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Data Breach Response Strategy

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1 Introduction

Laws around the world impose strict data security obligations on organisations that process personal data, and in some cases require them to report data breaches to data protection authorities and individuals affected by the data breach. In addition to significant sanctions for failing to take appropriate technical and organisational measures (TOMs) to protect data, and potentially for failing to report a data breach as required by law, organisations may suffer, among other things, loss of stakeholder trust, reputational damage, and disruption of business activities as a result of a data breach, leading to economic losses. In addition, there are significant costs associated with managing a data breach and remediating the damage caused by the breach.

Investing in data security to prevent data breaches, such as those caused by cyberattacks or employee errors, and being prepared to respond in the event of a data breach is therefore worthwhile not only to comply with the legal obligations, but also to avoid negative consequences for the organisation and its stakeholders.

This chapter elaborates on what constitutes a personal data breach and what a data breach prevention and response strategy might look like. It is limited to dealing with data breaches involving personal data and takes the requirements of the General Data Protection Regulation (GDPR) as a starting point, but without limiting itself to the GDPR.

2 What is a Data Breach and its Potential Consequences?

A data breach (also called a personal data breach or security breach) occurs when personal data held by an organisation is lost or subjected to unauthorised access, modification, disclosure, or other misuse or interference. The GDPR defines the term personal data breach as a breach of security leading to the accidental or unlawful destruction, loss, alteration, unauthorised disclosure of, or access to, personal data transmitted, stored, or otherwise processed. Privacy laws in other jurisdictions contain similar, though not identical, definitions.

In its Opinion 03/2014 on data breach notification and its Guidelines on personal data breach notification under Regulation (EU) 2016/679 (WP250rev.01), the Article 29 Data Protection Working Party divided data breaches into three security principles:

- **Confidentiality breach** – where there is an unauthorised or accidental disclosure of, or access to, personal data.
- **Integrity breach** – where there is an unauthorised or accidental alteration of personal data.
- **Availability breach** – where there is an accidental or unauthorised loss of access to, or destruction of, personal data.

Examples of data breaches include the loss or theft of a data carrier (e.g., notebook, phone, USB stick, paper files) containing unencrypted personal data of customers or employees (breach in confidentiality, and potentially availability if there is no backup for the stolen device); the successful penetration of an organisation's computer systems containing personal data for the purpose of copying, exfiltrating, and misusing personal data for malicious purposes (breach in confidentiality and possibly integrity); a ransomware attack in which the attacker encrypts data with a malicious code and then demands a ransom from the attacked organisation in exchange for the decryption key (availability breach, and possibly confidentiality breach); the unauthorised downloading of personal data by a terminated employee for further private use (confidentiality breach); the inadvertent disclosure of personal data by an employee to unauthorised persons inside or outside the organisation, e.g., by sending it to an incorrect address or by sending a file that inadvertently contains personal data not intended for the recipients (confidentiality breach).

A data breach may have various negative effects on individuals and result in physical, material and immaterial damage. It may, for example, cause the affected individual to lose control over his or her personal data or to be restricted in the exercise of his or her personal rights, to suffer financial loss or personal disadvantage, emotional distress, embarrassment or humiliation, or damage to his or her reputation. Possible consequences may also include identity theft or fraud, loss of employment or business opportunities, unwanted marketing or spam, reversal of pseudonymisation, or other significant economic or social disadvantages.

Organisations can also suffer harm as a result of a data breach. Responding to a data breach and potential subsequent complaints and implementing remedial actions may have financial, legal and resource implications. Data breaches can further result in reputational damage and loss of stakeholder trust.

According to the Ponemon Institute's 2021 Cost of a Data Breach Report, the average total cost of a data breach increased by nearly 10% year over year. The amount increased from $3.86 million in 2020 to $4.24 million in 2021, with costs being significantly lower for organisations with more mature security levels. The average total cost was $1.07 million higher for breaches where remote work was a factor in the breach, compared to breaches where remote work was not a factor. The average total cost per record containing personal data was $161. The longer it took to detect the breach, the more expensive it was, with 38% of the costs related to lost business (including business interruption and lost revenue due to system downtime, cost of lost customers and acquiring new customers, loss of reputation, and diminished goodwill). A total of 29% of the costs related to

detection and escalation. The remaining cost drivers were post-breach response (27%), and notification (6%). The costliest initial attack vectors were business emails, followed by phishing, malicious insiders, social engineering, and compromised credentials.

3 Data Breach Notification Requirements

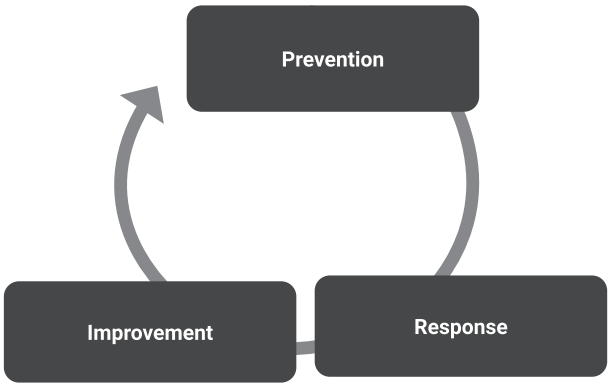
Many countries around the world have introduced data breach notification regulations. The first laws were enacted in the U.S. at the state level starting in 2002 (California). Other countries have followed, such as the EU Member States and the United Kingdom with the GDPR and the UK Data Protection Regulation (UK GDPR), respectively, as well as other countries around the world, such as Australia, Brazil, China, Colombia, Egypt, Ghana, Israel, Kenya, Mexico, New Zealand, the Philippines, Singapore, South Korea, Switzerland, Taiwan, Thailand and Uruguay.

Independent of data breach notification requirements, most countries in the world have introduced data security obligations that must be implemented by data controllers and data processors.

4 Data Breach Response Strategy

Although security requirements and the conditions and modalities of notification obligations may vary from country to country, any organisation that processes personal data and is subject to security and notification obligations should define and implement a data security and breach management strategy to ensure adequate data security and risk mitigation in the event of an incident and be prepared to deal with any data breaches.

The data breach response strategy does not need to be standalone but can and should be aligned with other internal data management and security strategies, e.g., information security, where possible. It should cover three key factors: prevention; response; and improvement.



4.1 Prevention – Implement appropriate TOMs

Even with the best possible security, data breaches cannot be completely avoided. However, data breaches are often the result of a vulnerable and outdated security regime or system weaknesses. Prevention through the adoption of appropriate security measures is therefore key to preventing vulnerabilities in systems or insufficient security that can potentially lead to a data breach.

Data and risk mapping: Only if organisations know what types of data breaches could occur and understand the characteristics of these breaches, they can take the necessary TOMs to reduce the risk of a successful attack or breach.

The basic prerequisite is first that companies know what types of data and personal data they process, who the data subjects are and their locations, where the data is stored and who should have access to it. This knowledge requires the mapping of all data systems, products and services that process personal data and their classification. Organisations should then assess the risk level to their organisation and to individuals in the case of a data breach as well as identify the possible types of attacks and based on that understanding and the level of risk, take the appropriate TOMs to mitigate the consequences in the case of a data breach.

Implementation of TOMs: Based on the risk level, such TOMs may include a state-of-the-art encryption of the data at rest and a separate back-up of the data to help mitigate the consequences of a successful ransomware attack or the loss or theft of a device with personal data. In addition to a state-of-the-art encryption, measures such as key management, regular updates of systems, use of strong authentication methods like two factor authentication, firewalls, etc. may help to mitigate the consequences of data exfiltration. Regular awareness campaigns and training to staff on security aspects, instructions on how to use company devices and information as well as the implementation of technical measures and controls may help to prevent human errors.

External resources and insurance coverage: Besides the implementation of robust TOMs, organisations should evaluate in advance what type of external expertise is required in the case of a data breach and ensure that such expertise is available on short notice, which may require the negotiation of frame contracts in advance. Additionally, organisations may consider holding an insurance policy for data breaches.

Data breach response plan: Finally, organisations should deploy a data breach response plan that sets out procedures, modalities, and responsibilities in the event the organisation experiences a data breach (or a suspected data breach, i.e., a security incident) to respond to a data breach in a timely and efficient manner.

4.2 Response – Implement a data breach response plan

4.2.1. Why a data breach response plan?

Due to the usually very short timelines for reporting a data breach to the data protection authorities and individuals (at least in some countries, including the EU), it is critical that each organisation handling personal data put in place a documented data breach response plan. Implementing such a plan can help organisations in (a) mitigating the impact on the organisation and affected individuals and the costs resulting from the data breach, (b) meeting their data security obligations, (c) protecting important business assets, including personal data of their employees and clients and the company's reputation, (d) dealing with negative media or stakeholder attention, and (e) instilling public confidence and trust in the organisation's capacity to protect personal data entrusted to the company by properly responding to a data breach.

The data breach response plan should be aligned with other plans as appropriate, such as existing security incident response, disaster recovery, business continuity, or contingency plans. This approach can ensure effective management with clear responsibilities, avoid duplication, and leverage synergies.

4.2.2. Content of a data breach response plan

A data breach response plan shall establish the rules and processes on how to handle a data breach in compliance with internal standards and legal and regulatory requirements. It shall outline what a data breach is, possibly providing some concrete examples tailored to the specific organisation, allocate the roles and responsibilities for detecting, responding, and documenting a data breach, describe the process for handling a

data breach, from detection to notification and risk mitigation, and specify the obligations towards third parties processing the data on their behalf.

4.2.3. Establishment of an incident response team

While in small organisations, the managing director or owner is often the person who deals with a data breach, usually with external assistance, establishing an incident response team has proven effective in mid-sized and larger organisations. The purpose of such a team is to ensure that in the event of a data breach, the relevant functions are immediately engaged, and data breaches can be promptly addressed, risks assessed, and any required notifications made in a timely manner.

The composition of the team will depend on the organisation and the nature of the business, but will typically require different skill sets, which can be ensured by involving internal functions and external legal, data forensics, and media management experts. Organisations should assess in advance what type of external expertise will be needed in the event of a data breach and ensure that this expertise is available on short notice. The organisation should maintain and regularly update a current list of team members, including their roles, responsibilities, and contact details, as well as the contact information of their delegates. Team members should receive regular training and participate in mock exercises. The response team should consist of a core team that includes, at a minimum, the data protection officer, and the information security officer, and should be extended to include other functions such as human resources, research and development, or communications, as well as outside legal counsel and forensic analysts, depending on the severity and nature of the incident.

The incident response team shall be responsible for managing the overall data breach, investigating, and reviewing the circumstances of the data breach and the facts of the case, engaging relevant functions and external experts, assessing the level of risk, determining remediation actions, determining the need for internal escalation, and notifying data protection authorities and individuals. The data breach response plan should identify the specific responsibilities of each member of the response team.

4.2.4. Process for responding to a data breach

The process for responding to a data breach typically includes different steps, starting from the detection of the data breach and reporting to the immediate containment, investigation of the data breach, risk evaluation, internal escalation, notification, and documentation. *Please see the illustration at the bottom of the page.*

Detection and reporting: Each employee should understand how to recognise a potential data breach and know how to report such a data breach or suspected data breach (security incident) to the incident response team, that will immediately perform a preliminary evaluation and determine whether the incident qualifies as a data breach.

Containment: Once the source of the data breach has been identified, the data breach should be contained immediately to prevent further exposure of personal data, for example, and depending on the concrete impact, by remediating identified vulnerabilities in systems, recovering records, shutting down the compromised system, restricting access to data, recalling sent emails containing personal data that were inadvertently attached to the email or sent to the wrong recipients, or deleting them from the accounts of the unintended recipients.

Investigation: The incident response team should investigate and document the facts and circumstances of the data breach, including: the causes of the data breach such as any vulnerabilities in the computer systems; the nature of the data breach (breach of confidentiality, availability, or integrity); the nature, scope, and sensitivity of the personal data involved, as well as the origin of the data; the type, number, and location of data subjects; applicable data protection laws; and notification requirements.

Risk evaluation: Based on the outcome of the investigation and taking into account the type of personal data compromised, the extent of the data breach, and the type and number of individuals affected by the data breach, the incident response team must assess the level of risk of the data breach to the rights and freedoms of data subjects and the organisation. To assess the level of risk, they must determine the impact that the data breach could have on the rights and freedoms of individuals and the likelihood that this impact will actually occur. The greater the impact and the greater the likelihood, the higher the risk. Essential elements for determining the impact on individuals are the ease of their identification (how easily can an individual be identified from the compromised data?) and the severity (how much harm can be caused by the data breach?). Key elements in determining the likelihood of the identified impact actually occurring are the potential vulnerabilities due to the lack of appropriate TOMs and the ability to exploit those vulnerabilities or the intent of the individuals accessing or possessing the data (was the data exfiltrated by a hacker with malicious intent or sent by an employee to the wrong recipient in the same organisation by mistake?).

Escalation: The data breach response plan should define the internal escalation process, which should depend on the severity and extent of the breach, the level of risk identified, and the requirement for notification.

Notification: The incident response team determines, based on all the facts and the risk evaluation, whether the data breach must be notified to local data protection authorities and affected individuals, and if so, when, where, and how. The data breach response plan should identify which function is responsible for notifying the authorities and individuals. Generally, this task is assigned to the data protection officer. It is also advantageous if possible scenarios requiring notification have already been worked through and documented.

Documentation: Any data breach, whether notified to data protection authorities and/or individuals or not, shall be documented, including the facts and circumstances of the breach, its effects, and the corrective actions taken and planned to prevent future similar data breaches, the risk evaluation, and the appropriate justification for the decisions made with respect to the notification to data protection authorities and individuals.

4.2.4. Considerations in implementing a data breach response plan globally

Given the large number of countries with data breach notification requirements, globally operating companies are faced with the challenge of finding solutions that are as comprehensive and

uniform as possible in order to, on the one hand, deal with data breaches uniformly and efficiently across the organisation and, on the other hand, take into account the specifics of the individual countries.

When implementing a data breach response plan globally, companies must take into account locally applicable data privacy and security laws, as well as notification requirements and modalities, languages, and cross-border data transfer restrictions, and align the data breach response plan accordingly. Companies should also decide what the internal reporting channel for discovered data breaches should be. Depending on their organisational set-up, they could establish one global reporting channel or separate regional or local reporting channels. Also, organisations must determine where data breaches should be documented (in a centralised system or locally), and whether a global incident response team should be deployed around the world or regional/local response teams should be established.

4.3 Improvement – Address security gaps to prevent future (similar) data breaches – regularly re-evaluate the data breach response plan to increase effectiveness

The third phase of the data breach response strategy consists of improvements in two respects: addressing identified vulnerabilities to prevent future similar data breaches; and increasing the effectiveness of the data breach response plan.

Address any identified security vulnerabilities to prevent future similar data breaches. Once the notification and documentation process is complete, the incident response team should determine and implement appropriate measures to prevent future similar data breaches. Depending on the concrete type of data breach and the root cause, such measures may include, for example, conducting regular security audits and reviewing and updating policies and procedures in light of lessons learned, reviewing and amending contracts with third parties to ensure appropriate handling of data breaches. Other measures may include, for example, restricting the downloading of personal data to mobile devices without adequate security protection, such as state-of-the-art encryption or the establishment of separate backups of specific data sets, and regular training for the business units concerned.

Periodically re-evaluate the data breach response plan to increase its effectiveness taking into account changes in applicable data protection laws, best practices and internal business requirements.

5 Conclusion

Data security is one of the essential obligations of any organisation that processes personal data. A breach of the confidentiality, integrity or availability of data can have negative consequences not only for the individuals concerned, but also for the responsible organisation. A data breach can result in notification obligations, significant costs to contain the data breach and repair the damage caused by the breach, as well as loss of stakeholder trust, reputational damage, and business disruption. Investing in data security to prevent data breaches, such as those caused by cyberattacks or human error, and being prepared to respond in the event of a data breach is therefore essential for any organisation to meet its legal obligations and avoid negative consequences for itself and individuals affected.

Daniela Fábián Masoch is the founder and executive director of FABIAN PRIVACY LEGAL GmbH. Daniela has more than 30 years of experience in privacy and data protection, employment law, risk and programme management, security, and related matters. She advises multinational companies, SMEs, and start-ups from various industries mainly in the EU, Switzerland and the US on data, data protection, security and related issues, particularly in the life sciences, pharma and medical device sectors.

Daniela supports her clients in evaluating, developing, implementing, and monitoring data protection strategies, governance models and global data protection programmes and data transfer mechanisms with a pragmatic approach. She also advises companies on data protection and cybersecurity, particularly on prevention and the creation and implementation of data incident response plans.

Daniela is a member of various data protection associations and a lecturer at FernUni Switzerland for the CAS Data Protection and at Swiss Health Quality Association ("shqa") for Digital Marketing.

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