

Managing Business Information

Group presentation 3

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What are Information Systems?

- An Information System (IS) is an integrated ensemble of hardware, software, data, people, and processes (University of York 2025). It acts as a "central nervous system," transforming raw data into actionable knowledge .



- **UK Strategic Context:** IS is critical for navigating post-Brexit regulatory shifts and supply chain restructuring (Warislohner 2025).
- **Market Growth:** The UK Business Information Services market was valued at **\$57.23 billion** in 2024 (Warislohner 2025).
- **Economic Impact:** Total UK ICT turnover is projected to hit **€327.58 billion** by 2028 (Report Linker 2024).
- **Competitive Edge:** Firms like Experian and RELX Group use AI-enhanced IS to maintain global leadership (Warislohner 2025).

A Typology of Information Systems

Is categorised by organisational levels:

Operational → Management → Strategic

- **Operational (TPS/OAS):** Handle routine transactions; the UK startup *Omnea* uses AI to automate procurement, saving customers **100,000 hours** of manual work (Scott 2026).
- **Management (MIS/DSS):** Support middle management via performance reports and analytical models (Akula et al. 2025). The UK MoD is migrating to Oracle Cloud to enhance DSS capabilities (SecurityBrief UK 2026).
- **Strategic (EIS/BI):** Aggregate data for senior leadership goal-setting (University of West Florida 2024).



Driving Business Value: Efficiency and Enhanced Decision-Making, Securing Competitive Advantage and the Future Landscape

Efficiency and Enhanced Decision-Making

Boosting Efficiency: IS reduces costs through automation; Laing O'Rourke's BR-AIMS system centralized siloed data to standardize project estimating.

Evidence-Based Decisions: IS moves managers from intuition to data-driven choices

Speed of Information: Lloyds Banking Group's "Athena" tool used by **20,000 staff** reduced information search times by **66%**

Security Integration: The ONS uses "Secure by Design" IS to reduce security risk scores during agile delivery.

Public Sector Compliance: A DfE information system improved contractor compliance from **<60% to 99%**

Securing Competitive Advantage and the Future Landscape

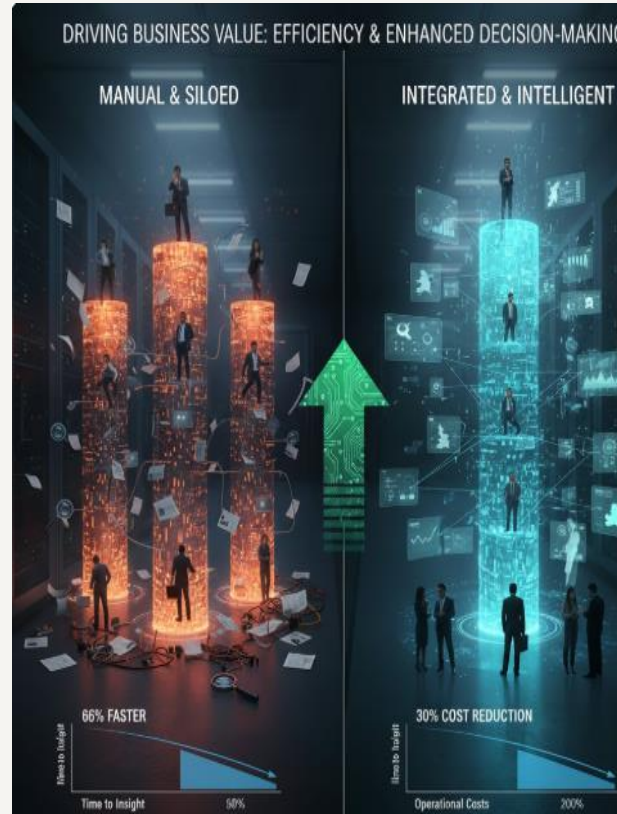
Quantifiable Value: Generative AI delivered **£50 million** in value for Lloyds Banking Group in 2025, with **£100 million** expected in 2026.

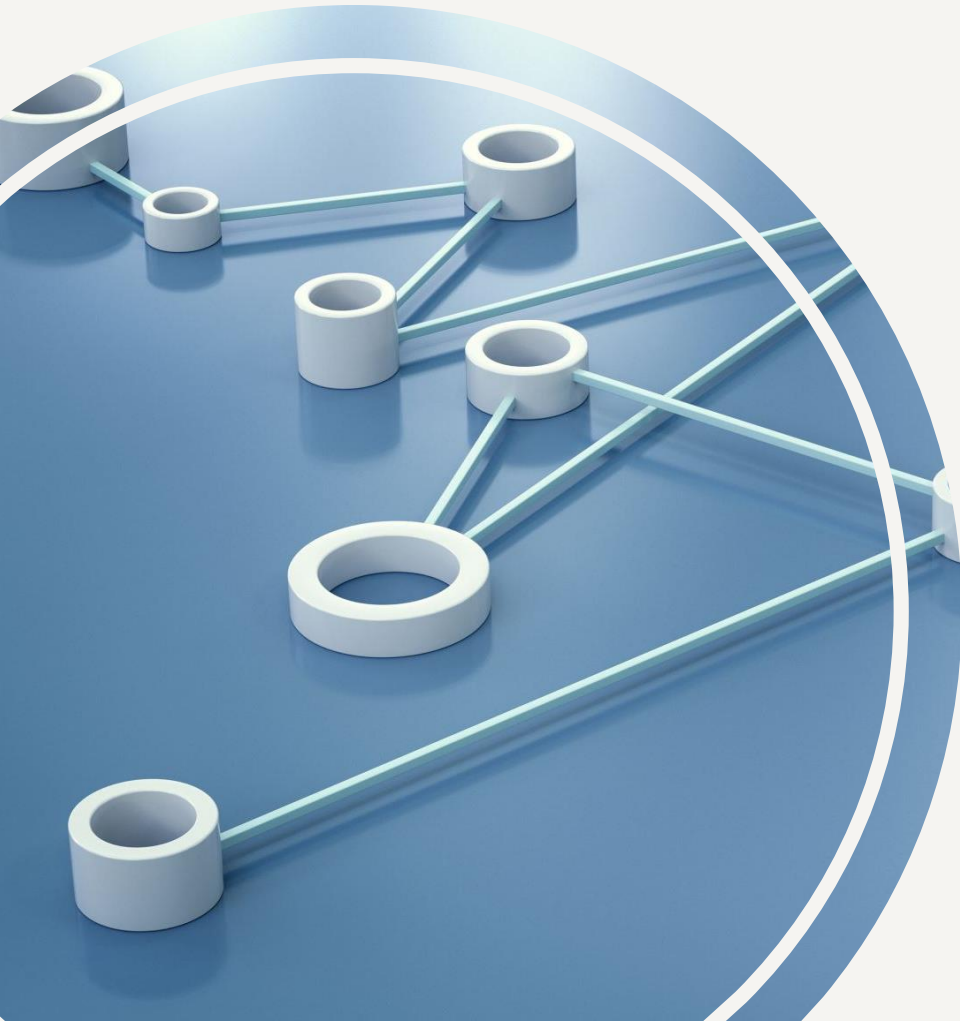
AI Transition: UK organizations are moving AI from pilot phases to full production using proprietary data sets .

Market Projections: The UK Business Information Services market is forecast to reach **\$102.67 billion** by 2033 .

Asset Management: Kirklees Council is investing **£2–5 million** in a cloud-based asset database transform corporate services .

Strategic Outlook: Intelligent IS is now the universal driver for operational resilience and superior service delivery





Transaction Processing Systems

- Benefits
 - ● High speed and reliability
 - ● Ensures operational continuity
 - ● Accurate record-keeping
- Limitations
 - ● Limited analytical capability
 - ● Focused on past and present transactions
 - ● Minimal strategic value alone



Management Information Systems

- Benefits
 - Improves planning and performance monitoring
 - Supports tactical decision-making
 - Enhances coordination across departments
- Limitations
 - Relies on historical data
 - Less flexible for complex or unstructured problems
- Best Use: Operations management, budgeting, performance tracking

Decision Support Systems

- Benefits
 - ● Scenario analysis and forecasting
 - ● Combines internal and external data
 - ● Supports strategic decisions
- Limitations
 - ● Can be costly and complex
 - ● Depends on data quality and model accuracy
- Best Use: Strategic planning, risk analysis, market expansion



Data Privacy & Security in Business Information Systems

- Modern information systems collect huge amounts of **customer and employee data**
- This raises concerns around **data privacy, consent, and data breaches**
- Regulations like **GDPR** require organisations to protect personal data and use it lawfully
- Cybersecurity failures can damage **trust, reputation, and finances**
- *In-text references:*
(GDPR, 2018; Laudon & Laudon, 2020)

Ethical Issues: AI, Bias & Employee Monitoring

- AI-driven systems can improve decision-making but may introduce **algorithmic bias**
- Biased data can lead to **unfair outcomes** in hiring, credit scoring, or promotions
- Employee monitoring systems can increase productivity but risk **invading privacy**
- Over-surveillance may harm **staff morale and workplace trust**
- *In-text references:*
(O'Neil, 2016; Stahl, 2021)

Managing Ethical Risks Responsibly

- Businesses should apply **ethical frameworks** when designing and using systems
- Regular **data audits** help identify bias and security weaknesses
- Transparency in AI decisions improves **accountability and trust**
- Clear policies and staff training support **responsible system use**
- *In-text references:*
(Laudon & Laudon, 2020; Stahl, 2021)

Case Study 1: Amazon (ERP & AI Systems)

- Amazon uses ERP and AI systems to manage logistics and personalise customer experiences
- Benefits include **fast delivery**, real-time inventory tracking, and cost efficiency
- Ethical concerns emerged around **employee monitoring and workplace surveillance**
- Amazon responded by reviewing monitoring practices and increasing transparency
- *In-text references:*
(Davenport, 2018; BBC, 2020)



Case Study 2: Netflix (Data Analytics & Decision Support Systems)

- Netflix uses data analytics to recommend content and guide production decisions
- This improved **customer retention** and competitive advantage
- Ethical issue: extensive tracking of **user behaviour and viewing habits**
- Netflix mitigates risk through anonymisation and strict data security policies
- *In-text references:*
(McAfee & Brynjolfsson, 2012; Netflix, 2023)

Key Takeaways from the Case Studies

- Information systems can significantly improve **efficiency and performance**
- Ethical risks grow as systems become more **data-driven and automated**
- Successful companies balance **innovation with responsibility**
- Ethical system design strengthens **long-term trust and sustainability**
- *In-text references:*
(O'Neil, 2016; Laudon & Laudon, 2020)

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