

Pragmatic Problem Solving



Troy Burgess
TreeHouse Foods

Today's Program



- Welcome
- Introductions
 - Ellen Milnes
- “Pragmatic Problem Solving”
 - Troy Burgess
- Open Discussion and Questions

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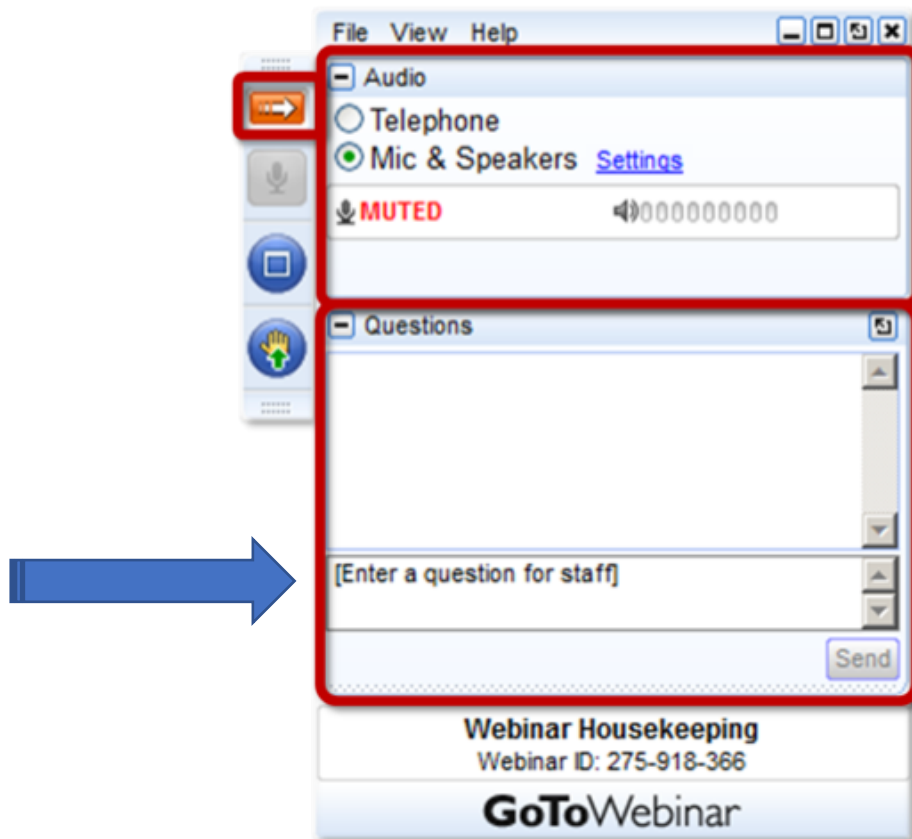


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About Our Presenter



Troy Burgess

Corporate CI Manager

TreeHouse Foods

- 20+ years experience in Lean, TPM, and Six Sigma
 - Westinghouse Electric
 - Abbott
 - Compass Minerals
 - TreeHouse Foods
- MBA, Certified LSS Black Belt

Pragmatic Problem Solving: Agenda



- Culture of Problem Solvers
- Simplify
- Choosing the Right Tools
- Implementing Pragmatic Problem Solving

Culture of Problem Solvers

The Key to “SEE”

- The key to achieving Sustainable Everyday Excellence is teaching our associates to “SEE” the problems that need to be solved
- Building a company of problem-solvers is one of the most impactful things a company can do towards the creation of a continuous improvement culture

S u s t a i n a b l e

E v e r y d a y

E x c e l l e n c e



Culture of Problem Solvers

Barriers

- However, a root-cause culture can be extremely hard to achieve. This is due to several reasons;
 - (1) Leadership Reinforcement
 - Leaders often reinforce short-term mentalities like “get it done” or “keep it running” rather than praise long-term thinking such as line-stopping temporarily
 - (2) Problem-Solving Acumen
 - Many organizations do not see problem solving as a core competency or bona fide skill needed to perform the work. This training is seen as secondary in nature
 - (3) Tool Use Confusion
 - When problem solving systems do exist, associates are often confused with what tool to use and when to use it

The causes and actions to improve leadership and training are well understood.
Knowing what tool to use and when to use can be the “black hole”

Culture of Problem Solvers

The Black Hole

Imagine what our employees' minds do when they experience an acronym soup like this!



- The root cause tool box can be compared to a black hole of never ending methodologies.
- One company in listed all the different problem solving methods being used in the corporation. Through its different and disjointed divisions, there were 23 different problem solving approaches.

This type of experience is common in many organizations.

Culture of Problem Solvers

The Sledgehammer

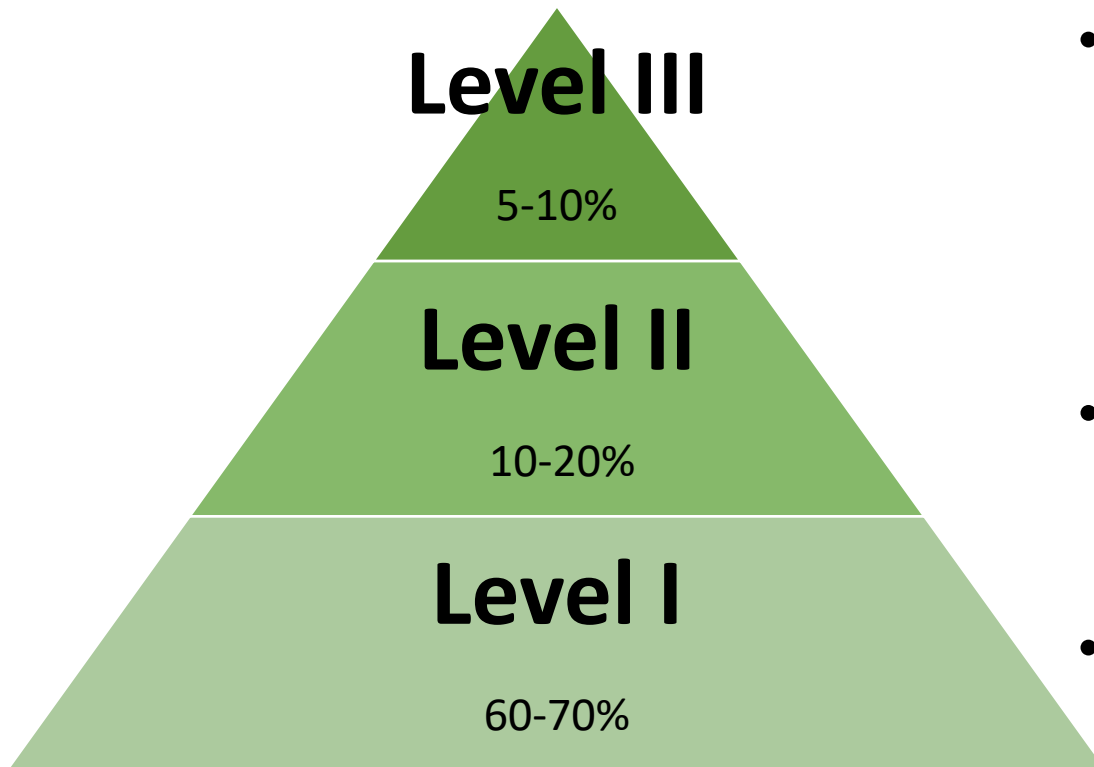
- Organizations use very complex tools to solve seemingly common problems.
 - Of course, we trained our employees so we expect an ROI on that investment.
 - We then spend long lead times and mass resources to solve a problem that was the solution our associates would have come away with in a fraction of the investment.



There is a reason why the old adage "beating a ten penny nail with a twenty pound sledgehammer," is so familiar - we just can't help ourselves!

Simplify

The Problem Solving Pyramid

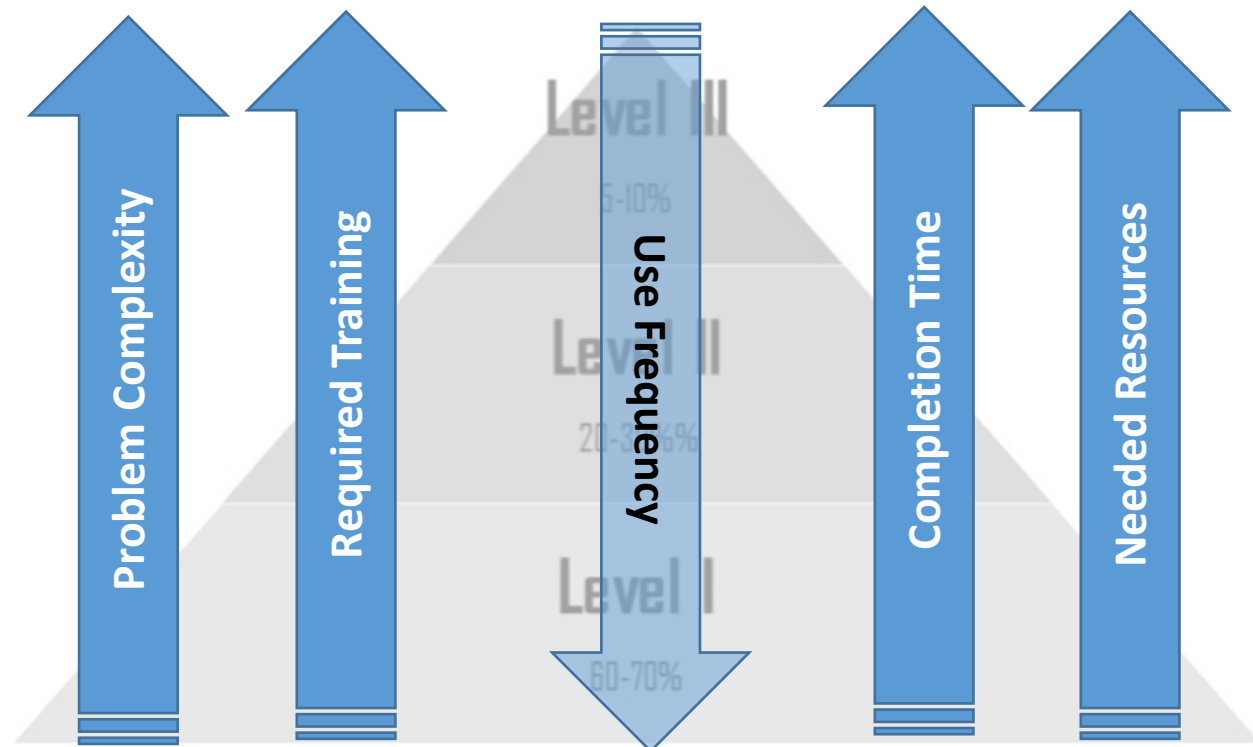


- Problem solving can be dramatically simplified through an approach called the Problem Solving Pyramid.
- The pyramid is typically constructed into three or four levels.
- The largest opportunity is found in level I or “everyday” problem

The base of the pyramid is where the most opportunity resides. Level one is the muscle behind transformative culture

Simplify

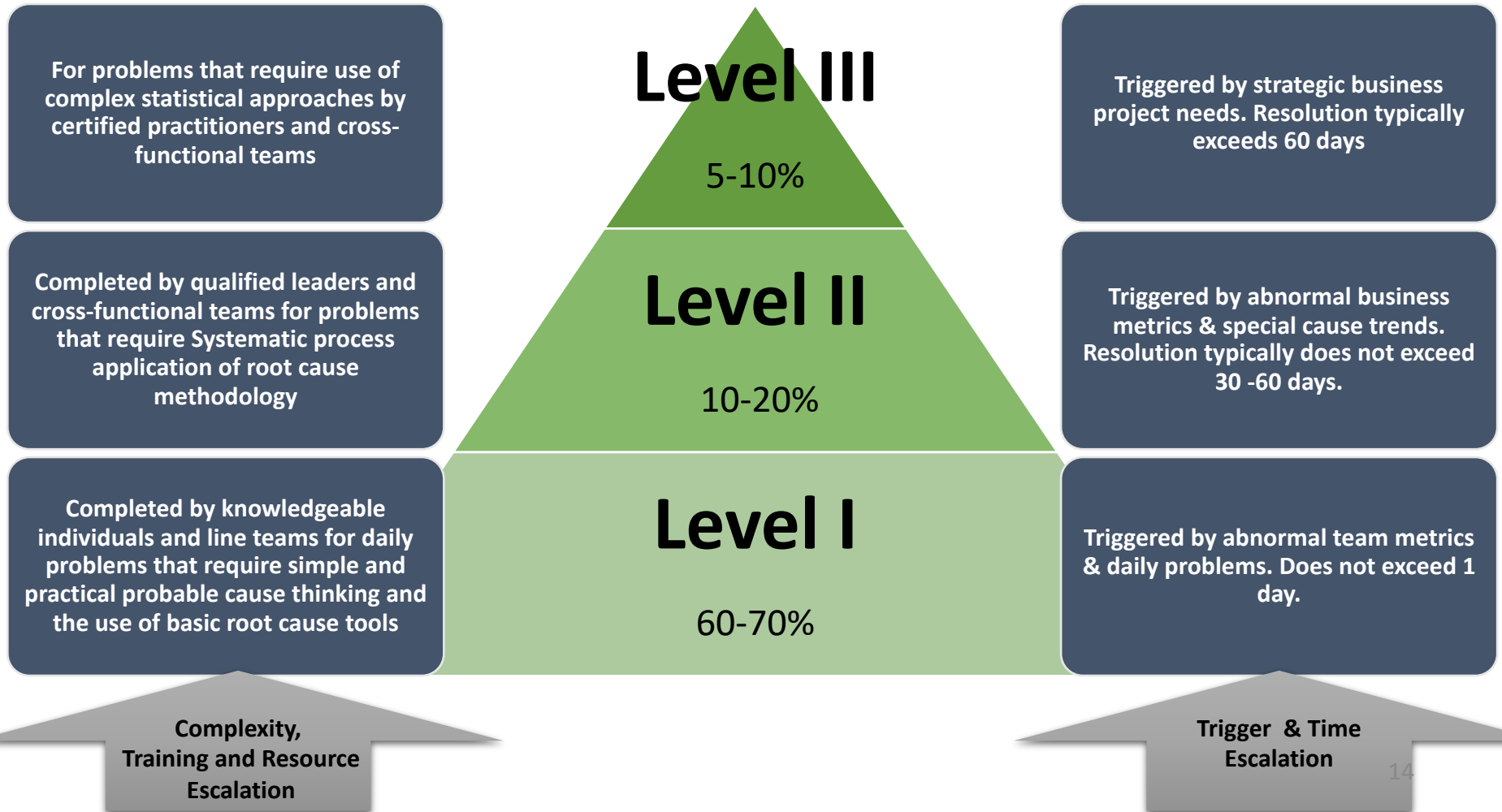
How the Pyramid Works



The levels represent frequency of use, problem complexity, required training, completion time and resource needs; as we climb higher on the pyramid, the frequency of use decreases while complexity, time, training and resources needs increase.

Simplify

How the Pyramid Works



Choosing the Right Tools

For Your Organization

- Before you can choose the right “Tools” for your organization, you need to establish the three levels of “methodologies” or types of problem solving
- Three methodologies that can be easily linked and make sense for most organizations are DMAIC (Level III), PDCA (Level II), and @ Source (Level I)

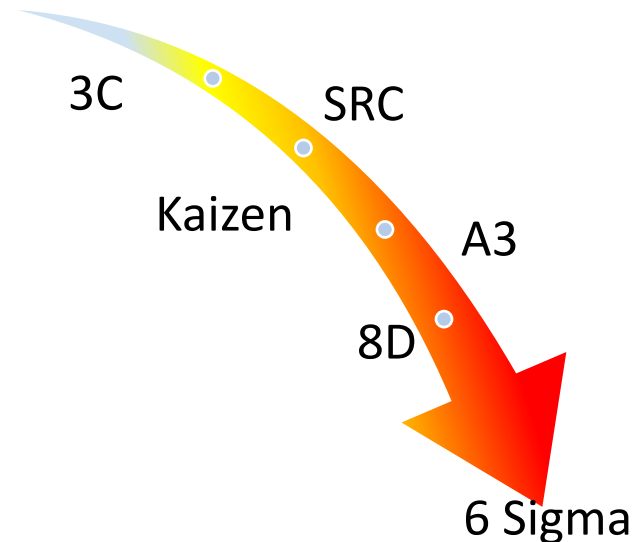
| Level III | Level II | Level I |
|-----------|------------|----------|
| DMAIC | PDCA | @ Source |
| Define | Plan | Concern |
| Measure | | Cause |
| Analyze | | |
| Improve | Do | Correct |
| Control | Check | |
| | Act/Adjust | |

Choosing the Right Tools

For Your Organization

- There are many different problem solving tools that can be used
- The tools need to match the culture, familiarity and expectations of your organization
- Although it may add complexity, you can use multiple tools within one of the three levels to match a desired trigger

| Problem Complexity | Required Training | Completion Time | Resources | Use Frequency |
|--------------------|-------------------|-----------------|-----------|---------------|
| Analytical | Certification | Project | High | Strategic |
| Focused | Qualification | Extended | Medium | Triggered |
| Simple | Practical | Quick | Little | Everyday |



Choosing the Right Tools

For Your Organization

| Level III | | Level II | | | | | Level I | |
|-----------|------------------------------------|------------|---|--|---------------------------------|-------------------------------|----------|----------------------------|
| DMAIC | 6Sigma 12 Step | PDCA | 8D 8-Step | A3 7-Step | Kaizen 6-Step | Simple RC 4-Step | @ Source | 3C 3-Step |
| Define | Select Output Characteristics | Plan | Establish Team | Clarify Problem (Background) | Charter Kaizen | Understand the Situation | Concern | State Concern |
| | Define Performance Standards | | Define the problem | | | | | |
| Measure | Validate Measurement System | | Implement containment actions | Breakdown Problem (Current State) | Process Walk & Map | | | |
| | Establish Process Capability | | | | | | | |
| | Define Performance Objectives | | | Set Goals/Target | | | | |
| Analyze | Identify Variation Sources | | Analyze root causes and escape point | Analyze Root Cause | Identify Waste & Root Causes | Identify Root Causes | Cause | Identify Probable Cause |
| | Screen Potential Causes | | | | | | | |
| | Discover Variable Relationships | | | | | | | |
| Improve | Establish Operating Tolerances | Do | Identify, Approve & Implement permanent corrective actions | Develop & Implement Counter measures | Improve | Implement Counter measures | Correct | Correct to run |
| | Validate Measurement System | Check | Validate corrective actions | Monitor Results | | | | |
| | Determine Process Capability | | | | | | | |
| Control | Implement Process Controls | Act/Adjust | Prevent reoccurrence | Standardize & Share | Sustain & Audit | Sustain & Reapply | | |
| | | | Congratulate and wrap-up | | Report & Share | | | |

This is list of tool examples tied to their methodology. It is important to make the connection that ALL problem solving methods are alike – however, like hammers, some are sized for finishing nails and some are sized for railroad spikes

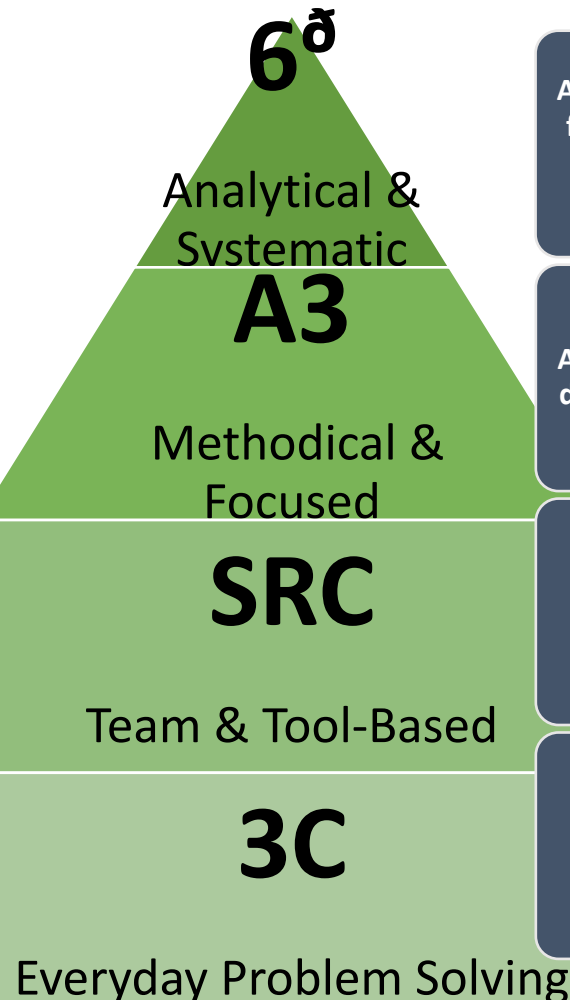
Implementing Pragmatic Problem Solving (actual example)

6 Sigma – for level 4 opportunities – Used for problems that require more complex LSS tools by qualified practitioners

A3 – for level 3 problems – Used for larger scale team-based projects or initiatives that require approximately 1- 3 months to complete

SRC (Simple Root Cause) – for level 2 problems – Using Simple Root Cause Tools & Kaizen for larger scale problems that require a cross-functional team and could require 1 day to 1 month to complete

3C (Concern, Cause & Correction) – for level 1 problems - @ the source problem solving approach and tools that anyone can use (e.g., 5-Why & Fishbone) – designed to take a few minutes using simple 3C cards or visual boards



Assigned during Strategic Deployment for opportunities exceeding a 90-day limit and require statistical or systematic approach

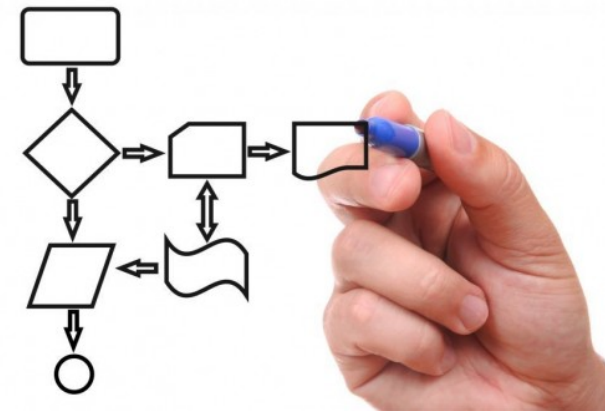
Assigned when problems exceed a 30-day limit or require a kaizen approach

Completed when designated Department metrics hit “RED” or for problems that exceed 3C Card capability

Completed when Tier 1 metrics hit “RED” or for problems that do not exceed the pre-set time limit

Implementing Pragmatic Problem Solving

1. Develop an approach and pyramid that fits your business needs and incorporates the effective methods already within your culture
2. Proceduralize the process, triggers, methods and approach
3. Develop and administer training, qualification and needed certifications
4. Build the approach into your business's Hoshin process
5. Institutionalize the process through Tiered accountability, Kamishibai and leader standard work to reinforce the proper timing, use and effectiveness of the tools



Pragmatic Problem Solving Summary

- The Problem Solving Pyramid is a **simple** approach
- Regardless of the tools you choose to plug into the ascending levels, the seemingly complex issue of standardizing problem solving methodologies becomes demystified
- Business adoption of the Problem Solving Pyramid will create better **alignment of results** throughout the organization by triggering a **logical progression** of improvement activities
- Consistent focus on the bottom of the pyramid where a bulk of opportunities reside can be the **transformative** key that unlocks the door to a culture of true Continuous Improvement



Questions?

Thank you!

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| Define & Prioritize | Measure Performance | Analyze Root Causes |
|--|--|--|
| <ul style="list-style-type: none">• Affinity Diagram• Failure Mode & Effects Analysis (FMEA)• Process Flow Chart• Project Priority Calculator• Value-added Flow Chart• Value Stream Analysis | <ul style="list-style-type: none">• Histogram• Measurement System Analysis (MSA)• Pareto Chart (Manufacturing Inc.)• Pareto Chart (Service Inc.)• Six Sigma Conversion Table• Statistical Process Control (SPC)• Trend Chart | <ul style="list-style-type: none">• 5-Why Analysis• Design of Experiments• Fishbone (Ishikawa) Diagram• Regression Analysis• Statistics Handbook |
| Implement Improvements | Control the Process | Methodology Overview |
| <ul style="list-style-type: none">• 5S Tool• A3 Report - MGR• Brainstorming• Corrective Action Matrix• Error-Proofing• Kaizen• One Piece Flow• Pull Scheduling• Quick Changeover (SMED)• System Diagrams• Total Productive Maintenance | <ul style="list-style-type: none">• CHECK Process• Control Plan• Standardized Work• Statistical Process Control (SPC) | <ul style="list-style-type: none">• Lean Roadmap - The Planning and Implementation Process |
| Additional References <ul style="list-style-type: none">• Communities of Practice• Recommended Books and Web sites• Statistics Software | | |



Thank you for joining us



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Archived presentations and other materials: <http://www.moresteam.com/presentations/>