

Unit 6: The Great Debate - What Will be the Most Influential Trend in ISM in the Next 5 Years?

1. Describe the main emerging trends in the field.

The integration of AI with cloud computing has brought forth a multitude of complex security concerns. Traditional security measures are insufficient for advanced GenAI-enabled environments, and the shortage of cybersecurity experts who possess knowledge of GenAI only exacerbates this challenge (Huang, 2023).

For instance, here are some of the most emerging trends in Information Security Management (ISM):

Generative AI (GenAI): GenAI rapidly evolves and impacts the security landscape. Large language models like ChatGPT and Gemini are just the beginning. While GenAI promises productivity gains, it poses ethical, trust, and cybersecurity challenges. Security leaders must collaborate proactively with business stakeholders to ensure ethical and secure use of this disruptive technology (Huang, 2023).

Edge Computing is gaining prominence. It involves processing data closer to the source rather than solely relying on centralised servers or cloud-based locations. Edge computing bridges gaps in modern IT infrastructure by offering faster processing, heightened data security, and increased resilience (Bigelow, 2021).

2. Argue for which you believe to be the most influential.

I firmly believe that edge computing will significantly impact current technology trends in the following years. Edge computing offers several advantages over traditional cloud computing, such as enhanced reliability, real-time decision-making, improved sustainability, cost optimisation, compliance with data sovereignty regulations,

enabling innovative applications, empowering remote locations, and streamlining updates and in-life change requests (Overmaat, 2023).

Moreover, Colva (2023) points out that edge computing has several benefits, including:

- **Widespread Implementation:** Edge computing is not restricted to particular sectors. It may be used in various industries, including manufacturing, healthcare, and smart cities. Its broad implementation will significantly impact businesses' management of computing and data.
- **Reduced Latency:** Edge computing lowers latency by moving computation closer to the data source. Low latency is essential for applications like industrial automation, autonomous cars, and real-time monitoring.
- **Security Improvement:** Edge computing improves data privacy and security by processing data locally and reducing exposure to outside dangers. Data security and privacy are significant issues in today's connected world.
- **IoT Synergy:** As the Internet of Things (IoT) expands, edge computing easily interfaces with IoT devices. It facilitates effective data collection, analysis, and decision-making at the edge.
- **Resilience:** Edge computing maintains functionality in the event of cloud failures or network interruptions. Decentralised processing is the best option for critical applications since it increases system resilience overall.

3. Cast your vote for the trend you support.

Edge computing has emerged as the most transformative trend in information security management (ISM). This is because it significantly enhances operational efficiency, security, and scalability in various settings, as pointed out by Bigelow (2021). Using edge computing, organisations can process and analyse data in real-time, closer to where it is generated, rather than relying solely on cloud-based solutions, as Overmaat (2023) suggests. This approach improves the speed and accuracy of data analysis and reduces the latency associated with transmitting data to and from a centralised cloud server. Moreover, edge computing can help bolster security by minimising the amount of sensitive data that needs to be transferred over networks, thereby reducing the risk

of data breaches, as FindErnest (2024) notes. Finally, edge computing can be highly scalable, allowing organisations to distribute computing resources across multiple endpoints instead of relying on a single centralised server (Bigelow, 2021). All of these benefits make edge computing a powerful tool for shaping the future of information security management.

References:

- Huang, K. (2023). *Top 5 Generative AI Cybersecurity Trends | CSA*. [online] Available at: <https://cloudsecurityalliance.org/blog/2023/10/06/top-5-cybersecurity-trends-in-the-era-of-generative-ai>.
- Bigelow, S.J. (2021). *What Is Edge Computing? Everything You Need to Know*. [online] Techtarget. Available at: <https://www.techtarget.com/searchdatacenter/definition/edge-computing>.
- Moore, J. (2024). *Cybersecurity market trends, from AI to post-quantum crypto | TechTarget*. [online] Available at: <https://www.techtarget.com/searchchannel/feature/Cybersecurity-market-trends-from-AI-to-post-quantum-crypto>.
- Overmaat, J (2023). *The Growing Significance of Edge Computing in the Era of Digital Transformation*. [online] Available at: <https://www.linkedin.com/pulse/growing-significance-edge-computing-era-digital-jeroen-overmaat/>.
- Colva (2023). *Demystifying edge computing: bringing data closer to the action*. [online] Available at: <https://www.colva-it.com/blog/demystifying-edge-computing>.
- FindErnest (2024). *'Discover the power of edge computing, unlock endless possibilities for innovation and progress'*. [online] Available at: https://www.linkedin.com/pulse/discovering-power-edge-computing-can-unlock-endless-possibilities-m53nc/?trk=article-ssr-frontend-pulse_more-articles_related-content-card.