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# **THE SILENT CYBER RACKET**

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## 1. INTRODUCTION

The rapid pace of advancement in cyber and computing capabilities in the past twenty years has been accompanied by a myriad of new risks ranging from accidental system failures that halt operations to more sinister ransomware attacks that hold companies hostage. On June 27, 2017, the country of Ukraine grinded to a halt as a powerful malware attack destroyed computer networks in several prominent companies and organizations. Among those hit by the infamous attack coined “NotPetya” was U.S. pharmaceutical giant Merck, which incurred over \$870 million in damages from crippled computer systems and destroyed servers (Griffin, 2019). The executive board at Merck scrambled to recoup the huge losses, filing for coverage with property policies from its 30+ insurers. These insurers, who had failed to exclude cyber risks from their policy agreements, were on the hook for significant liabilities that they did not expect to cover.

Though the \$1.3 billion lawsuit was eventually ruled in favor of the insurers due to a policy exclusion that transferred to “cyber-war,” the enormous potential loss nonetheless prompted excess and surplus (E&S) markets to explore the possibility of hidden cyber coverage within non-cyber policies (Griffin, 2019). This unintentional coverage of cyber risks, known as silent cyber, has become a huge concern across E&S markets as cyber risks continue to expand.

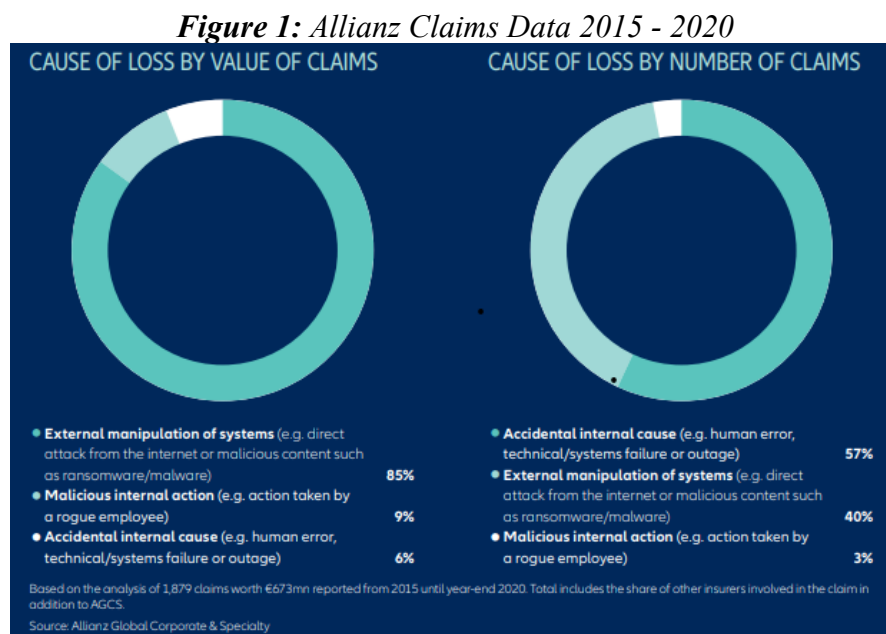
## 2. CYBER PERILS

Cyber perils can be classified into three main categories:

- **Accidental internal causes** - These unintentional cyber perils originate within a company and include risks like employee errors and software failures.
- **Malicious internal actions** - This category denotes any deliberate cyber damage done by rogue employees, including actions like the public release of confidential data.

- **Malicious external manipulation** - These external perils involve intentional attacks from outside entities that lead to cyber damage and losses.

Figure 1 shows claims analytics using these three categories at leading cyber insurer Allianz. Of particular interest is the external manipulation of systems, which accounts for 85% of total claim losses despite only making up 40% of the total number of claims.



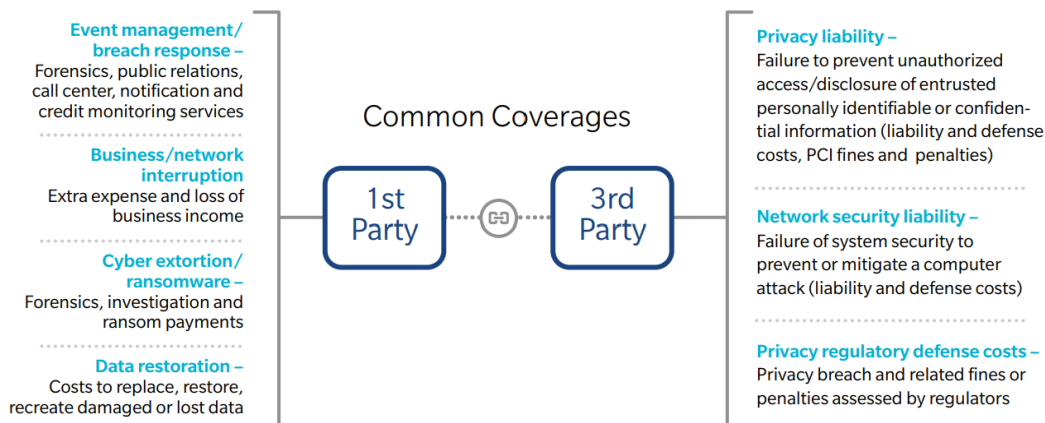
Perhaps the most notable external cyber threat currently is ransomware, where malicious actors render company systems unusable and demand compensation to restore access. US ransom demands amounted to \$6.3 billion in 2020 with the associated costs exceeding \$100 billion, and they continue to grow due to the immense profitability for cybercriminals (*Allianz, 2020*).

### 3. CYBER LOSSES

Cyber losses caused by these perils can be divided into two distinct groups: first-party losses, which concern the direct financial impact of losses incurred by the insured, and third-party losses, which entail costs from liabilities with external parties following a cyber incident. While traditional cyber insurance policies have a robust range of coverages, with popular product features

visible in Figure 2, the market for cyber insurance is still developing with a lack of standardized industry coverages and limited historical experience (Guy Carpenter, 2018).

**Figure 2:** Common Cyber Liability Policy Coverages (Guy Carpenter)



Most companies are vastly underinsured with a 2017 survey demonstrating that less than 5% of small and mid-sized businesses had any form of cyber insurance (Kshetri, 2020). While the past few years have seen an exponential growth in companies purchasing cyber insurance, the current lack of adequate coverage means that insureds that face any cyber incident often turn to adjacent options like property or liability insurance, even though these product lines were not designed for cyber exposures. As E&S insurers struggle to reconcile claims and eliminate latent cyber coverage, they experience silent cyber losses on any cyber-related claims they pay out on.

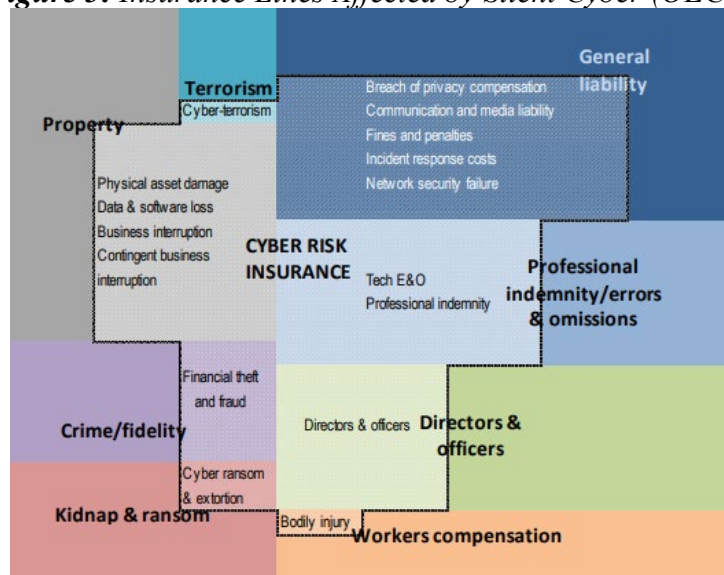
#### 4. SILENT CYBER WITHIN INSURANCE PRODUCTS

Silent cyber within E&S policy lines manifests as unintended cyber exposure when insurers fail to fully address cyber risk within policy language as an excluded cause of loss. This exposure frequently occurs on policies with an all-risk insuring agreement, which enables coverage on any risk not explicitly mentioned or excluded. Though silent cyber can occur in long-standing policies that have not been updated adequately for cyber risks, it can also arise when vague or unclear policy wording allows for coverage from non-cyber policies. A notable example of this

phenomenon is cyber damage from bricking, where malicious software corruption permanently renders computers unusable (*CyberCube*, 2021). Though no physical damage has occurred to properly activate the loss of use coverage within a property policy, a strong argument can be made that the computer's permanent disrepair meets the threshold for physical damage. Unless explicit policy wording has barred coverage for bricking, the insurer will likely have to pay out on these silent cyber losses.

Cyber losses are becoming more ubiquitous within non-cyber insurance lines, with Figure 3 displaying silent cyber risks present in a variety of insurance products (*OECD*, 2020). Though unintended cyber losses are prevalent in several E&S product lines, significant silent cyber exposure has emerged in property as well as general and commercial liability lines.

**Figure 3: Insurance Lines Affected by Silent Cyber (OECD)**



#### 4.1 Property

A traditional property policy covers material damage and business interruption expenses after any physical loss or damage that occurs to a property. While property insurance accounts for common physical perils including fire and water damage, most policies do not price adequately for the increased frequency of these perils caused by cyber risks. In companies where technology

is integrated into physical operations, such as at a manufacturing firm, cyber events like a malware attack could destroy key production components and start a fire or water leak within a facility, triggering physical damage coverage (*Marsh JLT Specialty, 2020*). For E&S insurers that did not consider these loss scenarios, such events would generate claims not factored into pricing models with the potential to adversely impact profitability and in some cases even solvency.

#### 4.2 General liability

General and commercial liability is another commonly impacted line of business by silent cyber. A standard liability policy covers businesses for third-party bodily injury, property damage, or personal injury, but policy language frequently neglects to consider the hidden liability costs created by cyber hazards. For a manufacturer, for example, an event like a faulty software update could deactivate operating systems and prevent the firm from honoring production agreements with clients. This breach of contract might escalate into a lawsuit along with regulatory fines and litigation fees, activating liability insurance coverage and creating unintended costs for insurers.

### **5. ADDRESSING SILENT CYBER**

When accounting for cyber risk within non-cyber policies, E&S carriers have three main approaches to resolve any uncertainties. All three options place an emphasis on consistent policy language and explicit cyber wording for all lines with potential exposure.

#### 5.1 Complete Cyber Exclusion

Because silent cyber often occurs on policies with all-risk insuring agreements, the most expeditious route to handle silent cyber is to exclude all otherwise-covered resultant loss exposure from cyber within the policy (*Marsh JLT Specialty, 2020*). The benefit of total exclusion is the complete removal of silent cyber exposure as coverage is denied for any plausible cyber-related

loss. However, E&S insurers with no stand-alone cyber insurance offerings face losing a significant amount of business due to their inability to comprehensively cover policyholders.

### 5.2 Cyber Write-Ins

Most E&S carriers typically offer a less restrictive version of a complete exclusion, excluding all resultant losses from cyber but then inserting write-backs and conditions to cover specified cyber perils (*Marsh JLT Specialty*, 2020). This option's popularity stems from its ability to address latent cyber exposures while allowing insurers to define their assumed cyber risks. Though cyber claims still occur on covered perils, the risk is no longer 'silent' as the insurer has delineated the cyber risk exposure and can implement associated data within pricing models. While this action enables insurers to better serve policyholders' needs, it does leave room for extensive cyber losses if a cyber event impacts large portions of an insurer's book of business.

### 5.3 Cyber Affirmation with Sublimits

For insurers with stronger risk appetites, a preferred approach is to affirm cyber exposure but provide sublimits for cyber risks within specified coverages (*Marsh JLT Specialty*, 2020). By doing this, the insurer is again able to isolate cyber exposures in non-cyber policies while providing the insured with clear coverage conditions. While the guaranteed cyber risk coverage is desirable for policyholders, it requires considerable resource costs associated with specialized underwriting practices, claims personnel training, and legal counsel. In addition, the partial coverage of cyber incidents might foster the false assumption that a non-cyber policy can successfully replace a standalone cyber policy for such risks, causing future litigation and pricing adequacy issues.

## **6. MODELING SILENT CYBER LOSSES**

Modeling for silent cyber has proved difficult due to the inability of insurers to properly identify cyber exposures within non-cyber lines and obtain the extensive data requirements

needed to properly profile a policyholder's cyber risk. This is exacerbated by the challenge of comparing modeled results to the sparse amount of internal claims experience available currently. These hindrances force insurers to rely on large amounts of third-party data, ranging from cyber catastrophe models generated by consultants to licensed industry data scraped by insurance watchdogs. Because there is no ideal model for silent cyber, insurers will often employ several different modelling techniques including Generalized Linear Models, Kill Chain approaches, and interactive Markov chains (Laux, 2021).

One special consideration used in the cyber insurance modeling process that can be transferred to silent cyber is the aggregation risk present in cyber losses from the interdependencies of exposures. For example, if multiple companies within an E&S insurer's book of business use Amazon Web Services, an outage to this platform would cause large aggregate portfolio losses due to the widespread reliance of exposures on this supplier (*American Academy of Actuaries, 2020*). The close resemblance of cyber aggregation risks to natural disaster risks has directed insurers to begin integrating catastrophe modelling within cyber insurance, with silent cyber emerging as a new area to incorporate such analysis.

## **7. COURT CASES/REGULATIONS FOR CYBER**

As silent cyber disputes continue to surface, conflicts between insurers and policyholders are entering court rooms, setting important precedents for the future handling of silent cyber. A recent court case in Illinois involved silent cyber within commercial general liability (CGL) policies. In this contentious case, a customer filed a lawsuit against a tanning salon for a BIPA violation due to the improper collection of biometric data without consent (Andrews, 2021). The tanning salon attempted to obtain coverage using its CGL policy but was denied by the insurer because cyber risks were not explicitly covered. The Supreme Court of Illinois ruled in favor of

the tanning salon and stated that no explicit verbiage about BIPA was needed to trigger coverage, causing silent cyber losses for the insurer. However, another court case involving Target and its insurers following a massive cyber-attack had a markedly different outcome. After a huge data breach caused Target to incur over \$290 million in damages, the company sought to cover its liability losses using its CGL policies (Chen et. al, 2021). The insurers denied the coverage due to the absence of any guaranteed coverage for cyber related losses, and after a complicated case surrounding legal definitions, the court ruled in favor of the insurers.

While court decisions regarding silent cyber continue to develop, several industry and regulatory initiatives have emerged to address these issues. Lloyd's of London, the largest international E&S market, has created a silent cyber mandate requiring affiliated E&S insurers to discuss cyber perils on non-cyber policies, whether affirming or excluding coverage (Moorcraft, 2020). This mandate has been launched in three phases, each directed at handling silent cyber in different E&S insurance products. On the regulatory side, the New York state government has introduced the Cyber Insurance Risk Framework, which provides guidelines and recommendations for insurers and policyholders regarding cyber risk (*Forbes*, 2021). For E&S insurers, this pioneering manual outlines best practices including the identification of silent cyber risks within non-cyber policies and the appropriate measurement for cyber risk exposures (Golan, 2021).

## **8. OPPORTUNITIES**

### 8.1 Cyber Hygiene

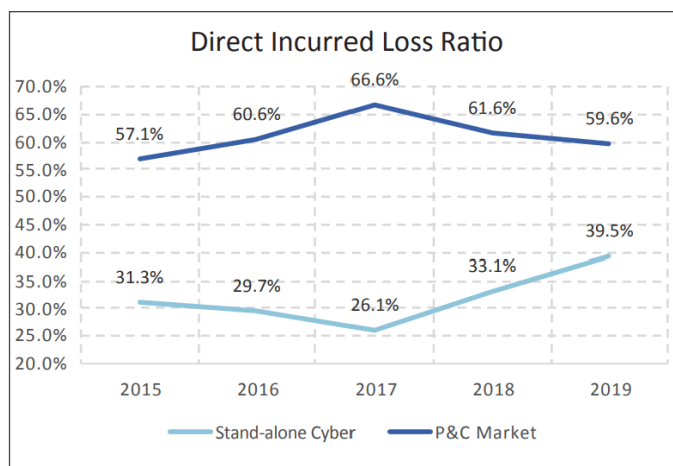
As cyber risks become more intertwined within non-cyber lines like liability, E&S insurers face the challenge of curbing the increasing costs of covered perils being triggered by cyber events. While internal cyber perils can be limited through better risk management and prevention strategies, the ever-increasing number of malicious cyber-attacks is difficult to curb with less than 1% of cyber incidents within the United States ending in an arrest (Peters et. al, 2020). With these

circumstances, E&S insurers should instead focus on curating better risk portfolios by improving the cybersecurity capabilities of their insureds. An easy way to facilitate this is the requirement of proper cyber hygiene, mandating crucial digital practices for companies to proactively protect against cyber threats (*Norton, 2021*). Key cyber hygiene requirements can include the presence of network firewalls and antivirus software alongside essential employee safeguards like strong passwords, multi-factor authentication (MFA), and device encryption. Security requirements could be scaled up or down for each policyholder depending on risk factors including the amount and sensitivity of data as well as the company size. These cybersecurity practices can decrease the frequency and severity of cyber losses, with MFA alone able to block over 99.9% of account-compromising attacks (*Traveler's, 2021*). By creating relevant cybersecurity requirements for insurability within non-cyber lines, E&S lines can reduce adverse selection, improving loss experience and profitability.

### 8.2 Standalone Cyber Policies

Though cyber liability loss ratios have increased over the past few years, the insurance line still remains more profitable than other P&C lines with lower loss ratios as seen in Figure 4.

**Figure 4:** Industry Aggregate Cyber Loss Ratios (*American Academy of Actuaries - AAA*)



\*The figures shown in the graphs are limited to information reported to NAIC by insurance carriers.

As more companies become aware of the multitude of cyber risks they face, demand for stand-alone cyber policies has skyrocketed with a 200% increase in written premium over the past six years (AAA, 2021). With the continued expansion of cyber insurance, excellent opportunities exist for E&S carriers to create separate cyber policy lines and gain entry to the market space. Because the creation of these policies aids in the removal of silent cyber and reallocation of cyber coverage while providing an additional income source, standalone cyber policies can help E&S carriers cover cyber risks in a more organized and profitable fashion. Though cyber insurance does require a sizable initial investment for proper underwriting capabilities and actuarial pricing, the rapid market expansion of cyber insurance can offset any significant expenses undertaken.

## **9. CONCLUSION**

While silent cyber continues to pose a threat to well-established E&S insurance lines, the recent emphasis on addressing cyber risks within policy coverages has greatly reduced latent risk exposure within affected product lines. Though modeling for silent cyber still remains in the early stages, industry progress is promising with the rapid growth in data availability. As companies' cyber capabilities expand, E&S insurers have the lucrative opportunity to provide policyholders with well-organized standalone cyber policies, tapping into new revenue sources while removing silent cyber exposure from pre-existing lines. This potential profitability can be bolstered further with an emphasis on strong risk selection through cyber hygiene requirements. By bringing noise to silent cyber and improving both underwriting and pricing strategies, E&S insurers can amplify the proper methods for addressing cyber risk while protecting the profitability of their product lines.

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# **WEED insure it if we could: Gaps in coverage for cannabis businesses**

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## **1. Introduction**

The cannabis industry is booming. In 2020, legal recreational marijuana sales reached \$17.5 billion, compared to Uber's sales of \$11.14 billion (Yakowicz, 2021) and the National Football League's combined national revenue of \$9.89 billion (Gentrup, 2021). It seems that every year another handful of states legalize the adult use of recreational marijuana, and the demand is met by a rapidly growing collection of marijuana growers, manufacturers, and dispensaries all combined under the term cannabis-related businesses.

Despite the growth and profitability of the industry, insurance companies remain apprehensive or unwilling to provide insurance services to cannabis-related businesses. This is mainly a result of legal concerns, since marijuana is still illegal under federal law. That creates uncertainty regarding whether insurers can provide coverage to the industry without putting themselves at risk of being prosecuted by the federal government. This creates several gaps in coverage for marijuana growers and distributors, and at this point in time only a subset of E&S insurance companies are currently willing to write coverage. Insurance companies may find that despite the legal uncertainty in insuring the industry, there are opportunities to insure profitable product lines today before legalization.

## **2. Legal difficulties**

One of the biggest challenges for Excess and Surplus (E&S) carriers in providing coverage to the cannabis industry has been its illegality on the federal level. Although several states have legalized the use of recreational and medical marijuana, it remains a Schedule I drug under the Drug Enforcement Agency.

The federal government considers the use of marijuana to be dangerous; as such, any entity that does business with the cannabis industry, including banks and insurance companies, may be held liable for aiding and abetting in a criminal operation (Messina, 2020). Although the

federal government has not shown much appetite in prosecuting these kinds of crimes, especially in states where cannabis use is legalized to some degree, most insurance companies choose to forgo the legal gray area and avoid providing coverage to the industry altogether.

Banks face the same legal standards in which they could potentially be prosecuted for providing banking services to the cannabis industry. As a consequence, cannabis-related businesses are unable to hold their funds in accounts run by banks insured by the Federal Deposit Insurance Corporation (FDIC), and state credit unions willing to perform banking services for the cannabis industry have long waiting lists of businesses that would like to do business with them. As a result, most of these cannabis businesses are forced into cash-only operations, which puts them at an increased risk of theft. Between the presence of highly valuable marijuana plants and products and excess amounts of cash, there is an increased vulnerability of these companies to theft by both employees and outside parties. This vulnerability extends to all areas along the supply chain; there is concern that the transportation of marijuana and cash in armored vehicles may be an uninsurable risk under normal commercial auto coverage (Obersteadt, 2019). Innovative companies are introducing a new business model where cannabis products are transported directly to the consumer in order to provide privacy and convenience in line with the standards of the past few years, and the use of commercial armored vehicles is useful in their successful operation (O'Brien, 2021). Finally, a consequence of not being able to hold bank accounts is the increased possibility of poor recordkeeping, which adds difficulty to the underwriting process as financial information is not easily accessible and understandable (Malyshev, 2020).

The difficulty cannabis-related businesses face in obtaining insurance and banking services is something that could change sometime in the near future, with two pieces of bipartisan legislation making their way through Congress. The Secure and Fair Enforcement (SAFE) Banking Act and the Clarifying Law Around Insurance of Marijuana (CLAIM) Act both seek to provide clarity regarding state and federal legal disparities and essentially decriminalize

businesses within the cannabis industry for banks and insurance companies respectively (Stewart, 2021). Legal and industry experts predict these acts will lead to an increased number of carriers in the E&S market, and the resulting competition could lead to lower premium rates and possibly higher capacity for many product lines. While there is an appetite for entering the cannabis market, currently many E&S carriers are waiting for the passage of the SAFE and CLAIM Acts before writing policies.

### **3. Gaps in coverage and opportunities**

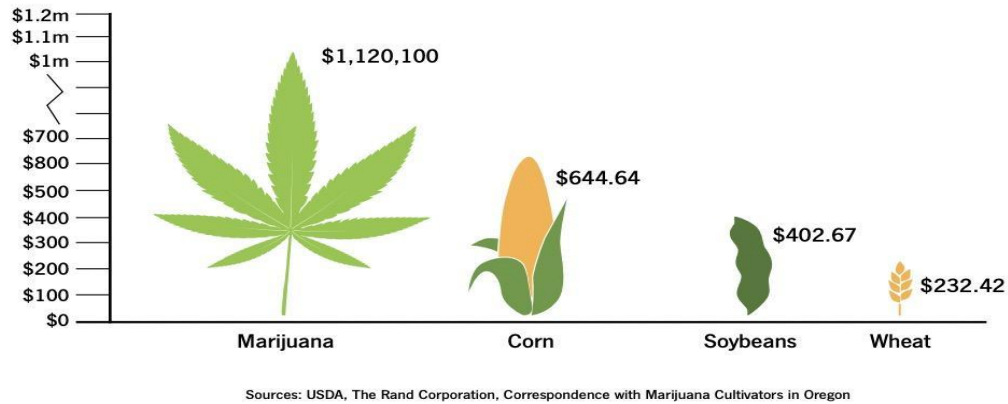
#### *3.1 Crop insurance*

One of the largest deficiencies in coverage is crop insurance for marijuana growers. Crops in general have historically been difficult to insure, and the federal government plays a large role in the affordability of crop insurance for growers of other plants, heavily subsidizing the insurance and making the often prohibitive price more affordable for farmers. However, marijuana growers are not granted access to the nearly \$9 billion in crop insurance and subsidies granted by the United States government. Especially in recent years, as wildfires continue to ravage key legal recreational marijuana states such as California, Oregon and Washington (who collectively recorded approximately \$6.8 billion in marijuana sales in 2020), growers have faced immense losses without the backstop of crop insurance to protect them, unlike what is made available for non-cannabis crops (Schroyer, 2021).

Additionally, even for traditional crops, crop insurance coverage is inadequate for the farming sector without the assistance of the federal government. Marijuana growers are uniquely vulnerable to losing large amounts of revenue due to damaged crops, and even if coverage was available, the limits would be insufficient under most standard crop coverage. Figure 1 displays the yield per acre of marijuana compared to various other widely grown crops in the United States. At over \$1,000,000 in yield per acre, marijuana plants are vastly more valuable than corn or wheat, which are only worth a few hundred dollars in yield per acre

(Bergner, 2018).

COMPARATIVE YIELD PER ACRE FOR GRAINS AND MARIJUANA <sup>91</sup>



**Figure 1:** Yield per acre of marijuana and various other widely grown crops in the United States.

Given the high yield of the plants, farmers who have been traditionally involved in growing other crops are taking an interest in marijuana and hemp cultivation in order to supplement or replace their traditional farming income. Since the legalization of products containing cannabidiol (CBD) in 2018, the so-called “green rush” has resulted in the tripling of the amount of hemp being grown in the United States (Nittle, 2019). The same behavior can be anticipated regarding growing marijuana once legalization becomes widespread. Both young, inexperienced farming novices and veteran farmers are embracing the prospect of growing marijuana and are willing to invest in these plants.

Although outdoor crop insurance without the aid of the federal government’s program is deemed uninsurable in general, and even more so in the context of cannabis insurance, creative solutions exist in which insurers can take on a more reasonable amount of risk while also providing cannabis businesses with needed coverage. For example, there has been interest in parametric crop insurance to insure the cannabis industry. A parametric crop

insurance policy's payout is determined by the severity of a particular loss event as specified in the contract, rather than by the monetary amount of loss sustained by the grower. For example, in an area where excessive amounts of rain are a concern for the health of cannabis crops, a parametric crop insurance policy may start paying out when the average amount of rain exceeds a certain threshold. More flexible variations on traditional crop insurance such as parametric crop insurance could reduce costs for insurers and allow cannabis growers to customize coverage to their specific concerns and budgets (Hallo, 2021).

Protection against adverse weather conditions, looting and riot perils are imperative to the successful development of the legal marijuana industry. Marijuana cultivation is a sizable and growing market that needs crop insurance, which is currently unavailable to them. If insurance companies were to make crop insurance available in commercial markets, cannabis companies would be able to obtain affordable coverage with insurance limits uniquely appropriate to cannabis plants.

### *3.2 Indoor crop & property insurance*

Many growers opt to grow marijuana plants in indoor settings, which comes with its own set of benefits in comparison to the growth of outdoor crops as well as its own unique risks. The benefits include an added layer of protection from wildfire and looting risk as well as decreased sensitivity to drought and other adverse weather conditions. Cannabis notoriously requires a very particular environment in order to be successfully cultivated, and by growing crops indoors growers have better control over temperature, humidity and other conditions; for this reason, most marijuana crops are grown indoors (Gottlieb, 2021).

In addition to standard risks such as theft, there are unique risks associated with indoor marijuana cultivation. The warmth and humidity needed to successfully grow marijuana means massive amounts of sophisticated electricity use; this heightens the risk of fire damage to property due to electrical malfunctions as well as the development of mold and subsequent

deterioration (Gottlieb, 2021). The process of extracting tetrahydrocannabinol (THC) from the marijuana plant using pressurized gas and other methods and equipment could potentially cause explosions or become a fire hazard. These types of liability risks are traditionally covered by E&S carriers for many other manufacturing industries but are still difficult to insure in the cannabis industry.

Most crop insurance policies do not cover plants grown indoors, although growing indoor crops could potentially minimize climate change-related risk and prove profitable for insurance companies who wish to tap into the market but are averse to the difficult-to-insure outdoor crop sector. The fire and electrical failure risk involved with growing plants indoors is normally covered in other property insurance policies, and E&S carriers may find that indoor growers would be willing to invest money in order to insure their valuable yield.

Surprisingly, the strongest argument in favor of insuring the cannabis industry in general is related to the controversy regarding the state legalization of marijuana despite its federal classification as a Schedule I drug. The stringent regulatory environment results in cannabis-related businesses having to go through more oversight, safety inspections, and other related practices that decrease the likelihood of a fire- or other oversight-related claim.

Insurance companies can also require that companies have a safe electrical structure, robust alarm systems, and safes or other high-security settings in which to keep mature plants and products. In this case, even in a location with more lax regulations, insurers have options to make indoor crop risks preventable and by extension more insurable. A common procedure in other industries is for insurance carriers to order inspections for certain safety features and verify that operations are safe and as described at time of submission, and these practices could easily be extended into indoor crop product lines. In a time when risks related to climate change cause concern to insurers and cannabis growers alike, a transition to indoor crop cultivation could benefit all parties.

### *3.3 Product liability risk*

Between the months of August 2019 and February 2020, the Centers for Disease Control and Prevention (CDC) recorded approximately 2,800 hospitalizations and deaths related to e-cigarette and vaping-associated lung injury (EVALI), many of which were among teenagers and young adults. Patient reports and product testing revealed a strong link between these injuries and vitamin E acetate, an additive commonly used by black-market manufacturers in THC products designed for use in e-cigarettes (“Outbreak of Lung Injury Associated with the Use of E-Cigarette, or Vaping, Products”, 2021). While legally-operating manufacturers and distributors were shown to have played a very small role in the outbreak, the media attention to stories of high school and college students falling severely ill due to the use of THC e-cigarettes have caused carriers to be more apprehensive about writing product liability policies for marijuana wholesalers and distributors (Hallo, 2020).

However, there is a high demand and need for product liability coverage in the cannabis industry due to the risk of overconsumption inherent to a mood-altering substance: cannabis-related businesses could be held legally liable for the harm this may cause a consumer, even if the product was consumed improperly (“Cannabis Insurance”, 2021). The industry is rapidly growing and the science behind optimally cultivating and refining cannabis products is developing at the same time as the public policies that are meant to control them. For this reason, it is hard to predict what could eventually be deemed dangerous or illegal, and although a “standard of care around agreed standards” is starting to develop, there is not enough concrete data to make confident decisions in this regard (“Minutes of the Cannabis (C) Working Group”, 2021, p. 3).

As states continue to legalize marijuana for recreational and medicinal purposes, a constantly-evolving patchwork of inconsistent and localized laws and regulations is being created that is increasingly difficult for both cannabis businesses and carriers to navigate. For this reason, there is a similarly high demand for product recall coverage as well in order to

protect against revenue loss and inventory if a product is recalled and no longer able to be sold. Although this is often an exclusion in product liability policies, nevertheless it is a significant risk for an industry subject to strict regulations in a shaky legal landscape. An example can be taken from the recent legalization of hemp in 2020, when the FDA recalled food products that were infused with CBD shortly after legalizing the production and use of hemp products (Malyshev, 2020).

The DEA's Schedule I drug classification indicates that "The drug or other substance has no currently accepted medical use in treatment in the United States" (Bergner, 2018, p. 3). Thus, little research is performed into both the short- and long-term effects of marijuana use, and this unknown may cause carriers to hesitate to cover product liability and product recall risk for cannabis-related businesses. Additionally, the recreational marijuana industry is still nascent and there has not been a sufficiently large amount of lawsuits filed in relation to recreational cannabis consumption to gain a strong understanding of the courts' interpretation of this liability ("Minutes of the Cannabis Insurance (C) Working Group", 2021). However, it is important to note that this risk was once faced by the alcohol and tobacco industries, and the hurdles were overcome accordingly in favor of a large, profitable revenue stream. Thus, insuring the cannabis industry from these risks should be no different ("The Marijuana Minefield", 2019; Oberstedt, 2019). Additionally, both the aforementioned strict regulatory environment and cannabis companies' incentives to preserve their reputation make cannabis companies more likely to implement preventive measures that would protect against the risk of product recall.

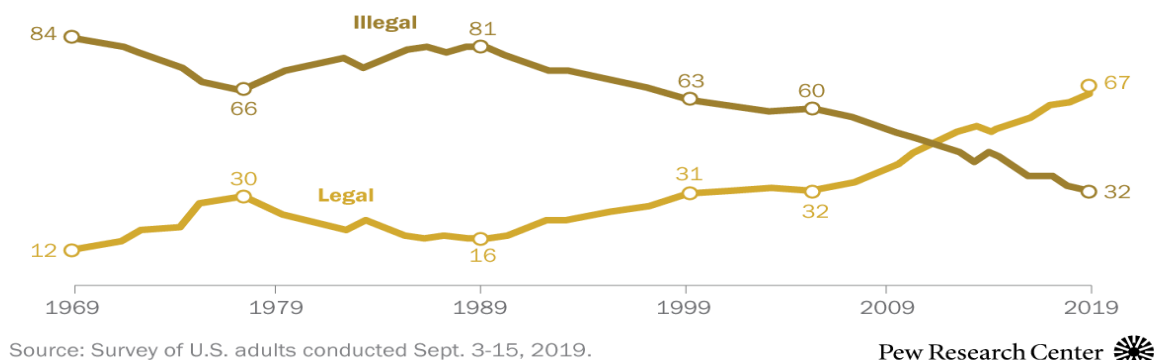
#### **4. Conclusion**

Public sentiment has changed significantly regarding the legalization of marijuana in recent years. As shown in Figure 2, since the 2000s Americans have become increasingly more accepting of marijuana use, and currently there is more support for the legalization of marijuana

than against it.

### U.S. public opinion on legalizing marijuana, 1969-2019

*Do you think the use of marijuana should be made legal, or not?*



**Figure 2:** U.S. adults' stance on the legalization of marijuana from the years 1969-2019.

The federal government is designed to respond to the will of the public, and it is only a matter of time before marijuana is legalized across the United States. The CLAIM and SAFE Banking Acts do not go so far as to mandate the legalization of marijuana, but seek only to decriminalize business between banks and insurance companies and cannabis-related businesses that are operating legally under state regulations. This means that the United States financial sector may very soon see an opportunity to do business with the flourishing cannabis industry.

However, E&S carriers do not need to wait for the federal government to catch up: there are reasonable, insurable risks where coverage is needed by cannabis-related businesses in order to operate effectively. With these gaps in coverage come opportunities to gain a larger market share and thus generate profit in an industry that is projected to continue growing at an exponential rate. Generally speaking, the high profitability of the marijuana plant and the products it creates leads to a high demand for robust coverage. Carriers have the opportunity to be "early-adopters" who are able to charge higher rates due to the relative lack of competition in

insuring the industry. While many carriers are awaiting the passage of the CLAIM and SAFE Banking Acts before doing business with cannabis-related businesses, writing policies now means access to the high demand for insurance in the cannabis field and a large established market share for a billion-dollar industry once other insurance companies choose to tap into it as well.

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# The Aftermath: Post-Pandemic Insurance

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December 5, 2021

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## Introduction

Over the course of the last two years, the COVID-19 pandemic has the world questioning how to do business and how to manage the associated risks. Entire industries have crumbled as the pandemic has consumers rethinking how to conduct day-to-day life. This new era of digital natives led to the development and rapid growth of online based services and communication (Daskal, 2021, par. 4-5). The demand for online services has created rapid growth of e-commerce and its integration into traditional business. However, rapid growth can also bring new risks to light that need to be considered by the insurance industry. In addition to new business sectors, pre-existing industries will need to adapt to the online centric market of the modern era. Once again, the insurance industry will be essential in managing the risks associated with this transition.

In addition to the pandemic itself, the litigations and government mandates surrounding the pandemic have created even more situations that require the attention of the insurance industry. Empty skyscrapers, workerless shipping docks, and a declining pool of first responders are having a massive impact on the insurance industry. Institutions that used to be constants in society have now become variables that will need to be protected by insurance. The COVID-19 pandemic has created a situation that the modern insurance industry has never seen before. How the insurance industry reacts to the current situation over the coming years will be instrumental in the future of insurance and the insurance industry.

## **In the Beginning**

In March 2020, COVID-19 became the center of news and world attention, as the disease made its way into North America and Europe. Amidst the panic buying, schools were closing, businesses were furloughing thousands of employees, and the insurance industry was up to their neck in claims. Even in March 2020 there were estimates that the pandemic would cause “\$1.3 trillion dollars of lost economic activity... twenty-five times the economic loss estimated from the SARS outbreak in 2002-3” (Muir-Wood and Edwards, 2020, par. 1). However, most of this loss would not be covered by standard insurance. A pandemic event was not covered or defined in most cases, and in the best of situations the pandemic fell under a moderate catastrophe policy (Muir-Wood and Edwards, 2020, par. 2-4). In addition to the claims, the investments that insurers rely on to cover payments began to become unstable. The pandemic was just beginning and already the insurance industry was under unprecedented circumstances.

## **Consumer Behavior**

While the insurance industry was focusing on major pandemic related claims, the average consumer was being told to avoid all non-essential travel and shopping. The “Stay at Home Orders” caused massive shifts in the habits of everyday consumers. In April 2020 the Walmart app, which allowed customers to order online and avoid shopping in stores, became the most downloaded shopping app on the App Store and Google Play (Perez, 2020, par. 2-3). Other major grocery stores and restaurants quickly rolled out similar programs to keep up with this demand for contactless shopping. The demand for online ordering even left Amazon with an overload of orders, causing major delays to delivery times. While these expanded contactless

services are convenient, they are leading to an increase in layoffs from big box stores. Continuing to look at Walmart, they are laying off employees in order to shift their focus to online shopping (PYMTS Editors, 2020, par. 1-3). The increased focus on delivery related to online shopping has led to an unmatched need for commercial delivery drivers and auto insurance.

## **Auto Insurance for All**

### **Personal Auto Insurance**

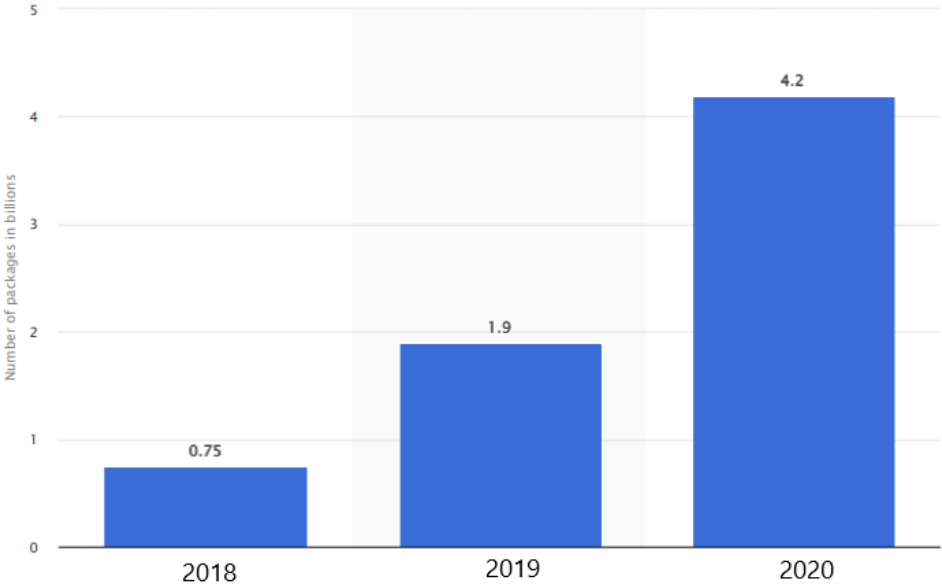
As home has replaced workplaces, grocery stores, restaurants, concerts, and movie theaters, personal automobiles are being used significantly less than before. Average vehicle miles decreased by over 60% during mid 2020 (Bureau of Transportation Statistics, 2021). With little need to drive, many auto insurance customers have cancelled or paused their coverage simply because they have no little or no use for the service. Due to these cancellations and customer demand, many auto insurance companies are focusing on specialized policies that allow customers to pick and choose their policy specifics. Even before the pandemic, the trend of individualized insurance was coming to light. Some of the largest auto insurance companies, such as Progressive and Geico, were starting to implement in-car insurance monitoring devices (Hall-Geisler, 2021, par. 6). These devices are able to monitor driving habits, braking, acceleration, cornering speeds, and more, and transmit that data to an insurer. The insurance company then calculates premiums based on a driver's individual habits. Post-pandemic, the in-vehicle monitoring could be an essential part of many policies because it could lead the way to an a-la-carte auto insurance model. With the future of traditional workplaces up in the air, this

new model could allow drivers the flexibility and confidence to purchase the insurance that they need. With many major insurance companies already touting some variation of “only pay for the insurance you need”, the car monitoring systems will further the goal of personalized insurance.

**Business Auto Insurance**

Due to stay-at-home orders and closed workplaces, the number of delivery services and delivery volume has skyrocketed. In 2018, Amazon delivered 750 million packages in the United States, in 2020 4.2 billion packages were delivered (Mazareanu, 2021).

**Number of packages delivered by Amazon Logistics in the United States from 2018 to 2020 (in billion packages)\***



Source: 2021 Statista, Transportation & Logistics, As of October 2021

The increase in demand for delivery services has also caused the number of delivery vehicles to be at an all-time high, and all those vehicles need insurance. The demand for deliveries has also led to the drivers being crunched for time every day. A sense of urgency is created by the delivery company, who monitors drivers to ensure that they are quickly delivering

packages. Amazon drivers, for example, are expected to have a 99.9% success rate of delivering packages on time, or they could risk reparation or job loss. (Tenge, 2020, par.3). Nearly impossible to achieve standards leads to panic and urgency, which cause dangerous driving behavior. The insurance companies know the stress that is out on the workers, which will cause premiums to increase significantly. As time progresses, the insurance industry will have to closely monitor the working conditions of commercial drivers to assess accurate premiums.

In addition to the commercial delivery vehicles, many local businesses have also had to implement delivery service in order to stay relevant. These small businesses have two main options, partner with an already existing delivery service, or hire their own local delivery drivers. In either case, the delivery vehicle is typically the driver's own vehicle. This creates issues because many personal auto policies have exclusions relating to using a vehicle for deliveries. Rideshare insurance was primarily developed for ridesharing services, but it has expanded to cover deliveries as well. Consumer demand for delivered goods and ridesharing does not seem to be decreasing, so rideshare insurance will continue to be important to many drivers. Since rideshare insurance is relatively new, premium calculations and coverage details will need to evolve with the rideshare and delivery ecosystem. Rideshare insurance is an opportunity that should be seriously considered by the insurance industry due to its continuous demand.

## **Empty Spaces**

Many office buildings and industrial parks across the nation have been vacant for nearly two years, but the need for insurance on these buildings has not diminished. In fact, the need for insurance on vacant buildings could be higher than when they were occupied. Empty buildings invite vandals and criminal activity because there is nobody to keep them from causing damage

(Stein, 2021, par. 2-3). Typically, commercial building policies would not cover such acts because they would happen when the building is transitioning ownership. However, the extended period of vacancy has businesses renewing policies while the building is vacant. Rightfully the insurance industry is taking vacancy into account and charging premiums accordingly or even cancelling policies on vacant buildings (Stein, 2021, par. 8-9). While some businesses are transitioning back to traditional workplaces, many businesses have decided to continue using the teleworking format. These companies will still own their offices, until they can find buyers. However, demand for large scale offices may be lower than in years past. Creating a need for specific insurance policies to cover vacant buildings. The demand for office space may increase as time passes, but in the meantime the insurance industry should take vacant building insurance seriously.

## **Consumer Data**

The digitization of the normal consumer over the past two years has led to massive amounts of consumer data being collected. This big data is being used by companies worldwide to better understand the needs of their customers and how they can increase profitability. Companies like Amazon and Walmart are taking full advantage of this data, and they are excelling due to the sheer knowledge they have about their customers' habits (Pathak, 2021). The digitization of the insurance industry can also create big data related to insurance customers. Developing apps and tools that allow insurance customers to quickly apply for insurance and file claims, will also allow for the collection of consumer data. That same data can then be used to streamline every aspect of the consumer to insurance interaction. Big data can be used to make insurance that fits the exact needs of the modern consumer because the data can tell what the

customer wants. Machine learning can be applied to the underwriting and claims settlement processes to more accurately facilitate the situation (NAIC, 2021, 2-5). Improvements in accuracy and efficiency of the underwriting and claims can increase profits of insurance companies and help to reduce adverse selection. However, there are also risks associated with collecting and storing large amounts of customer data.

## **Cyber Risks**

Consumers are conducting more and more of their business online due to the pandemic, and that behavior creates large amounts of stored data. This data can sometimes be accessed by cybercriminals who aim to cause damage to a consumer or business by stealing or releasing private data. Given the nature of sensitive data, its untimely release could lead to losses. These could come in the form of stolen credit/debit card numbers, leaked social security numbers, and much more. The pandemic has created an opportunity for cybercriminals to cripple the economy all from a computer. In many cases the criminal will lock data and demand a ransom to release it or threaten to release data if a payment is not made. These are the incidents that cyber insurance were designed to prevent (Palmer, 2021, par. 9). Cyber insurance will help a business or individual to recover financially from having to pay for these threats. The major problem with cyber insurance is that sometimes it is unknown if the threats have any real merit. Then the owner of the data is forced to decide if the criminal is bluffing. Choosing whether to pay the ransom is a very difficult decision, and cyber insurance helps to ease that burden. However, modern cyber insurance policies only cover direct financial losses, not later losses that were caused by the initial attack (Palmer, 2021, par. 23-26). If the insurance industry develops cyber insurance that protects subsequent losses, it would significantly increase the demand and

viability of cyber insurance. During the pandemic there were several major incidents of cybercrime, including the Colonial Pipeline Attack, that prove a need for developed cyber insurance. If it is effectively introduced, cyber insurance could become the next major insurance product. Individuals will come to realize that in a digital age insuring information is just as important as insuring physical assets. Businesses were already realizing the importance of cyber insurance, and the pandemic has shown the true merit of the product.

## **Conclusion**

The last two years have shown a massive shift in nearly every aspect of the human experience. New risks have been found around every turn, and it falls on the insurance industry to manage and cover the risks. The way consumers and businesses think about auto insurance, building insurance, and cyber insurance will never be the same. Both the insurance industry and consumers have the ability to capitalize on new technology to help their needs. In addition, the insurance industry has seen the effect that digital platforms and big data have had on other sectors. Now insurance companies have the chance to utilize these tools to increase their business. The insurance industry of two years ago will never be the same, but perhaps it can come out of the pandemic better suited to meet the needs of the post-pandemic consumer.

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