Taking Problem Management Seriously:
You Can’t Afford Not To Support It!

Session 707
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Problem Management: A Practical Guide
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Head Bumps

"Here is Edward Bear, coming downstairs now, bump, bump, bump, on the back of his head, behind Christopher Robin. It is, as far as he knows, the only way of coming downstairs, but sometimes he feels that there really is another way, if only he could stop bumping for a moment and think of it."

— A.A. Milne (Winnie the Pooh and the House At Pooh Corner)
Taking Problem Management Seriously:
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• Examples of Industry Transformation
• Unpacking the Problem Management Process
• How to Sell, Build and Deliver Industry Transforming Results
Industry transformation Examples
When I was a kid growing up on the farm the average American farmer produced enough to feed 25.8 people.

Today's American farmer feeds about 155 people worldwide. *

That's a 600% Increase!
How did they do it?
• The soil is the same
• The weather is the same
• No increase in staff

Problem Management!!

* Source: American Farm Bureau Federation
Problem Management - Workarounds

- Farmers use drones to analyze plant foliage and locate trouble areas, then quickly and precisely apply solutions only where needed.
Problem Management
- Known Error

• By analyzing yield data from prior years, farmers now compensate for variability in soil types by adjusting seed dispersion.
Problem Management
- Proactive, Analytics

- Farmers are collaborating using blockchain based systems to securely share data.
- Farmers use soil samples and yield data from prior years to proactively dial in nutrients.
- Farmers are looking for changes that will increase yield by just 2%!
Problem Management Has Transformed Farming!
Has it Transformed IT Organizations?

NO!

Based on a recent HDI Practices and Salary Survey of Technical Support Organizations:

• Only 49% claim to have adopted Problem Management
• Only 27% have a formal Problem Management process
• Only 10% have dedicated PM resources

It’s Time for a Fundamental Transformation
From “Fixing” to “Prevention”

The Incident – 9:00PM slow drip at water meter near the floor drain
✓ A repair person shows up in 20 minutes and fixes the leak

Bringing Value - Prevention
✓ When I ask about my gas meter not being level, the repair person offers to stay and fix it
✓ They cut and install the new pipe
✓ They repaint my meter
✓ They re-light all of my gas appliances
✓ They check each appliance for CO emissions
✓ They check my CO detectors and discover one is defective
From “Fixing” to “Preventing”

**The Incident** – 2,000 miles of aging water pipe
- Fix broken pipes quickly

**Bringing Value - Prevent**
- Utilities employees suggest preventative corrosion protection
- Renewing water pipes is 2-5% of the cost to replace them
- In 2 years, maintenance costs were reduced by $90 million
- Roadway disruptions are reduced by 95%
Problem Management: A Cultural Shift Toward Delivering Business Value

- Process – Shift from Restoring Service to Preventing Disruptions
- Metrics – Shift from Reactive to Value
- Mode – Shift from Sustainer to Dreamer
Unpacking Problem Management
It’s planting season and you are out in the field planting corn with your 40 row planter. The weather forecast is calling for rain so you need to quickly get the planting completed. Suddenly you hear a squeaking wheel on the corn planter. You should:

a. Turn Up the Radio  
b. Grease the squeaking wheel  
c. Grease all of the planter wheels  
d. Replace the squeaking wheel  
e. Buy a new planter
Incident Management vs. Problem Management

Incident – An unplanned interruption to the standard operation of a service, or a reduction in the quality of that service

- Logs data used for trending by Problem Management
- Categorizes incidents which aids in appropriate incident and problem assignments
- Prioritizes incidents which triggers problem prioritization
- Links incidents to problems

Problem – The underlying cause of one or more incidents

- More than restoring services
- Characteristic of high-performing IT organizations
- Eliminate recurring incidents
- Prevent incidents from occurring
- Minimize the impact of incidents and problems when they cannot be prevented
**Problem Management Scope**

**Reactive Problem Management**
Reactive Problem Management is focused on solving problems in response to one or more incidents as they occur.

**Proactive Problem Management**
Proactive Problem Management is focused on identifying and solving problems and known errors that might otherwise be missed, thereby preventing future incidents.
Triggers for opening a problem record

- There is an incident for which the root cause is not known
- Analysis of an incident by a Support Group reveals a potential underlying problem
- Event and alerting tools automatically create an incident record due to fault detection. This may reveal the need for a problem record.
- A major incident was declared

Reactive Problem Management

- Analysis of incidents over differing time periods reveals a recurring trend, indicating an underlying problem might exist
- Analysis of the IT infrastructure by Support Groups identifies a potential problem
- Analysis results from data and knowledge mining of the knowledgebase
- Reports generated from application or system software

Proactive Problem Management
Investigation and Diagnosis

- Determine what happened
- Determine why it happened (understand causal factors)
- Identify and document a workaround
- Determine the root cause

Define Problem → Document any Workaround → Collect Data → Analyze Data → Perform Root Cause Analysis → Document Conclusion

Kepner & Tregoe
Ishikawa Diagrams
Pareto Analysis
Fault Tree Analysis
Determining The Root Cause

- Brainstorming
- Five “Why’s”
- Chronological Analysis
- Ishikawa Diagrams
- Pareto Analysis
- Kepner-Tregoe
- Fault Tree Analysis

1. Define the problem
2. Describe (what, where, when, extent)
3. List possible causes
4. Test likely causes
5. Verify true cause
6. List problem at top
7. Brainstorm possible causes
8. Determine lower level causes
9. Use logic gates (and/or) to indicate relationships
Root Cause Analysis - Helpful Hints

- Focus initially on major incidents or priority 1 incidents
- Identify RCA team based on customer and service
- Start with a timeline (chronological analysis)
- Brainstorm and identify all possible causes
- Use Pareto Analysis when data is available to identify the most likely causes
- Post your work for others to see/use
Resolution & Recovery

- Research and identify possible solutions
- Choose a solution
- Test the proposed solution
- Submit a Request For Change (RFC) to Change Management for approval to implement the identified solution
- Implement the proposed solution
- Verify the solution corrected the error
- Execute problem prevention activities
- Update KEDE or knowledge base with resolution information
Closure

• Verify that the Problem and Known Error records are updated, correct and complete
• Close the Problem or Known Error records when the change has been implemented and the solution verified (there are no new Incidents related to the Problem)
• Update the status of related open Incidents at the time of Problem and Known Error record closure
• Conduct a post-implementation review for capturing lessons learned to be applied to future Problems
How to Sell, Build, and Deliver Results
Business Outcomes

are the only real measure of IT worth

IT is somewhat reactive, with little focus on improving business use of technology

IT has a firm grasp of technology and works to deliver stable infrastructure

IT is an excellent business partner, delivering appropriate levels of service

IT is a strategic partner measured in terms of its contribution to the business

IT is a competent business partner, ensuring critical services are available when needed

Source: ITIL: State of the Nation Survey
50-70 percent of organizations that undertake a reengineering effort do not achieve the dramatic results they intended.

Reengineering the Corporation, Michael Hammer and James Champy
Create a sense of Urgency

- 50% of transformations fail in this phase
- Without motivation, people won’t help and the effort goes nowhere
- 76% of a company’s management should be convinced of the need

Source: Leading Change, John P Kotter
Schedule Time for Problem Management

“You only have an IT Staff of 7 including the CIO!”

“If there are no Major Incidents impacting the business, we will do Problem Management every Friday afternoon from 1:00 PM to 5:00 PM”
Metrics – We Get What We Measure

According to the most recent HDI Practices and Salary Survey, 88% of customer satisfaction surveys are reactive.

If we are focused on the Check Engine light, we will forever be doing Incident Management instead of adding value!

Source: 2016 HDI Practices and Salary Survey
Metrics for Problem Management

Reduced Incident Resolution Time
- Report the cumulative savings for *developed workarounds*
  - To fund PM resources
  - To fund PM training
  - To fund Knowledge Management tools
Metrics for Problem Management

Reduced Incident Volume
- Predict the cumulative value of eliminating repeat incidents
  - To build a business case for the permanent fix
  - To build a business case to transition staff from Incident Management to Problem Management
- To build a business case for additional PM training
- To build a business case for implementing PM tools
Metrics for Problem Management

Proactive Problem Management
– Determine the value of actions taken to prevent incidents from occurring
  - To build a business case for preventative investments
  - To effectively communicate value to your customers
  - To build trust/support for future preventative investments
Key Takeaways

- The essence of strategy is choosing what not to do
- Business outcomes are the only true measure of IT success
- Identify and focus on the “first things”
“Two roads diverged in a wood, and I—
I took the one less traveled by,
and that has made all the difference.”

Robert Frost
Thank you for attending this session.

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