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TECH MEETS LEGAL

Investigative Realities: Working Effectively With Forensic Firms (Part One of Two)

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Lawyers and computer forensic investigators have significantly different skills and perspectives. Lawyers have an extensive knowledge of the law, focus on industry-specific regulatory standards and have a general understanding of business risks. Forensic investigators focus on security-specific risks, technical details and general regulatory requirements, but often possess a more limited understanding of specific industry needs and general business practices. Even when both have investigation experience, forensic investigators tend to focus on shorter-term containment and problem solving, while lawyers are focused on managing their clients' overall risks, including longer-term litigation and business ramifications. Even evidence may be viewed differently: evidence drives a forensic analyst's findings and informs the immediate need for containing a problem, but lawyers may already be thinking longer term as to how the evidence supports legal analyses and obligations, and later litigation strategies.

Both skill sets and perspectives are essential during cybersecurity incident response, although the differences can create friction and even conflict in setting priorities, communicating effectively, and interpreting findings. The incident response teams that best serve client objectives recognize the validity of disparate viewpoints and require effective collaboration across all stakeholders.

This article attempts to provide legal counsel with a better understanding of the focus of the forensic team in incident response, the various factors and evidentiary realities that may affect how an investigation is performed, and why response teams cannot always reach definitive conclusions. Some of these factors are technical in nature, while others revolve around the actions and dynamics of the various actors involved in the particular security incident, including the attackers, the investigators, and the other stakeholders within the victim organizations.

See also this three-part series on forensic firms: "*Understanding and Leveraging Their Expertise From the Start*" (Feb. 22, 2017); "*Key Contract Considerations and Terms*" (Mar. 8, 2017); and "*Effective Vetting and Collaboration*" (Mar. 22, 2017).

Investigation Realities

Many factors can influence the ultimate success of any forensic investigation, as the following sections describe. The more attorneys and forensic investigators understand perspectives and discuss these potential issues before an incident, the more likely they can address them during an incident in an efficient manner and provide the greatest value to their clients.

See also "*Fulfilling the Ethical Duty of Technology Competence for Attorneys*" (Aug. 24, 2016)

Objective Setting and Staying on Course

The ideal investigation follows a relatively linear, step-by-step plan; unfortunately, in most investigations twists and turns inevitably occur as new findings emerge or when expected evidence is unavailable. Despite the fluidity of investigations, progress toward successful completion of the fact-finding mission can be orderly, assuming the parties establish a clear understanding of scope and objectives.

An investigation's scope should be commensurate with the risks and the evidence to avoid unnecessary mission creep and disarray. For example, when a malicious

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intruder compromises a network that contains sensitive information, the investigation should focus, at a minimum, on identifying:

1. the attack vector;
2. the scope of the compromise across the network;
3. the extent of data loss or compromise; and
4. a timeline of events.

In such cases, it may be important to expand the scope of the investigation as findings unfold but the fundamental objectives remain the same.

Conversely, the objectives of the investigation may be more limited when inadvertent data exposure occurs, or where the breached environment does not contain sensitive data. In such cases, it may be appropriate to simply determine appropriate notification, recovery and remediation steps to improve processes and the network's security posture going forward.

See "*Learning From Experience: Five Actions to Take and Five Mistakes to Avoid When Testing a Breach Response Plan*" (Oct. 5, 2016).

Keep Your Eye on the Ball

Although goals may differ depending on the circumstances, it is important to set clear objectives and priorities at the outset and work toward efficiently and methodically achieving them. Without that clarity, it is very easy to be drawn into peripheral activities or to waste resources and time on issues that are not central to immediate response priorities. For example, it is common to encounter a variety of significant security vulnerabilities and concerns during a breach investigation that, while ultimately need to be addressed, are tangential to the incident. For example, although it can be alarming to discover that patch management processes are not working effectively, or that previously unknown and unmanaged systems exist, clients should avoid placing a high priority on the immediate resolution of those issues in the midst of responding to an unrelated incident. Although these discoveries can often be non-trivial problems, they are distractions during an active investigation.

Another common mistake is to change objectives in the midst of an investigation because initial analysis does not produce expected results and findings. Where the evidence fails to immediately support a litigation strategy, attorneys frequently feel compelled to redirect the investigation in the hopes of supporting a new theory. A more effective, less costly approach is to first complete the evidence collection and analysis, and reassess the client's position in light of the factual findings and conclusions that were made.

The Significance of a Single Finding

Despite the need to stay on course, identifying a single piece of evidence can significantly change the initial understanding of, or assumptions about a computer security incident. Discovering that an attacker was in the environment much earlier or later than previously believed, determining the attacker was using an account that had not previously been identified, or finding evidence of harvested data can all have a major impact on an investigation. A new finding may affect the investigative methodology, increase the level of effort required, or necessitate reassessment of notification requirements. Thus, it is important for legal counsel to recognize how dynamic investigations can be and how a single finding can alter the complexion of an incident suddenly and completely.

Framing the Message

The fluidity of an investigation also has implications for how communication should be framed both internally and externally. Throughout an investigation, it is important to communicate accurately and precisely, and avoid making premature assumptions or taking positions not supported by the known evidence. It is also critical to manage expectations across the organization,

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especially within upper management, and to quell rumors, misinformation and finger-pointing as circumstances change.

Evidence Quality, Integrity and Availability Limitations

Just as forensic investigators do not typically practice law, lawyers usually have a limited understanding of forensic analysis techniques and limitations. Although lawyers need not become security experts, they do need to have a basic appreciation of the limitations of computer forensics, and the variety of factors that can significantly impact an investigator's ability to draw final conclusions based on digital evidence. The better those issues are understood by legal counsel, the more likely counsel will be to identify appropriate case objectives, set effective analysis priorities, assess legal obligations and risks, and know when diminishing returns do not justify the allocation of additional resources toward analysis.

Discussed below are some of the most common factors that impact the quality, integrity, and availability of electronic evidence available to the investigation team.

Logging Limitations

It is rare for all desired log information to be available for investigators because many organizations simply do not collect it or retain it for long periods of time. Logging consumes resources and slows processing while data retention and management can create other problems for organizations. Due to performance concerns, environments with high transaction volumes, such as those involving database transactions, are less likely to log all activity.

Generally, logs overwrite earlier entries when they reach a certain size, thereby limiting how far back records go. Even when the logs are backed up for long-term retention, restoring historical data sometimes is not feasible because desired logs cannot be located or technical issues prevent data restoration.

All of these considerations lower the likelihood that full, comprehensive log information will be available for analysis. As frustrating as it may be for investigators and counsel, the reality is that significant logging gaps will exist, and in many cases, almost no relevant logging will be available.

See "*The Wisdom of Planning Ahead: The Duty to Preserve Backup Tapes, Mobile Devices and Instant Messages*" (Apr. 19, 2017).

Data Degradation

With the passage of time, the availability and integrity of data degrades. Systems are upgraded, patched, redeployed or decommissioned. Anti-virus programs identify and remove malware. Applications are retired or outsourced. Deleted logical files will be overwritten with other information as the system is used. Back-ups are purged as they exceed their retention periods. System administrators will perform maintenance or even "investigate" without following forensic protocols, resulting in inadvertent changes to file time and date stamps.

All of these factors reduce the likelihood that analysis will yield comprehensive results. Although information on systems that are used frequently or support high processing volumes will degrade most quickly, all systems are impacted by these activities over time.

Evidence Collection and Handling

Even if electronic evidence exists in the environment, improper evidence collection and handling procedures can destroy evidence or call its integrity into question.

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From a technical standpoint, improper collection occurs when it is performed without the appropriate tools and knowledge. Collecting information in a forensically sound manner requires the use of appropriate software and/or hardware by skilled, trained forensic professionals. A common misconception is that all IT personnel know how to collect electronic evidence and systems in a forensically sound manner. But collecting volatile information from a system before it is powered down requires the use of trusted forensic tools that do not depend on the integrity of the software on the particular system. Creating a forensically sound bit-for-bit image of a disk drive requires commercial hardware and software purpose-built for this activity. From a procedural standpoint, improper data collection occurs when evidence collection is not documented in a way that captures time stamps, or where there is a failure to perform well-established integrity checks to ensure that copies of systems and data are identical to original sources.

Even when the collections have been performed correctly, improper chain-of-custody controls and processes can still adversely impact the authenticity and admissibility of collected evidence for later legal proceedings. Forensic investigators should prepare evidence tags and chain-of-custody documentation if there is any possibility that a matter could be litigated.

Thwarting Forensic Efforts

Attackers may take deliberate steps to reduce the amount of evidence available to investigators. Sophisticated intruders will disable logging and anti-virus software prior to beginning their activities, and then re-enable them after they are done. They will delete evidence of the files they have created and then defragment the hard drive to scramble any intact files that might otherwise be recoverable. They will also run special tools to change the timestamps on the files they have created or modified, thus making timeline development more difficult. Lastly, they employ obfuscation techniques such as creating alternate data streams or using valid file naming conventions to name malware.

In short, even when an organization has instituted comprehensive logging, incident response processes are timely and flawlessly executed, and data is collected in accordance with best practices, anti-forensic activities will significantly reduce the amount of digital evidence necessary to provide investigators with a clear understanding of what has transpired.

Although it is not possible to know what limitations may exist before evidence collection begins, it is possible to anticipate gaps and set expectations appropriately. Because of the evidentiary limitations inherent in the forensic process, in most cases, forensic investigators will draw conclusions in terms of probability or likelihood based on their training and experience. Counsel needs to understand that it is rare to have high confidence in all investigative findings and to be able to provide definitive conclusions, particularly as to attribution to a particular attacker.

Tools and Analyst Errors

Sometimes victims and their lawyers lose sight of the fact that forensic analysis is like any other activity: the tools and the people, while often good, are not flawless.

Tool Limitations

Forensic tools are surprisingly good given that they are being patched regularly and new releases are being issued. Forensic tool software errors are rarely a problem in forensic investigations. However, inconsistencies can arise when different tools are used on the same case to answer the same question twice or verify earlier results. Those inconsistencies can lead to skepticism as to the efficacy of the tools or the methodology, when in fact the discrepancies are not "errors" but simply slight differences in software functionality.

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Thus, it is important not to overstate the significance of these variations when the evidence roughly supports the same conclusions.

Addressing Analyst Experience

Rather than encountering a software problem, it is more common for an analyst to make an error as a result of lack of experience, inadequate oversight, or poor communication. The best investigative firms continuously develop the skills and experience of their examiners by challenging them with new problems. Although many attorneys may not be qualified to evaluate the quality of the technical work, counsel should never shy away from asking questions and testing the caliber of the analysis in terms of assumptions and how the evidence supports the findings. More often than not, such discourse results in strengthening the logic or a reconsideration of the importance of particular logs or evidence. If the presentation of evidence is not compelling or the analyst cannot clearly articulate his or her reasoning, counsel should not hesitate, when it is warranted, to probe the strength of the forensic examination until he or she is confident in the factual findings.

Peer Review and Documentation

Errors are also more common if no internal quality assurance or peer review process is in place within the forensic investigations team. Forensic analysis is often performed by knitting together scraps of evidence and teasing out the truth. Having a second set of eyes vetting those conclusions can increase confidence levels in those conclusions significantly.

Internal documentation protocols can make a major difference in the ease of conducting such oversight and ensuring the accuracy of the analysis. Standard case management documentation and forensic report templates promote consistency in the analysis process, and superiors can catch logical inconsistencies. Documentation creates an audit trail of the investigative process and describes how the analytic decisions were made.

Poor communication can also adversely impact the quality of the work, particularly on large complex investigations. It is easy for a project team to lose sight of the bigger picture in a fast-moving investigation where multiple analysts are concurrently working on different issues. Maintaining a current summary of findings and forensic action items will ensure that efforts are not duplicated and that team members have a common understanding as to how the pieces of the digital puzzle fit together. Without someone managing the investigation as a whole, findings can be lost, priorities misdirected, and errors overlooked.

Nature of the Incident Dictates Approach

Conceptually, a single high-level investigative workflow should be applied consistently across all incidents: detect, triage, establish investigative objectives, conduct initial evidence collection, analyze evidence, iterate through analysis and collection, remediate, and report results. In practice, however, the sequencing of steps and processes may need to be changed depending on the nature of the incident. The approaches used to investigate web site defacements, distributed denial of service attacks, large-scale intrusions, employee theft, and potential evidence tampering differ significantly.

One size does not fit all when performing an investigation, and incident response processes need to be flexible. For example, although it may be appropriate to create forensic images and perform detailed forensic drive analysis when a rogue employee is suspected of misusing five systems, that approach is not practical when an advanced attacker is suspected of having domain administration access on dozens of systems over a multi-month period in a 200,000-node network on which sensitive information resides in multiple locations.

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In the former case, with the more limited universe, standard forensic tools, technical skills and a traditional investigative mindset will generally apply. In the latter case, automation is required to identify and collect relevant endpoint and network traffic information for analysis on a large scale. Although investigators will still use traditional techniques in a large enterprise-wide investigation, they supplement those techniques with automation to analyze data and systems at a scale that simply is not possible using traditional techniques.

Each investigation requires the forensic team to apply the judgment, flexibility, and especially the creativityappropriate to the scope, urgency, and focus of the particular situation. It behooves counsel to understand these differences, and recognize what forensic approaches are appropriate to different categories of incidents and the legal risks of each case. Moreover, counsel should vet investigative partners to understand the differences in skill sets, experience, and focus that different forensic firms possess.

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Investigative Realities: Working Effectively With Forensic Firms (Part Two of Two)

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Lawyers and forensic investigators must work together when investigating breaches, but the differences in their outlook and approach can sometimes make that difficult. This article addresses how to work with forensic teams when documenting and otherwise communicating findings, and during the remediation process. The first installment of the series addressed investigative realities and how attorneys and forensic investigators can gain an understanding of each other's perspectives and preemptively discuss any potential issues to be in the best position to address them efficiently during an investigation.

See also The FCPA Report's three-part series on forensic firms: "*Understanding and Leveraging Their Expertise From the Start*" (Feb. 22, 2017); "*Key Contract Considerations and Terms*" (Mar. 8, 2017); and "*Effective Vetting and Collaboration*" (Mar. 22, 2017).

Perspectives on Communications and Written Deliverables

One area where forensic investigators and lawyers differ significantly is in communications. Investigators are charged with identifying relevant systems, gathering logs and other evidence, and deploying forensic tools as quickly and efficiently as possible. During this problem-solving exercise, communications and information sharing between technologists often results in significant back-and-forth and the number of people involved in troubleshooting can quickly escalate.

Counsel, on the other hand, is primarily concerned with and quelling public or leaked speculation and preventing unnecessary disclosures of problems in the environment and oversharing of information. Most importantly, counsel has the responsibility to maximize the likelihood that formal attorney-client privilege and work-product doctrines will attach to protect the communications and work product associated with the investigation, thereby protecting clients from regulatory and litigation risks in the future.

Moreover, attorneys are expected to aggressively manage their clients' risks and present the facts of the situation in a way that is as favorable to their clients as possible, consistent with legal and ethical responsibilities. Investigators are expected to serve their clients including, as appropriate, by preparing reports that are objective and fact-based and mitigating any security risks to the environment. Although both parties have a risk-management objective, investigators are not as inclined to consider a client's broader risk profile.

Both parties should recognize the need to record the forensic methodologies and factual findings to establish the reasonableness of the investigation, and the credibility of the conclusions. However, they may differ on the best way to protect that information and what type of content is important to document.

Final Reports

Lawyers are very sensitive to how documents may be used in litigation proceedings and by regulators. Forensic reports may contain sensitive work product and security information, and can be used, sometimes unfairly and out of context, to pick holes in the analyses and undermine the forensic work. Similarly, discussions of strategic options, differences in opinion, and other work product created during the course of an investigation can also be used to weaken a client's position. For those reasons, lawyers are very

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careful as to how they frame the content of reports. Typically, anything other than precise factual conclusions supported by evidence and unassailable logic will be questioned and omitted.

Forensic investigators recognize that their reporting may be evaluated by other law firms, regulators, law enforcement and even their competitors – sometimes years after the investigation. The long-term concern about the reputational impact of this scrutiny may influence their willingness to accept edits from counsel, including suggestions to omit findings, assumptions, reasoning, or final conclusions that may disfavor their client. This occasionally leads to tension in the discussions when reports are being finalized.

Often, counsel determines that it would rather not prepare a final report at all. Such a decision should not be confused with a failure to keep accurate notes of methodologies and findings, or the failure to prepare a technical forensic report. Rather, counsel may determine that the risk of discovery of potential evolving or seemingly inconsistent findings or conclusions outweighs the need for regular written interim reports, or a final summary report of the incident.

Interim Reports

Investigators generally have a strong preference to produce both interim and final reports. For investigators, a benefit of producing interim status reports is that it allows the investigators to organize their work so they can better articulate status, plans and issues. As noted previously, in complex situations consisting of multiple system analyses, it can be very difficult to keep track of the status of the investigation as a whole or what analysis should be prioritized without a well-organized and written summary.

Focusing on How to Document

To investigators, ambiguous guidance regarding what can be written and what cannot makes it much more difficult for them to solve complex problems. If they are not confident they can produce documentation that they use to control their activities and ensure quality, their analysis will suffer. Without a record, it is harder to review processes and determine where mistakes have been made.

Thus, decisions on record creation should reflect a balance of competing needs: the importance of keeping track of investigative analyses and the need to communicate those findings at all levels of the organization while limiting the risk of unnecessary disclosures. The justification for maintaining work product and a case-management record needs to be understood in the context of long-term discoverability and communications discipline. It may be more important for lawyers and investigators to discuss best practices on how to document the investigative work in terms of necessity, tone, accuracy and precision, and audience, than whether to document the work. Proper management of communication will serve to increase efficiency and effectiveness throughout the investigation.

Again, investigators and counsel alike ultimately share the goals of discovering the truth so as to best position the client, and maintaining professional and ethical integrity and reputations. An understanding as to why information is, or is not, important in a written form is critical for achieving these objectives.

Law Enforcement Communication

Related to the issue of communication and risk of disclosure are the questions of whether and how to involve law enforcement in a cybersecurity incident. Many forensic investigators have law-enforcement backgrounds, and at times see collaboration with law enforcement as a natural part of incident response and information sharing. Legal counsel must view such communications in the light of their professional obligations to serve the interests of, most commonly, private organizations. This often requires weighing the competing costs and benefits of referring a matter

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to law enforcement, including whether the incident is already in the public realm, international in scope, and/or presents a broader threat to public safety.

Given that this calculus is highly dependent on the circumstances of the particular incident, investigators generally should not reach out to law enforcement – or provide requested materials to law enforcement – without first involving legal counsel, and without a broader discussion among stakeholders. (There can be exigent circumstances, however, that might require immediate reporting to law enforcement.)

When cooperation with law enforcement is deemed prudent, the mechanisms for safeguarding the confidentiality of information and communications must still be determined. In some instances, asking law enforcement for a warrant or subpoena to compel disclosure may be appropriate, while in other cases consent may be the best approach to maintaining control over information flows. Law enforcement agencies are accustomed to working with victimized companies to assist with these nuanced legal concerns.

Similarly, it is not uncommon to enter into non-disclosure agreements with law enforcement, or seek other assurances to protect the confidentiality of shared information, to the extent possible within our legal systems.

See "*Law Enforcement on Cybersecurity Matters: Corporate Friend or Foe? (Part One of Two)*" (Jun. 22, 2016); *Part Two* (Jul. 6, 2016).

Remediation Timing and Approach

The steps that must be taken to resolve, recover from and remediate a particular incident can range from an immediate and simple restoration of a single device, to months of staging and planning activities that can impact the entire enterprise. The scope of recovery and remediation activity depends on the nature of the attackers, their objectives, the scope/extent of the incident, the defensive posture of the victim organization and the ongoing monitoring and alerting capabilities of the victim organization.

To best work with forensic teams, counsel should be familiar with how the various factors impact remediation planning and execution. These factors affect not only what steps will be taken, but also the timing of those activities.

Incident Complexity

The less complex the situation is, the easier and faster remediation tends to be. Ideally, remediation is performed as soon as the scope of the incident has been determined and any relevant evidence has been preserved. However, that may not be appropriate when the attacker has the motivation and means to counterattack. Nation states and some advanced criminal organizations fall into this category. Dealing with these advanced attackers is like a chess game: remediation strategies must be thoughtful, tactics coordinated, and solutions implemented in such a way that activities do not alert the attacker of defensive measures applied to the environment.

The remediation phase in complex cases requires significant planning and coordination. Rushing leads to mistakes and can result in the attacker undermining temporary remedial measures, retaking the network, stealing more information, and destroying important evidence. If the attacker counterattacks and changes his tactics it can require the victim to restart the entire investigation. Once this breed of attacker knows it has been detected, it often escalates to using more advanced and stealthy tactics.

This occurs more frequently than many victims realize. Over the years, many victim organizations believe they have successfully removed the attacker from their environment but the attacker came back. Sometimes this is, in fact, the case, but often, the victim lost the trail of a hiding intruder while remediation steps were being undertaken. The attacker simply abandoned his current tools and began using different techniques,

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malware, IP addresses and accounts, which remained undetected. When this happens, the entire incident response must begin anew.

The Scope/Extent of Incident

The second factor that affects remediation is the scope or extent of the compromise. The more limited the scope of the incident, the less time the investigation should take and the more limited the remediation activities typically are. Regardless of the sophistication of the attacker, the more systems that are compromised, the more account credentials that are stolen, and the more vulnerabilities that an attacker has leveraged, the more involved the remediation will be. Large enterprise-wide breaches that involve hundreds or thousands of systems in large networks spanning dozens of data centers often require months of remediation planning, quiet implementation of improved defenses, and a high degree of coordination to ensure the environment is free of the attacker.

The Victim's Defensive Posture and Monitoring Capabilities

Lastly, even a well-planned remediation strategy will not succeed if the victim does not have the ability to recognize and defend against counterattacks. Oftentimes, those very limitations allowed the victim to be compromised in the first place. Consequently, victims of advanced attack groups must improve their defensive posture and monitoring capabilities concurrent with conducting their investigation if they are to reduce the likelihood of another compromise subsequent to their remediation. Examples of interim remediation steps that can be initiated concurrent with the investigation are:

- improving logging by activating more logging sources, making the logging more detailed or extending log-retention periods;
- improving device-hardening practices and implementing those practices for new system deployments;
- implementing commercial software such as multi-factor authentication that address known weaknesses in the security posture;
- upgrading unsupported operating systems;
- instituting more robust network segmentation - especially for enclaves housing sensitive data; and
- implementing a formal security information and event management (SIEM) platform.

It is prudent to carry out these improvement activities without raising the attacker's suspicions that he has been discovered. The victim organization should undertake general security-improvement steps that could be viewed as usual and customary, but it should avoid targeting the specific vulnerabilities being used by the attacker.

An example of an appropriate interim remediation step would be instituting a stronger password policy and implementing it in applications and operating systems across the enterprise. However, implementing a forced enterprise-wide password reset for all employees is an inappropriate interim remediation step if it signals to the attacker that he has been discovered. Forced password resets are typically reserved for remediation when the objective is to force him from the network.

Timing

Although remediation planning, preparation, and staging often occurs over a period of time, there are other instances where it occurs almost immediately. In the case of a DDoS attack, mitigation and remediation activities commence as soon as the attack is identified. Likewise, a website defacement is likely to be addressed in very short order. However, removing an advanced attacker from a very large network is a much more nuanced process.

In advanced threat situations, it is important to understand the extent of compromise as completely as possible before attempting to remediate. At the same time, the best chance of success exists early in the process when the attacker is unaware

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they have been discovered. To paraphrase Albert Einstein, remediation should occur as soon as possible, but no sooner.

Once remediation preparation steps have been completed, the best criterion for deciding when to remove an advanced attacker from an environment is when all of the attacker's actions are being captured in both host-based and network-based evidence in near-real time. When investigators have achieved that degree of visibility and immediacy they are in the best position possible to take back their network.

If the victim organization cannot allow that kind of ongoing activity due to risks or business disruption, then a decision needs to be made about when to force the attacker out of the environment and how. That decision requires a balancing of risks, including the potential loss in visibility and evidence gathering, by all of the stakeholders.

The timing of the remediation event can be subjective in many cases but the better the decision-makers understand each of these factors, the more likely the remediation will be appropriately timed and successful.

See also "*Key Strategies to Manage the First 72 Hours Following an Incident*" (Feb. 8, 2017).

Three Further Steps to Avoid Pitfalls

The concepts described in this article provide a solid foundation for improving the working relationship between counsel and forensic investigators. Further steps that lawyers should take to enhance their effectiveness in investigations include:

1) Deepen Technical Understanding to Fulfill Fundamental Legal Responsibilities

Technical education and experience are great foundations to have when involved in cyber-incident investigations, but many lawyers learn the same way most forensic examiners do: they gain experience one engagement at a time, ask questions of their colleagues, and refine their approaches.

Lawyers need not know how to image a drive or perform memory forensics to add insight and value into managing risk. By gaining some knowledge of security and technical fundamentals, and the types of digital evidence that may exist, lawyers bring a new perspective, can test the strength of forensic analyses and conclusions, and develop legal strategies based on a clear understanding of the facts as supported by the evidence. The early and continuous involvement of knowledgeable legal counsel in an investigation is part and parcel of successful incident-response work, and an essential requirement of the legal team.

2) Identify the Best Individuals

Skills and capabilities can vary significantly from one forensic investigator to another. They all have different strengths or capabilities. No single firm is equally strong at litigation support, white collar crime, commodity threats and advanced threat investigations. No single firm addresses all geographies equally well. The largest organizations do not always have the best capabilities. Identify the individuals, not firms, who have the most desirable skills and constantly evaluate their capabilities. The capabilities of firms tend to ebb and flow with the comings and goings of individuals who are experts in these areas.

3) Remain Current on the Major Trends

Cyber threats evolve over time, but many of the same factors that allowed attackers to be successful 10 years ago allow them to be successful today. Users continue to make mistakes. Malicious insiders create upheaval for organizations. Attackers penetrate victim networks using social engineering, known vulnerabilities, and stolen credentials.

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That being said, significant changes in technology have changed how investigations are performed. The network perimeter has dissolved as mobile devices and cloud computing have become more prevalent. Ransomware is now highly automated. Attackers target major data-aggregation points rather than individual targets. Security operational support is being outsourced more frequently.

Organizations are still battling people with the same malicious motives. Traditional common-sense investigative skills and experience remain essential for both attorneys and forensic experts. The different perspectives and insights both groups bring to investigations should not be seen as obstacles. Instead, they should be viewed as assets that enable them to meet shared objectives.

See also "*Eight Attributes In-House Counsel Look For in Outside Cybersecurity Counsel*" (Jun. 8, 2016).

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