**Introduction**

With the development of new technologies fundamentally transforming business structures (Zhu, 2024) and China’s “Digital Economy” accounting for 38.6% of GDP in 2020 (Li, 2020), digital transformation is an essential undertaking for any enterprise. This post will discuss the concept of a fully digital enterprise and the cyber security and business challenges that SMEs may face in becoming one. It will also explore digitisation for the energy sector in light of the 2022 energy crisis.

**What is a “Digital Enterprise”?**

As noted by McKinsey & Company (2022), the push for digitisation has created the “fourth industrial revolution,” providing enterprises with access to technologies such as Artificial Intelligence (AI), Virtual Reality (VR), and advanced engineering techniques like 3D printing. A digital enterprise has harnessed these technologies, along with cloud computing and big data, to optimise resources and enhance efficiency (Zhang, 2024).

**Cyber security concerns and business challenges**

Cyber attacks and other IT-related issues impose significant financial and reputational costs on SMEs. For example, a breach of GDPR could result in fines of up to a quarter of a company’s yearly turnover (European Parliament, 2021). The recent issues affecting CrowdStrike hurt its reputation, causing a 40% drop in its stock value. Other enterprises are looking for further payouts for the damage caused (Sheldon, 2024).

Due to this risk, older colleagues have become reluctant to embrace digital transformation (Hauer, 2021). This is evidenced by 87% of global companies believing it will disrupt their business (Appio, 2021). To bridge the “digital divide” and aid this cohort in better understanding cybersecurity risk, it is recommended to adopt a set of standards such as the NIST Cybersecurity Framework (Federal Trade Commission, N.D.).

**The Energy Crisis**

One area that will benefit from digital transformation is the energy sector, which was crippled by the Russian invasion of Ukraine (Emiliozzi, 2024). As Wei (2019) correctly notes, technological advances have led to declining costs in solar power, battery storage and microgrids. The UK Government aim to take advantage of this, capitalising on digitising the energy sector with the recently launched “GB Energy” (techUK, 2024).

Downtime caused by a cyber attack has the potential to be considered a national cyber emergency (NCSC, 2023). This was seen in 2015, when Russia attacked Ukraine’s national infrastructure, rendering 230,000 houses without power for up to six hours (OBR, 2022). As a result, Ukraine has extensively hardened their Information Communication infrastructure and continuously amend its cyber security strategy to “incorporate ongoing changes in the security landscape” (Aebi, 2024). This aligns with Spremic and Simunic (2018), who argue such catastrophic outcomes can be prevented through carefully designed and implemented security controls.

**Conclusion**

To sum up, declining computing costs have lowered overheads, and data-driven approaches to work have enhanced efficiency and innovation. While digitising has risks, adequately designed and implemented controls can mitigate these risks. To stay competitive and secure in the “fourth industrial revolution”, SMEs must embrace becoming a digital enterprise.

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