DIGGING INTO PROBLEM MANAGEMENT

Extracting stability gold from the rubble of service failures

Ceri Jones

BCS Edinburgh Branch Committee Member

Before we begin

- BCS Edinburgh Branch would like to thank Skyscanner for its continued support, the use of this room, and for providing the pizza and other refreshments.

- Thank you.

Please don't take the pizza home. Any untouched slices of pizza that are left at the end of the evening will be donated to a food charity.

ABOUT THE AUTHOR AND PRESENTER

Michael Hall

- The presentation is based on material originally created by Michael.
- Michael wrote the book Problem Management: An implementation guide for the real world.
- Michael has over 25 years' experience in IT, developing and leading teams, managing change programmes and implementing service management. A specialist in service operations, he implemented problem management as a global function at Deutsche Bank.

Ceri Jones

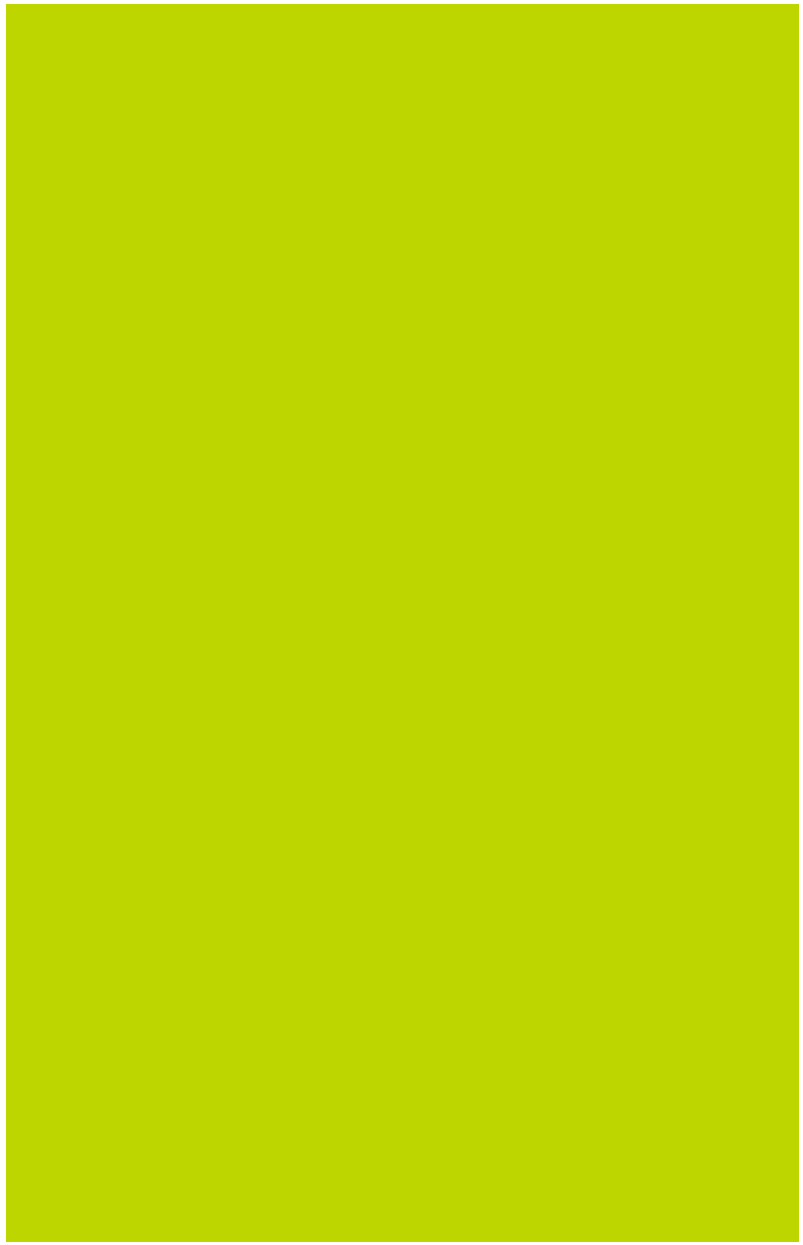
- Ceri's IT career spans more than 25 years, and has been spent working within the financial services industry.
- Initially specialising in operating systems, servers, networks and datacenters, he discovered that problem management actually had an application in the real world when reviewing the details of many years' IT incidents as part of a service improvement initiative.
- Understanding the reasons why incidents occur has convinced him that organisations should embrace ISO/IEC 20000 and ITIL service management practices.

WHAT WE’RE GOING TO COVER

Topics

- What Is Problem Management
- The Bedrock of Problem Management
- Preparing the Ground
- Dig Deep
- From the Coalface
- The Canaries in the Coal Mine
- Hitting the Mother Lode

WHAT IS PROBLEM MANAGEMENT?



The best way to escape from your problem is to solve it.

Robert Anthony

Selected ISO/IEC 20000 and ITIL 4 Practices

ISO/IEC 20000	ITIL
Asset Management	IT Asset Management
Business Relationship Management	Relationship Management
Capacity Management	
Change Management	Change Enablement
Configuration Management	Service Configuration Management
Continual Improvement	Continual Improvement
Demand Management	
Incident Management	Incident Management
Information Security Management	Information Security Management
Problem Management	**Problem Management**
Release and Deployment Management	Release Management Deployment Management
Service Level Management	Service Level Management
Service Reporting	
Service Request Management	Service Request Management
Supplier Management	Supplier Management

The purpose of problem management is to manage problems through their lifecycle from first identification through investigation, documentation and eventual resolution and closure.

ITIL Foundation Handbook

A problem is the cause of one or more incidents.

ITIL Foundation Handbook

An incident is an unplanned interruption to an IT service or reduction in the quality of an IT service.

ITIL Foundation Handbook

SO PROBLEM MANAGEMENT IS…

Identifying why a service stopped working properly, and making changes so the same thing can’t happen again.

THE BEDROCK OF PROBLEM MANAGEMENT

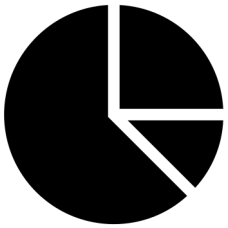
Top management shall demonstrate leadership and commitment with respect to the SMS.

ISO/IEC 20000-1:2018

PREPARING THE GROUND

Don’t set out to *report* on problem management…

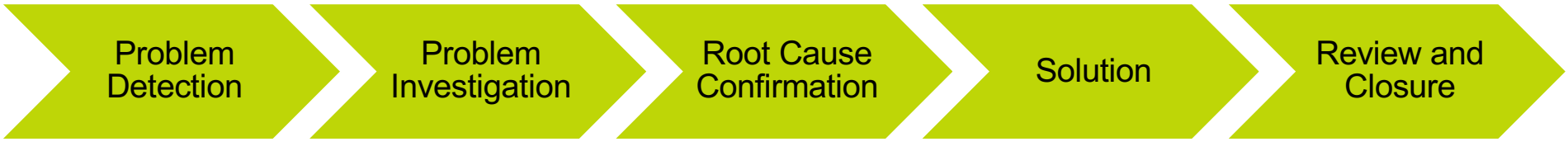
- Some organisations want to be seen to be doing problem management
- This can lead to a process that focusses on metrics
  - The “work” happens in the background
  - The purpose is lost
  - “Ownership” becomes “oversight”
- The process has no value



DO problem management!

Establish a structured and repeatable process

- Follow the process
  - Do all the steps, in order, all the time
- Always find the root cause before jumping to solutions
  - Apply a structured problem-solving methodology
  - Practice makes perfect

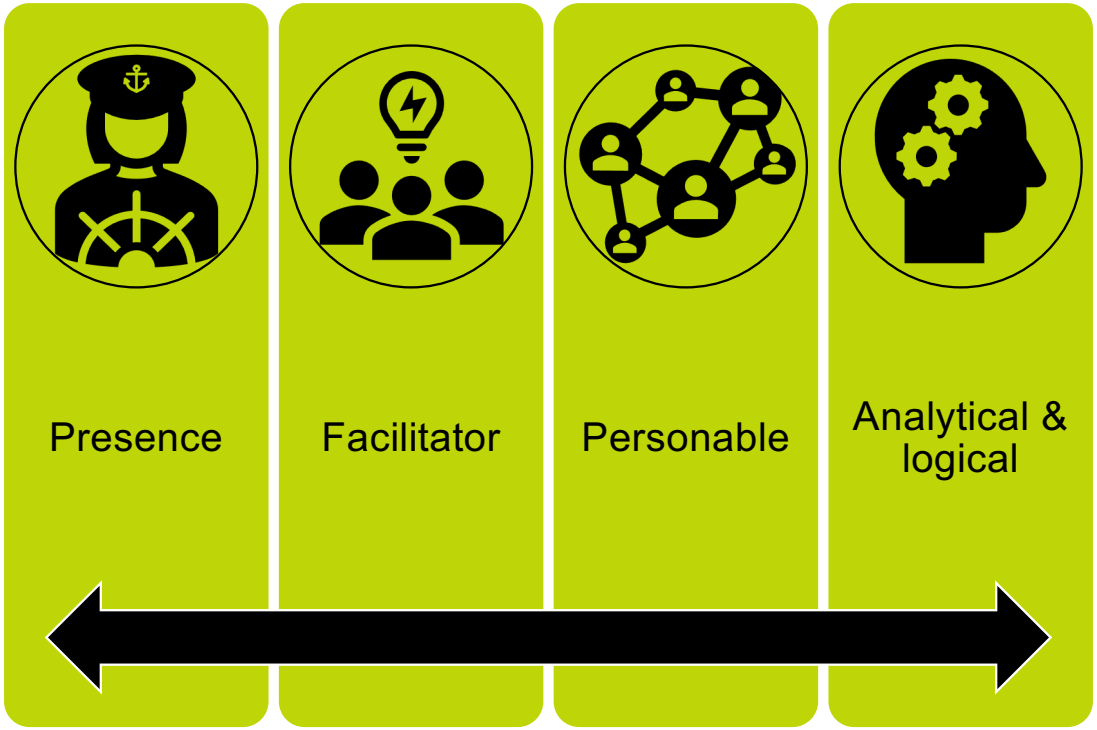


The problem manager

Problem manager is a leadership role

- Think “Scrum Master”
  - An expert in problem management and it’s context within a service management system
  - Shares their knowledge of the discipline and approach
  - Coaches others and helps them succeed
- Leads and enables problem investigations
  - Brings the right people together
  - Keeps them on track
  - Tests assumptions logically

The skills and characteristics needed



Key components of problem management

- Commitment
  - Shared purpose
  - The right people
- Collaboration
  - Group problem solving works better
  - Maintain engagement and collaboration
- Communication
  - Share status
  - Share results
  - Give recognition

Pick the right problems

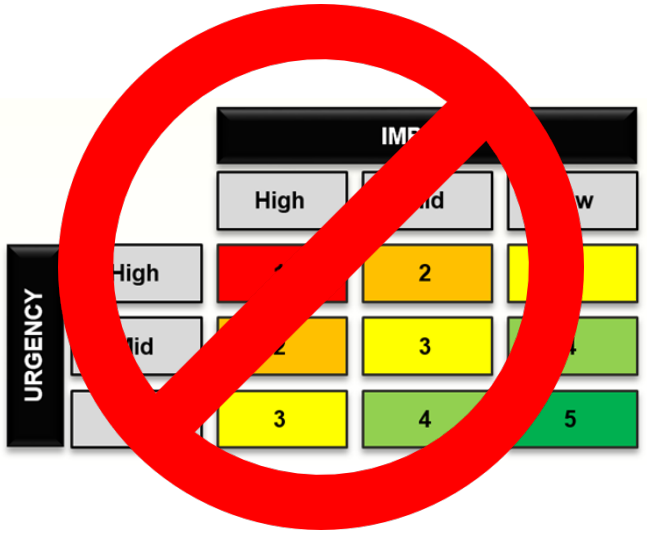
Time and resources cost money

- You can’t investigate everything
  - Ensure every problem is there for a valid reason
  - Pick the biggest impacts for the best return on investment
- Choices have to be justifiable
  - Requires a structured, repeatable way to select
  - Establish thresholds to decide what’s in and what’s out

Prioritise well

Prioritisation must be value-based

- Impact and Urgency is not sufficient
  - Not enough granularity
  - Not enough value assessment
- Use a priority matrix instead
  - Based on what's important ***to your business***:
    - Customer impact?
    - Regulatory impact?
    - Financial impact?
- Engage stakeholders to help determine priorities



Example priority matrix

Criteria	High/Yes Value	Medium Value	Selection	Score
Customer Impact	100	50	High	100
Operational Impact	100	50	Medium	50
Regulatory Impact	75		No	0
Event Impact	75		Yes	75
Recurrence	50	30	Medium	30
Financial Impact	50	30	High	50
Proactive Problem	30		No	0
				305

- Engage stakeholders to help determine criteria and scoring

Problem Priority	Minimum	Maximum
1. Critical	125	N/A
2. High	75	124
3. Medium	30	74
4. Low	0	29

Low priorities

- Very low ROI
- Don't investigate

Managing lows?

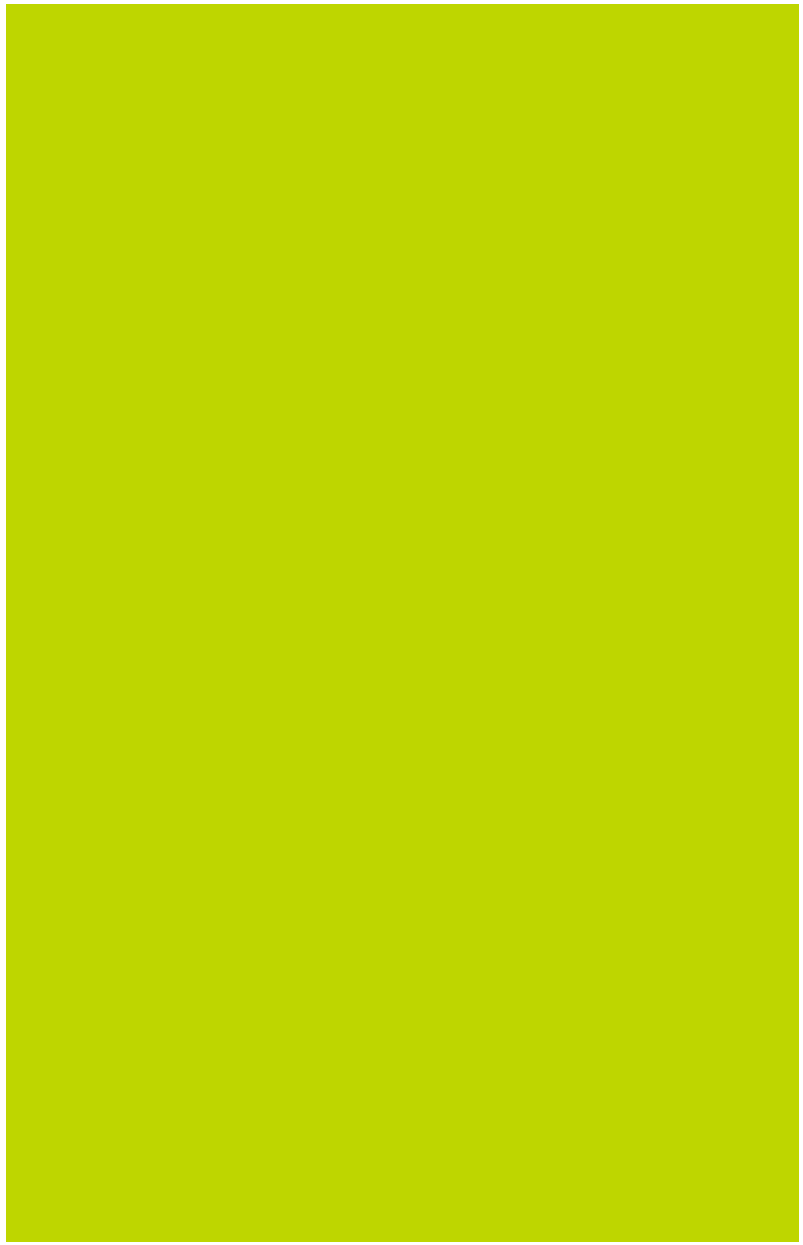
- Check your prioritisation

Find hidden problems

Find problems *before* they cause incidents

- 50% of effort goes to analysis
  - Data
    - Look at everything being captured
  - Process outputs
    - Service Management, Lean and Agile too
  - Institutional knowledge
    - The “wet floor”
- Find problems that can benefit from tooling
  - Automate the easy things to give you time for the hard stuff
  - Analyse the outputs as well to identify problems

DIG DEEP



Identify the root cause

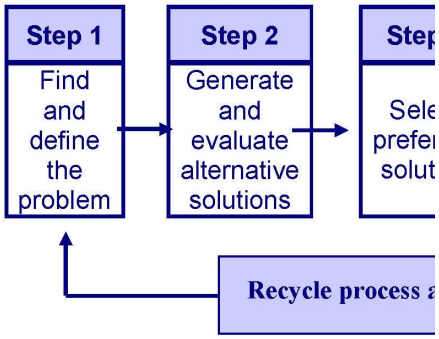
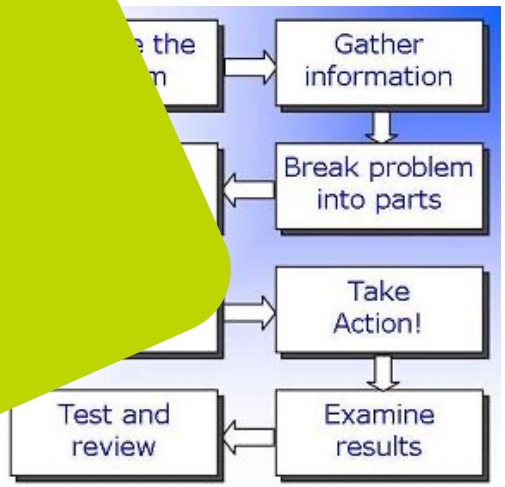


Figure 2.1: Steps in decision



Find the Root Cause!

Find the *real* root cause

Don’t accept superficial technical causes

- Not ‘Out of space’ (Why?)
  - This is the technical or direct cause; the trigger event
  - The real reason will be something else
- If you can ask why and get an answer
  - You are not finished
- Base findings on evidence
  - Deductive approaches are weak (e.g. ‘5 Whys’)
  - Causes should be testable, verifiable
- Test: ‘If I fix this, will it stop future occurrences?’

Know when to stop digging

- Use the ‘beyond reasonable doubt’ rule
- Third parties? Be realistic
  - Recognise when it is out of your control
  - Take a risk mitigation approach instead
- Many causes are in the human domain
  - Not just ‘human error’!
  - Processes, lack of automation, lack of knowledge
  - Many major problems are very cheap to fix

Don’t close problems prematurely

Not fixed? Not closed!

- Problems represent risks to the organisation
  - Don’t think of them as ‘tickets’, they are risks
- Implies that raising a problem is the default behaviour
  - Wet floor? Put up a sign until it is cleaned up
- Common objection – backlog will build up
  - Reality: It doesn’t
  - Pick the right problems, allocate resources
  - Open problems motivate to address risks

Be persistent

See problems through - implement comprehensive fixes

- Regardless of time frame
  - If it takes 12 months, so be it
- Regardless of who has to do it
  - Vendor
  - Major project
  - Agile development team
  - Service improvement

The exception that proves the rule

- It doesn't *always* make sense to implement a given solution
  - Ensure a robust workaround is in place
  - Record the scenario in the register of Know Problems

FROM THE COALFACE

Common themes

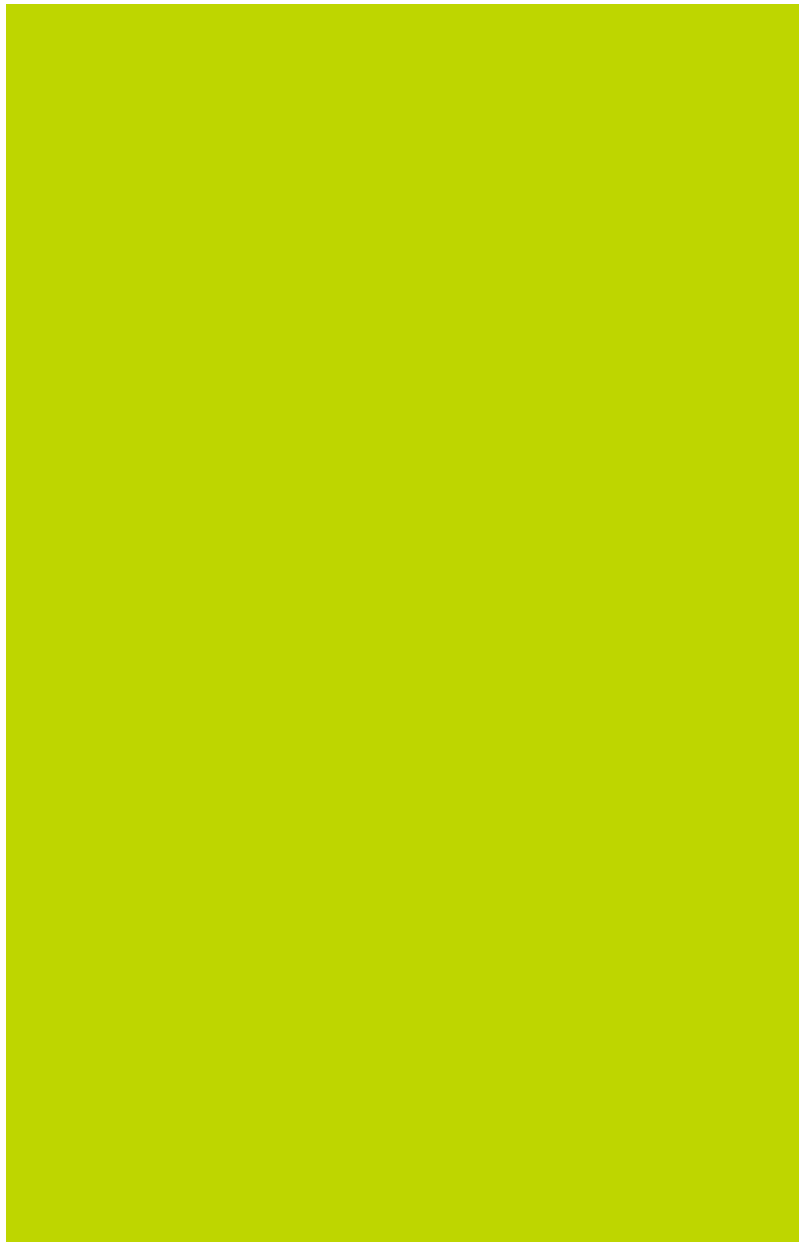
- Environment mismatch
  - Deploying something into an environment that doesn’t match the one in which it was developed
- Configuration deviation
  - ”Identical” elements with different configurations
- Unmanaged organic growth
  - The environment’s not able to support the current load

THE CANARIES IN THE COAL MINE

When problem management isn't working

Low Engagement	Just-in-Time	Just Enough	Premature Closure	Déjà Vu
• Difficulty engaging colleagues	• Claiming progress to satisfy reporting	• Implementing small, incremental solutions to demonstrate progress	• No permanent solutions implemented	• Problems that feel the same

HITTING THE MOTHER LODE



What good looks like

- Systems are stable
  - Major incidents reduced
- Processes are improved
  - Outmoded practises are eliminated
- Costs go down
  - Fixing problems saves money, it isn't a cost
- Productivity goes up
  - Teams are able to concentrate on initiatives that move the organisation forward
- Risks are controlled
  - Problem management often addresses IT and operational risks
- Compliance is maintained
  - Regulatory obligations are met

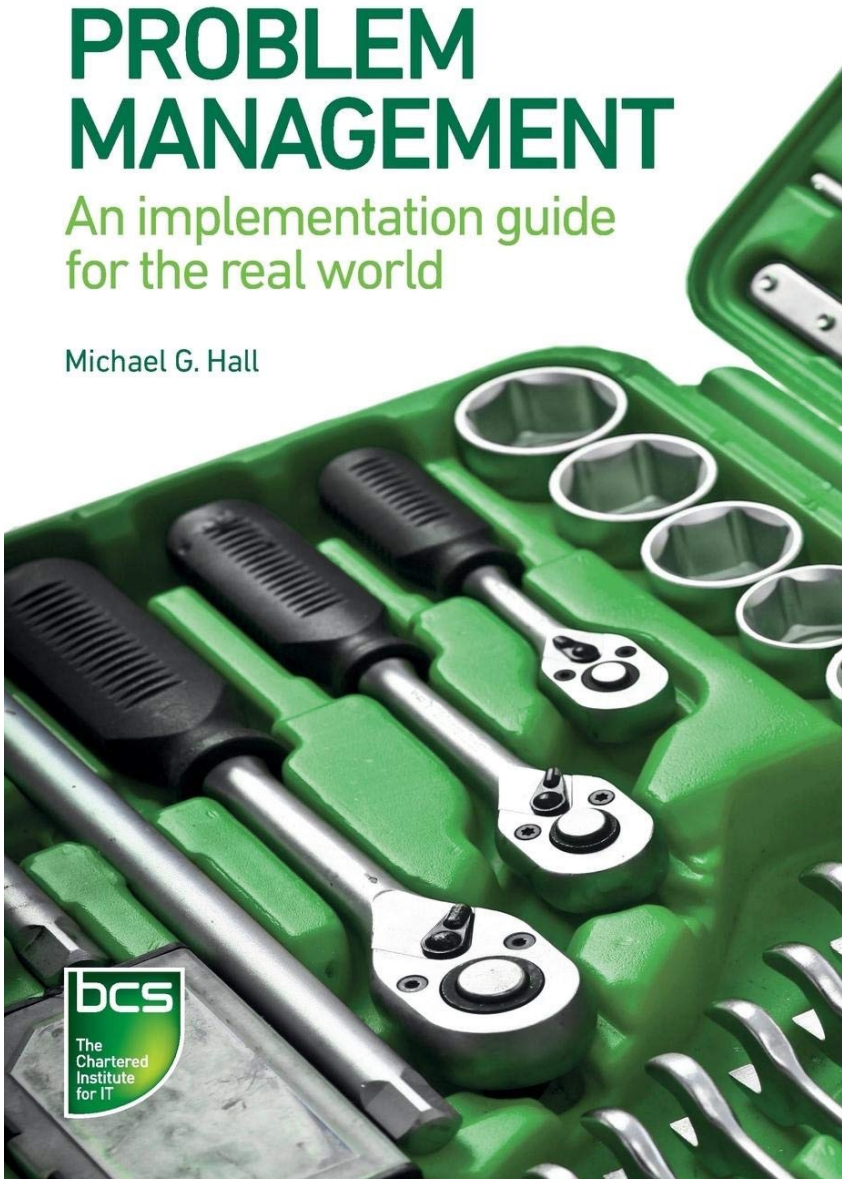
REVIEW

Key points

Q&A

PROBLEM MANAGEMENT: AN IMPLEMENTATION GUIDE FOR THE REAL WORLD

bcs
The Chartered Institute for IT



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NEXT EVENT

Next Event: More Than Lighthouses

- When
  - Wednesday 1st March 2023, 18:00 – 20:00
- Where
  - Skyscanner
- What
  - Mike Bullock OBE, Chief Executive of the Northern Lighthouse Board, talks about NLB's rich heritage and history, and how technology plays a vital role in ensuring that NLB's aids to navigation meet the evolving requirements of the mariner.

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Reminder

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THANK YOU