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## DNA Digitization

### **BLUF**

While DNA digitization offers a good portion of personal and medical benefits, the permanent nature of genetic information can create serious privacy and security concerns. Organizations have to find a way to balance scientific advancement with strong safeguards.

### **Ethics and Curiosity**

Direct-to-consumer DNA testing “companies provide consumers with information about ancestry, health risks, and other genetic predispositions”(Hendricks-Sturup & Lu, 2019). These benefits come in handy when people need to make informed decisions relating to their healthcare. However, unlike a password, DNA cannot be changed if it is exposed in a data breach. Due to the permanence of genetic information, the consequences of a security incident could last a lifetime. While I believe that the benefits of DNA digitization can outweigh the risks, organizations collecting genetic data must have high security and privacy standards.

### **Corporate and Employment Privacy**

One concern in the reading is whether employers should have access to genetic information when hiring. While “collection, storage, and usage of genetic information can be extremely beneficial to biomedical research and preventive medicine” employers using DNA data could lead to discrimination (Lee, Dotson, & Ortmann, 2022). Genetic discrimination is described as people being treated differently based on their traits or potential health risks. If

genetic databases allow unauthorized parties access, individuals could face unfair employment decisions, higher insurance costs, or other forms of discrimination.

### **The “Hacking Humans” Concept**

Humans have been considered the weakest link in cybersecurity because attackers target people rather than technology. However, biological data changes this concept due to DNA being permanent. A compromised password can be reset, but genetic information cannot be changed. This leads to organizations having to treat genetic data as highly sensitive information and have strong protections than those used for personal data.

### **Conclusion**

DNA digitization is a topic that is being discussed more. Therefore, organizations will have to find a way to balance innovation with privacy and security. Implementing strong safeguards, ethical policies, and data management will help protect individuals from long-term biocybersecurity risks.

## References

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