As per your request.....

Julie L. Mohr, Principle Research Analyst & Author
BlueprintAudits.com

Thank you for your interest in an article, presentation or report produced by BlueprintAudits.com. BlueprintAudits.com provides exceptional consulting, training and research. As an author, I want to continue to provide you with information to drive improvements in your organization. Please allow me to keep you informed of research, training and consulting offerings as well as notification of new books and reports.

Name:

Organization:

Phone:

Email:

Address:

City:

State/Providence:

Zip/Postal Code:

Country:

Please send me more information and add me to your mailing list. ☐ **Yes** ☐ **No**

BlueprintAudits.com

BlueprintAudits.com

VALUE DRIVEN PROBLEM MANAGEMENT

STRATEGIES FOR EFFECTIVE DIAGNOSIS AND ROOT CAUSE ANALYSIS

- Julie L. Mohr
- Principal Research Analyst & Author
- JLMohr@blueprintaudits.com

Introductions

Julie Mohr, Principle Research Analyst and Author

BlueprintAudits.com

- Principle Research Analyst and Author at BlueprintAudits.com
- Author of *"Mapping Support Processes: Blueprint for Success"*, *"The Help Desk Audit: Blueprint for Success"*, *"The Help Desk Toolkit: Companion CD"* and *"The Help Desk Dictionary"*
- Global Keynote Speaker, Consultant & Trainer : ITIL Expert; COBIT; KCS & also has the prestigious CGEIT Certification and Certified Helpdesk Director
- Passionate organizational change agent providing imaginative insight and dynamic leadership to transform organizations into best practice, customer-focused environments
- Serving as VP of Membership for the itSMF LIG in Sacramento, a faculty member with HDI and board member of HDI Sacramento Chapter
- Graduate of The Ohio State University with a Bachelor in Computer Science, Masters in Adult Education from University of Phoenix (in progress)

Agenda

- Problem Management Overview
- Problem Management Relationships
- Process Analysis
- Root Cause Analysis

BlueprintAudits.com

Problem Management

Overview

Objectives

- Prevent problems and the resulting Incidents from occurring
- Eliminate recurring Incidents and minimize the impact of Incidents that cannot be prevented.
- Minimize the impact of unavoidable Incidents.
- Be responsible for managing the Lifecycle of all problems.

Why do Problem Management?

- The Problem Management process is needed to:
  - Change Service Management from being reactive to being proactive
  - Change Service Management from fire-fighting mode to fire-prevention mode
  - Cause an increase in structural quality
  - Improve customer satisfaction

Why do Problem Management?

- Problem Management intends to reduce the number and severity of Incidents and Problems in a business.
- Problem Management is responsible to ensure that available information is accessible to all supporting groups.
- Problem Management information is readily indexed and relevant.

Problem Management

- Activities
  - Reactive Problem Management
    - Responding to problems after they happen
    - Identify the root cause of the Incident and suggest permanent solutions to prevent the recurrence of the Incident
  - Proactive Problem Management
    - Identify and solve Problems and Known Errors before Incidents occur
    - Trend analysis
    - Define preventive activities
  - Review major problems

Where do Problems Come From?

- Problems and Known Errors can be identified by:
  - Analyzing Incidents
  - Analyzing infrastructure
  - Referring to the knowledge database
  - Developers and suppliers

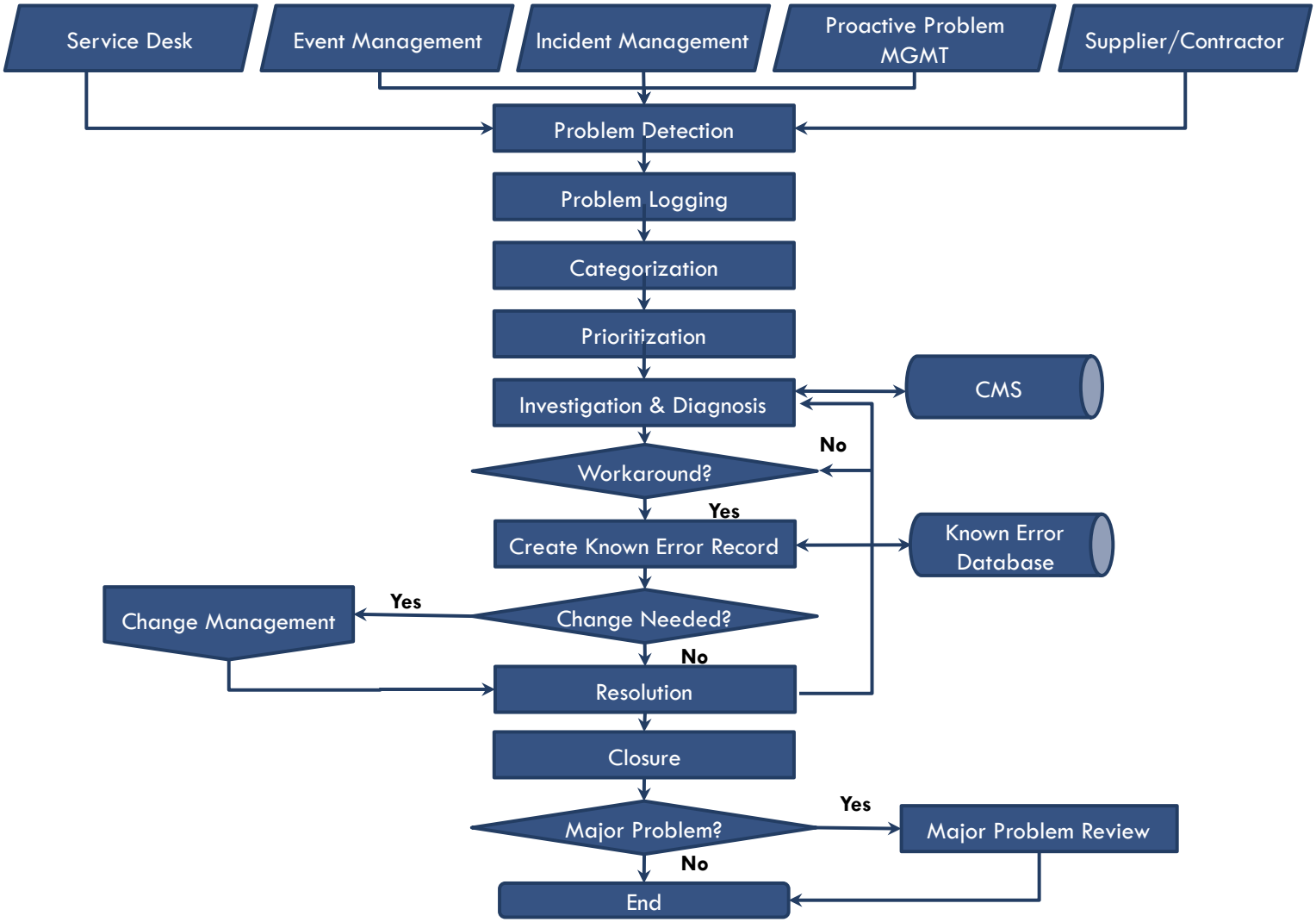
Problem Management Approach

- Change the IT Culture
- Reactive Focus
  - Advising incident management staff of best available workaround for incidents related to unresolved problems or KEs
  - Identifying errors and maintaining the KE database
  - Developing effective workarounds
  - Identifying problems
  - Accurate categorization of problems
  - Investigating problems according to impact through to resolution or error identification
  - Eliminate known errors by raising Requests for Change
  - Monitoring progress on the resolution of KEs
  - Conduct and participate in Major Problem Reviews

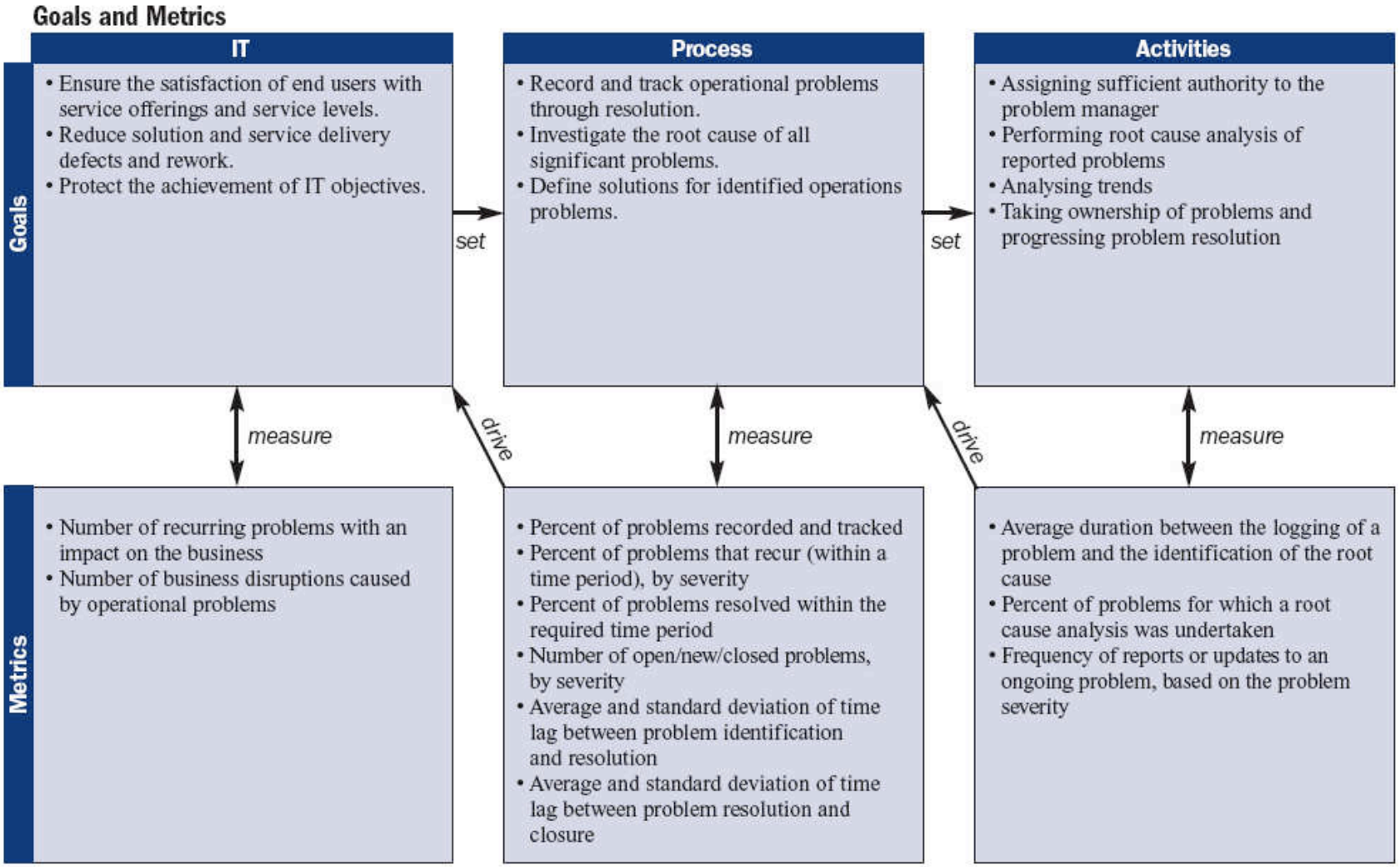
Problem Management Approach

- Proactive Focus
  - Effective Root-cause analysis
  - Pareto Analysis
  - Monitoring
  - Identifying trends and potential sources (incidents and problems)
  - Raising requests for change to prevent the recurrence of problems
  - Preventing the replication of problems across multiple systems

PROCESS ACTIVITIES



Problem Management KPIs



Key Performance Indicators

- General
  - Number of Problems by status, service, impact, category, and user group
  - Number of Known Errors
  - Mean and maximum elapsed times to closure
  - Temporary resolution actions
  - Expected resolution time for outstanding Problems
- RFC
  - Number of RFCs created
  - Impact of RFCs on availability and reliability
- Incidents
  - Number of Incidents during Problem resolution
  - Impact of Incidents before a Problem is closed and before a Known Error is confirmed
  - Number of preventive and temporary actions

Key Performance Indicators

- Service Desk:
  - Status of Problems
  - Information about workarounds
- IT Management:
  - Time spent on research and diagnosis
  - Turnaround time of the closed Problem
  - Planned resolution of open Problems with reference to resources such as:
    - People
    - Other used resources
    - Costs
  - Time lapsed and expectation period for unresolved Problems

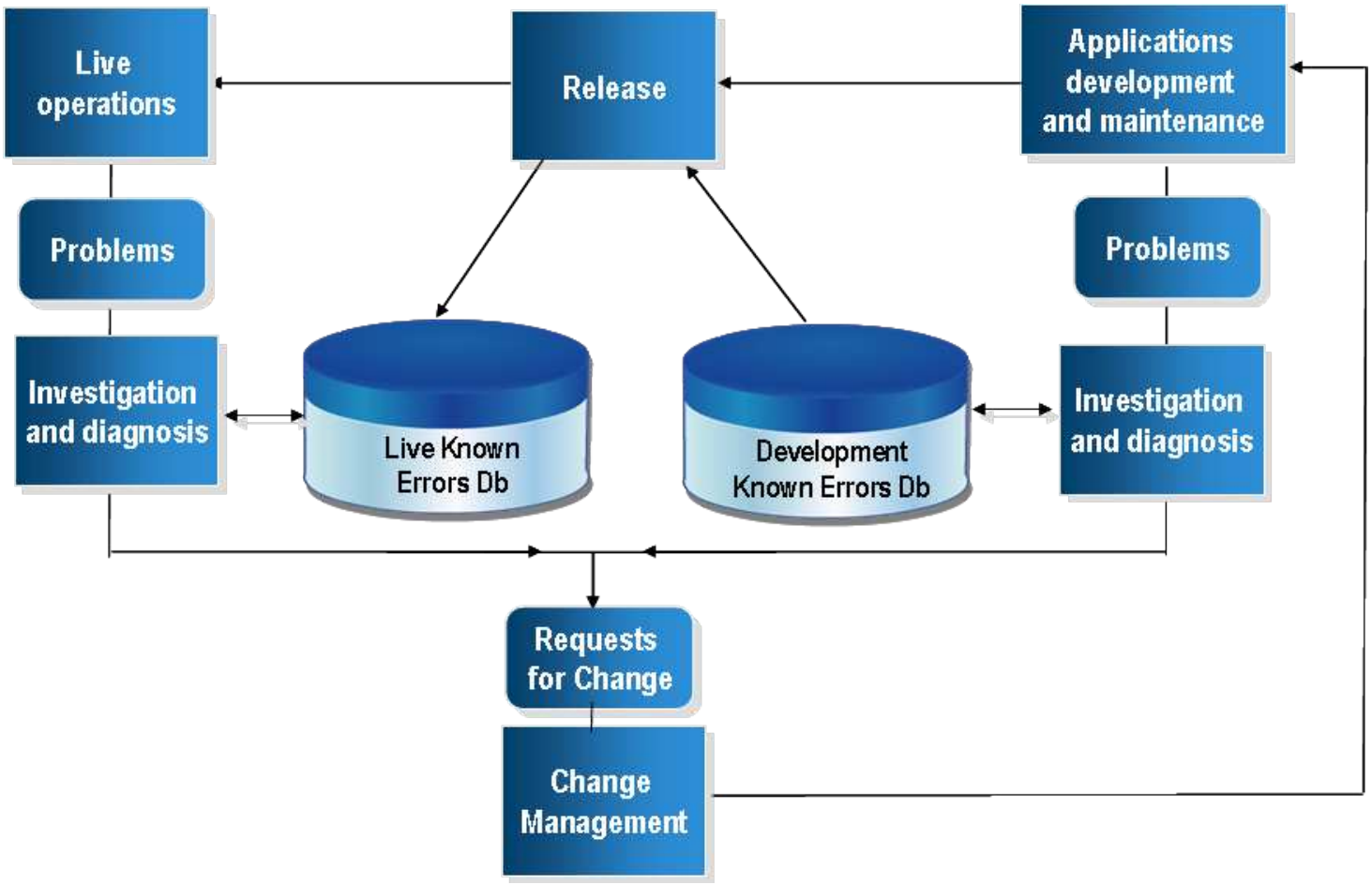
Critical Success Factors

- Effectively automate the registration of Incidents
- Set achievable objectives and use the problem-solving talents of existing staff
- Ensure good cooperation between Incident Management and Problem Management
- Make available time and resources

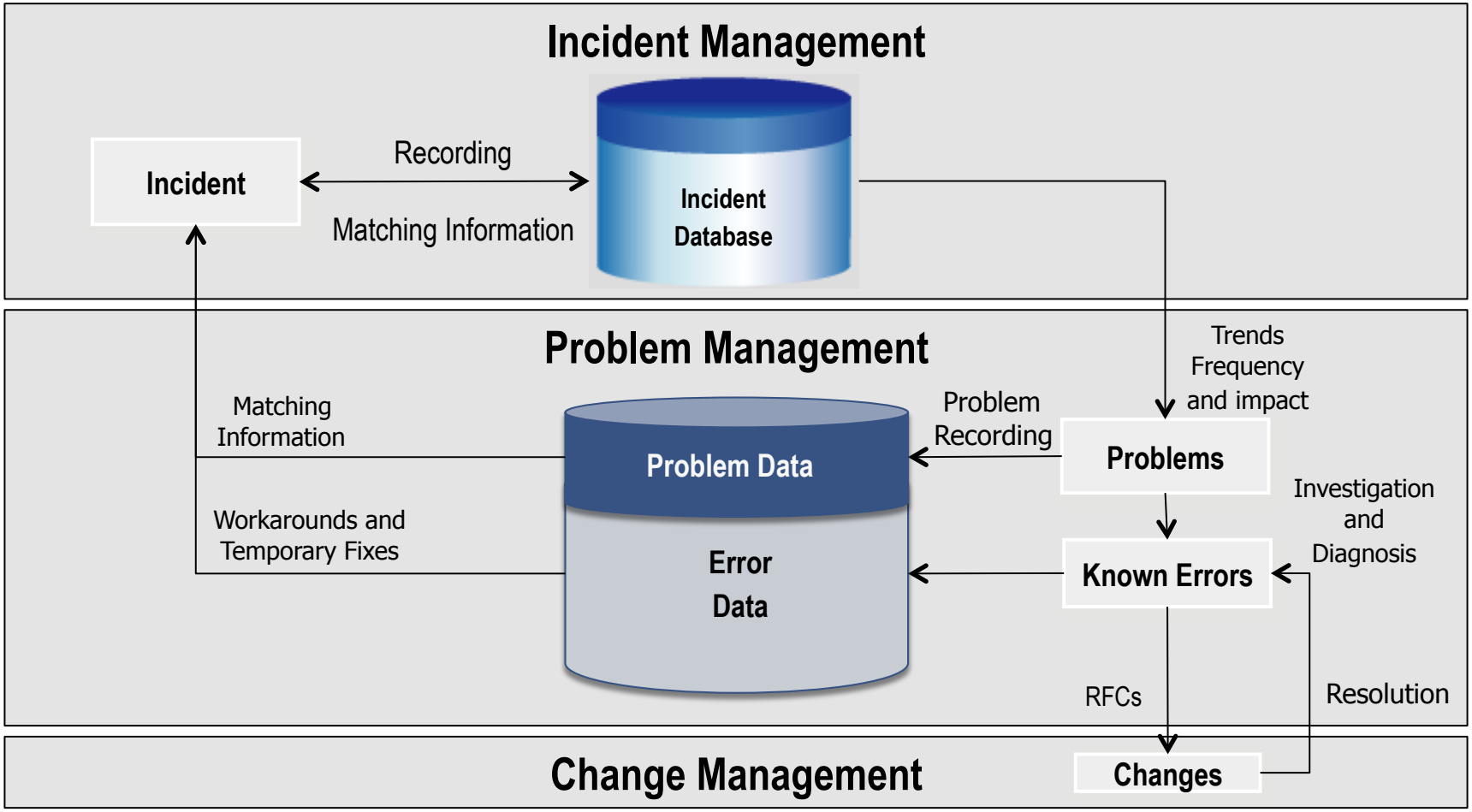
BlueprintAudits.com

Problem Management Relationships

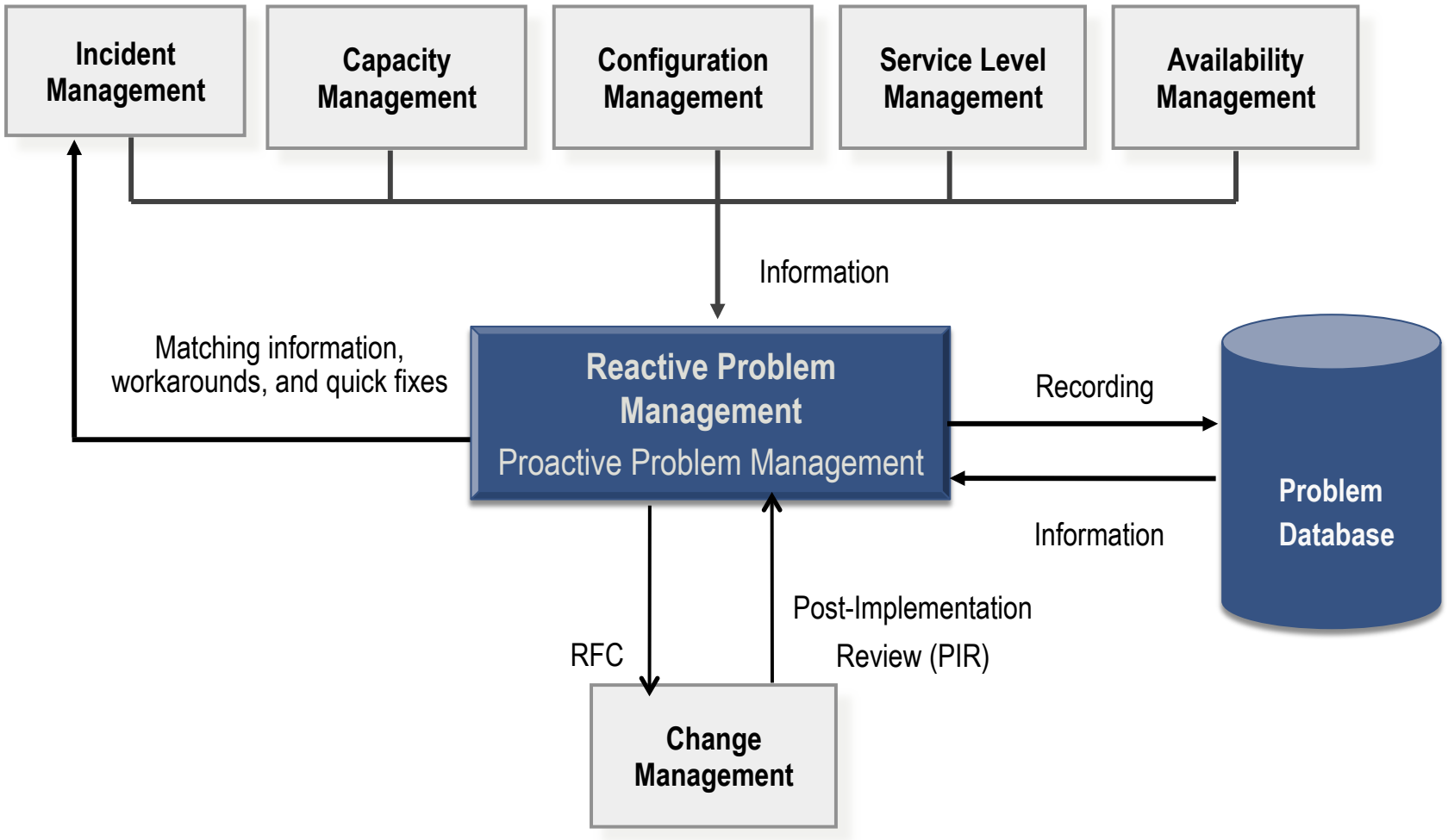
Known Errors from Development



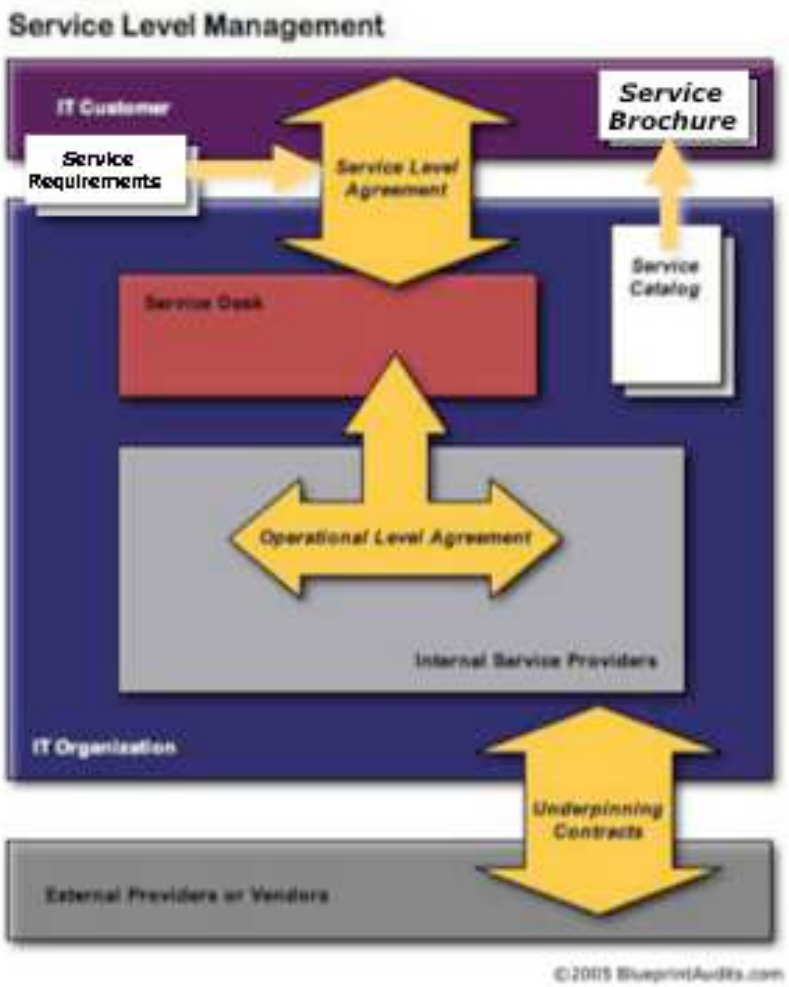
Relationship with Incident and Change



Relationships with other SM Processes



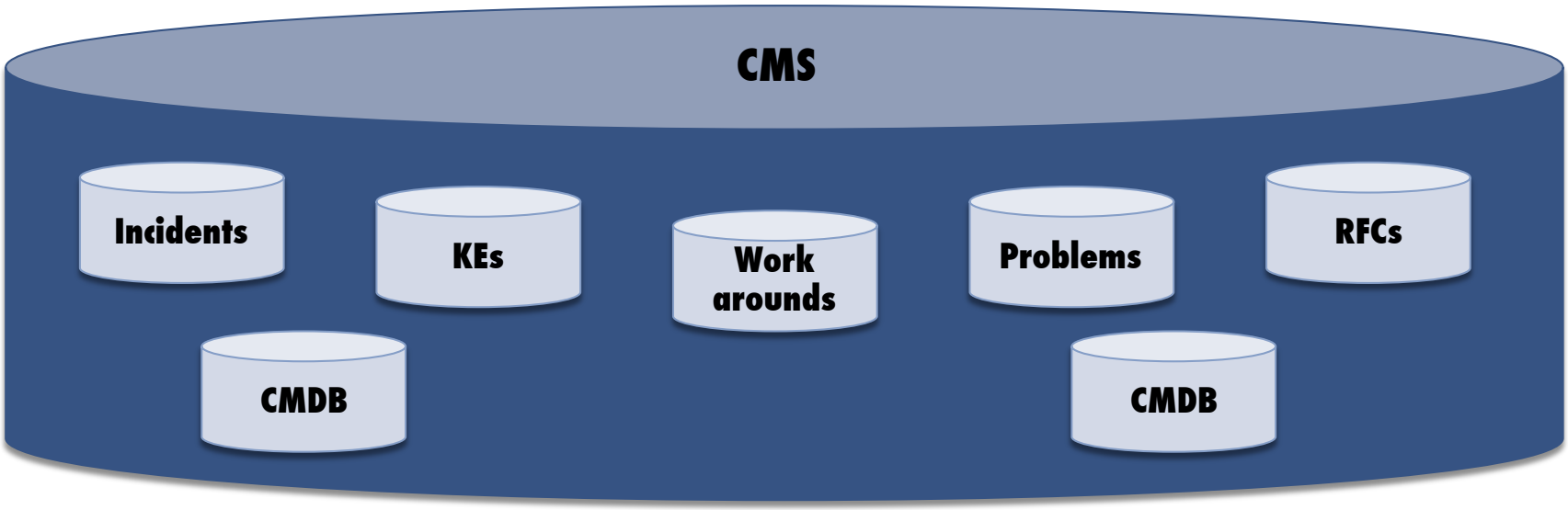
Service Level Management



- Establishes targets for SLAs
- Helps identify improvements
- Along with CSI will help to identify plan of action to improve an identified weakness
- Prioritizes projects

CMS / CMDB

- Knowledge is more than just documenting solutions
- Incidents, problems, workarounds, known errors and RFCs give more information about the links between change and incidents
- Incident models, problem models and change models also drive efficiency for repeat incidents, problems and changes



Interface with CSI

- Leverage the knowledge and skills of a group focused on quality of IT services and processes
- CSI owns the overall quality management initiative
- CSI prioritizes improvement opportunities across the Service Management organization

BlueprintAudits.com

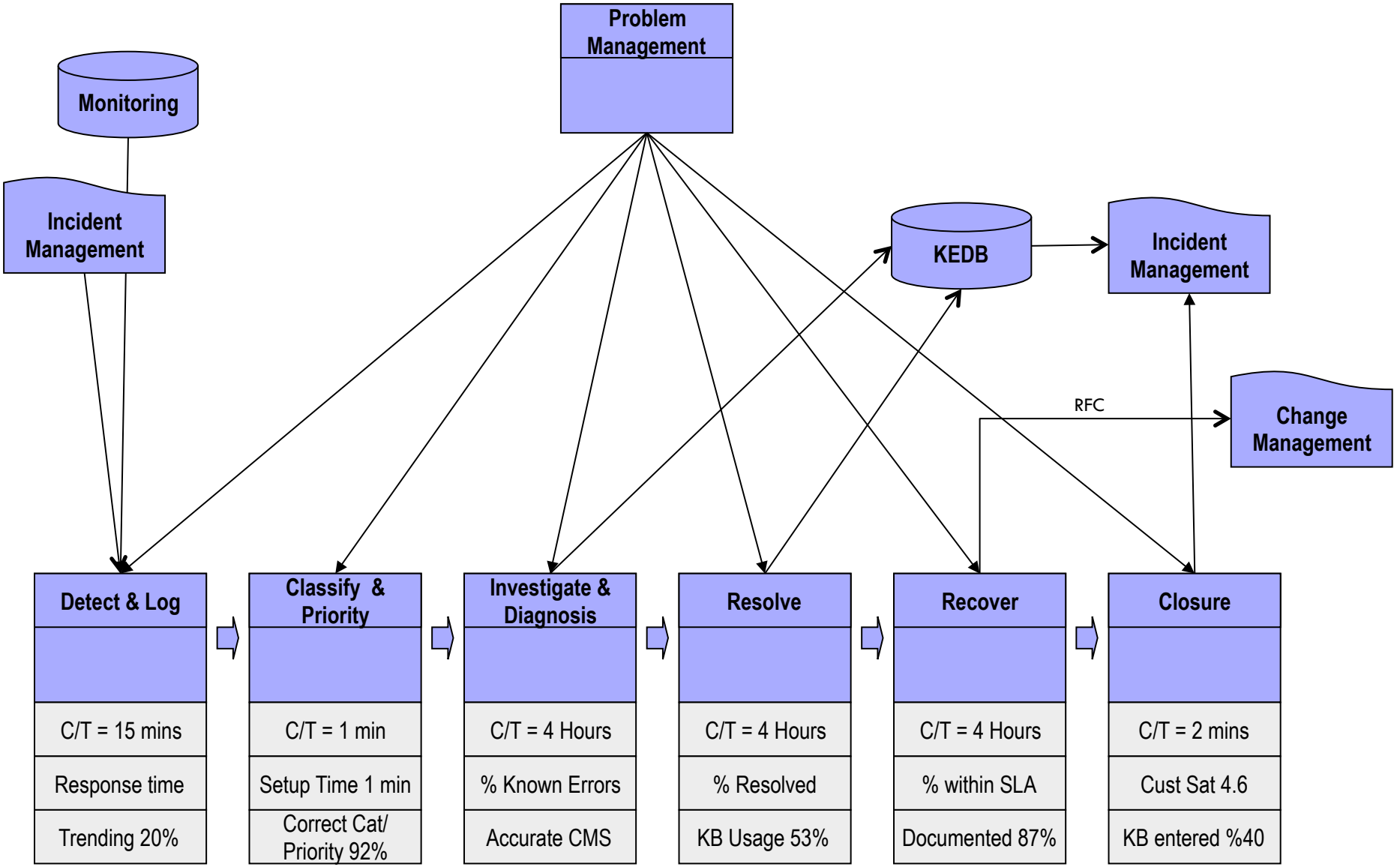
Problem Management Process Analysis Techniques

Task Procedure Analysis

Task: Incident Detection, Record and Initial Support					
Sequence	Time	Type *	Frustration	Description	Why?
1	2 mins	□ ◇ ⇒ ◗ ▽	**H** M L	Customer Calls	Experiencing an issue with their computer
2	4 mins	□ ◇ ⇒ ◗ ▽	H M L	Analyst Answers the phone	To help understand the customer's issue
3	2 mins	□ ◇ ⇒ ◗ ▽	H M L	Analyst records the incident	To record the incident and retain knowledge
4	30 secs	□ ◇ ⇒ ◗ ▽	H M L	Analyst categorizes the incident	To accurately trend incident at a later time
5	15 secs	□ ◇ ⇒ ◗ ▽	H M L	Analyst prioritizes the incident	To ensure priority handling of major or significant issues
6	12 mins	□ ◇ ⇒ ◗ ▽	H M L	Analyst analyses and diagnosis issue	Attempt to resolve on first contact
7	15 secs	□ ◇ ⇒ ◗ ▽	H M L	Analyst chooses functional escalation	Higher level of technical skill required
8	30 secs	□ ◇ ⇒ ◗ ▽	H M L	Analyst wraps up call and gives customer tracking number and service level target	Manage customer expectation
9	4 hours	□ ◇ ⇒ ◗ ▽	H M L	Analyst calls the customer back	Provide an update on open ticket before service level breech
10	1 mins	□ ◇ ⇒ ◗ ▽	H M L	Analyst hierarchically escalates incident	Breech of service level

* Types of tasks: □ - Operation ◇ - Decision ⇒ - Transport ◗ - Delay ▽ - Document

Value Stream Map



Driving Value through Six Sigma

Definition of Error Rate - The number of defective transactions or the number of defective steps in a transaction.

FORMULAS USED IN ERROR RATE CALCULATOR

Defects Per Million Opportunities (DPMO) = ((Total Defects) / (Total Opportunities)) * 1,000,000

Defects (%) = ((Total Defects) / (Total Opportunities)) * 100

Yield (%) = 100 - (Defects Percentage)

Process Sigma = NORMSINV(1-((Total Defects) / (Total Opportunities))) + 1.5

When determining your organization's Sigma Level, it is based upon the defects per million opportunities. Below is the Sigma Level based upon DPMO.

Sigma Level	DPMO
2	308,537
3	66,807
4	6210
5	233
6	3.4

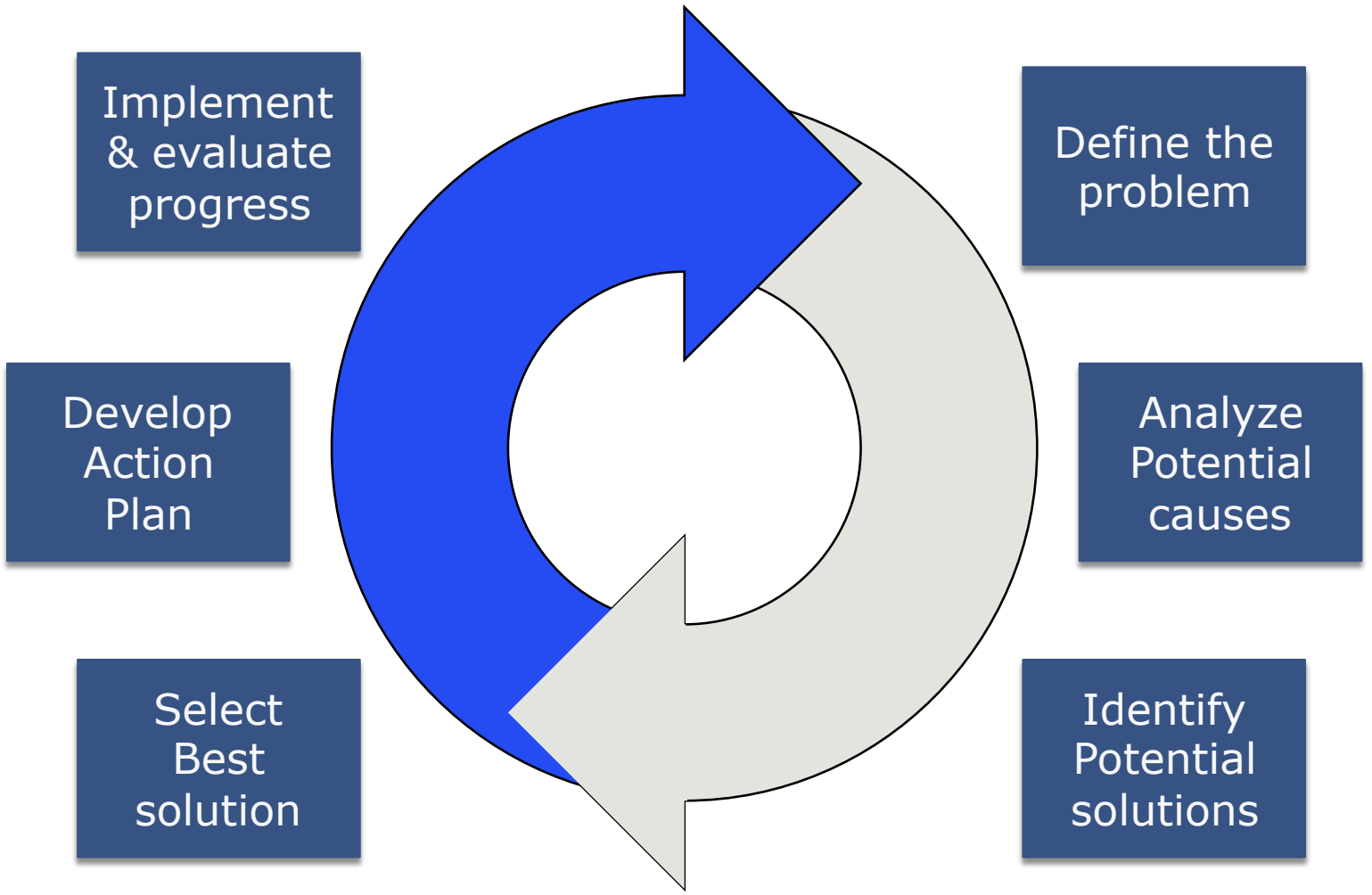
On the next page, enter in your organization's errors in the Incident Management Process in the yellow boxes. Using data captured from the problem management system, enter in the number of opportunities and the number of errors to determine your organization's Sigma Level for each sub-process and the overall Sigma in the Incident Management Process.

Clicking on this button means that you agree to the statement above →

BlueprintAudits.com

Problem Management
Root Cause Analysis Techniques

Step-by-Step Problem Solving



Source: Step-By-Step Problem Solving by R. Chang

Kepner and Tregoe Analysis

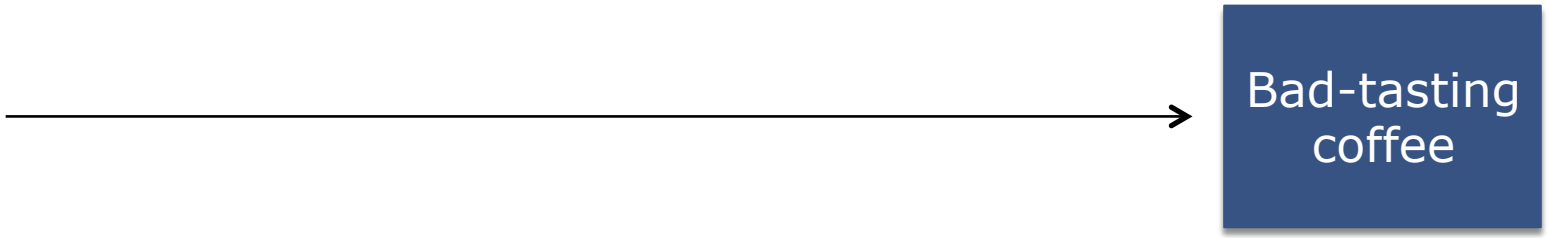
- Define the problem.
- Describe the problem:
  - Identity, location, time, and size.
- Establish possible causes.
- Test the most probable cause.
- Verify the true cause.

Kepner and Tregoe Analysis

	IS	IS NOT	CHARACTERISTICS	CHANGES
WHAT Thing Object Deviation				
WHERE Geographic by object				
WHEN First time ever since in the life cycle				
EXTENT Number of objects Deviation trend				

Cause & Effect Diagram

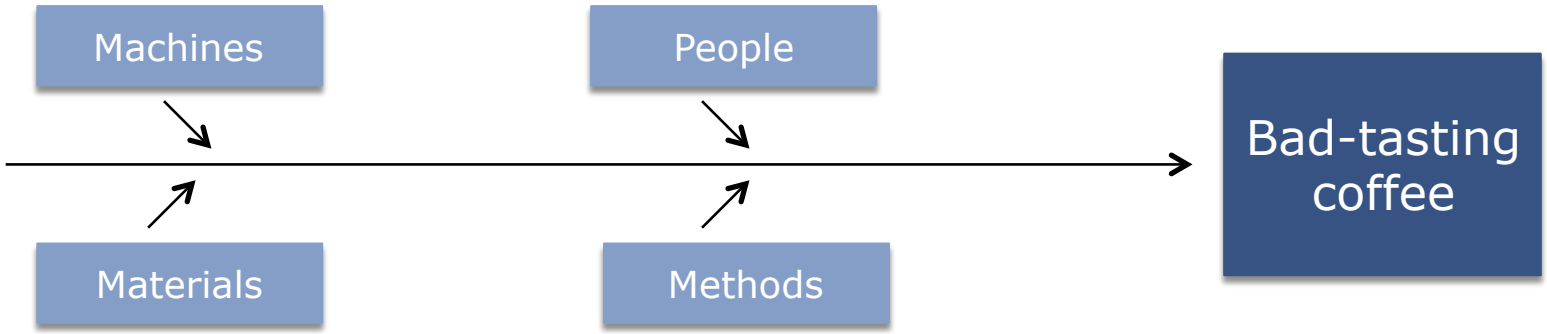
- Step 1: Define the Problem
  - Condense statement into a few words describing the result or effect of the problem



Source: Step-By-Step Problem Solving by R. Chang

Cause & Effect Diagram

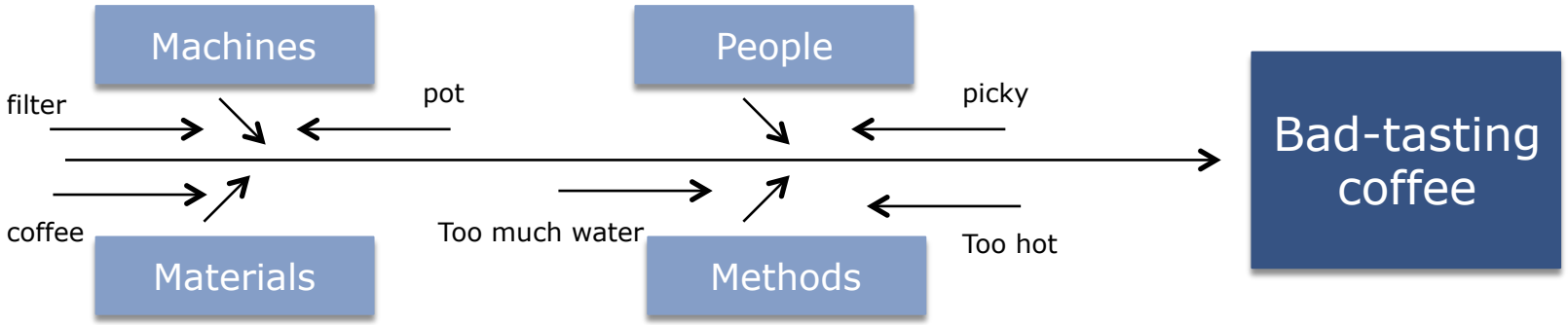
- Step 2: Identify Causes Classes
  - Look at the major categories of causes of the problem using:



Source: Step-By-Step Problem Solving by R. Chang

Cause and Effect Diagram

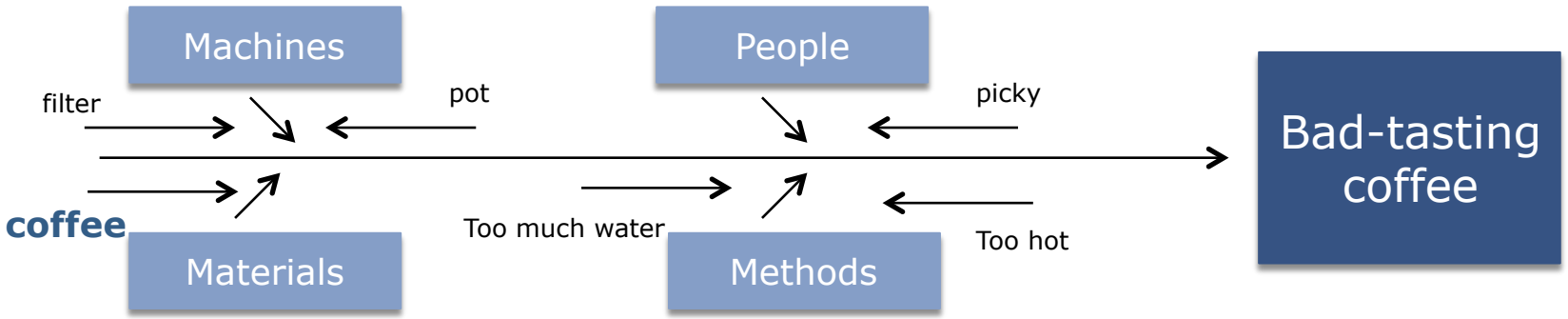
- Step 3: Brainstorm Potential Causes
  - Generate as many ideas as possible



Source: Step-By-Step Problem Solving by R. Chang

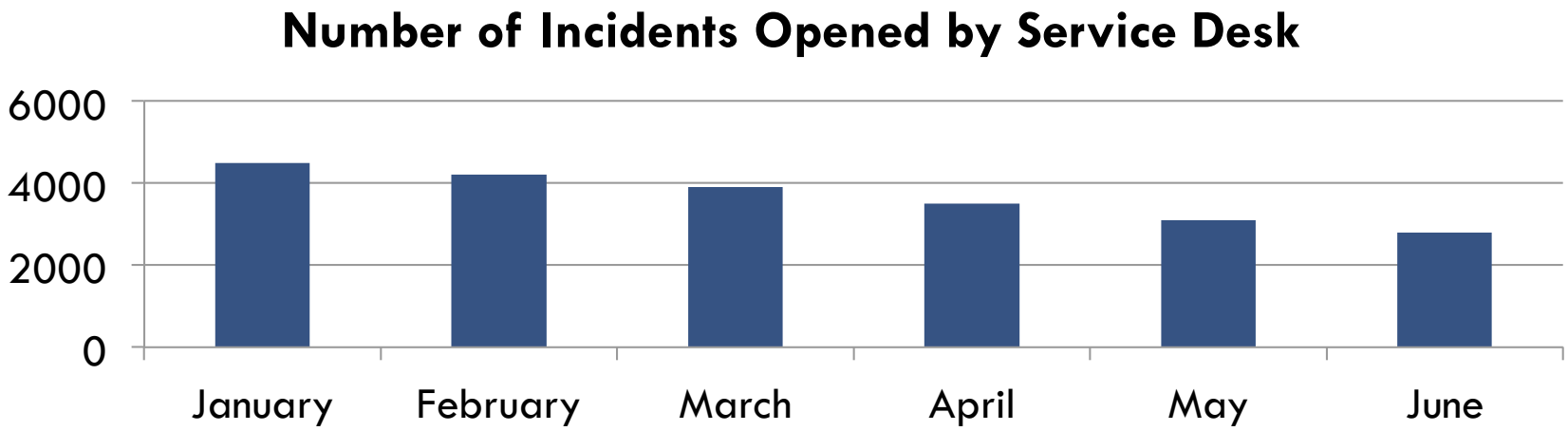
Cause and Effect Diagram

- Step 4: Identify the Most Likely Cause
  - Don't jump to conclusions - buy new coffee maker
  - Reproduce to verify
  - Evaluate likeliness of all plausible causes



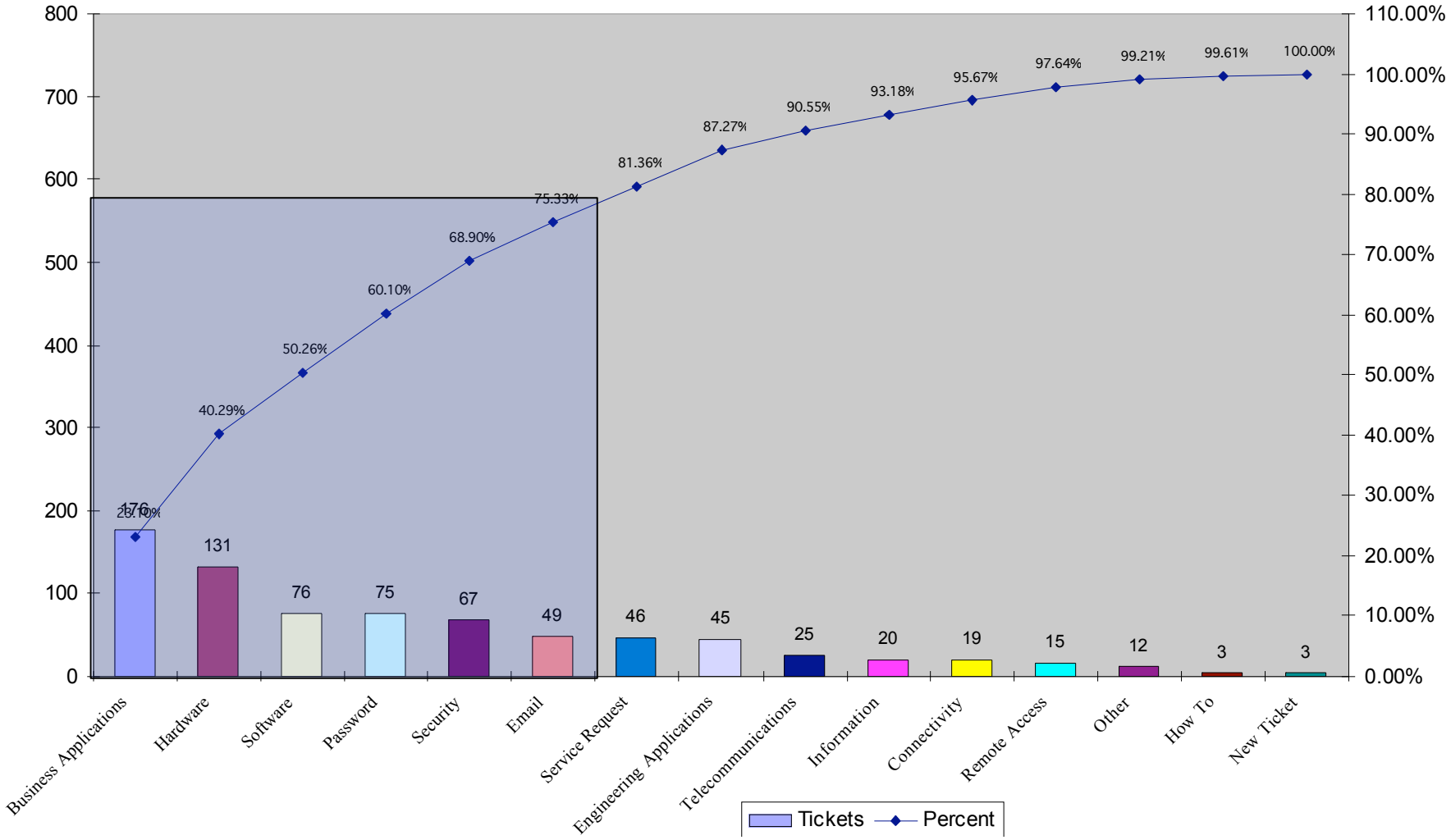
Source: Step-By-Step Problem Solving by R. Chang

Find the Root Cause



- Using the following diagram, identify the possible causes of the decrease in incidents over the last five months using a cause and effect diagram

Pareto Analysis - 80/20 Rule



Source: Performance Metrics Plan, J. McGillicuddy

Trend Identification

Identifying Trends requires:

- Identification of faulty components
- Investigation of faults
- Accurate categorization
- Utilization of statistical methods
- Specialists to assess trends and discover Problems
- Locating trends when a Problem is defined
- Evaluation of all related Incidents to identify associated objects

Trends may reveal:

- Problems that may affect other platforms
- The existence of recurring Problems

Targeting Preventative Action

- Meets the following objectives:
  - Directs scarce resources
  - Gains the highest possible business benefit
- Helps prioritize work while taking into account:
  - The volume of Incidents
  - The number of customers impacted
  - The duration and related costs of resolving Incidents
  - The cost to the business
- Initiate appropriate action as required:
  - Raise an RFC
  - Initiate education for Support Staff and Customers
  - Recommend improvements to processes or procedures
  - Ensure adherence to Problem and Incident Management procedures

Major Problem Reviews

- A group that reviews major incidents, problem identification, root cause and mitigation
- Govern problem management both reactively and proactively
- Stay current of industry news and vendor updates

Major Problem Reviews

- What went well?
- What didn't go well?
- How can this be improved next time?
- How to prevent the Problem from recurring?

- This analysis identifies process, people and technology improvements along with CSI

Tips for Proactive Problem Management

- The added value of trend analysis depends on sufficient historical data
- Technical documentation from suppliers provides information about inherent Problems
- Proactive Problem Management is not necessarily a full-time task
- Leverage vendor KB, Wiki, documentation, and discussion boards to stay on top of issues

BlueprintAudits.com

Summary

Contact Information

Julie L. Mohr

Principle Research Analyst & Author, CGEIT

ITIL Service Manager/Expert, CHDD

jlmohr@blueprintaudits.com

Blended-Learning now available on the eLearning Campus

Check it out!: http://campus.blueprintaudits.com

LinkedIn: juliemohr

Twitter: JulieMohr
BlueprintAudits.com
PO Box 1061
Davis, CA 95617-1061
PHONE +1.530.750.0240
FAX: +1.530.231.2970
AIM: blueprintaudits
SKYPE: julie.mohr