



Manufacturers Alliance Seminar **A3 Thinking & Problem Solving**

Practical experiences from peers on how to leverage A3's to unify culture, improve communication, and develop more problem solvers.

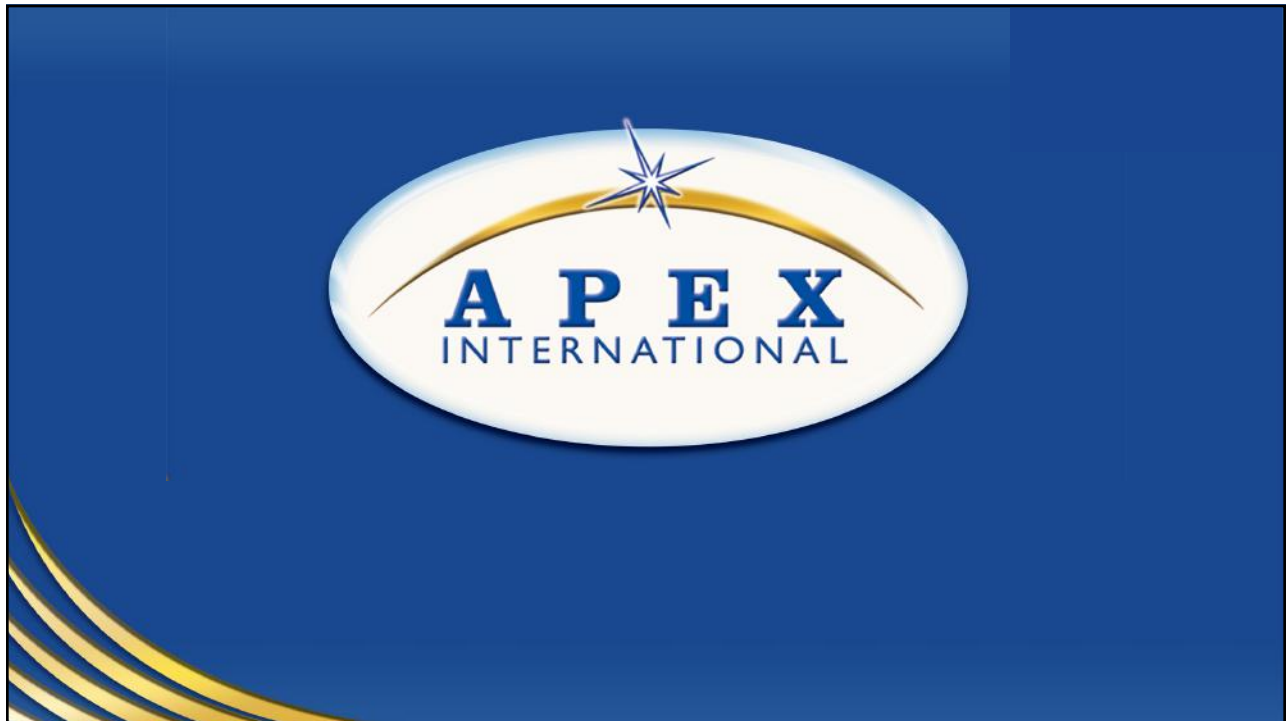
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Apex International

Dave Newman
General Manager



WHO IS APEX INTERNATIONAL

Apex is a leading contract manufacturer of Personal Care and Home Care products serving customers ranging from Fortune 500 companies such as Johnson & Johnson and Colgate to fast growing entrepreneurial companies.

Since starting Apex in 1999 the company's revenues have increased 15 fold. The company currently employs approximately 260 employees. The Village Company markets bath and body products including Village Naturals, Mr. Bubble and Sesame Street to the mass market

Apex Mission/Vision/Values



Mission: To contribute to the success of our customers by helping them grow and save money.

Vision: Become the most respected, most admired, most sought after personal care contract manufacturer in the world. Be the world's best at providing customer solutions with a passionate commitment to continuous improvement.

Values:

- Customer Focus
- Continuous Improvement
- Results Orientation
- Stewardship

APS Core Elements



- Breakthrough Improvement Techniques
 - Value Stream Analysis
 - Rapid Improvement Events (RIE)
 - Mission Control
 - Steering Team
- Managing for Daily Improvement (MDI)
 - A3 Thinking founded in Practical Problem Solving
 - Flow Cell Huddles
 - Leader Standard Work
 - Leadership Discipline (Gemba walks, Audits)

Product Examples



A3 Thinking at Apex – A Practical Approach





Our Learning

- The A3 document itself is not a Silver Bullet. It isn't going to solve problems or improve anything
- The critical thinking, collaboration, and following of the Plan Do Check Act (PDCA) cycle is what adds value



Our Struggle



- Initial results using the A3 approach were mixed
- We didn't know how to efficiently collect data to get to root cause (box 4 on our A3 form)

| Countermeasures | Expected | Predicted Result | Actual Result | Control |
|---------------------------------------|---------------------------------------|--------------------------------------|---------------|---------|
| Define customer needs | Identify if we have any major needs | Identify what information is needed | | |
| Characterize of customer requirements | Identify what needs to be addressed | Identify what we need to address | | |
| Determine which needs are critical | Determine which needs we must address | Determine what needs we must address | | |
| Collect data to support needs | Collect data to support needs | Collect data to support needs | | |
| Identify customer needs | Identify customer needs | Identify customer needs | | |

4. Gap Analysis
Identify all possible causes for the situation
Conduct investigations find 'root cause'
Use Basic where necessary the 7 basic Quality Tools (ex. Pareto, Affinity Diagrams, Scatter Diagrams, Trend, 5 Whys)

Our Discovery



We spend the better part of a year learning Practical Problem Solving (PPS) 8 steps

Plan

1. Clarify problem
2. Break Down the problem
3. Set a target
4. Analysis Root Cause
5. Develop Countermeasures

Do

6. See Countermeasures Through

Check

7. Evaluate both results and process

Act

8. Standardize (Yokoten)

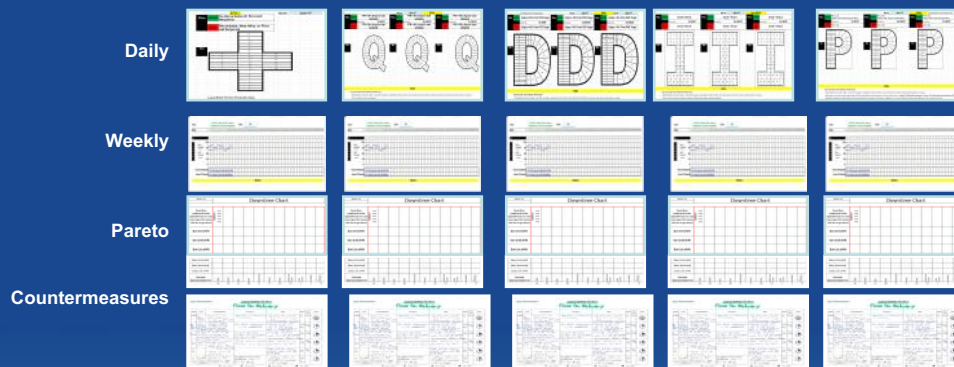


Application



We applied the learning's of PPS to our MDI (Managing for Daily Improvement) Model

Data collection and root cause analysis on issues suddenly became easier because we do it every day captured by the hour by hour boards and summarized by pareto



MDI Support Teams



- Critical to implementing improvements
- Made up of a cross section of disciplines within our company
- One problem assigned to one person
- Set expectation to solve in 7 days (helps limit scope of the issue)
- Trained in Practical Problem Solving concepts



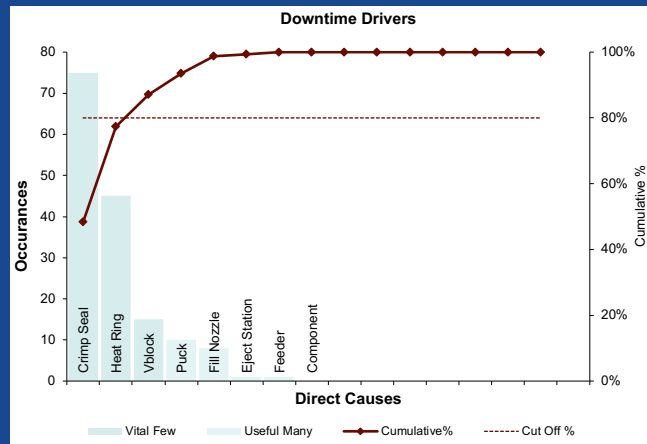
| Function | Quality | Lean | Maint | Line Lead | Supervisory |
|-----------------|-------------|----------|---------------|--------------------|-----------------|
| Line 1&2 | Jamie W. | Jerry F. | Tote B. | Juana | Brandon |
| Line 4 | Zack W. | Dave N. | Mike Hennen | Mike C. | Brandon |
| Line 5 | Bethany C. | Dave N. | Scott Decken | Eddie Valdevinos | Dan |
| Line 6 | Zack W. | Dave N. | Mike Hennen | Tom Jung | Brandon |
| Line 8 | Bethany C. | Erin H. | Tote B. | Yadira | Rod |
| Line S1/26/9/19 | Zack W. | Erin H. | Russ Wall | Wilma Austin | Alba |
| Comp Chaska | Hannah B. | Erin H. | Eddie Weiland | Nam Tran | David Vestedahl |
| EP01 / 02 | Amal Dahir | Jerry F. | Uze Taghubir | Rosa Nunez Sanchez | Cheryl Dorbor |
| EP23 | Amal Dahir | Jerry F. | Ahmad Hamed | Surendra Cecil | Cheryl Dorbor |
| Comp CP | Jane Cleary | Jerry F. | Travis Grack | Adam Berry | Zach Steffens |

Quick Example –KX1100 Filling Cell



| 1: REASONS FOR ACTION | Go | No Go |
|---|----|-------|
| <p>Problem Statement: KX1100 Tube filler is not achieving takt time and there is about 1.5 hours of equipment related downtime per shift. Current average output = 25 units/min, Target = 40 units/min. We are not able to meet customer demand with this level of output</p> <p>Aim: Use the Autonomous Maintenance Seven Step Process to increase equipment capacity, develop people and improve reliability as part of the MDI Process and start the TPM Process (Total Productive Maintenance) through the newly implemented tuber machine.</p> <p>Boundary: EP03 Cell and Maintenance Area</p> <p>Start: Loading tubes into feeder</p> <p>End: Pack Out</p> | | |

Quick Example –KX1100 Filling Cell



Conclusions



1. Teach employees Practical Problem Solving as part of A3 thinking
2. Establish your daily lean management system to track KPI's, determine biggest issues, root causes and countermeasures
3. A3 thinking has the potential to become an effective problem solving methodology even if you don't use the template to document every problem.



Thank you!



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