



Cyber Risk Underwriting Considerations: Reinsurance Perspective

Casualty Actuarial Society Reinsurance Seminar
Southampton, Bermuda

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Cyber Overview

Internet Origin



1960's
Military Use

1970's and 1980's
Research and
Educational use

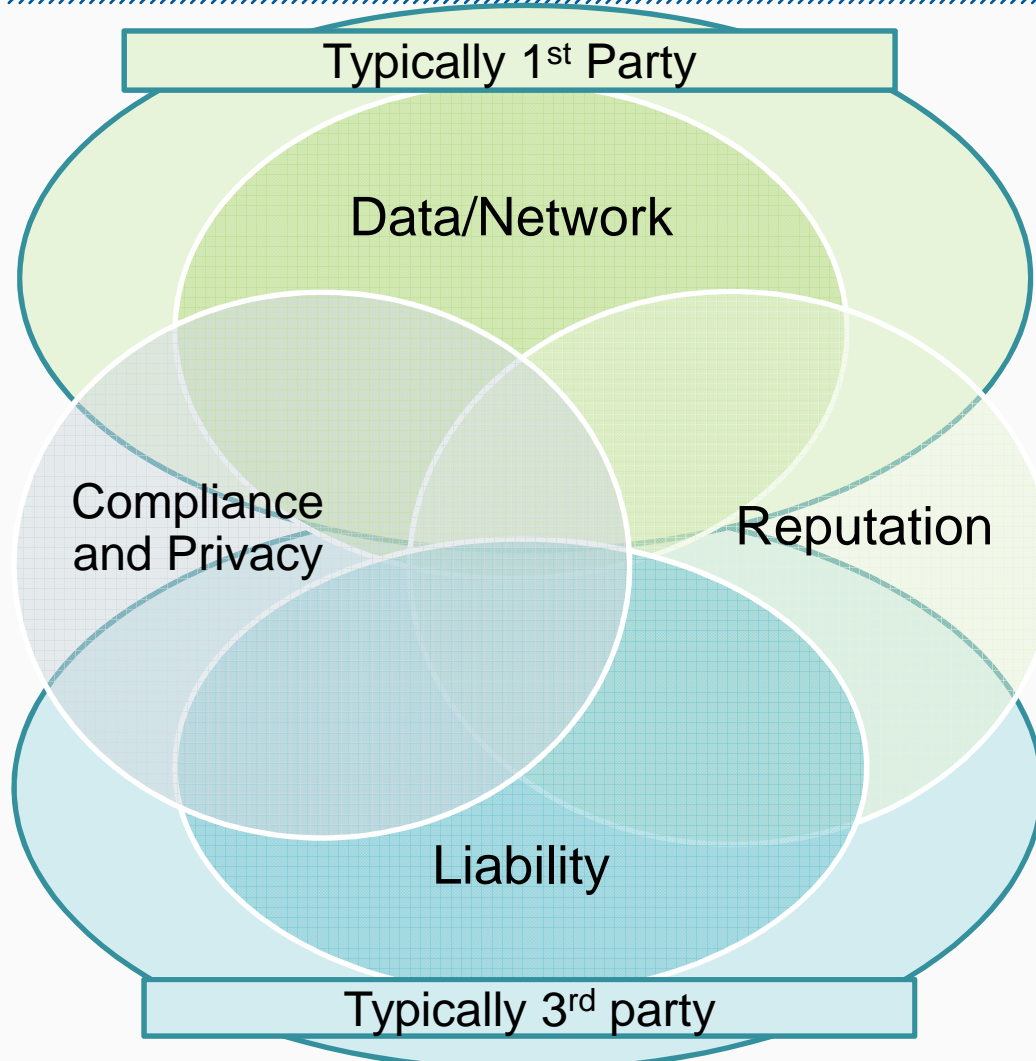
1990's
Commercial Use

1991

U.S. High Performance
Computing Act

**Internet
Explosion**

Cyber Risks Dimensions



Cyber Loss Examples
Data Theft or Extortion
Property Damage
Denial of Service
Unauthorized Access
Posting False Information
Computer Viruses
Loss of Media
Social Media (Misuse of Media)
Computer Failures
Human Error
Violation of Privacy (Laws)
Intellectual Property Infringement
Product/Service Failure

A lot of overlap → **Adds to complexity**

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Data Breach Trends



Data Breach Special Security Risk – Trends

Increased Exposure

- Increased use - Social Media; Transactional Activity , Mobile Activity
- Rapid Technological evolution and development ; E.g., Wi-Fi, Hand Held devices ; Cloud Computing

Workplace Behavior Trends

- Nontraditional work arrangements
- Qualified IT staff
- Information technology budgets
- Customer demands

Workplace Technology Trends

- Increase in high-speed Internet lines
- Software trends –Microsoft dominance
- Increasing sophistication of computer programs
- Internet and e-mail trends

Increased System and Data Vulnerability

Some Recent Trends

Definition of Personally Identifiable Information (PII) Broadens



Email addresses and Zip Codes now included

Costs increase for Breach Notification Delays



Fines & Penalties imposed : Health Net fined by multiple states;
Lawsuits : Honda sued for \$206mm

Increase in Privacy Lawsuits



Individual as well as Class Actions filed – The Plaintiff’s Bar is being aggressive

Infrastructure Attacks Escalate



Hackers target everything from railroads to stock exchanges.

Financial Services still a Prime Target



Both large and small FIs are a common target

Client Trends – Plus and Minus

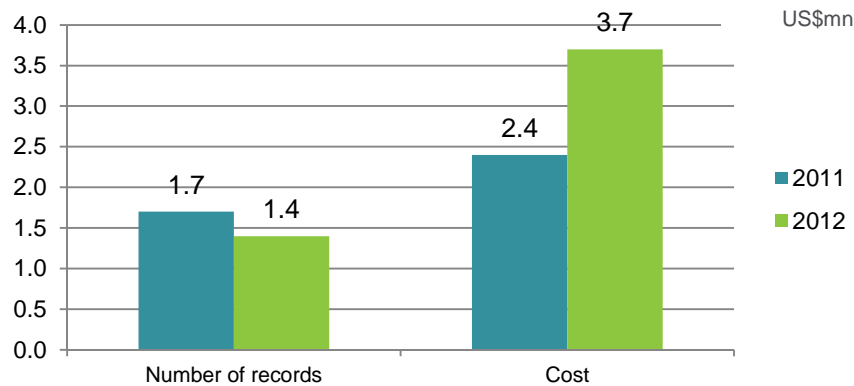


Plus – More Clients aware of Cyber Risk
Minus – Responsibility moving from CEO to Operating Managers

Data Breach Special Security Risk - Trends

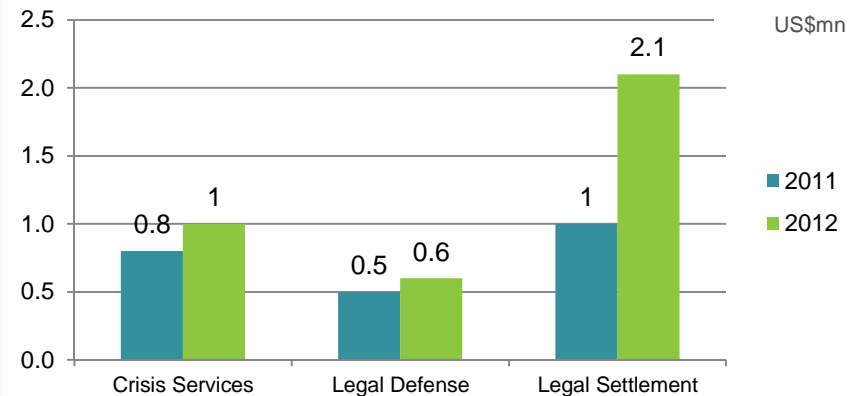
Comparing 2012 & 2011 Findings

Average number of records exposed and average cost



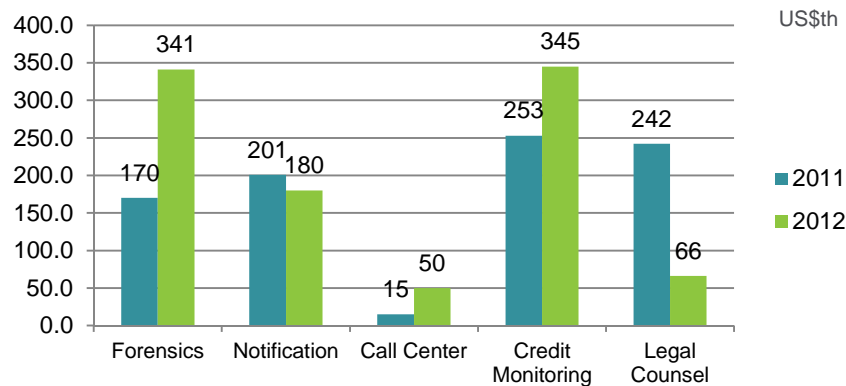
Comparing 2012 & 2011 Findings

Average cost by type



Comparing 2012 & 2011 Findings

Average cost for crisis services



- Number of Records exposed is lower, but average Cost is higher
- Legal Settlements Drive the costs
- Forensic Costs and Credit Monitoring up

Data Breach Special Security Risk – Trends

- Employee behaviors, both intentional and accidental are a fundamental cause
- Small/Midsize businesses (SMBs) are at a greater risk (81% to 78%)

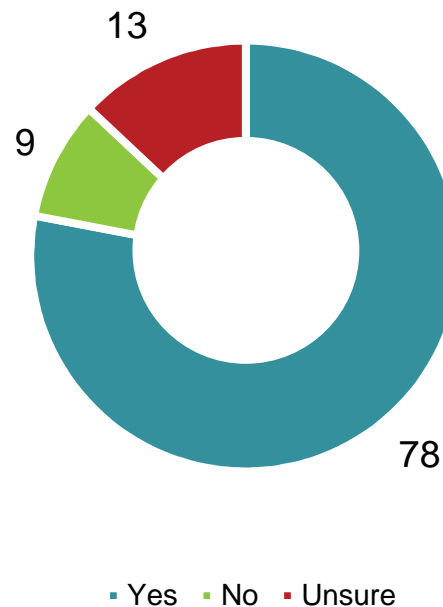
SMBs More Likely to:

- Open Spam
- Leave Computers unattended
- Visit Off-limit websites

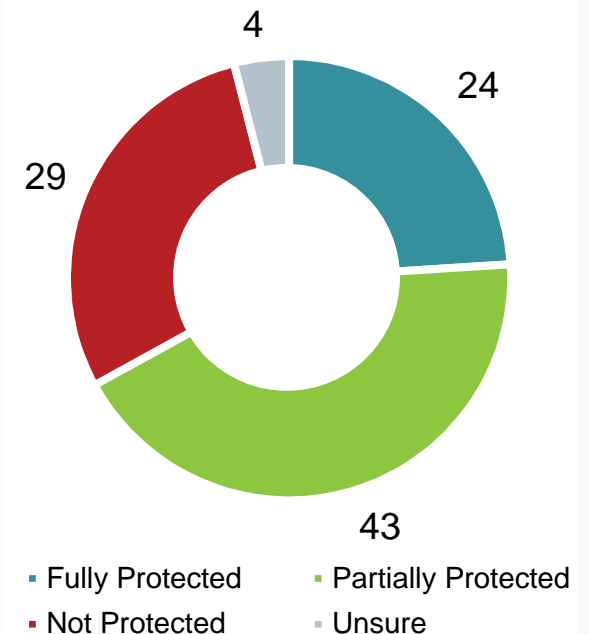
Data Breach Top 3 Causes

- Loss of laptop /mobile devise (35%)
- 3rd Party vendor Mishaps
- System Glitches

Has your organization ever experienced a data breach as a result of negligent or malicious employees or other insiders?

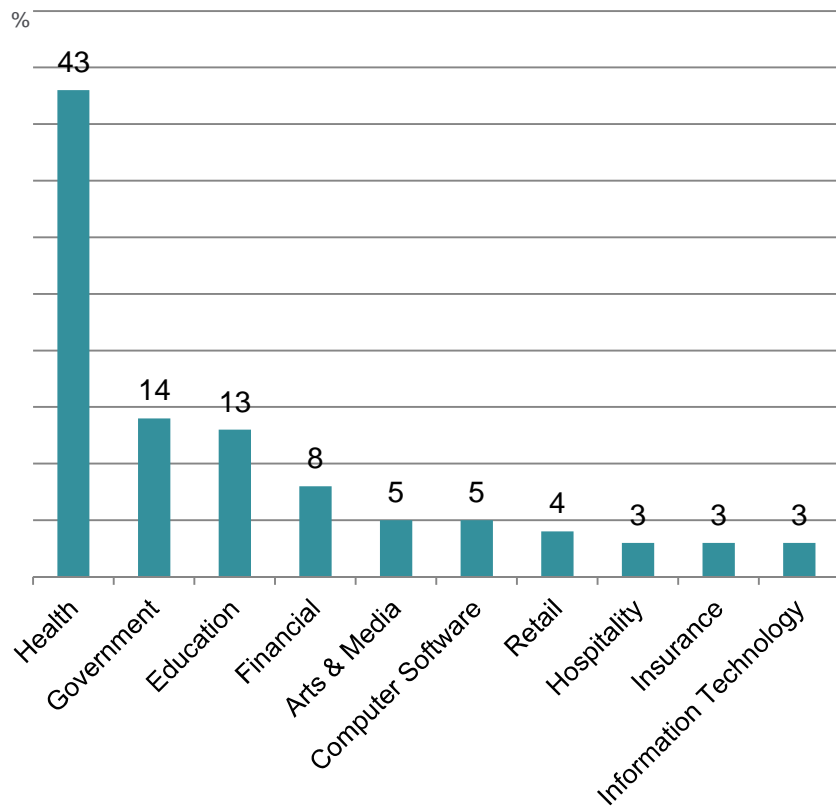


In general, is your organization's sensitive confidential business information protected by encrypted or other data protection technologies?



Data Breach Special Security Risk – Trends

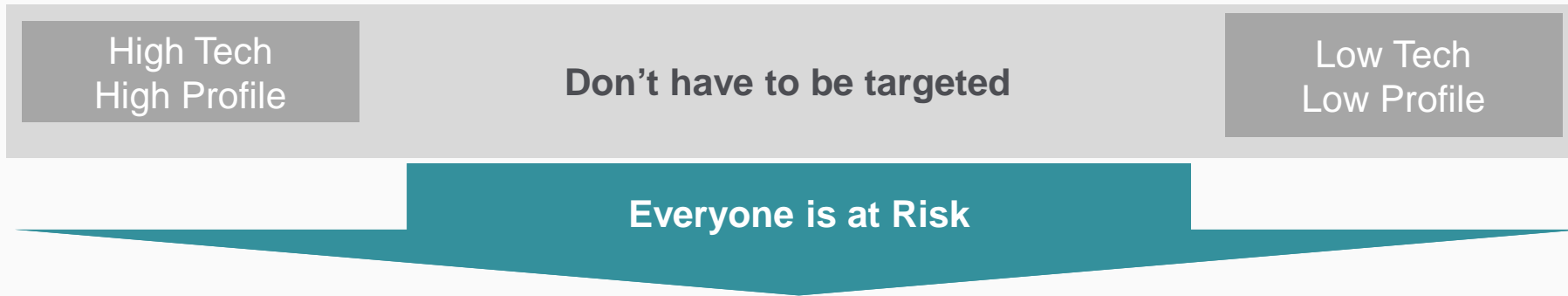
Top-Ten Sectors by Number of Data Breaches, 2011



2012 Symantec Report Some Findings of Interest

- Malicious Attacks Growing rapidly – 5.5BB – up 81% from 2010
- Targeted Attacks growing (increased from 77 to 82 per day) - spread to all size organizations - More than 50% aimed at org. with < 2,500 employees and 18% aimed at org with < 250 employees
- Lost device data breach on the rise (18.5mm identities)
- Mobile vulnerabilities up 93%

Data Breach Security Risk



- Automated programs search for unprotected computers on the internet...doesn't care if it finds a Fortune 500 computer or the local Pizza Parlor computer or a Church computer or another computer
- Located vulnerable computer accessed to install malicious software:

Identity Theft

Malicious Mischief

Vandalism

FTC : 2010 Identity Theft is Most Frequently Reported Complaint 250,000 or 19% (11th Year in a row)

**Towers Watson 2012 Study:
72% of Commercial Insurance Buyers Do Not Have Cyber Insurance**

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Reinsuring Heterogeneous Non-Standard Coverages



Coverage Considerations

Cyber Risk - Specialized Coverage



Wide Variety of Non-Standardized Coverage - 1st and 3rd Party - A Common Sampling

Privacy Regulatory Defense & Penalty	Covers defense costs, fines/ & penalties for violations of privacy regulations, including but not limited to HIPAA and the new Hi-Tech Act.
Data Privacy/Security	Covers third party claims as a result of a network security/privacy breach. Covers both online /offline information, virus attacks, denial of service & failure to prevent transmission of malicious code.
Internet Media Liability	Covers both online and offline media. Website content (copyright/trademark infringement, libel/slander, plagiarism and personal injury).
Intellectual Property	Theft/use/disclosure of proprietary, advertising, technology, trademarks, etc.
Information Asset Protection & Business Interruption	Covers expenses and costs required to recover and/or replace data that is compromised, damaged, lost, erased or corrupted. Coverage also includes business interruption and extra expense coverage for income loss as a result of the total or partial interruption of the insured's computer system.
Cyber Extortion	Covers investigation costs and extortion demand.
Cyber Terrorism	Terrorist acts covered by the Terrorism Risk Insurance Act of 2002. In some cases, may be further extended to terrorist acts beyond those contemplated in the Act.
E&O Coverage	Inadvertent loss or disclosure of data, employee error resulting in deletion of data or spreading of virus, etc.
Reputational Coverage	Covers reputational harm resulting from adverse media activity - pays for crises management expenses (via dedicated crisis management and public relations professionals) and pays for loss of revenue resulting from adverse media activity.

Rapidly Growing and Evolving!

ISO E-Commerce Package

Designed for Commercial Enterprises, including Non-Profit Organizations that have some form of Web Presence

Intent : Fill Gaps/Expand Coverage of the CGL Policy

Coverage : 8 Separate Insuring Agreements

1. website publishing liability — copyright, trademark, trade dress, or service mark; defamation against a person or organization; or violation of a person's right to privacy
2. security breach liability — unauthorized acquisition or disclosure of client information held within a computer system or otherwise (for example, hard copy); transmission of a virus to a third party by e-mail or other means
3. programming errors and omissions liability — programming errors or omissions that ultimately disclose clients' personal information held within a computer system
4. replacement or restoration of electronic data — expenses incurred to replace or restore electronic data or computer programs affected directly by a virus
5. extortion threats — ransom payments and other expenses incurred resulting directly from cyber threats
6. business income and extra expense — loss of business income and/or extra expenses
7. public relations expense — expenses incurred to restore the insured's reputation
8. security breach expense — expenses incurred to notify parties affected by a security breach .

Coverage Considerations

Specialized Coverage

Terms, Definitions and Conditions of similar Coverage can vary significantly, for example....

- Explicit Trigger (e.g., Claims Made; Failure to Secure Data, etc) rather than “Occurrence”
- Named peril rather than All Risk
- Often Defense in Limit
- Most have been Developed since 2000 – Largely untested in Court
- Scope of Coverage varies:
 - **Indemnity v Pay on behalf; Aggregate Limits; Duty to Defend; Definitions of key terms (“Claims”, Computer System”, “Damages”. Etc.); Exclusions, Sub-limits, Expense Coverage, etc.**

Coverage is Growing and Evolving Rapidly
A Growth Area for insurers.

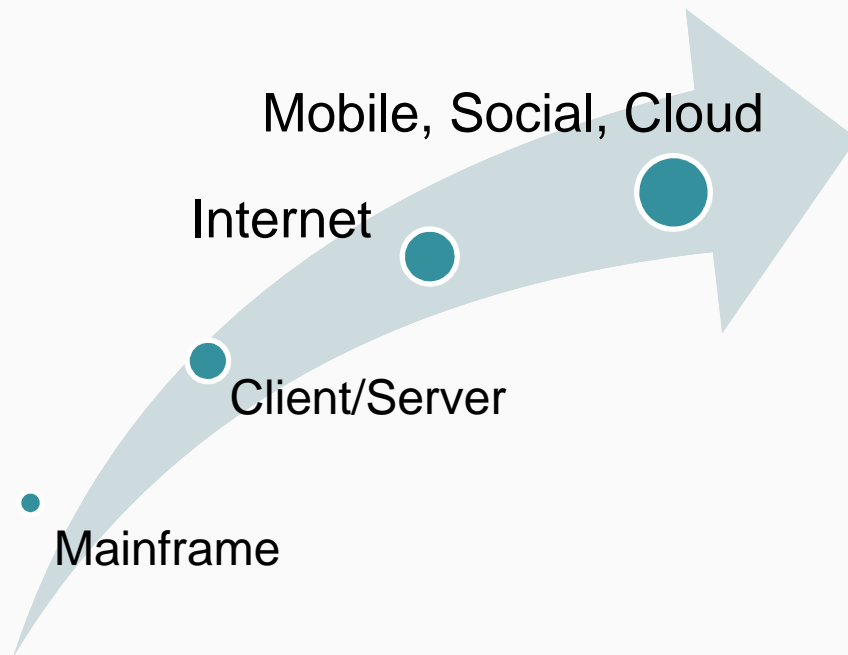
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Social and Mobile Technology



Where we are...
..... and where we're going



Every 60 Seconds

- ✓ **98,000+** tweets
- ✓ **695,000** status updates
- ✓ **11 million** instant messages
- ✓ **694,445** Google searches
- ✓ **168 million+** emails sent
- ✓ **38 tons** of e-waste

Beyond Increased Breach Exposure.....

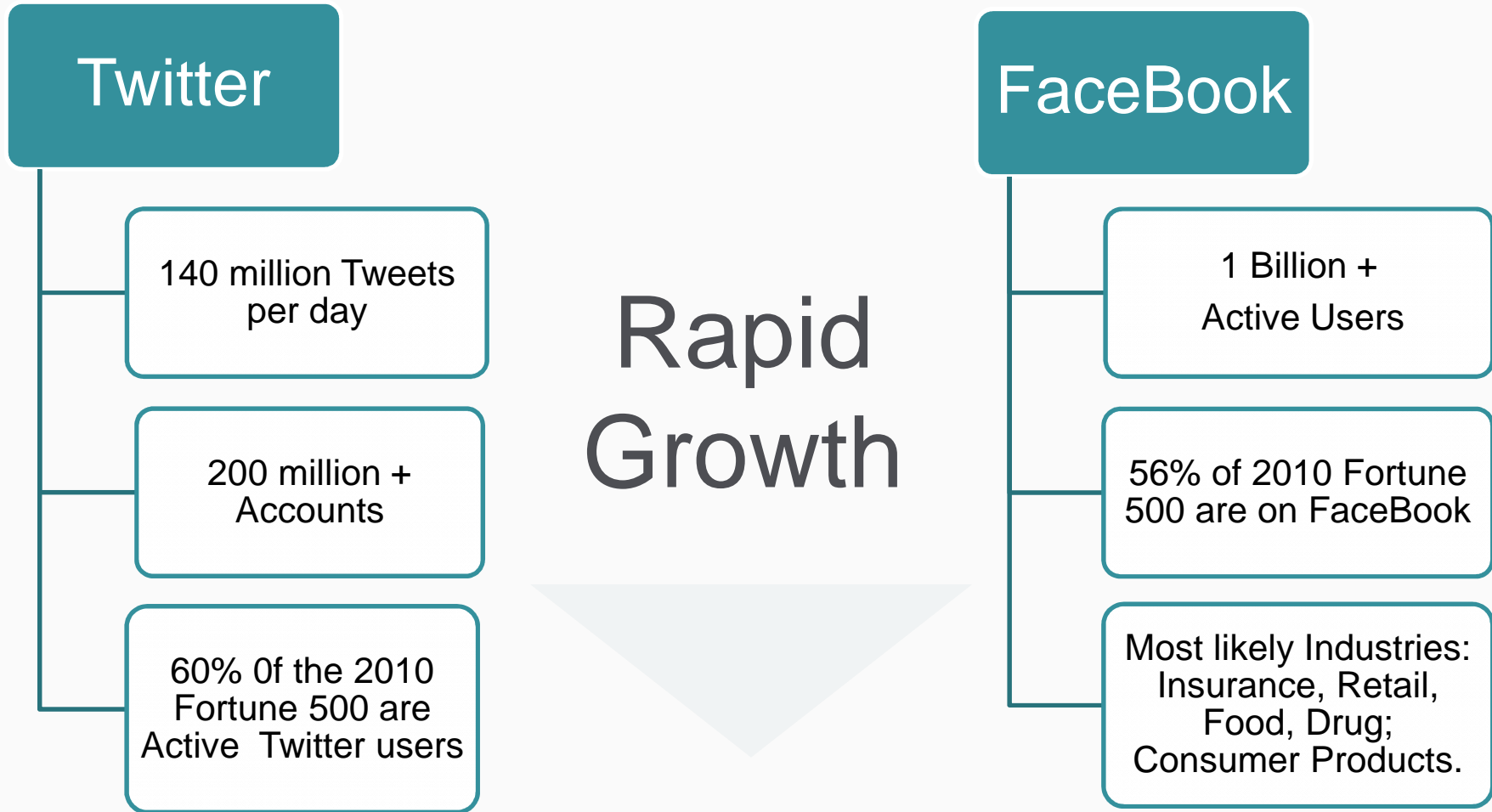
**“Open”
Communication
Platform**

**Social
Media**

Content Risks

**Everyone is in the Publishing Business
Any person or organization, not just media companies,
can be sued for media content**

Social Media
Some Quick Numbers (Already outdated!)



Widespread Personal and Commercial Use

Commercial Risks: Social media Exposure varies by Predominant Usage

- Internal – Employees Focus (Employment Practices Liability)
- External – Public, Customers, Students, Constituents
- Topic Focus – Specific vs. Open; Sensitivity level is Key

Discrimination or Harassment

- Hiring, Treatment, Termination
- Liable/Defamation
- Invasion of Privacy
- Cyber Stalking

Operational

- Antitrust Violations
- Data Security (Breach)
- Trade Secrets
- Copyright/Trademark Infringement
- Consumer Fraud/Deceptive Practices

Speed and global reach ➡ Greater Impact

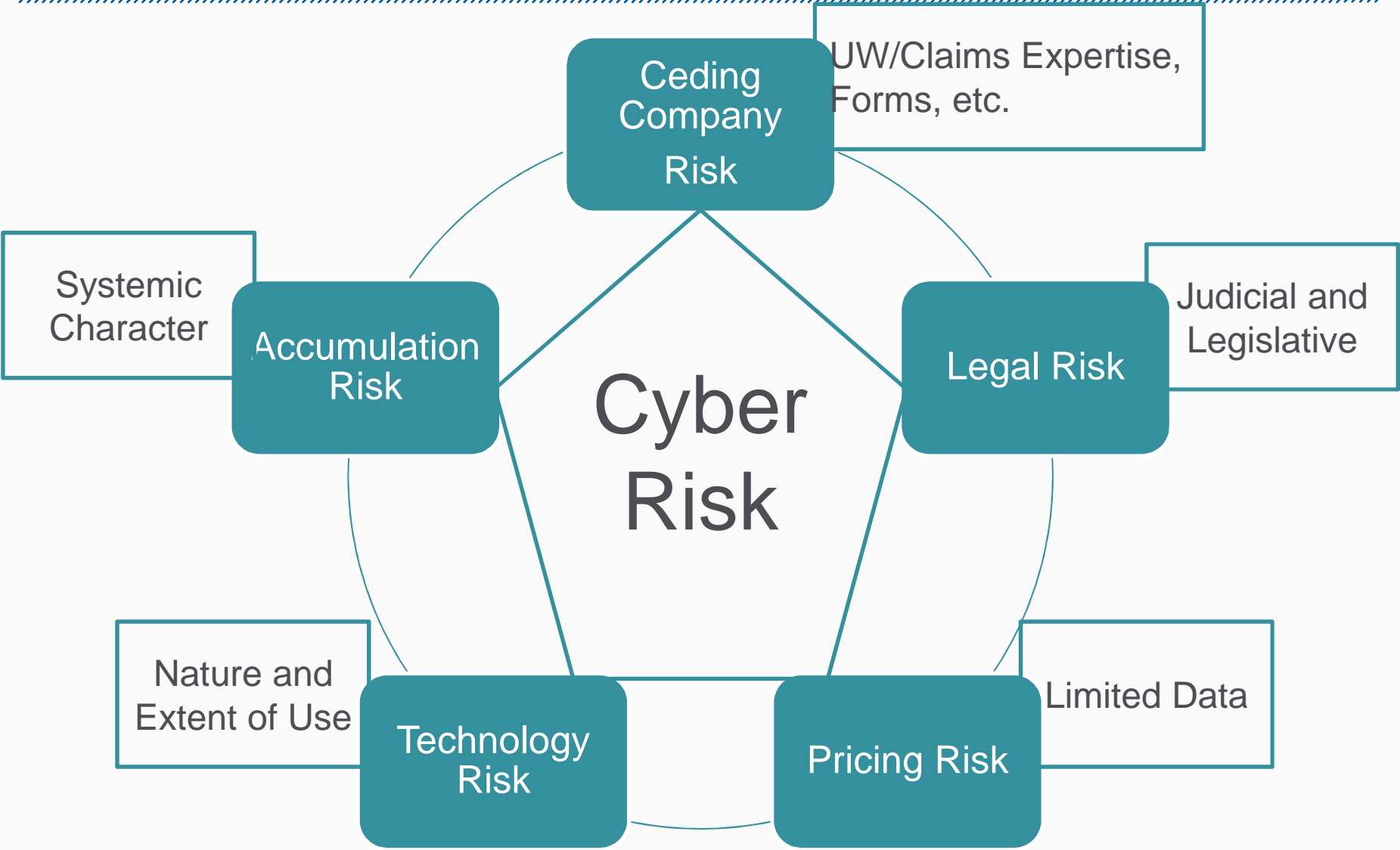
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Takeaways



Key Underwriting Risks Reinsurer Perspective



Varied and Rapidly Evolving



Technology



Legal
Landscape



Usage



Coverage

Challenges



Opportunities

Will be a Common Coverage



Thank You

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