CyberSecurity

BASIC TIPS FOR EMPLOYEES:

The Complete Guide to Secure Behaviour Online and in the Office

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Introduction

The Need to Educate Employees on Cybersecurity

When developing cybersecurity programs, many businesses focus on protecting their infrastructure perimeter and device endpoints (firewalls, antivirus etc.). After all, that's where cybercriminals usually first gain access and wreak havoc on a company's digital access.

But it's also important to consider what happens when a threat bypasses perimeter defences and targets an employee. This occurs in a variety of manners, it could be through a malicious email or text, or even a voicemail that might prompt an employee to respond with confidential company information. There's also the possibility of an offline attack from inside the office. This is where an employee or an office visitor might gain access to valuable data by quickly taking something carelessly left on a desk.

According to a June 2016 report by the Register, 48%, of small businesses in the UK were hit by cyber-crime in the previous year. Despite these numbers, only one in five businesses saw cybersecurity as 1 a business priority. These numbers indicate that there is a pressing need for better cybersecurity. The issue is not going away anytime soon, if anything, it's only getting worse.

In this book, we explore the need for employees to practice strict and secure cybersecurity habits in order to thwart digital attacks in the office and the home. We also present the key steps SME business owners can take to educate their employees to help secure their company's data and intellectual property.

We can't stress enough the importance of security awareness training for internal employees. Educating them on what it takes to protect proprietary documents and data is critical. Any leaks— unintentional and intentional—could hurt the business in the form of information that assists a competitor, violates regulations, or harms the corporate image. Leaks can also hurt employees from the standpoint of personal information that might be exposed. Lastly, customers and business partners could be at risk, compromising the industry reputation of any business that does not properly protect confidential information. It only takes one incident to completely destroy any goodwill you established and built with your customer base.

Chapter 1

Physical Security Precautions

It makes complete sense and sounds so simple, but keeping a clean desk is often overlooked when talking about data security. It's also the perfect place to start the discussion with employees.

Employees that keep a cluttered desk tend to leave USB drives and smartphones out in the open. They also often forget to physically secure their desktops and laptops so someone can't simply walk off with them.

A messy desk also makes it more difficult to realise something is missing such as a folder with hard copy print-outs of customer lists. A cluttered desk can also delay the detection of any theft—perhaps by days or even weeks if the employee is out of the office. Such delays make it more difficult to determine who the perpetrator is and where the stolen material might now be located.

Encouraging employees to maintain a neat desk pays off in two ways. Firstly, digital and paper assets are kept more securely. Secondly, employees with clean desks are more apt to be productive because they can quickly—and safely—access the resources they need to do their jobs.

The Common Messy Desk Mistakes to Avoid

The following list presents 11 "messy desk" mistakes employees are prone to commit and which could cause irreparable harm to the business, the employee, fellow employees, customers and business partners. These are all bad habits for which to educate employees to stop:

1 Leaving computer screens on without password protection: Anyone passing by has easy access to all the information on the device; be sure to lock down screen settings.

2 Placing documents on the desk that could contain sensitive information: It's best to keep them locked up in drawers and file cabinets.

3 Forgetting to shred documents before they go into the rubbish or recycling bin: Any document may contain sensitive information; it's best to shred everything rather than taking a risk.

4 Failing to close file cabinets: This makes it easy for someone to steal sensitive information and more difficult to realise a theft has occurred.

5 Setting mobile phones and USB drives out in the open: They likely contain sensitive business or personal information and are easy to pick up quickly without being caught in the act.

6 Neglecting to erase notes on whiteboards: They often display confidential information on products, new ideas and proprietary business processes.

7 Dropping backpacks out in the open: There's often at least one device or folder with sensitive information inside.

8 Writing user names and passwords on slips of paper or post-its: This is especially important given that user names and passwords are typically used to log in to more than one site.

9 Leaving behind a key to a locked drawer: This makes it easy to come back later—perhaps after hours when no one is around—and access confidential files.

10 Displaying calendars in the open or on the screen for all to see: Calendars often contain sensitive dates and/or information about customers, prospects and/or new products.

11 Leaving wallets and credit cards out on the desk: This is more likely to impact the employee, but wallets may also possess corporate credit cards and security badges.

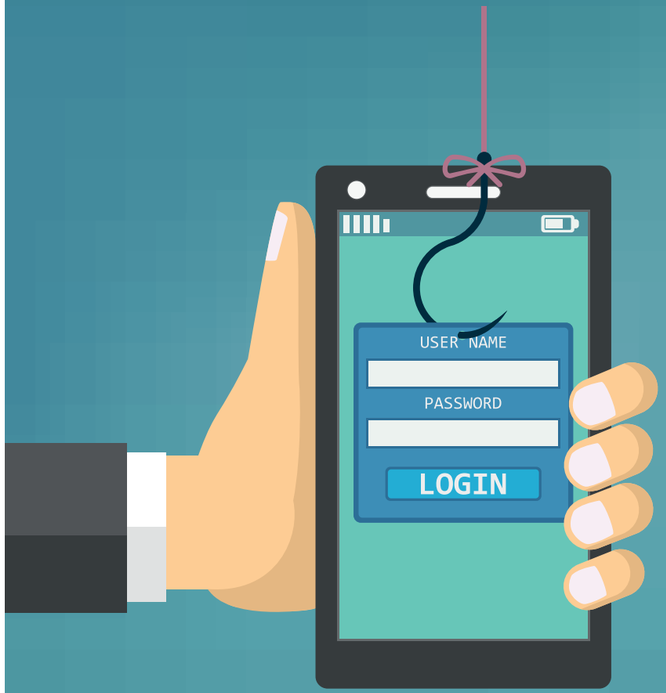
In today's fast-paced world where employees are always on the go, it takes too much time to determine whether documents, USB drives, devices and other items contain sensitive information. The safe bet is to make sure everything is filed away and kept locked up or else properly destroyed.

Chapter 2

Email Threats

Social engineering is non-technical, malicious activity that exploits human interactions to obtain information about internal processes, configuration and technical security policies in order to gain access to secure devices and networks. Such attacks are typically carried out when cybercriminals pose as credible, trusted authorities to convince their targets to grant access to sensitive data and high-security locations or networks.

An example of social engineering is a phone call or email where an employee receives a message that their computer is sending bad traffic to the Internet. To fix this issue, end users are asked to call or email a tech support hotline. They are then being prompted to give information that could very likely give the cybercriminal access to the company's network.



Social Engineering Inboxes and VoiceMail

Phishing Email

One of the most common forms of social engineering is email phishing—an attempt to acquire sensitive information such as usernames, passwords and credit card data by masquerading as a trustworthy entity. Phishing is likely the #1 primary email threat employees need to focus on.

Such emails often spoof the company MD, a customer or a business partner and do so in a sophisticated, subtle way so that the victim thinks they are responding to a legitimate request. ActionFraud says CEO (or C-level) fraud has increased 270 percent in the past two years with over 12,000 reported incidents totalling over £2 billion in corporate losses.

Among the reasons these scams succeed are the appearance of authority—staffers are used to carrying out Management instructions quickly. That's why phishing can be so easy to fall victim to.

Email Security Best Practises—Five Ways to Block Phishing Attacks

Employees should always be suspicious of potential phishing attacks, especially if they don't know the sender. Here are five best practices to follow to help make sure employees don't become helpless victims:

1 Don't reveal personal or financial information in an email—Make sure employees also know not to respond to email solicitations for this information. This includes clicking on links sent in such emails.

2 Check the security of websites—This is a key precaution to take before sending sensitive information over the Internet. <http> indicates the site has not applied any security measures while <https> means it has. Also consider if employees are practicing safe browsing habits. Sites that do not serve a legitimate business purpose are also more likely to contain harmful links.

3 Pay attention to website URLs—Not all emails or email links seem like phishing attacks, so employees may be lured into a false sense of security. Teach them that many malicious websites fool end users by mimicking legitimate websites. One way to sniff this out is to look at the URL (if it's not hidden behind non-descript text) to see if it looks legitimate. Employees may also be able to detect and evade the scheme by finding variations in spellings or a different domain (e.g., .com versus .net).

4 Verify suspicious email requests—Contact the company they're believed to be from directly. If an employee receives an email that looks odd from a well-known company, such as a bank, instruct them to reach out to the bank using means other than responding to the suspicious email address. It's best to contact the company using information provided on an account statement—NOT the information provided in the email.

5 Keep a clean machine—Utilising the latest operating system, software and Web browser as well as antivirus and malware protection are the best defences against viruses, malware and other online threats. It may be difficult for employees to do this, so the business may want to invest in a managed IT services provider who can also be a trusted adviser for all IT needs.

Four Common Phishing Techniques

The scope of phishing attacks is constantly expanding, but frequent attackers tend to utilise one of these four tactics:

- Embedding links into emails that redirect users to an unsecured website requesting sensitive information.
- Installing Trojans via a malicious email attachment or posing ads on a website that allow intruders to exploit loopholes and obtain sensitive information.
- Spoofing the sender address in an email to appear as a reputable source and requesting sensitive information.
- Attempting to obtain company information over the phone by impersonating a known company vendor or IT department.

Chapter 3

Username and Password Management

Although it should be common sense, employees need to avoid the use of passwords that are easy for hackers to guess. Among the top ten worst passwords according to www.splashdata.com are those that use a series of numbers in numerical order, such as <123456>. The names of popular sports such as <football> and <rugby> are also on the list as are quirky passwords such as <qwerty> and even the word <password> itself.

Emphasis should also be placed on the importance of avoiding common usernames. In analysis conducted by the information security firm Rapid7, hackers most often prey upon these 10 usernames in particular3:

- **Username**
- **administrator**
- **Administrator**
- **user1**
- **Admin**
- **Alex**
- **Pos**
- **Demo**
- **db2admin**
- **Sql**

How Attackers Exploit Weak Passwords to Obtain Access

While most websites don't store actual passwords, they do store a password hash for each username. A password hash is a form of encryption, but cybercriminals can sometimes use the password hash to reverse engineer the password. When passwords are weak, it's easier to break the password hash.

Here is a list of common word mutations hackers use to identify passwords if they feel they already have a general idea of what the password might be4:

- Capitalising the first letter of a word
- Checking all combinations of upper/lowercase for words
- Inserting a number randomly in the word
- Placing numbers at the beginning and the end of words
- Putting the same pattern at both ends, such as <foobar>
- Replacing letters like <o> and <l> with numbers like <0> and <1>
- Punctuating the ends of words, such as adding an exclamation mark <!>
- Duplicating the first letter or all the letters in a word
- Combining two words together
- Adding punctuation or spaces between the words
- Inserting <@> in place of <a>

Educating end users on these tactics underscores the importance of creating long passwords (at least 8 characters) and applying multiple deviations (Always include a symbol where possible), rather than something simple like just capitalising the first letter and a number on the end.

Nine Tips to Strengthen Password Security

Employees should always be suspicious of potential phishing attacks, especially if they don't know the sender. Here are five best practises to follow to help make sure employees don't become helpless victims:

1 If you have a complex password (an 8 character, non-dictionary word, with mixed case, numbers and symbols) then password changes should be minimal, for all other passwords we recommend changes every 60 days.

2 Use different passwords for each login credential.

3 Avoid generic accounts and shared passwords.

4 Conduct audits periodically to identify weak/duplicate passwords and change as necessary.

5 Pick challenging passwords that include a combination of letters (upper and lower case), numbers, and special characters (e.g. <$>, <%> and <&>).

6 Avoid personal information such as birth dates, pet names and sports.

7 Use passwords or passphrases of 8+ characters.

8 Use a Password Manager where users need just one master password.

9 Don't use a browser's auto-fill function for passwords.

An advanced and under-used password security tip to consider is two-factor authentication, which is a way for websites to double confirm an end user's identity. After the end user successfully logs in, they receive a text message or enter a code from an app to then input in order to authenticate their ID.

This approach makes sure that end users not only know their passwords but also have access to their own phone. Two-factor authentication works well because cybercriminals rarely steal an end user's password and phone at the same time. Leading banks and financial institutions enable two-factor authentication by default, but if not, the service can often be turned on by asking the website to do so. More and more non-financial websites are now offering two-factor authentication as well.

Chapter 4

Mobile Security

Mobile security is increasingly becoming a big concern as more and more companies adopt Bring Your Own Device (BYOD) environments, which allow end users to connect to corporate networks through their own (often multiple) devices. Even in cases where a business does not offer BYOD, end users often find a way to log onto business networks on their own.

With personal devices accessing corporate networks, businesses must now protect endpoint devices that are not completely under their control, which opens up the business to greater risk. Trying to gain control over personal devices also presents the challenge of making sure the company does not infringe on personal apps and information employees store on their own devices.

Mobile Device Security Challenges

• **Lost, misplaced, or stolen devices —** remote wiping them quickly is key to protecting sensitive business and personal information.

• **Mobile malware —** hackers are now turning their attention to mobile devices and executing successful breaches through text messages. Android markets can be set up by anyone looking to sell malicious software to unsuspecting customers. Note: While mobile malware affects Androids more than IOS, a few exploits exist for Apple products as well.

• **Unsecure third-party apps —** Unsecure third-party apps—if breached, they can serve as a gateway to other apps on a device and the device operating system, where security controls can be manipulated.

• **Files with sensitive information accidentally emailed to an unauthorised party or posted online—** once something is sent, it's out there forever.

Employees that utilise unsecured public Wi-Fi are another area of concern. Hackers in the vicinity of or on the same network can overtake a device without the end user even being aware, capturing sensitive data in transit. The end user can then become the victim of a man-in-the-middle attack, also referred to as hijacking. The hacker leverages the device so that it turns into an invasive device against other unsuspecting end users.

How Employees Can Secure Their Mobile Devices

Set a PIN or passcode:
This is the first line of defence—if someone wants to access the device, they first need to break the code. This is not an easy task and can operate as a deterrent against theft. Some device manufacturers also provide the option to automatically wipe the device after a few unsuccessful attempts at the passcode or PIN. So even if a phone is stolen, information cannot be accessed.

Use remote locate tools:
Several software solutions help locate lost or stolen devices through GPS and geofencing capabilities. Apple offers a service like this for mobile devices aptly named Find my iPhone. For Android users, the Android Device Manager offers these services, and Windows mobile users have this same option from the Windows Phone website. Similarly, many third-party applications are available in each of the app stores.

Keep devices clean:
Phones are mini-computers, and just like "big" computers, they need to be cleaned up from time-to-time. Utilising an antivirus and malware scanner is always a good idea. Malware can compromise information stored on mobile devices and has a snowball effect that continuously piles up until it slows down or stops the device.

Mobile Threats Jeopardising Company Data

Mobile Device Management (MDM) solutions help businesses and their employees apply these best practises by providing the ability to remotely wipe any devices that are lost or stolen. Such solutions also isolate personal apps from corporate apps in separate digital containers. This means that personal information remains private, and when an employee leaves the company, only their corporate apps and data are deleted while their personal apps and data are left intact.

By deploying an MDM platform, businesses can also enforce the use of passcodes to access devices, and they can apply geofencing capabilities that allow a lost device to be more easily located. End users can also be restricted to using only the corporate apps for which they have proper authorisation. MDM also protects devices from jailbreaking and rooting—where hackers try to gain access to the operating system to open security holes or undermine the device's built-in security measures.

Chapter 5

Secure Website Browsing

When end users venture out onto the Internet, it's easy to get tangled up in the vast web of threats lurking on many website pages. Some of them are apparent, but others are well hidden.

Malvertising— a form of malicious code that distributes malware through online advertising—can be hidden within an ad, embedded on a website page, or bundled with software downloads. This type of threat can be displayed on any website, even those considered the most trustworthy. According to security firm RiskIQ, malvertising increased by 260% in the first half of 2015 compared to the same timeframe in 2014.5

End users also need to beware of **social media scams.** Hackers have created a playground of virtual obstacles across all the major social media sites. According to an article in The Huffington Post, some of the most common Facebook hacks and attacks include click-jacking, phishing schemes, fake pages, rogue applications and the infamous and persistent Koobface worm. Koobface worm is particularly malicious as it gives attackers control of the victim's machine while replicating the attack to everyone on their Facebook contact list.

Twitter isn't immune to security issues either. Since the microblogging site is both a social network and a search engine, it poses extra problems. According to CNET News, just 43 percent of Twitter users could be classified as "true" users compared to the other 57 percent, which fell into a bucket of "questionable" users. Among the things to watch for on Twitter are direct messages that lead to phishing scams and shortened URLs that hide malicious intentions.

As for **Web-based exploits**, Internet websites are now the most commonly-used angles of attack, most often targeting software vulnerabilities or using exploits on the receiving client. This makes keeping up-to-date browsers paramount for all employees.

Website Browsing Best Practises for Employees

- Be conservative with online downloads.
- Beware antivirus scams.
- Interact only with well-known, reputable websites.
- Confirm each site is the genuine site and not a fraudulent site.
- Determine if the site utilises SSL (Secure Sockets Layer), a security technology for establishing encrypted links between Web servers and browsers.
- Don't click links in emails—go to sites directly.
- Use social media best practises.

Chapter 6

The Value of your IT Support Provider in Ensuring Employee Cybersecurity

Partnering with your IT Support Provider to focus on IT security can bolster your cybersecurity defences. This is especially true when it comes to end user error. All the tools and solutions in the world won't protect your business from every attack. Human error is still highly dangerous, and many employees grow complacent at some point as they fail to follow best practises.

A provider that offers mobile device management (MDM) can assist in deploying automatic and remote device-locate and device-wipe services in cases where mobile devices are lost or stolen. They can also offer antimalware and antivirus solutions to keep data on mobile devices as well as desktops protected.

Partnering with an IT Support Provider for your Cyber Security makes sense because they proactively prevent security leaks that employees might cause and mitigate damage if a leak occurs. Here's a sampling of the benefits that an IT Support Partner can provide:

- *Keeps employee devices updated with the latest antivirus and antimalware software.*
- *Applies updates to programs and applications when new versions and fixes become available.*
- *Applies operating system patches when first available on a regular schedule that you can configure.*
- *Provides security assessments to identify weaknesses in your existing mobile security program.*
- *Offers guidance on how to mitigate any mobile security program risks*
- *Offers guidance and certification to the Government Cyber Essentials standard.*

Education and Technology: A Winning Cybersecurity Combination

The journey to enhancing your businesses cybersecurity posture begins with educating your employees. The tips provided within this eBook along with some basic common sense can go a long way in making sure sensitive information does not fall into the wrong hands.

Proactively identify and thwart potential attacks as well as react expediently if a successful attack occurs. This is where a managed IT services provider can assist. They eliminate the need for your business to keep up on the latest antivirus, antimalware and alert technologies. You also don't need to expend the necessary resource time to deploy and manage such solutions, which often fall beyond the bandwidth and expertise of internal teams.

Succeeding in applying the necessary cybersecurity measures is paramount to your long-term business success. In today's world of advanced hackers, who revel in breaching corporate networks, confidential information will always be at risk. Businesses must take the necessary steps to protect their intellectual property, their confidential information and their reputations while also safeguarding their employees, customers and business partners.

Who We Are

Southern IT Networks are an outsourced IT Provider who also help businesses like yours have robust and reliable cyber defences, through technology, employee education and accreditation to the the government Cyber Essentials and IASME Governance standards.

Cyber Security
We ensure that systems are secure, and your business complies with accredited standards.

IT Support
We offer proactive support with 24/7 monitoring & alerting for a low fixed monthly fee.

Business Continuity
We ensure that your business is up and running swiftly, with minimal impact on the business.

Office 365 Support
Boost your productivity by working from anywhere while staying secure with Office Suite.

Learn more at **www.SouthernIT.com** or call us on **01323 287828**

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