Agenda

- Introduction
- Key Terminology
- Who is "InsurTech" and Why?
- Hurdles to Success
- The Old Guard
- Possible New Frontiers
- Don't Believe the Hype?
- What Does the Future Hold?

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The Land Rush is On…

- According to research firm CB Insights, investors poured \$1.7B into insurance technology (InsurTech) start-ups globally in 2016 and \$985M through 2Q 2017.
- The number of InsurTech funding deals has risen by more than 500% since 2011 to over 170 deals in 2016 and over 100 deals through 2Q 2017.
- While Non-Life insurance innovators have historically received the majority of new funding, recent focus has been on large Life and Health insurance deals.
- The majority of InsurTech funding (over 65%) has been focused in the U.S. but in recent quarters more funding to international deals.

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Terminology to Get Started

FinTech vs. InsurTech

- FinTech = Finance + Technology: Evolving intersection of financial services and technology.
- InsurTech (aka InsTech):
  - Off shoot of FinTech specifically addressing insurance related services often misused to narrowly describe only startups.
  - General approach within insurance space of entities with:
    - Faster/smarter technology – no anchor to legacy systems;
    - Culture of innovation and creativity;
    - Dedication to improving customer experiences; and
    - Cool one word names.

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Terminology to Get Started

Disruptive Innovation

- Likely only term misused more often than InsurTech…
- The theory of "disruptive innovation" was introduced in 1995 in the Harvard Business Review and, according to its authors, may now be a victim of its own success. It is often used too broadly to discuss innovation and any situation in which an industry is shaken up.
- Classic definition of "Disruption" – "A process where a smaller company with fewer resources is able to successfully challenge established incumbent businesses."
- Is Uber "Disruptive Innovation"? No! According to the theory:
  - Disruptive innovations originate in low-end or new market footholds; and
  - Disruptive innovations don't catch on with mainstream customers until quality catches up to their standards.

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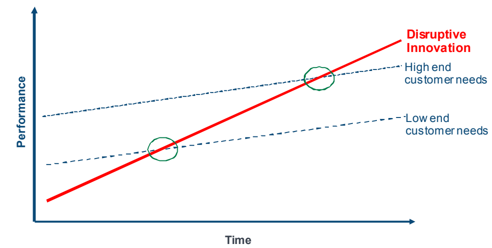
Disruptive Innovation



C Christensen, *Innovator's Dilemma*

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Why Now?

- Technological advances and insurance seen as a "highly antiquated, regulated, and entrenched industry, which makes it both appealing and problematic for start-ups" according to the digital news outlet Quartz.
- In summary – a perfect alignment of:
  - Technology
  - Talent
  - Treasure
  - Tempting Target

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What are "InsurTech" Companies Doing?

- Most InsurTech start-ups focus on non-risk bearing aspects of insurance:
  - Front End Policy Services
  - Back End Claims Services
  - Customer Experience
  - Business Intelligence
    - New sources of relevant data
    - Unique tools to analyze data
    - Using data to mitigate risks

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Classifying Technology

- Enabling Technology – Improves efficiency or transparency, enables cost savings in claims and acquisition
- Transformative Technology – Focuses more on the customer experience and behavior
- Disruptive Technology – Focus on P2P market, on-demand models, new product lines

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Examples of InsurTech Entities

- Tyche – Uses analytics to help clients estimate value of legal claims
- Insurify – Virtual insurance agent – consumers text a photo of their license plate to get insurance quotes
- Trov – Sells item-by-item insurance for possessions for duration of insureds choosing, via an app. Launches in US in 2017 with Munich Re as U/W.
- Mnubo – Provides analytics that generate insights from sensor-based data and external data sources
- Snapsheet – Developing virtual automobile claims technology and services

Examples of InsurTech Entities

- Carpe Data – Next generation data solutions provides data prefill, data validation and commercial risk scores based on social media data.
- CoverHound – Aggregator which allows customers to compare prices from many different carriers
- Hippo Insurance – Provides on-line Homeowners insurance quotes in 60 seconds based on 3 simple questions. Partnering with TOPA and Swiss Re.
- Haven Life – MassMutual direct sales to customers
- Google Compare (RIP)…

Some Exceptions to the "No Risk" Rule…

- Lemonade
  - Making "lemonade" out of lemons (the current insurance experience…)
  - New "Peer-to-Peer" insurer based in New York powered by artificial intelligence and behavioral economics
  - Invites users to form small groups of policyholders who pay premiums into a pool to pay claims, with members' designee (charity, school, etc.) receiving a share of profits (if they exist) at the end of the policy period.
  - First policies sold in September 2016 with initial focus on NY homeowners and rental insurance policies. Now also available in California, Illinois and New Jersey. Less than $0.5M in earned premium in first half of 2017.
  - Initial 2017 "giveback" of $53k provided more than 10% of Lemonade's revenue to 14 different causes chosen by the Lemonade community
- Metromile
  - Pay-per-mile auto insurer – flat monthly fee (typically $35) plus $0.05 per mile (fees vary based on location, years driving and other factors)
  - New automated claims service allow customers to file a claim entirely from their mobile phone or on-line dashboard with some claims resolved in under an hour
  - Established Metromile Insurance Co. in September 2016, licensed nationwide but currently only underwriting in seven states
  - Led by former Progressive executives with funding from Mark Cuban and others

What Hurdles do "InsurTech" Companies Face?

- Key hindrance to InsurTech progress as risk bearing entities – regulation and capital requirements
  - Regulation
    - Sometimes confusing system of regulation on statewide basis with varying rules and regulations
  - Capital Requirements
    - Regulators require lots of capital when entities take on risk
    - Tech investors are usually very thrifty with their money

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How are Established Legacy Insurers Reacting?

- 90% of insurers fear they will lose business to a tech start-up according to a PwC survey
- Main advantage of established insurers has always been many years of detailed risk data. As the amount of alternative data explodes, is this advantage sustainable?
- Shifting view of InsurTech entities from competitors to partners:
  - Many insurers teaming up with start-ups or other players outside the sector through incubators, accelerators, and innovation labs to speed up digital innovation
  - Many are forming venture capital arms to invest in start-ups
    - USAA Ventures, Munich Re/HSB Ventures, AXA Strategic Investors, Liberty Mutual Strategic Ventures, XL Innovate
- Some insurers seem not to be doing anything at all (Prudent or the next Blockbuster Video?)

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New Frontiers

- The "Outcome Economy"
  - Insurers sell solutions and results rather than traditional products and services
  - Desired outcomes are to reduce risk or avoid it altogether
  - Transforming insurance products into advisory or service solutions that add value to policyholders
  - Lower losses – resulting in lower premiums as well

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New Frontiers

- Look to Micro Insurance?
  - Micro Insurance – Risk transfer device characterized by low premiums and low coverage limits, designed for low-income populations not served by typical social insurance schemes
  - Challenges of Micro Insurance:
    - Lack of information on consumers and inadequate access
    - Different and new consumer needs
    - Consumers inexperienced with formal financial services
    - Constrained business models
  - Solutions in progress:
    - Use of social network interactions to assess consumer profiles and behaviors (Africa)
    - Use of on-line consumer retail purchases to inform risk profile and premium pricing (China)
    - Use of indexbased or parametric insurance for claims (Senegal)
    - Use of P2P platforms to adapt offerings to specific needs of groups (China)
    - Use of icons to guide inexperienced users through the insurance process (South Africa)

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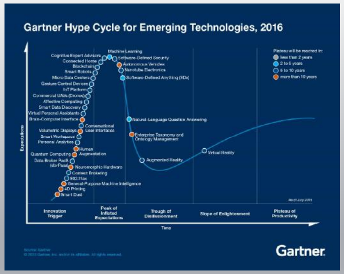
Don't Believe the Hype?

- "You should never doubt what nobody is sure about" – W. Wonka



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Don't Believe the Hype?

- Millennials
  - In 2015, Millennials (those born between 1981-1997) overtook Baby Boomers and are the largest current "generation"
  - No interest in homeownership and driving? The myth of the Millennial as cultural rebel..
  - What do they want?
    - Ease of transactions
    - Data security
- Home Monitoring Systems
  - Controlling heat, appliances, lighting, etc.
  - Sounds great – but these systems:
    - Could create all new, expensive claims for insurers – similar to those for auto insurers of "smart" cars
    - Could magnify cybersecurity and privacy threats in the home
  - Growth in demand flattened in 2016 - the technology is just not there yet

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What Does the Future Hold for InsurTech?

- More deals on the way as the financing pipeline is strong with capacity in existing funds and new sources continuing to emerge ($190M Aquiline Technology Growth Fund, $100M Nationwide "emerging business" division)
- New waves of ventures will bring "fresher" technology but may start to overlap heavily in particular areas of insurance value chain. Increasing competition could lead to consolidation through mergers/acquisitions.
- Partnerships/relationships are the currency of the day as start-ups need to grow their "eco-systems" for credibility and to prove their concept. The network effect…

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What Does the Future Hold for InsurTech?

- When will we know what "success" looks like?
  - 3 years? Estimated lag between technology innovations and an industry's ability to properly digest it and put that technology to use in a meaningful way
  - 4-5 years? Typical time frame expected for a "liquidity event" - such as a strategic sale or IPO by venture capital investors
  - 10 years? S&P Global Ratings estimate of time frame for when material effects of InsurTech may start to emerge

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What Does the Future Hold for InsurTech?

- Short-term – Fear of disruption may be overblown due to small size, limited data sets and limited financial resources of start-ups
- Long-term - We will likely be left with an overall better, more efficient experience for risk management – hopefully…

"Most people overestimate what they can do in one year and underestimate what they can do in ten years"

- Bill Gates

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Questions?

Agenda

- Introduction
- Overview of the Sharing Economy
- Sharing Economy Sectors
- Exposures
- Challenges
- Responses
- Appeal to Actuaries
- Questions

Sharing Economy - Definition

- The Sharing Economy is an economic model that uses a technology enabled platform or marketplace to match supply and demand for a product or service
- Matching of an underutilized asset (e.g., time, vehicles, things) with someone seeking to use that asset
  - Ride Sharing
  - Car Sharing
  - Space Sharing
  - On-Demand Service

A Sharing Economy is an economic model in which individuals are able to borrow or rent assets owned by someone else. The Sharing Economy model is most likely to be used when the price of a particular asset is high and the asset is not fully utilized all the time.[(1)]

A Sharing Economy company typically operates a platform that facilitates the sharing of assets or services among unrelated individuals.[(2)]

(1) http://www.investopedia.com/terms/s/sharing-economy.asp
(2) Lyft presentation, Aug 24, 2016

Sharing Economy - Trends

- **New companies are revolutionizing business**
  - On-demand products and services
  - Focus on peer-to-peer collaboration
  - Shift from ownership to access and sharing
- **Sharing Economy is rapidly evolving**
  - $15B in 2014 revenues → $335B by 2025
  - Over $21B in VC funding supports these companies
- **Benefits are real and consumers are catching on**
  - 78% of US adults agree that the Sharing Economy builds strong communities and makes life more affordable, convenient and efficient
- **Gen X and Y consumers are driving the growth of the Sharing Economy**

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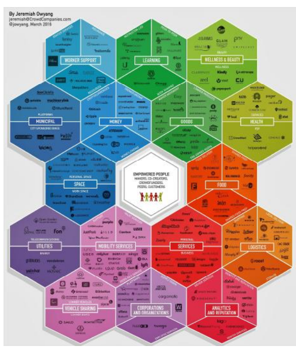
Sharing Economy - Constituents

- There are 16 subsectors of the Sharing Economy
- Examples:
  - Space – Airbnb, HomeAway, Peerspace, WeWork
  - Food – Feastly, Josephine
  - Logistics – Postmates, DoorDash, Instacart, Lugg
  - Goods – Rent the Runway
  - Services – UrbanSitter, Handy, TaskRabbit,
  - Mobility Services– Uber, Lyft
  - Vehicle Sharing – Getaround, Turo



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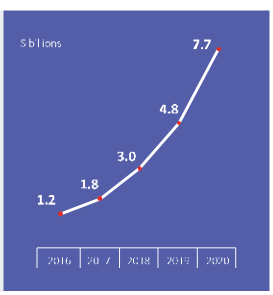
Sharing Economy – Commercial GWP

Estimate the addressable insurance market is between $1B and $2B today, growing to over $7.5B by 2020(1)



(1) Based on the PWC forecast of Sharing Economy global revenues, applying 2 methods to calculate range for market size - total cost of risk of $54 per $1000 revenue (RIMS 2015) and a price discovery process where companies expect to spend 10-15% of revenue on insurance; reasonable estimate given that $7.7B is only ~2.5% of the expected total commercial insurance market in 2020. Showing average of the 2 approaches.

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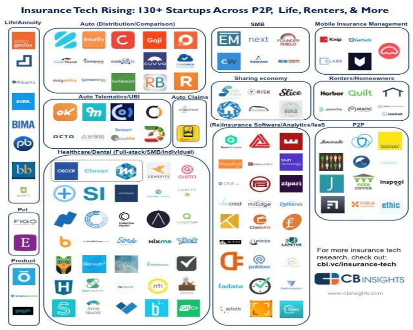
InsurTech Landscape "Today":



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Exposures

"Traditional" Relationship

- Platform (Company)
- Provider (Employee)
- User (Consumer)

Sharing Economy Relationship

Platform

Provider ⟷ User

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Challenges (1/3)

Insurance Industry

- Traditional insurance underwriting is rigid and formulaic
- Underwriting manuals & rating schedules don't work for Sharing Economy risks
- Lack of exposure data, loss data, revenue projections, support for growth estimates
- No incumbent pricing, insurer information or renewal date
- Brokers and insurance companies strive for "efficiency" can stifle creativity
- Pull back from commercial auto insurance

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Challenges (2/3)

Insurance Companies

- Education at the insurance partner level as to why the Sharing Economy risks are good
- Communicating the basic principles of insurability
  - Quantify the risk
  - Measure and analyze the risk
  - Remove any moral hazard

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Challenges (3/3)

Insurance Buyers

- Educate the end buyer as to why customized products are better / necessary
- Push through the adoption process

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Industry Response

- Relatively limited number of markets offering solutions – though number is growing
- Often solutions differ fairly dramatically
- Sometimes traditional markets offer terms that would appear to undervalue the exposure
- Technology allowing for interesting underwriting/pricing approaches
- Technology influencing claims handling as well

Traditional Approach

- Off-the-shelf products
- Structured, rigid policies
- Flat-rated
- Focus on established industries
- Insure the year

Innovative Markets' Approach

- Tailored solutions
- Nimble, flexible policy options
- Variable-rated
- Focus on Sharing Economy Companies
- Insure the moment

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Draw for an Actuary

- New, Exciting, Growing Segment
- Short Term
  - No Data – surrogate/analogous pricing
  - Creative Solutions
  - Usage Based Pricing
  - Truly New Business, not Someone's Lost Renewal
- Longer Term
  - Enormous Amount of Data – particularly on exposure side
  - Data and Analytics Possibilities

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Y-Risk

- Questions?

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