

Integrated Analysis of Strategic Information Systems

Exploring Operational Efficiency at UPS, Comparative Enterprise Architectures (ERP, CRM, DSS), Ethical Governance Frameworks, and Strategic Modernization Roadmaps.

 BA (Hons) Leadership & Management Skills for the Workplace

 Managing Business Information (LCLM 5004)

 Component 1 - Group Portfolio & Synthesis

Group Contributors & Project Echelons

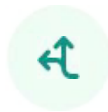
This research is structured through distinct specialized lenses, synthesizing core transactional networks, database alignment, socio-ethical safeguards, and strategic execution:



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Section 1: Core Operations &
Systems Hierarchy at UPS



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Section 2: Comparative Analysis
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Section 3: Ethical Frontiers, Data
Privacy & Algorithmic Bias



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Section 4: Alignment, Solutions &
Modernization Roadmap

SECTION ONE: CORE ANALYSIS

Information Systems at UPS

Powering Efficiency, Decisions & Competitive Advantage. Mapping business intelligence frameworks to daily global logistics operations.

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 Managing Business Information (LCLM 5004)

| What is an Information System?

A Synced Grid of Resources

An Information System is a set of **people, processes, data, and technology** working together to collect, store, and turn raw data into useful, actionable information.

 UPS relies on this same dynamic integration of resources to successfully route and deliver over **20 million packages** every single day.



UPS: Efficiency & Advantage



Operational Efficiency

Drivers use handheld **DIAD devices** to scan and log every package instantly. This automates paper-based tracking, eliminates human reporting errors, and syncs depot workflows in real-time.



Intelligent Decisions

UPS's flagship **ORION system** turns live transit and delivery data into highly optimized daily routes. This algorithmic routing saves drivers millions of miles and gallons of fuel each year.



Competitive Edge

Real-time customer-facing portals like **UPS My Choice** put complete control back into the buyer's hands. This superior delivery flexibility forms a barrier to entry that rivals struggle to match.

System Organization Layers

Systems are mapped horizontally to fit specific echelons of corporate governance. At UPS, these layers establish a continuous loop where higher systems thrive off details recorded below.

EXECUTIVE LEVEL

ESS

Executive Support Systems

Network Planning Tools

TACTICAL LEVEL

DSS

Decision Support Systems

ORION Route Optimization

MANAGEMENT LEVEL

MIS

Mgmt Information Systems

UPS Fusion Reporting

OPERATIONAL LEVEL

TPS

Transaction Processing Systems

DIAD Package Scanning

💬 "Higher-level organizational structures fundamentally rely on accurate transactional data captured by the operational levels directly below them."

UPS Systems Analysis Matrix

System Type	Primary Users	What it does at UPS	Business & Strategic Impact
TPS	Drivers & Field Staff	DIAD handheld scanners record physical pickup, sorting, and delivery points in real-time.	Drastically reduces data errors and secures faster local shipment processing.
MIS	Middle Managers	UPS Fusion reporting system structures raw scan logs into formatted performance charts.	Allows better monitoring of depot operations and continuous corporate control.
DSS	Route Planners	ORION models optimized routes based on distance, traffic, and package delivery windows.	Saves millions of travel miles, drastically reducing fuel costs and transit delays.
ESS	Senior Executives	Network Planning Tools capture high-level macro trends to forecast resource demands.	Grants faster strategic response to industry changes and supply fluctuations.

Key Takeaways

Strategic Synthesis

- ✓ **Speed to Compete:** Modern information systems convert raw, unorganized operations data into the efficiency needed to scale and compete globally.
- ✓ **Hierarchical Symmetry:** Distinct system tiers (TPS to ESS) ensure that staff at all operational levels have access to tailored dashboards.
- ✓ **Custom Fit:** The optimal balance of software suites relies deeply on overall business scale, financial capital, and the speed of decision-making.

Sources Consulted (Part 1)

- Integrated Information Systems Analysis.pdf (Core Class Document Verbatim)
- UPS Internal Technology Documentation: ORION and DIAD Operations Reports
- Laudon, K.C. & Laudon, J.P. (2020). Management Information Systems: Managing the Digital Firm. Pearson.

Strategic Information Systems

A Comprehensive Structural Comparison of Enterprise Resource Planning (ERP), Customer Relationship Management (CRM), and Decision Support Systems (DSS).

Presenter: **Juana Virginia Batista Santana**
LCLM 5004 | Component 1 - Group
Presentation

Enterprise Resource Planning (ERP)

System Features

- Integrates all core business functions (Marketing, Sales, HR, Inventory, Finance, IT) into a unified portal.
- Utilizes a single, master central database to store vital operations records.
- Exchanges real-time communication metrics to optimize performance (Hernandez, 2023).

PROS

- Speeds processes

CONS

- High setup cost



Customer Relationship Mgmt (CRM)

Core Capabilities

- Contains exhaustive profiles, habits, and order logs for every client.
- Directly coordinates campaign metrics to drive sales (Phadke, 2025).
- Personalizes communication across support touchpoints.

PROS

- Retains trust

CONS

- Data accuracy



DSS & Strategic Comparison

Decision Support Systems (DSS) analyze internal and external variables to predict future trends (Hak et al., 2022) and mitigate risk. Below is a structural comparison of our core systems:

Criteria	Enterprise Resource Planning (ERP)	Customer Relationship Mgmt (CRM)	Decision Support Systems (DSS)
Primary Purpose	Integrates and streamlines cross-departmental operations.	Manages, optimizes, and coordinates buyer touchpoints.	Enhances decision quality and guides strategic corporate plans.
Primary Users	All functional company departments.	Sales, marketing, and client care personnel.	Business managers, forecasters, and strategists.
Core Benefit	Dramatic increase in operations efficiency.	Deep customer satisfaction and lifetime retention.	Accurate business forecasting and agile risk management.
Business Value	Deep structural process integration.	Sustained client growth and expansion.	Mitigates environmental market uncertainty.

**Limits of DSS: Highly reliant on underlying clean data pools; cannot replace experienced human managers (Tonle, 2024).*

References & Summary

Synthesis & Conclusion

Individually, ERP, CRM, and DSS optimize unique vertices of an organization. When combined, they form an unbreakable technical core that powers long-term operational success.

"Combining backend alignment (ERP), front-end intelligence (CRM), and forward-looking projection (DSS) unlocks unmatched business value."

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Ethical Frontiers in IS

Evaluating Data Security, Workplace Monitoring, Algorithmic Bias, and Modern
Ethical Protection Frameworks.

Presenter: **Jair Alexander Possu Alegria**
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Component 1

| Data Privacy & Accountability

Shifting Toward Defensive Design

-  **The Shield of Privacy:** Centralized data hubs pose major corporate data security hazards. Systems must shift to a proactive, security-first "**Privacy-by-Design**" architecture.
-  **Enforced Data Security:** Implement strict end-to-end data encryption and role-based clearance permissions to limit data leaks.
-  **Algorithmic Integrity:** Promote transparency to prevent unexplainable "black box" automated calculations that can impact user safety.



Workplace Ethics & Bias



Surveillance Risks

Telemetry structures optimize warehouse throughput, but invasive monitoring ruins trust and damages worker mental health. Establish complete transparency as a baseline policy.



Algorithmic Bias

Software models learn existing social biases from historic datasets. Without regular, independent system audits, AI will naturally reinforce and automate systemic prejudice.



Data Integrity

Flawless data integrity is the moral baseline of modern technology. Corrupted, inaccurate data feeding automated corporate systems generates critical moral and operational hazards.

Strategic Mitigation & References

Three-Pillar Mitigation Framework

- ➡ **Explainable AI (XAI):** AI-assisted system outcomes must be explainable and auditable.
- ➡ **Bias Audits:** Formally audit underlying software datasets via independent third-party reviews.
- ➡ **Ethical Charters:** Create clear operational guidelines that prioritize worker dignity over basic productivity metrics.

"Ethical governance is not a barrier to corporate change; it is the fundamental engine of clean, sustainable enterprise growth."

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Modernizing Business Information Systems

Aligning Technology, People, and Ethics for Strategic Growth.

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Understanding the Landscape: ERP vs. CRM

ERP: "The Back-Office Brain"

Unifies Finance, HR, Inventory, and Supply Chain processes to generate a single backend source of truth.

CRM: "The Front-Office Heart"

Integrates sales pipelines, marketing automation, and customer support metrics to optimize client lifetime value.

"Success lies at the strategic intersection of People, Process, and Technology."



Deployment Challenges & Solutions

⚠️ Back-Office ERP Realities

Large-scale system transitions often encounter cultural resistance and operational frictions.

- ❌ Complex, non-aligned legacy data migrations.
- ❌ User friction and lack of top-down leadership commitment.
- ❌ The risk of sudden and costly "Big Bang" deployment strategies.

Solution:

Deploy phased, multi-stage rollouts with active leadership buy-in to manage change effectively.

🏢 Front-Office CRM in SMEs

Deploying customer platforms in smaller businesses requires targeted, agile strategies.

STRATEGIC INSIGHTS (WYNN, BANIK ET AL.):

- ✅ Success depends heavily on dedicated, proactive staff upskilling.
- ✅ Acknowledge local operating context and business limitations.
- ✅ Align CRM functions directly with immediate customer expectations.

Solution:

Pair software with practical staff training to maximize technology adoption and performance.

Strategic Roadmap, Security & Ethics

Security & Ethics

-  **The Security Challenge:** Centralized ERP/CRM repositories create high-value targets. Data leaks instantly damage client trust and retention rates.
-  **The CRM Paradox:** Tailoring preferential services to profitable tiers can inadvertently discriminate against lower-tier clients.
-  **Action:** Build systems with "Privacy by Design" principles to protect user autonomy and data integrity.

Our 3-Step Strategic Roadmap

- 1. Business Readiness Audit**
Formally map existing processes and organizational change readiness before system procurement.
- 2. Phased Hybrid Integration**
Deploy client-facing CRM components first to generate rapid business wins, then integrate deeper ERP processes.
- 3. Ongoing Upskilling & Governance**
Commit to continuous system training for teams coupled with strict data protection compliance models.

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