**An Introduction to Cybersecurity**

This paper provides a short description on what cybersecurity is and its importance in everyday life in an IT dominated society. It includes a personal reflection on cybersecurity issues related to my work at the Austrian central bank and concludes with a description of my expectation from completing the master course and related career perspectives.

In the advent of new technologies, like artificial intelligence (AI), internet of things (IoT), and products using a distributed ledger, e.g. for Fintech, cybersecurity has become a major topic for the functioning of society and economy. Information technology pierces through every layer of peoples life. Unsecure IT-Systems can lead to data, and monetary loses, or even worse to human damage.

Cybersecurity is the safeguards and measures to protect IT-Systems and data against malicious attacks. In alignment with the core components of an IT-Landscape, cybersecurity consists of technical areas, but also organizational tasks. Also, the human factor plays a pivotal role in secure IT-Systems. Core to cybersecurity is the building up of effective threat prevention and attack management strategies in order to ensure the smooth working of secure IT-networks and applications. The integrity, confidentiality, and availability of data must be ensured through a strong rights management to control the access to networks, applications, and data. Reoccurring training of employees enables them to identify potential threats, e.g. malicious emails or websites and prevents IT-Systems to be compromised. Through defined processes and measures, an organization should be prepared how to respond, if a cyber-attack is pending or was successful. (Kaspersky, 2020)

Besides the technical and organizational approach to cybersecurity, pictured above, the regulatory approach is worth to mention. For example, the European Union (EU) has identified strategic goals, it persuades with regulations in the field of cyber security including more granular regulations for specific fields, e.g. in the financial sector. To strengthen the resilience against cyber-attacks, the EU wants to facilitate the collaboration between the national competent authorities for the security of information systems. The reduction of cyber-crimes through harmonized minimum standards (directives) and funding related programs is a primary goal. Cybersecurity is also related to cyber-defence and thus related to the European Common Defense Policy. To facilitate the availability of the specific know-how concerning cybersecurity in the EU, security standards shall be established and best practices provided. This involves the public as well as the private sector. For the EU, cybersecurity is also a global cyber-space issue. An international policy shall provide secure information technology infrastructure in third party countries. (Fuster G.G., Jasmontaite L., 2020)

So cyber-security is a very diverse and broad topic. It can be addressed from a technical, organizational, regulatory or defence/crime perspective. The MSC for Cyber Security of the University of Essex addresses this topic through its diverse module structure. A comprehensive entry module gives an overview of the past, present and future developments in cyber-security. Modules in network and information security provide insights in securing business resources by risk analysis and monitoring. Further modules address secure software development and system architecture. Also, the legal perspective and the influence of the human factor are not neglected by the MSC in Cyber Security. Throughout the modules state of the art tools and technologies are introduced to the students. A module in academic practices complements the course. In the final project, the MSC in Cyber Security provides the students with the opportunity to synthesize the skills and knowledge acquired throughout the course. (University of Essex, 2020)

Not only IT-Professionals like software developers or product owners are increasingly concerned with cybersecurity issues but it's more and more becoming a management issue. Since the implementation of standards like ISO27001 or BSI IT-Grundschutz in organizations, cybersecurity pierce through IT-Departments as well as through business departments.

The importance of cyber-security is shown by the fact of rising demand and the lack of cybersecurity professionals. (Herjavec Group, 2018) Master Programs like the MSC in Cyber Security of the University of Essex contribute to close this gap. Through a comprehensive module structure, students gain a wide knowledge in the field of cybersecurity. This gives the graduates the necessary skills in hand to help implement safeguards and measures to facilitate cyber-security in their professional life.

After graduating in cybersecurity, I expect to have the skills and knowledge in hand, to become a cybersecurity professional. In supporting the implementation and operation of IT-Systems in the financial sector from a cyber-security perspective, I hope to contribute to a stable and secure financial system. Subsequently, I plan to deepen my knowledge in financial cyber-security regulations to become a financial cyber-security supervisor. A secure financial system contributes to prospering economic growth.

**References**

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