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Proposal for Modernising Information Systems at AKPerog Ltd.

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1. Introduction

AKPerog Ltd., a rapidly expanding consumer electronics retailer with 30 physical stores and a growing e-commerce platform, is experiencing significant operational strain due to outdated and fragmented information systems. Although sales have increased sharply over the past year, the organisation's technological infrastructure has not kept pace, creating challenges that now threaten customer satisfaction, regulatory compliance, and sustainable growth. Key business functions such as inventory management, customer relationship management (CRM), reporting, departmental coordination, and data security rely heavily on manual processes and disconnected legacy systems, resulting in inefficiencies that affect store operations, online sales, and head office decision-making. The most critical issue is the company's manual inventory tracking process, which frequently leads to discrepancies between actual stock levels and those shown online. These errors result in cancelled orders, delays, refunds, and negative customer experiences that undermine trust in the brand. The absence of a unified CRM system further complicates operations, as customer data is scattered across multiple databases, preventing personalised marketing and limiting the effectiveness of customer support teams. Decision-making is also impaired by the use of manually compiled spreadsheets, which often contain inaccurate or outdated information. Combined with weak data security measures and a lack of system integration across departments, these issues highlight the urgent need for AKPerog Ltd. to adopt a modern, integrated information system.

2. Evaluation of Existing Systems

2.1 Current Information Systems Landscape

AKPerog's current information system landscape is highly decentralised, manual, and inefficient. Inventory is tracked through basic spreadsheets and handwritten records, with each store maintaining separate stock lists. Online stock levels are updated infrequently, resulting in poor real-time visibility. As Laudon and Laudon (2022) note, fragmented systems lead to operational delays and bottlenecks, which are clearly evident at AKPerog. Customer data management is equally problematic, as the company lacks a unified CRM system. Marketing, customer support, and the e-commerce platform all store information separately, preventing the creation of a complete customer profile and limiting personalised service. Reporting processes also rely on manual data compilation from 30 stores and the online platform, increasing errors and slowing decision-making. Additionally, weak access controls and inadequate GDPR compliance expose the business to cybersecurity and legal risks. Finally, departments operate with disconnected software tools, leading to duplicated work and frequent errors during manual data transfers.

2.2 Identified Inefficiencies and Gaps

A major inefficiency at AKPerog is its manual inventory management system, which causes frequent errors, delays, and mismatches between physical stock and system records. This results in inaccurate stock levels both online and in-store. Monk and Wagner (2020) note that retailers lacking automated inventory control face increased stockouts, overstocking, and reduced customer satisfaction. CRM processes are equally inefficient due to disconnected customer data. Marketing cannot access purchase histories for targeted promotions, and

customer service struggles to resolve complaints without unified records, leading to slower responses and weaker loyalty. Business intelligence is limited by manual spreadsheets, which are time-consuming, error-prone, and lack real-time analytics. As O'Brien and Marakas (2019) emphasise, outdated reporting leads to poor decision-making. Data security is another critical gap, with weak access controls and GDPR risks, as highlighted by Stair and Reynolds (2021). Finally, the absence of integrated systems forces employees to manually transfer data, increasing delays and errors across departments.

2.3 Critical Evaluation

From a critical standpoint, AKPerog's current information system landscape does not support its strategic ambitions. The company is growing rapidly, yet its technological backbone remains rudimentary. Inadequate systems are not simply an inconvenience they are a direct threat to organisational performance. The manual and fragmented processes impede efficiency, reduce accuracy, and limit the company's capacity to respond to market dynamics. AKPerog risks losing its competitive advantage unless it undertakes comprehensive digital transformation. This requires more than incremental improvements; it demands a fully integrated modern information system capable of supporting automation, analytics, and customer-centric operations.

3. Recommended Solution

3.1 Proposed Information System: Integrated ERP with CRM

To address the complex challenges AKPerog faces, this proposal recommends implementing a cloud-based Enterprise Resource Planning (ERP) system that includes an integrated Customer Relationship Management (CRM) module. Leading ERP solutions such as SAP Business One, Microsoft Dynamics 365, and Oracle NetSuite offer the combination of real-time inventory management, CRM, financial control, supply chain integration, data analytics, and GDPR-compliant security features required by the company. An ERP system consolidates all core business functions sales, inventory, finance, logistics, human resources, and customer service into a single centralised platform. This unified approach eliminates the inefficiencies caused by the current siloed architecture and significantly improves coordination across departments.

3.2 Justification for the Proposed System

The ERP solution aligns closely with AKPerog's business needs. Real-time inventory visibility ensures accurate stock levels across all stores and the e-commerce platform. Automated reordering prevents stockouts and reduces excess inventory. Integrated CRM capabilities enable the company to track purchase histories, segment customers, and deliver personalised marketing campaigns. The analytics tools provide executives with real-time dashboards, trend analysis, and accurate forecasting models. From a scalability perspective, cloud-based ERPs allow the organisation to expand its store network or increase online sales without requiring large infrastructure investments. Modules can be added or modified as business needs evolve. Furthermore, cloud solutions reduce the burden on internal IT teams, as vendor-managed updates ensure the system remains modern and secure.

3.3 Cost Considerations: Total Cost of Ownership (TCO)

A TCO assessment includes initial acquisition costs, ongoing operating expenses, and indirect costs. AKPerog's initial costs would include software subscription fees, implementation services, data migration, and staff training. Ongoing costs would consist of maintenance fees, additional user licences, and support services. Indirect costs might include temporary productivity dips during implementation or process redesign. However, the long-term financial benefits outweigh these expenses. ERP systems reduce inventory inaccuracies, lower operational costs through automation, and minimise compliance risks. Bradford (2020) argues that ERPs offer substantial cost savings by eliminating redundant processes, reducing manual data entry, and improving decision-making accuracy. Thus, despite significant upfront investment, the decision represents a logical and financially sound step toward improving organisational performance.

3.4 Technology Acceptance Model (TAM)

To ensure successful adoption, it is crucial to consider employee attitudes using the Technology Acceptance Model (TAM). Perceived usefulness will be high because staff will clearly see improvements such as automated processes, fewer errors, and faster access to accurate data. Perceived ease of use is also expected to be strong because modern ERPs feature intuitive interfaces and automated functions that simplify tasks. Building positive behavioural intention requires involving employees early in the process, providing sufficient training, and demonstrating system benefits to different user groups. When these factors are combined, the likelihood of strong acceptance and sustained system usage increases significantly (Davis, 1989).

3.5 Technology–Organisation–Environment (TOE) Framework

The TOE framework offers additional justification for ERP adoption. Technologically, ERP systems represent industry best practice for retailers seeking integration and automation. Organisationally, AKPerog's leadership recognises the need for technological transformation, making it highly receptive to change. The company's fast growth and strategic objectives make ERP adoption a natural progression. Environmentally, external competitive pressures push the company to improve efficiency and customer experience. Furthermore, regulatory environments such as GDPR require stronger data controls, which ERP systems inherently support.

3.6 Collaboration Support: Time/Space Matrix

ERP systems improve collaboration across the organisation through both synchronous and asynchronous communication. For example, real-time dashboards allow geographically dispersed teams to monitor performance simultaneously, while shared workspaces enable employees to contribute at different times. Using the time/space collaboration matrix, ERP tools support same-place/same-time activities like store team meetings and different-place/same-time activities like virtual sales monitoring. Additionally, different-place/different-time tasks such as CRM updates or inventory checks are supported through cloud accessibility.

Time/Space Collaboration Tool Matrix for AKPerog Ltd.

		Same Time (Synchronous)	Different Time (Aysnchronous)
Collaboration Context	Same Place	• In-store team meetings • Real-time Point-of-Sale (POS) updates • On-site inventory checks	• Shift handover notes • In-store communication logs • Paper-based task lists updated throughout the day
	Different Place	• Virtual meetings via Microsoft Teams • Real-time ERP dashboards accessible across stores • Live stock visibility for multi-location coordination	• Emails between departments • Shared ERP collaboration workspaces • CRM notes and customer case updates • Cloud-based task management tools (e.g., Trello, Dynamics 365 tasks)

Figure 1: Illustration of how an integrated ERP system supports synchronous and asynchronous collaboration across AKPerog Ltd.

4. Implementation Plan

4.1 Implementation Steps

The implementation process should begin with a thorough requirements analysis to identify technical and functional needs across all departments, ensuring the ERP system is configured appropriately. Following this, a structured vendor selection process should be carried out using criteria such as cost, scalability, integration capability, security, and long-term support. Data migration planning is essential and should include data audits and cleansing to ensure that legacy information is accurate before transfer. Customisation will involve configuring key modules such as inventory, CRM, and finance, while integration with existing tools, including POS and supplier platforms, should be enabled through APIs. Rigorous testing must be conducted, including User Acceptance Testing (UAT) by departmental staff to validate system performance. A comprehensive training programme will prepare employees for smooth adoption. Deployment should follow a phased rollout, starting with a pilot site and expanding gradually. Finally, post-implementation reviews will evaluate performance against key KPIs.

4.2 Potential Challenges

Implementing a new ERP and CRM system will inevitably present several challenges for AKPerog Ltd. One of the most common obstacles is employee resistance to change, as staff may feel anxious about adopting unfamiliar technologies or fear that the new system will disrupt their established routines. This can temporarily reduce productivity as employees adjust to new workflows. Data migration also poses a significant risk; transferring information from fragmented legacy systems may lead to inconsistencies, loss of records, or errors if not carefully managed. Additionally, integration complexities may arise when connecting the new ERP with existing POS systems, supplier platforms, or third-party tools, requiring specialised technical expertise to ensure seamless interoperability. However, these challenges can be effectively minimised through clear communication, phased implementation, comprehensive training, and ongoing vendor support. Proper planning and change management will help ensure a smooth transition and maximise user acceptance.

5. Conclusion

AKPerog Ltd. faces significant operational challenges due to outdated information systems. These issues include poor inventory accuracy, fragmented customer data, slow decision-making, security vulnerabilities, and lack of departmental integration. To address these challenges, this proposal recommends implementing a cloud-based ERP system with integrated CRM capabilities. Supported by the TAM, TOE, and TCO frameworks, the ERP solution offers substantial long-term benefits, including automation, improved accuracy, enhanced customer experience, and stronger compliance. With a well-planned implementation approach and adequate staff training, AKPerog will be able to transform its operations, scale effectively, and maintain a competitive advantage in the consumer electronics retail sector.

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