Cybersecurity

Cybercrime: How to protect yourself and your office data

Grant Thornton | Malta

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Contents

Introduction to cybercrime

Cybercrimes can be carried out by individuals, hackers' collectives, and Government agencies. While the objective of the first two groups may be gaining financial benefits by stealing and selling information, state actors aim at gathering data such as government and company records, and personal information about private citizens, which can be used for corporate and military espionage with the aim of achieving a strategic advantage over a rival nation.

In recent years, the deep web has emerged as the digital playground for criminals involved in a number of illegal transactions, which may include the sale of drugs, weapons, and information, as well as human trafficking. The deep web (estimated to be 500 times larger than the "regular" internet) can only be accessed using dedicated browsers, such as Tor. However, internet users can be targeted even while browsing the "regular" internet. Here are the most common risks:

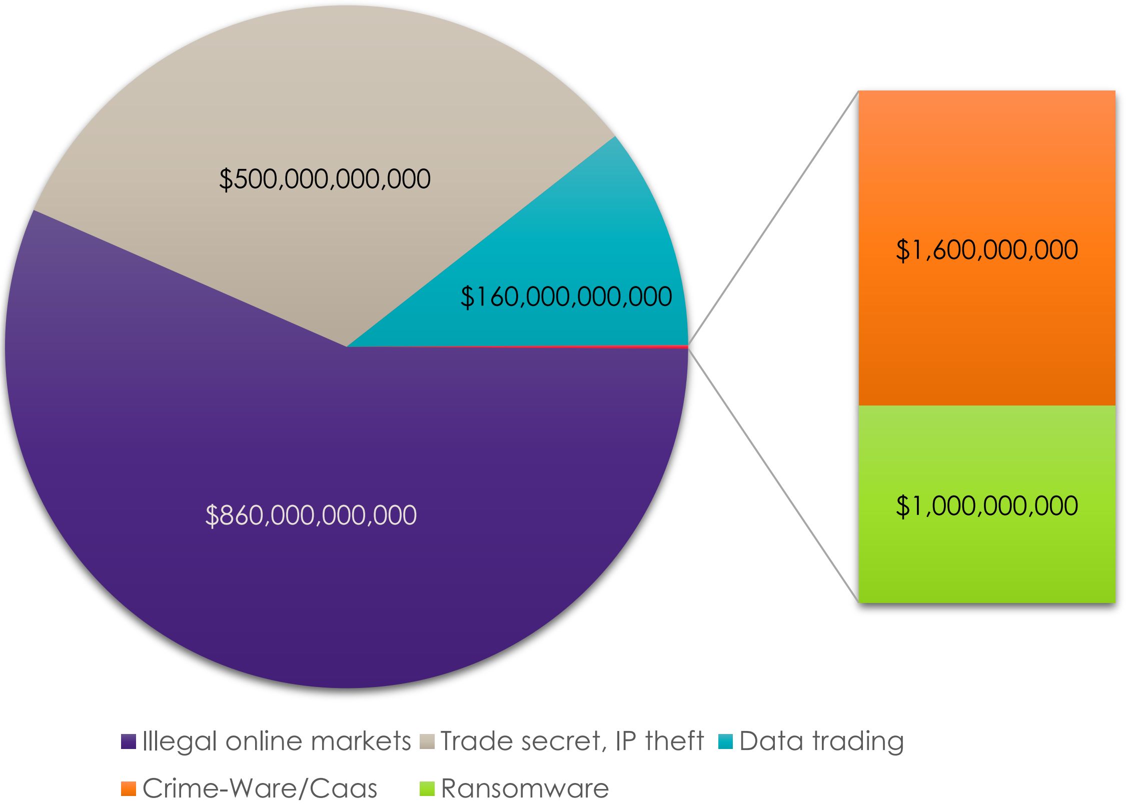
Malicious advertising: consists in tricking the user into clicking an advertisement (usually a banner) which redirects him to a website infected by a virus or malware that is automatically downloaded into the computer or mobile device (05);

Phishing: phishing is used to fraudulently obtain sensitive data such as usernames, passwords, and credit card details. Phishers use what is called "email spoofing", which consists in sending an email, apparently originated by a legitimate entity (such as a bank), to trick the recipient into opening a link which redirects him to a cloned version of a legitimate website. At this point the target is asked to provide sensitive data, such as credit card details, usernames, and passwords which will be collected by the hacker (05);

Social engineering: is a tactic used to establish direct contact with the target person through email, telephone calls, and other online communication channels. The aim is to build trust and convince the target to provide sensitive private information which can be used for fraudulent purposes (05);

Ransomware: this is a malicious software which is injected into a target computer to deny access to its user until a ransom is paid to the attacker (usually using cryptocurrencies). The average payment in 2018 amounted to $1077 per device (05, 06);

Hacking: perhaps the most common cybercrime offence. Hacking is the act of gaining illegal access to a computer, a network, or a website. The hacker can then inject viruses, delete, steal, or modify data (05).



In 2018 cybercrime has generated a staggering 1.5 trillion USD in revenue. The pie chart in this page shows how more than 50% of the total proceedings (860 billion USD) generated by online criminal activities have been the result of transactions carried out on illegal marketplaces established in the deep web (also known as dark web)(02). To fully understand the extensiveness of online criminal activities, one has to consider how the revenue generated annually is more than three times higher than that of Walmart (a Fortune 500 company). The table below shows the yearly income of cybercrime compared to the Top 5 Fortune 500 companies (02).

Organization	Annual revenue in USD
Cybercrime organizations	1,500,000,000,000
Walmart	485,873,000
Berkshire Hathaway	223,604,000
Apple	215,639,000
Exxon Mobil	205,004,000
McKesson	192,487,000

Both individuals and organisations can fall victim to cybercrime. This short guide aims at highlighting the most common threats and how one can protect personal and corporate data from falling into the wrong hands.

Cybercrime in the European Union

The EU's response to online criminal activities has been to implement a specific legislation and seek operational cooperation to support the EU member states in setting up a cyber security strategy.

To this regard, over the past two decades, the EU has implemented a number of directives:

2013: a directive on attacks against information systems;

2011: a directive on fighting online sexual exploitation and child pornography;

2002: an ePrivacy directive;

2001: a Framework Decision on fighting fraud and counterfeiting of non-cash means of payment;

As of December 2018, the EU has strengthened its cybersecurity policy, after a political agreement was reached on the Cybersecurity Act (08, 09).

In 2013, Europol set up the European Cybercrime Centre (EC3) to strengthen the law enforcement response to cybercrime in the EU. Every year the centre release the Internet Organised Crime Threat Assessment (IOCTA), a strategic report on key findings and emerging threats and developments in cybercrime.

Relevant statistics

In 2018, almost 700 million people fell victim to at least one type of cybercrime. This number represents almost 10% of the world's total population.

- cyber criminals generate a recorded revenue of $1.5 trillion annually (06);
- businesses face attacks as many as 16,856 times a year (06);
- 30% of fake emails are opened (06);
- hackers' earnings are 10 to 15% higher than those of non-cyber criminals (06);
- a hack, on average, occurs every 39 seconds, which means that more than a total of 800,000 hacks occur yearly (06);
- every year, $80 billion of the currencies held in cryptocurrencies is used for money laundering (06);
- China was the most targeted country in 2018, with 41% of the attacks originating from China itself (01);
- Netherlands is considered to be the most prepared country to face a cyberattack, with its preparedness rating at 60% (08);
- Malta is considered to be the most vulnerable country in the EU, with a 42% vulnerability score. Finland, on the other hand, is considered to have the lowest chance of being attacked, with a percentage of just 29% (08);
- Malta is the least prepared country in the EU zone, with its preparedness score being 34%. Malta is given a rating of 40% when it comes to cyber security commitment and 27% when it comes to the percentage of Protected Internet Connections (08);

- in 2018, it only took 12 data breaches to expose more than 100 million sensitive records (11);
- more than half a billion records about Facebook users were publicly exposed in a 2019 breach (11);
- in 2018, 53% of cyberattacks on business networks resulted in more than a $500,000 cost (11);
- more than 50% of crimes in the United Kingdom are carried out online (11);
- phishing has increased by 250% and is becoming even more difficult to detect (11);
- over 60% of online frauds are performed through a mobile phone, 80% of which are carried out using mobile applications;
- child pornography is estimated to be a 3-billion-dollar industry (05);
- around 73% of users use the same password for different platforms, which expose them to password theft (11).

Case study: the Bank of Valletta money heist (2019)

On February 13, 2019, hackers broke into Bank of Valletta's system (BOV) and transferred €13 million to several foreign accounts.

The breach was discovered after 30 minutes, and the bank enforced a security lockdown, stopping all BOV-operated point-of-sale process card payments and preventing ATMs from dispensing currency.

BOV resumed its operations the following day, confirming that no ATMs, cards and client records had been tempered with. The hackers managed to transfer the money to banks in the UK, US, Czech Republic and Hong Kong.

As of September 2019, €10 million (out of the 13 stolen) have been recovered (17,18,19,20).

Case study: the Sony Pictures hack (2014)

On November 24, 2014, Sony Pictures was hacked by a group called "The Guardians of Peace".

The hack involved stealing large amounts of information, including email communications between employees. The company's network was also down for days, as Sony struggled to fix security-related issues.

It is widely believed that the attack was carried out by Bureau 121, North Korea's cyberwarfare unit, under direct orders from Kim Jong Un, who was being ridiculed by a movie produced by Sony Pictures and in the process of being distributed in cinemas worldwide. Sony ultimately decided to suspend the distribution of the movie (03, 04).

How to protect yourself

Although it will never be possible to completely avoid being targeted by hackers, it is nonetheless important to mitigate the risk of an attack. The following are some useful precautions one can take.

Choose robust passwords

The most common (and weakest) passwords are “123456” and “password” as well as birth dates. Passwords should include at least 10 or more characters, with at least one uppercase letter, one lowercase letter, one symbol, and one number. It is also necessary to use different passwords for each platform and to change them at least every 60 to 120 days (12).

Regularly backup your data

A safe way to back up data is by using the 3-2-1 Backup Rule. This is a common approach whereby the data is saved and copied in 3 different platforms, 2 of which are on different devices or media storage, with 1 copy stored on an offset location or in a cloud (12,13).

Update your operating system and software

It is crucial to update operating systems and software when required, as these updates often come with the latest security patches (12).

Install an antivirus software

An antivirus software does not only detect any viruses downloaded on a device, but it can also warn the user about suspicious email attachments and unsafe websites. It has to be noted how a number of fake antivirus software (containing viruses or malwares) can be found online. It is therefore necessary, to download software from trustworthy websites only (15).

Visit secure websites only

Make sure that you only visit websites whose address starts with “https” instead of simply “http”. The “s” means that the website is safe, as it uses a HyperText Transfer Protocol Secure which, among other things, allows for the exchange of encrypted information with the user (16).

Be cautious when connecting to public Wi-Fi networks

When a device is connected to a public Wi-Fi network, nearby devices which are on the same network may be able to intercept data. Therefore, one should only use a Virtual Private Network (VPN) which creates a safe and encrypted connection (14).

Carry out a vulnerability assessment

A vulnerability assessment can only be carried out by IT professionals. These specialists will examine a network and compile a report to recommend any corrective action which may be necessary to make it safe. Vulnerability assessments should also be carried out on mobile devices and personal computers (12).

Case study: the Yahoo! data breaches (2013-2014)

In 2013, Yahoo! fell victim to one of the most extensive data breaches in history, when the personal data, passwords and emails of 3 billion users were stolen by hackers. A second attack (targeting 500 million accounts) took place in 2014. The intruders managed to steal security questions and backup emails, which are used to reset lost passwords. The information illegally obtained, was found to have been sold on the deep web (07, 10, 24,25).

Case study: the Sony Playstation Network data breach (2011)

In 2011 hackers stole the names, home addresses, emails, birthdates, usernames, passwords, logins and security questions of 77 million users of the PlayStation Network (PSN). The information was sold on the deep web for illegal purposes. As a result of the attack, Sony shut down the PSN for one week until a proper investigation could be completed by an external security firm. Further protection measures were put in place following the findings of the investigation (21,22,23).

How Grant Thornton can help keep your office data safe

Under GDPR, failing to adequately protect your customers' data can result in hefty fines. We can help.

Grant Thornton operates a team of qualified cybersecurity experts, who can carry out a full vulnerability audit of your business and provide you with solutions to ensure that your corporate and customer data is adequately protected against internal and external threats. Get in touch now with one of our experts to find out how we can help you secure your office data.

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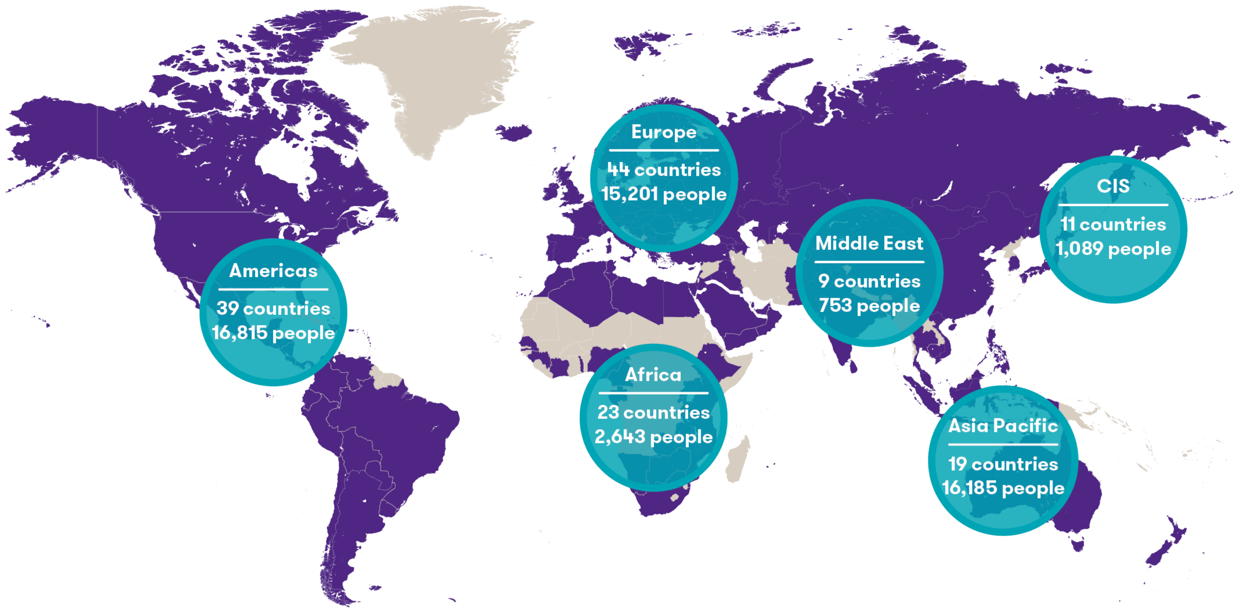

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USD5.45bn (2018 revenue) | 53,000 people | 700+ offices | 135+ countries

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