NetDiligence®

2015 CYBER CLAIMS STUDY

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INTRODUCTION

The fifth annual NetDiligence® Cyber Claims Study uses actual cyber liability insurance reported claims to illuminate the real costs of incidents from an insurer's perspective. Our goal is to raise awareness about cyber risk within the risk manager community.

For this study, we asked insurance underwriters about data breaches and the claim losses they sustained. We looked at the type of data exposed, the cause of loss, the business sector in which the incident occurred and the size of the affected organization. We also looked at the two additional data points: was there insider involvement and was a third-party vendor responsible for the incident.

We then looked at the costs associated with Crisis Services (forensics, notification, credit/ID monitoring, legal counsel and miscellaneous other), Legal Damages (defense and settlement), Regulatory Action (defense and settlement) and PCI Fines.

This report summarizes our findings for a sampling of 160 data breach insurance claims, 155 of which involved the exposure of sensitive personal data in a variety of business sectors. Two business interruption claims did not involve the loss of sensitive information and three claims were for defense of class action lawsuits alleging wrongful data collection.

It is important to note that many of the claims submitted for this study remain 'open', therefore aggregate costs as presented in this study represent "payouts to-date". It is virtually certain that additional payouts will be made on a significant portion of the claims in our dataset and therefore the costs in this study are almost certainly understated.

- The majority of claims submitted for this study are for smaller (Main Street) organizations and our findings best represent that group.
- Many insurers are leveraging legal counsel (Breach Coach®) early in the claims process to minimize mistakes on the part of the affected organization. This tends to prevent or minimize follow-on regulatory fines, legal defense and settlement costs.
- Insurers are putting in place 'preferred vendor panels' with pre-negotiated rates for Crisis Services costs, which we believe significantly reduces the cost of breach response for policyholders of those insurance carriers. We estimate data breach response costs for an uninsured organization could be up to 30% higher than costs for an insured organization.

Note: We've added a new research database with anonymized data from all our claims studies to the eRiskHub® for the exclusive use of eRiskHub licensors and their clients. For more information about the eRiskHub, contact Mark Greisiger at mark.greisiger@netdiligence.com.

Study Methodology

This study, although limited, is unique because it focuses on covered events and actual claims payouts. We asked the major underwriters of cyber liability to submit claims payout information based on the following criteria:

- The incident occurred between 2012 and 2015
- The victimized organization had some form of cyber or privacy liability coverage

We received claims information for 160 events that fit our selection criteria. Of those, 104 claims (65%) specified the number of records exposed and 132 claims (83%) included a detailed breakout of what had been paid out so far. Many of the events submitted for this year's study were recent, which means many claims are still open and actual costs have not yet been finalized.

Readers should keep in mind the following:

- Our sampling is a small subset of all breaches. We estimate that our dataset represents approximately 5% of the total number of cyber claims handled by all markets within the specified time period.
- Some of our data points are lower than other studies because we focus on claim payouts for specific breach-related expenses and do not factor in other financial impacts of a breach, including investigation and administration expenses, customer defections, opportunity loss, etc.
- Our numbers are empirical as they were supplied directly by the underwriters who paid the claims.
- Most claims submitted were for total insured losses and so included self-insured retentions (SIRs), which ranged from $0 to $15 million.

KEY FINDINGS

PII was the most frequently exposed data (45% of claims), followed by PCI (27%) and PHI (14%).

Hackers were the most frequent cause of loss (31%), followed by Malware/Virus (14%). Staff Mistakes and Rogue Employees tied for third (11%).

Healthcare was the sector most frequently breached (21%), followed closely by Financial Services (17%).

The largest breaches occurred in the Retail sector, followed by Healthcare.

Nano organizations experienced the most incidents (29%), followed closely by Small organizations (25%). Extremely large breaches occurred in Nano, Small and Large organizations.

Third parties accounted for 25% of the claims submitted.

There was insider involvement in 32% of the claims submitted.

The median number of records lost was 2,300. The **average number of records lost was 3.2 million.**

Claims in this year's study ranged from $0 to $15 million. Typical claims, however, ranged from $30,000 to $263,000.

The median claim was $76,984. The **average claim was $673,767.**

The **average claim for a large company was $4.8 million,** while the **average claim in the Healthcare sector was $1.3 million.**

The median per-record cost was $13.00. The **average per-record cost was $964.31.**

The median cost for Crisis Services (forensics, notification, credit/ID monitoring, legal guidance/Breach Coach® and miscellaneous other) was $60,563. The **average cost for Crisis Services was $499,710.**

The median cost for legal defense was $73,600. The **average cost for legal defense was $434,354.**

The median cost for legal settlement was $50,000. The **average cost for legal settlement was $880,839.**

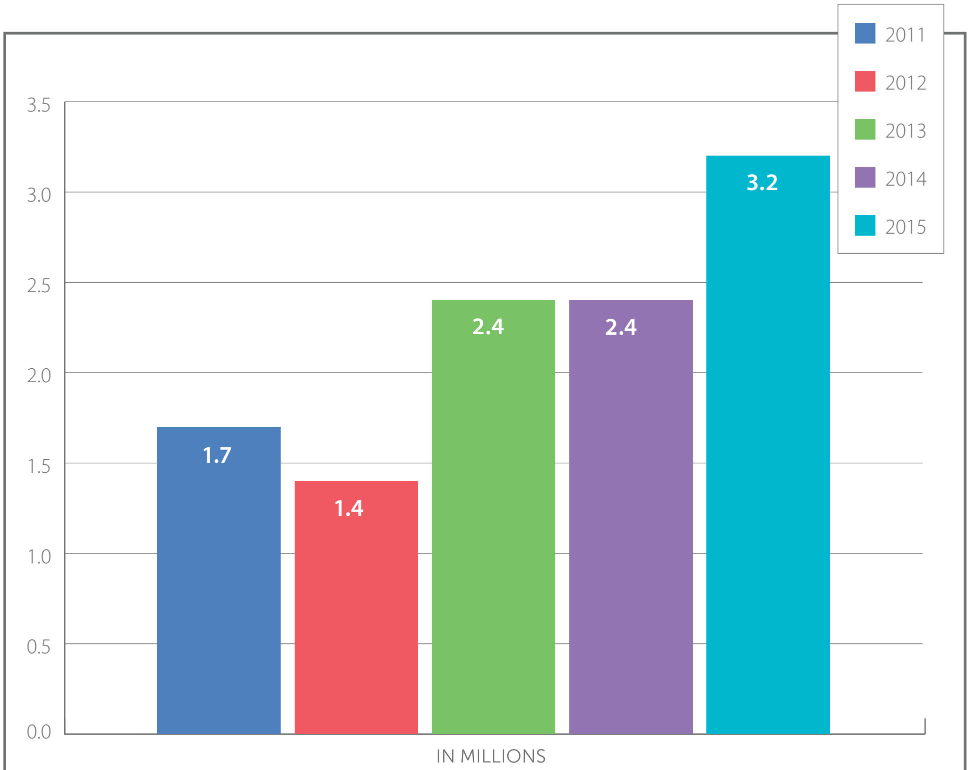
The average claim for a large company was $4.8 million, while the average claim in the Healthcare sector was $1.3 million.

A LOOK AT THE OVERALL DATASET

There were 160 cyber claims submitted for this year's study. Of that number, 155 claims involved the loss, exposure or misuse of some type of personal sensitive data. The remaining 5 incidents involved business interruption and wrongful data collection.

RECORDS EXPOSED

Of the 160 claims in the dataset, 104 (65%) reported the number of records exposed. The number of records exposed in a data breach claim ranged from 1 to 110,000,000. The average number of records exposed was 3,166,513.



AVERAGE RECORDS EXPOSED

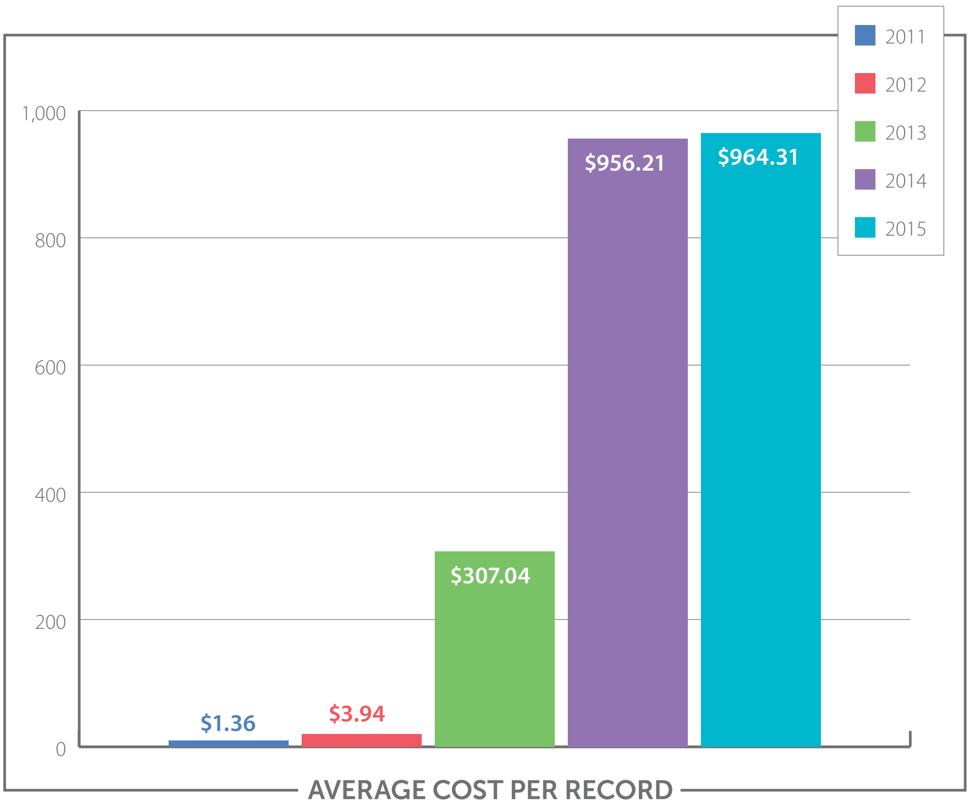
The median number of records exposed was much smaller, coming in at 2,300. This continues a trend we've seen in previous studies. The median number of records exposed was 45,000 in our inaugural 2011 study, 29,000 in 2012, 1,000 in 2013 and 3,500 in 2014. It is clear that more claims are being submitted for breaches with a relatively small number of records exposed.

"This study is a great resource to better understand the latest cyber risks and associated damages, and help organizations identify and prioritize further actions needed to protect themselves in today's environment."
RSM US LLP

COST PER RECORD

Of the 160 claims in the dataset, 73 (46%) reported both the number of records lost and the claim payout. The minimum cost per record was $0 and the maximum cost per record was $35,000.00. The **average cost per record was $964.31**, while the median cost was $13.00.

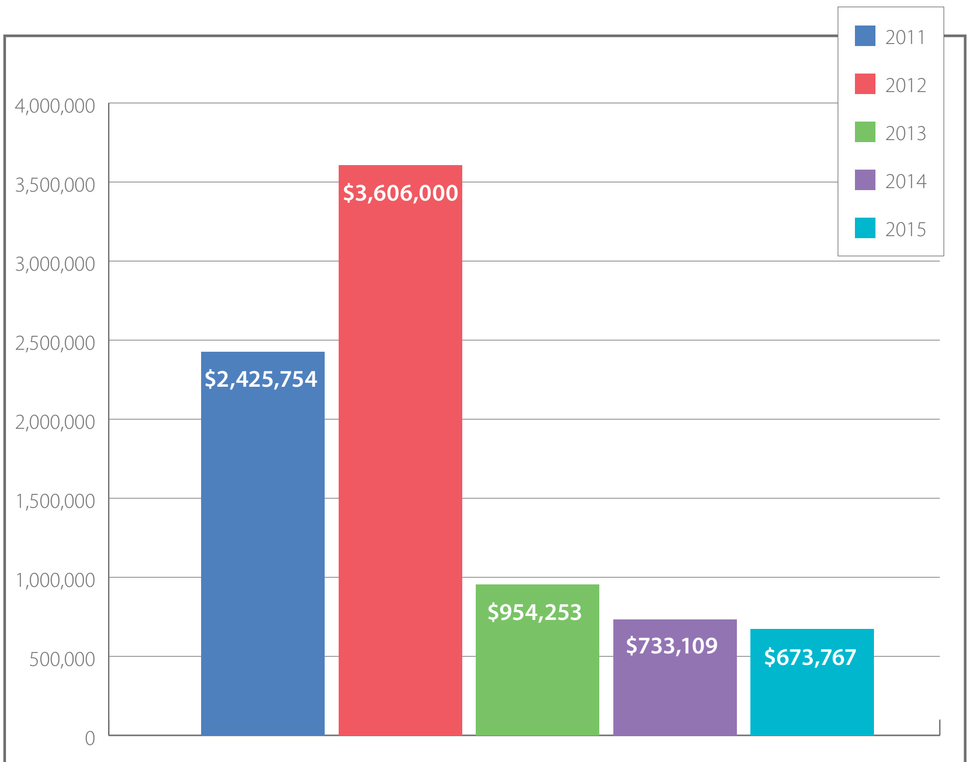
The industry appears to have reached a consensus that using a standard per-record cost to estimate total breach cost is problematic. While there is clearly a direct correlation between number of records lost and some costs (for example, notification), there is only an indirect correlation for some costs (regulatory fines) and no discernable correlation for other costs (forensics). Relatively small breaches can incur significant costs for legal (Breach Coach®) guidance, forensic investigation, regulatory fines, etc. For this reason, **high per-record costs are possible regardless of breach size.**



Relatively small breaches can incur significant costs for legal (Breach Coach®) guidance, forensic investigation, regulatory fines, etc. For this reason, high per-record costs are possible regardless of breach size.

COSTS

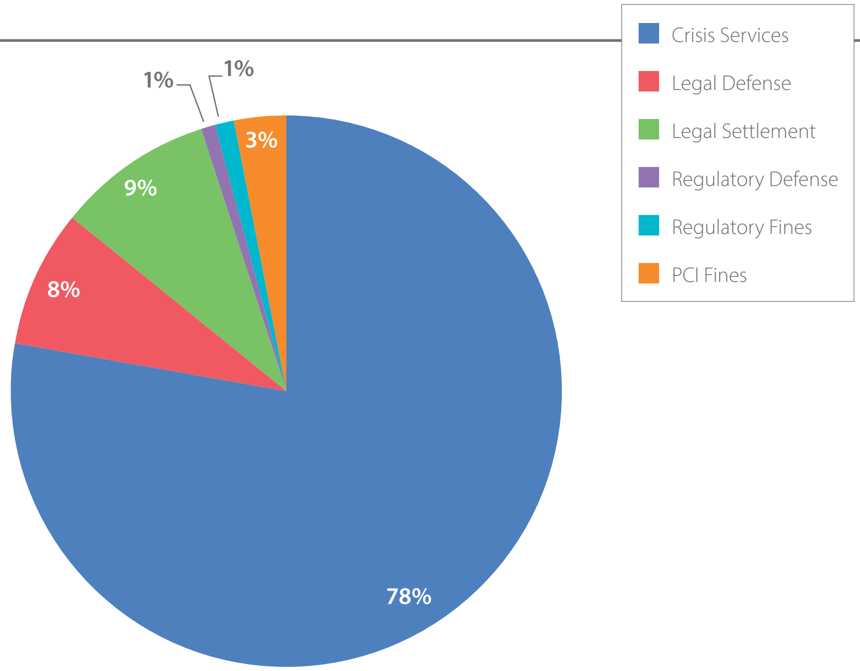
Of the 160 claims submitted, 132 (83%) reported claims payouts. Total costs to-date (some claims remain open) were $75.5 million. The smallest non-zero claim was $540 while the largest claim in our dataset was $15.0 million. Please keep in mind the industry as a whole has seen and paid a few larger claims but these were not provided to us in this year's study sample. The median claim was $76,984, while the **average claim was $673,767**. Note that the average payout **decreased by 8%** compared to last year's study.



AVERAGE CLAIM PAYOUT

> "Recent Court decisions suggest that it is highly likely that the percentages reflected in this year's study will change as legal defense costs, settlements and Regulatory actions increase as more lawsuits are filed and the courts allow plaintiffs a forum to establish "damages" as standards of care are established."
>
> Cipriani & Werner

Of the $75.5 million in total claims, 78% was spent on Crisis Services, 8% on Legal Defense, 9% on Legal Settlements, 1% on Regulatory Defense, 1% on Regulatory Fines and 3% for PCI Fines.

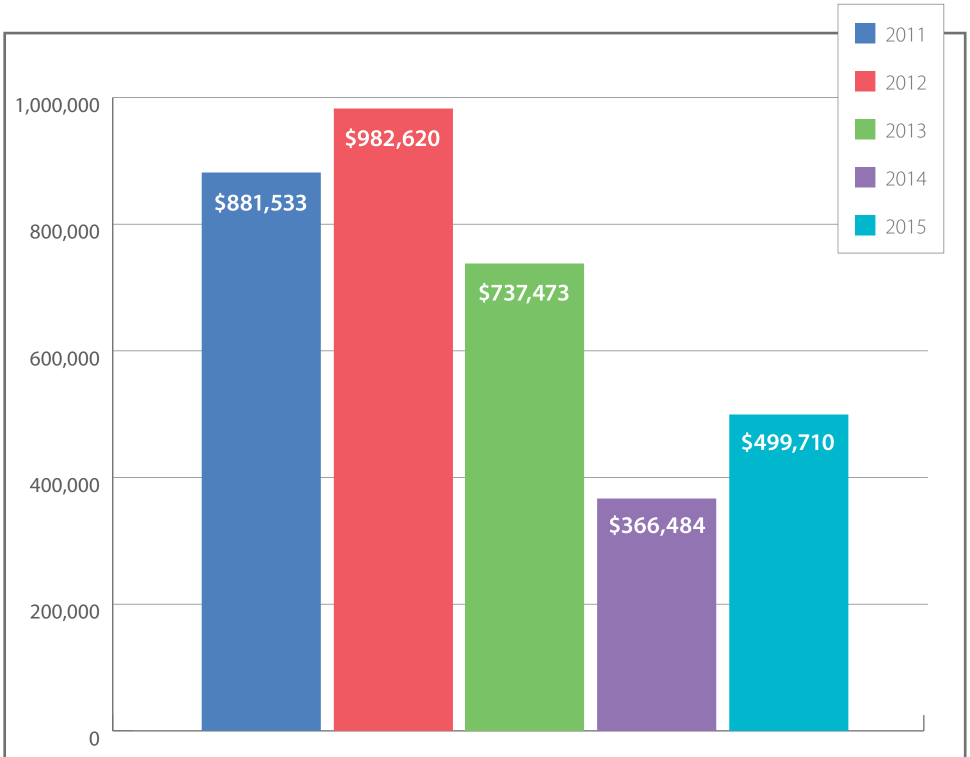


TOTAL CLAIM PAYOUTS BY TYPE OF COST
(N=132)

> "Crisis Services costs continue to account for a significant portion of overall claims payouts—78 percent in the 2015 study. As with traditional emergency response sectors like police and fire departments, planning for data breaches can lead to lower costs in the event of an actual emergency by ensuring the capacity to respond is available with trained, high-quality resources. AllClear ID is leading the way to reduce response costs for customer-facing components of notification, call center, and identity protection services by partnering with businesses before a breach to reserve capacity—ensuring that we can deploy quality resources in a guaranteed timeframe when a breach occurs."
>
> AllClear ID

CRISIS SERVICES COSTS

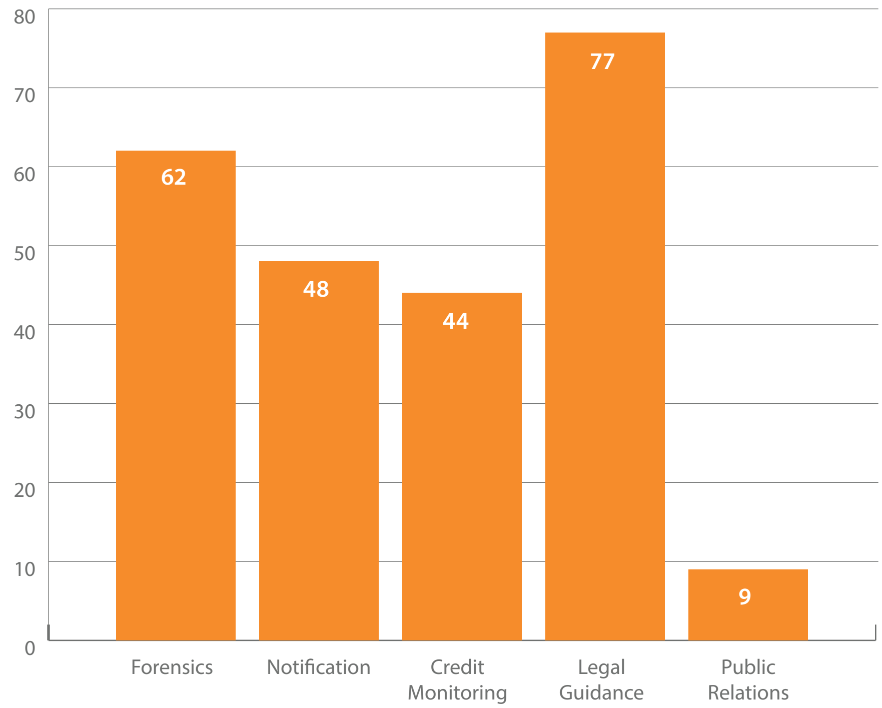
Of the 160 claims submitted this year, 105 included costs for one or more components of Crisis Services. The smallest (**non-zero**) claim for Crisis Services was $14, while the largest claim was $15 million. The **average for Crisis Services was $499,710.** The median was $60,563.



AVERAGE CRISIS SERVICES COSTS

Once again, not all claims included all of the services that comprise Crisis Services. Of the claims that reported Crisis Services, 62 (59%) included forensics, 48 (46%) included notification*, 44 (42%) included credit/ID monitoring and 77 (73%) included legal guidance/Breach Coach®. These numbers reflect all claims that reported a dollar figure for a particular service. This year, 18 claims (17%) included other costs, including public relations, card replacement and ransom paid.

*A significant number of the claims submitted for last year's (2014) study reported a single amount for bundled services that included notification, call center, credit monitoring and ID restoration, rather than individual amounts for each service. For that reason, we reported the aggregate total for these services under a single category called "Notification." However, in this year's claims study, the bundled services approach appeared to reverse itself. About half the claims in this year's dataset reported these costs as bundled services and the other half of claims reported individual costs for Notification, Call Center, and Credit/ID Monitoring services.



CLAIMS WITH CRISIS SERVICES COSTS (N=105)

There was a wide range of costs for these services (see chart below). Forensics costs ranged from $1,250 to $4.9 million. Notification costs ranged from $14 to $15 million. Credit/ID Monitoring costs ranged from $65 to $.1.3 million. Legal guidance/Breach Coach® (on complying with privacy and notification regulations) costs ranged from $540 to $1 million. Public Relations costs ranged from $3,964 to $240,000.

CRISIS SERVICES COSTS

Service	Claims with Costs	Min	Median	Mean	Max
Forensics	62	1,250	41,747	261,597	4,900,000
Notification	48	14	19,363	567,777	15,000,000
Credit/ID Monitoring	44	65	9,274	80,706	1,300,000
Legal Guidance/Breach Coach®	77	540	21,396	58,685	1,011,112
Public Relations	9	3,964	19,762	46,308	240,000

LEGAL DAMAGES

Of the 160 claims submitted this year, only 16 (10%) included costs for legal damages.

Like Crisis Services, the range of legal costs was extremely broad. Legal defense payouts ranged from $6,881 to $2.5 million. Payouts for legal settlements ranged from $1,968 to $5.9 million.

LEGAL DAMAGES

Expense	Claims with Costs	Min	Median	Mean	Max
Legal Defense	12	6,881	73,600	434,354	2,500,000
Legal Settlement	7	1,968	50,000	880,839	5,855,000

REGULATORY ACTION

Of the 160 claims submitted this year, only 4 (3%) included costs for regulatory actions.

As we've discovered in other cost categories, there was a wide range of regulatory costs. Payouts for regulatory defense ranged from $67,500 to $327,000. One claim reported a regulatory fine of $750,000.

REGULATORY ACTION

Expense	Claims with Costs	Min	Median	Mean	Max
Regulatory Defense	4	67,500	175,000	186,125	327,000
Regulatory Settlement	1	750,000	750,000	750,000	750,000

Claims that included regulatory costs in this year's study ranged from slightly more than 41,000 records exposed to 6.5 million records exposed. For that reason, the potential for regulatory action and its associated costs should be considered when evaluating any organization's risk exposure, regardless of the size of the organization or the size of the breach.

PCI FINES

Of the 160 claims submitted this year, only 6 (4%) included costs for PCI fines. Payouts for PCI fines ranged from $21,229 to $600,000.

PCI FINES

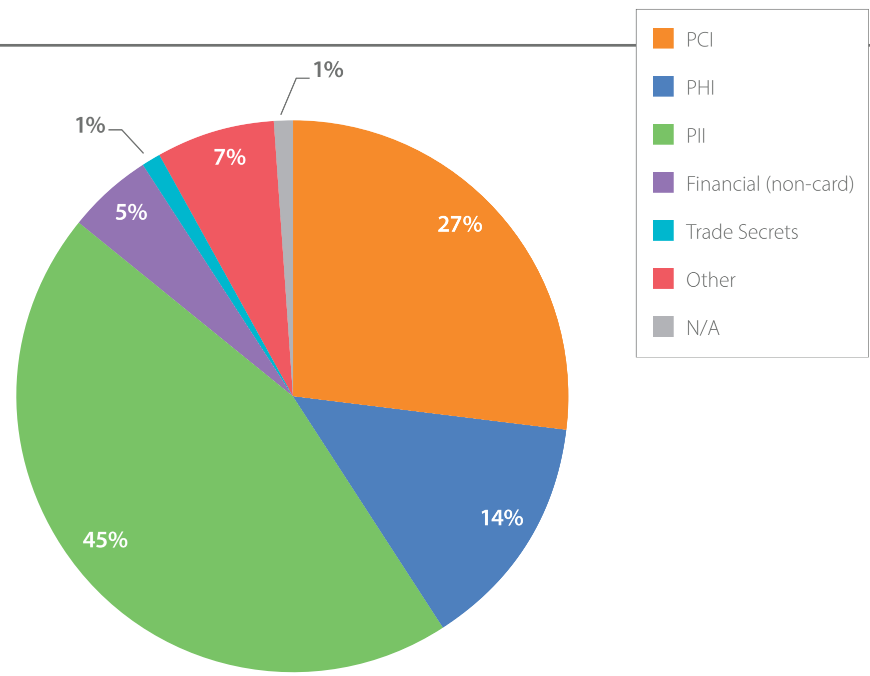
Expense	Claims with Costs	Min	Median	Mean	Max
Fines	6	21,229	199,419	268,780	600,000

VIEWING THE DATA THROUGH DIFFERENT LENSES

TYPE OF DATA EXPOSED

In this year's study, PII (personally identifiable information) was once again the runaway leader in type of data exposed, occurring in 72 claims submitted (45% of the dataset). PCI (payment card information) came in second with 43 claims (27%), followed by PHI (private health information) with 22 claims (14%).

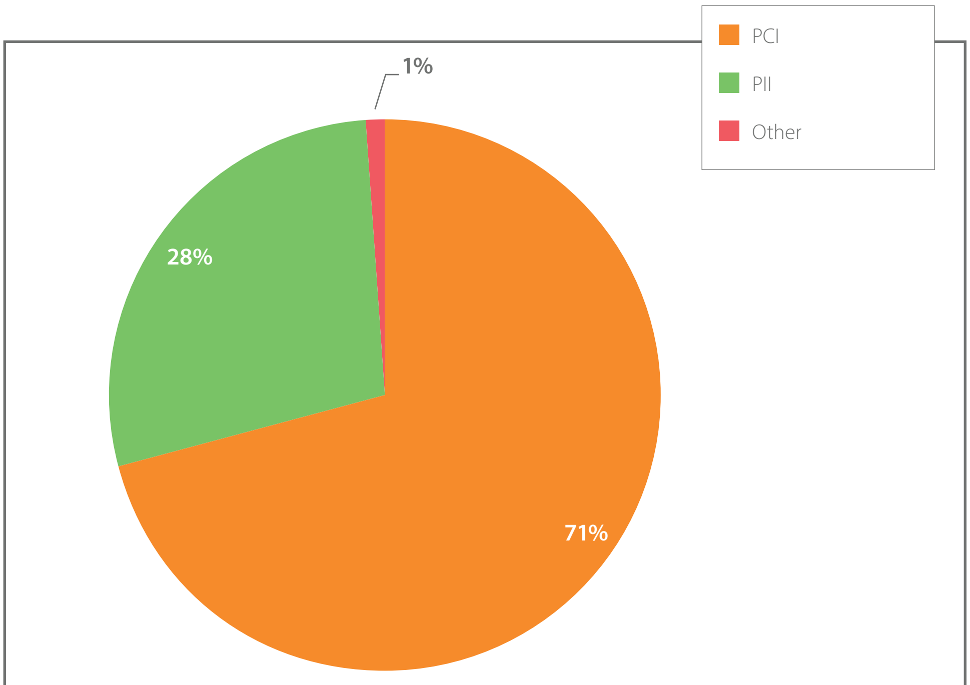
Non-card financial information was exposed in 8 of the claims (5%). Other data were exposed in 11 claims (7%).



PERCENTAGE OF CLAIMS BY DATA TYPE
(N=160)

RECORDS EXPOSED

Of the 160 claims in this year's dataset, 104 (65%) reported the number of records exposed. Of those 104 claims, PCI was the most frequently exposed type of data.



PERCENTAGE OF RECORDS EXPOSED BY DATA TYPE
(N=104)

RECORDS EXPOSED

Data Type	Claims with Records	Min	Median	Mean	Max
PCI	28	1	26,878	8,338,028	110,000,000
PHI	17	1	1,500	10,941	95,000
PII	55	4	1,481	1,739,373	80,000,000
Financial (non-card)	4	10	66	260	900
Total	**91**				

TOTAL COSTS

There were 112 claims in this year's dataset that included both the data type and the total payout amount. As we have seen in prior studies, there was a wide range of claim payouts for every data type, from a minimum of $540 up to $15 million. This year, the median claim for PCI-related breaches was higher than other data types—with one notable exception. This year's dataset included one claim for loss of trade secrets. The payout for loss of trade secrets was more than four times the median cost of a PCI-related claim.

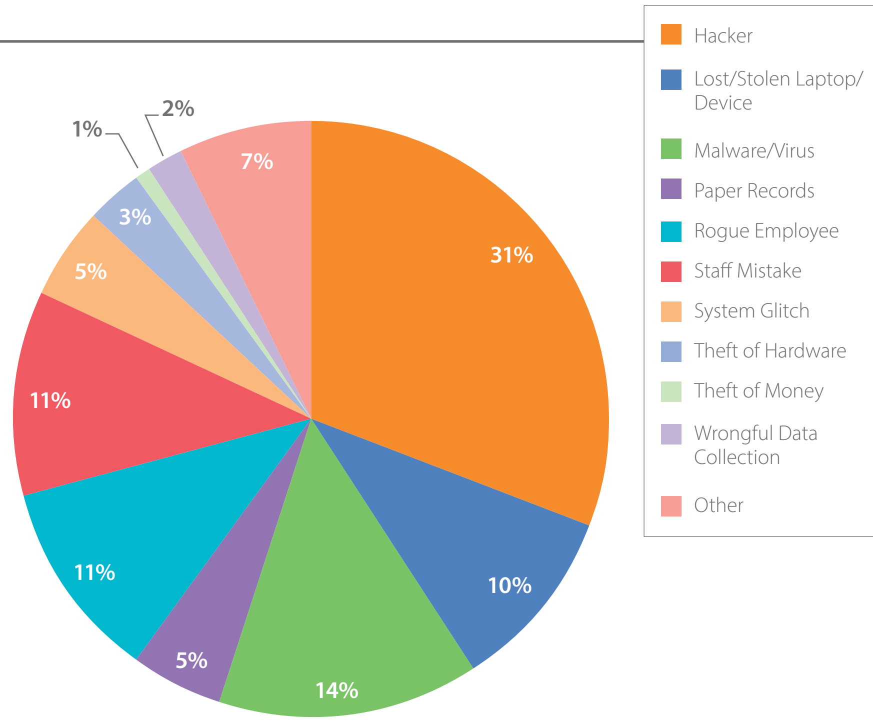
TOTAL COSTS (INCLUDING SIR)

Data Type	Claims with Costs	Min	Median	Mean	Max
PCI	31	0	100,000	780,652	8,916,432
PHI	19	0	43,850	255,239	2,989,966
PII	45	708	72,770	790,570	15,000,000
Financial (non-card)	3	5,900	28,000	20,870	28,711
Trade Secrets	1	455,588	455,588	455,588	455,588
Other	11	750	60,000	935,294	6,700,142
N/A	1	30,000	30,000	30,000	30,000
Total	**112**				

The payout for loss of trade secrets was more than four times the median cost of a PCI-related claim.

CAUSE OF LOSS

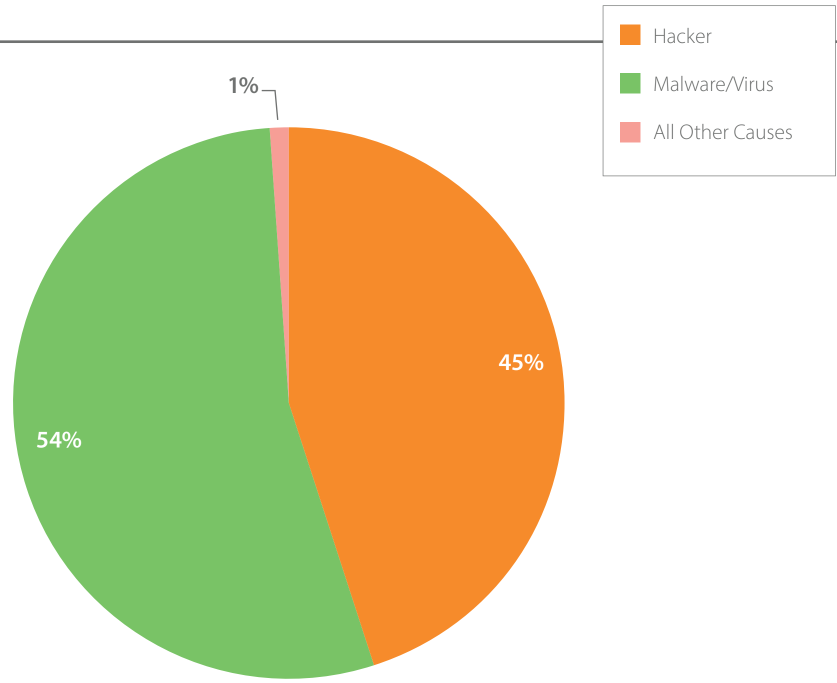
In this year's study, Hackers were the most frequent cause of loss, accounting for 49 claims (31% of the dataset). Malware/Virus were a distant second, responsible for 23 claims (14%), followed closely by Staff Mistakes with 18 claims (11%) and Rogue Employees with 17 claims (11%). Note that insiders (staff mistakes and rogue employees) accounted for a combined 35 claims, or 22% of this year's dataset.



PERCENTAGE OF CLAIMS BY CAUSE OF LOSS
(N=160)

RECORDS EXPOSED

Of the 160 claims in this year's dataset, 104 (65%) reported the number of records exposed. For those 104 claims, Hackers and Malware/Virus accounted for 99% of exposed data.



PERCENTAGE OF RECORDS EXPOSED BY CAUSE OF LOSS
(N=104)

While Malware/Virus accounted for only 14% of claim events, those incidents resulted in 54% of records exposed. Hackers accounted for only 31% of claim events, but 45% of records exposed. Since Hacker attacks often begin with the introduction of malware into the organization's network, it's instructive to look at the combined impact of these two causes of loss. Together, Hackers and Malware/Virus accounted for less than half (45%) of the claims in our dataset, but 99% of the records exposed.

RECORDS

Cause of Loss	Claims with Records	Min	Median	Mean	Max
Hacker	30	4	17,750	5,003,239	80,000,000
Lost/Stolen Laptop/Device	10	4	1,250	3,684	14,500
Malware/Virus	15	305	110,000	11,917,722	110,000,000
Paper Records	8	47	289	5,091	36,398
Rogue Employee	15	1	800	16,256	95,000
Staff Mistake	13	1	280	7,874	69,000
System Glitch	4	20	1,741	3,518	10,571
Theft of Hardware	4	50	1,250	3,987	13,398
Theft of Money	1	99	99	99	99
Wrongful Data Collection	2	13	90	90	167
Other	2	5	119	119	232
Total	**104**				

"We have seen a significant increase in remarkably unsophisticated malware that is actually being used as a smoke screen for an attacker to cover up the primary attack. We expect these types of attacks to continue to proliferate the landscape and cause more scrutiny for malware attacks in the future."

Symantec

COSTS

There were 112 claims (70%) in this year's dataset that included both the cause of loss and the total claim cost. Note that incidents caused by malicious activity (Hackers, Malware/Virus and Rogue Employees) resulted in higher costs than incidents caused by simple errors, such as staff mistakes, or actions by a third-party provider. This is probably attributable to the fact that malicious activity, by its nature, exposed larger numbers of records than other types of incidents.

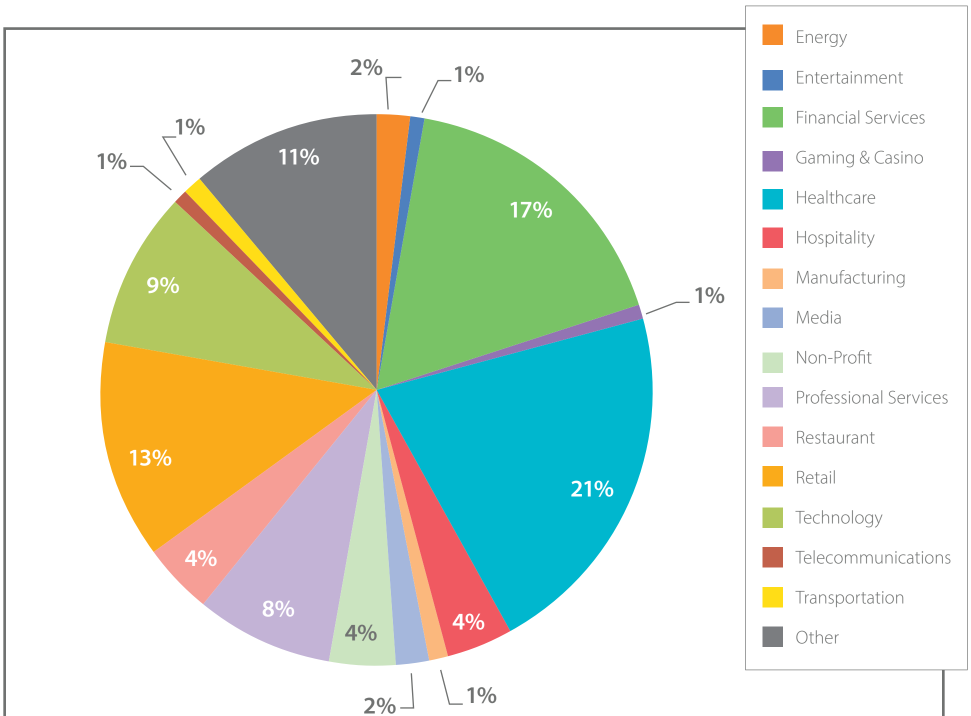
TOTAL COSTS (INCLUDING SIR)

Cause of Loss	Claims with Costs	Min	Median	Mean	Max
Hacker	31	0	144,490	1,485,540	15,000,000
Lost/Stolen Laptop/Device	13	708	60,000	100,039	125,259
Malware/Virus	18	0	179,516	828,232	8,959,000
Paper Records	7	1,955	7,338	37,446	181,247
Rogue Employee	8	8,510	102,224	161,815	455,588
Staff Mistake	13	0	12,615	69,129	600,000
System Glitch	6	9,454	68,816	73,932	161,887
Theft of Hardware	2	34,000	47,670	47,670	61,339
Theft of Money	1	43,336	43,336	43,336	43,336
Wrongful Data Collection	3	410,975	2,437,028	3,182,715	6,700,142
Other	10	7,650	55,299	69,608	220,899
Total	**112**				

BUSINESS SECTOR

Again this year, Healthcare was the most affected sector with 34 claims. Financial Services came in second with 27 claims, followed closely by Retail with 21 claims.

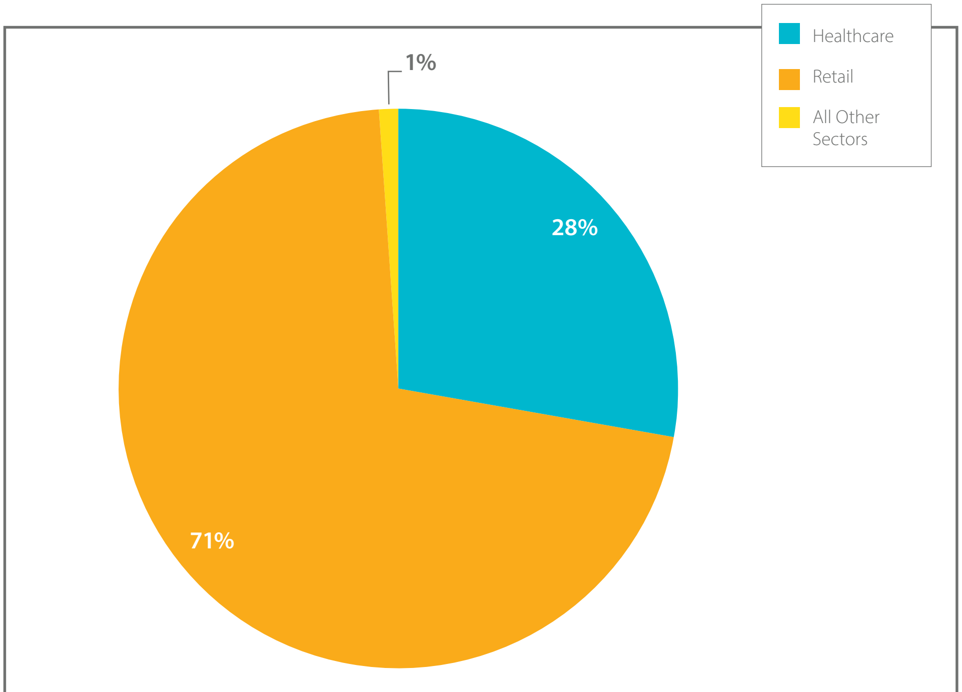
Technology came in fourth with 15 claims and Professional Services came in fifth with 13 claims. There were 17 claims that designated the business sector as 'Other'.



PERCENTAGE OF CLAIMS BY BUSINESS SECTOR
(N=160)

RECORDS EXPOSED

Of the 104 claims that reported number of records exposed, the Retail sector accounted for the vast majority of records exposed (71%), although that sector was responsible for only 13% of the claims in our dataset.



PERCENTAGE OF RECORDS EXPOSED BY BUSINESS SECTOR
(N=104)

Healthcare came in second, accounting for 28% of records exposed. All other sectors combined accounted for the remaining 1% of records exposed.

RECORDS

Business Sector	Claims with Records	Min	Median	Mean	Max
Energy	1	6,500	6,500	6,500	6,500
Entertainment	1	2,000,000	2,000,000	2,000,000	2,000,000
Financial Services	23	1	800	34,804	280,000
Gaming & Casino	1	3,800	3,800	3,800	3,800
Healthcare	24	1	2,150	3,864,905	80,000,000
Hospitality	3	12	2,500	1,671	2,500
Media	1	44	44	44	44
Non-Profit	3	167	1,700	1,531	2,725
Professional Services	4	9	611	3,433	12,500
Restaurant	4	129	3,945	27,005	100,000
Retail	16	1,499	285,000	14,560,216	110,000,000
Technology	9	13	3,073	46,566	250,000
Telecommunications	1	9,000	9,000	9,000	9,000
Transportation	1	20	20	20	20
Other	12	4	280	20,528	163,299
Total	**104**				

COSTS

There were 112 claims in this year's dataset that included both the business sector affected and the total payout amount.

TOTAL COSTS (INCLUDING SIR)

Business Sector	Claims with Costs	Min	Median	Mean	Max
Entertainment	1	73,968	73,968	73,968	73,968
Financial Services	15	0	72,770	141,249	809,788
Gaming & Casino	2	80,000	87,275	87,275	94,550
Healthcare	25	2,598	60,563	1,325,777	15,000,000
Hospitality	6	30,000	82,724	195,447	706,000
Manufacturing	2	750	65,967	65,967	131,184
Media	3	6,000	55,299	68,596	144,490
Non-Profit	5	5,900	35,794	50,112	101,127
Professional Services	10	6,704	29,217	329,845	2,989,966
Restaurant	5	4,000	16,212	75,744	250,000
Retail	12	91,359	455,488	1,795,266	8,916,432
Technology	11	0	90,000	206,532	641,635
Other	15	708	61,339	713,133	6,700,142
Total	**112**				

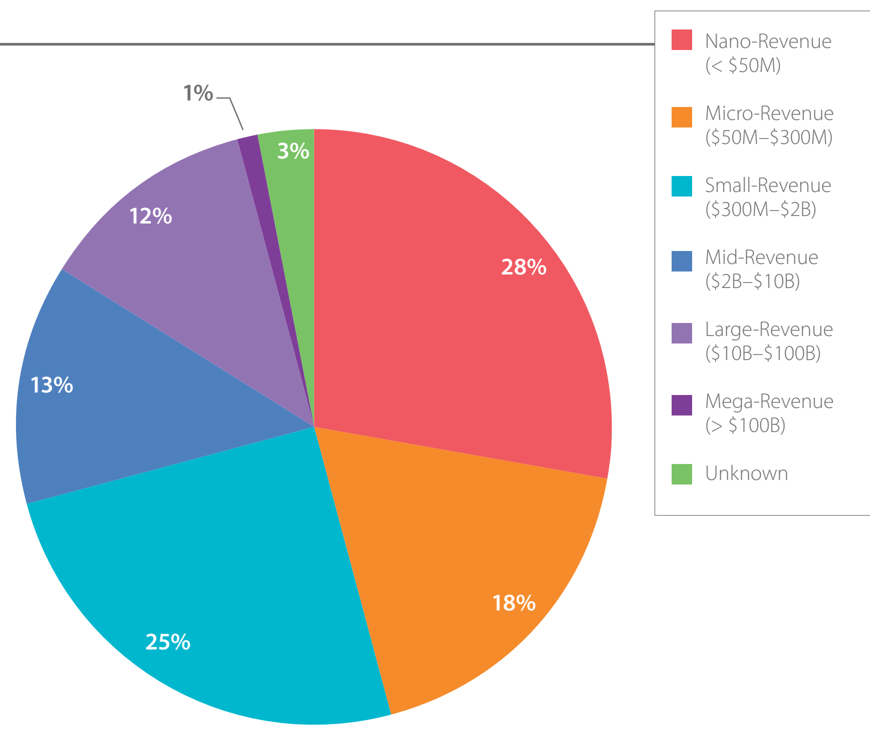
This year, the Healthcare and Retail sectors each had higher average costs than all other sector combined. This is primarily due to a few extremely large incidents (caused by Hackers and Malware/Virus) within those two sectors.

Individually, the Healthcare and Retail sectors each had higher average costs than all other sectors combined.

SIZE OF AFFECTED ORGANIZATION (BASED ON REVENUE)

For the first time in this study, revenue size of the affected organization was reported for the vast majority of claims in the dataset. Nano-Revenue organizations were the most impacted, accounting for 46 claims (29%). They were followed by Small-Revenue, which accounted for 40 claims (25%), and Micro-Revenue, which accounted for 29 claims (18%). Mid-Revenue organizations accounted for 20 claims (13%), while Large-Revenue organizations accounted for 19 claims (12%). There was one claim for a Mega-Revenue organization and five claims that did not report the size of the organization.

This mirrors our previous findings: smaller organizations experience most of the incidents. Our continuing hypothesis—which nothing in this year's study disproves—is that this is due to the fact that there are simply more small organizations than there are large ones. Other contributing factors may be that smaller organizations are less aware of their exposure or they have fewer resources to provide appropriate data protection and/or security awareness training for employees.

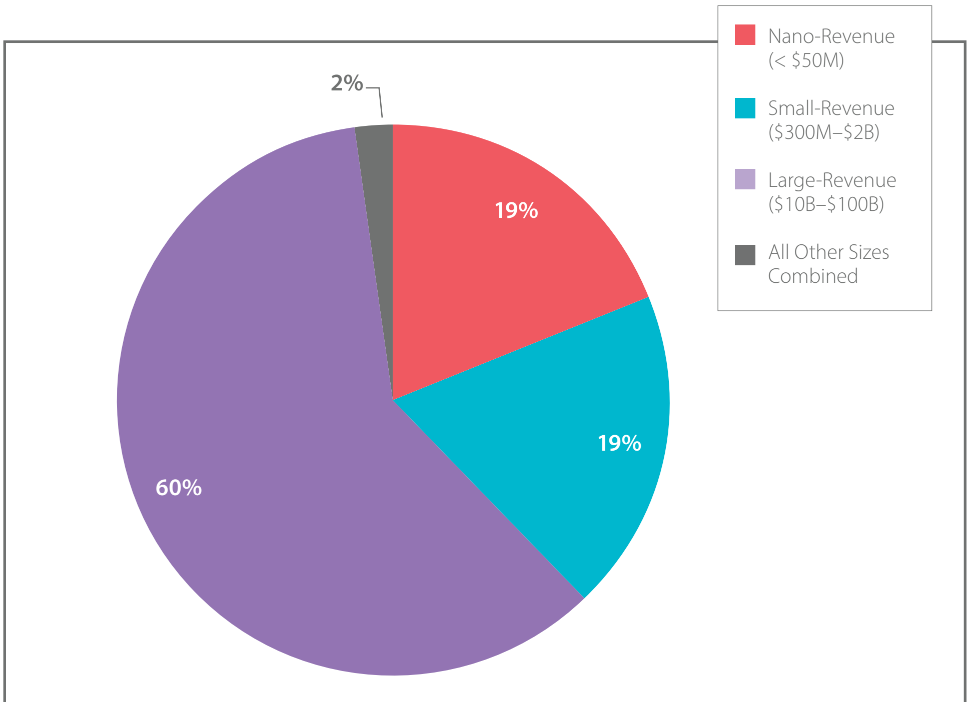


PERCENTAGE OF CLAIMS BY REVENUE SIZE (N=160)

RECORDS EXPOSED

While Nano-, Micro- and Small-Revenue organizations accounted for a combined 71% of the claims in our dataset, they were responsible for only 38% of records exposed. That falls in line with our expectations that smaller organizations are likely to have weaker security controls, but also that they would typically store less data.

The converse is equally true. Mid- and Large-Revenue organizations accounted for only 17% of claims, but they were responsible for 60% of records exposed.



PERCENTAGE OF RECORDS EXPOSED BY REVENUE SIZE
(N=104)

RECORDS

Revenue Size	Claims with Records	Min	Median	Mean	Max
Nano-Revenue (< $50M)	28	1	240	2,227,096	60,000,000
Micro-Revenue ($50M–$300M)	22	1	1,491	18,064	135,000
Small-Revenue ($300M–$2B)	25	5	9,000	2,446,670	53,000,000
Mid-Revenue ($2B–10B)	11	120	12,500	27,277	110,000
Large-Revenue ($10B–$100B)	14	50	24,250	14,184,791	110,000,000
Unknown	4	129	3.616	1,626,840	6,500,000
Total	**104**				

COSTS

As might be expected, claims for breaches occurring in larger organizations were substantially higher than claims for smaller organizations. The average claim for a Large-Revenue organization was **ten times** the average claim for a Small-Revenue organization.

With that in mind, it was surprising that once again this year some of the largest claims came from Small-Revenue organizations. What these claims had in common, in addition to the size of the affected organization, was that the incidents were all caused by Hackers and/or Malware/Virus, resulting in extremely large costs for forensics.

The largest legal and regulatory costs in this year's study were from Mid-Revenue organizations accused of Wrongful Data Collection. The combined legal and regulatory costs for these organizations ranged from $411,000 to more than $6.7 million.

TOTAL COSTS (INCLUDING SIR)

Revenue Size	Claims with Costs	Min	Median	Mean	Max
Nano-Revenue (< $50M)	36	540	32,500	65,906	809,788
Micro-Revenue ($50M–$300M)	25	0	64,781	150,018	764,225
Small-Revenue ($300M–$2B)	26	2,598	153,904	578,233	4,900,000
Mid-Revenue ($2B–10B)	12	31,000	172,500	910,801	6,700,142
Large-Revenue ($10B–$100B)	7	31,847	2,500,000	4,790,166	15,000,000
Mega-Revenue (> $100B)	1	201,233	201,233	201,233	201,233
Unknown	5	8,510	59,000	1,928,544	8,959,000
Total	**112**				

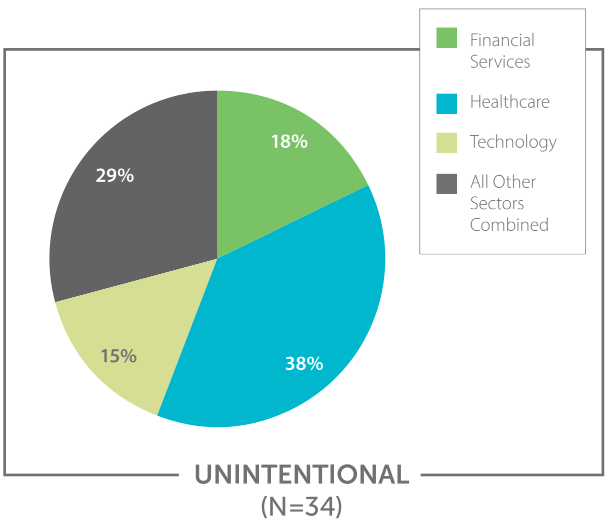
The largest legal and regulatory costs were from Mid-Revenue organizations accused of **Wrongful Data Collection**.

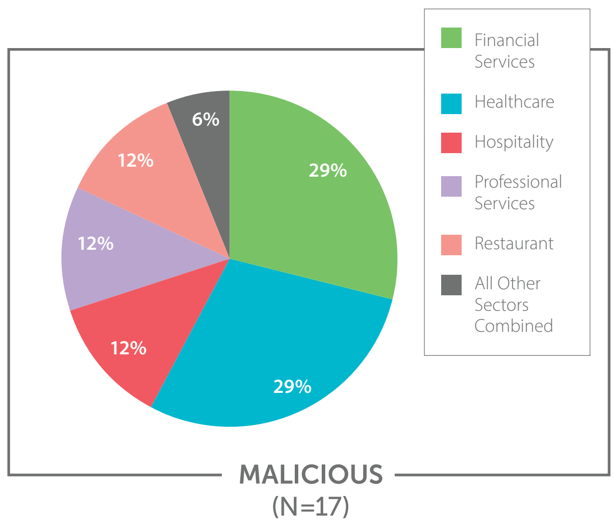
INSIDER INVOLVEMENT

For the second time in our study, we asked insurers to tell us whether there was insider involvement in the claim events they submitted. Of the 160 events in our dataset, almost one third (32%) were attributable to insiders. This mirrors, almost exactly, what we found in last year's study.

Of the claims attributable to insiders, more than two-thirds (67%) were unintentional, caused primarily by staff mistakes. The rest were malicious in nature, caused or abetted by rogue employees.

Insider-related incidents resulted in the exposure of every type of data, and occurred in almost every business sector. Of note again this year, a disproportionate number of insider incidents occurred in the Healthcare sector. While only 21% of the claims in our dataset occurred in Healthcare, that sector accounted for 35% of malicious insider incidents. The Financial Services sector also has cause to be concerned about insider threats. While only 17% of the claims in our dataset occurred in Financial Services, that sector accounted for 22% of insider incidents.





While only 21% of the claims in our dataset occurred in Healthcare, that sector accounted for 35% of malicious insider incidents.

Of the 51 claims attributable to insider actions, 36 (71%) reported the number of records exposed. In a complete reversal of last year's findings, unintentional disclosure (staff mistakes) accounted for the overwhelming majority of records exposed.

RECORDS

Insider Involvement	Number of Claims	Min	Median	Mean	Max
Unintentional	22	1	216	2,414,487	53,000,000
Malicious	14	12	850	17,417	95,000
Total	**36**				

A similar reversal did not occur in terms of costs. Like last year's study, malicious incidents tended to result in higher costs.

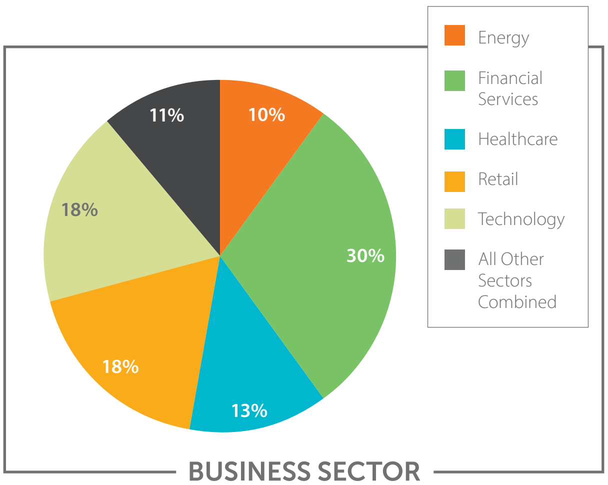
TOTAL COSTS (INCLUDING SIR)

Insider Involvement	Number of Claims	Min	Median	Mean	Max
Unintentional	24	0	31,424	72,305	600,000
Malicious	6	8,510	102,224	133,989	447,468
Total	**30**				

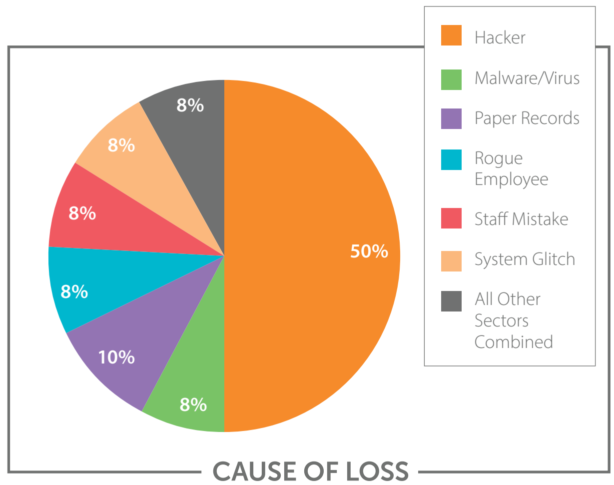
THIRD-PARTY BREACHES

Again this year we asked insurers to indicate whether their claim events were caused by a third-party vendor. Of the 160 events in our dataset, 25% were attributable to third parties.

Most organizations use third-party vendors, so third-party breaches occurred in virtually every business sector. Again this year, however, almost a third (30%) of third-party breaches occurred in Financial Services. Hackers accounted for half of all third party incidents. Other causes that contributed to third party claim events included Malware/Virus, Paper Records, Rogue Employees, Staff Mistakes and System Glitches. Each of these causes were cited in 8-10% of the claims in this year's dataset.



BUSINESS SECTOR
(N=40)



CAUSE OF LOSS
(N=40)

Of the 160 events in our dataset, 25% were caused by third-party vendors.

It is interesting that the third-party breach events in our dataset exposed significantly more records than breach events that occurred at the policyholder organization.

RECORDS

Third-Party Involvement	Number of Claims	Min	Median	Mean	Max
Yes	26	5	1,750	6,274,669	110,000,000
No	78	1	2,475	2,130,461	80,000,000
Total	**104**				

Despite the fact that third-party breach events were larger, payouts for third-party events were smaller. Overall, payouts for third-party breaches were just a fraction (17% to 26%) of the payouts for in-house breaches.

TOTAL COSTS (INCLUDING SIR)

Third-Party Involvement	Number of Claims	Min	Median	Mean	Max
Yes	16	0	30,699	191,990	2,500,000
No	96	0	93,392	754,063	15,000,000
Total	**112**				

ABOUT FIRST-PARTY LOSSES

Many (if not most) claim events include both first-party and third-party losses. But there are some incidents that are exclusively first party.

This year, there were six such incidents—two involving business interruption, one theft of trade secrets and three instances of wrongful data collection.

Both business interruption incidents were caused by Malware/Virus. One incident occurred in the Healthcare sector and one in Retail. The Healthcare incident resulted in a 330+ hour systems outage, but no loss of data. The Retail incident was much larger, exposing more than 50 million records and causing a business outage that lasted five months.

The incident that involved the theft of trade secrets occurred in the Healthcare sector and was caused a Rogue Employee.

The three instances of Wrongful Data Collection all resulted in class action lawsuits.

For comparison purposes, below are the exclusively first-party claims payouts included in prior years' studies:

- In our 2014 study, there were six first-party claims—three involving business interruption and three involving theft of trade secrets. The business interruption claims ranged from $1.5 to $5 million for lost business income, recovery expenses and legal defense. The claims for theft of trade secrets ranged from $150,000 to $900,000, primarily for forensics
- In our 2013 study, there were five first-party claims submitted: four distributed denial of service (DDoS) attacks and one malware incident. The costs for these incidents were pending at the time we conducted our study.
- In our 2012 study, there were five first-party claims submitted: two business interruption incidents, two incidents involving theft of trade secrets and one incident involving online copyright infringement. Most of the costs for these incidents were pending at the time we conducted our study; however, one claim had paid out almost $500,000 for forensics.
- Our 2011 study saw ten first-party claims submitted for DDoS attacks, malware and cyber extortion. The incidents accounted for approximately $1.22 billion in lost business income and $23 million in expenses. One incident resulted in fines of approximately $4 million.

CONCLUSION

Our objective for this study is to help risk management professionals and insurance underwriters understand the true impact of data insecurity by consolidating claims data from multiple insurers so that the combined pool of claims is sizable enough that it allows us to ascertain real costs and project future trends.

Despite increasing awareness around cyber security and the increasing frequency of data breach events, it has been difficult to fully assess the insurance cost (severity) of these incidents.

While many leading cyber liability insurers are participating in this study, there are many insurers that have not yet processed enough cyber claims to be able to participate. So our analysis is a work in progress, but still producing some interesting results.

It is our sincerest hope that each year more and more insurers and brokers will participate in this study—that they share more claims and more information about each claim—until it truly represents the cyber liability insurance industry overall. For the benefit of the industry overall, we encourage all underwriters to participate in next year's NetDiligence study. We also hope that each participating insurer shares a larger percentage of their total cyber claims. If we can expand participation in these two ways, our findings will become much more meaningful to everyone involved in the cyber insurance market.

INSURANCE INDUSTRY PARTICIPANTS

We want to thank the following companies, whose participation made this study possible:

- ACE
- Aspen Insurance
- AIG
- Ascent Underwriting
- Beazley
- Chubb Group of Insurance Companies
- CUNA Mutual Group
- Endurance Insurance
- Freedom Specialty Insurance
- Hiscox
- Hylant
- OneBeacon Technology Insurance
- Philadelphia Insurance Companies
- Safehold Special Risk
- Travelers
- United States Liability Insurance
- Wells Fargo Insurance Services
- XL Group
- Zurich NA

CONTRIBUTOR

Risk Centric Security, Inc.

A special thank you also goes to Patrick Florer, cofounder and Chief Technology Officer of Risk Centric Security and a Distinguished Fellow of the Ponemon Institute, who helped analyze the data submitted for this study. Risk Centric Security offers state-of-the-art SaaS tools and training for quantitative risk and decision analysis. For more information, visit **riskcentricsecurity.com**.

ADDITIONAL INSIGHTS FROM OUR SPONSORS

PLATINUM SPONSOR

AllClear ID

This study is a prime example of the power of information-sharing across our industry. This type of collaboration between businesses and industry leaders results in a more comprehensive understanding of the total costs associated with data breach events—and more effective decision-making both pre-breach and during an incident.

The findings of this year's study shed light on the challenges businesses face with increasingly destructive and costly breaches. For businesses and industry leaders, this study is further evidence that navigating today's cyber threat landscape takes more planning, training, and foresight than ever.

AllClear ID is the leader in customer security. We provide data breach response services, advisory services, and response capacity to business that need to notify, support and protect people affected by a data breach. We have helped thousands of businesses prepare for, respond to, and recover from data breaches, and have successfully managed three of the four largest and most complex breach responses in history.

Through this experience, we know what actions truly help save costs during a breach response. There are 3 important areas to consider for a customer-facing breach response that, if managed properly, can help save on cost without compromising quality: planning of the customer-facing response, reserving quality capacity, and putting the customer at the center of the response.

Planning Your Customer-Facing Response

After years of high-profile data breaches, both customers and the media expect businesses to be ready to respond to a breach with a well-orchestrated response in a matter of days. The media may even alert a company about a breach when they call to request a comment on a story that is going to press in a few hours. If companies are not prepared to respond, the media and their customers notice. Unfortunately, we find that many businesses' customer-facing incident response plans are undefined. This is a huge oversight when a company's sales and brand live and die with customers.

To mitigate these risks, choose a proven partner with experience successfully managing a customer-facing response to design and practice plan that is impactful and cost-effective. A few important characteristics of your partner should include:

- Expertise and success in customer-facing breach preparation and response

- Proven record of excellent customer service for clients and affected customers
- Customer support and call center staff trained in identity theft protection and easing consumer anxiety
- Ensure the partner will not sell customer data
- Ensure the partner offers appropriate identity protection for varying levels of risk

AllClear ID specializes in comprehensive planning and effective execution of customer-facing breach responses. We offer a leading breach preparation program to help companies mobilize a customer response with proven plans, expert operational advice, and guaranteed response capacity. Our program ensures that if a breach occurs, businesses are confident and ready to execute an effective response with high-quality communications that minimize negative impacts to the business.

Reserving Quality Capacity

The scale, complexity, and destruction of breaches today are at levels never seen before, and the demand for quality response services is exceeding supply. The real test of an incident response plan comes with a breach: an unpredictable event with an immense and relentless demand on resources. Even the most robust incident response plan is ineffective if quality capacity is not available. When a breach response launches, if there are long hold times on Day 1, that will dominate the conversation with both customers and the media despite best efforts during planning.

So the most impactful decision a business can make right now is to reserve capacity to respond to a breach with speed and quality. AllClear ID offers the first and only program to reserve capacity, ensuring that resources are trained and ready to respond in a guaranteed timeframe. The focus on scale and quality translates into a great customer experience, which is reflected in a 97 percent customer satisfaction rating for AllClear ID. In addition, companies that prepare with AllClear ID get the added benefit of significant cost savings in the event of a breach.

Put Customers at the Center of the Response

Data breaches cause anxiety for the affected population, so it is important that people affected feel taken care of in a timely and genuine manner. Their expectations are high, so clear communication about the incident and the promise to resolve harm is critical. How you implement identity protection influences customer satisfaction. Customers often resent being asked to provide their information to a third party to sign up for protection right after their information has been compromised. The solution is to not require enrollment. Instead, offer automatic access to identity repair with no enrollment required.

Another important consideration is to offer the appropriate protection to match the risk of the data lost. Often the decision is made to offer credit monitoring without analyzing if it will truly help the people affected by a breach. Credit monitoring is only helpful if Social

Security numbers are lost as it helps monitor for new credit accounts. Credit morning cannot help with data loss that includes existing credit card accounts or logins and passwords. The risk in offering credit monitoring as a blanket solution is that customers will have a false sense of security when it is not an effective remedy. In addition, credit motoring is the most expensive protection to offer, so defaulting to that as the choice can be an expensive mistake.

The solutions from AllClear ID put the customer first—no enrollment is required, identity repair is automatically available to everyone affected, and we help analyze the type of data lost and determine the appropriate protection to offer. Our guidance helps clients avoid the blowback and brand tarnish of making rushed decisions that don't truly help the people affected.

AllClear ID: The Leader in Data Breach Preparation and Response

Our focus on customer service, combined with our unique ability to provide capacity with speed and quality, has set the industry standard for data breach response. The AllClear ID approach always puts your customers first. In our experience, customers can forgive a breach if the response is handled well. Planning and reserving capacity with AllClear ID are investments that payoff when you need them most.

About AllClear ID

AllClear ID provides comprehensive breach response services to help businesses protect their greatest asset: their customers. With over 10 years of experience helping thousands of businesses prepare, respond, and recover from the most destructive, complex breaches in history, AllClear ID is recognized for our expertise, partnership, and innovative solutions. Learn more: **www.allclearid.com/business** or email **ResponseTeam@allclearid.com**.

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RSM

Key considerations to better protect your organization against cyberattacks

RSM is a proud sponsor of the NetDiligence® 2015 Cyber Claims Study. This year's report presents a wealth of data that businesses can use to assess the strength of their cybersecurity defenses. As organizations engage in this process, we would encourage them to consider taking the following steps:

Know your strengths and weaknesses. Despite your organization's industry or size, it likely possesses information that is valuable to a hacker. Inventory sensitive information and understand who has access to it, including employees and vendors. Understand the reputational and financial impacts to your organization if this information was exploited. Ensure the proper controls are in place to secure sensitive data.

Build security awareness into your organizational culture. Many employees become unwitting pawns in criminal intrusions of their IT networks when they do something as innocent and simple as click on a link in an email message that appears to come from an internal team or outside vendor, and thus activate a malware attack.

Cybercriminals are becoming increasingly crafty in the techniques they use to break into networks. They may target officials in human resources, purchasing, and other departments who may be less aware of risks they face from intrusions. Organizations need to communicate and conduct frequent and recurring educational sessions to alert employees to the various techniques cybercriminals use and build an awareness of these risks into their corporate culture.

Make cybersecurity assessment a continuous process. Every time a network changes, organizations face the possibility of introducing new risks to their systems. Adding a router, replacing a server, and implementing new software can create vulnerabilities for cybercriminals to exploit.

Organizations need to understand these vulnerabilities, and perform periodic risk assessments to identify areas of weakness, develop incident response plans, and keep those plans current by revisiting risk assessments whenever networks change. And when an incident occurs, organizations should go back and reevaluate why they missed a particular risk. It is always a continuous learning cycle.

Take control. Implementing the right security controls can help deter hackers and other criminals, but each type of internal control requires its own focus:

- **Preventive controls** keep incidents from occurring and deter unauthorized access. Preventive controls seek to secure the perimeter, but with technology such as the cloud and remote access, organizations must expand controls beyond traditional boundaries.

- **Detective controls** help to monitor and alert the organization of malicious and unauthorized activity. Infiltration is typically the focus of detective controls; however, these controls can be implemented at any stage in the attack life cycle to increase data security.
- **Corrective controls** are designed to limit the scope of an incident and mitigate unauthorized activity. Many organizations view corrective controls as solely technical, but they can also be physical, procedural, legal or regulatory in nature.

Large multinational corporations are not the only organizations that cybercriminals have in their sights. As this study shows, middle market companies and even smaller entities are increasingly becoming victims of cyberattacks. Reputational and financial impacts can be worse for smaller companies because many do not have the resources to address security and privacy issues themselves. However, it is incumbent upon all organizations to make sure that they have appropriate security controls in place to help protect their valuable corporate and personal data, and mitigate the chance that they become the next cyberattack headline.

For more information, please contact:

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CIPRIANI & WERNER
ATTORNEYS AT LAW

The NetDiligence 2015 Cyber Claims Study ("Study"), although based on a relatively small sampling from the insured claims reported, which they estimate to be 5-10% of the total number of cyber claims handled, illuminates where breaches have occurred, the types and volume of personal information (data) exposed and the relative expense of breaches within the target sectors. This information suggests certain "best practices" for insureds to follow as they consider what is needed to obtain appropriate coverage and minimize the risk exposure in the event of a breach. These two categories, coverage preparation and loss mitigation, are the topics companies need to emphasize as they navigate through the cyber-related business and legal risks confronting them.

The decision to obtain cyber insurance coverage is one that all businesses either have considered, or will soon be considering. Recently, reported legal cases from different jurisdictions suggest that the number of cyber breach damage claims, and, more than likely, lawsuits will increase as: 1) additional courts follow the recent 7th Circuit Court decision and allow Plaintiffs to establish "standing" where there is an "objectively reasonable likelihood" that injury will occur to customers who have had their PI stolen; and 2) insurance carriers continue to scrutinize the conduct of their insured's actions both pre- and post-breach, while placing Cyber coverage.

Cyber insurance coverage is best obtained after the applicant has taken appropriate steps to assess, its own cyber related risks. This assessment is not simply related to its information technology or network security. It includes internal processes and procedures to educate and train personnel and to evaluate third-party risks such as vendor contracts. The Study identifies that third parties accounted for 25% of the claims submitted and insiders were involved in 32% of the claims submitted. The assessment should also include a review and understanding of state and federal regulations that address a company's responsibility to preserve and protect information as well as regulations specific to an industry, e.g. HIPAA.

Once the assessment has been completed and thoroughly evaluated by corporate officers, recommendations should be presented to the Board of Directors. This will ensure the involvement of management as well as directors, each of whom will have their own risk tied to compliance standards for E&O/D&O Policies. From these recommendations should flow decisions, reduced to an action plan for the implementation of actions to correct deficiencies in advance of seeking coverage, and if thorough, an incident response plan that addresses breach response that includes actions to be taken by employees as well as outside professionals who will be needed immediately to respond to the emergency.

With cyber insurance in place, the insured must remain vigilant in order to meet the terms and conditions of many cyber policies and to meet what appear to be the evolving "industry standards" and government regulations for maintaining privacy and protecting against cyber breaches. This means that all businesses, not simply those in the high breach sectors identified by the Study such as health care, financial services or retail, must deploy appropriate and compliant data protection measures.

Such vigilance will place the insured in the best position in the event a breach results in regulatory claims or litigation. Traditional elements of tort liability will require failure on the part of the insured to satisfy standards, i.e. the legal breach of duty. Absent a strict liability standard, the vigilant insured provides not only protection to the officers and directors but also the foundation its attorneys will need to mount an aggressive defense.

An additional and related observation that supports the need for vigilance is that, as with other potentially large legal liability occurrences, the passing of time allows the plaintiffs' bar to develop new and "creative" theories of liability that may find acceptance in one or more Courts. Once these "friendly" Courts are identified, the likelihood of more litigation increases.

Two final observations from the Study pertain to the education and professional service markets. In contrast to the 2014 Study, where education represented 5% of the reported claims, 2015 had no measurable sample. It will not be surprising for this sector to return to one of the measurable sectors as breach numbers increase. University systems store not only PI, but increasingly PHI, and both student and family PCI. An additional target for hackers might include intellectual property from funded research projects. For this reason, university systems can be high-value targets and need to be hyper-vigilant and properly insured.

Similarly, law firms store multiple types of protected data including PII, PCI and PHI of employees, and depending on the nature of the firms' practice areas, e.g medical-malpractice, securities, or financial services, data from clients and often adversaries. Increasingly at risk is intellectual property data and privileged information on M&A and public securities transactions.

Cipriani & Werner, P.C. delivers an end-to-end, integrated approach to its clients' privacy and data security needs. Clients of this Mid-Atlantic litigation defense firm benefit from our team of professionals that includes experienced litigators, leaders in crisis communications, forensic IT assessment and mitigation, regulatory compliance and government relations offering services including corporate and IT audits and risk assessments, development of breach response plans, our breach response team and litigation defense. Our clients appreciate the simplicity and certainty of having a single point of contact with a trusted team that has served the insurance industry for more than three decades. For more information, visit **www.c-wlaw.com**.

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Symantec

When analyzing the data presented here, much of it aligns with data from Symantec's Internet Security Threat Report, where a majority of the attacks are leveraged against smaller organizations.

Why smaller organizations? These organizations tend to be operating with the tightest budget for security and staff, they have business connections to larger companies through partnerships and products, and the data they are storing and transmitting is still very useful to nefarious individuals. Collectively, these smaller, often times less noticeable, initial attacks will cause multiple other incidents and claims.

It's a domino effect. A piece of information we need to analyze and collect data on is just how far does one attack against a nano company migrate into the industry around it? Could 10 of the breaches mentioned in this report all be the cause of a single attacker? Could they have been a daisy chained attack where the nano was the original incursion meant to get to the largest corporation?

Symantec has the largest commercial security intelligence database in the world. By working to understand not just the attacks and damage caused, but also who the attacker is, what their motives are, and if the attack is part of a larger campaign; deeper insight is provided into the methodology behind the chosen tactics. After being breached, the most important questions are where the attacker might be next, and how to stop them before they do further damage.

We use this data today to help our customers be predicative rather than reactive with the goal of preventing a successful attack before it starts. This forward looking intelligence is what the insurance markets need to get the appropriate level of visibility into what they are insuring, what the risk to a customer will be both at the time a policy is designed as well as throughout the life cycle of the policy. How much value would be recognized if a single attack at one insured was identified as an attack that was about to hit your other insured and as a result you could notify them, protect them and prevent the breach?

There has been a major rise in attacks against healthcare, higher education and financial services where a simple malware or virus attack has been stage one of a much more sophisticated attack. As a result, the study data shows that the cost for these types of events is growing year-on-year. It's critical that as an industry we move to find better ways to not only protect customers, but to respond by providing key capabilities to both insurers and their clients to provide a reduction in costs for forensics and improve capabilities that reduce overall time to containment and eradication. Without focusing on this need we expect to see the number of cyber insurance policies rise, but with significantly higher risk to the insurer making it difficult to be competitive and profitable. This will ultimately lead to an insurance practice that has fewer players, less coverage and premiums that will make customers reconsider the purchase.

To effectively move forward and drive improvement, partnerships must exist that share intelligence, solutions, and act in the best interest of the client. Cross industry teams and task forces that are taking data from studies such as this and developing from that models that define industry wide changes. When automobiles are proven unsafe, insurers have stepped in to force the companies to make them safer. Same with other consumer products, this should be no different in the information security world.

At Symantec, we're working to improve the baseline of how organizations of all sizes and verticals approach cyber security. The new normal should be a truly holistic model, which addresses every step of the attack chain, from reconnaissance to exfiltration, to make prevention and response more robust than ever. Stronger organizations will lead to stronger, more mutually beneficial, relationships between the insurers, insured, and security industry.

Symantec Corporation is an information security expert that helps people, businesses, and governments seeking the freedom to unlock the opportunities technology brings—anytime, anywhere. Founded in April 1982, Symantec, a Fortune 500 company, operates the largest commercial global data intelligence network, and provides leading incident response and security solutions.

Symantec™ Cyber Security Services: Global Incident Response delivers both proactive and reactive services including Incident/Forensic Response and readiness services such as Incident Response Plan Assessments, Tabletop Exercises, Training, and Advanced Threat Hunting to help our customers build and refine their incident response plans and turn them into proactive programs. For more information, visit **www.symantec.com**.

NETDILIGENCE® FEATURED IN 2015 DATA BREACH INVESTIGATION REPORT (DBIR)

INSIGHTS FROM VERIZON RISK TEAM

For the past eight years, Verizon—with contributions from an ever-growing list of partners—has put together its annual Data Breach Investigations Report. The report collects, aggregates and analyzes data from organizations all over the world, including law enforcement agencies, governments and private companies. This year's report was able to bring together data from 70 different organizations to describe the threat landscape of data breaches and research what is happening both before and beyond data breaches. NetDiligence was one of those 70 organizations and was able to partner with Verizon to research the impact of data breaches.

The cybersecurity landscape is complex and there is no one take-away that the research can suggest, however there are quite a few insights that we were able to cover this year and a few key trends. For example, attackers target and seek out valid credentials (usernames and passwords) in about 3 out of every 4 system-level attacks. Whether they are brute-forcing the passwords (repetitively trying to guess a password), or if they are setting up a fake website to trick users into divulging their password, it's clear that credentials are a common thread across multiple motivated breaches.

PATCH QUICK AND PATCH WIDE

With contributions from partners, we were able to look at how vulnerabilities are being exploited by attackers. There were two key findings. First, most of the actively exploited vulnerabilities were exploited more than a year after being published publicly. In fact, about 95% of all of the CVEs (Common Vulnerabilities and Exposures) were published more than a year before we observed the exploitation in 2014. Secondly, there is a need for speed when it comes to applying patches: about half of the vulnerabilities exploited in the first year were exploited in the first month. This means that when it comes to patching, organizations need to focus on the critical patches quickly, and then focus on getting wide patch coverage into even the darkest corners of their network.

MOBILE IS NOT A PREFERRED VECTOR FOR ATTACKERS

We have been watching and waiting for mobile devices to show up in our breach data for years. But, rather than continue to wait, this year we went out seeking to understand just how mobile devices play into the threat landscape. We partnered with Verizon Wireless to analyze data collected for millions of mobile devices and the security events recorded for the last half of 2014. First we found that Android devices dominated the charts for frequency of events and was averaging around 20-thousand events per week across the millions of customers. We then dug deeper and found these events were driven by simple and annoying malware (adware, click-fraud, etc). Once we stripped away the simple malware, we were left with just under a hundred events per week across the millions of devices on the network. Our conclusion is not that we can ignore mobile devices, but when we look at these results in combination with our other breach data, it's clear that mobile platforms are not currently a preferred vector of attack for the current batch of threat actors. Mobile devices are certainly vulnerable, but just not actively being exploited. This gives defenders an opportunity to prepare for if and when the threats shift.

IT'S NOT ABOUT THE COST PER RECORD

With the help of NetDiligence, we were able to evaluate the prevailing method for estimating the impact from data breaches: the average cost per record. What we found is the cost per record is not constant and is inversely related to the number of records. That means small breaches could have costs that skyrocket into tens of thousands of dollars per record, while very large breaches (millions of records) will have their cost per record drop down to just pennies per record. Therefore, any simple cost per record estimate will greatly underestimate the costs of small breaches and grossly overstate the losses from larger breaches.

With the cost per record myth busted, we set out to find a replacement. Using the data collected by NetDiligence, we evaluated multiple variables associated with breaches. Do external attackers cause more damage than internal employees? Is a system compromise worse than a lost laptop? Do large companies have different impact from smaller companies? The answers to these questions surprised us. When we also tracked the number of records lost, there were no variables that showed a significant difference in losses. For example, large organizations had financial losses greater than small organizations, but they also lost more records. When we looked at the organizational by number of records, the size did not help the model at all. That story repeated itself over all of the variables we looked at.

We developed a new model that included the number of records as the key predictive variable. Using this approach, we found a non-linear relationship between loss and the number of records. The costs in small breaches increase rapidly and then losses slow down as the number of records increase. This again shows that any cost per record (which is a linear approach) model is going to be misleading. Even though the new model performed better than a cost per record approach, we evaluated just how good the model was. Turns out, a model that uses the number of records is just an "okay" model. Having more non-technical details around the event may help improve the model.

FORENSIC COSTS ARE HARDER TO PREDICT

When we looked at the cost of a breach, we looked at the total cost, but with NetDiligence data, we could break down the individual cost areas within a breach. For example, could we create a model to look at forensic costs? If we run through the same range of variables in our previous work, we again find that number of records is the strongest contributor—larger breaches have higher forensics costs. Except, we get a much weaker signal from the number of records and a wide amount of variance in the forensic costs that we cannot explain with the breach data alone. This indicates that there are other variables contributing forensic costs that we are not currently collecting. Perhaps if we knew how many systems were involved in the forensic analysis, or perhaps if we could measure “dwell time” (the amount of time an attacker has access), that may help create a better model. But without collecting and analyzing the data, the best we can say about forensic costs is that the number of records only helps explain a fraction of the costs.

NetDiligence®

ABOUT NETDILIGENCE®

NetDiligence® (**www.netdiligence.com**) is a Cyber Risk Assessment and Data Breach Services company.

Since 2001, NetDiligence has conducted thousands of enterprise-level **QuietAudit® Cyber Risk Assessments** for a broad variety of corporate and public entity clients. Our time-tested risk management approach (eliminate, mitigate, accept and cede residual risk) enables us to effectively help organizations of all types and sizes manage their cyber risk.

NetDiligence is also an acknowledged leader in data and privacy breach prevention and recovery. Our **eRiskHub®** portal (**www.eriskhub.com**) is licensed by more than 50 cyber liability insurers to provide ongoing education and breach recovery services to their clients. NetDiligence technical experts assist many of these insurers with cyber liability claims investigations.

QuietAudit®

With cyber risks growing daily, many organizations don't know where they're most vulnerable; who has access to their data; whether their network security measures meet legal standards for prudent and reasonable safeguards. NetDiligence can help answer these critical questions. Our QuietAudit® Cyber Risk Assessments document the organization's Risk Profile, so they know where their exposures are and can take the appropriate actions to mitigate them.

NetDiligence's QuietAudit Cyber Risk Assessments give organizations a 360 degree view of their people, processes and technology, so they can:

- Reaffirm that reasonable practices are in place
- Harden and improve their data security
- Qualify for network liability and privacy insurance
- Bolster their defense posture in the event of class action lawsuits

NetDiligence stores the assessment results online, so it's easy for organizations to re-evaluate their risk posture regularly and monitor changes over time.

NetDiligence offers a variety of QuietAudit Cyber Risk Assessments that are tailored to meet the unique needs of small, medium and large organizations in a variety of business sectors, including:

Cyber Health Check

NetDiligence assesses the organization's data security strengths and weaknesses, including data security "scores" for each key practice area. NetDiligence's Executive Summary report of its findings includes actionable recommendations to improve the organization's overall cyber risk posture.

Cyber Health Check for Healthcare Providers

NetDiligence conducts its Cyber Health Check assessment of the healthcare provider's data security strengths and weaknesses with a special focus on the data security standards mandated by HIPAA/HITECH.

Cyber Health Check for Retailers

NetDiligence conducts its Cyber Health Check assessment of the retailer's data security strengths and weaknesses with a special focus on PCI gaps and Point-of-Sale (POS) security.

CFO Cyber Risk Assessment

In addition to conducting a thorough and comprehensive Cyber Health Check assessment, NetDiligence performs a network vulnerability scanning service to test the effectiveness of firewalls and web servers and identify 6000+ vulnerabilities that hackers can exploit, including unpatched, non-hardened or misconfigured externally-facing network servers and devices.

eRiskHub®

The eRiskHub® is a licensed service that positions insurers and brokers to effectively assist clients with loss control. The eRiskHub cyber risk management web portal provides general information about sound security practices **before** a breach occurs, and facilitates appropriate reporting and recovery efforts **after** a breach. It provides tools and resources to help clients understand their exposures, establish response plans and minimize the effects of a breach on their organizations.

More than 50 insurers in global cyber liability insurance market license the eRiskHub portal to provide their clients with information and a suite of technical resources that can assist them in the prevention of IT and cyber losses and support them in the timely reporting and recovery of losses once an incident occurs.

Key Features of the eRiskHub Portal

- Incident Roadmap—includes suggested steps to take following a network or data breach incident, free consultation with a Breach Coach® and access to the insurer's preferred breach response team

- News Center—cyber risk stories, security and compliance blogs, security news, risk management events and helpful industry links
- Learning Center—best-practices articles, white papers and webinars from leading technical and legal practitioners
- Risk Manager Tools—tools to help organizations manage their cyber risk including free online self-assessment tools (excerpted from NetDiligence's QuietAudit system), recap of state breach notification laws, vendor management tools, downloadable policy templates and much more.
- eRisk Resources—a directory of third-party vendors with expertise in pre- and post-breach disciplines

When a breach event occurs, time is of the essence. With a good response plan in place and access to highly skilled third-party resources, a victimized organization can more efficiently and cost-effectively respond to and recover from a data breach.

The eRiskHub portal is an effective way for insurers and brokers to help their clients combat cyber losses with minimal, controlled and predictable costs.

CONTACT US

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