Insurtech for Financial Health
Insurance Innovation and Financially Struggling Consumers
October 2018
At the Center for Financial Services Innovation (CFSI), we believe that improving financial security for all Americans ultimately benefits both consumers and providers. Founded in 2004, CFSI is committed to shaping a more innovative financial services marketplace that meets the needs of today’s customers, particularly the underbanked. As the nation’s authority on consumer financial health, we work with business, government, and nonprofit leaders to improve financial opportunity and resilience for Americans everywhere.

Learn more at cfsinnovation.org.
Over the past several years, insurtech startups have exploded onto the insurance industry scene, precipitating both intense investment and excited speculation. These startups operate across the insurance value chain, but distribution and customer acquisition remain the primary focus areas for insurtech innovation.

While small industry incumbents have struggled to keep up, large industry players have responded to the insurtech boom in several ways, including internal innovation labs and in-house startups; strategic acquisitions and insurtech partnerships; venture capital initiatives; and investments in accelerators and incubators.

Despite massive growth in interest and investment, the U.S. insurance industry has yet to channel the energy of insurtech into products and services that support consumer financial health. Financial health – which comes about when an individual’s daily systems help them build resilience and pursue opportunities – requires a financial ecosystem filled with high-quality, affordable insurance products that support consumers when they suffer financial shocks. Many consumers, particularly those most vulnerable to financial shocks, lack access to such resilience-building products.
EXECUTIVE SUMMARY

This report examines three major advances in insurtech that, if implemented properly, could galvanize a movement toward insurtech that promotes financial health:

1. **Expanded Distribution Channels**
   - Tech-enabled models for delivering insurance to consumers, such as comparison sites and other forms of digital distribution, may reduce costs through disintermediation and healthy competition. These methods favor consumers with strong digital footprints, however. In a price-sensitive industry, they could also precipitate race-to-the-bottom competition, where providers sacrifice coverage quality for cheaper policies.

2. **Individualized Policies and Risk Assessment**
   - Advanced analytics and telematics/telemetry allow insurers to tailor their products to users’ needs and reduce their reliance on data biased against financially vulnerable consumers. But these technologies may also prompt insurers to pursue exclusionary policies, or yield opaque pricing schemes where risk factors lie beyond the customer’s control.

3. **Tech-enabled Risk and Claims Management Tools**
   - Internet-enabled sensors and behavioral nudges can help insurers address conditions that might lead to a catastrophe before that catastrophe occurs, a favorable outcome for both insurer and customer. But insurers may choose to use new sensor data to raise premiums rather than take preventive measures. Reliance on these connected devices raises privacy and security concerns, as well.

As the insurtech field matures, industry players who aim to maximize customer value and improve financial health will need to minimize the risk of abuse while aligning their incentives with their customers’ needs. Investment in innovations that achieve these aims will result in a healthier, more sustainable insurance ecosystem.
The Rise of Insurtech

Over the past several years, new technologies like machine learning, internet of things, and robotic process automation have landed in the insurance industry, propagating a wave of innovation, investment, and breathless speculation. Following in the footsteps of their financial technology predecessors, insurtech startups have seen a massive surge in both online search volume and venture capital. According to CB Insights, insurtech has received over $8 billion in financing globally since 2012 – an average of over $10 million per deal. Total investor spending on insurtech exceeded $2 billion in 2017, a 31 percent increase over the previous year.1

Most insurtechs, whether B2B or direct-to-consumer, ultimately serve the retail sector. A plurality focus on property and casualty insurance, while smaller but still substantial percentages are engaged with life and health insurance. Distribution is the primary area of focus on the value chain, followed by pricing, new product development, and claims management.2

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The Incumbent Response

Insurtech goes beyond individual startups and venture capital firms, however. Broadly defined, the insurtech wave includes any use of technology to reduce costs, improve efficiency, and expand the market for insurance.³ Industry incumbents have responded to the influx of innovation with a flurry of their own strategic maneuvers.

Internal Investments

Internal Innovation Labs: In an industry survey, over 60 percent of carriers said they expected to focus their innovation strategy on innovation labs in 2018.⁴ Many incumbents have already developed their own, including State Farm’s 485 Think Lab, MetLife’s LumenLab, and Liberty Mutual’s Solaria Labs.

Strategic Technology Acquisitions: Several carriers have acquired majority stakes in companies that provide the technology to improve their services. Legacy claims manager Crawford, for instance, spent $36.1 million on an 85 percent stake in WeGoLook, a startup that hires gig economy workers to gather and validate information.⁵

In-House Startups: While incubating startups in-house appears to be less common, some incumbents have grown their own insurtechs. One example is MassMutual’s Haven Life, an online life insurance underwriting platform aimed at younger customers.

External Investments

Insurtech Partnerships: Nearly half (45 percent) of insurers and reinsurers currently partner with an insurtech.⁶ Examples of such initiatives include Munich Re’s Digital Partners program, which developed partnerships with eight insurtechs in 2016.⁷ Many of these partnerships allow insurtechs to innovate on the front end, while the more established carrier provides risk capital and industry expertise.⁸

Venture Capital Initiatives: As of April 2016, incumbents had committed over $1 billion to insurtech investment, and in 2015, 25 percent of tech investment by incumbent players went to seed-stage funding for startups. Many insurers have corporate venture capital arms, such as AXA Strategic Ventures and Liberty Mutual Strategic Ventures.⁹

Digital Accelerators/Incubators: Several incumbents have created their own digital accelerators. For instance, AXA invested €100 million in Kamet, an incubator for insurtechs that build products and services for incumbent carriers.¹⁰

AMERICAN FAMILY’S MOONRISE: Innovating Beyond Insurance

American Family Insurance noticed that many customers of the company’s “The General” brand of auto insurance were struggling to pay their premiums because of cash flow issues and other financial troubles.

To help these consumers, the carrier created Moonrise, an on-demand jobs platform to connect them to employers with pressing staffing needs.

Moonrise is an example of an unconventional approach to innovation from one of the largest insurers in the United States.
The Difficulty of Innovation for Smaller Incumbents

Investment and activity in insurtech has remained confined to a relatively small group of large carriers and reinsurers, since small and regional insurers simply lack the capacity for these types of responses. Most smaller providers are still modernizing their core policy, billing, and claims systems. To stay competitive, these companies may require adaptable, turnkey solutions to bring innovation to their customers.

Insurtech in Support of Financial Health

Despite double-digit growth in investment, hundreds of funding deals, and a robust incumbent response, the insurtech boom in the U.S. has failed in one key respect. It has not yet spurred the industry to address the needs of struggling consumers who require insurance to support their financial well-being.

Rates of un- and underinsurance have not responded to insurtech innovation, and remain particularly high among those without the means to contend with catastrophe on their own. Consumer confidence in insurance is also minimal. In a large-scale mixed-methods study of insurance consumers, “Insuring the Way to a Financially Resilient America,” CFSI found that only 22 percent of households say that they are “very confident” that their insurance policies will provide enough support in case of an emergency, and only 13 percent say that they would rely on benefits from insurance in the event of a financial shock.

In such an environment, considerable opportunity exists for insurance innovation that grows consumer trust by building resilience and supporting financial health. Such innovation not only opens up new markets, but also creates more profitable customers. As the industry helps to improve the financial health of its customers, those customers will begin to accumulate more assets to insure. The end result is an ecosystem where insurers and consumers both benefit from financial health investments.

FLIPPING THE SCRIPT:
Metromile’s Acquisition of Mosaic Insurance

Many industry incumbents have made strategic insurtech acquisitions a central part of their innovation strategies. But Metromile, an auto insurance company that allows customers to pay for their insurance according to their mileage, reversed that logic by acquiring Mosaic Insurance.

In doing so, the insurtech became one of the first of its kind to acquire a traditional carrier, which allowed it to begin underwriting its own policies.

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12 For example, the number of uninsured motorists increased slightly even as the insurtech space expanded. Facts + Statistics: Uninsured Motorists, Insurance Information Institute, 2018.
13 Insuring the Way to a Financially Resilient America, CFSI, June 2018. 39 percent of respondents were “moderately confident” that their insurance coverage would be sufficient. Not all shocks studied were traditionally insurable. See footnote 19 for the shocks studied.
14 Considerable evidence exists that financially healthy customers are more profitable customers. See Making the Business Case for Financial Health, CFSI, March 2018.
Financial health comes about when your daily systems help you build resilience and pursue opportunities.

Financial resilience is a key component of financial health. Just as a robust immune system tempers the effects of physical illness, systems that support financial resilience help people avoid the more pernicious, compounding effects of unexpected financial shocks.

Unanticipated financial shocks happen to people across the income spectrum. CFSI's insurance-focused consumer research suggests that 59 percent of Americans experienced an unexpected expense or repair costing $500 to $2,000, 39 percent experienced the death of a family member, and 23 percent experienced a sudden loss of income over the past five years.

Though the prevalence of these shocks does not correlate with income, their effects do. Forty percent of low-to-moderate income (LMI) consumers – those with household incomes of less than $60,000 per year – said that their ability to pay bills was impaired, and 45 percent reported greater difficulty managing their debts as a result of experiencing a shock.15

But LMI individuals are not the only consumers for whom shocks can be dangerous. Several groups, all of which overlap with the LMI population (and each other), face heightened vulnerability to catastrophe. As we discuss throughout this report, those who are un- or underinsured, those without access to traditional financial systems, and those who live in areas at high risk for natural (or manmade) disasters could all benefit from an insurance industry that focuses on financial health.

15 Insuring the Way to a Financially Resilient America, CFSI, June 2018. The shocks we considered consisted of: 1) unexpected repairs or expenses costing $500 to $2,000; 2) the death of a family member; 3) a move to a new area and/or change in living arrangement; 4) unexpected repairs or expenses costing more than $2,000; 5) a major illness requiring hospitalization or a newly acquired chronic condition requiring ongoing care, medication, or equipment; 6) a loss of job or other income (from benefits, pension, etc.); 7) newly expanded financial responsibilities that were not expected; 8) other events with unexpected financial consequences; and 9) divorce.
FINANCIAL HEALTH SHOCKWAVES

For LMI individuals, unexpected financial shocks can be particularly dangerous. To cope with them, some might pull from less liquid savings like retirement accounts or home equity, reducing their ability to rely on these assets later in life.¹⁶

If they have no such assets, or if the amount of the shock is too great, they might carry a balance on a credit card or borrow from friends or family, further constraining their cash flow and placing burdens on their social networks.¹⁷ Some may choose to overdraw their bank accounts, increasing their risk of losing access to formal financial systems.¹⁸

If these sources are unavailable (e.g., for those with no bank accounts, no credit, or bad credit), they might turn to payday loans, high-cost installment loans, or other forms of expensive alternative financing. These products can trap people in debt cycles that can further cripple their financial resilience.¹⁹

¹⁶ 27 percent of workers with a 401(k) or similar plan have taken a loan, early withdrawal, or hardship withdrawal from their account. 17th Annual Transamerica Retirement Survey, Transamerica Center for Retirement Studies, 2016. The median balance on loans like these is $4,359. 401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2015, EBRI, 2017. 42 percent of employees say that they’ll likely need to use retirement funds for non-retirement purposes. 2018 Employee Financial Wellness Survey, PwC, 2018; 401(k) Plan Asset Allocation, Account Balances, and Loan Activity in 2015, EBRI, 2017.

¹⁷ The Federal Reserve reports that 41 percent of Americans could not afford a $400 expense without borrowing or selling something. 43 percent of these individuals would carry a credit card balance, and 26 percent would borrow from friends or family. Report on the Economic Well-Being of U.S. Households in 2017, U.S. Federal Reserve, May 2018.

¹⁸ Frequent overdrafters spent nearly $25 billion in overdraft fees in 2016. These consumers exit the traditional banking system at high rates, often on an involuntary basis. 2017 Financially Underserved Market Size Study, CFSI, December 2017.

¹⁹ 80 percent of payday loans are renewed within 14 days of issuance. CFPB Data Point: Payday Lending, CFPB Office of Research, March 2014.
Vulnerable Consumers Lack High-Quality, Affordable Insurance Options

Insurance would seem like a natural solution for helping vulnerable consumers manage many of the financial shocks they face. The insurance industry centers on providing customers the necessary resources to recover and rebuild in the face of adversity, and several studies have shown that un- and underinsured risks contribute to poverty.²⁰

Our research shows, however, that LMI consumers are less likely to own important elective insurance products: 61 percent of LMI renters do not carry renters insurance; 45 percent of LMI consumers who are married or have financially dependent children do not carry life insurance; and 64 percent and 68 percent of LMI consumers who work full-time do not carry short- and long-term disability insurance, respectively. Access to these products through the employer channel is restricted for low-income jobs. For example, only 57 percent of those in occupations with wages in the second-lowest quartile have access to life insurance through their work. This number decreases to 22 percent for those in the lowest quartile.²⁴

For mandatory products like auto and homeowners insurance,²⁵ premiums represent a significant portion of monthly budgets for LMI consumers, which may contribute to higher levels of un- and underinsurance. For example, a 2016 study by the Consumer Federation of America found that in 15 cities, LMI consumers paid an average of 59 percent more for auto insurance than their non-LMI counterparts.²⁶ Overall, the Insurance Research Council reports that 13 percent of motorists – 27.6 million drivers – in the United States were driving uninsured in 2015,²⁷ and available research indicates a strong negative correlation between income and being uninsured.²⁸

<table>
<thead>
<tr>
<th>Insurance Non-Ownership by Income</th>
<th>Source: CFSI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renters²¹</td>
<td>40%</td>
</tr>
<tr>
<td>Life²²</td>
<td>45%</td>
</tr>
<tr>
<td>Short-term Disability²³</td>
<td>53%</td>
</tr>
<tr>
<td>Long-term Disability²³</td>
<td>60%</td>
</tr>
</tbody>
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Annual household income

- <$60K
- $60K to <$100K
- $100K+

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²⁰ Insurance: Adding Value in Emerging Markets, Swiss Re Institute, November 2017, citing three separate studies on the topic.
²¹ Among those who rent.
²² Among those who are married and/or have financially dependent children.
²³ Among those who work full-time.
²⁵ These types of insurance are considered mandatory because auto insurance is required for motorists in every state except New Hampshire, and homeowners insurance is a frequent stipulation in mortgage contracts.
²⁶ Major Auto Insurers Raise Rates Based on Economic Factors, Consumer Federation of America, June 2016. Differences in prices were based on quotes from five market-leading carriers.
²⁷ Facts + Statistics: Uninsured motorists, Insurance Information Institute, citing a 2017 report from the Insurance Research Council. Absolute figure obtained by multiplying this percentage by the total number of licensed drivers. Licensed Drivers, Bureau of Transportation Statistics, 2013.
²⁸ Uninsured Drivers: A Societal Dilemma in Need of a Solution, Consumer Federation of America, March 2013.
The present dearth of affordable, high-quality, accessible options for the consumers most in need of protection represents a substantial untapped opportunity for innovation in the insurance ecosystem. In fact, several companies in emerging markets have applied many, if not all, of the technologies underlying the latest industry advances to provide low-cost insurance to underserved consumers across the globe. Despite some scattered domestic efforts, most U.S.-based insurtech startups and incumbent carriers have yet to design solutions that deploy these technologies to support their customers’ financial health directly.

In the remainder of this report, we review the current insurance innovation landscape through the lens of CFSI’s mission to improve consumer financial health – especially for those who are underserved and financially struggling. We discuss the global movement for inclusive insurance and examine three major industry trends:

1. **Expanded Distribution Channels**: Insurtechs are creating new models for delivering insurance to consumers, such as mobile distribution, comparison sites, and new co-selling partnerships.

2. **Individualized Policies and Risk Assessment**: Advances in analytics and telematics/telemetry allow both policyholders and insurers more granular control over the risks they cover and the prices of their policies.

3. **Tech-enabled Risk and Claims Management Tools**: Internet-enabled sensors and predictive risk modeling encourage an ongoing shift from reaction to prevention. When disasters do occur, these same technologies enable rapid response and claims management.

In this review, we aim to illustrate not only how the industry can use these trends to promote consumer financial health, but also how it can avoid the harms these trends could cause if not designed and directed properly.
Innovation Abroad: Inclusive Insurance in the Developing World

While few insurtech innovations in the U.S. have aimed to solve the problems of financially struggling consumers, emerging markets have seen considerable improvement in both access to and affordability of insurance. Microinsurance – insurance policies featuring low premiums and low coverage limits intended to serve low-income consumers – has existed in these markets since the late 1990s. In 2005, 11.4 million people in 60 countries across Latin America and Africa were covered by at least one microinsurance policy. By 2011, coverage had more than tripled in these countries, and has since expanded to a total of 114.7 million people worldwide.

Over the past decade, the innovation that began with microinsurance has burgeoned into a movement for “inclusive insurance,” which the Center for Financial Inclusion defines as “access to and use of appropriate and affordable insurance products for the unserved and underserved, with a particular emphasis on vulnerable and low-income populations.”

Many of the companies who operate under this new paradigm have blazed the trail for the trends now spreading across the insurtech space in the developed world. Their impact is considerable: Evidence suggests that the availability of microinsurance improves healthcare utilization rates, reduces out-of-pocket expenditures, and limits the need for expensive risk management strategies (such as selling possessions after a shock). Lumkani, a company that sells networked heat detectors to prevent slum fires, prevented two fires within two weeks of launching in South Africa.

Insurtech Pioneers
Companies operating in the developing world pave the way for advances in the U.S. and elsewhere.

MicroEnsure leverages mobile distribution to reach a broad customer base in emerging markets like India, Pakistan, Nigeria, and several other Asian and African countries.

BIMA offers pay-as-you-go products in life, personal accident, and hospital insurance. Its products are sold in discrete time units, allowing the user to purchase insurance exactly when they need it. It serves 14 countries across Africa, Asia, Latin America, and the Caribbean.

Based in South Africa, Lumkani aims to prevent damages from fires in high-density, low-income areas. It provides low-cost, networked heat detectors that enable community response to fires.

Meanwhile, Worldcover, a crop insurance company serving smallholder farmers in Africa, uses satellite technology to monitor rainfall and trigger automatic claims payment in the event of a drought.

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29 We will discuss startups that have targeted these groups in greater detail in the following sections.
31 CFIS analysis of data available at http://worldmapofmicroinsurance.org/#view/global/all/total-microinsurance-coverage-ratio. Note: Global microinsurance coverage exceeded both of these figures in their respective years. Data were limited to totals from only these 60 countries because of data limitations.
32 Inclusive Insurance: Closing the Protection Gap for Emerging Customers, Center for Financial Inclusion, January 2018. This study also reports large growth rates for microinsurance in a subset of emerging markets.
34 Lumkani: The little blue box that can save lives in slums, CNN, April 2017.
Domestically, insurance innovation for the underserved has not kept pace with the broader inclusive insurance movement, even at a time when the ecosystem faces massive technological shifts. As the industry evolves around insurtech, industry players will need to focus on how their decisions affect vulnerable and struggling consumers.

**1 Expanded Distribution Channels**

With the insurance industry’s traditional reliance on the agency model for distribution, the rise of digital distribution channels offers low-hanging fruit for industry innovation. Consequently, a plurality of insurtechs focus on insurance distribution. This focus manifests in two related phenomena: the proliferation of insurance aggregators (online insurance marketplaces) and the rise of digital distribution.

**Insurance Aggregators**

Of the trends discussed in this report, the growth of online insurance marketplaces is likely the most mature. Three-quarters of insurtechs in the distribution arena concentrate on helping shoppers compare different company offerings or simplifying the purchasing process. Non-traditional companies like Overstock and Walmart offer their own insurance comparison services. Big Tech has also made plays in the distribution space: Google’s failed attempt at a comparison site prompted speculation around market saturation, while Amazon’s investment patterns have elicited conjecture about the online retailer’s possible entry.

**Digital Distribution**

Over the past few years, carriers have invested heavily in digital distribution. On the front end, AI-enabled chatbots handle increasingly complex online sales interactions. Automated underwriting reduces time and labor costs associated with customer acquisition, while improving risk assessment accuracy. Nearly three-quarters (72 percent) of industry incumbents have formed, or plan to form, digital distribution partnerships. These insurers are likely driven by their search for lower costs, the ability to meet consumers’ expectations for online and mobile experiences, and the opportunity to convert some of the 19 million “stuck shoppers” who fail to complete a purchase.

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36 McKinsey estimates that 37 percent of startups focus on distribution. Insurtech—the threat that inspires, McKinsey and Company, March 2017. An estimate from Accenture and CB Insights, which includes insurtechs in both distribution and marketing, places the figure at 56 percent. Taking the “I” out of insurance distribution, Accenture, 2016. Deloitte reports that “Insurance Customer Acquisition” is the area with the most startup activity, with 441 companies founded globally since 1998. Fintech by the numbers, Deloitte, 2017.


38 Walmart Joining Overstock.com in Insurance Shopping Game, Carrier Management, April 2014.


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25 Insurance brokerage is broken, TechCrunch, May 2016. One study from the UK suggests that “acquisition cost per consumer is twice as high on traditional media compared to price comparison sites.” An examination of the profitability of customers acquired through price comparison sites: Implications for the UK insurance industry, Journal of Direct, Data and Digital Marketing Practice, 2011.
Potential Benefits

There are clear upsides to digital distribution for LMI and financially struggling consumers. Our research found that LMI consumers are more attentive to cost at initial purchase, and are more likely to drop their coverage because of price. In addition, those we interviewed in focus groups highlighted the tradeoffs between concrete, pressing financial concerns and the more abstract, conditional benefits insurance might provide.

Cutting into the expense of the traditional agent model, which reached $300 billion for insurance carriers in 2014, allows carriers to lower premiums, helping LMI consumers to acquire and maintain policies. SafetyNet, one of the rare U.S. insurtechs to target the LMI population, keeps its costs down by selling directly to consumers through digital channels.

The benefits from comparison sites are more theoretical. By displaying several carriers’ insurance offerings side by side, these sites may increase both market competition and transparency. In concept, at least, such competition promotes sound innovation that should reduce costs and improve product quality. Comparison sites also may reduce the burden of shopping around for insurance, something that LMI consumers are less likely to do.

Potential Risks

These expanded distribution channels present several potential pitfalls, however. For example, there is no guarantee that search algorithms on comparison sites prioritize the most favorable policy for a given consumer. Further, CFSI’s research finds that all consumers – but especially those who are struggling financially – are price-sensitive when it comes to their insurance purchases. As a result, LMI consumers are more likely to sacrifice much-needed coverage in favor of a cheaper policy. In such a market environment, comparison sites may precipitate “race-to-the-bottom” competitive pressure that harms consumers by advancing policies with only the barest protection.

More broadly, digital distribution naturally favors consumers with strong digital footprints, an area in which the LMI population lags the rest of the country. As the insurance industry continues to shift toward digital distribution models, it will need to ensure that it does not leave these consumers behind because of their lack of access to more advanced technology. And even if digital distribution channels do reach the LMI population, the industry will need to create innovative new products that these consumers will value.

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**SAFETYNET:**
**Digital Insurance Distribution Lowers Premiums for the Underserved**

SafetyNet, an insurtech venture from CUNA Mutual, offers low-premium disability and unemployment insurance designed for LMI consumers with little or no emergency savings.

Customers pay anywhere from $5-$30 per month for coverage of up to $9,000. The startup keeps costs down by selling directly to consumers through digital channels.

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TRENDS, POTENTIAL CONSUMER BENEFITS, AND POTENTIAL CONSUMER HARM

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46 The High Price of Mandatory Auto Insurance for Lower Income Households, Consumer Federation of America, September 2014.

47 Coming to Terms with Aggregators, Accenture, 2016.

48 Digital divide persists even as lower-income Americans make gains in tech adoption, Pew Research, March 2017.
TRENDS, POTENTIAL CONSUMER BENEFITS, AND POTENTIAL CONSUMER HARM

2 Individualized Policies and Risk Assessment

Another area of opportunity comes from the ability to allow consumers to insure risks that they actually face, and to receive a premium based on those risks. Insurtechs and incumbents have so far taken advantage of this opportunity by allowing users to customize the items they insure and only pay for insurance when they need it. Insurers themselves now have considerable capacity to price risk according to individual factors.

Individualized Risk Assessment

Insurance industry players see more powerful risk analytics as an extremely important trend; 84 percent of global incumbents planned to invest in their data modeling capabilities in 2017. The use of vast amounts of consumer data and advanced predictive modeling in underwriting allows insurers to rate customers more as individuals than as part of a risk pool.

Underwriters can further power their models with data collected through internet-enabled devices, such as in-car sensors that detect safe driving habits. Several incumbents already use such connected devices to collect underwriting data.

Customized Coverage, On-Demand, and Usage-Based Insurance

In a data-rich environment, consumers are also more able to choose which items they wish to insure and when they truly need coverage. Several insurtechs aimed at insuring individual possessions and at providing on-demand insurance have launched in recent years. Usage-based insurance – insurance ratings based on how much or in what manner a consumer uses an insured possession – is particularly popular in the auto insurance realm, where embedded telematic devices have provided data on billions of vehicle miles traveled.

Potential Benefits

Individualized risk assessments for insurance can improve insurance access for LMI consumers. Many traditional variables in insurance underwriting are biased against LMI populations – for example, insurers have often used credit scores to determine their risk ratings – so the use of a broader set of non-traditional data may lead to better affordability for many LMI consumers. Telematic data on actual driving behavior can allow those who are good drivers to lower their premiums and reduces the risk of moral hazard on the part of insured individuals, provided that drivers receive feedback and are allowed to modify behavior to lower their costs.

Likewise, the ability to purchase insurance only when it is needed can lower costs and improve access. Usage-based auto insurer Hugo provides low-cost, on-demand insurance to reduce the prevalence of uninsured driving because of unaffordable auto insurance.

HUGO: Allowing Consumers to Pay for Insurance Only When They Need It

Hugo provides low-cost auto insurance in order to help motorists who face high insurance premiums drive legally. It keeps premiums low by insuring drivers only when those drivers activate the insurance to start driving.

50 Opportunities await: How InsurTech is reshaping insurance, PwC, June 2016.
51 10 real-life examples of IoT in insurance, Internet of Business, May 2016.
53 See, e.g., Trov, Slice, Hugo, Metromile, and many others.
54 Usage-Based Insurance and Vehicle Telematics, NAIC and CIPR, March 2015.
55 Credit-Based Insurance Scores, NAIC, July 2018.
Potential Risks

Unfortunately, the ability to tailor risk assessments to individual consumers is a double-edged sword. Insurers and insurtechs who can narrowly assess risk may reverse the traditional logic of adverse selection, providing low-cost insurance only to those who they perceive as low-risk, while offering only high-cost policies to individuals who they see as higher-risk, or barring these consumers altogether.

Certain insurance pricing strategies illustrate further peril with respect to the use of data that has little concrete connection to most hazards insured by traditional property and casualty carriers. The insurance industry practice of price optimization – adjusting premiums based on market behavior, such as a consumer’s propensity to shop around for insurance, rather than risk – is one example of such a problem.56

The use of consumer data can also allow insurers to penalize LMI consumers further based on factors like where they drive, work, and live.57 These factors, while predictive of risk in the aggregate, can bar otherwise low-risk drivers from the insurance market as a result of factors outside of their control. Insurers and insurtechs will need to audit any new risk factors rigorously to avoid biasing insurance markets further against LMI consumers and other systemically underserved groups.

These problems worsen if insurers’ risk pricing algorithms are not designed to provide transparent feedback to consumers on how they can change their behavior to reduce their rating.58 To address these concerns, the industry will need to establish best practices and principles for consumer data protection and the responsible use of predictive analytics in risk pricing. CFSI’s consumer data sharing principles may provide an initial foundation for further industry action.59

CFSI’s Principles for Consumer Data Use

Companies that use consumer data should ensure that such data is:

> Available: Consumers should be able to see the data companies are using.
> Reliable: Data should be timely, consistent, accurate, and complete.
> User-permissioned: Data should be collected with the explicit consent of the consumer.
> Secure: Providers should follow applicable law and industry best practices with respect to data privacy and security.
> Limited: Only the data required for the product functionality should be collected.

Read more about CFSI’s consumer data principles [here](#).
Having written policies and taken on consumer risk in exchange for premiums, insurers and insurtechs face powerful incentives to mitigate risks among the policyholders they cover. Several recent advances in connected devices and sensors have enabled insurers to collect new data on potential risks, prevent adverse events before they occur, and support consumers in their own risk mitigation efforts. These advances also come into play after adverse events happen, allowing insurers to respond faster to mitigate damage and loss.

**Connected Devices**

Low-cost internet-enabled devices and improved analytics are creating a new model for insurance, in which instead of reacting to adverse events, insurers seek to prevent them from occurring in the first place. A connected plumbing system might check for leaks and transmit data to prevent flooding (and the associated extensive property damage payouts). Data systems could also monitor for a broad range of risk factors to provide early diagnoses for mechanical or structural failures. Insurers have partnered with providers of connected home devices, providing the devices for free or at a steeply subsidized rate to reduce their overall risk.

Distributed networks (either of sensors or of people) also allow insurers to monitor for disasters, deploy resources when they occur, and quickly verify whether claims are warranted. Machine learning-based anti-fraud algorithms handle the verification and payment of these claims automatically.

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**GUARDHAT:**
**Connected Safety Gear to Protect Workers on the Job**

GuardHat makes smart safety gear for workers who use heavy machinery. Their connected hardhats aim to reduce workplace accidents by monitoring workers’ vital signs, tracking moving objects on a worksite, and identifying hazardous environments like gas leaks.

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**FLO:**
**A Smart Device to Keep Homes Dry**

Flo offers homeowners a device to monitor their homes’ plumbing for leaks. This device allows the homeowner to remotely control water coming into their home, and to prevent water damage from occurring when pipes crack or break.
Behavioral Nudges

Connected devices enable insurers and insurtechs to better design and manage the choice architecture around risky behavior. For example, Beam Dental, an insurance provider that distributes its product through the employer channel, aims to promote good dental hygiene in several ways. Beam Dental reduces hassle factors by delivering dental products; supplies a smart toothbrush that monitors brushing behavior; and incentivizes performance by rewarding employee groups who improve their dental habits with premium reductions.

Potential Benefits

The move from a reactive mindset to a prevention paradigm has great potential to align insurer incentives with consumer interests. Connected devices subsidized by insurance companies can help LMI consumers automate maintenance tasks that may go neglected, or prevent the costly accidents that can lead to financial calamity for consumers with little or no emergency savings. For example, insurers pay $9 billion per year in claims for water damage alone, preventing water damage in the first place not only prevents the insurer from paying a claim, but also prevents the consumer from paying any out-of-pocket costs.

The potential of connected devices to improve loss mitigation may also have a strong positive impact on the underserved. Ample evidence suggests that LMI individuals disproportionately bear the impact of severe weather events and other disasters. Low-income neighborhoods were more likely to be affected by Hurricane Harvey, for example. Only 17 percent of Harvey-damaged households had flood insurance – coverage that wealthier consumers are generally more likely to hold.

Improved loss mitigation through distributed sensor technology can allow insurers to extend their coverage into riskier geographies, with the knowledge that they can mitigate any losses that arise.

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65 Flo’s $500 cost for detecting leaky water pipes could save you from bigger plumber bills, VentureBeat, February 2018.
66 Hurricanes hit the poor the hardest, Brookings Institution, September 2017.
Potential Risks

The risks associated with this trend are similar to those of advanced analytics for policy underwriting. With the wealth of behavioral data involved, insurers may choose to use the information at hand to raise premiums, rather than to seek risk reduction strategies. Providers will need to ensure that their incentive structures are designed to help consumers reduce their own exposure – and by extension, the exposure of the insurer – rather than penalize consumers for behaving in risky ways, per se.

Further, LMI consumers in our study expressed reluctance and suspicion around allowing insurtechs and insurers to monitor their activities and influence their behavior using connected devices. For these consumers, any use of such devices would need to come with the promise of sizeable cost savings.

Social Security Disability Insurance: A Case Study in the Need for Improved Claims Management for the Underserved

➢ The government has attempted to fill some of the gaps in insurance markets with programs like flood, disability, and unemployment insurance. Individuals often face severe barriers when they attempt to access these programs, however. In 2017, Social Security Administration processing centers took 110 days to adjudicate the average Social Security Disability Insurance (SSDI) claim, while disability screening may weed out many truly eligible applicants.\(^67\)

➢ A battery of research shows that these barriers have a disproportionate effect on the most disadvantaged consumers.\(^68\) As insurers and insurtechs think about how to serve these individuals best, they should seek to remove as many barriers as possible from their claims management processes.

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Conclusion

As the extent of insurtech investment shows, new technologies like machine learning and internet of things offer tantalizing prospects to venture capitalists, startup founders, and insurance incumbents alike. When viewed through the consumer-focused lens of greater financial resilience, however, the insurtech picture becomes much more complex – filled with ample opportunity, but also with significant hazards. Digital distribution can reduce acquisition costs, but favors those with strong digital footprints. AI and machine learning can help automate claims payments, but can also subject consumers to opaque pricing. And connected devices can help prevent catastrophe, but can also pose privacy and security concerns.

Avenues for improvement almost certainly exist beyond the trends described in this report, and each new innovation will have its benefits and drawbacks. The richest potential, however, lies in new products and services that support financial health for those who are struggling the most, minimizing the risk of abuse while aligning insurer incentives with customer benefit. The best insurtechs will succeed in all of these areas.