

Initial Post

by Mariam Ibrahim Ismail Hasan Almarzooqi - Sunday, 19 October 2025, 10:14 AM

Industry 5.0 builds on the automation of Industry 4.0 by emphasizing human-centric values such as ethics, resilience, and sustainability (Metcalf, 2024). These principles are especially relevant in high-stakes industries like aviation, where reliability and safety are critical. A recent example is the 2024 CrowdStrike IT failure, where a software update caused widespread outages across multiple sectors. Delta Air Lines was severely affected, with over 7,000 canceled flights and more than 1.3 million disrupted passengers (Alzaabi, 2024). The U.S. Department of Transportation launched an investigation, and lawsuits followed, including a \$500 million claim over poor risk management (Alojaiman, 2023).

This outage didn't just disrupt travel it impacted tourism, hospitality, and the broader economy. Global losses were estimated in the tens of billions of dollars (Moenck et al., 2025). The event exposed how vulnerable centralized IT systems can be and highlighted the importance of designing systems with built-in redundancy, decentralization, and human oversight.

Industry 5.0 calls for socio-technical resilience and ethical collaboration between tech providers and users (Abdel-Basset et al., 2025). As aviation becomes more digitized, applying these principles will be vital to ensuring operational stability and public trust during future technological disruptions.

References:

Abdel-Basset, M., Mohamed, R., & Chang, V. (2025). A multi-criteria decision-making framework to evaluate the impact of Industry 5.0 technologies: Case study, lessons learned, challenges, and future directions. *Information Systems Frontiers*, 27(2), 791–821. <https://doi.org/10.1007/s10796-024-10472-3>

Alojaiman, B. (2023). Technological modernizations in the Industry 5.0 era: A descriptive analysis and future research directions. *Processes*, 11(5), 1318. <https://doi.org/10.3390/pr11051318>

Alzaabi, A. S. (2024). Optimizing safety in the age of Industry 5.0: Mitigating domino effect. Retrieved from <https://khazna.ku.ac.ae/ws/portalfiles/portal/27091826/file>

Metcalf, G. S. (2024). *An introduction to Industry 5.0: History, foundations, and futures*. Industry 4.0 to Industry 5.0. <https://library.oapen.org/bitstream/handle/20.500.12657/89928/978-981-99-9730-5.pdf?sequence=1#page=20>

Moenck, K., Koch, J., Rath, J. E., Büsch, L., Gieracker, J., Kähler, F., ... & Schüppstuhl, T. (2025). Industry 5.0 in aircraft production and MRO: Challenges and opportunities. *CEAS Aeronautical Journal*, 1–25. <https://doi.org/10.1007/s13272-025-00832-3>