Risk Management Plan DHA Enterprise Inc.

(ISO 27001 Framework)

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Toolbox:

ISO 27001 Risk Management Framework

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Executive Summary

DHA Enterprise Inc. (DHAEI) is a dynamic software development company based in Oshawa, Ontario, with several branch offices supporting an expanding client base. Since its founding in 2019, the company has focused on providing high-quality internet connectivity, web registration, and hosting services tailored to small office and home office (SOHO) users.

Over the years, DHAEI has built a strong digital presence that includes both on-premises infrastructure, primarily running Windows Server 2019, and cloud-based workloads hosted on Rackspace and Amazon Web Services (Amazon Web Services, 2023; Rackspace, 2023; Microsoft, 2023).

As the company continues to grow, it recognizes the importance of strong cybersecurity measures to maintain client trust and protect its operations. To address this, DHAEI is implementing a formal Risk Management Plan aligned with the ISO/IEC 27001 standard (ISO/IEC 27001, 2022). This framework will help the organization identify, evaluate, and manage potential vulnerabilities across all systems and locations.

The plan provides a clear roadmap for improving DHAEI's security posture. It highlights the most significant threats facing the company's infrastructure, including unauthorized data access and ransomware attacks, and assigns clear responsibilities for managing these risks from frontline security technicians to senior leadership (NIST, 2020). The plan also includes recommended measures to protect critical assets such as user data, physical and virtual servers, and cloud services. Each control is mapped to the relevant ISO 27001 requirements, ensuring compliance and alignment with recognized industry best practices (ISO/IEC 27001, 2022).

By integrating these strategies into everyday operations, DHAEI will strengthen its commitment to confidentiality, integrity, and availability. This proactive approach builds customer confidence and lays the foundation for continued growth and innovation.

1. Introduction

DHA Enterprise Inc. (DHAEI) is a dynamic software development organization headquartered in Oshawa, Ontario, with additional branch offices serving its growing client base. Established in 2019, the company delivers internet connectivity, web registration, and hosting services designed for small office/home office (SOHO) customers. DHAEI's environment comprises both on-premises Windows Server 2019 systems (Microsoft, 2023) and cloud workloads hosted on Rackspace and Amazon Web Services (AWS) (Amazon Web Services, 2023; Rackspace, 2023). Recognizing the importance of robust security, the company is now implementing a formal Risk Management Plan aligned with ISO/IEC 27001 standards (ISO/IEC 27001, 2022). This plan identifies critical risks, assigns responsibility for mitigating them, and details how each solution maps to relevant ISO 27001 controls (ISO/IEC 27001, 2022; NIST, 2020).

1.1 Purpose

- Establish a structured approach to identifying, assessing, and treating risks that threaten DHAEI's information systems.
- Ensure compliance with international standards, including ISO/IEC 27001.
- Protect critical assets and maintain stakeholder confidence in DHAEl's services.

1.2 Scope and Applicability

- Technical Scope: All servers (Windows Server 2019), workstations (Windows 10), domain controllers, cloud infrastructure (Rackspace, AWS), and supporting network infrastructure.
- Organizational Scope: Main office in Oshawa (1,500 users), multiple branch offices (200 users each), remote programmers (20) using L2TP VPN, and new Brampton branch requirements.
- Applicability: Management, IT, Security, and relevant branch technicians with direct involvement in risk identification, mitigation, and oversight.

1.3 Users and Stakeholders

- CEO (Alan Hake): High-level strategic oversight and final risk acceptance authority.
- CIO (Amanda Wilson): Aligns technology budgets and priorities with risk management.
- CISO (Paul Alexander): Oversees execution of the Risk Management Plan and ensures compliance.
- Security Technicians and Interns: Implement and manage security controls daily.
- Branch Office Technicians: Perform local maintenance and report on local security incidents.

2. Risk Assessment Methodology

DHAEI's approach is guided by ISO/IEC 27001, leveraging the following steps:

- Identify assets (tangible and intangible).
- Identify threats and vulnerabilities relevant to each asset.
- Analyze risk based on impact and likelihood.
- Determine risk ownership at various organizational levels.
- Define risk acceptance and treatment criteria.

2.1 Process and Involved Personnel

Process:

- Asset and Data Review: Catalog servers, endpoints, and services in main/branch offices and cloud environments.
- Threat and Vulnerability Analysis: Evaluate potential risks (e.g., ransomware, insider threats, unauthorized data access, etc.).
- Impact and Likelihood Assessment: Assign numerical values (0–10 for severity, 0–5 for probability).
- Define Action: Accept, mitigate, transfer, or avoid each risk based on established thresholds.

Personnel:

- Amanda Wilson (CIO): Authorizes budgets and final strategic directions.
- Paul Alexander (CISO): Conducts overarching risk analysis and orchestrates security measures.
- Security Technicians: Provide technical data on vulnerabilities and assist in implementing mitigations.
- Branch Technicians: Offer local insights into infrastructure status and user patterns.

2.2 Assets, Vulnerabilities, and Threats

Key Assets

- Active Directory Domain Controllers (DC1, DC2, RODCs)
- File Servers (FSI) and Branch Office Servers
- Cloud Services (AWS, Rackspace)
- VPN Infrastructure (L2TP for remote workers)

Potential Vulnerabilities

- Misconfiguration in domain controllers
- Inadequate encryption on file servers
- Weak credentials for remote access
- Insufficient patch management for servers and endpoints

Top 3 Threats

- Ransomware Attacks
 - Challenges: Could disrupt operations across multiple branches; branch technicians might lack advanced incident response training.
- Data Breaches/Unauthorized Access
 - Challenges: Regulatory compliance issues, especially with storing or transmitting data across main/branch offices and cloud.
- Service Disruption/Outage (e.g., DDoS or system failure)
 - Challenges: Potential downtime affecting 1,500 plus users in the main office, plus 200 in each branch.

2.3 Risk Ownership

Each risk has a defined chain of ownership:

Ground Level:

- Branch Technicians: Monitor local security events, apply OS patch updates, escalate issues.
- Security Technicians: Perform vulnerability scanning, remediate findings, log incidents.

• Mid-Level:

 Paul Alexander (CISO): Coordinates risk response strategies, ensures consistent control implementation.

• Senior Executive:

- Amanda Wilson (CIO): Approves budget and major security changes, escalates to CEO if high-level acceptance is required.
- CEO (Alan Hake): Holds ultimate responsibility for risk acceptance, especially for strategic or high-impact risks.

2.4 Impact and Likelihood

Risk	Confidentia lity (0-10)	Integrity (0-10)	Availability (0-10)	Severity (0-10)	Likelihood (0-5)
Unauthorized Data Access	9	8	7	9	4
Malware / Ransomware	8	9	10	9	3
Infrastructure Failure	5	6	10	8	3

• Severity: 0 = Minimal impact; 10 = Severe impact

• Likelihood: 0 = Unlikely; 5 = Highly Likely

2.5 Risk Acceptance Criteria

DHAEI will prioritize risk treatment as follows:

- High-Severity Risks (Score ≥ 8): Require immediate action (mitigate or transfer) due to major operational/financial impact.
- Moderate Risks (Score ~ 5–7): Addressed based on resource availability and operational priorities.
- Low Risks (Score ≤ 4): May be accepted if cost of mitigating exceeds potential loss or if controls are impractical.

Highest priority will be given to unauthorized data access and ransomware threats due to severe business and regulatory implications. Infrastructure failures are important but can be addressed progressively based on cost-benefit analyses.

3. Statement of Applicability (SOA)

As part of the information security risk management project for DHA Enterprises Inc., I conducted a comprehensive controls assessment and documented the status of security measures in a formal Statement of Applicability (SoA). The process and findings are visually supported by the following SoA file screenshots:

Figure 1: This screenshot displays how we mapped supplier management, incident handling, and compliance controls, identifying areas where controls were fully in place or needed further development.

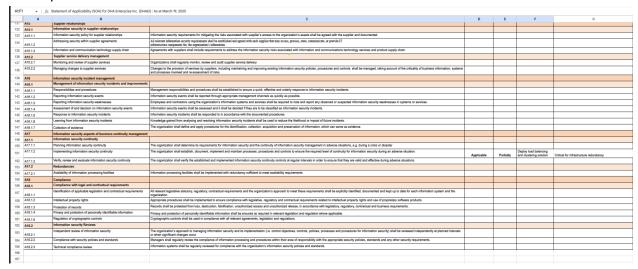


Figure 2: Here, you can see the evaluation of operational procedures, asset management, and network security controls, with clear indications of partial implementations and improvement needs.

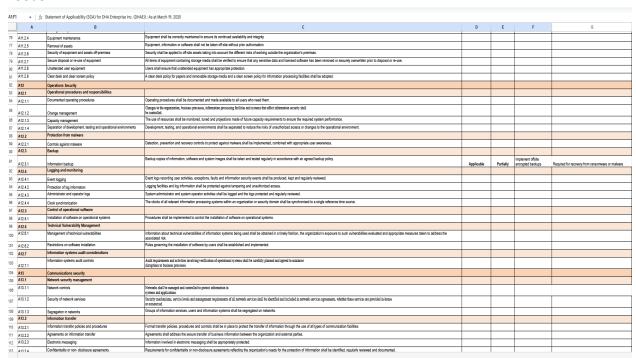


Figure 3: This final screenshot highlights our review of access control management, cryptographic controls, and physical security, offering a detailed look at our user management and data protection practices.

A	В	C	D	Е	F	G
	ser access provisioning	A formal user access provisioning process shall be implemented to assign or revoke access rights for all user types to all systems and services	U		,	0
	lanagement of privileged access rights	The allocation and use of privileged access rights shall be restricted and controlled.				
	lanagement of privilegeu access rights lanagement of secret authentication information of users	The allocation of use or privileges access rights shall be controlled frough a formal management process.				
W.L.1	<u> </u>	1 1				
	eview of user access rights	Asset owners shall review users' access rights at regular internals.				
	emoval or adjustment of access rights	The access rights of all employees and external party users to information and information processing facilities shall be removed upon learnington of their employment, contract or agreement, or adjusted upon change.				
	ser responsibilities					
9.3.1 U	se of secret authentication information	Users shall be required to follow the organization's practices in the use of secret authentication information.				
9.4 S	ystem and application access control					
19.4.1 In	formation access restriction	Access to information and application system functions shall be restricted in accordance with the access control policy.				
49.4.2 S	ecure log-on procedures	Where required by the access control policy, access to systems and applications shall be controlled by a secure log-on procedure.	Applicable	Partially	Expand MFA to all privileged accounts	Required to reduce unauthorized data acc
49.4.3 Pi	assword management system	Passivord management systems shall be interactive and shall ensure quality passwords.				
19.4.4 U	se of privileged utility programs	The use of utility programs that might be capable of overriding system and application controls shall be restricted and tightly controlled.				
49.4.5 A	coess control to program source code	Access to program source code shall be restricted.				
A10 C	ryptography					
A10.1 C	ryptography controls					
A10.1.1 P	olicy on the use of cryptographic controls	A policy on the use of cryptographic controls for protection of information shall be developed and implemented.				
A10.1.2 Ki	ey management	A policy on the use, protection and lifetime of cryptographic keys shall be developed and implemented through their whole lifecycle.				
A11 P	hysical and environmental security					
A11.1 S	ecure areas					
A11.1.1 P	hysical security perimeter	Security perimeters shall be defined and used to protect areas that contain either sensitive or critical information and information processing facilities.				
A11.1.2 P	hysical entry controls	Secure areas shall be protected by appropriate entry controls to ensure that only authorized personnel are allowed access.				
-	ecuring offices, rooms and facilities	Physical security for offices, norms and facilities shall be designed and applied.				
A11.1.4 P	rotecting against external and environmental threats	Physical protection against natural disasters, malicious attack or accidents shall be designed and applied.				
	Jorking in secure areas	Procedures for working in secure areas shall be designed and applied.				
ini.ia	elivery and loading areas	Access points such as delivery and loading areas and other points where unauthorized persons could enter the premises shall be controlled and, if possible, isolated from information processing facilities to avoid unauthorized access.				
	quipment					
	quipment siting and protection	Equipment shall be sited and protected to reduce the risks from environmental threats and hazards, and opportunities for unauthorized access				
		Equipment shall be protected from power failures and other disruptions caused by failures in supporting utilities.				
_	upporting utilities	1 1 1 1				
	abling security	Power and Selecommunications cabling carrying data or supporting information services shall be protected from interception, interference or damage.				
	quipment maintenance	Equipment shall be correctly maritained to ensure its continued availability and integrity.				
-	emoval of assets	Equipment, information or software shall not be taken off-site without prior authorisation.				
	ecurity of equipment and assets off-premises	Security shall be applied to off-site assets taking into account the different risks of working outside the organization's premises.				
11120	ecure disposal or re-use of equipment	All items of equipment containing storage media shall be verified to ensure that any sensitive data and incresed software has been removed or securely overwritten prior to disposal or re-use.				
	hattended user equipment	Users shall ensure that unattended equipment has appropriate protection.				
A11.2.9 O	lear desk and clear screen policy	A clear desk policy for papers and removable storage media and a clear screen policy for information processing facilities shall be adopted.				
A12 0	perations Security					
A12.1 0	perational procedures and responsibilities					
A12.1.1 D	cournerted operating procedures	Operating procedures shall be documented and made available to all users who need them.				
A12.1.2 C		Change to the organization, twiness processes, information processing facilities and systems that affect information security shall be controlled.				
	hange management	The use of persons chall be monitored timed and nonicotions made of finite catacity soutienment to process the provised outsine performance				

These referenced SOA screenshots illustrate the rigorous approach taken to evaluate, document, and prioritize security controls, ensuring DHA Enterprises Inc. meets both operational needs and regulatory requirements in its risk management efforts.

Please refer to the link below for the complete Statement of Applicability (SOA).

■ Statement of Applicability (SOA) for DHA Enterprise Inc. (DHAEI)

4. Risk Treatment

4.1 Threats and Recommended Mitigations

Threat 1: Ransomware Attack (High Severity)

• Mitigation Strategies:

- Endpoint Detection and Response (EDR) solutions on all workstations.
- Encrypted, regular backups (onsite/offsite).
- Enhanced staff training on phishing awareness.

Threat 2: Data Breach/Unauthorized Access (Moderate–High Severity)

Mitigation Strategies:

- Implement MFA for remote and privileged logins.
- o Enforce strict AD Group Policies (password complexity, account lockouts).
- Use file-level or volume-level encryption (BitLocker on Windows Server 2019).

Threat 3: Service Disruption/Outage (Moderate-High Severity)

• Mitigation Strategies:

- Redundant network links; load balancing for critical systems (e.g., DC1/DC2).
- Implement cluster management for the RODC environment to reduce single points of failure.
- Regular testing of DR/BCP (Disaster Recovery/Business Continuity Plan).

4.2 Prioritization and Justification

- Ransomware Attack Highest priority: Potential to halt operations across multiple branches.
 - ❖ Rationale: Malware significantly impacts availability and integrity of critical business data, causing operational disruption (ISO/IEC 27001 Controls A.12.3.1, A.12.2.1).
- **Data Breach** Equally critical from a regulatory standpoint, but immediate operational impact may be lower than ransomware.
 - ❖ Rationale: Regulatory compliance requirements and severe reputational damage if data is compromised (ISO/IEC 27001 Control A.9.4.2).
- **Service Outage** Infrastructure disruptions are highly impactful but can be mitigated with robust redundancy and DR strategies.
 - ❖ Rationale: Ensuring continuous business operation reduces customer dissatisfaction risks, but can be phased in based on budgetary constraints (ISO/IEC 27001 Control A.17.1.2)

Conclusion

This ISO 27001-aligned Risk Management Plan offers DHA Enterprise Inc. (DHAEI) a clear and methodical framework for safeguarding its information systems and digital assets against emerging cybersecurity threats (ISO/IEC 27001, 2022). By prioritizing ransomware prevention, stringent unauthorized access controls, and robust infrastructure redundancy, DHAEI positions itself effectively to sustain uninterrupted operations and proactively meet the evolving demands of its growing user base (NIST, 2020; Microsoft, 2023).

Moreover, this plan underscores the company's strong commitment to upholding recognized industry best practices and actively mitigating potential vulnerabilities across both on-premises and cloud environments, including workloads hosted on AWS and Rackspace (Amazon Web Services, 2023; Rackspace, 2023). Regular review and updates to this Risk Management Plan ensure DHAEI remains agile, resilient, and capable of seamlessly adapting to the challenges inherent in expanding its branch offices and deepening its reliance on cloud-based services.

Ultimately, the continued success of DHAEI hinges upon its capability to secure mission-critical data, maintain compliance with ISO 27001 standards, and consistently deliver reliable services to its clients (ISO/IEC 27001, 2022). This comprehensive Risk Management Plan not only addresses immediate cybersecurity concerns but also establishes a foundational framework for ongoing cybersecurity excellence, vital to DHAEI's long-term innovation, stability, and growth.

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