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

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<thead>
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<th>ISO/IEC 20000</th>
<th>ITIL</th>
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<tr>
<td>Asset Management</td>
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<td>Business Relationship Management</td>
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<td>Information Security Management</td>
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<td><strong>Problem Management</strong></td>
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<td>Release and Deployment Management</td>
<td>Release Management</td>
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<td>Service Level Management</td>
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<td>Service Reporting</td>
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<td>Service Request Management</td>
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<td>Supplier Management</td>
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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.
An incident is an unplanned interruption to an IT service or reduction in the quality of an IT service.
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.
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 focuses 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

Presence  Facilitator  Personable  Analytical & logical

"Today we are going to decide who to blame."
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

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

<table>
<thead>
<tr>
<th>Criteria</th>
<th>High/Yes Value</th>
<th>Medium Value</th>
<th>Selection</th>
<th>Score</th>
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<tbody>
<tr>
<td>Customer Impact</td>
<td>100</td>
<td>50</td>
<td>High</td>
<td>100</td>
</tr>
<tr>
<td>Operational Impact</td>
<td>100</td>
<td>50</td>
<td>Medium</td>
<td>50</td>
</tr>
<tr>
<td>Regulatory Impact</td>
<td>75</td>
<td></td>
<td>No</td>
<td>0</td>
</tr>
<tr>
<td>Event Impact</td>
<td>75</td>
<td></td>
<td>Yes</td>
<td>75</td>
</tr>
<tr>
<td>Recurrence</td>
<td>50</td>
<td>30</td>
<td>Medium</td>
<td>30</td>
</tr>
<tr>
<td>Financial Impact</td>
<td>50</td>
<td>30</td>
<td>High</td>
<td>50</td>
</tr>
<tr>
<td>Proactive Problem</td>
<td>30</td>
<td></td>
<td>No</td>
<td>0</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Problem Priority</th>
<th>Minimum</th>
<th>Maximum</th>
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<tbody>
<tr>
<td>1. Critical</td>
<td>125</td>
<td>N/A</td>
</tr>
<tr>
<td>2. High</td>
<td>75</td>
<td>124</td>
</tr>
<tr>
<td>3. Medium</td>
<td>30</td>
<td>74</td>
</tr>
<tr>
<td>4. Low</td>
<td>0</td>
<td>29</td>
</tr>
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</table>

- Engage stakeholders to help determine criteria and scoring

- Low priorities
  - Very low ROI
  - Don’t investigate

- Managing lows?
  - Check your prioritisation

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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

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DIG DEEP
Identify 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

<table>
<thead>
<tr>
<th>Low Engagement</th>
<th>Just-in-Time</th>
<th>Just Enough</th>
<th>Premature Closure</th>
<th>Déjà Vu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficulty engaging colleagues</td>
<td>Claiming progress to satisfy reporting</td>
<td>Implementing small, incremental solutions to demonstrate progress</td>
<td>No permanent solutions implemented</td>
<td>Problems that feel the same</td>
</tr>
</tbody>
</table>
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
1. Problem management is something that you do
2. A skill-set is required
3. Pick the right problems
4. Be proactive!
5. Get to real root causes
6. Not fixed? Not closed!

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Q&A
PROBLEM MANAGEMENT: AN IMPLEMENTATION GUIDE FOR THE REAL WORLD
PROBLEM MANAGEMENT
An implementation guide for the real world

Michael G. Hall

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<thead>
<tr>
<th>Print ISBN</th>
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<tr>
<td>eBook ISBN</td>
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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

- Please don’t take the pizza home. Any untouched slices of pizza will be donated to a food charity.
THANK YOU