

MSc Cyber Security

Unit 6 Assessment

Development Team Project: Risk Identification Report

Risk Assessment: Pampered Pets

Group D

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1. Introduction

This report contains risk assessments for the business Pampered Pets, one for current operations and one for digitalised operations. Each assessment explains the methodology used, analyses relevant threats, their impact, and provides mitigations. Questions on the business impact of digitalisation will be addressed. The report recommends digitalising the business and provides a strategy to implement this.

2. Risk Assessment of Current Business

2.1. Methodology

Pampered Pets' current business risks are assessed using a structured, internationally recognised approach supported by staff input.

- **ISO (International Organization for Standardization) 27001** provides a credible and globally recognised framework for managing information security (ISO, 2022).
- **ISO 27005** offers a step-by-step process for identifying, analysing, and prioritising risks (ISO, 2018).
- The framework ensures risks across **network security, physical security, operations, and supply chains** are systematically addressed.
- **OCTAVE principles** incorporate staff knowledge and participation, capturing day-to-day vulnerabilities (Alberts and Dorofee, 2003).
- This **hybrid approach** combines international standards with practical staff insights, making it adaptable for a small business.

2.2. Current Threats and Risks (ISO 27005 Risk Assessment Results)

Risk	Likelihood	Impact	Risk Level	Mitigation
Wi-Fi exploitation	Medium	High	High	WPA3, regular password changes
Inventory errors	High	Medium	High	Version control, error checks
Power outage/data loss	Low	High	Medium	UPS, backups
Staff absence	Medium	Medium	Medium	Crosstrain staff
Asset theft	Medium	Medium	Medium	CCTV, alarm, restricted access
Supplier delays	Low	Medium	Low	Multiple suppliers, buffer stock

Table 1: Current Risks

2.3. Recommendations

- **Maintain a Risk Register** – Record risks, controls, and reviews in a formal register.
- **Annual Risk Reviews** – Reassess risks regularly, especially when new suppliers, products, or technologies are introduced.
- **Enhanced Physical Security** – Use visible deterrents like CCTV, signage and secure storage.
- **Supplier Resilience Planning** – Establish alternative supplier agreements and review delivery performance quarterly.
- **Staff Training** – Awareness sessions for basic security, operational resilience and fraud prevention (Alberts and Dorofee, 2003).

This approach ensures a structured and thorough risk evaluation that remains practical and adaptable for a small four-person team.

3. Digitalisation Risk Assessment

3.1. Methodology

Digital risks were assessed using FRAP (Facilitated Risk Analysis Process), a qualitative methodology (Peltier, 2013).

- Digitalisation risks are complex and often non-quantifiable. FRAP allows expert judgment and discussion (Ganesen et al., 2022).
- Collaborative workshops with stakeholders ensure diverse perspectives and holistic risk identification (Bale, Sediyo and Marwata, 2014).
- FRAP assesses how digital changes introduce risks to existing operations and mitigations (Hiremath et al., 2024).
- FRAP is flexible and adaptable.

3.2. Proposed Changes for Digitalisation

- E-commerce portal for broader customer reach.
- Online Marketing for wider audience engagement.
- Digital Inventory System for improved efficiency and real-time tracking.
- CRM System to manage customer interactions, track sales, and personalise marketing.
- International supply chain integration for cost reduction and diversified offerings.

3.3. Digitalisation Threats and Risks

Change	Threat	Vulnerability	Impact	Likelihood	Risk Level
E-commerce	Cyberattacks	Weak testing, unpatched software	Breach, downtime, financial loss	High	High
Inventory	Data compromise, system failure	Poor access control, no validation	Errors, disruption, loss	Medium	High
CRM	Data breach	Weak authentication, inadequate encryption	Fines, legal actions, loss of trust	High	High
Marketing	Impersonation, misinformation	Weak social media policy/security	Reputation damage, lost trust	Medium	Medium
Supply Chain	Attacks, data theft	Third-party weaknesses	Disruption, IP theft, losses	Medium	Medium

Table 2: Digitalisation Risks

3.4. Mitigations (Digitalisation)

- **E-commerce:** Implement WAF, regular penetration testing, ensure secure coding, encryption.
- **Social media:** Enforce clear policies, use MFA, monitor for impersonation.
- **Digital Inventory:** Implement access controls, regular backups, data validation, consider redundancy.

- **CRM:** Encryption, access controls, regular security audits, training.
- **Supply Chain:** Conduct vendor security assessments, implement secure data exchange protocols, consider blockchain.

4. Key Questions

4.1. Could an online presence grow the business by up to 50%?

An online presence offers significant growth potential, with evidence suggesting up to 50% expansion for comparative businesses. This is supported by increased consumer adoption of e-commerce (Eurostat, 2023) and the ability to overcome geographical constraints (Ocado Group, 2025). Morell (2024) highlights online commerce pricing strategies as a priority for small retailers, while Gelder (2024) notes sustained consumer preference for online shopping. Achieving this growth necessitates strategic implementation, including effective digital marketing and competitive pricing.

4.2. Could changing to an international supply chain reduce costs by up to 24%?

International supply chain diversification can yield up to 24% cost reduction, primarily through lower labour costs and economies of scale from international suppliers (Ellram, 2013). Digital supply chain management can improve operational cost efficiency (Sharma, 2024). However, risks like shipping costs, quality control, and supply chain disruptions require consideration (Ni Business Info, no date).

4.3. Could the business lose up to 33% of its existing customers if the business doesn't provide some online features?

Lack of online features poses significant risks; evolving consumer expectations and competitive pressures could lead to a 33% customer loss. Modern consumers demand digital convenience, and businesses without an online presence may be perceived as outdated (Morell, 2024). While Pampered Pets' local reputation may mitigate some loss, actual impact depends on competitor actions and customer demographics (Eurostat, 2023).

5. Recommendations

5.1. Future Direction

Digitalisation is strongly recommended, with a phased approach considered best. Growth potential significantly outweighs risks of inertia, whilst failure to digitalise could damage the customer base.

5.2. Digitalisation Strategy Phases:

5.2.1 Foundation Building (0-6 months)

- Introduce e-commerce platform for core products and local delivery/pickup options. Prioritise security features and user experience.
- Integrated Inventory and Sales System: Cloud-based system to replace manual processes. Improves order fulfilment and inventory management.
- Training on systems and digital literacy. Consider an IT support specialist.
- Invest in cybersecurity and consider a cybersecurity consultant.

5.2.2. Market Expansion and Optimisation (7-12 months)

- Expand online marketing, focusing on targeted advertising and social media presence establishment. Monitor ROI.

- Implement a CRM system for customer relationship management and personalised marketing.
- Explore international supply chain options. Conduct due diligence on potential suppliers and logistics. Maintain quality and ethical sourcing.

5.2.3. Continuous Improvement and Innovation

- Periodic risk assessments.
- Implement new technologies and regularly update systems.
- Use customer feedback to refine online services.

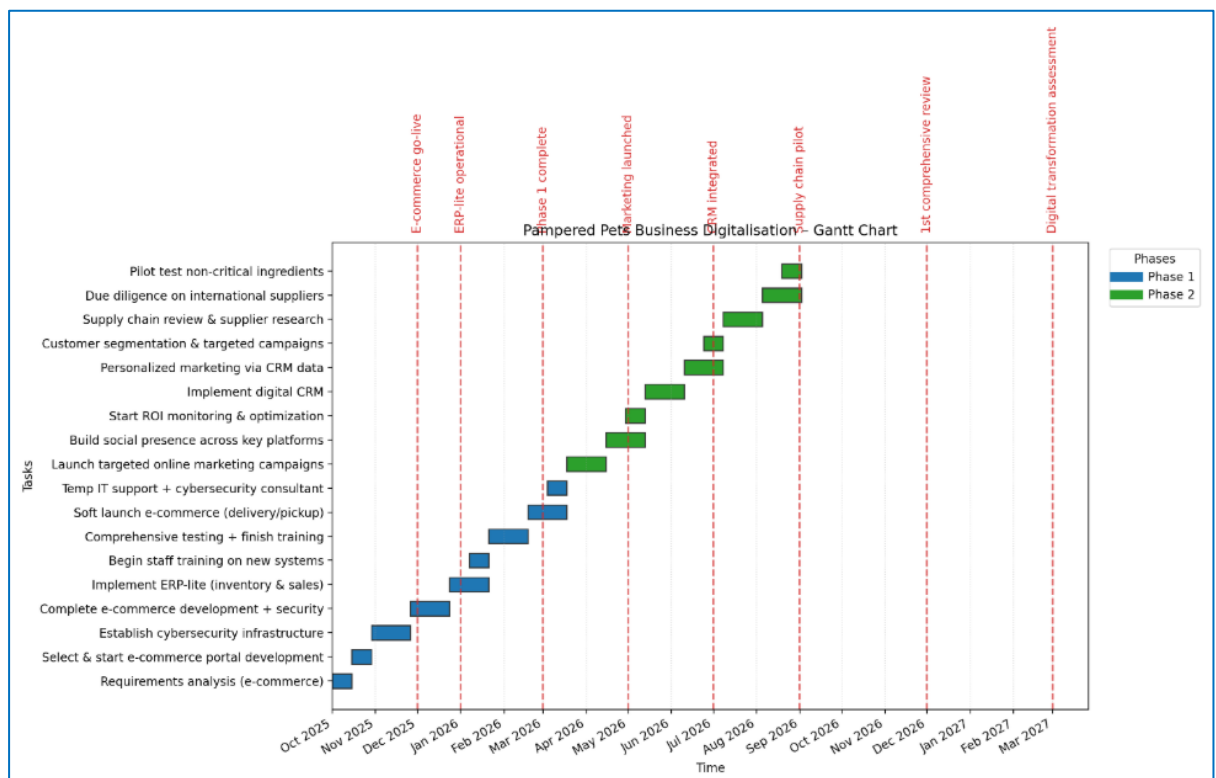


Figure 01: Gantt Chart

5.3. Keys for successful digitalisation:

- Budget for security infrastructure, audits, and continuous vulnerability management.
- Training on cybersecurity best practices.

- Enforce policies for data handling, mobile devices, social media, and third-party vendors.
- Gradual rollout with testing and adjustments.
- Establish mechanisms for ongoing security monitoring, incident response, and strategy adaptation.
- Security assessments and contractual agreements for third-party services.

6. Conclusion

This report evaluates Pampered Pets' current and digitalisation risks using ISO 27001, ISO 27005, OCTAVE, and FRAP. Current risks include security, theft, and supplier delays, while digitalisation adds cyber and supply chain threats. A phased digitalisation strategy is recommended to enhance growth, resilience, and customer retention.

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