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Marsh USA INC.: CHALLeNGES OF PANDEMIC INSURANCE IN A COVID-19 WORLD[[1]](#endnote-2)

Arpita Agnihotri and Saurabh Bhattacharya wrote this case solely to provide material for class discussion. The authors do not intend to illustrate either effective or ineffective handling of a managerial situation. The authors may have disguised certain names and other identifying information to protect confidentiality.

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In 2018, Marsh USA Inc. (Marsh), an insurance company based in New York, launched an innovative pandemic insurance product called PathogenRX. The new product was jointly developed with Munich Re Group, a reinsurance company based in Munich, Germany, and with Metabiota Inc. (Metabiota), a specialist in pandemic threat management based in San Francisco, California.[[2]](#endnote-3) By modelling and estimating the impact of pandemic and epidemic risk, PathogenRX mitigated several challenges faced by risk managers. Therefore, it protected insurance purchasers, such as business clients, against financial loss.[[3]](#endnote-4) Peter Lacovara, the analytics and alternative risks leader at Marsh, commented that, since the outbreak of the COVID-19 pandemic, demand for the product had boomed.[[4]](#endnote-5)

Pandemic insurance faced two key challenges: unpredictable market growth and a lack of government support. While the growth potential of the market was unclear, studies showed that a statistically significant epidemic occurred every seven years.[[5]](#endnote-6) However, industry experts defined pandemic insurance as a nascent market, making it difficult to predict its potential size or opportunity.[[6]](#endnote-7) Another issue was that most insurance companies were reluctant to offer coverage for a pandemic unless they had backing from the federal government.[[7]](#endnote-8) During the COVID-19 pandemic, John Doyle, Marsh’s chief executive officer, wrote a letter to the United States Congress and the US president requesting that a state-backed pandemic insurance plan be developed to help cover extremely high potential claim amounts.[[8]](#endnote-9) For example, in May 2020, industry experts estimated that US small business claims after COVID-19 could range between US$255 billion and $431 billion.[[9]](#endnote-10)

Doyle was well aware that experts classified pandemics as uninsurable events[[10]](#endnote-11) because, unlike other catastrophes, they did not cause physical damage, making financial and economic loss difficult to model or predict.[[11]](#endnote-12) These concerns raised several questions: What challenges would Doyle face in selling pandemic insurance, and how could he resolve them? Was it better to partner with a government or a private reinsurance partner? How could pandemic insurance modelling be improved to better forecast potential premiums and claims?

BACKGROUND

Marsh was a subsidiary of Marsh and McLennan Companies Inc. and a global leader in insurance brokerage and risk management.[[12]](#endnote-13) Marsh enabled its clients to grow by helping them understand and better manage the risks they faced. Its services included risk management, risk consulting, insurance brokerage, alternative risk financing, and insurance program management services.[[13]](#endnote-14) In early 2020, Marsh had over 35,000 employees and numerous clients in over 130 countries.[[14]](#endnote-15)

COVID-19 Pandemic and Losses

In March 2020, the Organization for Economic Co-operation and Development predicted that the COVID-19 pandemic could diminish global gross domestic product growth by 0.5 per cent for the entire year, resulting in trillions of dollars in losses. The International Monetary Fund predicted that the global economy could shrink by 3.0 per cent in 2020, which would be significantly worse than the 0.1 per cent decline during the 2008–09 financial crisis.[[15]](#endnote-16) A survey conducted in May 2020 by Statista found that approximately one-third of US residents saw a drop in income of 10–25 per cent during April 2020 due to the COVID-19 pandemic (see Exhibit 1). Among US industries, the hospitality and gaming sector was most adversely affected by the COVID-19 pandemic; it experienced the highest number of job losses (see Exhibit 2).

**Launch of PathogenRX and Client’s Cognitive Limitations**

Marsh launched the PathogenRX insurance product in 2018. For businesses that had bought PathogenRX insurance before the outbreak of the COVID-19 pandemic, financial losses stemming from business interruption were covered to a large extent.[[16]](#endnote-17) However, the cognitive limitations of many corporate clients, who took the attitude that events like pandemics “will not happen to me,”[[17]](#endnote-18) led them to consider the probability of such events to be low. Therefore, the demand for PathogenRX pandemic insurance was low before the outbreak of the COVID-19 pandemic.[[18]](#endnote-19) Generally, before an unlikely negative event occurred, people preferred to risk uncertain loss rather than to pay an insurance premium for an unpredictable number of years.[[19]](#endnote-20) Martin South, president of Marsh’s US and Canadian division, spoke about the need for pandemic insurance: “Pandemics and epidemics are not your average risk. They may occur over several months, are often not confined to a specific region, and their unpredictability means they can scale, grow, and become quite costly to a range of businesses from hotels and restaurants to schools and airlines.”[[20]](#endnote-21)

PathogenRX was targeted toward specific industries, including hospitality and gaming, travel and tourism, aviation, public entities, education, real estate, sports and events, and retail and wholesale food and beverages.[[21]](#endnote-22) By April 2020, when the COVID-19 pandemic was spreading globally, Marsh had had no COVID-19-related claims—no company had bought the policy.[[22]](#endnote-23) Up to that time, Marsh had been offering the policy for future pandemics, rather than specifically for COVID-19, as Lacovara explained: “Unfortunately, it’s too late. The coronavirus is excluded from coverage. . . . That would not have been the case as recently as last November. But you can’t buy insurance for your house when it’s already on fire.”[[23]](#endnote-24)

PATHOGENRX: THE PRODUCT

PathogenRX was a 2018 Business Insurance Innovation Award winner.[[24]](#endnote-25) The product was based on Metabiota’s Pathogen Sentiment Index (PSI), an analytics-based solution for predicting adverse impacts of infectious disease outbreaks.[[25]](#endnote-26) The PSI was designed to be flexible and extensible, as it could be rapidly updated to incorporate new and emerging pathogens to estimate the fear of emerging outbreaks and infectious disease events.[[26]](#endnote-27) The PSI was regularly updated to capture developments influencing public fear, such as the development of a new vaccine, the discovery of a new disease symptom, or the link of a virus to other issues, such as the link between the Zika virus and birth defects (see Exhibit 3).[[27]](#endnote-28)

Metabiota collected and structured data from a wide variety of reporting sources. For example, data on the COVID-19 pandemic was collected from 37 countries and 39 public data sources. These sources ranged from the Hong Kong Centre for Health Protection to the World Health Organization (WHO).[[28]](#endnote-29) In February 2020, based on its analysis, Metabiota predicted that by March 2020, the median number of COVID-19 cases across the globe would be 127,000.[[29]](#endnote-30) Metabiota’s main model parameters included the basic reproductive number (i.e., the number of secondary infections resulting from each case), incubation period, infectious period, travel reduction time, and transmissibility reduction time.[[30]](#endnote-31) It was expected that Metabiota’s sentiment index would be useful specifically for calculating the estimated damage to the travel and tourism industry resulting from the COVID-19 pandemic.[[31]](#endnote-32) However, by the end of March 2020, WHO had reported over 500,000 total cases.[[32]](#endnote-33)

The PathogenRX insurance policy, underwritten by Munich Re Group,[[33]](#endnote-34) was custom-written specifically for this purpose based on a parametric trigger of the number of deaths.[[34]](#endnote-35) To provide indemnity protection, it used parameters such as the mortality or type of infections in a given area and the portions of the calendar year, and it was based on Metabiota’s infectious disease database.[[35]](#endnote-36) Commenting on insurance policies, Jen Bruursema, the vice-president of marketing and sales at Metabiota, stated, “In the non-property damage (business interruption) world, pandemics have traditionally fallen out of the scope of what can be identified and measured for a policy.”[[36]](#endnote-37) Bruursema also commented on the difficulty of pandemic insurance: “That’s because pandemics are very difficult to predict in terms of where they’re going to emerge and how long they’re going to last.”[[37]](#endnote-38)

Christian Ryan, the managing director of Marsh, spoke about using the PSI to resolve the difficulty of pandemic insurance: “The Sentiment Index is very, very unique; that score can be impacted” based on the profile of a pathogen, and added, “Clients can see the index, and if something happens anywhere around the world, the index is adjusted. It’s very, very simple.”[[38]](#endnote-39) Commenting on pathogen profiles and their association with PSI, Bruursema explained that different pathogens had different profiles, which impacted how the public perceived the infectiousness of diseases. He said, “Each pathogen gets its own unique scores based on how frightening those symptoms might be. If this threshold or score is reached, the likelihood is consumers aren’t likely to go to various events or proceed with travel.”[[39]](#endnote-40)

Experts believed that estimating the human response to pandemics was challenging and told an incomplete story.[[40]](#endnote-41) For example, local and regional conditions could also affect how a pandemic influenced economic loss. With a high level of co-operation between international public health workers and government officials, the economic consequences could be lowered. Overall, although social factors were critical, incorporating only social factors was insufficient to characterize any risk assessment.[[41]](#endnote-42) The stage at which a disease was discovered could also influence the intensity of a pandemic.

In 2014, when the Ebola virus was first detected in Africa, the WHO initially estimated the cost of controlling the outbreak at less than $5 million. However, the actual costs turned out to be more than $1 billion within six months. The outbreak estimation had been inaccurate in determining either the stages of the outbreak or its containment.[[42]](#endnote-43) The Ebola outbreak continued for longer than expected due to several factors, including persistent regional conflicts, rampant disinformation, inadequate health clinics, and even the limited availability of diagnostic tests.[[43]](#endnote-44) In modelling any pandemic, insurers claimed validation of the data when they were able to replicate past data. According to experts, this was referred to as history matching. However, although this process may have worked for catastrophic events such as earthquakes, validation was difficult for a pandemic.[[44]](#endnote-45)

DENIAL OF CLAIMS BY INSURANCE COMPANIES

During the COVID-19 pandemic, many insurance claims by US companies for business interruption benefits were denied. After finding that his insurer had denied his claim because the policy had an exception for virus outbreaks, Fred Castellucci, the head of Castellucci Restaurant Group in Atlanta, Georgia, said, “My frustration with insurance companies is that they’re essentially in business to take your money, make money off of your money and then never pay you out when you have an issue.”[[45]](#endnote-46) Castellucci was forced to look for alternatives to traditional insurance.[[46]](#endnote-47) R.J. Lehmann, the director of finance, insurance, and trade at the non-profit company R Street Institute, noted that business interruption coverage from insurance companies was designed to provide revenue protection for businesses when their properties suffered physical losses from natural causes such as fires or windstorms, or from human-caused events such as vandalism or terrorism.[[47]](#endnote-48) Lehmann stated that “standard commercial insurance policies typically do not even provide business interruption coverage for power loss unless there is demonstrable damage to the insured property.”[[48]](#endnote-49)

Insurance companies potentially even lacked the ability to pay these claims. According to the American Property Casualty Insurance Association, a lobbying group for the US insurance industry, the estimated losses incurred by small businesses with 100 employees or less due to the COVID-19 pandemic totalled $431 billion, while the annual premium collected from these businesses by insurance companies was only $71 billion.[[49]](#endnote-50) However, media reports claimed that insurance companies in the United States had accumulated $822 billion in their claim reserves over the years.[[50]](#endnote-51)

Some businesses were denied claims even when their policies clearly mentioned business interruption due to a virus. Thomas Keller, a renowned US chef, filed a lawsuit against his insurance company for denial of payment for his French Laundry and Bouchon Bistro in California’s Napa Valley. Keller paid $350,000 extra on his insurance policy for a provision that explicitly included virus claims, but his claim was denied by the insurance company.[[51]](#endnote-52) As Lehmann noted, “There may be unusual cases in which nonstandard contracts contain language that would cover pandemic-related shutdowns, but the industry as a whole has intentionally excluded this risk because it is far too correlated across geographies and sectors.”[[52]](#endnote-53)

NEED FOR GOVERNMENT INTERVENTION

In March 2020, Doyle requested that the United States Congress and the US president create a state-backed pandemic risk insurance program that could support an economic recovery from COVID-19 and ensure that the country would be better prepared for any future outbreak.[[53]](#endnote-54) During the COVID-19 pandemic, there was an increasing demand in the United States for the passage of the *Pandemic Risk Insurance Act* (PRIA). If passed, PRIA could make insurance companies offer business interruption insurance policies to businesses, with the US government providing support for insurance claims or acting as a backstop.[[54]](#endnote-55)

Congresswoman Carolyn Maloney, also a senior member of the House Financial Services Committee, had plans to introduce PRIA into the United States Congress.[[55]](#endnote-56) In April 2020, a letter sent to the US government by the National Retail Federation (NRF) mentioned that “Congress must take swift action and begin contemplating a solution to provide all businesses protection against future pandemic risk.”[[56]](#endnote-57) The letter further noted, “This approach would serve as a cornerstone to a proactive and prospective approach to managing the risk of a widespread and catastrophic pandemic or epidemic in the future.”[[57]](#endnote-58) The NRF also endorsed PRIA. Edi Schmid, the chief underwriting officer at Swiss Reinsurance Company Limited, spoke about the need for government involvement:

It is important to highlight that the capacity to provide coverage for pandemic risk is limited, it is a very systemic factor. The losses . . . impacts go across the whole world. It affects the underwriting side and also the financial market side. So, we can only provide pandemic cover to a limited extent, and there needs to be solutions that also involve government backup as it would go beyond the ability of the insurance industry alone.[[58]](#endnote-59)

If the PRIA were passed by the United States Congress, the US government would be expected to intervene through a federal backstop program whenever claims related to a future pandemic (other than COVID-19) or epidemic exceeded $250 million, with a cap set at $500 billion. Businesses would be required to prove that they had suffered a significant drop in revenue due to business interruption.[[59]](#endnote-60) Commenting on previous government-backed policies, David French, the senior vice-president for government relations at NRF, stated, “When businesses couldn’t obtain coverage for acts of terrorism after 9/11, Congress stepped in. . . . It’s time for Washington to do the same for pandemics.”[[60]](#endnote-61)

Past Interventions by the US Government in Catastrophic Business Interruption Insurance

The tragedy of September 11, 2001, was considered an appropriate comparison in magnitude to the COVID-19 pandemic. After that tragedy, the United States Congress passed the *Terrorism Risk Insurance Act* (TRIA). In partnership with the federal Terrorism Risk Insurance Program, TRIA provided terrorism insurance to US policyholders by offering a backstop for losses payable by the United States Secretary of the Treasury.[[61]](#endnote-62) Depending on company size, premiums for terrorism coverage ranged $19–$49 for each $1 million in insured value, and expenses generally represented 3–5 per cent of a company’s property insurance costs. In 2020, approximately 60 per cent of US businesses had bought terrorism insurance.[[62]](#endnote-63)

Government-backed insurance programs were also used in other countries. For example, France had installed the Caisse Centrale de Réassurance (CCR), a government-owned reinsurance company that provided coverage for natural disasters.[[63]](#endnote-64) The government reinsurance program had reasonably priced premiums and offered unlimited coverage.[[64]](#endnote-65) When the CCR was on the verge of bankruptcy in 1999, it received $520 million from the French government so that it could honour its commitments.[[65]](#endnote-66)

In 2014, some conservative lawmakers demanded changes to the TRIA program. They asked the private sector to pay more for terror-related losses before the federal government funding could come into play.[[66]](#endnote-67) Jennifer Rubin, head of the terrorism, war, and political violence products line for the British insurance company Hiscox Ltd., commented on the federal government funding: “What we experienced during that two-week period was basically insanity.”[[67]](#endnote-68) The insurer had been inundated with requests for standalone coverage of terrorism policies that were not backed by government funding, despite their much higher cost in metropolitan areas such as New York, Washington D.C., or Los Angeles. Customers preferred Hiscox Ltd. because government-backed terrorism policies had more restrictions, such as requiring a US government declaration of international terrorism before claims would be accepted.[[68]](#endnote-69)

The federal Terrorism Risk Insurance Program was set to expire at the end of 2020. Insurance companies were exploring the possibility of a standalone contingency policy, which would be activated if the government policy was not renewed by the end of 2020. The American Property Casualty Insurance Association was concerned about the program’s timely renewal. The association wanted to make the program permanent and offer clarity on cyber-terrorism.[[69]](#endnote-70) However, with the program potentially expiring soon, insurers and brokers were exploring alternatives for commercial customers.[[70]](#endnote-71)

The Role of Private Reinsurance Companies

The top 20 reinsurance companies in the world lost their AAA capital adequacy rating in 2018 due to heavy payments made for catastrophic losses.[[71]](#endnote-72) Their return on equity declined to 1.6 per cent in 2017 and 2.9 per cent in 2018, compared to 12.5 per cent in 2014.[[72]](#endnote-73) However, between 2014 and 2018, assets under management by reinsurance companies in alternative capital increased from 11.13 per cent to 16.58 per cent (see Exhibits 4 and 5). As investment by reinsurance companies increased in alternative capital markets (e.g., collateralized reinsurance, insurance-linked securities), less capital was left for reinsurers, especially in case of a major catastrophic event. However, with premiums for catastrophic events at a high level, reinsurance companies were even more willing to expose themselves to catastrophic reinsurance, despite back-to-back catastrophic events having taken place in the United States in 2017 and in 2018.[[73]](#endnote-74)

**THE ROAD AHEAD**

Gunther Kraut, the head of epidemic risk solutions for Munich Re Group, was confident about the company’s new venture: “This joint effort is an important part in our continued strategic push for innovation. It will pave a new frontier for the insurance industry by helping businesses become more resolute to the evolving health threats facing the world.”[[74]](#endnote-75) By May 2020, Marsh was also looking for more business by offering the PathogenRX product for future pandemics.[[75]](#endnote-76) Lacovara was pushing forward to meet the demand: “We are actively seeking additional markets to quota share the product. . . . There is more demand than you can imagine.”[[76]](#endnote-77) Doyle, however, had yet to resolve several challenges, including finding a suitable partner—the government or a private reinsurance company—and determining if the pandemic insurance segment had any potential to grow.[[77]](#endnote-78)

EXHIBIT 1: PERCENTAGE OF INCOME LOSt DUE TO COVID-19 PANDEMIC (MAY 2020)

Source: Adapted from Alexander Kunst, “Thinking about What You Earned on Average a Month, before the COVID-19 / Coronavirus Pandemic, What Percentage of Income Have You Lost over the Past 4 Weeks Due to Its Impact?,” Statista, May 31, 2020, accessed July 8, 2020, www.statista.com/statistics/1108072/percentage-of-income-loss-due-to-the-covid-19-corona-pandemic.

EXHIBIT 2: NET CHANGE in Number of US JOBS by Sector (MARCH 2020)

Source: Adapted from Thomas Franck, “Here Are the Industries Suffering the Biggest Job Losses in an Initial Look at Coronavirus Impact,” CNBC, April 3, 2020, accessed July 1, 2020, www.cnbc.com/2020/04/03/this-chart-shows-which-industries-saw-big-job-losses-in-march-2020.html.

EXHIBIT 3: VIRUS AND FEAR RANK, AS Indicated BY THE PATHOGEN SENTIMENT INDEX

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Virus** | **Germany** | **Japan** | **Mexico** | **United States** |
| Marburg | 3 | 2 | 2 | 1 |
| Lujo | 2 | 3 | 3 | 2 |
| Nipah | 1 | 1 | 1 | 3 |

Source: Adapted from Metabiota Inc., *Infectious Disease Outbreaks Can Inflict Enormous Social and Economic Disruption*, 2018, accessed June 1, 2020, https://metabiota.com/sites/default/files/presentation\_files/Metabiota%20Pathogen%20Sentiment%20

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EXHIBIT 4: RETURN ON EQUITY of TOP 20 GLOBAL REINSURERS (2014–2018)

Source: Adapted from S&P Global Ratings, *Global Reinsurance Highlights 2019*, 13, 2019, accessed June 1, 2019, www.spglobal.com/\_assets/documents/ratings/research/global-reinsurance-highlights-2019.pdf.

EXHIBIT 5: REINSURANCE INDUSTRY’s ASSET UNDER MANAGEMENT (AUM) IN ALTERNATIVE CAPITAL Investments

Source: Adapted from S&P Global Ratings, *Global Reinsurance Highlights 2019*, 33, 2019, accessed June 1, 2019, www.spglobal.com/\_assets/documents/ratings/research/global-reinsurance-highlights-2019.pdf.

endnotes

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