BITSIGHT

REPORT

Make better cybersecurity decisions with trusted data analytics

Marsh McLennan study finds statistically significant correlation between Bitsight analytics and cybersecurity incidents

Executive summary

The Marsh McLennan Cyber Risk Analytics Center (Marsh McLennan) analyzed Bitsight's cybersecurity performance data to consider its potential benefits for market participants in helping to prioritize resources, address security risks, lower the probability of experiencing a cybersecurity incident, reduce insurance claims, and improve the cyber insurance underwriting and acquisition process.

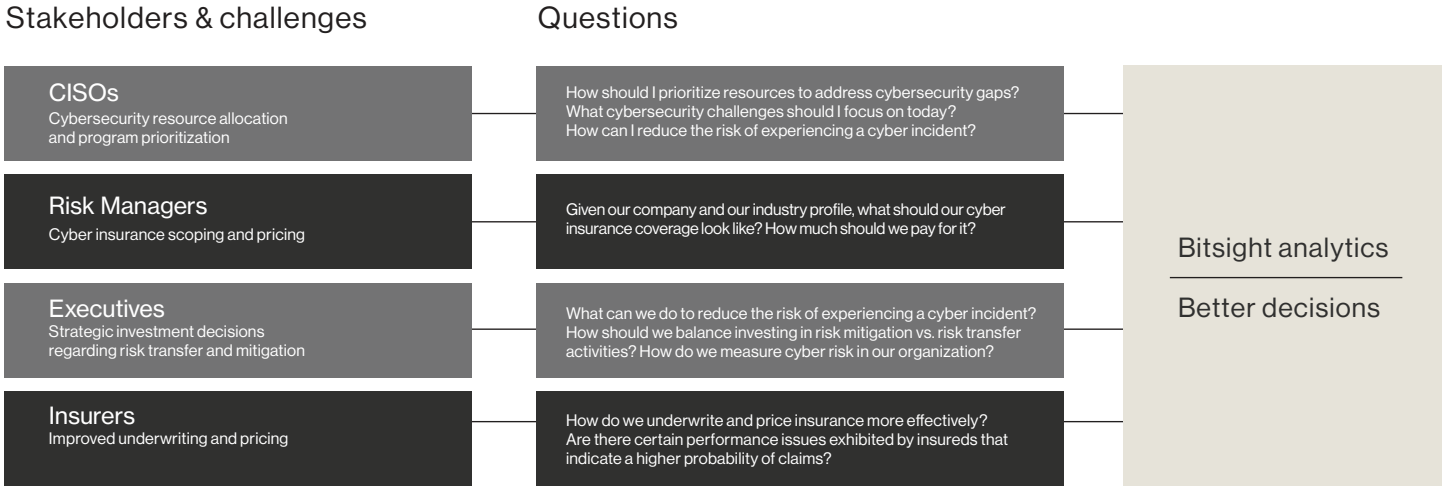
After comparing the security performance data of thousands of organizations that experienced cybersecurity incidents against those that did not, **Marsh McLennan identified 14 Bitsight analytics, including the Bitsight Security Rating and 13 risk vectors, that had statistically significant correlation to reported cybersecurity incidents.**

These findings provide actionable insights to help cybersecurity and cyber risk stakeholders focus on which aspects of their organization's security processes need improvement, and inform resource allocation, programmatic decision-making, and cyber insurance underwriting.

Background

Cybersecurity continues to be a top risk for business and government leaders worldwide. Malicious actors continue to find new, innovative methods to harm organizations. The onslaught continues, from creating highly sophisticated phishing campaigns to conducting far-reaching supply chain attacks to exploiting new vulnerabilities across the rapidly expanding universe of software and Internet of Things (IoT) devices. In recent years, ransomware has emerged as a serious threat to organizations of all sizes and sectors, resulting in soaring financial costs and frequent operational disruptions.

The need for trusted data that better enables cybersecurity decision-making and reduces the likelihood of incidents is more critical than ever as security, business, and financial leaders on the front lines are facing significant challenges in addressing these risks.



Each market participant needs quantitative, objective, trusted data and insights regarding cybersecurity program performance to help them make better, more confident decisions. In cybersecurity, a lack of objective, quantitative, and transparent data tied to specific outcomes (e.g. cyber incidents) has limited the ability for market participants to act with greater confidence.

Marsh McLennan's independent analysis of Bitsight's analytics and risk vectors can help market participants:

- Prioritize resources and address security risks.
- Lower the probability of experiencing a cybersecurity incident.
- Improve cyber insurance coverage with better security performance.
- Improve the cyber insurance underwriting and acquisition process.

Key findings

Marsh McLennan identified 14 Bitsight analytics to be statistically signficant and correlated with cybersecurity incidents, including the Bitsight Security Rating and 13 risk vectors. Bitsight's Patching Cadence risk vector, which measures the rate at which organizations remediate important vulnerabilities, was most strongly correlated to cybersecurity incidents, followed by risk vectors that measure updated desktop and mobile software and observed exploited devices.

Marsh McLennan concluded that poor performance in these areas increased an organization's risk of experiencing a cybersecurity incident, while strong performance implied a lower risk of incident. Market participants should pay particularly close attention to key findings in these areas when forming a strategy to avoid cybersecurity incidents. A detailed statistical analysis is separately available for readers interested in learning more.

The top14

14 Bitsight Analytics are clearly correlated with the risk of facing a cybersecurity incident

01 Bitsight Security Rating
02 Patching Cadence
03 Desktop Software
04 Potentially Exploited Systems
05 Mobile Software
06 Botnet Infections
07 Insecure Systems
08 Web Application Headers
09 User Behavior
10 TLS/SSL Configurations
11 Open Ports
12 TLS/SSL Certificates
13 Spam Propagation
14 Unsolicited Communications

Source: Independent analysis by Marsh McLennan's Cyber Risk Analytics Center, October 2022

The following Bitsight analytics were identified to be statistically significant and correlated with cybersecurity incidents:

01 Bitsight Security Rating

Measures an organization's cybersecurity performance – how effective it is in preventing cybersecurity incidents.

02 Patching Cadence

Measures how many systems within an organization's network are affected by important vulnerabilities, and how quickly the organization remediates them.

03 Desktop Software

Measures whether browser and operating system versions are kept up-to-date for laptops, servers, and other non-tablet, non-phone computers in an organization's network with access to the Internet.

04 Potentially Exploited Systems

Measures devices observed to be running potentially malicious or unwanted programs or software (e.g. greyware or adware).

05 Mobile Software

Measures whether mobile software and associated devices such as phones and tablets are kept up-to-date.

06 Botnet Infections

Measures devices on an organization's network observed participating in botnets as either bots or Command and Control servers.

07 Insecure Systems

Measures endpoints communicating with an unintended destination. Software on these endpoints may be outdated, tampered with, or misconfigured.

08 Web Application Headers

Measures web server traffic by examining security-related fields in the header section of HTTP request and response messages.

09 User Behavior

Measures how often employees at an organization are observed engaging in potentially risky behaviors, including sharing files using peer-to-peer networks (e.g. BitTorrent).

10 TLS/SSL Configurations

Measures whether an organization has correctly configured security encryption software, and whether that software utilizes strong encryption protocols when making encrypted connections to other machines.

11 Open Ports

Measures which port numbers and services are exposed to the Internet.

12 TLS/SSL Certificates

Measures whether an organization has properly obtained and deployed TLS/SSL encryption certificates that are used to secure communication over the Internet.

13 Spam Propagation

Measures if an organization is infected with malware and sending unsolicited commercial or bulk email (spam).

14 Unsolicited Communications

Measures if an organization's devices are seeking to contact a service that is unexpected, unsupported, or not useful on another network, indicating that they may be compromised.

Recommendations for market professionals

Prioritize resources and address security risks.

- Leverage this analysis to prioritize programmatic efforts and investment to reduce your organization's risk of experiencing a cybersecurity incident.

Lower the probability of experiencing a cybersecurity incident.

- Address critical findings in prioritized Bitsight risk vectors and determine if there are underlying programmatic areas that could lead to weaknesses in these risk vectors.

Security program area

Vulnerability Management

Endpoint Protection & Malware Detection

Secure Communications

User Training & Awareness

Bitsight risk vectors

01.

Patching Cadence
Desktop Software
Mobile Software

02.

Potentially Exploited Systems
Botnet Infections
Insecure Systems
Open Ports
User Behavior
Spam Propagation
Unsolicited Communications

03.

Web Application Headers
TLS/SSL Configurations
TLS/SSL Certificates

04.

User Behavior
Botnet Infections
Potentially Exploited

Source: Bitsight

- Focus on these key risk vectors when assessing the security performance of your third-party ecosystem. Vendors with poor performance across these risk vectors may be at a heightened risk of cybersecurity incidents.

Improve cyber insurance coverage with better security performance.

- Focus your cyber insurance discussions with carriers on the Bitsight analytics that were covered in this analysis to make those efforts more productive and efficient.

- Showcase the effectiveness of your organization's security performance in these areas to negotiate better insurance coverage for your organization. Bitsight data is used by insurers who collectively underwrite more than 50% of cyber insurance premiums globally.

Improve the cyber insurance underwriting and acquisition process.

- Focus risk selection and loss prevention efforts on the Bitsight analytics that are most highly correlated with cybersecurity incidents.

About the Study:

The Marsh McLennan Cyber Risk Analytics Center conducted an independent analysis of Bitsight's data analytics (Security Rating and risk vectors) and Marsh McLennan's reported cybersecurity incident data.

Marsh McLennan leveraged proprietary and licensed cyber claims and incident data for the analysis. Marsh McLennan collects cybersecurity incidents and claims data from thousands of organizations in its customer portfolio. Reports are submitted when an organization has experienced a cyber incident. For purposes of this study, a cybersecurity incident was defined as a malicious attack (e.g. ransomware, business interruption, data breach) resulting in an insurance notification or claim that was logged in Marsh McLennan's proprietary database from 2018 to 2021. The study was conducted without providing Bitsight access to Marsh McLennan's data.

Bitsight provided Marsh McLennan cybersecurity performance data across 365,000 organizations to conduct this study. Bitsight non-intrusively collects unique telemetry into the cybersecurity performance of organizations around the globe, and uses it to create analytics that measure performance over time. The Bitsight Security Rating measures an organization's overall cybersecurity performance. Bitsight risk vectors measure an organization's performance in particular cybersecurity domains (e.g. patching cadence, software updating practices, etc.).