

# Influence of Cyber Risk on the P&C Insurance Market

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## Agenda

- **Cyber Risk and Fire Risk – the Parallels**
- **State of P&C Insurance Market**
- **Factors Driving the Demand**



## Cyber Risk and Fire Risk – the Parallels




### Past state of affairs of fire risk


- **This year is the 350th anniversary of the Great Fire of London**
  - One of the largest urban fires in history
  - Destroyed a third of the city and resulted in 100,000 homeless
- **Increased fire risk was a significant negative consequence of urbanization**
  - Risks that came with urban expansion were serious, but did not dissuade people from city living
  - Instead, society captured the massive benefits through risk mitigation, including insurance
- **Response to the risk of urban fire was multifaceted, where every intervention made was necessary, and none was sufficient on its own**
  - Governments required building in brick and stone, not wood
  - Local authorities established fire brigades
  - People stopped heating with open fires in their homes
  - Fire insurance was developed



## Current state of affairs of cyber risk



- **Increased cyber risk is a significant negative consequence of the digital revolution**
  - But should it dissuade society from becoming more interconnected?
  - There are many benefits that society may reap from Internet of Things (IoT)
- **Sounds very similar to the situation with fire risk and urbanization**
- **Response to cyber risk will likely be very similar to that of urban fire risk**
  - Multifaceted, where a number of interventions will be necessary – none of which will be sufficient on its own
  - Proactive risk mitigation will lead to lead to reduced risk






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## Putting it all in perspective

<div style="text-align: center; font-size: 2em; color: #0056b3; margin-bottom: 5px;">  </div> <b>Fire Risk – <i>past</i></b>	<div style="text-align: center; font-size: 2em; color: #0056b3; margin-bottom: 5px;">  </div> <b>Cyber Risk - <i>current</i></b>
<ul style="list-style-type: none"> <li>▪ Significant and complex risk to manage due to <u>urbanization</u></li> </ul>	<ul style="list-style-type: none"> <li>▪ Same as fire risk, except due to <u>digitalization</u> and IoT</li> </ul>
<ul style="list-style-type: none"> <li>▪ Major event could disable critical infrastructure, imperil national security and threaten the economy</li> </ul>	<ul style="list-style-type: none"> <li>▪ Same as fire risk</li> </ul>
<ul style="list-style-type: none"> <li>▪ In spite of the risk people still gravitated towards city living</li> </ul>	<ul style="list-style-type: none"> <li>▪ In spite of the risk people and businesses are gravitating towards a more interconnected world</li> </ul>
<ul style="list-style-type: none"> <li>▪ Response to the risk involved an integrated approach involving public, private and social sectors adopting a package of risk mitigation measures</li> </ul>	<ul style="list-style-type: none"> <li>▪ Stay tuned...</li> </ul>




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# State of P&C Insurance Market



## State of the P&C insurance market

Growth challenges faced by insurers in recent years	Capital levels for the industry are at all-time highs and continue to rise	Product supply outpacing demand for many insurance products	A few exceptions exhibit potential for high growth
Driver of recent wave of M&A transactions and stock buybacks	But identifying attractive opportunities for deploying capital has been difficult	Resulting in limited opportunities for organic growth	Insurance solutions for Cyber Risk



## An opportune time for P&C insurance market

- **Cyber risk is increasing, and so is the demand for comprehensive cyber risk solutions**
- **At last, an opportunity for organic growth for the P&C industry in what is challenging growth environment**
- **Insurers have certainly responded with various cyber products**
  - However, there are significant challenges that constrain their ability to fully penetrate this market



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## Factors Driving Demand



## Major cyber breach events since 2014

Date	Company Affected	Number of records	Type of information stolen	Total costs incurred	Insurance cover	Total cost/Market Cap*
Feb 2015	Anthem	80 million	Names, Social Security numbers and other personal information	US\$230 million <sup>1</sup>	Cyber coverage between US\$150-US\$200 million	0.63%
Nov 2014	Sony	47,000	Social Security numbers	Estimated to be around US\$100 million	100% covered by insurance	0.32% <sup>2</sup>
Oct 2014	JPMorgan Chase	76 m household, 7 m businesses	Customer names, Addresses, Phone numbers and Email addresses	.3	-	-
Sep 2014	Home Depot	56 million	Credit and Debit card information	US\$232 million <sup>4</sup>	US\$30 million	0.17%
Aug 2014	Community Health Systems	4.5 million	Patient names, birth dates, addresses, telephone and social security numbers	.5	-	-
Dec 2013-Jan 2014	Target	40 million	Credit and debit card information	US\$290 million	US\$90 million	0.81%

\*Market cap in USD millions as at end of fiscal year of the breach, as sourced from Bloomberg.

1. Figure as of Dec 2015. It is reported that most of its costs were covered by the company's cyber insurance policy.
2. The US\$100 million on which this is calculated is a third party estimate. Sony has not released any data regarding the data breach losses incurred.
- 3.5. The company has not released data breach related costs in its latest annual report.
4. Costs as reported in October 2015.

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## Major cyber breach events (continued)

Date	Company Affected	Number of records	Type of information stolen	Total costs incurred	Insurance cover	Total cost/Market Cap*
Jul-Aug 2015	Ashley Madison	32 million	Names, Addresses, phone numbers and credit card information	£1.2 billion <sup>1</sup>	-	-
Jan 2015 <sup>2</sup>	Premera Blue Cross	11 million	Name, Social security number, telephone number, medical information etc.	-	-	-
Sep 2015	Excellus BlueCross BlueShield	10.5 million	Name, Social security number, telephone number, medical information etc.	US\$17.3 million <sup>3</sup>	US\$9.1 million	-
Sep 2015	Experian	15 million	Names, addresses, social security, driver's license and passport numbers	US\$20 million <sup>4</sup>	US\$10 million <sup>5</sup>	0.12%
Dec 2015	United States voters	191 million	Name, address, birth dates, phone numbers and emails	.6	-	-
Jul 2015	Korea Pharmaceutical Information Center	43 million <sup>7</sup>	Medical health information on patients in Korea	-	-	-

\*Market cap in USD millions as at end of fiscal year of the breach, as sourced from Bloomberg.

1. Estimated damages that the Canada-based company faces in the UK only from class action lawsuit. Global damages expected to be much more.
2. Discovered in Jan 2015, the cyber attack actually took place in May 2014.
3. Costs reported as of 2015. Costs incurred for 2016 have not been released yet.
4. Costs reported till Nov 2015. The company expects further damages related to possible lawsuits.
5. Though no insurance cover amount could be sourced, insurance cover is expected to take care of 'short term' costs of the breach like customer notifications, which were pegged at US\$10 million by analysts.
6. The data was attributed to accidental loss due to a misconfigured database and no damages were reported.
7. Represents nearly 90% of Korea's population. Although this insider data breach is under investigation, no costs have been reported so far.

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## Recent cybersecurity incidents

- **Data breaches have been happening at a disturbingly frequent rate**
  - Due to increased reporting of breaches that happened before but were not disclosed?
  - Due to increased activity by, and effectiveness of hackers?
- **Leading many businesses to re-evaluate their expectations**
  - More a matter of when a breach occurs, rather than if a breach occurs



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## Other factors driving demand

- **Vendor requirements, particularly for small and mid-sized (SME) companies**
  - Customers, clients, suppliers, lenders may refuse to do business with a SME if cyber-insurance is not in place
- **Regulatory pressures, which encourage the use of cyber-insurance**
- **Stricter privacy notification laws**
- **Traditional insurance policy exclusions...**

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## Intersection of Cyber Insurance and Traditional Insurance

What if a cyber event leads to physical damage to property, as well as business interruption and other third-party liability exposures?

- **Should a cyber policy or commercial property policy cover such losses?**
- **Majority of traditional markets are reluctant to cover any losses stemming from a cyber peril (and vice versa)**
  - Commercial property exclusion usually via CL 380 (LMA cyber attack exclusion)
- **Polarizing topic, with varying views**
  - More coverage usually available under commercial property
  - Single cyber tower with an all-risk component to it reduces ambiguity?
  - Cyber extension to existing coverages across other lines would more effectively provide the coverage that's actually needed?
  - Where would the underwriting expertise need to sit?

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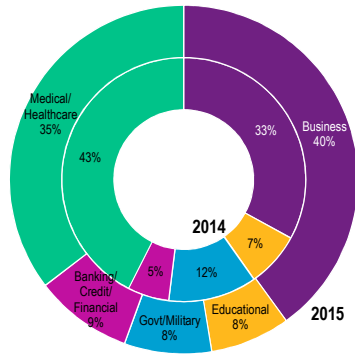
## An Aside...



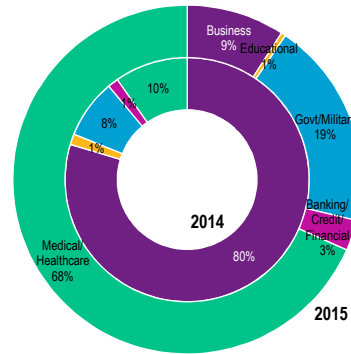


## Data breaches by business category

Data Breaches By Business Category, By Number of Breaches



Data Breaches By Category, By Number of Records Exposed



Source: Identity Theft Resource Center

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## Public-private cyber-catastrophe reinsurance scheme

“Insurers find writing cyber insurance difficult without reinsurers, but reinsurers need significant scale before the pooling effects make such reinsurance possible”

- **An addition or extension to existing schemes for terrorism**
  - Example: Pool Re in U.K. and TRIPRA in U.S.
- **Remove blockages that limit cyber insurance penetration**
  - Allays some of the concern around risk aggregation
- **Provides a way for businesses, insurers, and government to work together to manage cyber risk**
  - Encourages information sharing and insurance-based incentives for investment in cyber defenses

Source: “Promoting UK Cyber Prosperity,” Z/Yen Group, July 2015

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