Clear thinking for a complex world

Creating a Highly Effective Troubleshooting Environment: itSMF Presentation
- August 16, 2013 -
AGENDA

• Background and History of KT
• What Does “Highly Effective” Look Like
• Process Overview
• Demonstrated Value
• KT and ITIL
• Successful Implementation Requirements
• KT Client Results
• Questions
History and Overview

• Founded in 1958, by Drs. Charles Kepner and Benjamin Tregoe
• Thought leaders in rational process and critical thinking techniques
• Authored numerous books including: New Rational Manager, The Art & Discipline of Strategic Leadership, Implementation, How Organizations Work
• Circa 7 million individuals developed from Senior Execs through line management to direct employees.
• Headquartered in Princeton, New Jersey
• Global footprint, with multi-language capability and presence in 25 countries.
A Global Presence through a combination of subsidiaries, branches and licensed affiliates
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What does Highly Effective Look like?
The changing service operations landscape

Changes:

- We are facing a growing technology complexity avalanche
- Incident and Problem Management are more crucial than ever to the stability of our IT
- Uptime of services, applications and systems is key
- Consistency and quality of IM and PM is becoming a competitive advantage

Operational goals:

- COMMUNICATION: Stakeholders are informed, and have confidence in the information
- CERTAINTY: restoration and troubleshooting processes create a sense of control
- SPEED + QUALITY: we need both
- CLARITY: data is visible and clear to all those participating
- RELIABLE: the system is restored, AND recurring incidents minimized

Being able to Think Clearly Under Pressure is a necessity
Individuals handling individual incidents/problems differently might be OK…
Why Clear Thinking Matters

...for teams, that approach can quickly become a quality/efficiency problem
Why *Clear Thinking* Matters

For example: it can lead to extended resolution time

*Chart represents week 1 2007 through week 12 2008*

Linear to a team of 16
What customers don’t want...

**Cartoon: Dilbert**

1. **Manager:** How can you say my trouble ticket is resolved when I still have the problem?!?

2. **Technician:** Resolved is a catch—all term that can mean a shift change, escalation, or even an accidental disconnect.

3. **Manager:** So... you escalated it?

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What customers want...

How Customers Evaluate Support

- Timely/consistent responses: 60%
- Quality/speed of response to critical issues: 53%
- Fair pricing: 52%
- Proactiveness of problem elimination: 37%
- Helpfulness in getting value from products: 18%
- Amount of new functionality in updates: 18%

Source: SSPA 2006 Benchmark Data
KT Results Model - Highly Effective

Quality x Adoption = Results

KT Clear Thinking skills

Coaching + Alignment of:
- Processes and Triggers
- Roles and responsibilities
- Measurement
- Role modeling/leadership/Culture
- Expectations - Consequences - Feedback
- Documentation and Knowledge Creation

Business Results
- Decreased cost per incident;
- Decreased resolution time;
- Increased Customer Support

Organization Results
- Enhanced Teamwork;
- Enhanced communication;
- Enhanced ability to make and implement decisions

⇒ Skill Development alone will get you 10-20% adoption
⇒ What are the other adoption drivers in your business?
“Do our behaviors support?”

“Do we agree?”

“Is it sticking?”

“Do we know how?”

“Do we know it’s working?”

Highly Effective Issue Management

Leadership Alignment

Business Process Integration

Adhocracy

Hierarchy

Culture

Enterprise

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**Issue Management Maturity Model**

**Optimized**
Processes exist to measure effectiveness
Lessons learned are examined consistently and applied
Management uses metrics to improve the organization
Senior management encourages use of KT business process improvement and true cost performance tools to refine related business processes

**Managed**
Process is integrated with corporate business processes
Metrics used to evaluate process performance
Management prioritizes, resources, and tracks performance
Senior management insists on use of KT process

**Defined**
Process standardized with triggers for use
Management models use of process on key issues
Department managers require process be applied to defined issues
Metrics established to evaluate performance
Documented evidence of process use

**Repeatable**
Basic process exists, but not used on all issues
Management supports use via training and/or unstructured coaching
Individual performers self-motivated to use new process

**Improvised**
No standard practices
No metrics or documentation available to measure performance
Management aware of the need for improved issue resolution skills
Individual performers apply issue resolution tools if they know them

**Level 1**
No standard practices
Management aware of the need for improved issue resolution skills
Individual performers apply issue resolution tools if they know them

**Level 2**
Basic process exists, but not used on all issues
Management supports use via training and/or unstructured coaching
Individual performers self-motivated to use new process

**Level 3**
Process standardized with triggers for use
Management models use of process on key issues
Department managers require process be applied to defined issues
Metrics established to evaluate performance
Documented evidence of process use

**Level 4**
Process is integrated with corporate business processes
Metrics used to evaluate process performance
Management prioritizes, resources, and tracks performance
Senior management insists on use of KT process

**Level 5**
Processes exist to measure effectiveness
Lessons learned are examined consistently and applied
Management uses metrics to improve the organization
Senior management encourages use of KT business process improvement and true cost performance tools to refine related business processes
Critical Thinking Process

Inputs

- Information
- Experience
- Judgment
- Knowledge

Process

- Gather
- Sort
- Organize
- Analyze
- Communicate

Systematic Thinking

Q & Q → Q

Systematic questioning is key in getting results that matter!

Results

Issues resolved effectively

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Issue Resolution Processes

What is the cause?
Avoids pitfall of jumping to cause.

Which is best?
Avoids pitfall of jumping to a choice.

What could go wrong? What can we leverage?
Avoids pitfall of “reactive” action.

What should we work on first?
Avoids pitfall of working on low-priority issues out-of-turn.
Kepner-Tregoe’s PM Process

Understand and manage performance
- Design
- Diagnose
- Influence

Project Definition
- What?
- Why?
- How?
- How Much?
- Cost

Give/Gather Info
- Gain/Test Understanding
- Determine Action

Project Planning
- Who?
- Order?
- When?
- Who/When?
- What if?

Project Implementation
- Ready?
- Status?
- Changes?
- Results?

Targeted Involvement for:
- Information
- Buy in
- Sign off
- Trouble shooting
- Decision making

Go?
Purpose & Scope
Schedule & Protection

Benefits vs Costs

Kepner-Tregoe’s PM Process

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Issue Resolution Cycle

Problem Analysis

Cause & Effect Analysis

Decision Analysis

Decision Making / Solution Design

Potential Problem Analysis

Situation Appraisal

Issues to Resolve

Decision / Solution Implementation

Project Management

Check for Results
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Demonstrating Value
Process Demonstration

- Case Study
  Read case individually
  In your group, solve the problem

- Debrief and discuss
I’m an Expert – Why a Process?

Scalability

Repeatability

Improved hit rate:
  • Wrong answer less often
  • Right answer more often

Consistent and accurate (we’ve got our act together!)

Facilitate knowledge management -- Development, Organization and Retrieval
Problem Resolution Flow

Goal = Logic-driven troubleshooting

SA

List Concerns
Separate/Clarify
Set Priority
State & Specify Problem
Distinctions & Changes
Testing/Verifying Possible Causes

Time

Logical Process Flow
3 weeks wasted due to incomplete problem description
Dead-Time Study #2

6 months wasted due to incomplete problem description and ‘hunch-driven’ activity.

Escalation #: 5190XX
Opened: February 1999
Closed: August 2000

Dead Time (Amt/%): 6 of 18 months (33.3%)
Why a Common Process?

Excessive process variation results in:

- Unpredictability of resolution success
- Wasted “raw materials” - common sense, judgment, skills, information, etc.
- “Wheel reinvention”
- Difficulty tracking troubleshooting progress
- Inconsistent and inefficient expertise transfer

Visible processes can be measured, adjusted and improved

Consistent processes facilitate hand-offs during issue resolution
The Goal is Flow

Problem Analysis
Describe the Problem
State the Problem
Include both an object and a defect in the sentence. (WHAT IS WRONG WITH WHAT?)
One Way traffic on <trunk equipment>
Specify the Problem

<table>
<thead>
<tr>
<th>WHAT</th>
<th>IS</th>
<th>IS NOT</th>
</tr>
</thead>
<tbody>
<tr>
<td>What object?</td>
<td>trunk equipment</td>
<td>comparable equipment</td>
</tr>
<tr>
<td>What defect?</td>
<td>One way voice</td>
<td>Packets being lost</td>
</tr>
</tbody>
</table>

WHERE
Hutchinson Telecom
<exact location>
Horse.com
<equipment name>
<card name>
WHERE on the object?
<card name>
<packets sent see logs>

WHEN
Where first?
18th August 00:30
BEFORE

Where since?
Intermittently
Constant/Periodic

When in life cycle?
After loading patch set 11
After previous reset

EXTENT
How many objects?
1
How many defects? 40 instances reported
What is the trend?
Increasing / Decreasing
Stable
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KT and ITIL
Annex 6B: Kepner and Tregoe analysis

Defining the Problem
Describing the Problem
Establishing possible causes
Testing the most probable cause
Verifying the true cause

Charles Kepner and Benjamin Tregoe developed a useful method to analyse problems. In this Annex, their method is presented as an example of a Problem Analysis method.

Kepner and Tregoe state that Problem Analysis should be a systematic process of solving problems and should take maximum advantage of knowledge and experience. They distinguish the following five phases for Problem Analysis (described further below):

- Defining the problem
- Describing the problem with regard to identity, location, time and size
- Establishing possible causes
- Testing the most probable cause
- Verifying the true cause.

Depending on time and available information, these
ITIL Objectives

- Increase customer focus within the IT organization
- Increase quality of IT services
- Reduce IT service cost
- Improve “process thinking” within the IT organization

➢ *ITIL describes the “WHAT”, not the “HOW”!*
Objective

Restore service as quickly as possible (not find cause!)

Incident (deviation or potential deviation)

Any event which is not part of the standard operation of a service and which causes, or may cause, an interruption to, or a reduction in, the quality of that service

Examples:
- service not available
- application bug
- system down
- printer not printing
Objective

Get to the root cause of Incidents and then initiate actions to improve or correct the situation

Prevent recurrence of Incidents related to these errors - Both reactive and proactive

Problem Definition

The unknown underlying cause of one or more Incidents
IM, PM and KT Process

Incident Management

- Incidents
  - Fix/Work-Around/JDI
  - Incident Resolution
- Select the best fix/workaround
- Implementation
- Multiple Incidents can be linked to one Problem

Problem Management

- Problem
  - Known Error
  - Find root cause
- Problem Analysis
  - Think-Beyond-the-Fix
- RFC

Change Management

Customer

Potential Problem Analysis

Decision Analysis

Situation Appraisal
Problem Process – Overview

**Before Continuing:**
- Do we have a deviation?
- Is Cause Unknown?
- Do We Need to Know to take an effective action?

**Tips:**
- Focus on gathering strong data around the WHAT section
- Look for IS NOTs that are related and similar to the IS

**Test and Document Assumptions**

“If x is the true cause of y then how does it explain…” Perform fully for each IS/IS NOT Pair
Perform for each possible cause

**Default Path:** Use What you Know

- Do I have enough data and confidence in a possible cause?

**Alternate Path:** Distinctions and Changes

- Trigger: Too many ideas, Ideas Fail or “Not Enough Data”

**PA Distinctions**

- Ask: What is different odd special or unique about IS vs IS NOTs? Focus on the IS
- What has changed around those differences?

**PA Find Related Changes**

**PA Test Causes Against IS/IS Nots**

- Choose the most reasonable

**PA Think of Causes**

**PA Decide on Action**

Think Beyond the Fix

**Go**

Verify Cause

Choose the most reasonable Action
Poor preventive planning measures, and poor feedback loops based from old incidents create situations where we can solve the same thing again and again. This can become frustrating.

Frustrating Examples to see repeat and cause a service to be unavailable:
→ hard drive full, transactional log full, data errors in incoming EDI stream etc.

The Post Process – Think Beyond the Fix plays an important role in stopping this frustration.
Successful Implementation
Requirements
What is necessary to make change stick?

Retention of training after six months

Presentation 3%
P + Demonstration 5%
P + D + Participation 15%
P + D + P + Role Modelling 25%
P + D + P + RM + Personal Feedback 45%
P + D + P + RM + PF + On-the-job-Coaching 85%

University of Colorado
Why does training sometimes fail to meet expectations?

- Training not tied to strategic goals
- Training not tied to operational issues
- Participants learn the skills, not sure how to apply them to the job
- New skills are not tied into the business process
- New skills are in conflict with existing measures and processes
- New skills are not encouraged for use on the job
- New skills are difficult to use
- Coaching for supporting new skills is non-existent
- No management support or reinforcement of new skills
When Change Doesn’t Work
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Client Results
Client Results and ROI

**Reduced Costs**: Using Problem Analysis, a Siemens plant solved a defect problem that had persisted for years.

– Results: Annual savings of $2.8 million in rejected product and material costs.

**Reduced Costs**: Using Decision Analysis, Aristocrat Technologies, a fast growing company, selected their suppliers for key component parts

– Results: Annual savings of $2.2+ million per year.
Client Results

**Reduced Cost:** DRS Optronics (DRSO) used KT problem solving to prevent shut down of a product line worth $25 million/year

- Results: avoided retrofit costs of $2.2 million year one and double that in year two

**Increased Customer Satisfaction:** Research In Motion’s BlackBerry Premium Support used the KT Process to gain confidence and trust from their customers

- Results: decreased time to resolve customer issues by 40% and increased customer satisfaction by 24 points
Client Results

**Saved Lives:** NASA used decision analysis and problem solving to bring Apollo XIII safely back to earth from space

- Results: Apollo XIII returned safely to earth and engineers found root cause critical for safety of future missions

**Phenomenal Growth:** during their period of high growth, Scientific Atlanta credits the acceptance and success of their Six Sigma initiative to KT’s processes

- Results: High quality, low price and on-time delivery by reducing defects, operating costs and cycle time
Client Results and ROI

• “Kepner-Tregoe’s results can be measured in the hundreds of millions of dollars.” — Robert A. Lutz, Vice Chairman, Product Development and Chairman, GM North America
What Questions Do You Have?

Shellina Damji  
Practice Leader  
sdamji@kepner-tregoe.com  
+1/609-356-3429 (Cell)

Randall Peoples  
Client Relationship Manager  
rpeoples@kepner-tregoe.com  
+1/281-467-3523 (Cell)