Simulating ERP Cyber Incidents: A Serious Game for Awareness and Incident Management

About

This paper presents the design, implementation, and evaluation of a serious game scenario titled 'ERP-Systems in Need' to raise cybersecurity awareness specifically for Enterprise Resource Planning (ERP) systems. The study applies a Design Science Research approach to build upon an existing game, simulating realistic security incidents to foster experiential learning. The game's effectiveness was evaluated in academic settings to measure its impact on increasing knowledge and preparedness for ERP-related cyber threats.

Problem

Enterprise Resource Planning (ERP) systems are fundamental to business operations but are increasingly vulnerable to sophisticated cyberattacks that can paralyze supply chains and cause significant financial damage. Traditional cybersecurity training methods like lectures are often ineffective at engaging users, and there is a lack of gamified training tools specifically addressing the unique security risks of ERP systems.

Study Outcome

- The serious game 'ERP-Systems in Need' is an effective training tool for increasing knowledge, participation, and preparedness for ERP-related cyber threats.
- A dual-role setup (employee and management) proved valuable for promoting perspective-taking and fostering discussion across organizational levels.
- Both technical and non-technical participants showed increased confidence in identifying and responding to incidents after the game sessions.
- Evaluation results indicate high participant satisfaction and a significant increase in perceived learning content compared to games focused on general IT security.

Keywords

Serious games • ERP • IT security • Cybersecurity • Awareness