

Cyber Security and Risk Assessment of the e-Banking Services

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Abstract : Today we are more exposed than ever to cyber threats and attacks at personal, community, organizational, national, and international levels. More aspects of our lives are operating on computer networks simply because we are living in the fifth domain, which is called the Cyberspace. One of the most sensitive areas that are vulnerable to cyber threats and attacks is the Electronic Banking (e-Banking) area, where the banking sector is providing online banking services to its clients. To be able to obtain the clients trust and encourage them to practice e-Banking, also, to maintain the services provided by the banks and ensure safety, cyber security and risks control should be given a high priority in the e-banking area. The aim of the study is to carry out risk assessment on the e-banking services and determine the cyber threats, cyber attacks, and vulnerabilities that are facing the e-banking area specifically in the Kingdom of Bahrain. To collect relevant data, structured interviews were taken place with e-banking experts in different banks. Then, collected data were used as in input to the risk management framework provided by the National Institute of Standards and Technology (NIST), which was the model used in the study to assess the risks associated with e-banking services. The findings of the study showed that the cyber threats are commonly human errors, technical software or hardware failure, and hackers, on the other hand, the most common attacks facing the e-banking sector were phishing, malware attacks, and denial-of-service. The risks associated with the e-banking services were around the moderate level, however, more controls and countermeasures must be applied to maintain the moderate level of risks. The results of the study will help banks discover their vulnerabilities and maintain their online services, in addition, it will enhance the cyber security and contribute to the management and control of risks that are facing the e-banking sector.

Keywords : cyber security, e-banking, risk assessment, threats identification

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