



**JANUARY 2019**

**Inside this Issue**

**INSURING THE COMMERCIAL CANNABIS INDUSTRY**

2

*The rapid expansion of the cannabis industry is bringing a host of unique needs and complex risks to be insured. More than two-thirds of states have legalized cannabis in some form. The District of Columbia and 10 states now allow adult consumption of cannabis for recreational use. There are other states that have passed laws which specifically legalize the use of cannabis-derived products, such as cannabidiol oil. Insurers looking to provide commercial cannabis insurance to this budding market should understand its rapidly shifting landscape. This article will discuss the legal uncertainty, evolving regulations, lack of data and developing business practices cannabis-related businesses face. It will also explore how the cannabis industry's first- and third-party coverage needs are unique from other industries.*

**GDPR FOR NORTH AMERICAN INSURERS**

7

*The European Union's General Data Protection Regulation (GDPR) aims to allow individuals to exercise control over their data and stipulates rules for anonymizing and purging data upon request. Each EU member will create a national supervisory authority to enforce compliance. The law also applies to US firms that do business in the EU—and possibly to U.S. firms that do business with EU citizens in the U.S. As such, U.S. carriers must be aware of GDPR provisions and may need to take steps to comply. Further, the California Consumer Privacy Act of 2018 resembles GDPR, though the former is less stringent in some key areas. This article will provide an overview of GDPR provisions for North American insurers.*

**INTELLIGENT MACHINES AND THE TRANSFORMATION OF INSURANCE**

11

*Artificial Intelligence (AI) is accelerating the technology revolution currently underway in the insurance industry. AI technologies, such as speech and image analysis, hold great promise by enabling insurers to generate massive amounts of real-time data and process it in new and faster ways. The integration of these new technologies over the next decade is expected to redefine how insurers underwrite, engage with customers and manage risk and claims. At the same time, their use raises important regulatory and legal issues around data ownership, bias, liability and transparency. This article will examine how insurers are using artificial intelligence and discuss some of the concerns state insurance regulators have as start-ups and incumbents roll out AI applications across their business models.*

**WHEN INNOVATION MEETS REGULATION**

17

*Innovation in the insurance industry (and the world) is happening at a pace much quicker than most of us can keep up with. Fueled by recent technological advances, exponential growth of data, changing consumer expectations, and a tremendous amount of capital, insurance technology start-ups ("InsurTechs") are redefining the fundamentals of insurance. As the InsurTech sector continues to emerge, and the use of new technology becomes more prevalent, state insurance regulators are moving quickly to ensure they are equipped with the tools to oversee this changing marketplace. The NAIC Innovation and Technology (EX) Task is currently studying different ways in which the U.S. insurance regulatory framework can respond to and foster innovation. This article will begin with an update on the current InsurTech landscape and initiatives by state insurance regulators to encourage innovation. Julie Sherlock, Head of Insurance Strategy at Boost Insurance, will then provide perspectives on some of the regulatory hurdles to innovation in the insurance industry.*

Kris DeFrain

Director, Research & Actuarial

816-783-8229

KDefrain@naic.org

Shanique (Nikki) Hall

Assistant Director, CIPR

212-386-1930

SHall@naic.org

Dimitris Karapiperis

Research Analyst III

212-386-1949

DKarapiperis@naic.org

Anne Obersteadt

Senior Researcher

816-783-8225

AObersteadt@naic.org

**NAIC Central Office**

**Center for Insurance Policy and  
Research**

1100 Walnut Street, Suite 1500

Kansas City, MO 64106-2197

Phone: 816-842-3600

Fax: 816-783-8175

<http://cipr.naic.org>

# INSURING THE COMMERCIAL CANNABIS INDUSTRY

---

By Anne Obersteadt, CIPR Senior Researcher

*The author is grateful to Ian Stewart of Wilson Elser for his contributions to the article and help improving it with his insightful comments and background information.*

## ◆ INTRODUCTION

The rapid expansion of the cannabis industry is bringing a host of unique needs and complex risks to be insured. More than two-thirds of states have legalized cannabis in some form. The District of Columbia and 10 states now allow adult consumption of cannabis for recreational use. There are other states that have passed laws which specifically legalize the use of cannabis-derived products, such as cannabidiol (CBD) oil. The number of cannabis-related businesses will undoubtedly grow as more states move to legalize it in the future. In fact, sales of legal cannabis are projected to double over the next four years, reaching \$20 billion.<sup>1</sup>

Insurers looking to provide commercial cannabis insurance to this budding market should understand its rapidly shifting landscape. They must contend with legal uncertainty, evolving regulations, lack of data and developing business practices. Insurers will also need to understand how the cannabis industry's first- and third-party coverage needs are unique from other industries. To support this, the NAIC Cannabis Insurance (C) Working Group was formed last year. Members of the Working Group will collaborate to better understand the industry's insurance coverage gaps and regulatory issues. They will also develop best practices for state insurance regulators to help them address these insurance needs. As part of this process, the Working Group anticipates releasing a white paper in 2019.

## ◆ INSURANCE AVAILABILITY

The cannabis industry has evolved in sophistication over the last decade. This once illicit market, characterized by tie-dyes and Birkenstocks, has given way to suits and boardrooms. Cannabis operations now involve farmers, chefs, scientists, laboratory technicians, engineers, security personnel and accountants. Additionally, the once loosely regulated industry must now conform to robust regulations. Such regulations support the insurability of the industry.

Demand for cannabis-related insurance products will continue to grow as more states legalize the drug. Additionally, coverage needs will become more complex as cannabis-related businesses respond to evolving state regulations.

Despite this, only a limited number of insurers and brokers serve the market. There are a few large carriers, but most are small specialty insurers. Coverage is primarily written in the surplus lines market due to the specialized hard-to-place risks inherent in cannabis operations.

Recently, however, there have been a handful of admitted carriers entering the market. This is largely attributed to insurance regulatory outreach efforts. Most notably, Golden Bear Insurance became California's first admitted carrier in November 2017. Since then, the California Department of Insurance has approved admitted insurer Continental Heritage and four additional admitted carriers. It also approved the first Cannabis Business Owners Policy (CannaBOP) form for business lines of insurance.<sup>2</sup>

Insurance regulators in states where cannabis has become legal are examining the insurance and insurance regulatory needs of this new industry. This is in line with state insurance regulators' charge to ensure insurance availability and affordability in their markets.

## ◆ BARRIERS TO ENTRY

So, what is keeping carriers on the sidelines? Inconsistencies between federal and state laws are likely the most significant obstacle to insurers' willingness to enter the market. Cannabis is now legal for medical and/or recreational use in more than half of U.S. states. However, its listing as a Schedule 1 drug under the federal Controlled Substances Act (CSA) makes it a federally illegal substance. This contradiction creates legal risks because insurance policy provisions exclude illegal operations and criminal acts. The risk is particularly relevant to large multistate insurers with concerns over federal anti-money laundering laws.

To provide some clarity on this issue, the U.S. Department of Justice (DOJ) issued non-enforcement policies in 2014 related to cannabis transactions in states where the drug is legal. Despite this, Lloyd's of London ceased insuring the U.S. cannabis industry in June 2015, citing legal uncertainty. It should be noted many of the policies were subsequently picked up by other insurers, most notably Hannover Re.<sup>3</sup>

Another barrier is the lack of data available for pricing and underwriting such a nascent industry. Additionally, in states where cannabis is legal, state insurance regulators are moving rapidly to erect regulatory structures. This means insurers must contend with an industry where standard business practices are still evolving. Moreover, most states license at

*(Continued on page 3)*

the local and state level. As such, carriers must keep pace with new and frequently changing requirements at both levels in each jurisdiction where they operate.

The complexity of cannabis-related operations presents another difficulty to be navigated. This requires specialized employee education and training. Policy submissions are typically lengthy and intricate. Carriers must be able to identify standard and unique risks and align them with the appropriate insurance coverage. They must also understand what is needed to effectively mitigate risk and manage claims. The following sections take a closer look at how these apply to the commercial cannabis industry and each phase of its supply chain.

### ◆ COMMERCIAL INSURANCE NEEDS

Most commercial businesses have exposure to first-party property losses and third-party commercial general liability (CGL) and product liability claims. Cannabis-related businesses are no exception. Commercial property insurance indemnifies against physical loss to property from fire, theft and certain weather perils. Property includes contents, equipment, fixtures and owned property. Most policies also cover losses related to business interruption from a covered peril. This coverage replaces lost earnings and expenses during the time operations are disrupted. It can also provide protection against delays from operation disruptions further down the supply chain.

Commercial property insurance should often have higher limits for cannabis-related businesses compared to other businesses of similar size. Theft of inventory (cannabis and related products) and cash is a significant risk for this industry. Many banks, which are federally regulated, are hesitant to accept deposits from the cannabis industry due to federal law. This leaves cannabis-related businesses heavy in cash. Employee dishonesty and crime coverage is needed to cover the risk of theft from first and third parties. In addition to theft, excessive cash also brings a higher risk for kidnap, ransom or extortion.<sup>4</sup> It should be noted some of these coverages may be sold as standalone policies.

Insurers typically mitigate against theft risks by requiring use of sophisticated security systems, fencing and security personnel. Cash is often required to be stored in fireproof safes. This has the added benefit of protecting against losses from fire. Fire damage to high-value cannabis crops and products and expensive equipment have the potential to generate large property damage losses. As such, automatic fire suppression systems and proper ventilation are also frequently required.<sup>5</sup>

Cannabis-related businesses also have extensive legal exposure tied to their products. Liability from a defective product claim can extend to every business in the supply chain.<sup>6</sup> As such, it is important products liability coverage be included in CGL policies. A stand-alone product liability policy may be needed if the CGL policy excludes this coverage. Additionally, insureds should be made aware of any coverage limitations. For example, CGL and product liability policies may have shared limits for both coverages, non-stacking endorsements and no duty to defend. There may also be exclusions for illegal acts, smoking product, health hazard, mental or physical impairment, and vape cartridges.

Products liability exposure is high, in part, because a claimant only needs to demonstrate a product is defective to establish strict product liability.<sup>7</sup> Negligence is not a consideration. Additionally, product contamination and impairment can occur at any part of the supply chain. The wide range of cannabis potency and strains and infused-products also increases exposure. Aside from product damage and bodily injury, claims of failure-to-warn, deceptive advertising and defective labeling may arise.

Most states with robust regulatory regimes require sophisticated track and trace software. This software allows a product to be traced as it moves through the supply chain from “seed to sale.” By doing so, every party along the supply chain can be easily identified and potentially added to a product liability lawsuit, regardless of “fault.”

The risk of cyber threats in this industry should not be ignored. Track and trace software brings together numerous data points, many of which are required to be provided to regulators online. Cannabis-related businesses also often store personal and medical information on their customers. Unfortunately, the availability of cannabis-specific cyber coverage is limited.<sup>8</sup>

### ◆ RESPONDING TO SPECIFIC OPERATIONAL RISKS

#### *Cultivation*

Insurance needs can vary based on the risks specific to where cannabis-related businesses operate in the supply chain. The supply chain starts with cultivation. Cultivators include growers of plants and nurseries producing seeds and seedlings. Commercial cannabis cultivation activities include planting and growing the plant, harvesting the buds, and then drying, curing or trimming them. The can-

*(Continued on page 4)*

nabis bud is considered a product. As such, cultivators have product liability exposure from potential injury claims. For instance, a consumer could file a claim after becoming ill from ingesting a product originating from a grower using non-approved pesticide.

Cultivating cannabis can be done outdoors in a field or indoors in a grow facility. Pesticide drift is a major problem for outdoor growers. Cultivating cannabis outdoors also carries the same exposures as other crops.<sup>9</sup> This includes natural disasters such as hail, drought or floods and loss of revenue from price fluctuations. While crop insurance covers losses from insects, natural disaster and mold, it is usually not available to outdoor cultivators.<sup>10</sup> Also, coverage of saleable cannabis and crop are two distinct coverages.

Indoor cultivating often relies on high-wattage lights to grow crops. This increases the risk of losses from fire and power outages. Mold can be an additional risk of growing indoors. Property damage limits for cultivators is frequently higher to address these risks. The remaining risks are in line with outdoor cultivation operations. All plants are subject to issues from water supply, insects and climate. The controlled atmosphere does offer greater control of these risks. It also provides a greater yield by allowing year-long growing. For these reasons, many licensed growers choose to cultivate indoors.<sup>11</sup>

### *Manufacturing*

Manufacturing is the next step in the supply chain. In some business models, processing the cannabis after harvest is done in this step, separate from the grow operations. This includes processing, drying, curing, packaging and labeling the cannabis product. Manufacturing can also include extraction, infusion and compounding processes, and the storing of components and ingredients. Manufacturers produce cannabis-derived or infused products in the form of edibles, vape oil, topical applications, wax, beverages, tinctures and capsules. They also produce accessories, such as papers, pipes and vape pens.

Manufacturers of cannabis products face many unique risks. Cannabis-infused products rely on cannabis extract. Extraction operations use chemical solvents to extract the active ingredients from the cannabis flowers. These solvents are usually flammable and can have explosion hazards, bringing the need for higher-limit property damage coverage.<sup>12</sup> As stated earlier, cannabis-infused edibles are exposed to heightened product liability, mislabeling and

false advertising hazards. Accidental over-consumption is more likely with edibles. Infusing cannabis into food can result in uneven dosage. Additionally, there is a significantly delayed psychoactive effect when consuming versus smoking cannabis.

Contamination risk also exposes manufactures to potential CGL, products liability, false advertising and property hazards. Improper product handling or issues involving pests, molds, bacteria and pesticides can result in contamination. For instance, bakeries producing edibles carry all the standard food preparation risks.<sup>13</sup> Should inventory become contaminated, it, and potentially the equipment used to process it, would need to be disposed or recalled, resulting in product and equipment losses. Product recall insurance would reimburse for any costs involved in recalling defective product from the market. However, this coverage can be expensive and difficult to obtain.

The oil used in the production of vape pen cartridge concentrates can also contain contaminants. The most common are pesticides, heavy metals and toxins. One 2015 study found pesticides were detected in one-third of the study's concentrate samples.<sup>14</sup> Vape pens are used to heat and vaporize the cannabis oil, which is then inhaled through the pen. Certain solvents or additives may produce health risks when heated. Vape pens may also not heat evenly or may be used in a way which increases risk. Many vape pens are manufactured in China and may not conform to newly issued regulations. Some pens have been falsely labeled as being from ceramic, which heats differently from glass or metal.<sup>15</sup>

### *Retail/Wholesale*

Retail shops, dispensaries and wholesale outlets are the final step in the supply chain. Wholesalers can serve as an intermediary between manufactures and retailers. Product is received from manufactures or wholesalers and is often already tested, labeled and packaged. A dispensary provides cannabis and related products to medical cannabis patients. Access to the dispensary may require a medical recommendation and/or a medical marijuana card. Retail shops serve recreational users and tend to focus more on branding and packaging for public appeal. They also tend to have wider product selection. Sales are made by bud tenders who provide dosage and product suggestions.<sup>16</sup>

*(Continued on page 5)*



Retailers, dispensaries and wholesalers (“retailers”) face risks from property exposure to fire, vandalism and theft. They also have CGL exposures from slips and falls, security failures and crime. Theft and crime risks are elevated for retailers due to their public accessibility. Dispensaries not anticipating the needs of disabled clients have higher exposure to claims of negligence.<sup>17</sup> As with the rest of the supply chain, retailers have exposure to product liability hazards related to their products. For instance, a consumer may sue for personal injury from an ingested edible.

Retailers who sell products infused with CBD face much legal uncertainty. CBD is an extract of hemp or cannabis and has no psychoactive effects. Bolstered by its purported health benefits, CBD-infused oils, topical treatments and food products have become popular. A provision in the 2018 Farm Bill is anticipated to remove hemp from the list of Schedule 1 controlled substances.<sup>18</sup>

As such, the U.S. Drug Enforcement Administration (DEA) will not consider hemp-derived CBD a controlled substance subject to the CSA. However, the U.S. Food and Drug Administration (FDA) has concluded CBD from any source is a drug, not a dietary supplement or an allowable additive to food. As such, CBD-infused products require FDA approval prior to being sold to the public.<sup>19</sup>

Companies continuing to sell hemp-sourced CBD should understand they face potential regulatory fines and civil litigation. As the FDA’s jurisdiction pertains to interstate commerce, this is particularly true for those selling across state lines. The FDA has warned many online sellers of CBD-infused products against making impermissible health claims. Adding to the complexity, some states (such as California) also prohibit hemp-derived CBD in food products. Thus, CBD-infused products could be the subject of class-action lawsuits alleging adulteration or misbranding under consumer protection laws.<sup>20</sup>

Insurance carriers need to understand the risks presented by potential violations of U.S. food and drug laws. This represents the more important long-term problem for the industry. Legal experts warn carriers are more likely to pay defense and indemnity dollars as a result of violating food and drug laws, as opposed to losses arising from the legal status of CBD under the CSA or the Farm Bill.<sup>21</sup>

### *Laboratories*

Laboratories test for potency, pesticides, mold, residual solvents and other contaminants. They are also usually required to perform sampling and validate consistency in products such as extracts, concentrates and edibles. Most states with legal cannabis require laboratory testing to ensure safety. However, not all states have accreditation requirements to ensure the quality of the lab’s testing procedures. Improper testing can result in product liability losses from bodily injury claims. It can also lead to professional liability losses from negligence claims. Additional risks are typical of all testing laboratories.

### *Distribution*

Cannabis distributors transport cannabis, cannabis-related products and cash between the various operators in the supply chain. Transporting in the cannabis industry is a specialized process with many risks. States frequently impose strict regulations on the transportation of cannabis. Because cannabis is illegal under federal law, the product is constrained to intrastate transportation.

It is important for commercial auto insurance to be tailored to the unique transportation risks and methods of the cannabis industry. The transport of large volumes of high-value product and cash requires excessive means to ensure safety. This is especially true when transporting to retail locations because of their greater visibility and public access. For this reason, transporting usually involves armed military trained drivers taking varied routes in armored and unmarked vehicles.<sup>22</sup>

It should be noted a standard auto policy may not cover employees driving personal vehicles for business purposes. These policies provide accident coverage and rental reimbursement. However, they do not typically cover the transport of cannabis.

### *Landlord*

Landlords who lease their owned building or property to cannabis-related businesses have unique risks. Many commercial property and GCL policies exclude coverage for tenants operating in the cannabis industry. Thus, a specialized lessor’s risk liability policy may be needed to protect the owner from lessee or third-party bodily injury or property damage claims.

*(Continued on page 6)*

◆ CONCLUSION

The explosive growth potential of the industry offers insurers new business opportunities. Nevertheless, insuring cannabis-related businesses is complicated and requires extensive knowledge of the industry. There are many legal uncertainties, unique hazards and emerging risks involved. Robust state regulations support the insurability of this market by setting standards. This is tempered somewhat by the increased potential for class-action litigation alleging noncompliance with narrower rules. Efforts to remove inconsistencies between federal and state laws in the new year could reduce the legal hazard. Ultimately, the decision on whether to enter the market is a business risk decision to be made by each insurer.

ABOUT THE AUTHOR



Anne Obersteadt is a researcher with the NAIC Center for Insurance Policy and Research. Since 2000, she has been at the NAIC performing financial, statistical and research analysis on all insurance sectors. In her current role, she has authored several articles for the CIPR Newsletter, a CIPR Study on the State of the Life Insurance Industry, organized forums on insurance related issues, and provided support for NAIC working groups. Before joining CIPR, she worked in other NAIC Departments where she published statistical reports, provided insurance guidance and statistical data for external parties, analyzed insurer financial filings for solvency issues, and authored commentaries on the financial performance of the life and property and casualty insurance sectors. Prior to the NAIC, she worked as a commercial loan officer for U.S. Bank. Ms. Obersteadt has a bachelor's degree in business administration and an MBA in finance.

ENDNOTES

- <sup>1</sup>Walsh, Chris, 2018. "Annual Marijuana Fact Book," *Marijuana Business Daily Ed. 6*, accessed at <https://mjbizdaily.com/wp-content/uploads/2018/05/Factbook2018-ExecutiveSummary.pdf>.
- <sup>2</sup>Dixon, Camille, 2018. Interview, California Department of Insurance.
- <sup>3</sup>Dreibus, Tony, 2015. "Lloyd's of London to Exit U.S. Cannabis Insurance Industry," *Marijuana Business Daily*, accessed at <https://mjbizdaily.com/exclusive-lloyds-of-london-to-exit-u-s-cannabis-industry/>.
- <sup>4</sup>Chaney, Fiona, and Woods, Pamela, 2017. "A Look At 1st-Party Insurance Coverage for Cannabis," *Law360*, accessed at [www.law360.com/articles/925337/a-look-at-1st-party-insurance-coverage-for-cannabis](http://www.law360.com/articles/925337/a-look-at-1st-party-insurance-coverage-for-cannabis).
- <sup>5</sup>American Bar, n.d. *How High: The Buzz on Emerging Issues in Coverage for Cannabis Operations*, accessed at [www.americanbar.org/content/dam/aba/administrative/litigation/materials/regionals-materials/2018-2019/win/8-Coverage-for-Cannabis-Operations/WIN-How-High-The-Buzz-on-Emerging-Issues-in-Coverage-for-Cannabis-Oper.pdf](http://www.americanbar.org/content/dam/aba/administrative/litigation/materials/regionals-materials/2018-2019/win/8-Coverage-for-Cannabis-Operations/WIN-How-High-The-Buzz-on-Emerging-Issues-in-Coverage-for-Cannabis-Oper.pdf).
- <sup>6</sup>Jackson, Stacey, 2018. Oral Presentation, NAIC Fall National Meeting, Cannabis Insurance (C) Working Group Meeting.
- <sup>7</sup>Ibid.
- <sup>8</sup>Ibid.
- <sup>9</sup>Ibid.
- <sup>10</sup>Weidenback, Lindsey, 2018. "Cannabis Businesses: Insurance Needs 101," Jefferson, Danielson, Sonn & Aylward, P.S. Blog, accessed at [www.idsalaw.com/blog/2018/5/30/cannabis-businesses-insurance-needs-101](http://www.idsalaw.com/blog/2018/5/30/cannabis-businesses-insurance-needs-101).
- <sup>11</sup>Jackson, Stacey, 2018. Oral Presentation, NAIC Fall National Meeting, Cannabis Insurance (C) Working Group Meeting.
- <sup>12</sup>Ibid.
- <sup>13</sup>Ibid.
- <sup>14</sup>Rabber, Jeffery, Sytze, Elzinga, and Charles Kaplan, 2015. "Understanding Dabs: Contamination Concerns of Cannabis Concentrates and Cannabinoid Transfer During the Act of Dabbing," *The Journal of Toxicological Sciences*, 40(6):797–803.
- <sup>15</sup>Richards, Kathleen, 2018. "Is Vaping Cannabis Safe?," *East Bay Express*, accessed at [www.eastbayexpress.com/oakland/is-vaping-cannabis-safe/Content?oid=14356874](http://www.eastbayexpress.com/oakland/is-vaping-cannabis-safe/Content?oid=14356874).
- <sup>16</sup>Oleinic, Alex, 2018. "A Marijuana Store and a Cannabis Dispensary: What's the Difference?," *Benzinga*, accessed at [www.benzinga.com/markets/cannabis/18/11/12569406/a-marijuana-store-and-a-cannabis-dispensary-whats-the-difference](http://www.benzinga.com/markets/cannabis/18/11/12569406/a-marijuana-store-and-a-cannabis-dispensary-whats-the-difference).
- <sup>17</sup>Jackson, Stacey, 2018. Oral Presentation, NAIC Fall National Meeting, Cannabis Insurance (C) Working Group Meeting.
- <sup>18</sup>Mundhal, Erin, 2018. "New Farm Bill Makes Hemp Federally Legal in the U.S.," *Inside Sources* accessed at [www.insidesources.com/legal-cannabis-is-closer-than-you-think/](http://www.insidesources.com/legal-cannabis-is-closer-than-you-think/).
- <sup>19</sup>Stewart, Ian, and Neill Willner, 2018. "Hemp-Derived CBD in Food Products, a Legal Rabbit Hole," *Wilson Elser*, accessed at [https://www.wilsonelser.com/news\\_and\\_insights/attorney\\_articles/3185-hemp-derived-cbd-in-food-products-a-legal-rabbit](https://www.wilsonelser.com/news_and_insights/attorney_articles/3185-hemp-derived-cbd-in-food-products-a-legal-rabbit).
- <sup>20</sup>Ibid.
- <sup>21</sup>Stewart, Ian 2018. Interview. Wilson Elser.
- <sup>22</sup>Guillot, Craig, 2018. "Cannabis Transport Risk," *Risk & Insurance*, accessed at <http://riskandinsurance.com/cannabis-transport-risk/>.

# GDPR FOR NORTH AMERICAN INSURERS

---

*By Mitchell Wein, Vice President, Research and Consulting, Novarica*

## ◆ INTRODUCTION

The General Data Protection Regulation (GDPR) went into effect May 25, 2018. The regulation is binding for all European Union (EU) member states and provides strict controls around the processing and movement of EU residents' personal data by corporations. The GDPR supplants earlier data directive regulations in the EU—i.e., Directive 95/46/EC. The GDPR intends to allow individuals to control their data. The regulation strictly defines legal uses of individuals' data and requires companies ensure individuals can explicitly and individually approve other uses of their data. Each country in the EU will establish a national supervisory authority to oversee compliance. These authorities may work in consort to enforce the law.

The GDPR creates regulations for corporations that process the personal data—personally identifiable information (PII)—of people residing in the EU. The laws apply regardless of country citizenship, the location of the person or the location of the corporation. These corporations (called “data controllers”) can be EU firms or firms operating in the EU from other jurisdictions around the world. Data controllers must demonstrate technology, process and organizational compliance. The GDPR's definition of PII is broader than the one in the U.S.; it covers almost anything attributable to a person.

The GDPR defines data controller responsibilities, data protection approaches and data anonymization requirements. The law defines the right of EU citizens to access their data from data controllers, the right to have their data erased and be forgotten, and the requirement for the data controller to have a data protection officer. The GDPR also lays out data breach notification requirements and fines for non-compliance. Under certain circumstances, these fines can total up to 4% of a corporation's global revenue. Whether the GDPR applies to EU citizens who travel to or reside in the U.S. remains unclear.

## ◆ CARRIER NEEDS AND STRATEGIES

The carriers must evaluate where and how they collect EU citizen data. They must also determine whether data they collect is necessary to the process they are performing (e.g., whether an applicant's profession is necessary for an insurance quote). Likewise, carriers need to determine whether they use EU citizen data for actuarial or marketing purposes the individual never explicitly authorized.

In addition, carriers will need to deploy capabilities to delete this data and enable the “right to be forgotten.” This is by far the most difficult GDPR provision to achieve due to the number of places data can be replicated and shared. Because some U.S. states are copying aspects of the GDPR (notably the “right to be forgotten” in the California Consumer Privacy Act), carriers will need to replicate these capabilities where necessary. Due to the emergence of state-by-state data and security regulations, compliance requirements may overlap and differ whether carriers operate in the EU and the U.S.

## ◆ THE GDPR AND ITS IMPACT ON NORTH AMERICAN CARRIERS

### *What is GDPR?*

The GDPR is an EU-wide regulation around the use, processing and movement of the personal data of people (data subjects) who live within the EU. The GDPR also applies to companies (data controllers) domiciled outside the EU if they collect personal data of someone living within the EU. The law is designed so individuals have control over their data and how it is used. It defines explicit legal uses for personal data; requires individualized, explicit consent for other uses; and requires companies allow individuals to see, correct or expunge their data.

The GDPR supplants the EU's earlier directive on data privacy. In the EU, directives are passed at the EU parliament level, approved by the Council of EU. Individual EU national parliaments then adopt these directives over a two-year period, with some minor adjustments on occasion. Since the GDPR is a regulation, it did not require national parliament approval.

The United Kingdom (UK) plans to withdraw from the EU in March 2019, after which time the GDPR will no longer apply there. The UK passed a parallel law called the Data Protection Act 2018 in May 2018 that provides similar protections.

### *Compliance Concerns for North American/U.S. Insurers*

The GDPR requires companies processing the personal data of EU residents to comply with certain provisions around using and safeguarding that data, regardless of the nationality of the person in question or the location of the company. Data controllers can be EU firms or firms operating in the EU from other jurisdictions around the world. They must demonstrate technology, process and organizational compliance under the GDPR.

*(Continued on page 8)*

## GDPR FOR NORTH AMERICAN INSURERS (CONTINUED)

---

For example: A U.S.-based insurance company with a website that offers renters' insurance and takes information from a person entering the information from an EU country for renting an apartment in the U.S. would be subject to EU regulations under the GDPR. The insurance carrier would, therefore, fall into the category of "data controller."

It is unclear if EU citizens living or working in the U.S. receive GDPR protections. This will certainly be tested in court. US citizens living or working in the EU would receive GDPR protections. It is also unclear whether GDPR covers U.S. subsidiaries of EU-domiciled companies.

The GDPR's definition of personally identifying information (PII) is broader than definitions of the same concept used in the U.S. The law considers any data one can use to identify a person as PII—name, address, billing information, etc., as well as IP address and location history.

Under Article 25, it is the responsibility of the data controllers to meet the principles of the GDPR data protections by "design and default." Data controllers must build safeguards to protect data into the way a process for a service is designed or the way a product is built.

Data controllers must anonymize (or create pseudonyms for) personal data they store so the data cannot be related back to the person unless additional data is introduced. This is similar to the encryption-at-rest requirement of New York State's recent cybersecurity law.

Data owners must preapprove all data use. It is assumed the data owner has opted out of the use of their data for any purpose unless they explicitly opt in. This is different from the U.S., where companies can default opt-in users, who then must opt out. All EU citizens are allowed to see the data a data controller has of theirs at any time, and they have the right to correct this data.

Under the GDPR, EU citizens have the right to have their data erased and be forgotten unless there is a specific regulatory or business reason to retain this data. Compliance will be difficult on a practical level because data controllers may make back-up copies of the data or may have sold the data if this were preauthorized by the data owner. The data must not be discoverable by a search engine if it has been deleted at the request of the data owner.

The GDPR requires the data controller to have a data protection officer. While this is similar to the requirement to have a

chief information security officer in the New York State regulations, it is not identical because it applies to personal data and not to ownership of a full security program.

The GDPR specifies data breach notification guidelines. Article 33 requires a 72-hour window to report breaches to the supervising authority in the country where the breach occurred if the breach compromises rights under the GDPR. This is similar to various notification requirements in different states in the U.S.

The regulations define all fines for noncompliance, which can range up to 4% of global revenue. These fines are substantially higher than what regulations in states like New York or South Carolina could charge.

### ◆ THE GDPR AS A PRECURSOR TO CALIFORNIA PRIVACY LAW

California has some regulations with similar sets of provisions. California passed an online erasure law in 2015 allowing someone to erase data posted by a minor from a website, mobile application or service. It is not clear from the law if someone can request to erase data if that person was a minor at the date of data creation but is no longer.

Additionally, California passed the California Consumer Privacy Act of 2018 in June 2018, which gave California residents the right to know what data companies have collected about them and why, to request deletion of personal data, to opt out of sales of their personal data (identifiers, biometrics, geo-location, internet browsing history, etc.), and to access their personal information easily. The law has some differences compared with the GDPR. It only requires the disclosure of the category of company receiving someone's data—not the name of the company itself as the GDPR mandates. The default is not opt-out like GDPR, though California mandates companies must provide the ability to opt out of someone selling your data. The law also goes into effect at the beginning of 2020, which will allow time for California to adjust the law if needed. The GDPR went into effect in May 2018.

The impact on U.S. digital advertising, the ability to buy data from third parties, and the impact on social media firms like Facebook, Amazon and Google could be enormous. These laws will affect insurers collecting information as well.

*(Continued on page 9)*



## GDPR FOR NORTH AMERICAN INSURERS (CONTINUED)

### ◆ CARRIER NEEDS AND STRATEGIES

#### *Consent Management*

Since the GDPR requires an opt-in system, insurance carriers must request, receive and capture customer consent in a way that is secure and referenceable by all processes relevant to customer data rights. Carriers must also capture the duration of this consent since it can expire under the GDPR.

Software solutions providing this system must be scalable and easy to integrate. Some vendors have moved toward an application program interface (API)-based microservices architecture to provide this capability. The solution must track all customer data permissions by specific element and category. It must also provide a front end for customers to see the permissions they have granted and to be able to revoke them. The business workflow around permission revocation must integrate with the repository storing the permissions. Regulatory-compliant security certificates for all data interactions need to be issued.

An audit trail must be available to the carrier so customer data interactions are tracked and mapped to data privacy

laws and regulations. Regulators must have available policy change logs and aggregate and granular consent tracking. Data controllers also need to issue bulk notifications to data owners if appropriate.

#### *Data Subject Rights*

The GDPR requires a number of “data subject” rights around personal data to be technically ensured. These are described in various GDPR Articles:

- *Article 12: Transparent information, communication and modalities for the exercise of the rights of the data subject*
- *Article 13: Information to be provided where personal data are collected from the data subject*
- *Article 14: Information to be provided where personal data have not been obtained from the data subject*
- *Article 15: Right of access by the data subject*
- *Article 16: Right to rectification*
- *Article 17: Right to erasure (right to be forgotten)*
- *Article 18: Right to restriction of processing*

*(Continued on page 10)*

### GDPR Comparison to U.S. State Regulations

Regulation and Focus	Technology and Vendors	Data Management	Organizational Requirements	Breach Notification
California <i>All Private Sector</i>	Consumers have the right to know third parties with access to their data	Personal data must be provided upon request	Systems to accommodate requests for personal data/verify consumer identity	
Delaware <i>All Private Sector</i>	(None)	(None)	Required breach prevention protocol  Free credit monitoring	60-day time frame to notify state residents affected by a breach
GDPR <i>Any company doing business in EU</i>	Third-party vendors that process PII data must be compliant	Must provide personal data to Europeans  “Data protection by default/design”	Data controllers, processors  Required assessment of data processing measures	Within 72 hours
New York <i>Financial Institutions</i>	Tighter controls expected on third parties housing PII data	Policy for destruction of data  Encryption at rest	Formal CISO  Formal cybersecurity	Within 72 hours of becoming aware of breach
South Carolina <i>Insurance</i>	Required oversight of third-party providers	Policy for destruction of non-public information	Documented cybersecurity program	Within 72 hours  Annual statement to DOI

- *Article 19: Notification obligation regarding rectification or erasure of personal data or restriction of processing*
- *Article 20: Right to data portability*
- *Article 21: Right to object*
- *Article 22: Automated individual decision-making, including profiling*
- *Article 23: Restrictions*

The details of these rights are summarized in <https://gdpr-info.eu/chapter-3/>.

As data controller, the carrier must ensure it enforces these rights through software. This includes creating a self-service portal for consents and disclaimers, correction of inaccurate or incomplete information (rectification), suppression of some data, ability to remove and forget some data, allowing individuals to revoke consent for use of their data, and having data portability from one data controller to another, or to the individual so they can see their personal data. The actions taken in the portal must be reflected in the processing and workflow of the carrier, including core systems processing of policy administration, billing, claims, customer relationship management (CRM), underwriting, actuarial analysis and marketing

### ◆ BREACH NOTIFICATION REQUIREMENTS

In the event of a data breach, data controllers operating in the EU must notify the supervising authority in the country where the breach occurred within 72 hours of becoming aware of the breach. The GDPR considers any event affecting the rights of the data subjects to be a breach. Under certain conditions, companies must also communicate the data breach to the data subjects.

Software must capture incident and breach records, evaluate the breach against notification needs and assess the risk against the data the carrier possesses. Carriers must establish an automated mechanism to understand potential harm to the “data subjects” and classify the risks. A response mechanism must also initiate. Portions of the incident and its impact may need to be documented by different areas within a company; this reporting needs to be coordinated through software. Finally, breach metrics and updates to enterprise operational risk assessments need to be reported and acted upon.

### ABOUT THE AUTHOR



*Mitch Wein is a Vice President of Research and Consulting at Novarica. He is an expert in international IT leadership and transformation as well as technology strategy for life, annuities, health, personal and commercial lines, wealth management, and banking. Prior to joining Novarica, Mitch served in senior technology*

*management positions at AXA including Interim CIO of AXA Ireland, Chief Architect and Head of CTO for AXA UK, and CTO of AXA Equitable; he was also on the AXA Group Architecture Review Board and Information Systems Architecture Committee Board and co-developed the AXA IT Strategy and Group Target Architecture. Mitch was also CTO for the Domestic Brokerage Group and Domestic Personal Lines at AIG and held roles at Bankers Trust (now Deutsche Bank) and Prudential Insurance. Mitch holds both an MBA in Information Systems and a BS in Finance from Fordham University.*

### ◆ CONCLUDING THOUGHTS

Any U.S. insurance carrier doing business in the EU or with EU citizens needs to concern itself with GDPR compliance. In addition, similar regulations are starting to emerge in U.S. states, with California leading the way. Regulatory requirements like “right to be forgotten” will be difficult to implement. Most importantly, the GDPR and similar U.S. regulations that emerge will require carriers to conduct a program of multiple projects that leverage different pieces of software to ensure compliance.

All carriers—whether they do business in the EU or not—should understand GDPR may serve as a model for future laws. The GDPR indicates what U.S. regulators may soon require of insurers’ data governance functions and overall enterprise security. While California’s recent data privacy law is more relaxed than the GDPR on several key points, this may not hold true for future regulations. Vended solutions can help, but carriers should still look to create robust data governance practices of their own as a way to ease into compliance with future regulations.

# INTELLIGENT MACHINES AND THE TRANSFORMATION OF INSURANCE

---

By Dimitris Karapiperis, CIPR Research Analyst

## ◆ INTRODUCTION

The history of intelligent machines is punctuated by bold predictions regarding their potential, as well as admonitions about their limitations. Traditional computing is rules-based and dependent on organized information and external programming. However, the science of artificial intelligence (AI) is dedicated to making machines intelligent by allowing them to learn independently from disparate and varied data.

Machine learning, which at its core is how AI can be achieved, is the act of teaching machines to learn from their experiences and adapt to their environment. In effect, machines can be self-taught to replicate the multilayered complexity of human behavior, ostensibly without any faults, weaknesses or hesitation.

The ability of AI and machine learning to automate and optimize every business function has been a game-changer for all industries. The insurance industry is no exception. In fact, being a historically data-heavy industry, it has always strived to improve its analytic capabilities with the latest technological tools.

Machine learning and AI seem to be tailor-made for the insurance industry with a variety of applications already widely adopted. Most obvious applications of machine learning in this industry are in claims processing, underwriting, fraud detection and customer service. Insurers also expect benefits from the analysis of competitor actions, customer trends and the detection of patterns in the data to gain unique insights at a detail and speed impossible for humans.

Although these new technologies are transformative in nature, they also present certain challenges just like other historical technological revolutions. This article briefly discusses how machine learning works, explores its main insurance applications and considers regulatory concerns. For a closer examination of how machines truly learn, their immense analytical capabilities and the implications for the insurance industry, the NAIC Center for Insurance Policy and Research (CIPR) is working on a research study, *The ABCs of Machine Learning*, which will be released in 2019.

## ◆ MACHINE LEARNING BASICS

Machine learning is considered a subset of AI. While AI includes the entirety of computer systems able to perform complex tasks normally requiring human intelligence, machine learning involves programs that have not been explicitly entered into a computer. Machine learning is the capability of computers to acquire their own knowledge by extracting

patterns from raw data.<sup>1</sup> This is distinct from other types of AI systems, which work by hard coding already acquired knowledge.

Machine learning has become the leading solution to most classic challenges with AI. Machine learning dominates the fields of computer vision, speech recognition, computer dialogue systems and robotics.<sup>2</sup> Interestingly, it borrows heavily from neuroscience to build algorithms based on artificial neural networks mimicking human brain processes of learning. Artificial neural networks, like their biological counterparts, are arranged in layers with information passing from one layer to another.

In this layered structure of algorithms, there are input and output layers with hidden layers between them. It is in the hidden layers where the artificial neurons process the inputs to produce an output similar to the activity in the human brain. Networks with multiple hidden layers, referred to as deep networks, allow for the processing of larger and more complex data and more computationally intensive training. Deep artificial neural networks are behind deep learning, which is a subset of machine learning.

The development of artificial neural networks would not have been possible without advanced computing power and big data. These artificial neural networks are powered by an enormous amount of information in order to learn. Recent innovations, such as self-driving cars, Alexa/Siri and Facebook's facial recognition owe their existence to machine learning technologies like artificial neural networks.

## ◆ MACHINE INTELLIGENCE IN INSURANCE

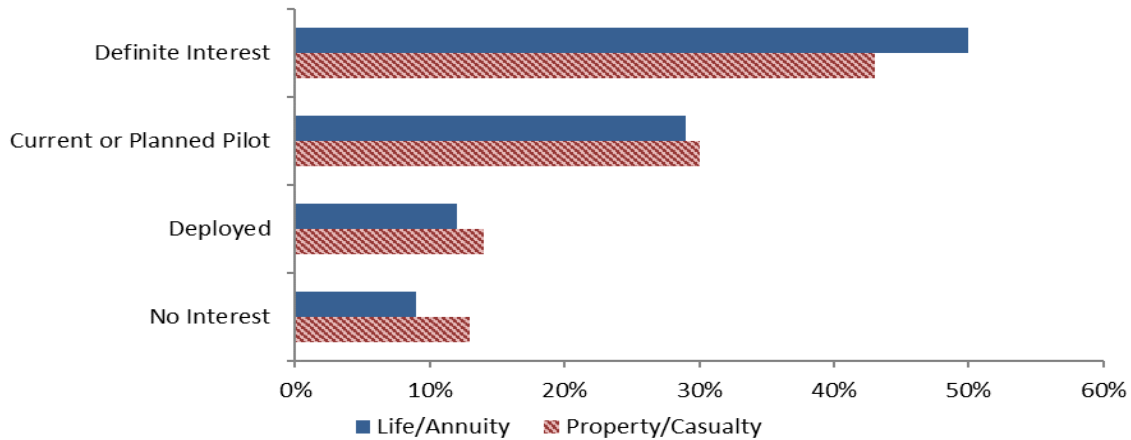
For most of their history, insurers have depended on expert judgments and simple rule-based heuristics to make critical predictions. Insurers have leveraged these new quantitative and computational technological innovations to improve their predictive modeling. However, the extensive use of data for business process optimization and evidence-based decision making has not yet been as prevalent.

Although data has always played a central role in the insurance industry, most insurers are processing just 10–15% of the data they possess.<sup>3</sup> Given the volume and richness of the data insurers have at their disposal, there is still so much value to be tapped. Machine learning is used to effectively mine all available data for predictive analytics and business insights.

Despite the mounting interest in machine learning, the number of insurers deploying machine learning still remains

*(Continued on page 12)*

FIGURE 1: INSURER MACHINE LEARNING ADOPTION



Source: Novarica.

relatively small.<sup>4</sup> According to Novarica, only 14% of property/casualty (P/C) insurers and 12% of life insurers actively use machine learning. However, about 30% of all insurers are working or plan to work on pilot programs, and nearly half are interested in developing machine learning (Figure 1)<sup>5</sup>.

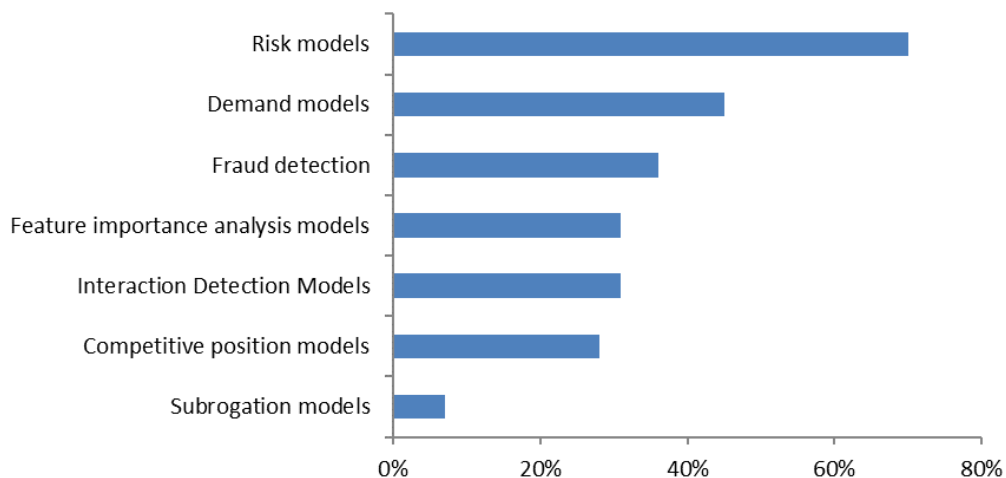
According to a recent report by Earnix, from all of the insurers currently using machine learning, 70% employ it to develop risk models, 45% to create demand models and 36% for fraud detection (Figure 2)<sup>6</sup>. These numbers are significantly ahead of the banking industry, in which only 11% of banks have embraced AI technologies.<sup>7</sup>

Many insurers report the process of adopting machine learning entails steep learning curves. In fact, 82% of insurers indicate they are still novices (30%) or have intermediate knowledge (52%) in developing and applying machine learning. Only 14% of insurers consider their use of machine learning as advanced, and just 4% feel they are experts.<sup>8</sup>

Despite the learning curve, those insurers who have adopted machine learning report positive returns on their investments.<sup>9</sup> About 52% of insurers expect immediate benefits mainly in terms of greater analytical accuracy and cost sav-

*(Continued on page 13)*

FIGURE 2: TYPES OF MODELS CREATED WITH MACHINE LEARNING



Source: Earnix.

ings (Figure 3).<sup>10</sup> However, benefits of machine learning tend to accrue unevenly with larger insurers being the main beneficiaries.

Many insurance technology start-ups (“InsurTechs”) are concentrating their innovation efforts on developing machine learning to help bring new AI-enabled applications into the insurance market. From all leading innovations among InsurTechs, the use of big data with machine learning tops the list.<sup>11</sup> According to a survey by International Business Machines (IBM), more than 50% of InsurTechs use AI and machine learning.<sup>12</sup> Leading insurers see InsurTechs as key drivers of innovation and, therefore, ideal sandboxes in which to experiment with AI and machine learning technologies. About 45% of all insurers and 81% of leading insurers have invested in or work closely with one or more InsurTechs.<sup>13</sup>

◆ **FRAUD DETECTION**

Insurers are primarily using machine learning to optimize traditional insurance functions. This includes the growing problem of insurance fraud. According to various estimates, annual insurer losses from fraud range from \$30 billion to \$80 billion.<sup>14,15</sup> Fraudulent claims represent a significant cost, but it is expensive to identify fraud the way claims are currently processed. By leveraging AI and machine learning, insurers have developed tools capable of sifting through all the claims to detect patterns of possible fraudulent activity.

Machine learning algorithms are superior to conventional statistical predictive models for fraud detection because they can quickly scan enormous amounts of unstructured

data in different formats. This includes claims adjusters’ handwritten notes, repair estimate documents and claimants’ social media accounts. It can even sift through videos and images to identify potential fraud.

The main advantage of machine learning is the ability to discover new variations of known and new fraud patterns. Obvious patterns have always been quite clear for investigators to spot, but many data anomalies may suggest fraudulent behavior that can be virtually undetectable by humans. With machine learning data analysis, human behavior can be analyzed at much deeper levels to produce incredibly precise criteria. The ability to continuously learn from data to detect new anomalies and patterns makes machine learning a uniquely powerful tool for fraud detection.

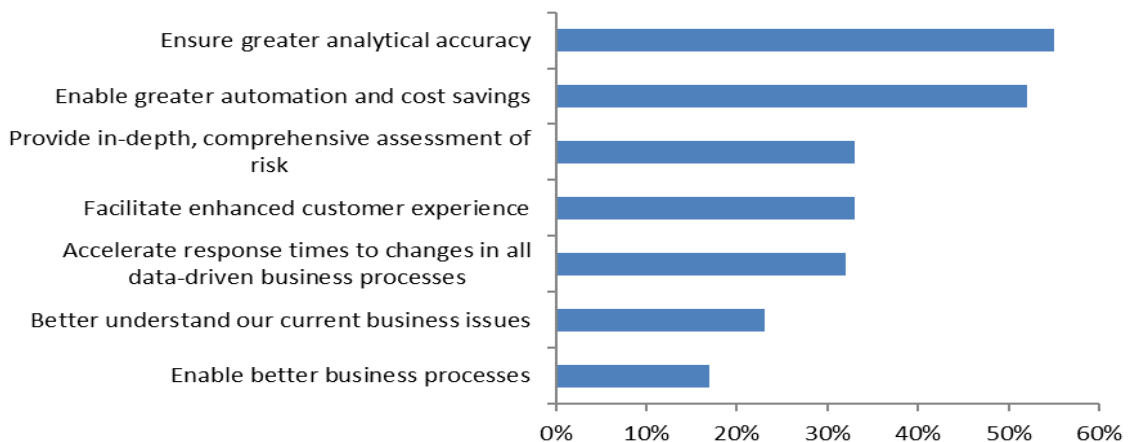
Machine learning has allowed investigators to prioritize claims and specifically target only those already red-flagged as likely fraudulent. The benefits of employing machine learning for fraud detection are three-fold. First, insurers can significantly reduce their overall losses from fraud. Second, insurers can use their investigative resources more efficiently. Lastly, insurers can avoid adversarial customer interactions by not challenging innocent claims.

◆ **CLAIMS PROCESSING**

Integrated with fraud-detecting solutions, machine learning can also be used to optimize claims processing. The interaction between the insurer and the policyholder and the ease and speed by which a claim is settled drives, to a large degree, both customer satisfaction and loyalty. Simplifying a stressful process for customers through claim process auto-

*(Continued on page 14)*

**FIGURE 3: TOP BENEFITS REALIZED WITH MACHINE LEARNING**



Source: Earnix.



mation can enhance customer experience while reducing settlement time and cutting costs.

Machine learning can allow computers to communicate with customers via phone call or email, using speech recognition and text scanning, and automatically fill out a claim. Machine learning can decrease the volume of calls and inquiries during the claims process, eliminating costly human errors that are often unavoidable in manually intensive tasks. An automated claims process can take only minutes to complete instead of the industry typical 72 hours.<sup>16</sup>

Better predictive models powered by machine learning can help insurers better understand and manage their claims costs. Gained valuable insights can save millions of dollars in costs through proactive claim management and fast claim settlement. Insurers can also calculate how much funding they need to allocate to claim reserves with more confidence and certainty.

InsurTech start-ups leading the digitalization of the industry exclusively use chatbots to interact with their policyholders during their claims process. Claims are submitted through apps on a mobile phone or computer, and they are usually approved within minutes.<sup>17</sup> The policyholder is then notified when the payment is made. Thus, AI and machine learning can effectively and efficiently take care of every step of the process from first reporting the claim to settling it.

### ◆ UNDERWRITING

Insurers have to evaluate a multitude of highly complex and often new and unfamiliar risks in the process of underwriting. In addition, there are multiple sources of useful data that can provide insights into a variety of risks. However, managing such large amounts of data is becoming challenging and often impossible for underwriters.

By incorporating real-time, highly granular data, machine learning can help underwriters simplify the complexity of their work and improve their decision making. Machine learning applications learn from training sets of past experiences to highlight key considerations for human decision-makers and minimize errors.

An underwriter's assessment can be flawed if false information is used or vital information is missing. This would essentially invalidate the essence of the underwriting process. Machine learning can verify the accuracy of the information applicants provide and reveal even more information using diverse sources like social media, news media and government agencies. In property and casualty insurance, machine

learning can use data from digital maps and high-resolution aerial imagery from drones and satellites to identify property features and quickly assess risks.

Machine learning can maximize the benefit from the explosion of data available to insurers from connected devices in homes, cars and even on people with wearables. In such a data-rich environment, personalized pricing in real time can be possible with machine learning. The increasing penetration of devices such as fitness trackers suggests underwriters could accurately calculate a policyholder's personal risk score based on daily activities, as well as the probability and severity of potential events. With pricing available in real time based on dynamic data from usage and behavior, policyholders can make decisions regarding their actions and how they affect their insurability, coverage and premiums.

### ◆ SALES AND MARKETING

The benefits of developing AI and machine learning capabilities in sales and marketing are evident. More than 85% of all customer interactions are predicted to be conducted without any human involvement by 2020.<sup>18</sup> Insurance consumers are increasingly expecting highly personalized services preferably through a digital medium, such as a smartphone. Machine learning can provide such customized experiences for consumers. It can also extract valuable insights from vast amounts of data on demographics, personal preferences and lifestyle generated during these interactions. Insurers can then use the data to develop personalized offers, policies and loyalty programs for their policyholders and prospective customers.

By increasing their touch points or interactions with customers, insurers can develop a mutually beneficial long-term relationship with them. With machine learning insurers can estimate the lifetime value of their customers. This value is represented by the difference between the revenues gained and the expenses made projected into the future relationship with a customer.

Lifetime value is calculated with behavior-based models widely applied to forecast customer market preferences and retention. Machine learning algorithms process available customer data to estimate risk probabilities from behaviors and attitudes, and the likelihood of keeping or surrendering policies. Customer life value prediction enhances insurers' marketing strategy development with machine learning providing valuable consumer insights.

Machine learning algorithms can also classify consumers based on their individual attributes such as education level,

*(Continued on page 15)*

profession, income level, age, location, etc. Consumer segmentation based on personal information and characteristics can allow for more precise targeted marketing for specific policies tailored to the perceived needs of each segment.

### ◆ RISK MANAGEMENT

Complex algorithms and machine learning-based systems are used to define and achieve organizational goals, accelerate performance, and improve differentiation. Risks to growth and profitability can be quantified and analyzed, especially those considered blind spots, as they are generally unknown to management.

The complexity of machine learning brings transparency concerns. In terms of risk management, there is a need for appropriate controls to be in place to manage machine learning as a tool and as a technology. The algorithms can evolve beyond even the understanding of those that created them. As the data gets reshuffled and combined in different ways with other data, it is important to be aware of new risks with these algorithms and the conclusions they provide.

Input data may also be vulnerable to risks. For instance, the data used for training in machine learning could have biases. The data may also be incomplete, outdated or at times entirely irrelevant. There could also be a mismatch between the training data and the actual input data used to generate the output.<sup>19</sup>

Decisions regarding the output are also vulnerable to various risks, such as erroneous interpretation or inappropriate use of the output. Algorithmic risks can potentially have more broad and long-term implications for an array of insurer risks, including financial, operational, market and reputational. Insurers should be aware of algorithmic risks when they develop and deploy machine learning solutions to ensure they are appropriately and effectively managed.<sup>20</sup>

### ◆ REGULATORY CHALLENGES

The independent learning nature of machine learning raises concerns for state insurance regulators. With machines capable of learning how to improve independently and without any human involvement, it is important to ensure the deployment of machine learning continues to adhere to regulations regarding data privacy, fairness, discrimination and cybersecurity.

Machine learning algorithms are based on proprietary data and models particularly difficult or impossible to interpret or explain. The resulting “black box” poses challenges to state insurance regulators trying to understand what data is

used, from what sources, and how the machines actually reach their conclusions. This lack of interpretability and auditability could potentially embed unknown and unforeseen risks if this technology is not appropriately managed and supervised. For this reason, the Financial Stability Board (FSB) cautioned the widespread use of machine learning models could become a macro-level risk for the insurance market.<sup>21</sup> Adequate testing and training of machine learning tools, auditable by regulators, is essential to ensure they operate within their design parameters and in full compliance with existing regulations.

The ability of machine learning to analyze data at a very granular level for more accurate pricing and risk assessment could have consumer protection implications. To avoid discrimination, data on sensitive characteristics such as race, religion, gender, etc. are not supposed to be considered by insurers. However, machine learning algorithms may use geographical data or other individual attributes, creating outcomes which implicitly correlate with those sensitive characteristics. This could result in the same biases and exclusions of groups of consumers regulators were trying to avoid in the first place.

By using machine learning applications to price risk, insurers could reduce the degree of moral hazard and adverse selection they are facing, but at the same time undermine the risk pooling function of insurance. It is true offering dynamic personal coverage with continuous pricing adjustments according to policyholders’ changing circumstances and behavior could solve the moral hazard problem. It is equally true offering highly customizable policies reflecting the unique characteristics of each individual would eliminate adverse selection. However, this type of risk pricing would lead to higher premiums for riskier consumers, potentially rendering certain groups of people effectively uninsurable by the private market.

In addition, the more dynamic and adaptable machine learning programs become, the harder it is to predict their actions and their impact creating new risks, often with a distinct ethical dimension. A set of ethical guidelines for data scientists developing machine learning applications is needed to ensure their actions do not harm consumers and the public in general. The Code of Ethics of the Association for Computing Machinery (ACM) currently serves as the basis for ethical decision-making by its members.<sup>22</sup> It supports accountability and transparency as the most effective means to ensure compliance with developers’ primary responsibility which is to always protect the public.<sup>23</sup>

*(Continued on page 16)*

Collecting data from diverse sources to arrive at automated conclusions and decisions about people raises a host of questions about privacy and data quality. Insurers should be able to show what inputs go into their models and explain the logic behind their decisions. At the same time, with machine learning, this kind of transparency into the data and the decision-making process tends to be more difficult than traditional rules-based models. New regulatory approaches may be required to effectively alleviate concerns about machine learning models.

◆ **CONCLUSION**

AI and machine learning are developing technologies with broad uses and high utility for insurers. Measuring, controlling and pricing risk with greater precision can reduce costs and improve efficiency for insurers and some consumers. While machine learning can engage and empower consumers and even in some cases expand insurability, it may potentially price other consumers out of the market.

Efforts to improve the interpretability of AI and machine learning are important for insurer risk management, effective regulatory supervision and greater public trust. Insurers are innovating and changing the way insurance is delivered, purchased and experienced. State insurance regulators are responding by broadening their regulatory scope to account for all the challenges created by these new innovations. The state insurance regulatory framework strives to be forward-looking and sufficiently flexible to allow for innovation, without straying from its mission to protect consumers and the viability of the insurance market.

**ABOUT THE AUTHOR**



*Dimitris Karapiperis joined the NAIC in 2001 and he is a researcher with the NAIC Center for Insurance Policy and Research. He has worked for more than 20 years as an economist and analyst in the financial services industry, focusing on economic, financial market and insurance industry trends and developments.*

*Karapiperis studied economics and finance at Rutgers University and the New School for Social Research, and he developed an extensive research background while working in the public and private sector.*

**ENDNOTES**

- <sup>1</sup>Goodfellow, I., Bengio, Y., Courville, A., & Bengio, Y., 2016. "Deep Learning." The MIT Press, Cambridge, Massachusetts.
- <sup>2</sup>McAllester, D., 2009. "Case Studies in Machine Learning." Toyota Technological Institute at Chicago.
- <sup>3</sup>Malhotra, R. and Sharma, S., 2018. "Machine Learning in Insurance," FS Perspectives, Accenture. Accessed at
- <sup>4</sup>Novarica, 2018. "Emerging Technology in Insurance: AI, Big Data, Chatbots, IoT, RPA, and more," Novarica Research Council, Jan, 2018.
- <sup>5</sup>Novarica, 2018. "Emerging Technology in Insurance: AI, Big Data, Chatbots, IoT, RPA, and more," Novarica Research Council, Jan, 2018.
- <sup>6</sup>Earnix, 2018. "Machine Learning – Growing, Promising, Challenging." Accessed at
- <sup>7</sup>Brill, J., Drury, N., Harper, A. and Wagle, L., 2016. "The cognitive bank: Coding data to bolster growth and transform the enterprise," IBM Institute for Business Value. Accessed at [www-01.ibm.com/common/ssi/cgi-bin/ssialias?subtype=XB&infotype=PM&htmlfid=GBE03713USEN&attachmnt=GBE03713USEN.PDF](http://www-01.ibm.com/common/ssi/cgi-bin/ssialias?subtype=XB&infotype=PM&htmlfid=GBE03713USEN&attachmnt=GBE03713USEN.PDF).
- <sup>8</sup>Earnix, 2018. "Machine Learning – Growing, Promising, Challenging." Accessed at [https://earnix.com/wp-content/uploads/2017/03/2017\\_Machine\\_learning\\_survey\\_report.pdf](https://earnix.com/wp-content/uploads/2017/03/2017_Machine_learning_survey_report.pdf).
- <sup>10</sup>Ibid.
- <sup>11</sup>McKinsey, 2017. "Digital disruption in insurance: Cutting through the noise," March 2017. Accessed at [www.mckinsey.com/industries/financial-services/our-insights/digital-insurance](http://www.mckinsey.com/industries/financial-services/our-insights/digital-insurance).
- <sup>12</sup>Bieck, C., Kesterson-Townes, L., Marshall, A., McLaughlin, M. and Riedel, S., 2018. "Friend or Foe? Insurtech and the global insurance industry," IBM Institute for Business Value. Accessed at <http://ibm.biz/insurtechs>.
- <sup>13</sup>Ibid.
- <sup>14</sup>Malhotra, R. and Sharma, S., 2018. "Machine Learning in Insurance," FS Perspectives, Accenture. Accessed at
- <sup>15</sup>Earnix, 2018. "Machine Learning – Growing, Promising, Challenging." Accessed at
- <sup>15</sup>[www.insurancefraud.org/statistics.htm](http://www.insurancefraud.org/statistics.htm).
- <sup>16</sup>[www.propertycasualty360.com/2018/03/22/claims-handling-is-ground-zero-for-customer-retent/](http://www.propertycasualty360.com/2018/03/22/claims-handling-is-ground-zero-for-customer-retent/).
- <sup>17</sup><http://iireporter.com/lemonade-reports-insurance-claim-paid-in-3-seconds-with-no-paperwork/>.
- <sup>18</sup>Deloitte Digital, 2017. "From Mystery to Mastery: Unlocking the Business Value of Artificial Intelligence in the Insurance Industry." Accessed at [www2.deloitte.com/content/dam/Deloitte/ru/Documents/financial-services/artificial-intelligence-in-insurance.pdf](http://www2.deloitte.com/content/dam/Deloitte/ru/Documents/financial-services/artificial-intelligence-in-insurance.pdf).
- <sup>19</sup>Krishna, D., Albinson, N., and Chu, Y., 2017. "Managing Algorithmic Risks," Deloitte. Accessed at <https://www2.deloitte.com/content/dam/Deloitte/lu/Documents/risk/lu-risk-algorithmic-machine-learning-risk-management.pdf>.
- <sup>20</sup>Krishna, D., Albinson, N., and Chu, Y., 2017. "Managing Algorithmic Risks," Deloitte. Accessed at <https://www2.deloitte.com/content/dam/Deloitte/lu/Documents/risk/lu-risk-algorithmic-machine-learning-risk-management.pdf>.
- <sup>21</sup>Financial Stability Board. 2017. "FSB considers financial stability implications of artificial intelligence and machine learning," Press Release, Nov. 1, 2017. Accessed at [www.fsb.org/2017/11/fsb-considers-financial-stability-implications-of-artificial-intelligence-and-machine-learning](http://www.fsb.org/2017/11/fsb-considers-financial-stability-implications-of-artificial-intelligence-and-machine-learning).
- <sup>22</sup>Association for Computing Machinery, 2018. "Code of Ethics and Professional Conduct." Accessed at [www.acm.org/code-of-ethics](http://www.acm.org/code-of-ethics).
- <sup>23</sup>Association for Computing Machinery, 2018. "Code of Ethics and Professional Conduct." Accessed at [www.acm.org/code-of-ethics](http://www.acm.org/code-of-ethics).

# WHEN INNOVATION MEETS REGULATION

---

By Shanique (“Nikki”) Hall, CIPR Assistant Director; and Julie Sherlock, Head of Insurance Strategy, Boost Insurance

## ◆ INTRODUCTION

Innovation in the insurance industry (and the world) is happening at a pace much quicker than most of us can keep up with. Fueled by recent technological advances, an exponential growth of data, changing consumer expectations, and a tremendous amount of capital, insurance technology start-ups (“InsurTechs”) are redefining the fundamentals of insurance, including the way insurers communicate with policyholders, measure risks and process claims. As the InsurTech sector continues to emerge, and the use of new technology becomes more prevalent, state insurance regulators are moving quickly to ensure they are equipped with the tools to oversee this changing marketplace. They are also taking a more active role in understanding InsurTech.

The NAIC established an Innovation and Technology (EX) Task Force in late 2016 to monitor new InsurTech developments and help state insurance regulators stay informed of emerging technology. The Task Force is currently studying different ways in which the U.S. insurance regulatory framework can respond to and foster innovation. It has formed a small group of state insurance regulators to compile information on what states are doing with respect to innovation. The Task Force is also looking into several regulatory areas where innovation may be facing obstacles and has identified three specific areas to study. They are anti-rebating laws, cancellation and renewal regulations, and states’ implementation and interpretation of Uniform Electronic Transactions Act or UETA.

To better understand some of these obstacles, I’ve partnered with Julie Sherlock, Head of Insurance Strategy at Boost Insurance, on this article. Boost is a technology-enabled MGA that streamlines the go-to-market process for innovative insurance products and distribution platforms by providing Insurance Infrastructure-as-a-Service to InsurTech startups and digital distribution partners. Julie was a panelist at our CIPR event held during the 2018 Summer NAIC National Meeting titled, “Can Regulation Keep up with Innovation?” and provided valuable insights on the regulatory challenges she has seen impacting InsurTech start-ups. This article will begin with an update on the current InsurTech landscape and initiatives by state insurance regulators to advance innovation. Julie will then provide her perspectives on some of the regulatory hurdles to innovation in the insurance industry.

## ◆ THE INSURTECH LANDSCAPE

While there is no one definition of InsurTech, the broadest definition involves the use of new technologies with the potential to bring innovation to the insurance sector. The term InsurTech is most commonly used to describe new start-up ventures, such as Lemonade, Slice Labs and Hippo, that were launched over the last five years. These InsurTechs are harnessing the latest technology—for example, artificial intelligence, cloud computing, blockchain/distributed ledger technology (DLT) and smart contracts, and the Internet of Things (IoT)—to develop and deliver new and innovative customer-centric products and services. Moreover, these InsurTechs are active in all major insurance products and all lines of business, with concentrations in the property/casualty business and in the marketing and distribution areas of the value chain.

Although the InsurTech “movement” is still in its early stages, it has become a global phenomenon, with well over 1,000 start-ups in more than 60 countries.<sup>1</sup> The United States is the biggest destination for InsurTechs due to its large base of sophisticated consumers and vast pool of venture capital. According to Deloitte, there were 1,516 InsurTechs globally as of the first half of 2018, with the U.S. accounting for a little over half of all start-up launches since 2008. While the majority of InsurTech launches still take place in the United States, the United Kingdom, Germany, Singapore and India are now significant markets and many other countries are following suit.<sup>2</sup>

More than \$7 billion has been invested in InsurTech companies globally since 2014, with a record \$2.5 billion raised across 101 deals in the first three quarters of 2018, according to FinTech Global (Figure 1 on the following page).<sup>3</sup> Moreover, there are a number of InsurTech accelerators and bootcamp programs helping InsurTechs attract capital and attain scale. For example, Startupbootcamp, Plug and Play Tech Center and Global Insurance Accelerator all provide InsurTechs access to investors and mentors.

InsurTech is said to now be entering its second wave as investors are channeling additional money towards more mature InsurTechs. In an InsurTech study led by Deloitte, it was noted “investor activity is expected to remain robust as investors shift their attention to maturing entities. More established InsurTechs will likely focus on gearing up

*(Continued on page 18)*

**FIGURE 1: GLOBAL INSURTECH INVESTMENT (USD, NUMBER OF DEALS)**



Source: Fintech Global.

their solutions to scale, but we may yet see a second wave of new startups not too far down the road in areas where innovation has lagged.”<sup>4</sup>

InsurTechs are also driving a new era of collaboration with incumbent insurers. Many incumbents have acquired technology from InsurTechs and incorporated it into their own ecosystems, or they are partnering with InsurTechs that provide software-as-a-service (SaaS) or licensing solutions. A recent World InsurTech Report by Capgemini<sup>6</sup> found insurance executives across the industry believe InsurTechs will be a major catalyst to redefine the customer experience, deliver widespread efficiencies, and create new business models. Of the 140 insurance executives surveyed, almost 96% of them said they were looking to collaborate with InsurTech firms in some way.

◆ **U.S. REGULATORY INITIATIVES**

The U.S. regulatory system is unique and can be confusing to new entities. Some of the innovators and entrepreneurs behind InsurTech initiatives come from the technology sector and are not as familiar with the regulatory environment specific to insurance. While the rest of the world tends to view the U.S. market as a whole, our state-based system of insurance is regulated by insurance departments in the 56 U.S. states and territories. As such, rules and regulations may vary by state, which can be complicated for innovators to navigate. This is one reason regulation is often cited as an inhibitor of innovation in the insurance industry.

As InsurTechs have made inroads into the insurance world, it is particularly important they understand the regulated na-

ture of the industry. State insurance regulators and the NAIC have been reaching out to InsurTechs to start a dialogue early on to promulgate a better understanding of the U.S. regulatory landscape. This dialogue also allows state insurance regulators to better understand the innovations in technology and products being developed. The NAIC has coordinated and facilitated numerous events and dialogues with InsurTechs and incumbent insurers including a “Bridge the Gap” event at Plug and Play and a “Meet the Regulator” session at the InsurTech Connect Conference in 2017 and 2018.

State insurance regulators and the NAIC also recognize there may be outdated regulations impeding the development of innovative InsurTech products and services. Many of the laws and regulations currently on the books do not contemplate technologies such as big data analytics and other recent innovations. However, their underlying purpose is often still very much relevant and important. Accordingly, it is important for state insurance regulators and InsurTechs to work together from the beginning to ensure applicable statutes and regulations are being followed. This could help bring innovative products to market more quickly and point out where regulations effective in the past, need to be modernized.

The NAIC Innovation and Technology (EX) Task Force recently compiled a list of innovation and technology contacts in each state insurance department. This will allow startups, accelerators and incumbent insurers to get in direct contact with someone in most State Departments of Insurance to ask questions regarding new concepts and ideas. The Task Force is also studying several regulatory areas where innovation may be facing obstacles.

*(Continued on page 19)*



### ◆ ANTI-REBATING

One area the Task Force is studying is insurance rebating, which occurs when an insurer or producer offers something of value to a customer, not specified in the policy, to “induce” an insurance purchase. Rebates can include cash, gifts, services, payment of premiums, employment, or almost any other thing of value, usually over a certain specified amount.

Historically, rebates were used in the life insurance industry by agents to induce a customer to purchase life insurance. The first set of anti-rebate laws were introduced more than 100 years ago after agents’ use of rebates raised questions around unfair discriminatory practices. While the definition of what constitutes rebating may vary from state to state, nearly all states have some form of anti-rebating or anti-inducement laws on the books, most of which are substantially similar to the NAIC *Unfair Trade Practices Act* (Model #880).<sup>7</sup>

Although promotional items, such as mugs and pens, are often exempt from such laws, a company must be especially careful when it begins to offer—at no charge—more valuable goods or value-added services to its customers. For example, if a new entrant provided a wearable or smart home device to its customers, they should check to see if this would constitute an inducement and therefore would violate anti-rebating laws. A number of states have enacted revisions to their anti-rebating laws permitting certain value-added services directly related to the insurance policy sold.

The other two areas the Task Force is studying are cancellation and renewal regulations as well as states’ implementation and interpretation of Uniform Electronic Transactions Act in the area of e-signatures. Julie Sherlock will provide more insight on these two areas in the remainder of this article.

#### *“It Depends...”*

At Boost, we have a recurring joke of “it depends” which we shout in the office after someone has identified another state-by-state variance that may stand in the way of improving the industry—both for the policyholders it should be serving as well as the companies that do business in it. There are numerous examples of this, but complex and inconsistent cancellation/non-renewal notice laws, and e-delivery and communication restrictions are two low-hanging targets we feel innovators and regulators can tackle together.

### ◆ POLICY CANCELLATION AND NON-RENEWAL NOTICES

Policy cancellation and non-renewal requirements are complicated and disparate across the 56 jurisdictions. These laws can be frustrating because they differ significantly by state

and by line of business. Whether it’s understanding and tracking policyholder notice timing requirements and ensuring the reasons for cancellation or termination are compliant in each respective jurisdiction, the administrative costs associated with this issue are enormous. Creating the technology to track and support this can cost hundreds of thousands of dollars, sometimes millions depending on the company size and the number of lines of business they support. Hundreds of hours are spent configuring and maintaining the systems needed to track these inconsistent rules.

Even if an insurer, managing general agent (MGA) or Insur-Tech start-up is only focused on a single line of business in a single state, they will still deal with several hundred configurations, which for a technology-savvy company is not terribly taxing. However, what about an MGA supporting multiple lines of business in multiple states or country-wide? They will have to configure thousands upon thousands of disjointed and varying rules and requirements—a massive undertaking.

Consider these challenges: different cancellation reasons, notice timing, notice delivery methods—all varying by line of business, by state, by reason. Does this state require a 90-day policy cancellation notice? A 60-day notice? Can we mail it? Can we email it? Will we be allowed to cancel/non-renew for this reason or do we need to change our policy form? Boost feels there should be greater consistency on this relatively simple issue across the states.

### ◆ E-DELIVERY AND E-COMMUNICATION

Currently 38 states allow for policyholders to receive all insurance transaction documents and insurer communications over the internet—if the consumer has given their consent.

Despite e-signatures being more efficient, it isn’t the default method. Delivering a policy electronically is pretty simple these days. It’s also definitely the modern consumer’s preferred method of receipt. This simple change would instantly save billions of dollars across the industry—not to mention however many trees that get tossed into the trash, unopened.

Another challenge is “policy delivery” which is far from the only communication between an insurer and its policyholders. Depending on the state, certain notifications—like the cancellation and non-renewal notices discussed earlier—need to be sent via postal service. Consider the reliance on proof of mailing—this can be purchased at a physical post

*(Continued on page 20)*

office or, to avoid that trip, you can upgrade to certified mail at a higher cost. In the age where online communication is the rule, not the exception, and everything has a digital footprint, this “postal service certification” seems entirely unnecessary, unless the policyholder expressly communicates it as their preference.

There have been incremental changes made to adjust to our new digital world. For example, 49 states now allow electronic proof of personal auto insurance for drivers—so let’s take this next step forward and make electronic document delivery and communication of all types the default.

Boost Insurance is excited to work with the NAIC and other entities to tackle these issues later this year. Some of the critical issues we are trying to solve for, in addition to those mentioned in the article, include: improving the go-to-market process for start-ups, improving products and notice requirements to better support the on-demand/gig/sharing economy, modernizing the declination requirements and marketing restrictions in non-admitted business, and many more.

◆ SUMMARY

The rise of InsurTech along with technological advances is having a profound impact on the insurance industry. State insurance regulators want very much to smooth the way for innovative products and services, but, need to make sure the consumer is protected, insurance laws are not violated, and they do not create unintended consequences. State insurance regulators will continue to work with innovators to identify obstacles that may need to be reviewed for relevancy as the world of technology evolves.

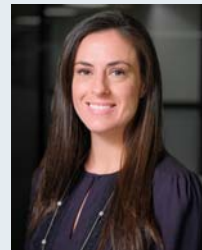
ENDNOTES

<sup>1</sup> Source: Innovators Edge.  
<sup>2</sup> “InsurTech entering its second wave,” Deloitte Center for Financial Services, 2018. Retrieved from: [www2.deloitte.com/content/dam/Deloitte/us/Documents/financial-services/us-dcfs-insurtech-entering-second-wave.pdf](http://www2.deloitte.com/content/dam/Deloitte/us/Documents/financial-services/us-dcfs-insurtech-entering-second-wave.pdf)  
<sup>3</sup> “InsurTech funding on track for a record-breaking 2018 with \$1.7bn in capital raised,” FinTech Global, August 22, 2018. Retrieved from: <http://fintech.global/insurtech-funding-on-track-for-a-record-breaking-2018-with-1-7bn-in-capital-raised/>  
<sup>4</sup> “InsurTech entering its second wave,” Deloitte Center for Financial Services, 2018. Retrieved from: [www2.deloitte.com/content/dam/Deloitte/us/Documents/financial-services/us-dcfs-insurtech-entering-second-wave.pdf](http://www2.deloitte.com/content/dam/Deloitte/us/Documents/financial-services/us-dcfs-insurtech-entering-second-wave.pdf)  
<sup>5</sup> Ibid.  
<sup>6</sup> “The World InsurTech Report,” Capgemini, Oct. 2, 2018.  
<sup>7</sup> Parson, J., Marlette, D., and Powell, S., “Time to Dust off the Anti-Rebate Laws,” Journal of Insurance Regulation,” 2017. Retrieved from: [https://www.naic.org/prod\\_serv/JIR-ZA-36-07-EL.pdf](https://www.naic.org/prod_serv/JIR-ZA-36-07-EL.pdf)

ABOUT THE AUTHORS



Shanique (Nikki) Hall is the Assistant Director of the NAIC Center for Insurance Policy and Research (CIPR). She currently oversees the CIPR’s primary work streams, including the CIPR Newsletter; studies; events; webinars and website. Ms. Hall has extensive capital markets and insurance expertise and has authored copious articles on major insurance regulatory and public policy matters. She began her career at J.P. Morgan Securities as a research analyst in the Global Economic Research Division. At J.P. Morgan, Ms. Hall analyzed regional economic conditions and worked closely with the chief economist to publish research on the principal forces shaping the economy and financial markets. Ms. Hall has a bachelor’s degree in economics from Albany State University and an MBA in financial services from St. John’s University. She also studied abroad at the London School of Economics.



Julie Sherlock is the Head of Insurance Strategy at Boost Insurance. She is responsible for executing Boost’s Insurance Strategy with oversight on underwriting, product development, and claims; additionally she serves as an underwriting resource for Boost’s Insurtech Partners. Sherlock has an extensive insurance background, with over 13 years of experience in high net worth personal lines. She has expertise in complex programs, fine art insurance, and has underwritten for multiple lines of business, including Non-Admitted Solutions. She also has reinsurance experience, handling both facultative and treaty solutions for one of her prior carriers. In her last role she led the Underwriting Department for an Insurance carrier, responsible for all aspects of underwriting execution and underwriter development. Sherlock has a BA from Villanova University and an Art Business Certification from NYU.

---

**Innovation meets regulation.**  
In the middle of the map.  
In the middle of the year.



JUNE 3 - 7, 2019 | KANSAS CITY, MO



[summit.naic.org](http://summit.naic.org)





NAIC Central Office  
Center for Insurance Policy and Research  
1100 Walnut Street, Suite 1500  
Kansas City, MO 64106-2197  
Phone: 816-842-3600  
Fax: 816-783-8175

<http://www.naic.org>

<http://cipr.naic.org>

To subscribe to the CIPR mailing list, please email [CIPRNEWS@NAIC.org](mailto:CIPRNEWS@NAIC.org).

© Copyright 2019 National Association of Insurance Commissioners, all rights reserved.

The National Association of Insurance Commissioners (NAIC) is the U.S. standard-setting and regulatory support organization created and governed by the chief insurance regulators from the 50 states, the District of Columbia and five U.S. territories. Through the NAIC, state insurance regulators establish standards and best practices, conduct peer review, and coordinate their regulatory oversight. NAIC staff supports these efforts and represents the collective views of state regulators domestically and internationally. NAIC members, together with the central resources of the NAIC, form the national system of state-based insurance regulation in the U.S. For more information, visit [www.naic.org](http://www.naic.org).

**The views expressed in this publication do not necessarily represent the views of NAIC, its officers or members.** All information contained in this document is obtained from sources believed by the NAIC to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, such information is provided "as is" without warranty of any kind. **NO WARRANTY IS MADE, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY OPINION OR INFORMATION GIVEN OR MADE IN THIS PUBLICATION.**

This publication is provided solely to subscribers and then solely in connection with and in furtherance of the regulatory purposes and objectives of the NAIC and state insurance regulation. Data or information discussed or shown may be confidential and or proprietary. Further distribution of this publication by the recipient to anyone is strictly prohibited. Anyone desiring to become a subscriber should contact the Center for Insurance Policy and Research Department directly.

---