

Fujitsu Services POA Customer Service Problem Management Ref: CS/PRD/021
Process Details
Version: 5.0
COMPANY-IN-CONFIDENCE Date: 20-JAN-2005

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Originator & Dept: Mike Stewart Customer Service Operations

Contributors: Rob Milner, Peter Thompson

Internal Distribution: Peter Thompson, John Holman-Dine, Carl Marx, Tony Wicks, Mike Woolgar, Dean Felix, Ian Daniel, Julie Welsh, Graham Mockridge

External Distribution:

Approval Authorities: (See PA/PRO/010 for Approval roles)

Name	Position	Signature	Date
Carl Marx	Infrastructure & Availability Manager		
Dave Baldwin	Director Customer Services		

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0.0 Document Control

0.1 Document History

Version No.	Date	Reason for Issue	Associated CP/PinICL
1.0	05/11/97	ICL Pathway Problem Management Process	
1.1	16/04/98	Update	
1.2	25/05/98	Update	
1.3	19/07/98	Update	
1.4	03/12/98	Update	
1.5	02/04/99	Update	
1.6	29/07/99	Updated following internal review and comments	
2.0	26/08/99	Stored in PVCS as "Version Complete"	
2.1	15/05/00	Updated following a review of the CS Problem Management Operation	
3.0	13/11/00	Updated with comments from version 2.1, and developed for approval.	
3.1	19/11/01	Updated following annual process review, and incorporation of the CS divisional alert process.	
4.0	27/11/01	Updated with comments from review of version 3.1 and developed for approval	
4.1	05/11/04	Updated with a complete rewrite of the Process after workshops within the POA Support Groups. To support the change in Post Office Business for On-Line Services	
5.0	20/01/05	Updated following internal review and comments	

0.2 Review Details

Review Comments by :	
Review Comments to :	

Mandatory Review Authority	Name
Infrastructure & Availability Manager	Carl Marx

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Director Customer Services	Dave Baldwin
Optional Review / Issued for Information	
Peter Thompson	Data Centre & Operations Manager
John Holman-Dine	Network Service Manager
Tony Wicks	Business Continuity Manager
Mike Woolgar	Problem & Availability Manager
Dean Felix	Service Delivery Manager
Julie Welsh	Service Delivery Manager
Ian Daniel	Service Delivery Manager
Graham Mockridge	Service Transformation Manager

(*) = Reviewers that returned comments

0.3 Associated Documents

Reference	Version	Date	Title	Source
PA/TEM/001	8.0	19/12/02	Fujitsu Services Document Template	PVCS
CS/IFS/008	1.0	23/12/02	POA/POL Interface Agreement for the Problem Management Interface	PVCS
CS/PRD/074	2.0	05/11/04	POA Incident Management Process	PVCS
CS/PRO/110	2.1	11/10/02	POA Problem Management Database Procedures	PVCS
PA/PRO/001	10.0	02/02/04	Change Control Process	PVCS
CS/QMS/001	1.0	04/11/04	Customer Service Policy Manual	PVCS

Unless a specific version is referred to above, reference should be made to the current approved versions of the documents.

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0.4 Abbreviations/Definitions

Abbreviation	Definition
KEL	Known Error Log
MSU	Management Support Unit
PAM	Problem & Availability Manager
PM	Problem Manager
PMDB	Problem Management Database
PO	Post Office
POL	Post Office Limited
SDMs	Service Delivery Managers
SDU	Service Delivery Unit
SLA	Service Level Agreement
SSC	System Support Centre

0.5 Changes in this Version

Version	Changes
5.0	Update with a few minor comments after internal review at Version 4.1

0.6 Changes Expected

Changes
None

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1.0 Process Introduction

The following terms are defined to assist understanding of this process:

- An **Incident** is defined as:
‘Any event that is not part of the Standard Operation of a Service and that causes, or may cause, an interruption to, or a reduction in, the quality of that Service’
- A **Problem** is defined as the underlying root cause of one or more Incidents.
- A **Known Error** is an Incident or a Problem for which the root cause has been diagnosed and a work round or cure has been identified.
- A **Trend** is an identifiable pattern or tendency.

1.1 Principles of Problem Management

The principles of Problem Management may be stated as:

Problems are investigated and diagnosed in order to identify their root cause and provide a resolution.

Problem Management must be centralised.

Problem Management will work reactively.

Problem Management will work proactively.

The Problem Management process provides the ability to identify and resolve the root-cause of incidents quickly and effectively.

The process also provides a way of identifying problems that may cause several incidents by proactively analysing incident and problem trends.

Problem Management must be closely related to Incident Management in order to ensure end-to-end management of customer issues. It is responsible for accepting unresolved incidents escalated from Incident Management.

Problem Management is focused on finding the solution, whereas Incident Management is focused on restoring the service.

2.0 Identify and Resolve Problems

2.1 Functional Overview

The purpose of this process is to investigate and identify the root cause of unresolved incidents and to provide resolutions to those problems. In the course of these investigations, the process may also identify short-term fixes or workarounds to resolve incidents.

Problems identified are thoroughly analysed using (where available):

- Problem correlation tools,
- Internal and external knowledge databases;
- Information from management information,

Until an accurate diagnosis can be made. A workaround is devised where the resolution is unknown or there is a Known Error. In order to affect a resolution to the problem, it may be necessary to raise a Change Request to implement the necessary change.

2.2 Process Benefits

This process provides the following benefits:

- It reduces the recurrence of service affecting incidents;
- It reduces business impact of problems by timely resolution.

2.3 Scope

The scope of this process includes the investigation of the underlying root cause of unresolved incidents and the provision of resolutions.

It does not include the implementation of resolutions, nor does it include the management of changes necessary to effect those resolutions.

2.4 Process Description

2.4.1 Identify Potential Problems

Problems can be identified from many sources: major incidents, recurrent incidents, incident trends, requests from customers, requests from suppliers and, very importantly, through pro-active investigation of management and incident data to look for possible new problems.

2.4.2 Raise and Assign a Problem Record

A request to raise a problem record has been received by the PAM, Problem & Availability Manager or a recognised Service Manager who will manage the Problem.

The Problem Manager will raise the problem on the PMDB, classify it as one of three:

- Cross Domain Problem (Obtain a POL Reference Number to do this)
- Problem Branch
- Internal Problem

The PAM may well manage the Problem. If he assess, that the Problem is best handled by a specific Service Manager, (one responsible for the Service area the Problem relates to), he will allocate that Service Manager as the Problem Manager.

2.4.3 Problem Investigation

The assigned Problem Manager will initially investigate the problem to see if he can identify the root cause of and a solution to the problem.

If he is unable to do this he will decide which support or development teams will be able to assist. He will then manage these resources until the root cause has been identified and a solution identified. A plan and timescale should be agreed with the solution resources to ensure progress to conclusion.

2.4.4 Resolve the Problem

Following identification of a solution it must be implemented.

For technical changes this is likely to require a Change Request. In the case of software changes this will mean liaising with Release Management.

For people and/or process change a change request is not necessarily required.

The required changes should be planned and implemented according to the plan.

Following implementation there should be an agreed period of monitoring and review in order to ensure that all involved agree that the problem has been finally resolved.

2.4.5 Problem Closure

When it has been agreed by all parties that a problem has been fully resolved it should be closed.

Also, when a problem is a duplicate or is not accepted as a problem it should be closed.

All relevant parties must be informed that the problem has now been closed.

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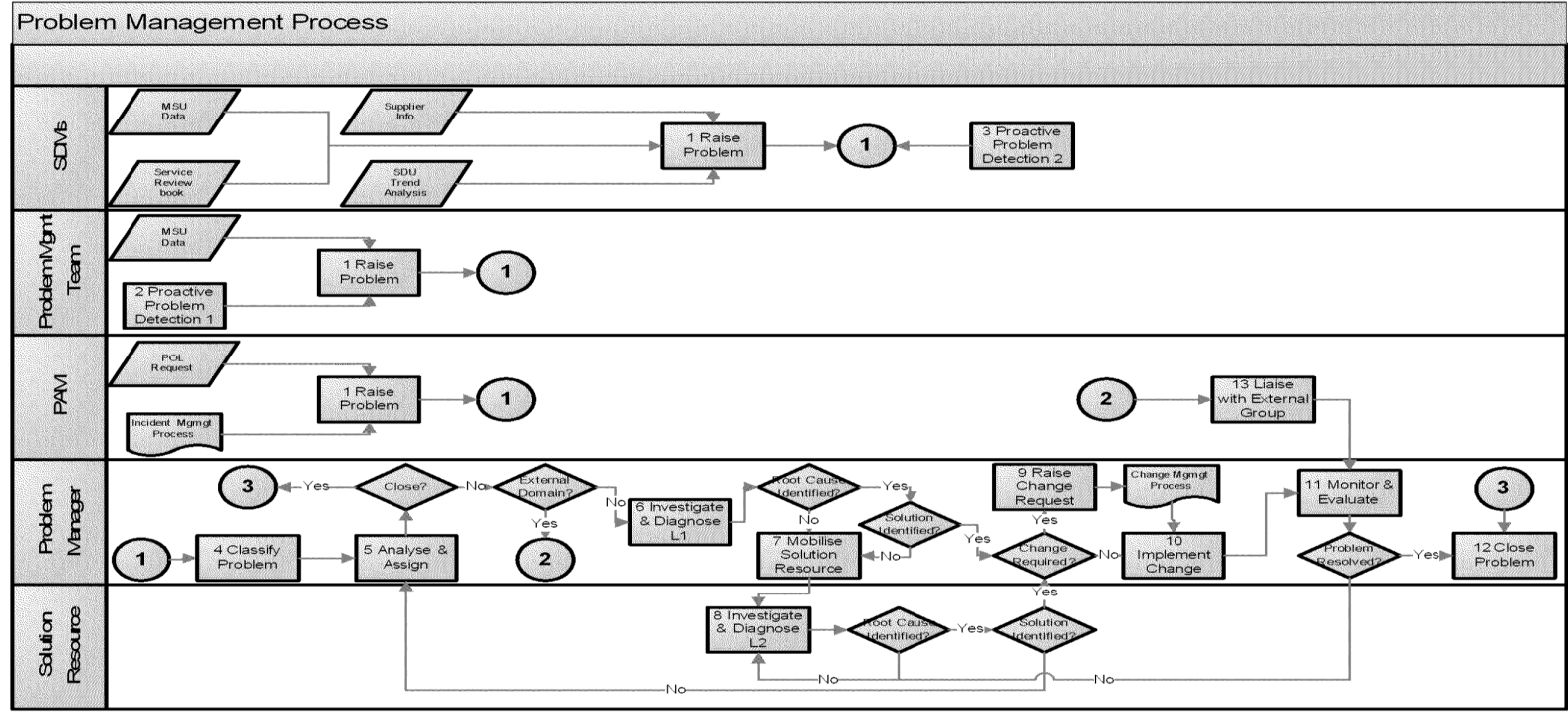
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2.5 Process Steps Diagram



The steps identified in the above process flowchart are described in more detail below. Examples of typical Inputs/Outputs and typical Data Source/Repository are included.

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2.6 Procedure Descriptions

Item	Description
Process Name:	Problem Management Procedures
Sub-Process:	Identify and Resolve Problems
Diagram Version:	1.0
Procedure Number:	1
Procedure Name:	Raise Problem
Purpose and Scope:	Record logged to capture details of an underlying fault or exposure in order to enable further investigation.
Triggers:	A request is received to raise a Problem Record. This may be due to the identification of an underlying fault during Incident Management or as a result of proactive Problem Management.
Inputs:	Incident Record (PowerHelp), Request (verbal, email), Problem Management database, Management Information from MSU, Trend Analysis from SDU, Suppliers, PO Customer
Activities:	Check existing Problem Records to avoid duplication. Update existing Problem Record with details, if new occurrence. New Problem: log the details in the Problem Management database.
Outputs:	A unique Problem Record or an updated Problem Record
Interfaces:	MSU, PowerHelp, SDUs, PAMs, SDMs, POL, Suppliers
Service Level Criteria:	
Responsibilities:	Problem Management Team, Service Management Team, PAM team
Owner:	Problem Management Team Leader
Comments:	

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Item	Description
Process Name:	Problem Management Procedures
Sub-Process:	Identify and Resolve Problems
Diagram Version:	1.0
Procedure Number:	2
Procedure Name:	Proactive Problem Detection (1)
Purpose and Scope:	Detect possible problems through investigation of incidents and management information
Triggers:	Daily task.
Inputs:	Management information from MSU, problem management database and PowerHelp
Activities:	Anomaly detection, trend analysis, incident age analysis
Outputs:	Request to raise problem record.
Interfaces:	MSU, PowerHelp, SDUs, PAMs, SDMs
Service Level Criteria:	
Responsibilities:	Problem Management Team.
Owner:	Problem Management Team Leader
Comments:	

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Item	Description
Process Name:	Problem Management Procedures
Sub-Process:	Identify and Resolve Problems
Diagram Version:	1.0
Procedure Number:	3
Procedure Name:	Proactive Problem Detection (2)
Purpose and Scope:	Detect possible problems through investigation of incidents, management information and discussion with relevant SDUs and suppliers
Triggers:	Daily task.
Inputs:	Management information from MSU, problem management database, PowerHelp, SDUs & Suppliers
Activities:	Anomaly detection, trend analysis, incident age analysis
Outputs:	Request to raise a problem record
Interfaces:	Input from External Fault Management.
Service Level Criteria:.	
Responsibilities:	Service Delivery Managers
Owner:	Problem Management Team Leader
Comments:	

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Item	Description
Process Name:	Problem Management Procedures
Sub-Process:	Identify and Resolve Problems
Diagram Version:	1.0
Procedure Number:	4
Procedure Name:	Classify Problem
Purpose and Scope:	Determine the category of problem
Triggers:	Problem Record logged.
Inputs:	Problem Record and categories of problem
Activities:	Determine whether: Cross Domain, Problem Branch or Internal Problem.
Outputs:	Classified Problem
Interfaces:	
Service Level Criteria:.	
Responsibilities:	Problem Management Team.
Owner:	Problem Management Team Leader.
Comments:	

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Item	Description
Process Name:	Problem Management Procedures
Sub-Process:	Identify and Resolve Problems
Diagram Version:	1.0
Procedure Number:	5
Procedure Name:	Analyse & Assign Problem
Purpose and Scope:	Analyse the fault and determine the correct assignee group (including external / customer group).
Triggers:	Problem Record logged.
Inputs:	Problem Record and valid assignees
Activities:	Analyse fault. Determine correct problem manager or reject fault. Contact and assign to problem manager.
Outputs:	Assigned record Notification to assigned problem manager (Potentially) Rejected Problem Record.
Interfaces:	
Service Level Criteria:	
Responsibilities:	Problem Manager.
Owner:	Problem Management Team Leader.
Comments:	

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Item	Description
Process Name:	Problem Management Procedures
Sub-Process:	Identify and Resolve Problems
Diagram Version:	1.0
Procedure Number:	6
Procedure Name:	Investigate & Diagnose (Level 1)
Purpose and Scope:	A solution has not been found in the Problem database or KEL, further diagnosis is required in order to determine resolution.
Triggers:	Assigned Problem Record
Inputs:	Problem Record
Activities:	Investigate the fault (including any diagnosis carried out during Incident Record investigation if relevant). Identify root cause analysis Identify resolution details (or circumvention / work-around if resolution may take some time). Further review of Problem database or KEL may be required if resolution not identified.
Outputs:	Diagnosed Problem Record, Potential circumvention, Identified Resolution plan OR Unresolved Problem record.
Interfaces:	
Service Level Criteria:	
Responsibilities:	Problem Manager
Owner:	Problem Management Team Leader.
Comments:	

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Item	Description
Process Name:	Problem Management Procedures
Sub-Process:	Identify and Resolve Problems (Level 1)
Diagram Version:	1.0
Procedure Number:	7
Procedure Name:	Mobilise Solution Resource
Purpose and Scope:	A solution has not been found in the Problem database or KEL further diagnosis is required in order to determine resolution.
Triggers:	Unresolved problem record
Inputs:	Problem Record
Activities:	Determine which service or development team(s) is/are most likely to be able to identify the root cause and resolve the problem. Discuss problem with resolving team(s) and agree plan and timescales for resolving problem
Outputs:	Assigned solution resource Agreed plan and timescales for investigation & resolution
Interfaces:	SDUs / Development
Service Level Criteria:	
Responsibilities:	Problem Manager
Owner:	Problem Management Team Leader.
Comments:	

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Item	Description
Process Name:	Problem Management Procedures
Sub-Process:	Identify and Resolve Problems
Diagram Version:	1.0
Procedure Number:	8
Procedure Name:	Investigate & Diagnose (Level 2)
Purpose and Scope:	The problem manager has been unable to resolve or find the root cause of a problem
Triggers:	Unresolved problem record or no root cause identified
Inputs:	Problem Record
Activities:	Investigate the fault (including any diagnosis carried out during Incident Record investigation if relevant). Identify root cause Identify resolution details (or circumvention / work-around if resolution may take some time). Further review of Problem database or KEL may be required if resolution not identified.
Outputs:	Diagnosed Problem Record, Potential circumvention, Identified Resolution plan OR Unresolved Problem record.
Interfaces:	
Service Level Criteria:	
Responsibilities:	Service Delivery Units / Development
Owner:	Problem Management Team Leader.
Comments:	

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Item	Description
Process Name:	Problem Management Procedures
Sub-Process:	Identify and Resolve Problems
Diagram Version:	1.0
Procedure Number:	9
Procedure Name:	Raise Change Request
Purpose and Scope:	Underlying problem requires a change to the system configuration in order to resolve. Raise Change Request to facilitate.
Triggers:	Identification of root cause of problem and identification of resolution plan.
Inputs:	Problem resolution details.
Activities:	Raise Change Request according to standard Change Management procedure. Update the Problem Record with details.
Outputs:	New Change Request. Updated Problem Record.
Interfaces:	Output to Change Management.
Service Level Criteria:	
Responsibilities:	Problem Manager / Solution Resource.
Owner:	Problem Management Team Leader.
Comments:	

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Item	Description
Process Name:	Problem Management Procedures
Sub-Process:	Identify and Resolve Problems
Diagram Version:	1.0
Procedure Number:	10
Procedure Name:	Implement Change
Purpose and Scope:	To implement the required changes to process, technology or people to resolve root cause of problem.
Triggers:	Identification of root cause of problem and identification of resolution plan.
	Approval from Change Management
Inputs:	Problem resolution details.
	Change Management process
Activities:	Implement changes according to agreed plan
Outputs:	Implemented change
Interfaces:	
Service Level Criteria:	
Responsibilities:	Problem Manager / Solution Resource.
Owner:	Problem Management Team Leader.
Comments:	

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Item	Description
Process Name:	Problem Management Procedures
Sub-Process:	Identify and Resolve Problems
Diagram Version:	1.0
Procedure Number:	11
Procedure Name:	Monitor & Evaluate
Purpose and Scope:	Ensure that implemented change has successfully resolved problem to the satisfaction of all.
Triggers:	Implemented Change
Inputs:	Implemented Change
Activities:	Monitor status of problem symptoms over agreed period of time
	Evaluate and agree whether problem has been resolved
Outputs:	Agreement that problem has been resolved OR Additional investigation required
Interfaces:	
Service Level Criteria:	
Responsibilities:	Problem Manager
Owner:	Problem Management Team Leader.
Comments:	

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Item	Description
Process Name:	Problem Management Procedures
Sub-Process:	Identify and Resolve Problems
Diagram Version:	1.0
Procedure Number:	12
Procedure Name:	Close Problem
Purpose and Scope:	Problem resolved, so close the Problem Record
Triggers:	Fault resolved to user's satisfaction. Problem Record not relevant (duplicate / not required).
Inputs:	Resolved Problem Record.
Activities:	Change Problem Record status to CLOSED. Determine a Closure Code. Report Closure to Reporter of problem
Outputs:	Closed Problem Record.
Interfaces:	Reporter of problem
Service Level Criteria:	
Responsibilities:	Problem Manager.
Owner:	Problem Management Team Leader.
Comments:	

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Item	Description
Process Name:	Problem Management Procedures
Sub-Process:	Identify and Resolve Problems
Diagram Version:	1.0
Procedure Number:	13
Procedure Name:	Liaise with External Group
Purpose and Scope:	To notify of problem which resides with an external (i.e. supplier, POL or POL supplier) group
Triggers:	Problem assessed as responsibility of external group
Inputs:	Problem Record
Activities:	Contact External group and feed them all information relating to the problem record Agree problem resides with them Assign problem as residing with group in PM database Monitor ongoing progress of problem with external group
Outputs:	Externally assigned problem
Interfaces:	External groups
Service Level Criteria:	
Responsibilities:	Problem Manager.
Owner:	Problem Management Team Leader.
Comments:	

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3.0 Process Indicators

The introduction of an integrated Problem Management process and function should have a noticeable impact on the levels of service provided to the users of the infrastructure. It is however vital that the effectiveness of the process is measured on a regular basis in order to highlight areas for attention as part of an ongoing Service Improvement Plan.

The following are typical of Indicators that may be used to measure the effectiveness of the Problem Management process.

Indicators	Data
Total effort for this process (FTEs)	Time Sheet data
Number of problems received (by priority)	Incidents and Problems database
Number of problems resolved (by priority)	Incidents and Problems database
Number of outstanding problems (by bracket of elapsed time to date, by priority)	Incidents and Problems database
Resolution time (by priority)	Incidents and Problems database
Percentage of problems resolved within agreed thresholds (by priority)	Incidents and Problems database
Number of incidents and problems to be analysed	Incidents and Problems database
Number of incident / problem similarities analysed	Problem Trends database
Number of problems raised by this process	Incidents and Problems database
Number of incidents / problems relating to problems that were already raised (i.e. incidents / problems relating to trends identified during previous analyses)	Incidents and Problems database Problem Trends database
Number of KEL updates made (i.e. entries added / reviewed / removed)	KEL Database
Percentage of incidents resolved using KELs	Incidents and Problems database
Percentage of problems resolved using KELs	Incidents and Problems database
Total number of KEL entries	KEL Database

4.0 Reporting Guidelines

4.1 Pre-Requisites

For effective Management Information to be produced from the Problem Management function, the following pre-requisites must be in place:

1. It is important to understand what information Senior Management wants to see and to fully comprehend why they want this information.
2. It is necessary to ensure that the Problem Management toolset is capable of collecting the required information (and that it has been configured to do so!)
3. Reporting ownership needs to be accepted by:
 - the Problem Management team; and
 - the report recipients
4. Data extract and reporting tools need to be in place to collect the information prior to report production (this functionality may form part of the Problem Management toolset or may be provided by stand-alone tools)
5. Report structures needs to be agreed:
 - Frequency
 - Historical data needed:
 - One year?
 - Archive data?
 - Archive reports
6. Targets should be agreed for the management of Problems (as opposed to Incidents).

4.2. Report Information

Senior Management will typically require information detailing the effectiveness of:

- the Problem Management process;
- the Problem Management team and all Problem Managers; and
- the Support groups that contribute to the process (i.e. Solution Resources).

4.2.1 Problem Management Process

- What is the ratio of Incidents to Problems
- In total, and by Support Group, how many Problems per day are:
- Opened?

- Closed?
- Carried over?
- Re-opened?

Where there are no specific SLAs applicable to Problem Control, there should be targets based on the priority (likely impact, and likelihood, of recurrence). Reporting should be on achievement against targets

4.2.2 Problem Management Effectiveness and Efficiency for Problem Handling

- How many Problems per day are:
 - Opened?
 - Closed?
 - Carried over?
 - Re-opened?
- How many SLA breaches? In total & by Support Group?
- How many Problems, passed to Support Groups, are duplicates?
- How many Problems are raised for existing Known Errors?
- Do Problem Record updates occur according to defined criteria?
- How many Problems are raised due to trend analysis?

4.2.3 Solution Resource Effectiveness and Efficiency for Problem Handling

- Is the Support Group successful? ... It is necessary to define success criteria
- Is the group failing to meet SLAs? If so, why?
- Is the group improving?
- Is there an action plan for improvement?
- How well does the group co-operate and communicate with other groups, the Service Desk and third parties?
- Do 'fixed' faults recur?
- Are there customer complaints?
- Are the right skills deployed at the right time?
- Does escalation to the next technical level occur pro-actively and at the right time intervals?
- Are Problem Records updated according to defined requirements?
- In total, and by Support Group, how many Problems per day are:
 - Opened?

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- Closed?
- Carried over?
- Re-opened?

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