### **Data leak worksheet - Google Cyber security Professional Lab document project by Kiernan Rodriguez**

**Incident summary:** A sales manager shared access to a folder of internal-only documents with their team during a meeting. The folder contained files associated with a new product that has not been publicly announced. It also included customer analytics and promotional materials. After the meeting, the manager did not revoke access to the internal folder, but warned the team to wait for approval before sharing the promotional materials with others.

During a video call with a business partner, a member of the sales team forgot the warning from their manager. The sales representative intended to share a link to the promotional materials so that the business partner could circulate the materials to their customers. However, the sales representative accidentally shared a link to the internal folder instead. Later, the business partner posted the link on their company's social media page assuming that it was the promotional materials.

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| **Control** | **Least privilege** |
| **Issue(s)** | *What factors contributed to the information leak?*  *Access to the internal folder was not limited to the sales team and the manager for inadequate permission privileges. The business partner should not have been given permission to share the promotional information to social media. This is what allowed the issue to evolve to a greater degree of failure.* |
| **Review** | *What does NIST SP 800-53: AC-6 address?*  *NIST SP 800-53: AC-6 addresses how an organization can protect their data privacy by implementing least privilege. It also suggests control enhancements to improve the effectiveness of least privilege to manage security controls stronger.* |
| **Recommendation(s)** | *How might the principle of least privilege be improved at the company?*  *Don’t give information to those who can’t be trusted within the industry to create more issues of potential criminal intent of failure. Restrict access to sensitive resources based on user role for who’s able to gain access strictly for the position a person is working for. Also, regularly auditing user privileges will make security flaws less likely to occur for any reason to allow potential bad actors to exist in this scenario.* |
| **Justification** | *How might these improvements address the issues?*  *This will assist in making sure security enhancements strictly monitor who is being given access for particular things. These measures will heavily prevent bad actors from wanting to do harm in the future more. The means of enhancing all security controls produces a stronger defense in depth infrastructure to remain heavily successful in any organization that wants to succeed long term in the future. This is an important fundamental to hold in life and anything to do to achieve safety, liberty and proper defense in the freedom of your business endeavors to achieve a successful lifestyle to maintain awareness to deter against any threat that wishes to do bad harm in the long term. Data leaks can be prevented if shared links to internal files are restricted to employees only with specific permission access to files they can use. Also, requiring managers and security teams to regularly audit access to team files would help limit the exposure of sensitive information. This will help long term for the effect of sustaining proper security of anything to prevent bad actors from doing harm onto anyone.* |

### **Security plan snapshot**

The NIST Cybersecurity Framework (CSF) uses a hierarchical, tree-like structure to organize information. From left to right, it describes a broad security function, then becomes more specific as it branches out to a category, subcategory, and individual security controls.

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| **Function** | **Category** | **Subcategory** | **Reference(s)** |
| **Protect** | PR.DS: *Data security* | PR.DS-5: *Protections against data leaks.* | NIST SP 800-53: AC-6 |

In this example, the implemented controls that are used by the manufacturer to protect against data leaks are defined in NIST SP 800-53—a set of guidelines for securing the privacy of information systems.

**Note:** References are commonly hyperlinked to the guidelines or regulations they relate to. This makes it easy to learn more about how a particular control should be implemented. It's common to find multiple links to different sources in the references columns.

### **NIST SP 800-53: AC-6**

NIST developed SP 800-53 to provide businesses with a customizable information privacy plan. It's a comprehensive resource that describes a wide range of control categories. Each control provides a few key pieces of information:

* **Control:** A definition of the security control.
* **Discussion:** A description of how the control should be implemented.
* **Control enhancements:** A list of suggestions to improve the effectiveness of the control.

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| **AC-6** | **Least Privilege** |
| Control:  Only the minimal access and authorization required to complete a task or function should be provided to users. |
| Discussion:  Processes, user accounts, and roles should be enforced as necessary to achieve least privilege. The intention is to prevent a user from operating at privilege levels higher than what is necessary to accomplish business objectives. |
| Control enhancements:   * Restrict access to sensitive resources based on user role. * Automatically revoke access to information after a period of time. * Keep activity logs of provisioned user accounts. * Regularly audit user privileges. |

**Note:** In the category of access controls, SP 800-53 lists least privilege sixth, i.e. AC-6.