

6 Technological Advancements, Robotics, AI, IoT and Mixed Realities

Aim

Explore how 21st century technological advancements can improve and enhance the culinary and food service operations efficiency and costs.

Objectives

1. Explain how AI and robotics are transforming food service operations.
2. Assess the benefits of Internet of Things (IoT) in inventory and equipment management.
3. Identify the application of data analytics for operational improvements.
4. Explore the financial impact on an organisation.

6.1 The role of AI, robotics, mixed realities and IoT in food service operations

The food service industry is undergoing a technological revolution, driven by advancements in AI, robotics, Internet of Things (IoT), Augmented Reality (AR), Virtual Reality (VR), and collectively Extended Reality (XR). AI, robotics, and IoT can now form the technological backbone of many modern food service operations, offering automation and insight-driven decision making that were previously unattainable. Technologies are transforming how restaurants, cafes, fast-food chains, and catering services operate. These emerging technologies can enhance efficiency, improve customer experiences, support staff development and labour challenges, track and optimise business performance and both streamline and develop efficient supply chain management.

As consumer expectations evolve and become increasingly demanding, businesses are able to adopt innovative solutions to remain competitive. AI enables smarter decision-making, while robotics automates repetitive tasks, AR/VR enhances training and customer engagement, while IoT can connect kitchen appliances for seamless operations. These technologies are reshaping food service operations creating a more adaptive business.