



ISO/IEC 27001:2022

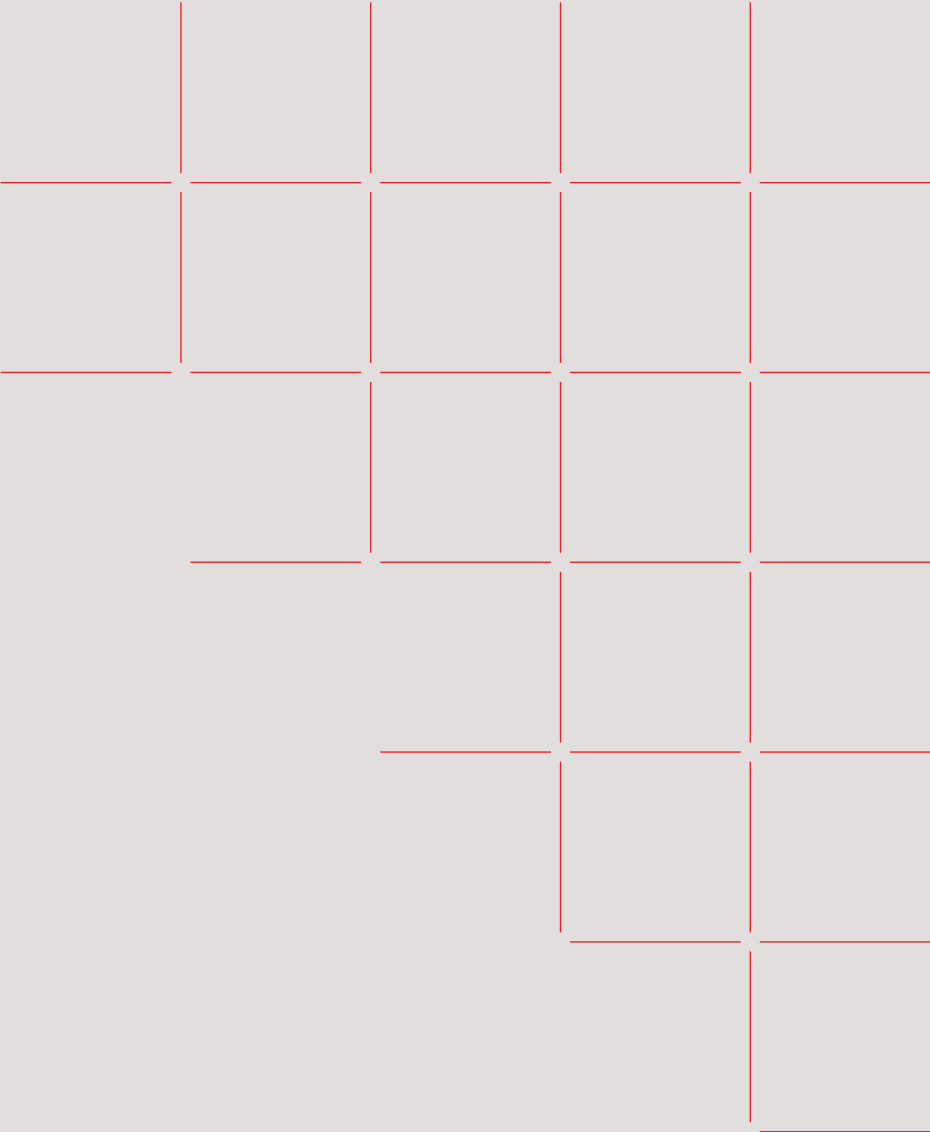
Information Security Management Systems

A practical guide for SMEs

Advice from ISO/IEC JTC 1/SC 27

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Foreword

Cybercrime is on the rise, growing increasingly severe and sophisticated as hackers develop ever more advanced techniques. In this fast-changing landscape, it can seem difficult or even impossible to keep track of cyber-risks. At ISO, we are ready with support and solutions to help small and medium-sized enterprises (SMEs) safely navigate this process.

This handbook focuses on guiding SMEs in developing and implementing an information security management system (ISMS) in accordance with ISO/IEC 27001, in order to help protect yourselves from cyber-risks.

SMEs account for the vast majority of businesses worldwide and often have specific needs. International Standards help you to compete on a level playing field with bigger enterprises, gaining access to global markets, reducing costs and building customer confidence that your products are safe and reliable. We understand the unique challenges you face as SMEs – whether due to lack of money, resources or a full understanding of the issues – that can lead to your security being compromised.

ISO/IEC 27001 is the world's leading standard for ISMSs, providing organizations with guidance on establishing, implementing, maintaining and continually improving an ISMS. It defines requirements for an ISMS and helps organizations secure their information assets by identifying and managing risks – something which is vital in today's digital world. The requirements that ISO/IEC 27001 describes are generic and are designed to be both scalable and flexible, and hence apply to all types of organization, regardless of their size or the nature of their business activities or sector.

Implementing ISO/IEC 27001 means that your organization or business has put in place a system to manage risks related to the security of data owned or handled by the company, and that this system respects all the best practices and principles enshrined in the standard.

By using ISO/IEC 27001, you demonstrate to stakeholders and customers that you are committed to managing information securely and safely. It is a unique way to promote your organization, celebrate your achievements and prove that you can be trusted. In addition, the holistic approach of ISO/IEC 27001 means that the entire organization is covered, not just IT. People, technology and processes all benefit.

This handbook was developed by experts from the joint ISO and IEC technical community on information security, cybersecurity and privacy protection. I sincerely hope it will support your enterprise's efforts in developing an ISMS that acts as a tool for risk management, cyber-resilience and operational excellence. By doing so, we hope your organization will set the standard and emerge as a leader in your industry.



Sergio Mujica

ISO Secretary-General

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About this handbook

The aim of this handbook is to guide small and medium-sized enterprises (SMEs) on developing and implementing an information security management system (ISMS), based on the International Standard ISO/IEC 27001:2022, Information security, cybersecurity and privacy protection — *Information security management systems — Requirement*.

The remainder of this handbook will refer to this standard as ISO/IEC 27001 for brevity. The requirements that ISO/IEC 27001 describes are generic and are designed to be both scalable and flexible, and hence apply to all types of organization, regardless of their size or the nature of their business activities or the sector. This handbook focuses on guiding SMEs.

Strictly speaking, an SME is in practice an *organization*. However, SMEs do not normally consider themselves as organizations, as the term typically refers to an entity which is larger in size and complexity. Therefore, this handbook frequently uses the term enterprise, which is consistent with the recognized concept of SMEs.

In this context, the term enterprise includes all organizations that use, process, exchange and store information for their own internal needs and on behalf of others, such as their customers or suppliers. Examples of enterprises are small family businesses, manufacturers, distributors, schools, retail outlets, law firms, charitable foundations, care homes and community medical centres,

This handbook consists of a number of sections that readers can apply and refer to separately, as the need arises. As such, the handbook is a supporting document for SMEs applying ISO/IEC 27001. Therefore, this handbook neither adds requirements, nor modifies existing ones.

When compared with larger entities, SMEs face particular challenges when developing an ISMS, such as the availability of resources. With a limited number of employees, an SME might not be able to dedicate a team to manage an ISMS. Therefore, individuals within an SME would be expected to include information security in addition to their main roles. Another challenge is the cost involved in developing and maintaining an ISMS. There are many factors that mean the costs can be lower than those in a large organization. Communications, for example, can often be simple and more direct, decision-making is usually simpler, involving just a few people, management can be more straightforward due to simpler structures, and risk management is generally less complicated.

From an SME's perspective, the time and money spent on an ISMS should be seen as an investment, providing business opportunities while showing a return on the investment, including protecting the enterprise's information and providing assurance and confidence to its customers. As ISO/IEC 27001 is a flexible and scalable standard, these challenges should not be a barrier to a small enterprise implementing the standard.

Information security management systems

What is an ISMS?

A management system is defined as a set of interrelated or interacting elements of an organization to establish policies and objectives, as well as processes to achieve those objectives. In simple terms, a management system is the way an enterprise directs and controls those business activities that are related (either directly or indirectly) to achieving its intended objectives and results.

For an ISMS, the objectives are the preservation of the confidentiality, integrity and availability of the information under its control. Your business activities should be directed, controlled and managed in a way that achieves these information security objectives. This needs to consider the requirements of relevant interested parties in the planning, operation and management of your ISMS in order to achieve these objectives. For example, an interested party could be one of your customers and their requirements associated with your products and services.

ISO/IEC 27001 specifies the requirements for establishing, implementing, maintaining and continually improving an ISMS.

ISO/IEC 27001 should not be confused with other security standards; for example those which specify explicit requirements and techniques for protecting IT products, networks and services. ISO/IEC 27001 specifies requirements for good management practices in order to achieve information security management but without referencing any particular type of IT product, network or service.

Implementing and using an ISMS should not result in excessive rules, paperwork and documentation, or lack of flexibility, and it should not be a financial burden. The implementation, use and maintenance of an ISMS should be considered an investment that will provide a return in the form of benefits and improvements to your information security.

All enterprises will already have some form of management system in place and this should be the basis on which their information management system is built. Therefore, it is likely that your enterprise could already fulfil at least some of the requirements included in ISO/IEC 27001 but has simply not yet organized its activities into a formal ISMS.

Why have an ISMS?

It is a strategic decision of the enterprise whether to implement an ISMS. It does so to protect its information against threats and risks. Such threats can include, for example the online theft or unauthorized modification of information. Customers might also want assurances that an enterprise protects their information. Moreover, there could be a law or regulation that requires certain types of information be protected, such as personal data.

An ISMS provides a systematic approach to fulfilling the information security objectives and requirements of an enterprise, which should lead to improvements to information security.

Using the handbook

Target audience

The target audience for this handbook is SMEs. This includes all types of small enterprise, covering all kinds of business activity and different styles of management and ownership that differentiates them from medium and large organizations.

Getting started

Initially, SMEs should use this handbook to understand both the requirements of ISO/IEC 27001, and what an ISMS is.

It is important to note that it is not the intention of ISO/IEC 27001 to impose a totally new way of managing an enterprise. An enterprise should continue to use its existing management processes as much as possible and adapt or extend them, if necessary, to implement an effective ISMS. For an enterprise to follow this advice, it should look at how it manages its business and how it currently operates in order to customise its systems where necessary, to satisfy the requirements of ISO/IEC 27001. Hence an enterprise does not need to start from the very beginning; it should use what is already in place and adapt this as necessary.

A small enterprise will have many management aspects related to its business that are more straightforward and less complex than those of a medium-to-large organization. For example, decision-making is often a less complicated process. Therefore, for a small enterprise these examples can be advantageous and make the implementation of ISO/IEC 27001 much easier.

Therefore, you will need to analyse which requirements of ISO/IEC 27001 apply to your enterprise and whether or not you are satisfying these requirements.

If you are using the 2013 version of ISO/IEC 27001, you will need to review your current practices, and then update them to satisfy the requirements of the 2022 version.

Getting help and support

There are many sources that give information and advice (see Annex C):

- industry or professional associations, especially those that can provide guidance to SMEs;
- government departments that specialise in SME support and advice;
- national standards bodies;
- Internet websites containing information about ISMS, for example, ISO (iso.org/standard/27001, committee.iso.org/home/jtc1sc27);
- training course providers;
- certification bodies;
- consultants.

These sources may help you understand what your enterprise needs to do to implement an ISMS. Next, your enterprise needs to decide whether to go ahead with an ISMS. If your enterprise decides to go ahead, it then needs to determine how much of the work it can do and how much help it needs from external sources.

Your enterprise will need to consider what resources (people and time) it has available to do the work and this will determine how much additional help it might need. Again, the sources listed above may be able to provide additional help but your enterprise will need to take account of any associated costs.

Before using external sources of help, the following need to be noted and considered:

- Your ISMS will be unique to your enterprise; therefore, any generic solutions provided by external sources cannot always be adapted to your specific needs and business requirements.
- Two areas of misunderstanding and common failure are:
 - Not all levels of management get involved – ISO/IEC 27001 requires all levels of management to commit to the ISMS and get involved in its operation.
 - Your personnel do not get actively involved when implementing the ISMS – ISO/IEC 27001 requires commitment and participation at all levels of an enterprise. For example, consultants may not replace your management or personnel, nor may consultants manage your enterprise, speak, lead or make decisions on your behalf.



Implementing the ISMS yourself

Taking into account these requirements and the available resources, your enterprise may either implement an ISMS with or without external support – this is a decision that only an enterprise's management can make.

It is important to remember that it is your enterprise that has overall responsibility for its own ISMS. This responsibility cannot be delegated or assigned outside your enterprise even if you use an external source, such as a consultant.

There is no reason for you to make significant changes to the way your enterprise operates or manages its business. Some aspects of your enterprise may need to be adapted to meet the requirements of ISO/IEC 27001, but it is up to your enterprise how you are going to implement the standard – ISO/IEC 27001 is flexible and able to be used by all organizations and enterprises. There is no requirement in ISO/IEC 27001 for significant changes to be made to your current way of doing business.

Using a consultant

If you decide to use a consultant to help and guide you through implementing the requirements in ISO/IEC 27001, then you need to be rigorous in your selection. Also, you need to be clear what a consultant can do for you and what they should not do. A consultant could help you with a preliminary assessment of your current activities compared with the requirements of ISO/IEC 27001, and training and awareness and some aspects of implementation. However, a consultant cannot be responsible or accountable for implementing the ISMS, make management decisions, or take the leadership or ownership roles for your ISMS.

When selecting a consultant, your enterprise should undertake a thorough and careful examination of the qualifications, credentials, references and knowledge and experience of ISMS.

There needs to be a clear understanding between your enterprise and the consultant regarding scope of work, roles and responsibilities, milestones, confidentiality agreements, impartiality, regular and effective communications and reporting and any specific requirements of the enterprise. In order to inspire ownership of the ISMS and commitment to it, people in your enterprise should be actively working with the consultant.

Information security management system certification

Certification is a demonstration that your ISMS conforms to the requirements of ISO/IEC 27001 and is carried out by an independent third party.

Certification of an ISMS is not mandatory; it is the decision of your enterprise. There are several factors that might influence your decision; for example, one of the customers to whom you supply products or services could request certification, there may be statutory or regulatory requirements for certification or it might give you a competitive advantage if you gain certification. Annex B of this handbook provides more details about certification.

Guidance on what ISO/IEC 27001 means to SMEs

According to the World Bank¹, SMEs account for the vast majority of businesses worldwide and are important contributors to global economic development and job creation. SMEs represent about 90% of businesses globally – and approximately 99% in the European Union – while SMEs provide more than half of all employment. Therefore, it can be said that, collectively, SMEs form the largest set of businesses in the world.

The specialist, international working groups that write International Standards have created such standards to assist SMEs, just as they do for larger organizations. In particular, SMEs should be able to share in the gains and benefits in efficiency and effectiveness offered by ISO/IEC 27001.

This handbook briefly summarises the requirements of each clause and subclause of ISO/IEC 27001, and then provides guidance to help understand these requirements. The guidance also includes examples and case studies.

¹ <https://www.worldbank.org/en/topic/sme/finance>

Terminology

When using ISO/IEC 27001, note that certain words and phrases have particular significance or meaning specific to their context. The following verbal forms have a specific meaning in ISO and are applicable to all ISO documents.

Verbal form	Definition
shall	to express requirements – alternative words are: is to, must, needs to
should	to express recommendations
may	to express permission
can	to express possibility or capability

For most words used in ISO/IEC 27001 the dictionary definition applies, particularly common terms.

Some terms specific to information security management systems are shown below, while ISO 27000 describes the vocabulary applied to ISMS:

Term	Definition
audit	systematic and independent process for obtaining evidence and evaluating it objectively to determine the extent to which the audit criteria are fulfilled
availability	property of being accessible and usable on demand by an authorized entity
competence	ability to apply knowledge and skills to achieve intended results

Term	Definition
confidentiality	property that information is not made available or disclosed to unauthorized individuals, entities, or processes
continual improvement	recurring activity to enhance performance
corrective action	action to eliminate the cause of a nonconformity and to prevent recurrence
effectiveness	extent to which planned activities are realized and planned results achieved
integrity	property of accuracy and completeness
nonconformity	non-fulfilment of a requirement
objective	result to be achieved
objective evidence	data supporting the existence or verity of something
performance	measurable result
requirement	need or expectation that is stated, generally implied or obligatory
review	activity undertaken to determine the suitability, adequacy and effectiveness of the subject matter to achieve established objectives
risk	effect of uncertainty on objectives
top management	person or group of people that directs and controls an organization at the highest level

How to use this handbook

This handbook follows the same structure of ISO/IEC 27001, and reflects the ten sections (or clauses of this International Standard. Each section and subsection will begin with a short summary of the requirements of each specific clause or subclause of ISO/IEC 27001, and then provides guidance on what this means and what an enterprise needs to do. Additionally, there are also case studies which provide examples of how organizations can meet the requirements of ISO/IEC 27001.

Lastly, this handbook does not duplicate the clauses in ISO/IEC 27001, so a reader should refer to the applicable clauses of the standard when reading the handbook.

The Foreword of ISO/IEC 27001

The Foreword of ISO/IEC 27001 lists the technical details of ISO's processes of standards writing and approval. It also explains that ISO/IEC 27001:2022 cancels and replaces the 2013 edition, which has been technically revised to align with the Harmonized Structure for management system standards. Annex A of ISO/IEC 27001 has also been extensively revised and to align with the information security controls described in ISO/IEC 27002:2022.

Introduction

Introduction, 0.1 – General

The Introduction describes the purpose of ISO/IEC 27001, which is to establish, implement, maintain and improve an ISMS. It then describes the factors that influence the form, scale and function of an ISMS, and the outcomes of implementing an effective ISMS.

This section adds that ISO/IEC 27001 is a foundation standard for ISMS, and exists in a family of International Standards in the ISO/IEC 27000 series.

How you run your enterprise is unique to you. ISO/IEC 27001 gives you a framework to create suitable management practices that applies to your organization. The standard specifies requirements for an ISMS that have been recognized as being aligned with internationally accepted good practice for running an organization.

The standard specifies a set of items that need to be included in an ISMS, but it does not specify how you do them. Hence, there is considerable freedom and flexibility in meeting the information security requirements of the standard.

You need to build your ISMS around your existing enterprise practices and processes, i.e. the practices you currently use, so that it becomes part of and integrated within your current overall management structure and processes.

This subclause indicates that you do not need to align your documentation with the clause structure of the standard, nor use the specific terminology in it; instead, you can use the terms that you normally use in your organization.

An ISMS aims to give confidence that your enterprise is preserving the confidentiality, integrity and availability of information by applying a risk management process. This in turn provides assurance to interested parties that an enterprise is managing risks adequately, and that it is meeting any associated statutory and regulatory requirements.

Introduction, 0.2 – Compatibility with other management system standards

This part of the Introduction to ISO/IEC 27001 describes how the standard uses the Harmonized Structure that is now applied within all management system standards. This structure is specified in the ISO Directives, Part 1, and sets out a format of ten sections containing mandatory text for all management system standards.

Therefore, the Harmonized Structure provides a standard, harmonized framework for all management systems. This in turn helps those enterprises which want to implement a single management system based on the requirements of two or more management system standards.

Following the Introduction, ISO/IEC 27001 specifies ten clauses which conform to the ISO High Level Structure. The first three clauses, which are the *Scope*, *Normative references* and *Terms and definitions*, do not contain mandatory requirements. The remaining seven clauses do contain normative or mandatory elements, and are therefore assessable for both internal and external audits.

1. Scope

This describes the extent of application of ISO/IEC 27001, for ISMS that apply to all types and sizes of organization whose activities require the management and control of information security.

Guidance

The Scope explains the purpose of the standard. This clause states that the requirements of ISO/IEC 27001 are for an ISMS and focuses attention on the preservation of the confidentiality, integrity and availability of information by applying a risk management process to give confidence to interested parties that risks are adequately managed and that the ISMS meets customer requirements and applicable statutory and regulatory requirements.

It also indicates that ISO/IEC 27001 is intended to be generic and applicable to all organizations, regardless of their type or size or the products and services they provide.

2. Normative references

This clause states which International Standards are mandatory and in this case, there is only one such reference, which is ISO/IEC 27000, Information technology — Security techniques — *Information security management systems — Overview and vocabulary*.

Guidance

If a reference is normative, this means that users of ISO/IEC 27001 must refer to the normative reference and apply it. ISO/IEC 27000 describes an overview of ISMS and also describes the vocabulary for this field of application. Therefore, your enterprise must know and understand the contents and language of ISO/IEC 27000, and use the same language when referring to information security and ISMS.

ISO/IEC 27000 is a standard that contains a number of information security definitions, including those terms used in ISO/IEC 27001.

Considering that ISO/IEC 27000 is a mandatory reference, it is advisable that your enterprise at least has access to both these International Standards.

Other references are listed in Annex C of this handbook (References).

3. Terms and definitions

The activities described in every International Standard have their own terminology. ISO/IEC 27001 does not list any specific terminology, but instead refers to ISO/IEC 27000, which includes the vocabulary applied to ISMS.

Guidance

In many ISO standards, this clause contains a list of terms and their definitions necessary for an understanding of the text; however, as all terminology required for the use of ISO/IEC 27001 is given in ISO/IEC 27000, you are directed to that standard instead.

The International Standards that ISO/IEC JTC 1/SC 27 has developed for both information security management and ISMS use generic terms to describe the relationship between the interested parties involved.

ISO hosts a useful online browsing platform (OBP) which includes a large compendium of terms and definitions here: <https://www.iso.org/obp>.

4. Context of the organization

This clause in ISO/IEC 27001 consists of four subclauses, which are:

- 4.1 Understanding the organization and its context
- 4.2 Understanding the needs and expectations of interested parties
- 4.3 Determining the scope of the ISMS
- 4.4 ISMS

Each of these is explored in turn.

Subclause 4.1 – Understanding the organization and its context

The organization must determine the internal and external issues that are relevant to its business purpose and that have an effect on its powers to achieve the intended results of its ISMS.

The standard recommends that users refer to ISO 31000:2018, *Risk management Guidelines*, subclause 5.4.1 of ISO 31000.

Guidance

The intent of this subclause is to understand the enterprise and its context by determining the external and internal issues that are relevant to the business purpose and strategic direction of your enterprise, and how this might have an effect on its ability to achieve the intended results of its ISMS (i.e.. the preservation of the confidentiality, integrity and availability of information).

External and internal issues can and do change - this can have an effect on the ability of the ISMS to preserve the confidentiality, integrity and availability of information. Therefore, you should make sure that the ISMS and its context within the enterprise is monitored and reviewed at planned intervals and through activities such as management review.

Information about external and internal issues can be gathered from many sources, such as through internal documents, discussions and meetings (detailing information about the enterprise, its mission and procedure). External sources of information might include national and international press, relevant websites and government departments, small business and

professional associations, professional and technical publications, workshops and conferences and meetings with customers and other interested parties. The information gathered from external sources needs to be understood and adapted in the context of your enterprise; you need only consider that which is important and relevant to your enterprise and not become overwhelmed by the volume of information from external sources, such as the media and websites. It is more important to take note of information from customers, clients and suppliers that you do business with.

Examples of external issues can include, but are not limited to:

- **economic factors**, that may have an impact on the enterprise and its ISMS, such as national economy, money exchange rates, interest rates, inflation, credit availability, wages, transportation costs;
- **social factors**, such as unemployment rates, safety requirements, education levels, public, culture;
- **political conditions**, such as political stability, public investments, local infrastructure, international trade agreements;
- **technological trends** that may have an impact on the enterprise and its ISMS; this could be new technology and its adoption by the enterprise, new versions of software, materials and equipment or patent expirations;
- **contractual relationships**, understanding your relationships with customers and suppliers and considering their requirements for information security where appropriate to the provision of services and products;
- **market factors**, including market share, market trends, customer growth trends, domestic and global issues, market stability, supply chain relationships;
- **statutory and regulatory factors** which affect the business, such as privacy regulations, cybersecurity laws, employment law, competition regulations, import/export restrictions, intellectual property law, trade union regulations and regulations related to a specific industry.

Internal issues can include:

- the overall **performance** of the enterprise;
- **resource factors**, including infrastructure, environment for the operation

of the ISMS;

- **human aspects**, including competence of persons, the culture of the enterprise, relationships with unions;
- **operational factors**, such as process/production and service provision capabilities, performance of the ISMS, monitoring customer satisfaction;
- **governance of the organization**, such as rules and procedures for decision-making or organizational structure.

The approach your enterprise takes to establish the context and determine the issues is entirely yours to decide. A simple approach can be useful for your enterprise (dependent on the size and complexity of its business), such as brainstorming meetings and asking 'what if?' questions. Your enterprise may decide to use a SWOT analysis tool (strengths, weaknesses, opportunities and threats).



Case study

A small enterprise importing goods for distribution for the car servicing trade is a part of a supply chain. It handles various type of information, including that from foreign suppliers, exporters, border control systems and customers. The enterprise should determine any external issues that may affect the ability of the ISMS to protect this information.



Case study

A small enterprise provides transport services to schools and is implementing an ISMS to protect all information related to the provision of these services and its customers. The local government has various requirements related to the security and safety of the children that the enterprise needs to comply with.



Case study

A small residential care-home for elderly people providing accommodation, 24-hour professional care, special medical needs and other support services. The care home handles a lot of sensitive and personal information, including medical data, financial data and personal data relating to its patients. The care home is implementing an ISMS to protect all information related its patients, staff and carers. The enterprise might need to comply with several government regulations and the ISMS would need to include provisions for these regulations.

Subclause 4.2 – Understanding the needs and expectations of interested parties

The organization has to determine which interested parties are relevant to the ISMS, together with their requirements, and which of these requirements need to be addressed within the ISMS.

Guidance

The intent of this subclause is to make sure that your enterprise considers the relevant requirements of all relevant interested parties. This covers more than just those of your immediate customers and helps to focus attention on those parties that have an interest in your enterprise, which could have an impact of your ISMS. Subclause 4.1 of ISO/IEC 27001 helps to determine the relevant interested parties.

Each enterprise may generally have a different set of interested parties, so your enterprise will have a relatively distinct set of interested parties. An interested party may be identified by their possible influence or impact on the performance of your enterprise and the decisions it needs to make. Of course, your enterprise may be affected by the decisions that an interested party makes.

An interested party may create risks to your ISMS, for example, a member of a supply chain connected to your system whose security is not good. Another consideration in determining an interested party could be their potential influence or impact on the market.

Examples of interested internal parties include:

- owners;
- shareholders;
- employees;
- staff.

Examples of interested external parties include:

- customers, clients;
- business partners;
- external providers and suppliers;
- users;
- others working for the enterprise;
- bankers and insurance providers;
- statutory and regulatory authorities;
- owners of intellectual property;
- unions;
- trade associations;
- competitors.

Understanding the needs and expectations of interested parties can be achieved in different ways. For example, consulting with customers and suppliers, conducting user surveys, reviewing supply chain relationships, reviewing regulatory requirements and consideration of feedback received for interested parties, market surveillance and monitoring customer needs.



Case study

A small international language school has students from around the world learning English and French. The age of the students is 11 years and upwards. The courses that the school offers are provided through classroom teaching and online teaching. It handles various types of information related to its students (including any special needs, expectations), admissions and the administration of the school. The school needs to ensure it understands the needs and expectations of its students, parents and guardians and the requirements of educational authorities, regulatory bodies and border control agencies (e.g. student visas) in order to protect the information it handles in an appropriate and suitable way.

Subclause 4.3 – Determining the scope of the information security management system

This subclause requires the organization to determine its ISMS scope by considering the context, interested parties and the connections and dependencies of the activities the organization performs, and those of other organizations.

Guidance

The intent of this subclause is for your enterprise to determine the boundaries of your ISMS. These boundaries must be defined in a way that helps your organization satisfy the requirements of ISO/IEC 27001 and the objectives of your ISMS.

This means for that ISO/IEC 27001, 4.3, a) and b), your enterprise should establish the scope based on the external and internal issues as determined by the requirements of ISO/IEC 27001 4.1 and the relevant requirements of relevant interested parties as determined in accordance with the requirements in ISO/IEC 27001, 4.2.

For ISO/IEC 27001, 4.3, c), the enterprise should also establish the boundaries of the ISMS by considering the infrastructure of the organization, whether it has more than one site, its activities, any commercial policies it has and whether its activities, processes and services are provided internally or externally.

The scope should be recorded and maintained as documented information. The scope should include details of all that is covered by an ISMS. This documented information can be maintained in whatever method your enterprise determines meets its needs, such as manual or electronic.



Case study

A small independent book seller imports and sells books in many countries. When considering the scope of the ISMS of the book seller, relevant factors can include the following: there are two sites for its operations, i.e. an office and storage facility; it works with publishers (at home and overseas), second-hand booksellers, antique-book auctioneers, and other book suppliers, logistics companies and customers.

Subclause 4.4 – ISMS

This subclause states that the organization has to establish, implement, maintain and continually improve an ISMS, applying the requirements of ISO/IEC 27001.

Guidance

The intent of this subclause is to ensure that you establish, implement, maintain and continually improve an ISMS in accordance with ISO/IEC 27001. This includes the processes needed for the effective implementation of the system, such as risk assessment, risk treatment, monitoring, internal audit, management review and others, in accordance with the requirements of ISO/IEC 27001.

A process is a series of actions or steps taken in order to achieve a particular end. Each process will use a set of inputs in order to produce an intended result. The level to which processes need to be detailed can vary according to the context of the enterprise and the application of risk – taking into consideration the extent to which the process affects the ability of your enterprise to achieve its intended results, the likelihood of problems occurring with the process and the potential consequences of such problems.

A process is a set of interrelated or interacting activities that use inputs and outputs to deliver intended results. For example, the inputs needed for the planning of the ISMS (ISO/IEC 27001, subclause 6.1) include aspects referenced in ISO/IEC 27001, subclause 4.1, and the requirements referred to in ISO/IEC 27001, subclause 4.2. This will determine the risks and opportunities that need to be addressed. Specifically, to:

- ensure the ISMS can achieve its objectives;
- prevent or reduce undesired effects;
- achieve continual improvement.

The output of this process includes actions needed to address the risks and opportunities. The processes required for risk assessments are covered in detail under Clause 6.



Case study

A cheese manufacturer wants to meet the requirements of ISO/IEC 27001. It already has information security, including keeping some of its business information in the form of papers, files and folders, which are kept physically safe and secure, and its buildings, shop and office are physically secure. It has started to use IT to store and process more of its information electronically and has started to promote and sell some of its cheeses online. It is also expanding to open more shops.

The manufacturer has internal meetings to look at everything in its business to determine the issues (ISO/IEC 27001, subclause 4.1) and requirements (ISO/IEC 27001, subclause 4.2) to understand its business and future plans involved in its cheese-making activities or to record that tasks were performed as required. This includes reviewing the information it has, both paper-based and electronic: what information is vital and necessary for its future business, information that is not vital but should be retained and information that can be discarded.

The review includes identifying what information is either sensitive or confidential for the enterprise, and what information that is publicly available (e.g. information on their Website promoting their products) and also includes requirements for protecting the information.

5. Leadership

Clause 5 of ISO/IEC 27001 includes three subclauses with requirements for leadership, which are:

5.1 Leadership and commitment

5.2 Policy

5.3 Organizational roles, responsibilities and authorities

Subclause 5.1 – Leadership and commitment

This subclause specifies eight actions top management need to take in order to provide leadership in order to ensure the overall effectiveness of the ISMS.

Guidance

The intent of this subclause is to demonstrate the management leadership and commitment to the ISMS. It does this by requiring management to be directly involved in certain activities.

The enterprise's management should know what they want their enterprise to achieve. The same should be true for information security, and there should be a clear vision of what achievements are desired from having an ISMS. It is an investment because good information security will cost money and time, but the reward should be a safer, more successful business. ISO/IEC 27001 refers to what the enterprise's management wants to achieve as *objectives*, and the policy is the overarching statement of intent describing what the enterprise will do to achieve these objectives. The requirement is that top management of the enterprise must ensure that the information security policy for the enterprise reflects their intention and direction.

Examples

An objective could be "no inappropriate disclosure of personal information"; a corresponding policy could be "laptops must use hard disc encryption".

Information security should never be an afterthought. This is what is meant by “integration”. It should be a natural part of everyday operations. The enterprise’s management should therefore encourage themselves (and everyone who works under their direction) to “think security first” in all their work.

Examples

Risk assessment should form a natural first step in any new undertaking. Reviewing the results of any activity and seeking improvements should likewise be second nature.

Running an effective ISMS requires time and effort. The enterprise’s management must therefore ensure that there are adequate resources, including budget for technology and people, and that people have the necessary competence to perform their work. If this is not done, planned activities will not happen on time and the ISMS will never meet its objectives. Of course, if the enterprise is a one-person entity, then this person is responsible for all the requirements in ISO/IEC 27001, 5.1 d), f) and h).



Case study

A photographer runs a one-person photographic enterprise and is responsible for everything from marketing, sales to taking the photographs and making the tax returns. The photographer has invested in a high-end digital camera and mobile computing equipment and makes use of cloud services for storage, processing and customer communications. Customers include newspapers and television companies.

The photographer operates a mobile ISMS to assist with information security management, which is considered integral to business operations. The photographer employed a consultant to help build the ISMS and ensure that it was fully integrated into the workflow and did not distract the photographer from concentrating on the business of taking newsworthy photographs and making a profit.

The enterprise’s management should be fully aware of how the ISMS is performing and act as necessary to ensure that it meets its objectives.



Documents

Document Sharing Hub



Case study

A small medical practice consists of five doctors, four nurses, a practice manager and three receptionists. The most senior doctor acts as management for the ISMS and, being concerned about the confidentiality, integrity and availability of medical data, has taken personal responsibility for the ISMS. Weekly meetings are held before the practice is opened for patients, at which the senior doctor ensures that all matters relevant to information security are discussed.

In enterprises that consist of more than one person, it is important for the enterprise's management to set an example of how management requires other people to behave. It is also important for everyone to know why the enterprise has an ISMS and what can happen if the enterprise does not conform. The enterprise's staff should understand why things should be performed in a certain way, as well as how things should be performed. By knowing why, people can use their initiative when something that they are supposed to do cannot be done, but an alternative exists which achieves the same result.



Case study

An electronics company has a government contract. The last person out must store all documents marked "confidential" in Safe Number 1. The purpose of this procedure is to safeguard government secrets. However, one evening the staff member discovers that this cannot happen because the lock is broken.

Understanding the purpose of the procedure, the employee looks for another safe with a working lock and sufficient space to accommodate the entire contents of Safe Number 1. Safe Number 3 is suitable.

The employee transfers the contents of Safe Number 1 to Safe Number 3, together with the "confidential" documents to be put away and locks it. Finally, the employee pins a note on Safe Number 1, explaining what they have done and why. They know the importance of this last step. The following morning their colleagues will find Safe Number 1 open and empty. Without the note, they might falsely conclude that there has been a burglary and raise an alarm.

The enterprise's management should also encourage and support everyone engaged in ISMS activities. Subordinate management should be encouraged to emulate the behaviour of the enterprise's management. In this way, the benefits of leading by example cascade down throughout the enterprise.



Case study

Having been taught how to perform a risk assessment, a senior police officer decided to buy a safe and lock up all their confidential documents overnight. News of what the senior officer had done quickly spread throughout the department. Within a week, all the subordinate officers had bought safes for themselves and their staff, so that they could secure their documents overnight too.

Such encouragement and support not only demonstrate the enterprise's management commitment to information security but also provides vital feedback to everyone that they are doing what is required of them. It facilitates reward, when justified. The enterprise's management should also encourage people to report mistakes, errors and incidents, as early detection can avoid disasters, create awareness and lead to ISMS improvements.



Case study

Office entry is controlled by key card. Upon leaving a social gathering after work, an employee discovered that they had lost their key card. They immediately phoned their line manager and reported what had happened. The line manager was able to deregister the card immediately. It therefore could not be used by anyone to gain access to the office. The next day, the employee was reminded to be more careful, but nevertheless congratulated for their prompt action in reporting the incident. No harm had been done.

The enterprise's management should always be looking for improvements: more rewarding objectives, more efficient operations, greater personal and customer satisfaction. Ideas for improvement can come from anywhere and anyone.

Example

An enterprise's management realizes that world events can have an impact on their business operations. The management therefore adds an item to the regular management meetings to take note of recent world events and determine their impact, if any, on the enterprise and its information security concerns. While there are many world events that do not have any impact on the enterprise, there is no longer a risk of missing those that do.

Subclause 5.2 – Policy

This subclause requires the organization to establish a policy and specifies the details that must be included within the ISMS policy.

Guidance

The intent of this subclause is to require the enterprise's management to record what they wish their enterprise to achieve and how they want that to be approached. The policy must be a true reflection of what the enterprise's management wants the ISMS to achieve and how they want it to be done. It should be appropriate for their business purposes.



Case study

The director of a one-person IT consultancy business has an ISMS. Its policy has sections for cloud service providers; operation of the enterprise's software as a service; the enterprise's public Website; information back-up; password reminders; critical updates and malware; end-point and wireless security; retention of records; disposal of media; information in transit; working away from the office; and security breaches.

The enterprise's management can either include the enterprise's information security objectives in the policy or write down the way they are to be determined.



Case study

The owner of a five-person motorcycle workshop reviews the performance of the workshop near the end of each budget year and sets new business objectives for the coming year. The owner then sets new information security objectives in support of these business objectives, taking account of incidents, and feedback from the workshop staff and customers.

The workshop's information security policy describes the way in which the enterprise's management sets the information security objectives for the enterprise.

While the enterprise's management can best demonstrate commitment through action, a simple policy statement along the lines of "[Name of the enterprise] is committed..." is recommended. Likewise, the enterprise's management can best demonstrate their commitment to continual improvement through action. Nevertheless, a simple policy statement like "[Name of the enterprise] is committed..." is recommended.

The information policy must be documented and the enterprise may decide exactly how to do this, e.g. digitally, as a hard copy, or both forms.

Example

It can be a document called "Information security policy". It can be part of a document called the "Operations manual", it could be a Webpage or even posted on a wall.