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WHY YOU SHOULD LET YOUR SECURITY TEAM GO PHISHING

A guide for executives on the value, cost, risk, and execution of a phishing awareness program

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INTRODUCTION: PHISHING 101

Phishing—in which attackers trick email recipients into clicking malicious links or revealing sensitive information—and related social engineering techniques are linked to more successful data breaches than any other form of cyberattack. That makes them today's number one attack vector.

Unfortunately, it is impossible to prevent phishing attempts by purely technical means.

However, the good news is that a phishing awareness program can dramatically reduce the success rates of phishing attempts.

This guide will help you understand the importance of a phishing awareness campaign, as well answer key questions such as:

- Will it be expensive?
- What are the risks?
- How should your company execute the campaign?

Read on to learn just how widespread and destructive phishing is today, to better understand how to talk about phishing with your security team, and to see why a phishing campaign is one of the best investments your company can make in cybersecurity.

WHY PHISHING NEEDS TO BE A PRIORITY

Don't just take our word for it. As we've alluded to, there are loads of statistics and anecdotes that illustrate the threat of phishing.

For example, according to a Verizon study:

- Phishing was involved in over 90% of security incidents and breaches that involved social actions (that is, attacks based on human mistakes).
- 95% of the phishing attacks that led to a breach were followed by some form of software installation; many also caused people to disclose confidential information.[1]

You might also be wondering:

How prevalent is phishing?

- One industry organization finds over 90,000 unique phishing campaigns every month, launched from around 50,000 websites.[2]

> "Phishing impacted 72% of organizations surveyed in 2017, more any other type of threat. The FBI estimates that BEC scams alone cost American businesses $1.6 billion over three years.

- Phishing and social engineering attacks are the number one concern of security professionals, and are their most time time-consuming activity on a daily basis.[3]

Do phishing attacks affect many enterprises?

- Phishing was seen in 72% of organizations surveyed in 2017, more than any other type of threat.[4]

How many people fall for phishing emails?

- Different surveys and tests have found anywhere from 7% to 45% of users clicking on a link or opening an attachment in a phishing email. Even 7% ensures that attackers can find many potential victims in any organizations.

[1] Verizon 2017 Data Breach Investigations Report (DBIR): Attack the Humans! section.

[2] APWG Phishing Activity Trends Report, 1st Half 2017

[3] 2017 Black Hat Attendee Survey

[4] SANS Institute: 2017 Threat Landscape Survey.

How much damage is done by phishing campaigns?

- The FBI estimates that business email compromise (BEC) scams alone (which are based on spear-phishing emails that appear to come from company executives and other insiders) caused $5.3 billion in losses to businesses worldwide in 40,000 incidents over three years.[5]

How many phishing emails hit your company in a month?

- Symantec found that in 2016 slightly more than one in 2,596 emails was a phishing email.[6] So you can take the number of emails that enter your network in a month, divide by 2,596, and come up with a reasonable estimate.
- The idea here is not to deluge you with statistics, but to show that there are hard numbers proving that phishing is a very serious threat.

[5] FBI: Business E-Mail Compromise - E-Mail Account Compromise, the 5 Billion Dollar Scam

[6] Symantec: Internet Security Threat Report, Volume 22

WHAT A PHISHING AWARENESS CAMPAIGN LOOKS LIKE AND HOW IT HELPS

Let's dispel a couple of common myths:

First, a phishing awareness campaign is not a piece of technology or a new toy for the IT and security staff (although there is a technology component).

Secondly, a phishing awareness campaign is not a technique to manipulate people or play "gotcha" with negligent employees (although it will let them know when they have been careless).

A phishing awareness campaign is an educational initiative that shows employees how to protect themselves and the company from cybercriminals. In short, it's a program to raise the awareness of phishing threats and motivate employees to help block them.

> **"A phishing awareness campaign is an educational initiative that shows employees how to protect themselves and the company from cybercriminals.**

It is important to keep this perspective not only when presenting the plan to management, but also when planning and executing the campaign as well. Despite what skeptics may think, phishing awareness is about empowering people to make better decisions, and you should design your process to produce that result.

A typical campaign includes four elements:

- Training, which educates employees on why phishing is harmful and on how to detect and report phishing attempts.
- Simulation, which tests whether people apply the training under real-world conditions and reinforces the lessons when they don't.
- Reporting of phishing attempts, with a process that makes it easy for employees to spot and alert their IT department to real phishing attempts as they occur.
- Follow-up training for employees who fell for the phishing simulations, which helps them improve their response.

There is evidence that phishing awareness campaigns have a significant effect on improving employee behavior. One study found that training reduced clicks on phishing emails between 26% and 99%, with an average improvement of 64%. That doesn't solve the entire problem, but it represents a very substantial improvement.[7]

While the value of preventing employees from falling for phishing emails is clearly very important, the value of improving reporting should not be overlooked. If 20 employees fall victim to a phishing attempt before someone reports the incident, the cybercriminal has 20 opportunities to plant malware before IT can respond. If the first employee to receive the phishing email reports it, the attacker may have no chance.

> **"One study found that training reduced clicks on phishing emails between 26% and 99%, with an average improvement of 64%.**

Evaluating the Cost

Phishing awareness programs don't cost very much when compared with the benefits.

Direct costs are quite low, and the subscription costs for powerful campaign management tools are typically modest as well. Unless your organization is very large, the effort required to create and run the simulations amounts to only a few hours per week.

Training requires time from the instructors who prepare and deliver the information. However, that effort can be limited by using written documents or media like teleconferencing and video. If you and your managers decide that classroom training will be most effective, it can be included in sessions that provide other types of IT or human resources training.

Phishing awareness training will obviously take employees away from their work for short periods. But this can be weighed against the costs of not providing such training. Different studies have evaluated the combined cost of dealing with a single successful phishing attack as $3.8 million for a typical company. That includes the cost of dealing with malware, productivity losses, and business disruption.[8]

Minimizing Risk

You may be sensitive to risk, for the good reason that you have likely seen plenty of programs that resulted in significant unintended consequences. For example, you may be concerned that a phishing awareness campaign might create resentment if it creates a feeling that employees are being spied on or manipulated.

But you can minimize the risk by following a few guidelines.

First, create a core phishing education team that includes at least one executive or high-level manager, someone from human resources or corporate communications, and a few individuals who are representative of the employee population, as well as the IT analyst or administrator who will conduct the simulations.

[7] Ponemon Institute: The Cost of Phishing & Value of Employee Training

[8] Ibid.

Having broad representation in this steering committee ensures that you will take into account diverse viewpoints, including those of employees and managers. It also creates a network of champions for the initiative within the organization.

Convey repeatedly to managers and employees that the program will never be used to embarrass or punish individuals or departments. The simulations are designed entirely as learning tools that will help employees get better at detecting and reporting suspicious emails, so they can better protect themselves and the company.

Finally, put in place safeguards to protect privacy. For example, the simulated attacks should never retain sensitive information such as passwords and social security numbers. Anonymity should be preserved wherever possible; published results should never single out individuals.

WHAT TO INCLUDE IN EMPLOYEE TRAINING

Training typically includes information on:

- The dangers of phishing to individuals and the company (conveyed by the statistics and examples you have already gathered for management).
- How to detect suspect emails by identifying Indicators of Phishing (IOP) such as odd or unknown senders, unexpected attachments, misspellings and bad grammar in the text, links that don't match the address spelled out on the page, and phrases frequently used in scams.
- How to report suspected phishing emails, ideally through a button in the email client or browser.
- The plan to use phishing simulations as a learning tool, and the safeguards in place to make sure that privacy is preserved.

The methods of delivering this education depend on the company, but they might include a document, an online video, company or department meetings, classroom training, or some combination of these. These might be publicized through "all hands" emails, employee newsletters, corporate intranets, social media, or all of the above.

RUNNING THE PHISHING SIMULATIONS

Simulations involve creating email campaigns that closely replicate the real-world phishing attacks most likely to be used against the specific organization. These are created with phishing simulation tools and run by an IT analyst, administrator, or member of the security operations team.

> **“The simulation tool can customize realistic emails, attachments, and web landing pages to match the versions most likely to target the company and departments within the company.**

The typical process is to:

1. Research the types of phishing attacks most likely to be launched against the company (mass phishing), or specific departments or individuals within it (spear phishing and whaling).
2. Use the phishing simulation tool to create emails, attachments, and web landing pages that reflect an attacker mindset. These can be customized to match the versions most likely to target the company, and even individual departments or roles within the company.
3. Use the tool to create a “training page” for each simulation, explaining to unwary employees what happened, how it might have affected them and the company, and what to do in the future.
4. Select a target group for the simulation.
5. Send the email to the target group and monitor the results.

Most organizations will also offer follow-up training to employees who fall for phishing attempts in the simulations, to reinforce the original training, and perhaps to offer extra information on how to avoid the particular mistakes made.

SUMMARIZING THE BENEFITS OF A PHISHING AWARENESS PROGRAM

You might be thinking, "This training and simulation are very nice, but how do they actually produce results?"

Part of the answer is that they significantly reduce how often people click on links or open attachments in phishing emails. As mentioned earlier, one study found reductions between 26% and 99%, with an average improvement of 64%.

But you should also be aware of two other important benefits.

First, a good simulation tool can collect statistics on the success rate of attacks, including details such as what percentage of employees open phishing emails, click on a link, go to a "compromised" website, click on an attachment, and report emails that contain Indicators of Phishing (IOP). These statistics provide critical insights for the IT group and for management into weak points, risks, and the progress of the phishing awareness campaign in reducing dangerous employee actions.

> **"Improving the speed and accuracy of reporting suspect emails can provide a huge benefit to the organization.**

Second, improving the speed and accuracy of reporting suspect emails can provide a huge benefit to the organization. As discussed earlier, if the first employee to receive a phishing email reports it, IT can respond before any damage is done.

In fact, to improve the rate of reporting, your organization should:

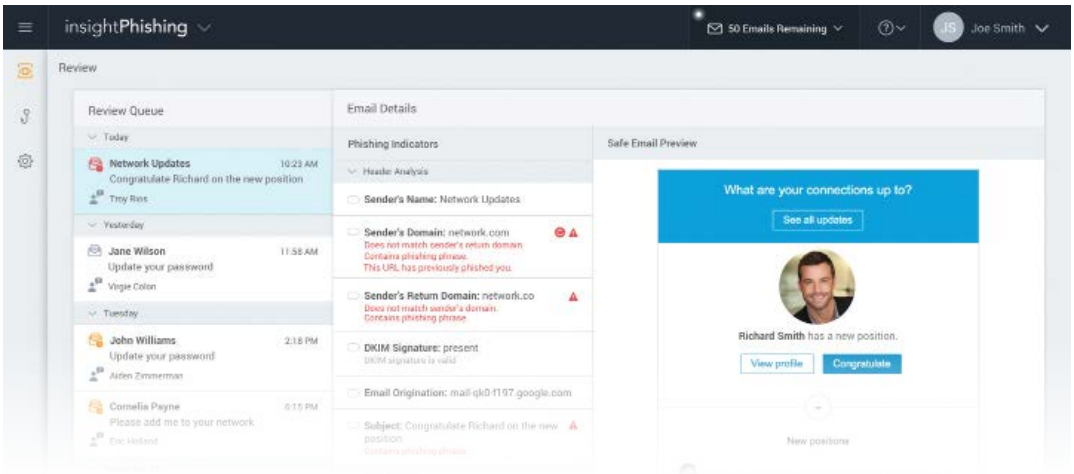
- Make reporting as easy as possible through a phishing hotline, email address, or even better, a button in the email client or browser.
- Emphasize reporting repeatedly during training; why it is critical to report suspicious emails immediately, and how to do it.
- Adjust incident response processes to make maximum use of phishing reports to confirm when phishing attacks are occurring and to alert the IT organization.

FINDING A GREAT TOOL FOR PHISHING REPORTING AND SIMULATIONS

Okay, we're slipping in a short commercial here. InsightPhishing from Rapid7 is an easy-to-use tool for creating and managing phishing simulations and reporting suspected phishing attempts. It addresses the needs of managers, employees, and the IT administrators or analysts who will be running the simulations and using the reports of suspected phishing attempts. InsightPhishing:

- Is easy to learn and use
- Gives you pre-designed templates that mirror real-world attacks based on an attacker mindset
- Makes it easy to customize those templates for your industry, company, and departments
- Helps you create effective training pages
- Makes reporting suspect emails easy through a button in the email client or browser
- Evaluates messages to determine if they contain Indicators of Phishing (IOP), enabling analysts to identify active phishing campaigns more quickly.
- Provides statistics on simulation results and employee reporting, so analysts can track the improvement of the organization's phishing awareness over time
- Never collects confidential information
- Is very economical
- Was designed by Rapid7, a leading provider of vulnerability management, penetration testing, application security, incident detection and response, and log management solutions, including the world-renowned Metasploit penetration testing software

Learn more about how Rapid7 InsightPhishing can protect you against phishing attempts at: rapid7.com/insightphishing



ABOUT RAPID7

Rapid7 (Nasdaq:RPD) powers the practice of SecOps by delivering shared visibility, analytics, and automation so that security, IT, and Development teams can work together more effectively. The Rapid7 Insight platform empowers these teams to jointly manage and reduce risk, detect and contain attackers, and analyze and optimize operations. Rapid7 technology, services, and research drive vulnerability management, application security, incident detection and response (SIEM), orchestration and automation, and log management for more than 7,200 organizations across more than 120 countries, including 54% of the Fortune 100. To learn more about Rapid7 or join our threat research, visit www.rapid7.com.