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LEMONADE: “JUICY” FLAVOR INSURTECH

Here's our mission: transform insurance from a necessary evil into a social good. We've designed Lemonade to bring out the best in people, while giving society a push for the better.

—Lemonade¹

Jim Hageman, the chief claims officer of Lemonade, an insurance technology (insurtech) startup, received an email from a customer named Alan. Several days earlier, Alan had filed a claim² with Lemonade for a stolen laptop and had already received USD1,200 for his loss. The email was short but surprising. “Hey, my laptop turned up. How could I return the money?” Alan wrote. With almost three decades working experience in the property and casualty insurance industry, Hageman had never encountered a situation when a customer voluntarily returned claimed money to the insurance company.³

It turned out that Alan was the first but not the only customer who voluntarily returned the claimed money to Lemonade after finding their property later on. This scenario was, however, uncommon in the insurance industry, in which dishonesty and fraud were prevalent. The conventional wisdom held that customers' claims would reduce profits of insurance companies and deteriorate the so-called claim-to-premium ratio⁴ (also known as loss ratio), a key performance metric that insurance companies valued. This conflict of interest resulted in a lack of mutual trust and spawned fraudulent claims estimated by the FBI to be more than USD40bn per year.⁵

Lemonade aimed to reinvent insurance by eliminating the conflicts of interest between customers and insurance providers, striving to bring trust and transparency to the industry. The rising insurtech startup offered renters and homeowners insurance in 21 states in the United

¹ Lemonade, “Giveback,” company website, 2019, <https://www.lemonade.com/giveback>, accessed 10 September 2019.

² Coverage and compensation for a (personal) property that has sustained damage/ loss by one of the perils insured by the insurance provider.

³ D. Ariely, “Lemonade Proves Trust Pays off, Big Time,” Lemonade blog, 19 June 2017, <https://www.lemonade.com/blog/lemonade-proves-trust-pays-off-big-time/>, accessed 10 September 2019.

⁴ The ratio of paid-out claims to premiums. The higher the claims paid, the lower the ratio.

⁵ Federal Bureau of Investigation (FBI), <https://www.fbi.gov/stats-services/publications/insurance-fraud>, accessed 10 September 2019.

Dr. Yanfeng Zheng prepared this case for class discussion. This case is not intended to show effective or ineffective handling of decision or business processes. The authors might have disguised certain information to protect confidentiality. Cases are written in the past tense, this is not meant to imply that all practices, organizations, people, places or fact mentioned in the case no longer occur, exist or apply.

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States as of July 2019.⁶ Within three years, since its first product launch in late 2016, the company reached total annual sales of USD57.2mn in 2018, covering approximately 425,000 homes across the United States.⁷ It became one of the most popular choices among first-time insurance buyers in New York state.⁸ Behind Lemonade's explosive growth was its unique artificial intelligence (AI)-enabled, behavioral science-driven businessmodel.

Insurance Industry

The insurance industry was gigantic. The industry had an estimated global revenue of USD4.8trn in 2017.⁹ Insurance was essentially a risk-management financial product designed to protect against a possible loss. Common insurance products included life insurance, health insurance, auto insurance, and property and casualty insurance. In the traditional insurance model, insurance companies (insurers) collected premiums from insurance buyers (policyholders). When an insured incident occurred, a policyholder would file a claim with his or her insurer and receive compensation for the loss.¹⁰ Insurance companies often employed a large number of actuaries or professionals who carried out sophisticated mathematical and statistical analyses on event risk such as car accident or theft. The premium charged to policyholders in theory were able to cover the expected loss of the accident or loss from a probability perspective.

In this traditional model, the insurance companies' income consisted of two major sources: (1) net underwriting income (premiums collected minus claims paid), and (2) investment income (interest earned by investing policyholders' premiums).¹¹ The significant cost to insurance companies was the payment of insurers' claims. In addition, there were operating costs including actuary research, administrative work, and, more importantly, marketing. Given its cost and revenue structure, this model had inherent conflicts of interest. Insurance companies treated the prepaid premiums from policyholders as revenue that they could invest in pursuit of financial returns. Similarly, insurance companies treated policyholders' claims as expenses that directly reduced profits. In fact, the claim-to-premium ratio, also called loss ratio, was one of the key metrics adopted in evaluating the performance of an insurance company. The lower the ratio, the higher the profit margin, and the better for the company. Insurance companies thus had the incentive to decline insurance claims and placed customers on the opposite side of the transactions.

These conflicts of interest undermined mutual trust between customers and insurers, leading to severe market inefficiencies. On one side, insurers had to deal with fraudulent claims and lost billions of dollars each year due to customer dishonesty. Though it was impossible to determine the number exactly, the FBI estimated that the total cost of insurance fraud was more than USD40bn per year in the US, implying an average annual cost of USD400 per family. Many customers regarded insurance fraud as morally justifiable. In an online customer survey by the Insurance Research Council in 2013, 24% of respondents believed that it was acceptable to

⁶ L. Cook, "Lemonade Insurance Review: For When Life Hands You Lemons," 2019,

<https://www.doughroller.net/insurance/homeowners/lemonade-insurance-review/>, accessed 10 September 2019.

⁷ S. Wininger, "Signals from Space," Lemonade blog, 24 January 2019, <https://www.lemonade.com/blog/signals-from-space/>, accessed 10 September 2019.

⁸ D. Schreiber, "Two Years of Lemonade: A Super Transparency Chronicle," Lemonade blog, 20 September 2018, <https://www.lemonade.com/blog/two-years-transparency/>, accessed 10 September 2019.

⁹ S. Crawford, L. Russignan, and N. Kumar, "Global Insurance Trends Analysis 2018," Ernst & Young, June 2018, [https://www.ey.com/Publication/vwLUAssets/ey-global-insurance-trends-analysis-2018/\\$File/ey-global-insurance-trends-analysis-2018.pdf](https://www.ey.com/Publication/vwLUAssets/ey-global-insurance-trends-analysis-2018/$File/ey-global-insurance-trends-analysis-2018.pdf), accessed 10 September 2019.

¹⁰ J. Kagan, "Insurance," Investopedia, 2019, <https://www.investopedia.com/terms/i/insurance.asp> (accessed 10 September 2019).

¹¹ N. Aggarwal, "How Do Insurance Companies Make Profit," 2017, <https://blog.ipleaders.in/insurance-companies-profit/>, accessed 10 September 2019.

fraudulently “expand” their claims or exaggerate their losses.¹² A similar survey on car insurance fraud in Canada reported that 47% of customers thought fraud was tolerable.¹³ To fight against fraud, insurance companies had to commit considerable resources to fraud detection and turn down suspicious claims due to the lack of trust in their own customers.

On the other side, the cost of fraudulent claims was eventually passed to policyholders in the form of higher premiums. It was estimated that fraud cost around 10% to 20% of the total premiums paid.¹⁴ This surcharge due to insurance fraud was unfair to customers who did not commit fraud and therefore discouraged people from being honest, leading to a vicious cycle. In addition, the administration of fraud detection was usually cumbersome and time consuming. Time cost and heavy paperwork had a significant impact on customer experience as well as the industry image. As Daniel Schreiber, the cofounder and CEO of Lemonade, commented, the existing insurance model “[brought] out the worst in people,” and led to “an experience that [was] cumbersome, distrustful and unpleasant.”¹⁵

Another consequence caused by the lack of trust was the inclusion of “deductibles” in most insurance products. A deductible was the amount of money subtracted from a future claim. In other words, insurance companies only reimbursed the amount over the deductible limit when paying claims. Insurers introduced deductibles to avoid processing small claims because it was not economical to evaluate the risk of fraud in these cases. Deductibles were also an antifraud device because policyholders paid for part of the claims themselves. Though deductibles helped insurers save fraud-detection cost, they also reduced the coverage and undermined the “risk-hedging” nature of insurance.

Lemonade: A New Breed of Insurance

Inception

Daniel Schreiber received his law degree at King’s College in London in 1995. As an attorney for clients in the high-tech sector, he soon found that he was fascinated by modern technology. The passion for innovation drove him to start his own internet security company in 1997.¹⁶ After that, Schreiber became the vice president of marketing at Msystems in 2003, senior vice president at SanDisk in 2007, and president of Powermat in 2011. Schreiber’s copious experience in the high-tech sector made him an advocate for innovation before he cofounded and became the CEO of Lemonade.

The other cofounder of Lemonade, Shai Wininger, was also a veteran tech entrepreneur. After graduating from the Neri Bloomfield Academy of Design and Education in 1991, Wininger founded a series of technology startups. The most well-known one was Fiverr, the world’s largest marketplace for freelance services.¹⁷ Wininger had developed a keen interest in financial technology (fintech) while he was at Fiverr. Through a common friend, Wininger met Schreiber and learned about his idea of using innovation to transform the “outdated” insurance model.¹⁸

¹² B. Nguyen, L. Simkin, and A. I. Canhoto, eds., *The Dark Side of CRM: Customers, Relationships and Management* (London: Routledge, 2015).

¹³ J. Linsangan, “New ICBC Survey Shows That Customers Believe Society Simply Tolerates People Who Commit Insurance Fraud,” 2018, <https://www.icbc.com/about-icbc/newsroom/Pages/2018-May24.aspx>, accessed 10 September 2019.

¹⁴ Insurance Information Institute (III), <https://www.iii.org/article/background-on-insurance-fraud>, accessed 10 September 2019.

¹⁵ D. Gogel, “Interview with Daniel Schreiber, CEO and Co-Founder of Lemonade,” 2016, <https://medium.com/wharton-fintech/interview-with-daniel-schreiber-ceo-and-co-founder-of-lemonade-1a6aef384e2f>, accessed 10 September 2019.

¹⁶ Ibid.

¹⁷ For details, see Wininger’s LinkedIn: <https://il.linkedin.com/in/shaiwininger>, accessed 10 September 2019.

¹⁸ M. A. Eisenberg, “Why We Decided to Drink the Lemonade?,” 2015, <https://aleph.vc/why-we-decided-to-drink-the-lemonade-c78f42dfa341>, accessed 10 September 2019.

Wininger found that they shared the same vision, and the duo started a new venture journey called "Lemonade" in April 2015.

Despite their expertise in the technology sector, both cofounders possessed only limited knowledge of the insurance industry. As industry outsiders, they believed that the "[current] model of the insurance industry is fundamentally flawed."^{19,20} They decided to develop "a fundamentally different approach to the [insurance] business."²¹ Before delving into how the traditional insurance industry actually worked, Schreiber and Wininger locked themselves in a room and sketched on a white board, envisioning how insurance should work.²² They hoped to develop an insurance model to address the lack of trust in the traditional insurance industry; this was how Lemonade was born.

We don't believe that the existing infrastructure allows for the kind of innovation that we're hoping to bring to market. It really requires rebuilding the very basics [sic] that the building blocks, [and] the business models have to be different which means that to do what [we] want to do we don't believe you can just sprinkle technology on top. You've got to build it from the core up differently.

—Daniel Schreiber²³

Behavioral Science: The Juicy Flavor

The two cofounders chose to enter the segment where the fraud issue was the most severe—renters and homeowners (R&H) insurance. Renters insurance covered (1) personal property loss due to incidents such as fire, theft, and vandalism, (2) temporary living expenses when a policyholder was forced out of his or her rented property by those incidents, and (3) personal liability such as a friend getting hurt on their rental property. Homeowners insurance was similar except that it also covered damages to the actual property. Because R&H insurance had broad coverage and many self-reported incidents such as thefts, fraudulent claims were common in this segment. Schreiber and Wininger knew that if they could solve the fraud problem, Lemonade would be able to offer insurance products sustainably at a very competitive price.

The initial solution was a peer-to-peer (P2P) insurance model. The team realized that the fundamental cause for the conflicts of interest in traditional insurance was an implicit competition between policyholders and insurers over premiums. Therefore, the team proposed a P2P-based flat-fee model. In this model, policyholders were assigned to groups called "cohorts." Premiums from policyholders in the same cohort were pooled, and Lemonade charged a flat fee of 25% from the premium pool. When there were claims, payments were drawn from the cohort pool. By the end of each year, any leftover money in the pool was rebated to cohort members. If total claims exceeded the pool limit, Lemonade would cover the extra cost. This P2P model was based on an assumption that people treated the money in the premium pool as their own and behaved honestly.²⁴

¹⁹ S. Solomon "Replacing Agents with Bots, Startup Upends Home Insurance Industry," *Times of Israel*, 14 May 2018, <https://www.timesofisrael.com/replacing-agents-with-bots-israelis-startup-upends-home-insurance-industry/>, accessed 10 September 2019.

²⁰ D. Gogel, "Interview with Daniel Schreiber, CEO and Co-Founder of Lemonade."

²¹ Ibid.

²² Ibid.

²³ Ibid.

²⁴ National Association of Insurance Commissioners (NAIC), https://naic.org/meetings1704/cmte_c_sharing_econ_wg_2017_spring_nm_materials.pdf?1496770271460, accessed 10 September 2019.

When this initial model was presented to the New York Department of Financial Services (NYDFS), the regulator for insurance companies in New York state, NYDFS raised several legal concerns about the P2P model.²⁵ The major concern was about fairness. Each policyholder had his or her own idiosyncratic risk level. Pooling policyholders meant that policyholders with different risk levels would pay the same premium and get the same amount of rebate by the end of each period, which was unfair to low-risk policyholders.

The team then refined the model to accommodate that concern while keeping the idea of removing the conflicts of interest unchanged. This led to the current “giveback” model. The new model started with each policyholder choosing a favorite registered charity. Lemonade then grouped policyholders who chose the same charity into a cohort. The premiums were pooled together for each cohort. A 25% flat fee was charged on the premium pool as Lemonade’s operating income. For the remaining 75%, approximately half was used to purchase reinsurance,²⁶ and the other half formed a claim pool. When claims arrived, payments were first drawn from the claim pool. If the pool was used up by the end of each year, reinsurance companies would cover any extra claims. If the claim pool still had leftover money, the remainder would be donated to the designated charity. [See **Exhibit 2**.]²⁷

To strengthen this novel business model, the two cofounders invited Dan Ariely to join the team to help build the psychological foundation of the new business. Ariely was the James B. Duke Professor of Psychology and Behavioral Economics at Duke University.²⁸ He was an expert in honesty and fraud research and also the author of the *New York Times* bestseller *The Honest Truth about Dishonesty*.²⁹ He joined Lemonade as the chief behavioral officer to transform his research insights into real business practices.

Ariely, in his past research, had found that when deciding whether to be (dis)honest, people considered both monetary incentives and social norms.³⁰ Lemonade’s giveback model directly put dishonesty on the opposite side of charitable donations, fortifying the moral obstacles to fraud. In this model, committing fraud was no longer a morally acceptable practice against insurance companies, but a sinful activity toward a charity that customers themselves designated. Moreover, the flat-fee scheme eliminated the conflicts of interest between Lemonade and its policyholders. The giveback model therefore dealt with fraud with behavioral science and economic logic rather than sophisticated fraud-detection mechanisms.

The power of Lemonade’s model manifested in the “money returning” cases described at the beginning. Customers like Alan were willing to return the claimed money to Lemonade after they found their lost possessions. Five percent of Lemonade customers returned money this way. Given the low likelihood of lost things turning up, this percentage was impressive. Customers consciously and actively chose to be honest, and the new model brought about the

²⁵ Ibid.

²⁶ Reinsurance is insurance that is purchased by an insurance company. Reinsurance contract is negotiated case by case. Typical reinsurance would cover either a proportion of claims occurred (proportional reinsurance) or extra claims above a predefined amount in a period (nonproportional reinsurance).

²⁷ Petra, “Lemonade Reinvents the Insurance Industry with Machine Learning,” 2018, <https://rctom.hbs.org/submission/lemonade-reinvents-the-insurance-industry-with-machine-learning/>, accessed 10 September 2019.

²⁸ For details, see Ariely’s official website: <https://www.fuqua.duke.edu/faculty/dan-ariely>, accessed 10 September 2019.

²⁹ J. Maslin, “Sampling the Cheating Life, in Bite-Size Pieces,” *New York Times*, 29 June 2012, <https://www.nytimes.com/2012/06/29/books/the-honest-truth-about-dishonesty-by-dan-ariely.html?mtref=www.google.com&assetType=REGIWALL>, accessed 10 September 2019.

³⁰ N. Mazar, O. Amir, and D. Ariely, “The Dishonesty of Honest People: A Theory of Self-Concept Maintenance,” *Journal of Marketing Research* 45, no. 6 (2018): 633–644.

mutual trust it was intended to rebuild. As the chief claims officer, Hageman, said: “We expect you will be honest with us, just as you can expect us to be honest and transparent with you.”³¹

Lemonade formally launched its insurance products on 21 September 2016 in New York state after almost two years’ preparation and business model exploration. Forty-eight hours after its launch, Lemonade’s mobile app had been downloaded 1,956 times and 142 policies were sold.

Transparency

As a team of tech veterans and a behavioral scientist, Lemonade understood that a conflict-free insurance model was only the starting point in earning customers’ trust and rebuilding the image of insurance. It was far from enough to make customers love its products. The traditional insurance industry was known for its heavy paperwork, abstruse terms, and complicated administrative procedures. These issues directly increased the cost of insurance, let alone their contributions to customers’ bad impressions and distrust of the industry. Solving these issues was as important as inventing a new model for Lemonade.

Transparency could strengthen the customers’ trust in the new venture. Lemonade highlighted transparency along two dimensions. The first was transparency in insurance policies. Though all the terms and policies were explicitly written in the formal contract, customers could easily get lost in obscure sentences. In addition, most customers did not understand all insurance terms.³² Lemonade knew that simply showing the contract was not equal to transparency. Though a 40-page formalized contract was legally required, Lemonade explained its policy terms concisely in the form of Q&A with plain English and vivid examples. In addition, the team initiated a GitHub open-source project called Policy 2.0 in 2018, trying to make insurance simple. The project rewrote an insurance policy from scratch in plain language and made it read like a blog post. It invited everyone to contribute to making insurance easily understandable to ordinary people.³³ This project was still in progress and required further approval from regulators before this customer-friendly policy could be sold.

The second dimension of transparency that Lemonade brought to customers was in its operation. Targeting millennial customers, Lemonade inherited a tech culture from the founders’ experience in tech startups. Operational transparency was one of the key features in that culture. Though not legally obligated, Lemonade periodically disclosed its operating results through its blog—“Transparency Chronicles,” which even reported unfavorable performance metrics such as the higher-than-expected loss ratio.³⁴ Being transparent was not without cost. As a new player in this century-old industry, transparency exposed Lemonade to public criticism and competitive imitation. Even so, the team thought it was the right thing to do, as the CEO Schreiber said: “Getting to that level of [customer] trust is something that you have to earn, you can’t just demand it.”³⁵

Social Impact

Essential to the giveback model was Lemonade’s promise to donate all the leftover money in the claim pool to customer-designated charities. The company truthfully followed up on its commitment and made considerable donations for its policyholders. The first giveback of

³¹ J. Hageman, “It’s Not Our Money,” Lemonade website, 23 November 2016, <https://www.lemonade.com/blog/its-not-our-money/>, accessed 10 September 2019.

³² D. Schwarcz, “Transparently Opaque: Understanding the Lack of Transparency in Insurance Consumer Protection,” 2014, https://scholarship.law.umn.edu/cgi/viewcontent.cgi?article=1582&context=faculty_articles, accessed 11 September 2019.

³³ J. Crook, “Lemonade Wants to Rewrite the Insurance Policy Itself,” Techcrunch, 2018, <https://techcrunch.com/2018/05/16/lemonade-wants-to-rewrite-the-insurance-policy-itself/>, accessed 11 September 2019.

³⁴ Lemonade, “Transparency,” company website, 2019, <https://www.lemonade.com/blog/category/transparency/>, accessed 11 September 2019.

³⁵ D. Gogel, “Interview with Daniel Schreiber, CEO and Co-Founder of Lemonade.”

USD53,174 happened in July 2017, accounting for 10.2% of Lemonade's revenue at the time.³⁶ In comparison, *Fortune* 100 companies donated only 0.1% of their total revenues in 2015.³⁷ Fourteen of 21 designated charities received Lemonade's givebacks in 2017. The size of giveback in 2018 tripled along with the growth of the company, reaching USD162,135 in total. Although the giveback-to-revenue ratio decreased to 1.6%, with many claim pools used up, 15 charities received donations. The biggest donation came from the policyholder cohort for the nonprofit Teach for America. This cohort reported a loss ratio of just 1% with the remaining 39%, or USD28,289, donated to the charity.³⁸

Along with its achievements in the business world, Lemonade's unique giveback model also had a significant impact on society. The company was certified by nonprofit organization B Lab as a B Corporation (B Corp) [see **Exhibit 10**]. B Corp was a globally recognized accreditation certifying that a business had met the highest standard of social and environmental performance, public transparency, and legal accountability to balance profit and social purposes.³⁹ Well-known B Corporations included Ben & Jerry's, Natura, and Etsy. To become a certified B Corp, a company had to incorporate a social or environmental mission into its governance articles and be subject to reassessment every three years.⁴⁰ The B Corp website described Lemonade: "By injecting technology and transparency into an industry that often lacks both, Lemonade creates an insurance experience that is fast, affordable and hassle free."⁴¹

Imprinting social values into its culture, Lemonade expanded its social impact beyond what was required by the model. After the deadliest US mass shooting in Las Vegas in October 2017, Lemonade took a stand against gun ownership as the first move in its "Ethics of Insurance" series. It limited its insurance coverage for firearms up to USD2,500 and removed assault rifles from the coverage.⁴² This move brought Lemonade polarized customer feedback, including both fierce criticism and keen support. Soon after the announcement, 20 customers canceled their policies to protest the move, but Schreiber insisted that a B Corp should "try to do the right thing."⁴³

Another move in Lemonade's "Ethics of Insurance" series was to abstain from investing in fossil energy companies.⁴⁴ Investing in fossil energy companies was common for traditional insurance companies. According to Lemonade, insurance companies invested approximately USD590bn in fossil fuels. In comparison, the worldwide investment in renewable energy was only USD242bn. To fight against climate change, Lemonade announced that it would not invest any policyholders' premiums, which stood at USD100mn by September 2018, in fossil energy companies. Aiming for social good, Lemonade believed that it could do more than just maximize profit.

³⁶ "Time to Giveback! Lemonade's 2017 social impact report," Lemonade website, 10 July 2017, <https://www.lemonade.com/blog/time-to-giveback/>, accessed 11 September 2019.

³⁷ Chief Executives for Corporate Purpose, "Giving in Numbers 2016 Edition," 2016, http://cecp.co/wp-content/uploads/2016/11/GIN2016_Finalweb.pdf, accessed 11 September 2019.

³⁸ D. Schreiber, "Giveback 2018: The Lemonade Social Impact Report," Lemonade website, 10 July 2018, <https://www.lemonade.com/blog/lemonade-giveback-2018/>, accessed 11 September 2019.

³⁹ For details, see Certified B Corporation's website: <https://bcorporation.net/about-b-corps>.

⁴⁰ M. Giddens, "The Rise of B Corps Highlights The Emergence of a New Way of Doing Business," *Forbes*, 3 August 2018, <https://www.forbes.com/sites/michelegiddens/2018/08/03/rise-of-b-corps-highlights-the-emergence-of-a-new-way-of-doing-business/#3694e5c42ed2>, accessed 11 September 2019.

⁴¹ "Lemonade, Inc." Certified B Corporation website, 2016, <https://bcorporation.net/directory/lemonade-inc>, accessed 11 September 2019.

⁴² D. Schreiber, "Guns, and Why Lemonade Is Taking a Stand," Lemonade website, 16 October 2017, <https://www.lemonade.com/blog/insuring-guns-lemonade-takes-stand/>, accessed 11 September 2019.

⁴³ D. Schreiber, "Thanksgiving Transparency '17," Lemonade website, 14 November 2017, <https://www.lemonade.com/blog/thanksgiving-2017-transparency-chronicle/>, accessed 11 September 2019.

⁴⁴ D. Schreiber, "Why Lemonade Won't Invest in Coal," Lemonade website, 11 September 2018, https://www.lemonade.com/blog/divest_coal/, accessed 11 September 2019.

To our thinking, we don't deserve to be a standout company if we're not willing to stand out.

—Daniel Schreiber⁴⁵

Artificial Intelligence

In another attempt to transform the industry, Lemonade introduced an AI-enabled policy application and claim process. When a customer applied for a new policy, an AI chatbot called Maya, named after Lemonade's Vice President of Business Development Maya Prosor, stepped in and handled all the purchasing procedures [see **Exhibit 3**]. Maya used a fluent, natural human language and was able to handle most customer questions. The insurance application process became a friendly conversation with a kind insurance assistant. All the data input and risk calculations were processed at the back end, and customers got price quotations instantly during the hassle-free chat with Maya. A customer commented: "The conversation with Maya feels natural—the inputs for all of the questions needed for an accurate quote are neither tedious, nor do they feel like you are filling out an insurance form."⁴⁶ In 2018, the capability of Maya was further upgraded to cover complex situations such as a customer moving to another house that involved cancellation of the old policy, risk reevaluation, and offering a new policy.⁴⁷

In addition to insurance applications, insurance claims were also primarily handled by AI—the chatbot Jim, named after Jim Hageman [see **Exhibit 4**]. The claimant process was again designed to be a natural conversation with AI Jim. Customers chatted with Jim about what happened. Their descriptions were interpreted and processed with the aid of "natural language processing," an AI technology. The processed information then went through automated fraud-detection algorithms at the back end. If the algorithm regarded the claimed incidents as true and insurable, customers would get their claimed money instantly in a few seconds. Complex cases that chatbot Jim could not handle were forwarded to the real Jim Hageman. On 23 December 2016, AI Jim set a new world record of the fastest claim paid to a customer—in only three seconds.⁴⁸ In 2018, Jim paid over USD1mn claims to customers almost instantly.⁴⁹

AI-based services enabled Lemonade to provide an unprecedentedly excellent experience to customers, while at the same time greatly reducing operating costs. As stated in Lemonade's transparency chronicle, it achieved a very high customer-to-employee ratio of 2,500, compared to the nearest incumbent State Farm, which scored only 500 on the same metric. The high operating efficiency rendered another unique competitive advantage to Lemonade in addition to its giveback model.

Growing Lemonade

The unique AI-enabled behavioral science-driven model helped the startup win investors. In December 2015, almost a year before its formal launch, Lemonade raised seed round funding of USD13mn from Aleph and Sequoia Capital, which invested another USD13mn in August 2016.

Lemonade's model not only attracted investors but also gained support from crucial partners. In Lemonade's model, reinsurance companies played an important role. Reinsurance was

⁴⁵ D. Schreiber, "Thanksgiving Transparency '17."

⁴⁶ P. Faller, "UXperts Weigh In: Designs We Love, December Edition," 2017, <https://theblog.adobe.com/uxperts-weigh-in-designs-we-love-december-edition-2/>, accessed 11 September 2019.

⁴⁷ S. Wininger, "Signals from Space," Lemonade website, 24 January 2019, <https://www.lemonade.com/blog/signals-from-space/>, accessed 11 September 2019.

⁴⁸ "A New York Startup Shakes up the Insurance Business," *The Economist*, 9 March 2017, <https://www.economist.com/finance-and-economics/2017/03/09/a-new-york-startup-shakes-up-the-insurance-business>, accessed 11 September 2019.

⁴⁹ S. Wininger, "Signals from Space."

regarded as insurance for insurance companies. Insurance companies bought reinsurance contracts from reinsurers to hedge huge losses or extreme claims. For Lemonade, it used 40% of the total premiums to procure reinsurance to cover extra claims when claims exceeded the initial 40% set aside in the claim pool. Lemonade's unprecedented insurance model made it very difficult for reinsurers to evaluate the risk of reinsurance contracts. Nonetheless, Lemonade was able to obtain support from the world's leading reinsurers, including Berkshire Hathaway's National Indemnity and Lloyd's of London, as they believed in the potential of this new customer-oriented model.⁵⁰

Lemonade turned their support into astonishing performance. In the first year, the total insurance premiums had increased from USD0.6mn in Q1 2017 to USD5.3mn in Q4 2017. This sales figure continued to increase to USD18mn in Q3 2018 [see **Exhibit 8**].⁵¹ Within only two years, Lemonade had expanded its operations to 21 US states, where it was available to over 50% of the US population. This was a remarkable expansion rate because insurance was regulated by state governments in the US, and Lemonade had to obtain licenses in each state for its unprecedented insurance model. On the customer side, according to the independent insurance rating website Clearurance, Lemonade ranked second best among 295 renters insurance providers, many of which had a history of over 100 years. Clearurance reported that 94% of customers would recommend Lemonade to their friends, and 91% would renew their policies. In comparison, the largest US R&H insurer State Farm got only 81% and 84%, respectively, on these metrics.⁵²

The eye-catching business model and performance brought Lemonade great recognition and more opportunities. The company was selected for the *Forbes* 2018 top-50 fintech list⁵³ and the CNBC 2019 disruptor 50,⁵⁴ and was covered in well-known media including the *New York Times*, *Fortune*, *Bloomberg*, and the *Wall Street Journal*. Additional strategic partners and investors started paying attention. In December 2016, Lemonade raised USD34mn from venture capitalists including Google's VC arm, Google Ventures.⁵⁵ In April 2017, the insurance giant Allianz⁵⁶ announced it had become a strategic investor of Lemonade and would help it expand in both the US and the global markets.⁵⁷ By the end of 2017, Lemonade raised another round of USD120m funding led by the SoftBank Group and planned to expand into other insurance sectors [see **Exhibit 9** for Lemonade's fund-raising history].⁵⁸

In addition to its direct customer-facing R&H insurance, Lemonade was also exploring B2B opportunities. In April 2018, Lemonade partnered with Roomi, a P2P room-rental marketplace that offers renters insurance to its registered users. Later in October 2018, Lemonade announced a partnership with WeWork, a New York-based company offering coworking spaces and

⁵⁰ "Lemonade is Backed by Berkshire Hathaway's National Indemnity and Lloyd's of London," PR Newswire, 9 February 2016, <https://www.prnewswire.com/news-releases/lemonade-is-backed-by-berkshire-hathaways-national-indemnity-and-lloyds-of-london-568159441.html>, accessed 11 September 2019.

⁵¹ D. Schreiber, "Two Years of Lemonade: A Super Transparency Chronicle," Lemonade website, 20 September 2018, <https://www.lemonade.com/blog/two-years-transparency/>, accessed 11 September 2019.

⁵² For details, see Lemonade's Clearurance page: <https://clearurance.com/insurance-company/lemonade-insurance-company-5851ea2d0b01ce3345a66f23>, accessed 11 September 2019.

⁵³ J. Kauffman et al., "The Most Innovative Fintech Companies In 2019," *Forbes*, 4 February 2019, <https://www.forbes.com/fintech/2019/#3e5636982b4c>, accessed 11 September 2019.

⁵⁴ "Meet the 2019 CNBC Disruptor 50 companies," CNBC, 15 May 2019, <https://www.cnbc.com/2019/05/15/meet-the-2019-cnbc-disruptor-50-companies.html>, accessed 11 September 2019.

⁵⁵ "Google Participates in Lemonade's \$34M Round," Businessinsider.com, 7 December 2016, <https://www.businessinsider.com/google-participates-in-lemonades-34m-round-2016-12>, accessed 11 September 2019.

⁵⁶ Allianz ranked 38 in *Fortune* 2017 Global 500 company list.

⁵⁷ "Allianz Goes for Lemonade," Businessinsider.com, 24 April 2017, <https://www.businessinsider.com/allianz-goes-for-lemonade-2017-4>, accessed 11 September 2019.

⁵⁸ J. Shieber, "SoftBank Leads a \$120 Million Round for Insurance Startup Lemonade," Techcrunch, 19 December 2017, <https://techcrunch.com/2017/12/19/softbank-leads-a-120-million-round-for-insurance-startup-lemonade/>, accessed 11 September 2019.

residential services to entrepreneurs and freelancers. WeWork had over 175,000 members as of 2017. According to the partnership agreement, WeWork would include Lemonade in its residential service package as a preferred option.⁵⁹ Lemonade's low-cost, hassle-free insurance products had the greatest fit with the image of WeWork.

As of December 2018, Lemonade's insurance covered 425,000 homes in 21 US states with a total insured value of USD50bn. Its share in the renters' insurance market increased from zero in December 2016 to 6% in December 2018. In this insurance segment, Lemonade had become a significant player.⁶⁰

Charging Forward

Reinventing insurance was never easy. Lemonade introduced a new insurance model to an old industry. This also meant that the model was not as proven and mature as the traditional one. On its way to rebuilding the foundation of insurance, Lemonade also faced great challenges and uncertainties.

Along with Lemonade's fast growth was its high loss ratio (i.e., claim-to-premium ratio). In the first half of 2017, the company recorded a loss ratio of 260%, which meant that Lemonade paid claims 2.6 times compared to premiums it collected, or a net loss of 160% simply due to claims.⁶¹ A loss ratio over 100% suggested that the insurance company could not sustain it in the long run, let alone 260%. Lemonade attributed the high loss ratio to the lack of customer data.⁶² It admitted that reinsurance contracts and partners helped it a lot in paying out customer claims but also clearly realized that this could not continue in the long run.⁶³

Reducing the loss ratio was a big challenge for Lemonade. For a typical health insurance company, the loss ratio was 60%–70%.⁶⁴ A high loss ratio was usually due to one or more of the following reasons: (1) overpaying claims due to frauds; (2) pricing insurance policies at an unsustainably low rate; or (3) accepting customers with uncontrollable risks. As frauds were minimized by Lemonade's model, the company tried to lower the loss ratio by training its AI to be more prudent in accepting new policies. The ratio declined to 132% in Q2 2018, and further to 99% in Q4 2018 [see **Exhibit 11**].⁶⁵ This effort was not without cost. In 2017, Lemonade declined to quote over USD17mn worth of policy applications in order to fix the ratio.⁶⁶ In Q4 2018, Lemonade, for the first time, saw a decline in quarterly sales from USD18.2mn to USD17.7million [see **Exhibit 8**]. Even so, the 99% loss ratio was higher than the industry average of 65%, and the company was still in a net loss after deducting operating expenses.

As a challenger to a well-established industry, Lemonade also had to deal with criticism from incumbents. On 16 October 2018, the largest US R&H insurer, State Farm, posted an ad video on YouTube ridiculing the use of chatbot and technology in the insurance industry.⁶⁷ The video

⁵⁹ J. Crook, "WeWork Taps Lemonade to Offer Insurance to WeLive Members," Techcrunch, 8 October 2018, <https://techcrunch.com/2018/10/08/wework-taps-lemonade-to-offer-insurance-to-welive-members/>, accessed 11 September 2019.

⁶⁰ S. Wininger, "Signals from Space."

⁶¹ D. Schreiber, "Two Years of Lemonade: A Super Transparency Chronicle."

⁶² S. Wininger, "We Suck, Sometimes," Lemonade website, 21 June 2018, <https://www.lemonade.com/blog/lemonade-transparency-review/>, accessed 11 September 2019.

⁶³ D. Schreiber, "Two Years of Lemonade: A Super Transparency Chronicle."

⁶⁴ Casualty Actuarial Society (CAS), <https://www.casact.org/education/spring/2016/presentations/C-20-Berman.pdf>, accessed 11 September 2019.

⁶⁵ S. Wininger, "Signals from Space."

⁶⁶ D. Schreiber, "Thanksgiving Transparency '17."

⁶⁷ <https://www.youtube.com/watch?v=KIWfc9a11YI>, accessed 11 September 2019.

invited the famous basketball stars James Harden and Chris Paul as well as actor Oscar Nunez of "The Office" to joke about a robot created by "a rival insurance company." As *Forbes* commented, the ad was "a battle of old vs. new."⁶⁸ Lemonade's response was surprising. Instead of fighting back, it sponsored the spread of this attack video on social networks. Schreiber pointed out that the video actually helped Lemonade, and it "demarcates the choice consumers face with fabulous clarity."⁶⁹

Imitations by both large incumbents and new startups imposed another pressure on Lemonade. Soon after Lemonade's launch in September 2016, the large insurance company GEICO also launched a marketing campaign with exactly the same name, "Lemonade," targeting young generations [see **Exhibit 12**]. Later in January 2017, GEICO introduced its own chatbot Kate to handle customer questions.⁷⁰ In late 2017, the fourth-largest US property and casualty insurance company, Liberty Mutual, introduced a renters insurance brand called Lulo with a very similar user interface to compete with Lemonade [see **Exhibit 13**].⁷¹ Potential imitators also included startups. In June 2018, Lemonade filed a lawsuit against the German insurtech company Wefox for reverse engineering Lemonade to create its own product ONE.⁷² The two startups later reached an agreement that Lemonade would drop the lawsuit when Wefox agreed to redesign its product.⁷³

Competitive pressure came from other insurtech startups as well. Hippo was a key startup competitor [see **Exhibit 14**]. This California-based startup was also founded in 2015 and had raised USD109mn in funding by the end of 2018.⁷⁴ Hippo also tried to fully digitalize the R&H insurance experience by using chatbots and a data-driven approach. In addition, Hippo included two smart home sensors in its policy package and intended to use technology to reduce risks as well as its policy price. Unlike Lemonade, Hippo did not create insurance contracts itself but cooperated with existing incumbents in a commission-based brokerage model. Backed by large incumbents and their credibility, Hippo intended to inject technological innovation into the industry rather than to revolutionize it.⁷⁵ By July 2018, Hippo had achieved a total insured value of USD10bn, around 20% of that of Lemonade, and was operating in 15 US states.⁷⁶

Lemonade entered its fourth year of operation. Facing a number of challenges, the AI-powered giveback model gradually gained a foothold in the US market. While Lemonade chose to start with rental and homeownership issuance, it could expand into other insurance segments as a strategic move. Moreover, it could also form partnerships to expand its market access. Its recent

⁶⁸ E. Bino, "State Farm Attack Ad on Lemonade Backfires, Setting the Stage in Battle of Old vs. New," *Forbes*, 22 October 2018, <https://www.forbes.com/sites/evalbino/2018/10/22/state-farm-attack-ad-on-lemonade-backfires-setting-the-stage-in-battle-of-old-vs-new/#3869aff1e1ba>, accessed 11 September 2019.

⁶⁹ Ibid.

⁷⁰ S. Ben-Hutta, "Lemonade vs. GEICO 24/7 365," 2017, <https://coverager.com/lemonade-vs-geico-247-365/>, accessed 11 September 2019.

⁷¹ S. Ben-Hutta, "The Bizarre Behavior of Lulo," 2017, <https://coverager.com/bizarre-behavior-lulo/>, accessed 11 September 2019.

⁷² J. Crook, "Lemonade Files Lawsuit against Wefox for IP Infringement," 2018, <https://techcrunch.com/2018/06/15/lemonade-files-lawsuit-against-wefox-for-ip-infringement/>, accessed 11 September 2019.

⁷³ S. O'Hear, "Insurance App Lemonade Looks Set to Drop Lawsuit against Germany's Wefox," *Techcrunch*, 3 August 2018, <https://techcrunch.com/2018/08/03/insurance-app-lemonade-looks-set-to-drop-lawsuit-against-germanys-wefox/>, accessed 11 September 2019.

⁷⁴ K. Clark, "Home Insurance Provider Hippo Brings in \$70M Amid a Record Year in Funding for Insurtech Startups," *Techcrunch*, 14 November 2018, <https://techcrunch.com/2018/11/14/home-insurance-provider-hippo-brings-in-70m-amid-a-record-year-in-funding-for-insurtech-startups/>, accessed 11 September 2019.

⁷⁵ "Hippo Insurance Bolsters Leadership Team as It Continues to Expand Its Coverage Nationwide Expanded Bench Draws on Experience from Esurance, GEICO, Kemper, PolicyGenius and Beepi to Further Drive...," *Markets.Businessinsider.com*, 15 September 2017, <https://markets.businessinsider.com/news/stocks/hippo-insurance-bolsters-leadership-team-as-it-continues-to-expand-its-coverage-nationwideexpanded-bench-draws-on-experience-from-esurance-geico-kemper-policygenius-and-beepi-to-further-drive-1002375282>, accessed 11 September 2019.

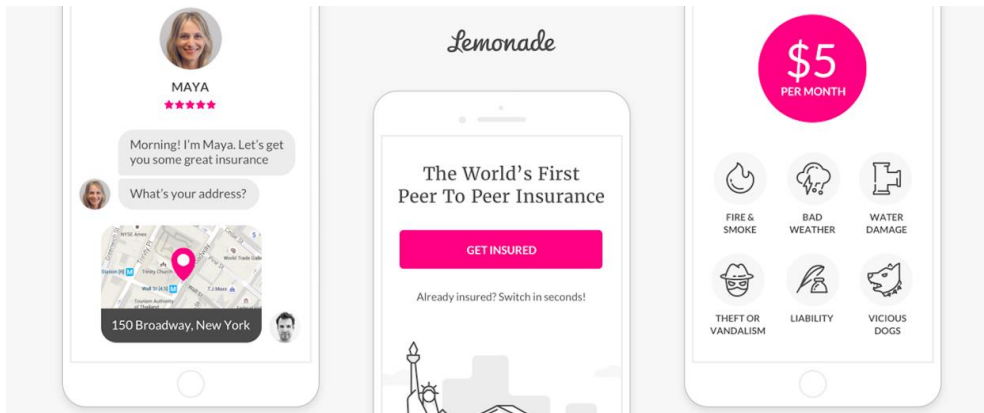
⁷⁶ A. Wand, "Hippo Insurance: Growth by the Numbers", 2018, <https://medium.com/@hippoinsurance/hippo-insurance-growth-by-the-numbers-590761b8871a>, accessed 11 September 2019.

partnership with another rising fintech startup, SoFi (short for social finance), an online personal finance company, confirmed this possibility.⁷⁷

Lemonade was, by no means, the only company that tackled the lack of trust issue in the traditional insurance industry. Its giveback model was also not the only solution to the problem. In China, for example, a fintech giant, Ant Financial, introduced a claim-sharing model for critical illnesses among its millions of users. Members enrolled in the program could claim a lump-sum payment in the case of a predefined illness but did not have to pay any premiums beforehand. Instead, each member in this pool was obliged to equally share the claim plus a 10% flat fee afterward. The model was also able to eliminate the conflicts of interest between customers and insurers and was highly transparent. Which model, either or both, could eventually reinvent insurance? Other critical questions remained. Could Lemonade replicate its success in other insurance segments such as car insurance or health insurance, and on what basis? Could this model be applied worldwide, especially in regions with different cultures, values, and social norms?

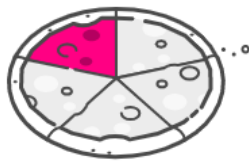
⁷⁷ "SoFi Fills Out Insurance Offerings Together with Lemonade and Root," PR Newswire, 15 April 2019, <https://www.prnewswire.com/news-releases/sofi-fills-out-insurance-offerings-together-with-lemonade-and-root-300831505.html>, accessed 11 September 2019.

EXHIBIT 1: LEMONADE APP INTERFACE

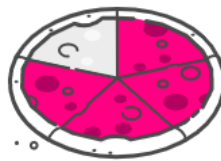


Source: Lemonade mobile app.

EXHIBIT 2: LEMONADE "GIVEBACK" MODEL



A flat fee to
run everything



We pay claims
super fast



If there's money leftover,
we give it back to causes

Source: Lemonade website.

EXHIBIT 3: LEMONADE CHATBOT AI MAYA

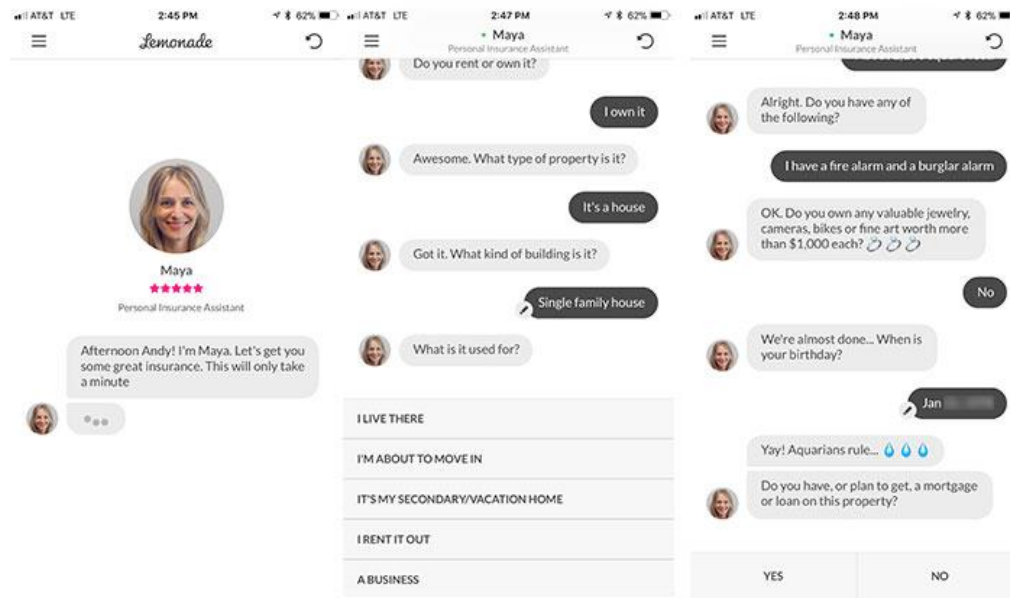
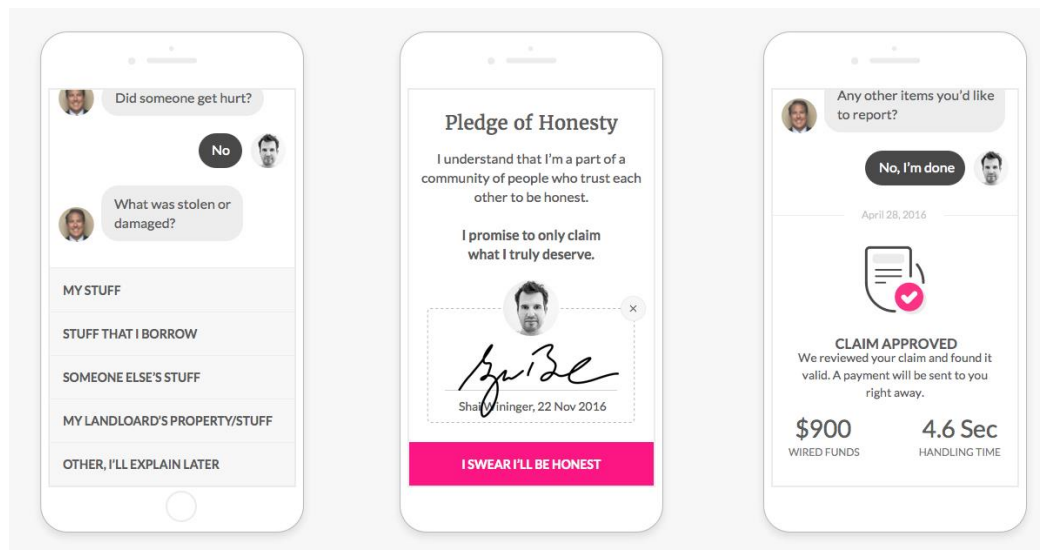
Source: Abode blog.⁷⁸

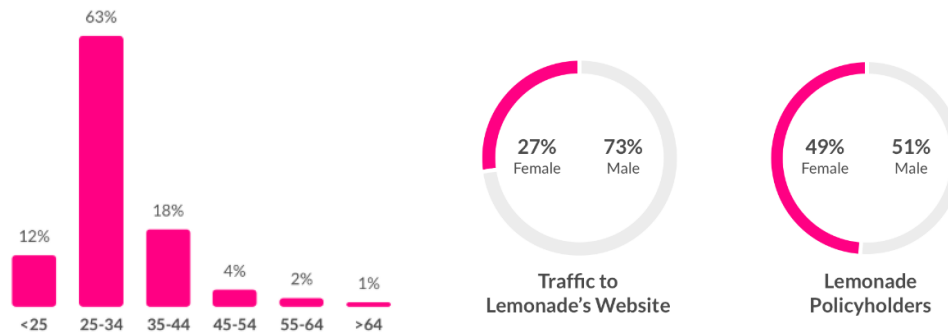
EXHIBIT 4: LEMONADE CHATBOT AI JIM

Source: Lemonade blog.⁷⁹

⁷⁸ P. Faller, "UXperts Weigh In: Designs We Love, December Edition," 2017, <https://theblog.adobe.com/uxperts-weigh-in-designs-we-love-december-edition-2/>, accessed 11 September 2019.

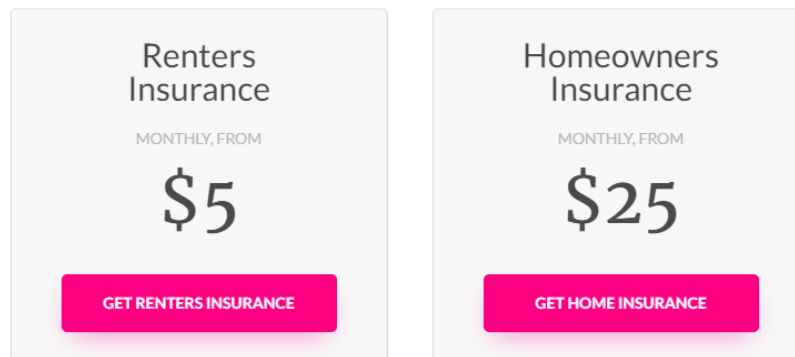
⁷⁹ S. Winger, "The Secret behind Lemonade's Instant Insurance," 2016, <https://stories.lemonade.com/the-secret-behind-lemonades-instant-insurance-3129537d661>, accessed 11 September 2019.

EXHIBIT 5: CUSTOMER COMPOSITION



Source: Lemonade blog.^{80 81}

EXHIBIT 6: POLICY PRICE



Source: Lemonade website.

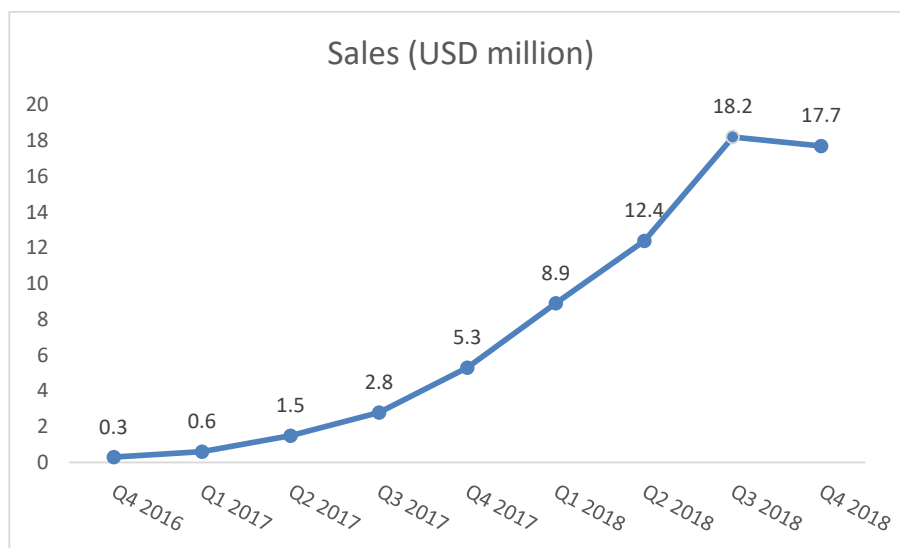
⁸⁰ S. Wininger, "Lemonade's First Quarter in Market," Lemonade website, 18 January 2017, <https://www.lemonade.com/blog/lemonades-first-quarter-market/>, accessed 11 September 2019.

⁸¹ Y. Wissner-Levy, "Why Do Women Love Lemonade More?," Lemonade website, 23 July 2017, <https://www.lemonade.com/blog/women-love-lemonade/>, accessed 11 September 2019.

EXHIBIT 7: LEMONADE'S ZERO EVERYTHING

	Standard Insurance (\$250 deductible)	Zero Everything™ (No deductible)
\$80 Apple Magic Mouse	Declined!	You get \$80 ✓
\$350 Bose Headphones	You get \$100 (70% less)	You get \$350 ✓
\$999 iPhone X	You get \$749 (25% less)	You get \$999 ✓
\$2,500 Leather Sofa	You get \$2,250 (10% less)	You get \$2500 ✓

Source: Lemonade blog.⁸²

EXHIBIT 8: LEMONADE'S SALES VOLUME

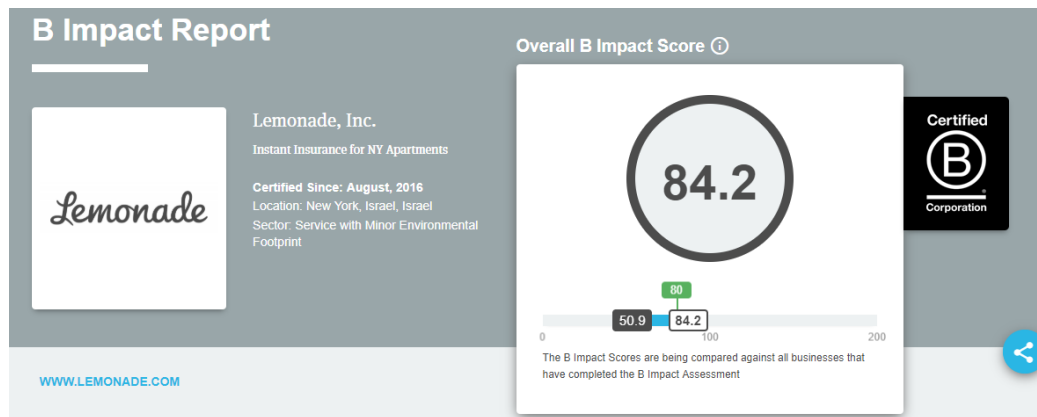
Source: Lemonade blogs.

⁸² S. Wininger, "Zero Everything," Lemonade website, 26 September 2017, <https://www.lemonade.com/blog/zero-everything-zero-deductible/>, accessed 11 September 2019.

EXHIBIT 9: LEMONADE FUND-RAISING HISTORY

<i>Date</i>	Round	Lead Investor	Money Raised (USD million)
<i>Dec 19, 2017</i>	Series C	SoftBank	120
<i>Apr 24, 2017</i>	Strategic	Allianz	Undisclosed
<i>Dec 5, 2016</i>	Series B	General Catalyst, GV	34
<i>Aug 23, 2016</i>	Series A	Aleph, Sequoia Capital	13
<i>Dec 8, 2015</i>	Seed	Aleph, Sequoia Capital	13

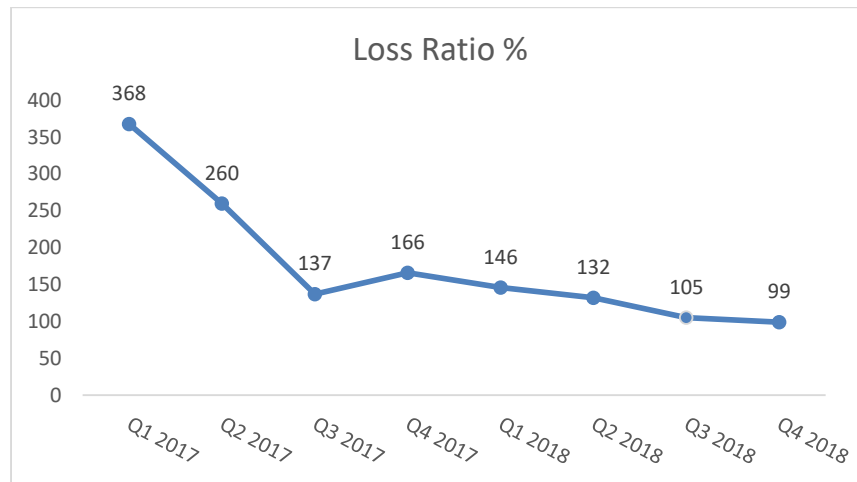
Source: CrunchBase.⁸³

EXHIBIT 10: B CORPORATION CERTIFICATION

Source: B Corporation website.⁸⁴

⁸³ "Lemonade," CrunchBase, <https://www.crunchbase.com/organization/lemonade#section-funding-rounds>, accessed 11 September 2019.

⁸⁴ "Lemonade, Inc.," Certified B Corporation website, 2016, <https://bcorporation.net/directory/lemonade-inc>, accessed 11 September 2019.

EXHIBIT 11: LEMONADE LOSS RATIO

Source: Lemonade blogs.

EXHIBIT 12: GEICO'S "LEMONADE" CAMPAIGN

Source: GEICO TV commercial.⁸⁵

⁸⁵ "Lemonade Not Ice T: It's Not Surprising' Featuring Ice-T," Ispot.tv, <https://www.ispot.tv/ad/ACf9/geico-lemonade-not-ice-t-its-not-surprising-featuring-ice-t>, accessed 11 September 2019.

EXHIBIT 13: LEMONADE VS. LULO

Logo:

Lemonade Lulo

Design:

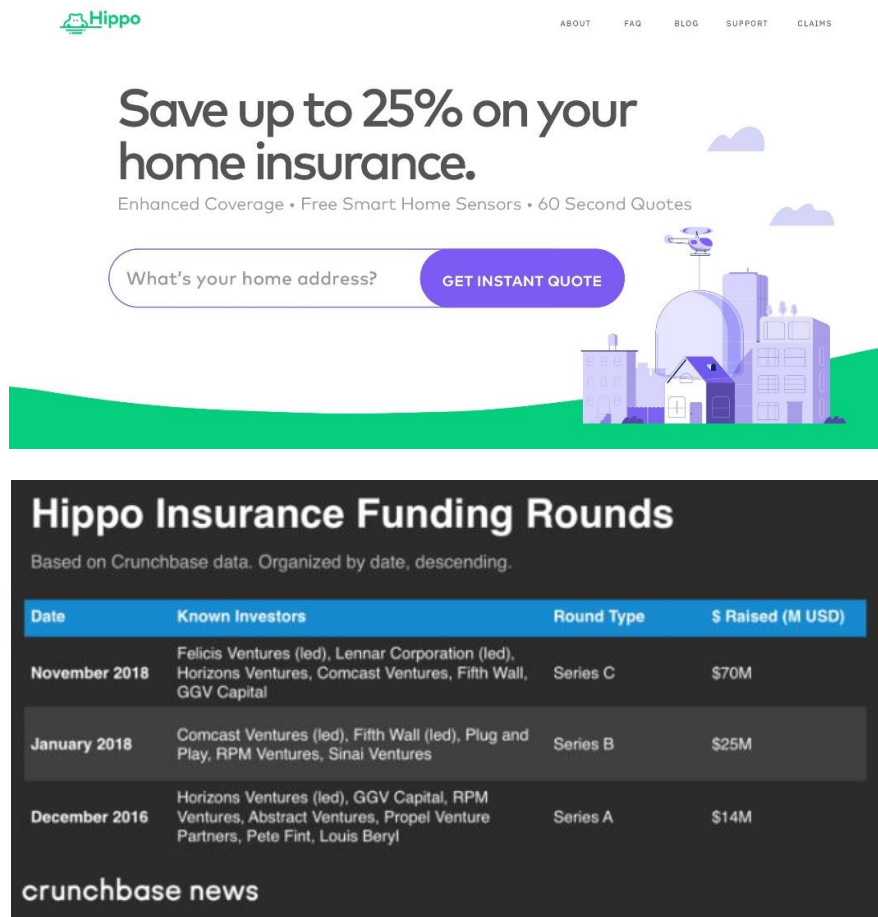
The image shows a comparison of two insurance policies. The top section, 'What's Covered' for 'LEMONADE'S ORIGINAL', lists three categories: Fire and Smoke, Crime and Vandalism, and Bad Weather. The bottom section, 'Included with Coverage' for 'LIBERTY'S COPY', lists three categories: Fire & Smoke, Theft & Vandalism, and Weather. Each category includes a brief description of the coverage.

LEMONADE'S ORIGINAL	LIBERTY'S COPY
What's Covered FIRE AND SMOKE A faulty Christmas light or your attempt at deep frying can cause some smoke and fire damage. We cover you for both.	Included with Coverage Fire & Smoke Sometimes that romantic candlelight evening ends with a visit from the fire brigade. Fear not! If your stuff catches fire or gets that indelible "eau de house fire" smell - we cover you for both smoke and fire damage.
CRIME AND VANDALISM Your home is full of stuff: furniture, clothing, appliances. We cover you if any of it is stolen or damaged.	Theft & Vandalism If your stuff gets stolen or (somehow even more frustrating) gets needlessly destroyed, don't worry — you're covered. Go back to eyeing your neighbors suspiciously.
BAD WEATHER Wind, lightning, and hail are scary. You're covered for all of them. Flood insurance isn't part of the basic policy.	Weather Lightning! Wind! Hail! Your dog may hide in the bathroom when these happen, but we'll be there for you. Floods, though, aren't covered.

Source: Lemonade blog.⁸⁶

⁸⁶ D. Schreiber, "Who's the #1 Lemonade Copycat?," 2017, <https://stories.lemonade.com/whos-the-1-copycat-e33bb82c9cdf>, accessed 11 September 2019.

EXHIBIT 14: HIPPO INSURANCE



Hippo

ABOUT FAQ BLOG SUPPORT CLAIMS

Save up to 25% on your home insurance.

Enhanced Coverage • Free Smart Home Sensors • 60 Second Quotes

What's your home address? **GET INSTANT QUOTE**

Hippo Insurance Funding Rounds

Based on Crunchbase data. Organized by date, descending.

Date	Known Investors	Round Type	\$ Raised (M USD)
November 2018	Felicis Ventures (led), Lennar Corporation (led), Horizons Ventures, Comcast Ventures, Fifth Wall, GGV Capital	Series C	\$70M
January 2018	Comcast Ventures (led), Fifth Wall (led), Plug and Play, RPM Ventures, Sinai Ventures	Series B	\$25M
December 2016	Horizons Ventures (led), GGV Capital, RPM Ventures, Abstract Ventures, Propel Venture Partners, Pete Fint, Louis Beryl	Series A	\$14M

crunchbase news

Source: Hippo website; CrunchBase News.⁸⁷

⁸⁷ S. Dowling, "Hippo Insurance Raises \$70M as Data-Driven Quoting Attracts Investors," 2018, <https://news.crunchbase.com/news/hippo-insurance-raises-70m-as-data-driven-quoting-attracts-investors/>, accessed 11 September 2019.