Improving Returns On Existing Demographics

By adopting powerful technologies like AI to reduce risk and boost customer experience, legacy lenders and fintechs can improve returns and customer loyalty. Emerging credit scoring technologies can also reduce running costs for incumbents. The three main losses made on loans are write-offs on bad loans, delayed interest income on missed payments, and delinquency servicing expenses, like staff travel costs and legal proceedings, according to a study by The Next Billion project. Ten percent of all US lenders' loans are written off, and servicing costs (based on a $1,000 loan) increase from $8 per month on a performing loan to $25 per month for a delinquent loan, according to the study. These costs add up, impacting revenue and efficiency.

However, the study finds, lenders can drastically reduce these costs and losses by applying rapidly improving technologies like AI and predictive algorithms to their risk assessment process to better identify loans that are likely to be written off. The authors argue that, in many cases, the basic profiles of clients likely to default differ from those of clients likely to repay by enough for the former to be "surgically targeted." Such precision can reduce both delinquency servicing costs and write-offs. In turn, this can enable lenders to be more selective about which loans to chase down, cutting down outlays.

Reducing both false positives (mistakenly rejecting creditworthy applicants) and false negatives (failing to spot default risks) could secure legacy lenders' position of power not only over incumbent competitors in their home demographics, but also in populations and geographies some alt lenders have been trying to claim.



RISKS AND RECOMMENDATIONS

Despite the opportunities it presents, alternative credit scoring is in its nascent phase, and hasn't yet been tested extensively. The incumbent lenders adopting new credit scoring solutions — and the fintechs developing them — should consider the following potential pitfalls and ways to mitigate them.

Inbuilt biases. When generating alternative credit scores, lenders make assumptions about the demographic they're targeting in order to generate criteria that applicants must meet to be granted a loan. It's likely, then, that some credit scoring approaches disadvantage certain individuals. For example, psychometric testing often assumes a certain level of basic education, literacy, and familiarity with, and access to, technology. This could disadvantage those with poor reading, numerical, and computer skills — and, potentially, disabled applicants.

- **Ensure the methodology is carefully tailored to a specific group.** To mitigate the risk of such exclusion, lenders should avoid targeting too broad a group, and instead zero in on specific subsections within consumer segments to ensure they account for their narrow needs, limitations, and resources. Methodology developers can also take steps to avoid discriminating against the disabled — for example, they can offer an audible quiz for the blind — and against the poorly educated, by including response options that enable applicants to indicate that they don't understand a question. The EFL's psychometric exams already include such options.

- **Actively work toward neutrality.** James CEO Joao Menano says this "fair lending" problem is the trickiest for his company to navigate. He points out that all scoring methodologies will, by default, have some degree of bias built in, simply by virtue of deciding which data sets must be taken into account, and which have to be left out. The key for companies like James, which seek to optimize lenders' scoring methods, he says, is to avoid amplifying these biases. Moreover, he adds, the challenge is exacerbated by the fact that some anti-discrimination regulations are very vague in terms of what constitutes as discrimination, making due diligence difficult. The best solution to this problem, he says, is for lenders and credit score developers to work closely with regulators to ensure compliance.

Fraud. Although data sources from social media platforms can offer valuable insight into consumer behavior when financial data isn't available, such information is also easy to manipulate. It's reasonably simple to create and cultivate a counterfeit, or at least a deceptive, online profile, and to influence those asked to vouch for an individual's identity and reputation. This is a major potential pitfall of alt scoring models, which draw primarily on social media data, online transactions, or anecdotal evidence from peers.

- **Cross-check social media data and profiles against other metrics and forms of ID.** Lenders adopting social-media-based methodologies should ensure they can check the information listed on applicants' social media profiles — such as employment status, address, and lifestyle choices — against at least one other source. This will weed out not only fraudulent applications, but also applications containing outdated information. Such cross-checking, however, is more difficult with subjective metrics, such as reputation. Lenders using such methodologies should consider contacting an applicant's former or current employer for testimony.

Conflict with third-party data policies. Alt credit models that depend on access to individuals' profiles on social platforms such as Facebook, Twitter, and LinkedIn risk using these companies' data in a way that violates their data protection and discrimination policies. For example, last year, major UK insurer Admiral ran up against Facebook's data rules when it tried to leverage the social media giant's customer data to price individuals' insurance policies. Admiral had planned to analyze the data to derive insight into individuals' personalities, and whether they were likely to be safe drivers, and price their insurance accordingly. Facebook rebuffed the attempt, emphasizing that its data policy stipulates that its users' personal data cannot be used to determine their eligibility for products and services.

- **Ensure compliance teams are well-versed in big tech companies' data policies.** Most legacy lenders already have extensive legal and compliance teams, but these institutions should ensure that their teams are up to date with social media firms' internal rules. This is an area that might not seem immediately relevant to lenders' legal teams, so they should take extra care in this respect if they opt to onboard social-media-reliant scoring methods.

Regulatory infringement. Incumbent lenders must abide by regulations, including the Equal Credit Opportunity Act, the Gramm-Leach-Bliley Act, and UDAAP regulations in the US, as well as the Fair Credit Reporting Act in the US and its equivalent in the UK. In aggregate, these regulations are designed to protect consumers against discriminatory use of their data — a point that will become especially risky once lenders start drawing on a wider range of data sources, some of which they'll be less familiar with than others, such as social media profiles.

- **Cross-check new methodologies thoroughly against all existing and incoming legislation.** The biggest regulatory challenge likely to affect lenders adopting alt scoring methods will be simply dealing with an even larger volume of regulatory publications. Like FIs in other industry segments, such institutions should consider implementing AI solutions to help them crunch larger volumes of regulatory information more accurately and quickly, and cross-check their internal compliance procedures against external requirements data. This will become especially imperative as they onboard experimental new methodologies that use unconventional data sets in new ways.

- **Work closely with regulators.** Credit Karma's CEO, Kenneth Lin, says that one of the biggest challenges companies like his must contend with is that, in many cases, regulation hasn't yet caught up with the pace of innovation in the fintech and financial services markets, largely because the concepts are so novel — yet another indicator that fintechs would benefit from communicating effectively with watchdogs.

Poor financial education among underserved demographics. Many alt credit scoring models are targeted at demographics that have previously had minimal or no access to financial services, and as such, have poor financial literacy. Failing to teach these demographics at least the basics of financial health and responsibility could leave a lender exposed to higher default levels, or fail to attract consumers who've never borrowed before to seek a loan.

- **Launch extensive but accessible consumer education campaigns and materials.** This could lower default rates in demographics lenders have traditionally catered to as well as among new targets. Campaigns can take the form of dedicated pages on websites, informative videos, or even in-person consultations if clients demand a more thorough explanation.

THE FUTURE OF CREDIT SCORING

Disruptions in the credit scoring market could provide legacy lenders with the opportunity to both improve returns on prime borrower demographics and tap into subprime and near-prime consumers. However, these disruptions will continue to cause ripples in the lending landscape, and lenders will have to adapt.

First, as alternative credit scoring methods are increasingly tried and tested, and eventually become more widespread, it will be crucial for developers and adopters to remember these methods were meant to be tailored to niche demographic segments. They should therefore avoid applying them to too wide a group, and thus replicating the exclusivity they were designed to combat. As more data sources become available, lenders will have to strive to avoid introducing biases into their decisions and violating discrimination laws.

Meanwhile, as the application of data analytics technologies allows incumbents to optimize their conventional scoring methods, the resulting better underwriting will lead to a race to the bottom in terms of pricing among lenders. In the long run, this could lead to lower returns across the industry. Incumbents will have to think about how to compensate for this.

It's worth noting that, as of yet, these technologies in the credit scoring space haven't been tested over long periods of time, and it's still hard to determine whether they're in fact outperforming legacy methodologies in terms of effectiveness and accuracy. In the short term, this will likely prove an impediment to widespread adoption among credit scoring agencies and legacy lenders.

THE BOTTOM LINE

- Traditional consumer lenders, like banks and credit unions, have historically served segments of the population they could conduct robust risk assessments on.
- This has hobbled legacy lenders at a time when alternative lending firms — which pride themselves on precision risk assessment and financial inclusion — are taking off.
- Alternative lenders are disrupting the credit scoring space in two key ways: by using alternate credit scoring methods and integrating new technologies.
- The solutions that are best suited for a particular lender will vary based its specific business needs, the demographics it aims to attract, and its jurisdiction's regulatory landscape.
- If executed correctly, the payoff can be huge for incumbent lenders.
- But disruptions carry both short- and long-term risks that both fintechs and incumbent lenders must navigate.

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