Slicing Up the Gecko

How tech start-ups can disrupt a $5 trillion industry

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Why insurance matters

The insurance industry is ossified, tech-averse, disliked by consumers, slow, aging, and almost entirely untouched by the IT revolution. That's going to change, thanks to a new generation of financial technology start-ups that are remaking the way Americans think about, shop for, purchase, and use insurance.

Since Core Innovation Capital was founded four years ago, we've invested in start-ups such as *Oportun* (formerly Progreso Financiero), *BankingUp*, and *Vouch* that offer financial products and services that previously were provided by banks and low-quality "alternative financial services" providers. These new entrants, while still small relative to traditional banks, have carved out a path to fundamentally change the nature of banking.

The same dynamics will change the insurance industry in the coming years. The entire "stack" of insurance companies is shifting – including consumer-facing distribution channels, insurance carriers underwriting risk, and even reinsurers and capital markets devising new ways to transfer risk. Brick-and-mortar sales agents, static underwriting models based on actuarial tables, and time-consuming, in-person "claims adjustment" are all functions that can – and soon will – be performed by automated software processes.

We're bullish on insurance in the macro. As growth slows across developed economies, households are increasingly interested in downside protection – maintaining the gains in living standards won over the past centuries. More than a third of American households struggle with volatile incomes. Smarter insurance products enabled by technology can provide peace of mind, especially for households that have only the thinnest of safety nets.

Here at Core, we're excited to have made our first investment in the insurance industry: *CoverHound*, an "Expedia for car insurance" that has enabled hundreds of thousands of Americans to shop for better insurance policies – and is growing quickly to serve millions more. CoverHound is in the vanguard of new technology companies that are unlocking significant value in savings, convenience, and improved insurance coverage for consumers and small businesses.

This whitepaper is intended to encourage more great entrepreneurs to get into insurance – which, like banking, seems opaque and formidable from the outside, but presents enormous opportunities for those daring, creative, and persistent enough to break in.

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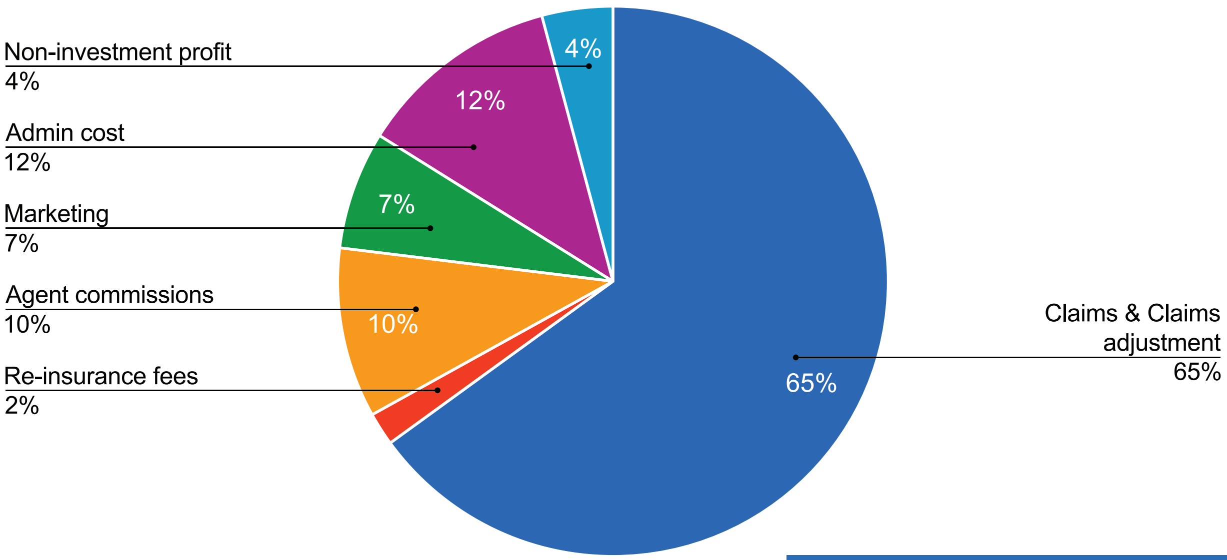
The price of insurance is too damn high

Today, risk transfer is one of the most expensive financial services: insurers spend $0.35-0.40 of each premium dollar on administrative costs, distribution, marketing, and reinsurance. Only $0.60-65 of every dollar, on average, is paid out in claims: that's called the "loss ratio." Insurance companies also generate income by investing premium dollars, called the "float."

How premium dollars are spent



Core analysis of Allstate & Progressive 10-K reports

In a perfectly efficient mutual insurance scheme, with zero transaction costs, 100% of every dollar would be paid out in claims. The cost structure of insurance companies is bloated by expensive and inefficient distribution, marketing, and administrative costs, including claims processing.

Why would insurance change now? Breakthroughs in technology — an explosion of sensors, consumers accustomed to shopping online, software automation, APIs, etc. - enable enormous cost savings. But insurance companies are slow-moving giants, and change from within won't come quickly.

What a $5 trillion industry looks like

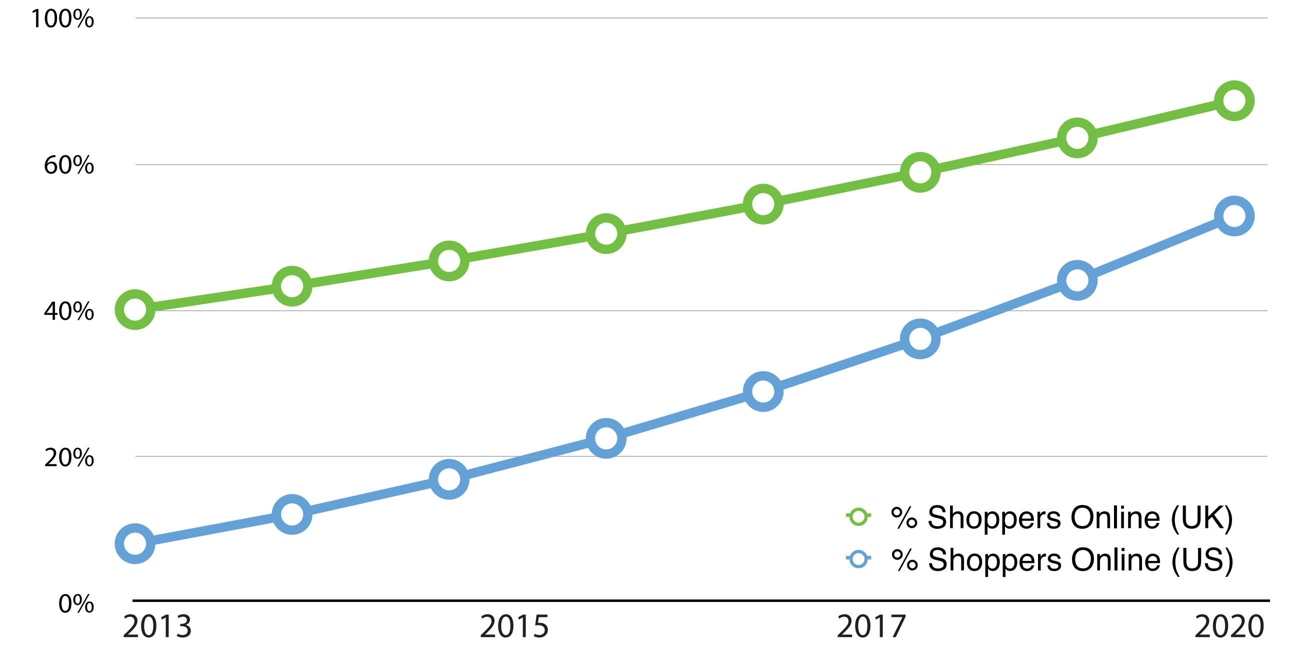
USA	Property & Casualty	Life	Health	Total
Products	Auto, homeowner's commercial	Term, whole, universal, annuities	Transformed by ACA	-
Annual Premiums	$252B	$616B	$171B	$1,039B
Balance Sheet	$1.4T	$3.9T	(Included in Life)	$5.3T

US Treasury

The end of the traditional agent

Consumer insurance purchasing patterns are beginning a dramatic and irreversible change from offline sales agents to online comparison shopping websites. We predict that by 2020, two-thirds of Americans who shop for car insurance will do so online — a six-fold increase from the 11% who do so today. In the UK, 70% of consumers already shop for insurance online.

Online Shopping for Car Insurance



Core Innovation Capital Analysis

Four drivers behind online shopping:

(1) Consumers' bottom line: Comparison shopping saves consumers money — for car insurance, an average of $359/year.

(2) Front-end tech: Improvements in UI/UX create a better online purchasing experience.

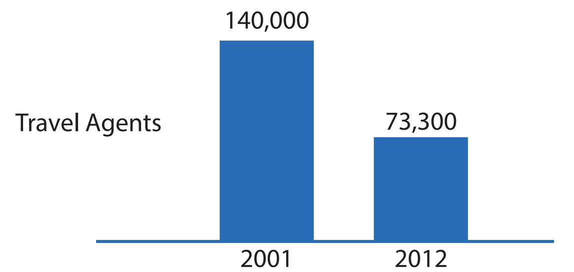
(3) Back-end tech: Carriers are building the digital integration tools necessary to bind policies online and exposing these through APIs.

(4) Customer habits: E-commerce is the "new norm" for financial services. Using the internet to purchase financial products is familiar to consumers through online banking and, with Healthcare.gov, online health insurance exchanges.

Insurance agents

Independent insurance agencies in the US (incl life & health)	37,500
Total spent on insurance commissions & fees by consumers	$25B+

Travel agents



Bureau of Labor Statistics

Technology enables new products

Real-time data from an explosion of sensors enables parametric insurance products, like usage-based car insurance. New industries, like ridesharing and home rentals, need new insurance products that are pay-per-use, not pay-per-year. And the flood of new data can empower insurers to mitigate risk for their policyholders — resulting in fewer claims and happier insureds.

Parametric products

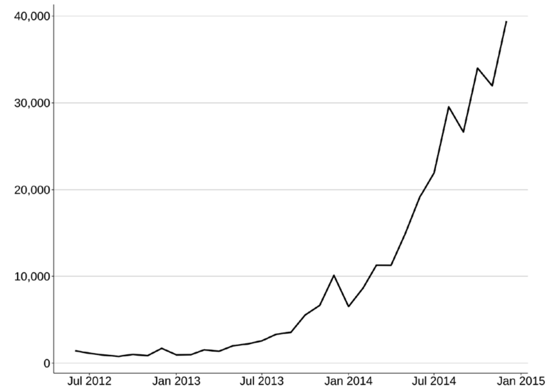
If you drive fewer than 12,000 miles per year, a typical car insurance policy is probably overcharging you. And if you're a great driver with a low credit score, you're likely paying a price that doesn't accurately represent your risk.

Parametric products, like MetroMile's pay-by-the-mile insurance policy, offer a better deal for these kinds of customers - allowing for better segmentation of drivers by their actual risk on the road. In car insurance, the telematics revolution is just beginning.

Sharing economy

The rise of Airbnb, Uber, and Lyft has prompted a re-thinking of traditional insurance policies. Homeowner's insurance isn't intended for commercial use, like running a part-time bed & breakfast. The typical personal auto policy doesn't permit use of the vehicle for commercial purposes. That's a lot of homeowners and drivers who aren't following the terms of their policy (see chart, right). Traditional insurers and new providers are rushing to fill these gaps and ensure adequate coverage for policyholders.

New Uber drivers per month



Uber

Risk reduction through adoption of smart devices

Cause of claims	Connected devices available	Prevention potential
Home:	Connected meters	~20-30%
Water Leakage	Active leakage detection devices	~70%
Fire	Smart smoke detector	~70%
Theft	Advanced alarm systems	~10-80%
Motor:		
Poor Driving	Safer driving & fraud detection through	~5%
False Claims	Telematics	~10-20%

Morgan Stanley / BCG

Risk mitigation

Insurance companies only lose money when policyholders have a bad day. Why not work to avoid accidents and mitigate the impact of disasters before they happen? Insurers could use reams of data and A/B testing of interventions to actively reduce risk in their portfolios. Best of all, no regulations constrain the ability of insurers to slice and risk for existing policyholders. Imagine a life insurer analyzes which of its policyholders are most likely to die - and finding ways to extend their lives.

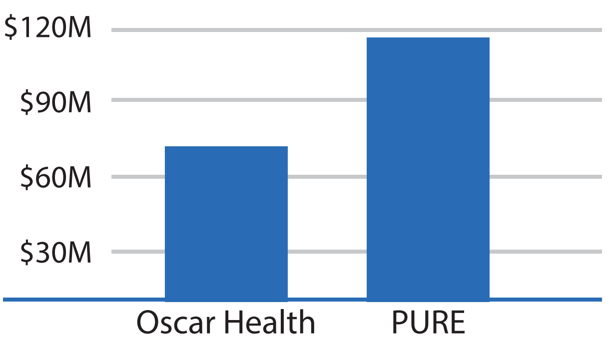
Historically, insurers have only half-heartedly made attempts at mitigation – for example, Allstate's "Don't text and drive" ad campaign. Insurers will need to be smarter and more proactive about using big data and real-time loss results to reach the right customers with the right interventions. For example: Wally for flood avoidance, giving flood sensors to homeowners that have the highest risk of broken pipes or other factors for flooding.

Technology creates new structures for sharing risk

In 1922, 25 Army officers who were denied insurance by existing carriers banded together to form their own collective insurance scheme, in which they mutually insured one another's losses. That reciprocal insurance company is now called USAA, with more than 10 million policyholders. Today, would it be possible to gather together 25 people and build an insurance company from the ground up?

A de novo insurer requires an extraordinary amount of capital. What's changed since the creation of USAA, Erie Insurance, and other prominent reciprocal insurance companies is the regulatory environment. Today, reciprocals must adhere to the same capital requirements that a normal stock insurance company would have - requirements that continue to grow as the company scales. Despite these high start-up costs, several new companies have tried to create a workaround.

Start-Up Capital of Recent De Novo Insurers



Pooling deductibles

Friendsurance (Germany), Guevara (UK), and InsureMyFriend (UK) bring policyholders together in risk groups to effectively pool their deductibles. For example, a group of Germans would take out insurance on their mobile phones with the highest deductible possible, reducing premium costs and insuring one another against deductible payments.

Tried & true: $70 million out of the gate

Oscar, a de novo health insurance company in New York, raised $70 million in seed funding before launching — much of it to satisfy minimum requirements set by regulators.

A new US reciprocal

PURE, a P&C insurer catering to wealthy homeowners, is structured as a reciprocal insurance arrangement, in which members' premiums are pooled together. PURE has financed its statutory surplus (capital) requirements with contributions from its members and sizable private equity investment.

The rise of the hedge fund

Hedge funds such as Greenlight, Third Point, and Two Sigma acquired and created Bermuda-based reinsurance companies a decade ago. Now they're buying primary insurers in the U.S.

Hedge funds and investment firms make excellent insurers: they are incentivized to cut prices, grow market share, and retain premium dollars. Look at Berkshire Hathaway: the value of a premium dollar to a top-notch investor allows Geico to price policies aggressively and push for greater market share. The same dynamic will radically shake up insurance companies as they face fierce competition from new, hedge-fund-backed entrants.

Disruption from top to bottom

From "fintech" to "financial services": Technological change in the industry has so far come from "fintech" companies — vendors such as Verisk, Vertafore, and LexisNexis selling into incumbent insurers. A transition is underway: start-ups in insurance are capturing more value by building their own technology from the ground up, owning the customer, and providing users with an experience that's an order of magnitude better than incumbents.

How the insurance stack is changing

Function	Past	Near future
Distribution	In-person agents & call centers, through Paper, phone, and, recently, basic online forms	Online, using Interactive, quick, photo-based survey on mobile to buy insurance through comparision-shopping marketplaces
Products	Big, dumb items (car, jewelry, house) High deductibles	Small, connected items Low deductibles Per-use policies (e.g., AirBnB)
Underwriting	Limited data Regression analysis	Big data; machine-learning analysis; processing, billing, & fraud detection
Policy administration (billing, claims)	Manual claims processing	Automatic, instantaneous claims processing, billing, & fraud detection
Distribution of reinsurance	A small handful of reinsurance brokers	Marketplace
Reinsurance	Few, large reinsurers	Third-party capital (hedge funds, pensions) investing in insurance-linked securities (ILS)
Corporate structure	Stock companies	Back to mutuals?

What's the hold-up? State insurance commissioners.

U.S. insurance regulation is an enormous impediment to new entrants. Insurance should be regulated like nearly every other financial product: with coherent national rules created by a federal insurance regulator. Fifty different sets of rules — and 50 different regulators requiring frequent filings — hurts innovation, unfairly protects incumbents, and imposes onerous costs on start-ups.

In many states, insurers can't set prices without state government approval. Insurers can only use certain variables to underwrite personal lines, and even the weighting of those factors is regulated. It's very difficult for insurers to even see the prices of their competitors, which are only published periodically. Some states require pre-approval of new prices, limiting the ability of insurers to dynamically change rates. Worse, group discounts aren't permitted, and in many states, brokers and agents can't rebate any of their fees to consumers. All this can and should change, creating a level playing field that will dramatically save costs for consumers.

Start-ups are chopping up the Gecko

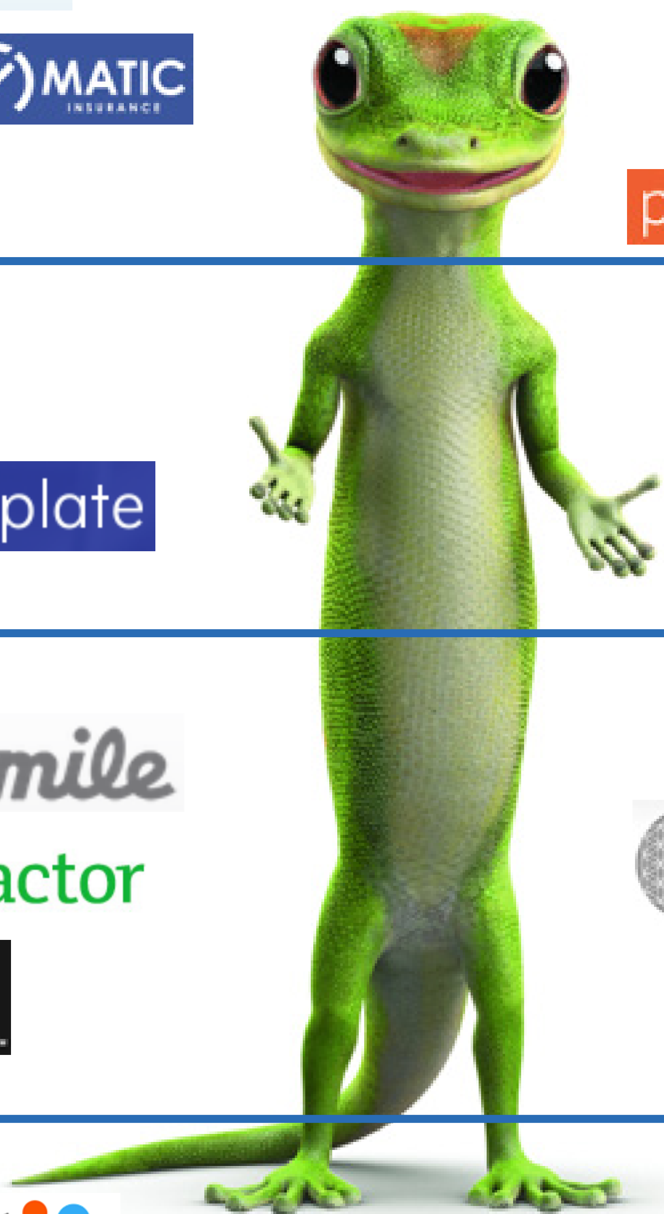
We're excited to see a growing number of start-ups enter the insurance industry.
Here are a few:

Property & Casualty **Life, Annuity & Health**

Distribution

CoverHound
The Zebra
Goji
MATIC INSURANCE
Bungalow

Abaris
FOUNDERSHIELD
policygenius



Administration

QuanTemplate

DaisyBill
oscar

Underwriting

metromile
drivefactor
GUILD
IQ

Vitae Analytics

Structure

GUEVARA
Insure my Friend
2σ
friendsurance
GREENLIGHT RE
THIRD POINT

At Core we hope that this paper might inspire more great entrepreneurs to build the next generation of insurance companies. If you're working on a start-up that offers a more efficient, equitable, and convenient future for financial services, please reach out to us.

Thanks to Sam Belden, David Bergendahl, Steven Kauderer, and Jason Wootton for reading drafts of this white paper.

CORE INNOVATION CAPITAL

About Core

Core Innovation Capital is a leading financial services sector expert venture capital fund investing in companies that empower everyday Americans. Core leverages its deep expertise in financial services, technology and regulation to help entrepreneurs build disruptive, high-growth businesses. Core portfolio companies save 20 million customers more than six billion dollars every year. Investments include Oportun (formerly Progreso Financiero), Ripple Labs, Vouch, CoverHound and TIO Networks. Follow Core at @CoreEMC and online at www.corevc.com.