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Information technology — Service management —

Part 1: Specification

Technologies de l'information — Gestion de services —

Partie 1: Spécifications

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 20000-1 was prepared by BSI (as BS 15000-1) and was adopted, under a special “fast-track procedure”, by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, in parallel with its approval by national bodies of ISO and IEC.

ISO/IEC 20000 consists of the following parts, under the general title *Information technology — Service management*:

— *Part 1: Specification*

— *Part 2: Code of practice*

Introduction

This part of ISO/IEC 20000 promotes the adoption of an integrated process approach to effectively deliver managed services to meet the business and customer requirements. For an organization to function effectively it has to identify and manage numerous linked activities. An activity using resources, and managed in order to enable the transformation of inputs into outputs, can be considered as a process. Often the output from one process forms an input to another.

Co-ordinated integration and implementation of the service management processes provides the ongoing control, greater efficiency and opportunities for continual improvement. Performing the activities and processes requires people in the service desk, service support, service delivery and operations teams to be well organized and co-ordinated. Appropriate tools are also required to ensure that the processes are effective and efficient.

It is assumed that the execution of the provisions of this part of ISO/IEC 20000 is entrusted to appropriately qualified and competent people.

An International Standard does not purport to include all necessary provisions of a contract. Users of International Standards are responsible for their correct application.

Compliance with an International Standard does not of itself confer immunity from legal obligations.

Information technology — Service management —

Part 1: Specification

1 Scope

This part of ISO/IEC 20000 defines the requirements for a service provider to deliver managed services of an acceptable quality for its customers.

It may be used:

a) by businesses that are going out to tender for their services;

b) by businesses that require a consistent approach by all service providers in a supply chain;

c) by service providers to benchmark their IT service management;

d) as the basis for an independent assessment;

e) by an organization which needs to demonstrate the ability to provide services that meet customer requirements; and

f) by an organization which aims to improve service through the effective application of processes to monitor and improve service quality.

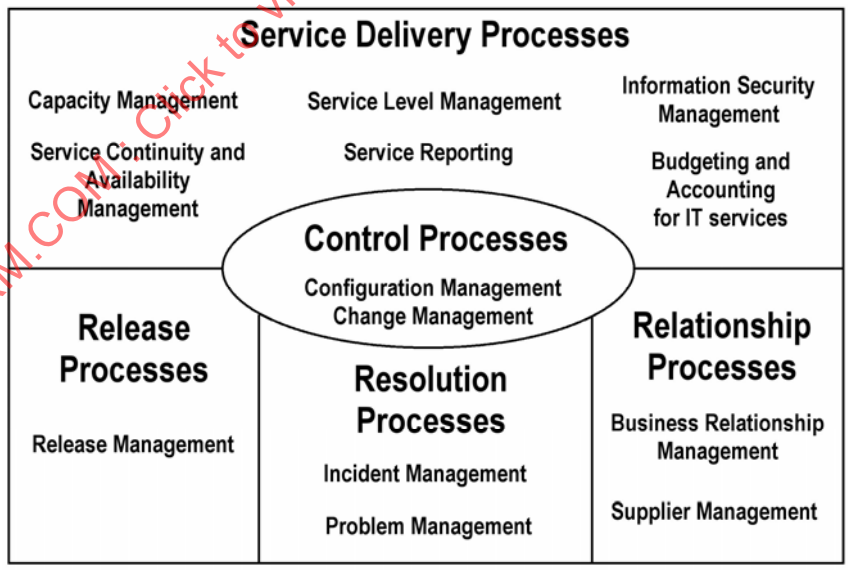

Figure 1 — Service management processes

This part of ISO/IEC 20000 specifies a number of closely related service management processes, as shown in Figure 1.

The relationships between the processes depend on the application within an organization and are generally too complex to model and therefore relationships between processes are not shown in this diagram.

The list of objectives and controls contained in this part of ISO/IEC 20000 are not exhaustive, and an organization may consider that additional objectives and controls are necessary to meet their particular business needs. The nature of the business relationship between the service provider and business will determine how the requirements in this part of ISO/IEC 20000 are implemented in order to meet the overall objective.

As a process based standard this part of ISO/IEC 20000 is not intended for product assessment. However, organizations developing service management tools, products and systems may use both this part of ISO/IEC 20000 and the code of practice to help them develop tools, products and systems that support best practice service management.

2 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

2.1
availability
ability of a component or service to perform its required function at a stated instant or over a stated period of time

NOTE Availability is usually expressed as a ratio of the time that the service is actually available for use by the business to the agreed service hours.

2.2
baseline
snapshot of the state of a service or individual configuration items at a point in time (see 2.4)

2.3
change record
record containing details of which configuration items (see 2.4) are affected and how they are affected by an authorized change

2.4
configuration item (CI)
component of an infrastructure or an item which is, or will be, under the control of configuration management

NOTE Configuration items may vary widely in complexity, size and type, ranging from an entire system including all hardware, software and documentation, to a single module or a minor hardware component.

2.5
configuration management database (CMDB)
database containing all the relevant details of each configuration item and details of the important relationships between them

2.6
document
information and its supporting medium

NOTE 1 In this standard, records (see 2.9) are distinguished from documents by the fact that they function as evidence of activities, rather than evidence of intentions.

NOTE 2 Examples of documents include policy statements, plans, procedures, service level agreements and contracts.

2.7
incident
any event which is not part of the standard operation of a service and which causes or may cause an interruption to, or a reduction in, the quality of that service

NOTE This may include request questions such as “How do I...?” calls.

2.8
problem
unknown underlying cause of one or more incidents

2.9
record
document stating results achieved or providing evidence of activities performed

NOTE 1 In this standard, records are distinguished from documents by the fact that they function as evidence of activities, rather than evidence of intentions.

NOTE 2 Examples of records include audit reports, requests for change, incident reports, individual training records and invoices sent to customers.

2.10
release
collection of new and/or changed configuration items which are tested and introduced into the live environment together

2.11
request for change
form or screen used to record details of a request for a change to any configuration item within a service or infrastructure

2.12
service desk
customer facing support group who do a high proportion of the total support work

2.13
service level agreement (SLA)
written agreement between a service provider and a customer that documents services and agreed service levels

2.14
service management
management of services to meet the business requirements

2.15
service provider
the organization aiming to achieve ISO/IEC 20000

3 Requirements for a management system

Objective: To provide a management system, including policies and a framework to enable the effective management and implementation of all IT services.

3.1 Management responsibility

Through leadership and actions, top/executive management shall provide evidence of its commitment to developing, implementing and improving its service management capability within the context of the organization's business and customers' requirements.

Management shall:

a) establish the service management policy, objectives and plans;

b) communicate the importance of meeting the service management objectives and the need for continual improvement;

c) ensure that customer requirements are determined and are met with the aim of improving customer satisfaction;

d) appoint a member of management responsible for the co-ordination and management of all services;

e) determine and provide resources to plan, implement, monitor, review and improve service delivery and management e.g. recruit appropriate staff, manage staff turnover;

f) manage risks to the service management organization and services; and

g) conduct reviews of service management, at planned intervals, to ensure continuing suitability, adequacy and effectiveness.

3.2 Documentation requirements

Service providers shall provide documents and records to ensure effective planning, operation and control of service management. This shall include:

a) documented service management policies and plans;

b) documented service level agreements;

c) documented processes and procedures required by this standard; and

d) records required by this standard.

Procedures and responsibilities shall be established for the creation, review, approval, maintenance, disposal and control of the various types of documents and records.

NOTE: The documentation can be in any form or type of medium.

3.3 Competence, awareness and training

All service management roles and responsibilities shall be defined and maintained together with the competencies required to execute them effectively.

Staff competencies and training needs shall be reviewed and managed to enable staff to perform their role effectively.

Top management shall ensure that its employees are aware of the relevance and importance of their activities and how they contribute to the achievement of the service management objectives.

4 Planning and implementing service management

NOTE The methodology known as “Plan-Do-Check-Act” (PDCA) can be applied to all processes. PDCA can be described as follows:

a) Plan: establish the objectives and processes necessary to deliver results in accordance with customer requirements and the organization’s policies;

b) Do: implement the processes;

c) Check: monitor and measure processes and services against policies, objectives and requirements and report the results;

d) Act: take actions to continually improve process performance.

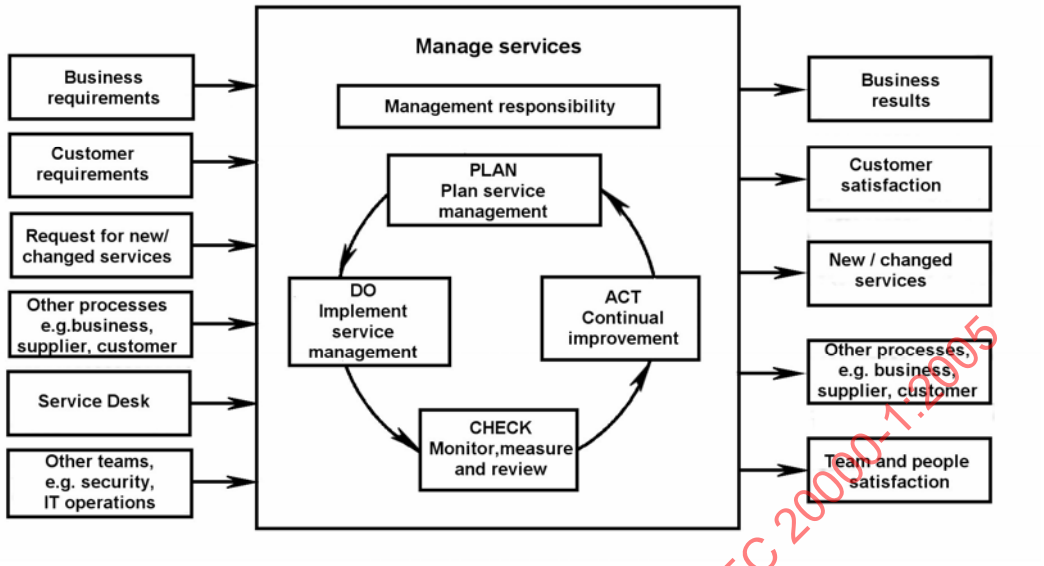

Figure 2 — Plan-Do-Check-Act methodology for service management processes

The model shown in Figure 2 illustrates the process and process linkages presented in clauses 4 to 10.

4.1 Plan service management (Plan)

Objective: To plan the implementation and delivery of service management.

Service management shall be planned. The plans shall at a minimum define:

a) the scope of the service provider's service management;

b) the objectives and requirements that are to be achieved by service management;

c) the processes that are to be executed;

d) the framework of management roles and responsibilities, including the senior responsible owner, process owner and management of suppliers;

e) the interfaces between service management processes and the manner in which the activities are to be co-ordinated;

f) the approach to be taken in identifying, assessing and managing issues and risks to the achievement of the defined objectives;

g) the approach for interfacing to projects that are creating or modifying services;

h) the resources, facilities and budget necessary to achieve the defined objectives;

i) tools as appropriate to support the processes; and

j) how the quality of the service will be managed, audited and improved.

There shall be clear management direction and documented responsibilities for reviewing, authorising, communicating, implementing and maintaining the plans.

Any process specific plans produced shall be compatible with this service management plan.

4.2 Implement service management and provide the services (Do)

Objective: To implement the service management objectives and plan.

The service provider shall implement the service management plan to manage and deliver the services, including:

a) allocation of funds and budgets;

b) allocation of roles and responsibilities;

c) documenting and maintaining the policies, plans, procedures and definitions for each process or set of processes;

d) identification and management of risks to the service;

e) managing teams, e.g. recruiting and developing appropriate staff and managing staff continuity;

f) managing facilities and budget;

g) managing the teams including service desk and operations;

h) reporting progress against the plans; and

i) co-ordination of service management processes.

4.3 Monitoring, measuring and reviewing (Check)

Objective: To monitor, measure and review that the service management objectives and plan are being achieved.

The service provider shall apply suitable methods for monitoring and, where applicable, measurement of the service management processes. These methods shall demonstrate the ability of the processes to achieve planned results.

Management shall conduct reviews at planned intervals to determine whether the service management requirements:

a) conform with the service management plan and to the requirements of this standard; and

b) are effectively implemented and maintained.

An audit programme shall be planned, taking into consideration the status and importance of the processes and areas to be audited, as well as the results of previous audits. The audit criteria, scope, frequency and methods shall be defined in a procedure. The selection of auditors and conduct of audits shall ensure objectivity and impartiality of the audit process. Auditors shall not audit their own work.

The objective of service management reviews, assessments and audits shall be recorded together with the findings of such audits and reviews and any remedial actions identified. Any significant areas of non-compliance or concern shall be communicated to relevant parties.

4.4 Continual improvement (Act)

Objective: To improve the effectiveness and efficiency of service delivery and management.

4.4.1 Policy

There shall be a published policy on service improvement. Any non-compliance with the standard or the service management plans shall be remedied. Roles and responsibilities for service improvement activities shall be clearly defined.

4.4.2 Management of improvements

All suggested service improvements shall be assessed, recorded, prioritized and authorized. A plan shall be used to control the activity.

The service provider shall have a process in place to identify, measure, report and manage improvement activities on an ongoing basis. This shall include:

a) improvements to an individual process that can be implemented by the process owner with the usual staff resources, e.g. performing individual corrective and preventive actions; and

b) improvements across the organization or across more than one process.

4.4.3 Activities

The service provider shall perform activities to:

a) collect and analyse data to baseline and benchmark the service provider's capability to manage and deliver service and service management processes;

b) identify, plan and implement improvements;

c) consult with all parties involved;

d) set targets for improvements in quality, costs and resource utilization;

e) consider relevant inputs about improvements from all the service management processes;

f) measure, report and communicate the service improvements;

g) revise the service management policies, processes, procedures and plans where necessary; and

h) ensure that all approved actions are delivered and that they achieve their intended objectives.

5 Planning and implementing new or changed services

Objective: To ensure that new services and changes to services will be deliverable and manageable at the agreed cost and service quality.

Proposals for new or changed services shall consider the cost, organizational, technical and commercial impact that could result from service delivery and management.

The implementation of new or changed services, including closure of a service, shall be planned and approved through formal change management.

The planning and implementation shall include adequate funding and resources to make the changes needed for service delivery and management.

The plans shall include:

a) the roles and responsibilities for implementing, operating and maintaining the new or changed service including activities to be performed by customers and suppliers;

b) changes to the existing service management framework and services;

c) communication to the relevant parties;

d) new or changed contracts and agreements to align with the changes in business need;

e) manpower and recruitment requirements;

f) skills and training requirements, e.g. users, technical support;

g) processes, measures, methods and tools to be used in connection with the new or changed service, e.g. capacity management, financial management;

h) budgets and time-scales;

i) service acceptance criteria; and

j) the expected outcomes from operating the new service expressed in measurable terms.

New or changed services shall be accepted by the service provider before being implemented into the live environment.

The service provider shall report on the outcomes achieved by the new or changed service against those planned following its implementation. A post implementation review comparing actual outcomes against those planned shall be performed through the change management process.

6 Service delivery process

6.1 Service level management

Objective: To define, agree, record and manage levels of service.

The full range of services to be provided together with the corresponding service level targets and workload characteristics shall be agreed by the parties and recorded.

Each service provided shall be defined, agreed and documented in one or more service level agreements (SLAs).

SLAs, together with supporting service agreements, supplier contracts and corresponding procedures, shall be agreed by all relevant parties and recorded.

The SLAs shall be under the control of the change management process.

The SLAs shall be maintained by regular reviews by the parties to ensure that they are up-to-date and remain effective over time.

Service levels shall be monitored and reported against targets, showing both current and trend information. The reasons for non-conformance shall be reported and reviewed. Actions for improvement identified during this process shall be recorded and provide input into a plan for improving the service.

6.2 Service reporting

Objective: To produce agreed, timely, reliable, accurate reports for informed decision making and effective communication.

There shall be a clear description of each service report including its identity, purpose, audience and details of the data source.

Service reports shall be produced to meet identified needs and customer requirements. Service reporting shall include:

a) performance against service level targets;

b) non-compliance and issues, e.g. against the SLA, security breech;

c) workload characteristics, e.g. volume, resource utilization;

d) performance reporting following major events, e.g. major incidents and changes;

e) trend information;

f) satisfaction analysis.

Management decisions and corrective actions shall take into consideration the findings in the service reports and shall be communicated to relevant parties.

6.3 Service continuity and availability management

Objective: To ensure that agreed service continuity and availability commitments to customers can be met in all circumstances.

Availability and service continuity requirements shall be identified on the basis of business plans, SLAs and risk assessments. Requirements shall include access rights and response times as well as end to end availability of system components.

Availability and service continuity plans shall be developed and reviewed at least annually to ensure that requirements are met as agreed in all circumstances from normal through to a major loss of service. These plans shall be maintained to ensure that they reflect agreed changes required by the business.

The availability and service continuity plans shall be re-tested at every major change to the business environment.

The change management process shall assess the impact of any change on the availability and service continuity plan.

Availability shall be measured and recorded. Unplanned non-availability shall be investigated and appropriate actions taken.

NOTE Where possible, potential issues should be predicted and preventive action taken.

Service continuity plans, contact lists and the configuration management database shall be available when normal office access is prevented. The service continuity plan shall include the return to normal working.

The service continuity plan shall be tested in accordance with business needs.

All continuity tests shall be recorded and test failures shall be formulated into action plans.

6.4 Budgeting and accounting for IT services

Objective: To budget and account for the cost of service provision.

NOTE This section covers budgeting and accounting for IT services. In practice, many service providers will be involved in charging for such services. However, since charging is an optional activity, it is not covered by the standard. Service providers are recommended that where charging is in use, the mechanism for doing so is fully defined and understood by all parties. All accounting practices in use should be aligned to the wider accountancy practices of the service provider's organization.

There shall be clear policies and processes for:

a) budgeting, and accounting for all components including IT assets, shared resources, overheads, externally supplied service, people, insurance and licences;

b) apportioning indirect costs and allocating direct costs to services;

c) effective financial control and authorization.

Costs shall be budgeted in sufficient detail to enable effective financial control and decision making.

The service provider shall monitor and report costs against the budget, review the financial forecasts and manage costs accordingly.

Changes to services shall be costed and approved through the change management process.

6.5 Capacity management

Objective: To ensure that the service provider has, at all times, sufficient capacity to meet the current and future agreed demands of the customer's business needs.

Capacity management shall produce and maintain a capacity plan.

Capacity management shall address the business needs and include:

a) current and predicted capacity and performance requirements;

b) identified time-scales, thresholds and costs for service upgrades;

c) evaluation of effects of anticipated service upgrades, requests for change, new technologies and techniques on capacity;

d) predicted impact of external changes, e.g. legislative;

e) data and processes to enable predictive analysis.

Methods, procedures and techniques shall be identified to monitor service capacity, tune service performance and provide adequate capacity.

6.6 Information security management

Objective: To manage information security effectively within all service activities.

NOTE ISO/IEC 17799, *Information technology — Security techniques — Code of practice for information security management* provides guidance on information security management.

Management with appropriate authority shall approve an information security policy that shall be communicated to all relevant personnel and customers where appropriate.

Appropriate security controls shall operate to:

a) implement the requirements of the information security policy;

b) manage risks associated with access to the service or systems.

Security controls shall be documented. The documentation shall describe the risks to which the controls relate, and the manner of operation and maintenance of the controls.

The impact of changes on controls shall be assessed before changes are implemented.

Arrangements that involve external organizations having access to information systems and services shall be based on a formal agreement that defines all necessary security requirements.

Security incidents shall be reported and recorded in line with the incident management procedure as soon as possible. Procedures shall be in place to ensure that all security incidents are investigated, and management action taken.

Mechanisms shall be in place to enable the types, volumes and impacts of security incidents and malfunctions to be quantified and monitored. Actions for improvements identified during this process shall be recorded and provide input into a plan for improving the service.

7 Relationship processes

7.1 General

Relationship processes describe the two related aspects of Supplier Management and Business Relationship Management.

7.2 Business relationship management

Objective: To establish and maintain a good relationship between the service provider and the customer based on understanding the customer and their business drivers.

The service provider shall identify and document the stakeholders and customers of the services.

The service provider and customer shall attend a service review to discuss any changes to the service scope, SLA, contract (if present) or the business needs at least annually and shall hold interim meetings at agreed intervals to discuss performance, achievements, issues and action plans. These meetings shall be documented.

Other stakeholders in the service may also be invited to the meetings.

Changes to the contract(s), if present, and SLA(s) shall follow from these meetings as appropriate. These changes shall be subject to the change management process.

The service provider shall remain aware of business needs and major changes in order to prepare to respond to these needs.

There shall be a complaints process. The definition of a formal service complaint shall be agreed with the customer. All formal service complaints shall be recorded by the service provider, investigated, acted upon, reported and formally closed. Where a complaint is not resolved through the normal channels, escalation shall be available to the customer.

The service provider shall have a named individual or individuals who are responsible for managing customer satisfaction and the whole business relationship process. A process shall exist for obtaining and acting upon

feedback from regular customer satisfaction measurements. Actions for improvement identified during this process shall be recorded and input into a plan for improving the service.

7.3 Supplier management

Objective: To manage suppliers to ensure the provision of seamless, quality services.

NOTE 1 The scope of this standard excludes the procurement of the suppliers.

NOTE 2 Suppliers may be used by the service provider for provision of some part of the service. It is the service provider who needs to demonstrate conformity to these supplier management processes. Complex relationships may be present as demonstrated in the diagram below which is used as an example:

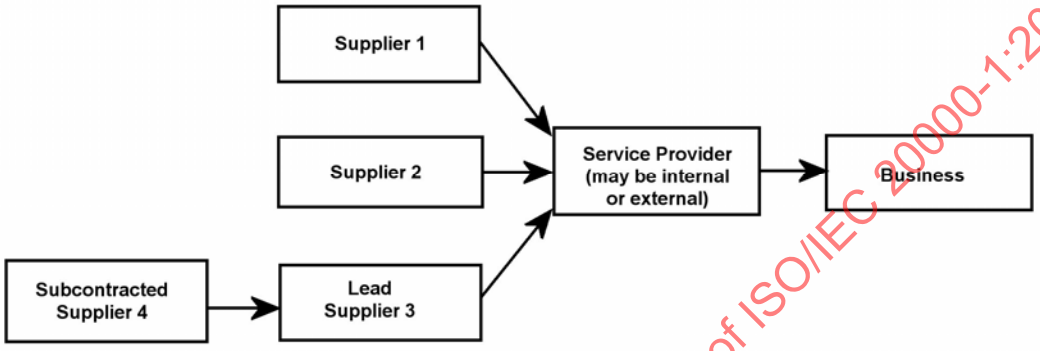

Figure 3 — Example of relationship between service providers and suppliers

The service provider shall have documented supplier management processes and shall name a contract manager responsible for each supplier.

The requirements, scope, level of service and communication processes to be provided by the supplier(s) shall be documented in SLAs or other documents and agreed by all parties.

SLAs with the suppliers shall be aligned with the SLA(s) with the business.

The interfaces between processes used by each party shall be documented and agreed.

All roles and relationships between lead and subcontracted suppliers shall be clearly documented. Lead suppliers shall be able to demonstrate processes to ensure that subcontracted suppliers meet contractual requirements.

A process shall be in place for a major review of the contract or formal agreement at least annually to ensure that business needs and contractual obligations are still being met.

Changes to the contract(s), if present, and SLA(s) shall follow from these reviews as appropriate or at other times as required. Any changes shall be subject to the change management process.

A process shall exist to deal with contractual disputes.

A process shall be in place to deal with the expected end of service, early end of the service or transfer of service to another party.

Performance against service level targets shall be monitored and reviewed. Actions for improvement identified during this process shall be recorded and input into a plan for improving the service.

8 Resolution processes

8.1 Background

Incident and problem management are separate processes, although they are closely linked.

8.2 Incident management

Objective: To restore agreed service to the business as soon as possible or to respond to service requests.

All incidents shall be recorded.

Procedures shall be adopted to manage the impact of incidents.

Procedures shall define the recording, prioritization, business impact, classification, updating, escalation, resolution and formal closure of all incidents.

The customer shall be kept informed of the progress of their reported incident or service request and alerted in advance if their service levels cannot be met and an action agreed.

All staff involved in incident management shall have access to relevant information such as known errors, problem resolutions and the configuration management database (CMDB).

Major incidents shall be classified and managed according to a process.

8.3 Problem management

Objective: To minimize disruption to the business by proactive identification and analysis of the cause of incidents and by managing problems to closure.

All identified problems shall be recorded.

Procedures shall be adopted to identify, minimize or avoid the impact of incidents and problems. They shall define the recording, classification, updating, escalation, resolution and closure of all problems.

Preventive action shall be taken to reduce potential problems, e.g. following trend analysis of incident volumes and types.

Changes required in order to correct the underlying cause of problems shall be passed to the change management process.

Problem resolution shall be monitored, reviewed and reported on for effectiveness.

Problem management shall be responsible for ensuring up-to-date information on known errors and corrected problems is available to incident management.

Actions for improvement identified during this process shall be recorded and input into a plan for improving the service.