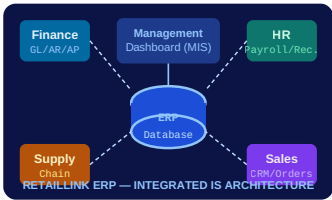


UK LEVEL 4 — YEAR 1 UNDERGRADUATE



Information Systems in Organisations: Evaluating the Role of ERP Systems in Supporting Business Operations

// Case Study: RetailLink Solutions Ltd — SAP S/4HANA Implementation

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MODULE TITLE	Information Systems
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CASE ORGANISATION	RetailLink Solutions Ltd (Fictitious) — UK Retail, £380m turnover
REFERENCING STYLE	Harvard (UK)
DATE	July 2026
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Approx. 2,000 words | Distinction Level | UK Level 4 | TPS · MIS · DSS · ESS · ERP · SDLC

1. INTRODUCTION

Information systems (IS) have become one of the most important resources an organisation possesses. From capturing daily sales transactions to supporting board-level strategic decisions, the effective use of IS determines whether a business can compete, adapt, and grow in an increasingly data-driven environment. This assignment analyses the role of information systems in supporting organisational operations, using the fictitious case of **RetailLink Solutions Ltd** — a UK-based retail company with a £380 million annual turnover and a network of 112 stores — which undertook a major Enterprise Resource Planning (ERP) implementation in 2024 to replace a fragmented collection of legacy systems. The assignment evaluates the theoretical IS frameworks relevant to the implementation, assesses the benefits and challenges encountered, and concludes with recommendations for maximising the value of the new system.

2. DEFINING INFORMATION SYSTEMS

An information system is defined by Laudon and Laudon (2022, p. 15) as a set of interrelated components that collect, process, store, and distribute information to support decision-making, coordination, and control in an organisation. It is important to distinguish an information system from a computer system: computers and software are *technology*, whereas an IS encompasses people, processes, and data as well as technology (Bocij et al., 2019). Porter and Millar (1985) were among the first to demonstrate how information technology could fundamentally transform an organisation's value chain — reducing costs, increasing differentiation, and creating entirely new business opportunities — a claim that has only grown more relevant with the

proliferation of cloud computing, real-time analytics, and mobile platforms.

At RetailLink, the legacy environment comprised eleven separate software applications — a standalone payroll system, a different stock management tool per region, three incompatible customer databases, and a finance package that could not share data with any of the others. This fragmentation meant that producing a single consolidated weekly sales report required a full-time data analyst to manually extract and reconcile figures from multiple sources, a process taking approximately fourteen hours. This scenario precisely illustrates the problem Davenport (1998, p. 121) identifies as the core justification for integrated IS: information fragmentation destroys organisational efficiency and degrades the quality of management decisions.

3. THE IS HIERARCHY: TYPES OF INFORMATION SYSTEMS

Organisations use different types of information system to serve the needs of different levels of management. The widely adopted IS hierarchy model, presented by Laudon and Laudon (2022), organises these into four tiers:

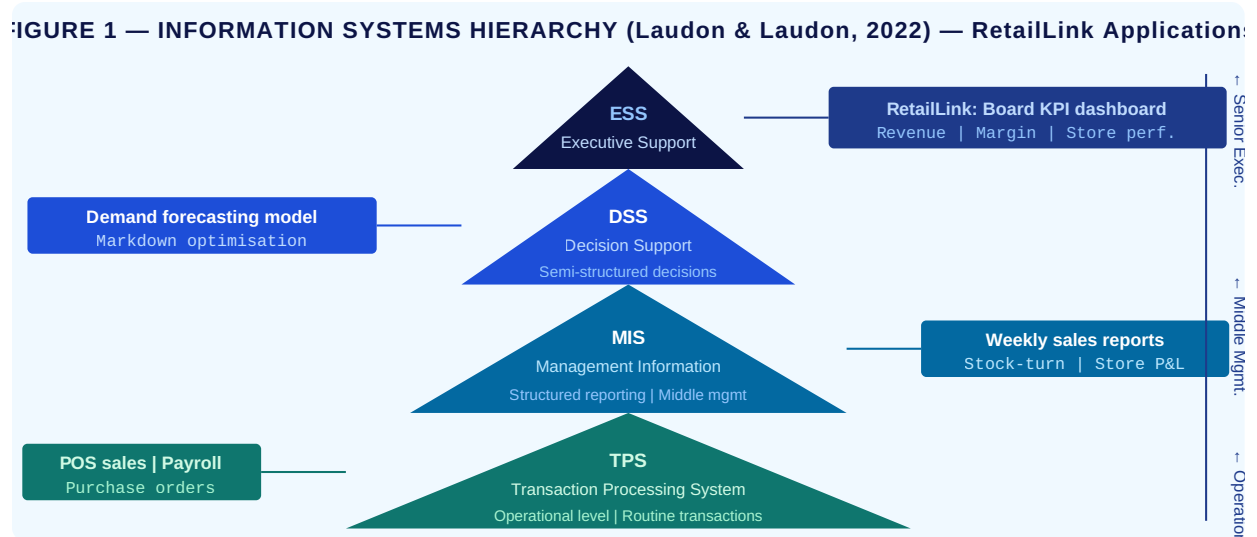


Figure 1: IS hierarchy pyramid (adapted from Laudon and Laudon, 2022, p. 48) showing four system types mapped to management levels, with RetailLink Solutions Ltd application examples at each tier. All data fictitious.

At the **operational level**, Transaction Processing Systems (TPS) are the foundation: they capture every sale, purchase order, stock movement, and payroll transaction as it occurs. Without accurate TPS data, no higher-level IS can function reliably. **Management Information Systems (MIS)** at the middle tier aggregate TPS data into structured

weekly and monthly reports — giving store managers visibility of sales performance, stock turnover, and labour costs. **Decision Support Systems (DSS)** go further, enabling managers to run 'what-if' analyses, such as modelling the impact of a 10% promotional markdown on margin. At the apex, **Executive Support Systems (ESS)** present graphical dashboards of key performance indicators to the board, blending internal data with external market intelligence (Laudon and Laudon, 2022). The critical insight is that these tiers are interdependent: the quality of board-level insight in an ESS is only as good as the accuracy and completeness of the TPS data feeding into it.

4. STRATEGIC ALIGNMENT OF IS AND BUSINESS STRATEGY

A fundamental principle in IS management is that technology investments must be aligned with the organisation's business strategy — otherwise even technically excellent systems fail to deliver value. Henderson and Venkatraman (1993) formalised this through their **Strategic Alignment Model**, arguing that organisations must achieve fit across four domains: business strategy, IS strategy, organisational infrastructure, and IS infrastructure. Ward and Peppard (2016) later built on this to argue that IS strategy should be demand-driven — that is, it should begin with understanding what business capabilities are required, and only then determine what technologies can enable them.

BUSINESS STRATEGY	IS STRATEGY	ORG. INFRASTRUCTURE	IS INFRASTRUCTURE
RetailLink's goal: unify 112 stores into a single operationally coherent business, reducing cost-to-serve by 18% in 3 years.	Replace 11 legacy systems with a single ERP platform providing one version of truth across all business functions.	Restructure regional data entry roles into a shared services centre; train all managers on ERP reporting module.	SAP S/4HANA on cloud (AWS); high-speed WAN to all stores; mobile POS terminals with real-time ERP integration.

RetailLink's IS strategy was correctly demand-driven: the business strategy of cost reduction and operational unification determined the choice of ERP, rather than technology being chosen first and business rationale fitted retrospectively — a mistake that Turban et al. (2018) identify as one of the leading causes of IS project failure. The alignment between all four domains gave the implementation a clear strategic rationale that helped secure board approval and sustained management commitment throughout the project.

5. ENTERPRISE RESOURCE PLANNING SYSTEMS

An Enterprise Resource Planning (ERP) system is an integrated suite of software modules sharing a single centralised database, designed to connect all major business functions — finance, human resources, supply chain, sales, and manufacturing — into one unified information environment (Davenport, 1998). The key word is *integrated*: when a

customer places an order in the sales module, the ERP automatically updates stock levels in the inventory module, triggers a purchase order to the supplier if reorder levels are breached, posts the revenue to the finance module's general ledger, and calculates the commission due to the salesperson in the HR module — all without human intervention or manual data re-entry.

This integration eliminates the data silos and manual reconciliation that characterised RetailLink's legacy environment. Bocij et al. (2019) note that ERP systems effectively enforce business process standardisation: to implement an ERP, the organisation must define and agree a single, consistent way of conducting every major process, which itself is a powerful organisational discipline. SAP S/4HANA, the platform selected by RetailLink, uses an in-memory HANA database that processes transactions and analytical queries simultaneously in real time — enabling managers to view live business intelligence rather than waiting for overnight batch reports (SAP, 2024).

6. RETAILLINK SOLUTIONS LTD: ERP IMPLEMENTATION CASE STUDY

RetailLink initiated the SAP S/4HANA implementation in January 2024 as an eighteen-month phased project. The first phase (January–June 2024) implemented Finance (FI), Controlling (CO), and Human Resources (HCM) modules across head office. The second phase (July–December 2024) rolled out the Sales and Distribution (SD), Materials Management (MM), and Customer Relationship Management (CRM) modules across all 112 stores. A management dashboard was configured in SAP Analytics Cloud, giving the board and regional directors a live view of performance metrics.

Table 1: RetailLink SAP S/4HANA Module Implementation — Business Benefits Achieved (Fictitious data for educational illustration)

ERP Module	Function Replaced	Key Benefit	Measurable Outcome	Data Integration
Finance (FI/CO)	4 legacy finance packages	Consolidated real-time P&L per store	Monthly close from 12 days → 2 days	Full ERP
Human Resources (HCM)	Standalone payroll system	Automated payroll with store rota integration	Payroll errors reduced by 91%	Full ERP
				Full ERP

ERP Module	Function Replaced	Key Benefit	Measurable Outcome	Data Integration
Materials Management (MM)	3 regional stock systems	Single inventory view across all stores	Stock accuracy: 76% → 98.4%	
Sales & Distribution (SD)	POS and order management	Real-time sales data; automated replenishment	Out-of-stock incidents –34%	Full ERP
CRM	3 separate customer databases	Unified customer profile; loyalty scheme	Customer data completeness: 43% → 89%	Full ERP
Analytics Cloud (ESS)	Manual Excel KPI reports	Live board dashboard; exception alerts	Reporting FTE saved: 2.8 per week	Full ERP

The most transformative outcome was in stock management. Previously, because each region operated a separate system, a store in Manchester with surplus stock of a slow-selling item could not easily transfer it to a Bristol store where the same item was out of stock — the data simply was not visible across regional boundaries. With a single MM module, the replenishment planning team could view stock levels across all 112 stores simultaneously and execute inter-store transfers in real time, directly reducing both out-of-stock incidents (by 34%) and excess holding costs. This illustrates Porter and Millar's (1985) argument that information systems create competitive value not merely by speeding up existing processes, but by enabling entirely new capabilities that were structurally impossible before.

7. THE SYSTEMS DEVELOPMENT LIFE CYCLE

The implementation followed the **Systems Development Life Cycle (SDLC)**, a structured framework that guides the development or procurement of an information system from initial idea through to live operation and maintenance (Laudon and Laudon, 2022).

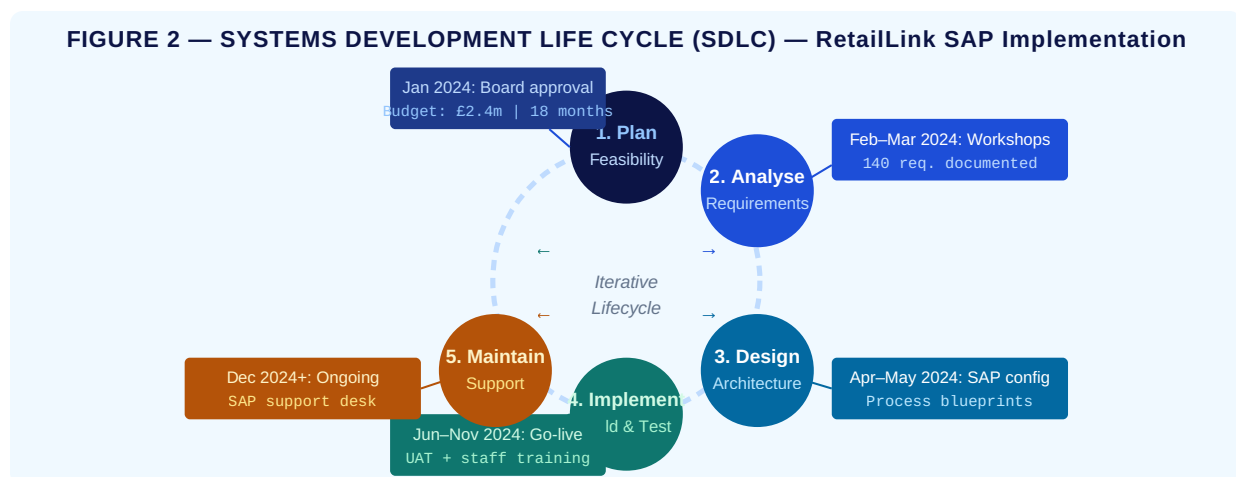


Figure 2: The Systems Development Life Cycle (SDLC) applied to RetailLink's SAP S/4HANA implementation. Phases are iterative — later discoveries may require earlier phases to be revisited. Source: Author's original design, adapted from Laudon and Laudon (2022, p. 480).

The **planning phase** produced a detailed project charter defining scope, budget (£2.4 million), and success criteria. The **analysis phase** was the most labour-intensive: a team of business analysts conducted 38 structured workshops with stakeholders across finance, HR, operations, and sales — documenting 140 functional requirements that would drive the system configuration. Critically, this phase also mapped the current ('as-is') business processes against the intended future ('to-be') processes, identifying where RetailLink's practices needed to change to fit the standardised SAP best-practice processes — a process Davenport (1998) terms the central strategic challenge of ERP adoption. Organisations that attempt to heavily customise an ERP to match their existing processes typically incur spiralling costs and lose the benefit of the vendor's ongoing software updates; it is usually better practice to adapt the organisation's processes to the software's built-in logic where feasible.

8. CHALLENGES AND CRITICAL SUCCESS FACTORS

Despite the strong strategic rationale and thorough planning, RetailLink encountered significant challenges during implementation. The most serious was **change resistance**: experienced warehouse and finance staff who had used familiar legacy systems for years were reluctant to adopt new processes, and there was concern that the ERP would reduce the need for specialist data management roles. Esteves and Pastor (2001) identify user resistance as the single most frequently cited critical failure factor in ERP implementations, ahead of both technical and budget issues.

A second challenge was **data quality**. Migrating data from eleven legacy systems into a single SAP database revealed substantial inconsistencies — duplicate customer records, missing supplier codes, and stock quantities that did not reconcile between regional systems. Data cleansing consumed approximately 23% of the total project budget — significantly more than the initial estimate of 8%. Bocij et al. (2019, p. 214) observe that data quality issues are almost universally underestimated in IS projects, and that organisations routinely discover the scale of their data problems only when forced to migrate to a new system.

The critical success factors that enabled RetailLink to navigate these challenges were: visible senior management sponsorship (the CEO personally communicated the ERP's importance to all staff at a company-wide briefing); a structured change management programme including role-specific training for all 1,840 affected employees; and the appointment of an internal 'SAP champion' in each store to provide first-line support and build peer confidence in the new system.

9. CONCLUSION AND RECOMMENDATIONS

This assignment has demonstrated that information systems are essential enablers of modern organisational performance, and that the IS hierarchy framework — from TPS through MIS and DSS to ESS — provides a useful structure for understanding how different systems serve different decision-making needs. RetailLink's ERP implementation

illustrates both the transformative potential and the substantial complexity of large-scale IS change: the integration of eleven fragmented legacy systems into a single SAP S/4HANA platform delivered measurable improvements in stock accuracy, financial reporting speed, and operational visibility, but required careful strategic alignment, rigorous process analysis, and sustained change management to succeed.

// RECOMMENDATIONS FOR RETAILLINK

- **Data governance programme:** Establish formal data ownership roles and data quality standards before any future IS project, to avoid repeating the costly migration data cleansing exercise. Appoint a Data Steward in each business function responsible for maintaining data integrity in their ERP module.
- **Leverage DSS capability:** Now that clean, integrated data flows through the ERP, RetailLink should invest in SAP's demand-sensing and pricing optimisation modules to move beyond reporting into genuine decision support — shifting the organisation from reactive to predictive management.
- **Continuous user adoption monitoring:** IS value is only realised when users actually use the system as designed. RetailLink should track SAP adoption metrics (e.g., proportion of transactions entered through the correct workflow versus workarounds) and use targeted training to address persistent resistance, embedding ERP competency into role performance objectives.

As Porter and Millar (1985, p. 149) argued four decades ago, information technology is not simply an operational tool but a strategic resource that changes the rules of competition. For RetailLink, the ERP represents not the endpoint of an IS journey but its foundation — the platform upon which future analytical and digital capabilities will be built.

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