

INDIVIDUAL REPORT: INFORMATION SYSTEMS IMPROVEMENTS FOR MALDIVA LTD.

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Programme: BA (Hons) Leadership and Management Skills for the Workplace

Module: Managing Business Information (LCLM 5004)

Module Code: LCLM 5004

Contribution to Overall Module Assessment: 50%

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Submission Deadline: 21/08/2026

1. Introduction

Maldiva limited is one of the fastest growing retailers of consumer electronic products which has a hybrid commercial model of 30 brick and mortar stores and an ecommerce platform. During the last fiscal year there was a large increase in the number of customers and Sales volumes. Due to this commercial momentum, the leadership of maldiva limited is looking to grow its physical footprint in stores, and to expand its digital marketplace. While the top line Sales volumes have grown rapidly for maldiva limited, its back office operations and operational infrastructure are heavily impacted by legacy, fragmented and inefficient systems.

The operational constraints for maldiva limited arise from the structural inadequacies of its information Architecture. The major operational bottlenecks that are causing poor performance and dissatisfaction for customers include:

- **Stock outages and inventory misalignment:** maldiva limited uses manual inventory tracking. There is large amounts of "data drift" when comparing store level inventory to what is actually available on their ecommerce site. When a customer places an order online for something they see is in stock, but it is

actually out of stock, they receive a cancellation notice. They experience delayed delivery and damaged brand reputation. Also, due to stock imbalances, maldiva limited loses money because of unfulfilled orders.

- **Disjointed customer data and poor crm functionality:** transaction history and customer profiles are stored separately within different departmental databases. Therefore, marketing teams cannot develop campaigns based upon specific segments of customers. Customer support agents cannot view historical transactions to resolve customer complaints.
- **Human errors and timely decision making:** manual creation of report books using spreadsheets, across each location, is necessary to obtain financial and Sales performance analysis. Human error rates are high in the manual process. The reports do not reflect current Sales trends. Additionally, the process of collecting and analyzing data to make timely decisions for senior management is delayed.
- **Data security threats and non compliance with gdpr regulations:** the structure does not provide standardized role based access control (rbac) or enterprise grade data encryption. This leaves sensitive customer data vulnerable to unauthorized access. Also, maldiva limited is exposed to serious legal consequences related to non-compliance with gdpr data privacy regulations.
- **Cross departmental isolation and workflow Inefficiencies:** separate Software applications are used by the Sales, finance, and logistics teams. These separate applications do not communicate with each other. Employees must transfer data manually between departments, resulting in wasted employee time and increased errors during the processing of operational activities.
- **Physical store and e-commerce channel misalignment:** due to the lack of central management, physical store managers operate independently from e-commerce fulfillment teams. Store managers struggle to manage overstocked items while e-commerce warehouses suffer from stockouts of the exact same products. This leads to unnecessary holding costs in physical retail locations and missed sales opportunities online.

2. Assessment of current systems

Information systems (is) can be defined as: from both a technical and managerial standpoint, is refers to the combination of hardware, Software, data, procedures, and people that function together to convert raw data into useful information for decision making and operational control (Laudon & Laudon, 2021). Currently, maldiva limited operates a disorganized legacy Architecture consisting of: standalone Point-of-sale (pos) devices located in-store, e-commerce databases that are not integrated with the

pos systems, basic desktop based accounting Software for financial reporting purposes, and manual spreadsheet workbooks for inventory tracking and reporting to executive management.

Assessment of current processes shows serious deficiencies in terms of both technical capability and functional capabilities:

Operational capability	current system processes	gap/deficit
inventory management	use manual end-of-day updates to update local pos terminals.	inventory tracking lag. Due to asynchronous inventory synchronization between physical store inventories and e-commerce site inventory listings, stock discrepancies occur. Stock outs occur, leading to lost Sales Opportunities. Stock holding fees incur when excess quantities exist in physical stores. Order cancellations occur when customers attempt to purchase items that appear to be in stock on the web site but are not actually available in physical stores.
customer interaction	isolated contact sheets for departmental databases.	lack of SSOT (single Source of Truth). Marketing cannot segment audiences for promotional efforts. Customer service representatives do not have a centralized log of previous interactions with customers.
business intelligence	manually compiled Excel workbook aggregations across 30 retail branches.	human error & time consuming. Manual aggregations take days, providing senior executives with antiquated and inaccurate performance metrics for demand forecasting.
data governance	storage of flat files using ad-hoc password protection on	non-gdpr compliant. Lack of centralized permissions management or access auditing constitutes violations of gdpr art. 32 (Security of Processing), which exposes maldiva ltd. To potential regulatory liability

	shared file servers.	due to failure to implement adequate measures to secure consumer data.
cross functional workflows	unconnected departmental applications that require employees to enter data twice in two separate applications.	time consuming administrative burden. Duplicate manual entry wastes employee time & creates data inconsistencies between Sales & general accounting ledgers.
supplier and order management	manual generation of purchase orders sent via email attachments based on store manager estimates.	poor vendor visibility & supply delays. Purchasing decisions lack central oversight. Delayed ordering leads to backorders on high-demand electronics and over-purchasing slow-moving goods.

According to dynamic capabilities theory, an organizations' flexibility & ability to adapt depends on its integrated information Architecture (teece, 2019). Maldiva ltd's existing systems act as a constraint preventing them from expanding their customer base & increasing revenue streams due to Inefficiencies created by an outdated technology infrastructure.

3. Recommendation for solution

To mitigate the above mentioned operational problems faced by maldiva ltd., we recommend that maldiva ltd migrate towards a cloud based Enterprise Resource Planning (ERP) application (e.g., Microsoft Dynamics 365 or sap s/4 hana cloud) which includes a centralized customer relationship module (crm) along with embedded Business Intelligence (BI).

This integrated Architecture would eliminate stand alone applications, replacing them with a single enterprise-wide database. Real-time synchronization would occur between physical stores & central warehouse inventory levels, digital storefronts & corporate office inventory levels.

Our recommendation has significant advantages in terms of meeting many operational needs including:

- **Alignment with corporate goals and omnichannel integration:** centralization of inventory databases into a single cloud based platform provides a single Source of Truth (SSOT). All Sales activity occurs in real-time regardless of the Sales channel & therefore instantly updates global stock balances eliminating over-sold situations, stock-outs & delayed shipments (chorfi et al., 2021).
- **efficient operations:** automate workflow triggers eliminating manual data reentry across Sales, warehouse & finance functions. Relocate administrative personnel into analyst roles reducing operational costs.
- **scoping costs and scale ability:** using a SaaS (Software as a service) approach limits up-front capital expenditures (CapEx) on server infrastructure costs transforming those costs into regular operational expenditures (opex) subscription fees (chaudhary et al., 2022). Scaling the cloud infrastructure enables maldiva ltd. To seamlessly add new physical storefronts as part of expansion plans.
- **enhancing analytics & senior leadership decision making:** embedded bi engines analyze transactional data streams in real-time producing timely dashboards, automated Sales trend analysis & predictive inventory forecasting eliminating the delay associated with compiling spreadsheet data (Davenport, 2020).
- **improved vendor collaboration & procurement management:** automated reorder triggers send electronic purchase orders to electronics suppliers when stock breaches minimum thresholds, reducing lead times and ensuring optimal inventory levels across physical locations and e-commerce hubs.

The single system also embeds regulation compliance into everyday business practices through several controls:

- **Access control based upon roles (rbac):** limit employee access to relevant job-function required permissions restricting unauthorized employee access to protected consumer files.
- **Encryption of consumer data:** encrypt consumer personal identifiable information during transit & at rest protects consumers' private identifiable information ensuring gdpr compliance (Voigt & Von dem Bussche, 2017).
- **automated log creation & auditing:** automatically create audit logs capturing all modifications made to records including who modified the records & when the modification occurred enabling complete auditable trails supporting regulatory compliance.

4. Rollout plan

A successful implementation of an enterprise wide system requires a well-defined project governance framework for managing change management methodologies and infrastructure migration approaches. The rollout follows a 5 Phase plan that spans a period of 9 months.

- **Phases 1-2 months 1-2 (Requirements Analysis & Vendor Selection):**
 - Document detailed functional specification documents across all business units.
 - Establish formal service level agreements (sla) with vendors selected.
 - Define specific regulatory compliance requirements.
- **Phases 2-3 months 3-6 (Configuration & System Integration):**
 - Configure core Software modules.
 - Develop API interfaces connecting pos & e-commerce & accounting engines.
 - Perform data cleansing scripts on legacy databases.
- **Month 6 pilot test & validate business processes:**
 - Deploy pilot program across 5 pilot retail stores and online platform to test automated inventory synchronization, order shipment triggers & financial posting logic.
- **Months 7-8 Phase 4 (Workforce Training & Change Management):**
 - Deliver role-specific training programs across retail employees, logistics employees & executive-level users.
 - Establish departmental super-users to facilitate peer-to-peer learning.
- **Month 9 Phase 5 (system transition & parallel run):**
 - Execute parallel run transition strategy—operate both legacy & cloud platforms simultaneously for 14 days—to confirm accurate data synchronization prior to shutting down legacy applications.

enterprise system failures often result from organizational reluctance rather than technological shortcomings (Markus & Benjamin, 2021). To address organizational change management, maldiva ltd. Will employ kotter's eight step change model:

- **Create sense of Urgency:** Highlight market-related risks, financial leakages & operational Inefficiencies incurred by reliance on manual processing techniques.
- **build guiding coalition:** Form multi-disciplinary project steering committees comprised of it professionals, financial professionals, store managers & marketing professionals.

- **create strategic vision:** Communicate strategic benefits of implementing unified cloud-based operations throughout all levels of staff.
- **enlist Volunteer Army:** Identify key store super-users who can serve as champions of new Software workflows & assist fellow employees in adopting new ways of doing things.
- **enable actions by removing obstacles:** Eliminate redundant manual spreadsheets & legacy applications to avoid having employees revert back to old ways of completing tasks.
- **generate early wins:** Celebrate successes achieved in pilot stores with regard to automated inventory synchronization without errors & no errors in fulfilling orders.
- **sustain momentum:** Continuously improve system configuration options & workflow settings after deploying system.
- **institutionalize changes:** Embed newly implemented cloud ERP procedures into company standard operating procedures & employee orientation programs.

attitudes toward technology adoption were studied extensively as part of TAM research. two fundamental factors in determining whether users will accept new technologies include: users' perceptions regarding how useful new technologies are (perceived usefulness pu) [demonstrate how automation obviates manual tasks] and users' perceptions about how easy or difficult it will be for them to use new technologies (perceived ease of use $peou$) [provide clear directions for users on how to utilize the interface] (Davis, 1989; Venkatesh et al., 2016).

Several key deployment risks were identified. Several corresponding mitigation strategies included:

Risk identified	severity	mitigate Risk
Legacy data corruption	high	automatically clean legacy data prior to migrating.
Employee Resistance	High	Implement kotter aligned change management methodology.
Network downtime	medium	utilize hybrid local cache for pos terminals so that if network connectivity is interrupted shipping will continue until network connectivity is restored again.

Scope creep/cost overruns	medium	monitor scope creep via rigid agile sprints overseen by executive steering committee
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5. Conclusion & References

Maldiva Ltd.'s operational bottlenecks—such as stock outages, fragmented customer data, slow reporting, and GDPR compliance risks—are directly caused by an outdated and fragmented information systems architecture. Migrating towards an integrated cloud-based ERP and CRM platform featuring embedded Business Intelligence addresses these issues directly.

Consolidating core workflows into a single Source of Truth (SSOT) removes data drift, eliminates manual spreadsheet processing, ensures GDPR data protection compliance, and gives executive management real-time analytics for making timely decisions. Supported by a structured rollout plan and Kotter's change management framework, this system transformation will optimize Maldiva Ltd.'s operational capabilities, restore customer satisfaction, and provide a scalable foundation for expanding physical storefronts and e-commerce channels.

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