

Notes:

## Rapid Improvement Events

### Key Learning Points

1. Describe the steps to make rapid improvements.
2. Explain why you would use a Rapid Improvement Event.
3. Utilize Rapid Improvement Events on your process.

### What is a Rapid Improvement Event?

Rapid Improvement Events (RIE) are conducted to enable project teams to analyze the current problems (topics) quickly and develop/implement solutions in a short time frame. The teams are cross-functional so that all aspects of the problem are considered, and solutions developed will be understood and accepted by all.

This technique requires an organizational culture that empowers employees to identify and solve problems. It uses established methods that are reinforced through training.

### Before Embarking on a RIE

The following are key activities to complete before a RIE is started:

1. Determine the target business process value stream.
2. Create the team.
3. Develop the team charter.
4. Determine key metrics and targets for the team.

## The RIE Agenda

1. Ensure the team is ready to rumble.
2. Make sure the team is communicating, communicating, communicating.
3. Review the “RIE Preparation” document.
4. Finalize the boundaries of the team (or clarify as necessary).
5. Confirm all details (resources, logistics, food, food—was food mentioned for the team?—timekeeping as necessary for the team members, supplies, schedule commitments, etc.).
6. Train team members.
7. Complete current state mapping.

## Three Weeks Before Event

- Determine the target value stream. The target value stream is the process that the team will focus its improvement effort on.
- Create the team. Remember that the ideal team should include 5 to 6 members from different functions who understand the process being targeted.
- Develop the team charter.
- Determine key metrics and targets for the team. The key metrics are those measures that indicate success or failure of the process. They can be output or time-related, or be any metric that indicates the process is performing well.
- Begin the Current state Value Stream Map.
- Review the “RIE Preparation Document.”

## Two Weeks Before Event

- Gather as much data as possible.
  - Customer demand—actual not forecast
  - Backorders
  - Production volumes
  - Direct labor hours
  - Indirect labor hours
  - Productivity measures based on output and hours
  - Product returns, customer issues, defects, rework, issue lists, etc.

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- Continue developing current state VSM.
- Ensure the team is ready to go.
- Ensure the availability of equipment.

## One Week Before Event

- Finalize boundaries and the team. Team boundaries refer to what is in-scope for the Rapid Improvement Team. It may also be helpful to indicate what elements are out-of-scope for the team.
- Train the team members!
- Communicate, communicate, communicate.
- Confirm the details (resource, logistics, food, timekeeping for team members as necessary, supplies, schedule commitments, equipment availability, etc.).
- Complete current state mapping.

## The RIE Schedule

### Day 1: Start Fast

- Implement S1, S2, S3 of 6S
- Validate value stream maps—understand the “before” values.
- Study current conditions.
- Complete the following:
  - VA/NVA Decomposition Analysis
  - Current State Load Charts
  - Current State Spaghetti Diagrams
  - Current State Standard Worksheets
- Review Day 1 and plan Day 2.

### S1: Sort (Organization)

1. Separate what is needed from what is not needed.
2. Keep only what is needed, only in the amounts needed, and only when it is needed.
3. Discard unnecessary items.

### S2: Set in Order (Orderliness)

1. Arrange needed items so they are easy to find and use.

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2. Label items so their storage sites are easily understood by anyone.
3. “A place for everything and everything in its place.”
4. Implement visual control.

### S3: Sweep & Shine (Orderliness)

1. Remove dirt, grime, and dust from the workplace.
2. Keep everything swept and clean.

### Day 2: Keep Focused

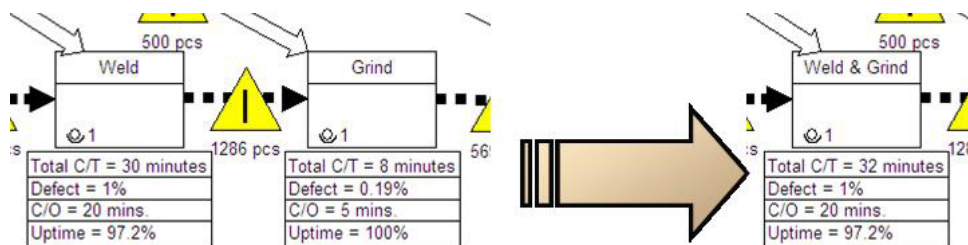
- Review the results of Day 1.
- Review current state analyses.
- Design the future state (see following slides).
- Design control sheets.
- Communicate, communicate, communicate.
- Develop future state standard work.
- Develop an open issues (“To Do”) list.
- Plan for Day 3.

### The Future State

When implementing a future state, try to:

- Specify a short time-frame to institute and stabilize it (one or two months is often the recommendation).
- Imagine how to remove wasted steps, get remaining steps to flow, and let the customer pull.

### The Future State: Combine and Eliminate Tasks



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## Designing the Future State

### Define Demand

1. Determine Takt and Pitch times.
2. Determine the capacity to meet demand.
3.  $\text{Capacity} = (\text{Available Time}) / (\text{Longest Cycle Time})$
4. Determine if buffer or safety stocks are needed.
  - a. Buffer – to allow for Takt time variation (customer)
  - b. Safety – to allow for process inefficiencies (internal)
5. Determine if you need a finished goods supermarket
6. Determine tools to be used to improve process demand responsiveness.
  - a. SMED (Quick Changeover)
  - b. TPM / AM ? RCM
  - c. Standard Work
  - d. Visual Control

### Balance the Line (Flow)

1. Complete Load Charts.
2. Plan for cells and complete standard worksheets.
  - a. Combine
  - b. Improve efficiency
  - c. Share labor
  - d. Run more tools
3. Determine how to pull from upstream operations.
  - a. In-process supermarkets
  - b. Kanban
  - c. FIFO lanes
  - d. Computer signals
4. Determine tools to be used to implement the future state.
  - a. SMED
  - b. TPM/AM/RCM

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- c. Standard work
- d. Visual control
- e. Mistake proofing

Once you have created future states within your defined process:

- Start mapping longer stretches of the value stream – downstream toward your customers, and upstream toward your suppliers.
- Start envisioning an “ideal state” in which all wasted steps have been removed and response time to the customer approaches zero. What technologies and in what location will be necessary?

### Level the Work

1. Determine minimum staffing requirements.
2. Staffing = (sum of cycle times) / (Takt time)
3. Determine how to monitor production vs. Takt.
  - a. Production control boards
  - b. Computerized
  - c. Production control sheets
4. Set up material handler (water spider) movements and methods.
5. Design standard work flexibility to meet variable demand.

### Remember

- Assure all functions support the value stream.
- Envision a future state with fewer steps, maximum flow, and pure pull.
- Achieve and stabilize the future state in a set period of time—could be 1-2 months.
- Do it again in a few months and then again and then again and then again...

### Day 3: Implement

- Review Day 2 activities.
- IMPLEMENT CHANGES (big moves).
- Implement the production control boards.
- Ensure that some good product is completed.
- Review standard work, standard work-in-process, needed fixtures, to-do lists, etc.

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## Expect Resistance to Change: Follow the Rules of the Road

### Provide Participation

- This is the most important rule for introducing change.
- Those affected should participate in the planning and execution.
- Lack of participation leads to resentment and resistance.
- Allow those closest to the process time to give their input (Voice of the Customer).

### Provide Enough Time

- How long does it take for members of a culture to accept a change?
- Members need time to evaluate the change impact.
- Even if the change seems beneficial, they need to learn what price they must pay in cultural values.
- Include time to reinforce direction potentially many times before the change is made.

### Start Small

- A small-scale tryout reduces risk for advocates and members of the culture.
- Kinks can be worked out before implementing on a wider-scale.
- Momentum on a small-scale can be used moving forward with full implementation.

### Avoid Surprises

- A major benefit of the cultural pattern is predictability.
- A surprise is a shock to this predictability and a disturber of the peace.
- Maintaining dialogue and having a communication plan is a critical factor in avoiding surprises.

### Choose the Right Year

Timing can be very important to a change.

Example:

ABC Corp. is planning to implement computerized documentation, and has two concurrent projects focused on the completeness of design documentation, and compliance with government regulations. Would this be the right year to do an additional project on documentation at the organization?

### Keep the Proposal Free of Excess Baggage

- Avoid cluttering the process with extraneous matters not closely related to getting the results.

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- The risk is that the debates will get off the main subject and into side issues.
- Defining scope in the project charter helps a team focus and stay clear of extraneous matters.

### Work With Recognized Leadership

- The culture is best understood by its members.
- Leadership can be informal.
- Convincing leadership is significant for change acceptance.
- Recognize whom your informal and formal leaders are. Can some leverage others for additional support?

### Treat People With Dignity

- Respect individual differences.
- Value divergent opinions as an opportunity to see a new perspective.

### Reverse the Positions

- Ask: “What position would I take if I were a member of the culture?”
- Role play to stimulate understanding of the other person’s position.
- Process mapping can help you understand the process as others see it, and walk the process in their shoes. See the process as they live it through their eyes.

### Deal Directly With Resistance

- Try a program of persuasion (cookies help).
- Offer a quid pro quo—something for something.  
Example: When developing a new documentation form for test technicians, the technicians’ feedback was incorporated into making the form easier to fill out and streamlining information so there is less double entry of results.
- Change the proposal to meet specific objections.  
Example: If having jobs start on time is a bigger problem identified by a department than increasing volumes, determine if start time should be the project focus which would impact the volumes being handled in the department.
- Change the social climate in ways that make the change more acceptable.
- Forget it. Sometimes the correct alternative is to drop the proposal.
- Plan for Day 4.

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## Day 4: Act on Results

- Review Day 3 activities.
- Analyze results on the Production control board.
- Make value stream successful.
- Review standard work, standard work-in-process, needed fixtures, etc.
- The team helps and assists.
- Mark locations for SWIP tools, fixtures, etc.
- Plan for Day 5.

### Standard Work in Process (SWIP)

Standard Work-in-Process tools (SWIP tools) are those tools, fixtures, or work aids that are commonly used for the completion of the process step. In the transactional world, they can be tables (standard mileage, postal rates, etc.) or other process aids.

## Day 5: Celebrate Success & Follow Up

- Review Day 4 results and confirm any homework assignments.
- Finalize flow, procedures, standard work, and production control board.
- Document achievements, to-do list, and lessons learned.
- Prepare the presentation.
- Present results to management and celebrate.

## First Week After Event

- Ensure the completion of documentation for standard work.
- Ensure production control boards, SWIP, 6S, etc. are in place.
- Eliminate any problems each day.
- Schedule walkthroughs multiple times each day with the cell manager, value stream manager, etc.
- Work on the to-do list.
- DO NOT BACK OFF!

## Second Week After Event

- Confirm that standard work is posted.
- Continue reviews with the process owner/value stream manager.
- Continue to eliminate problems and improve work flow.

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- Work on the to-do list.
- Sustain—DO NOT BACK OFF!

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## Third Week After Event

Develop an audit process and audit schedule for on-going sustainability.

- Action items after each audit are to be assigned and completed within a specified time.
- Schedule reviews with management at defined frequencies and ensure controls are in place to sustain improvements.

## When to Use Rapid Improvement Events

The advantages for using Rapid Improvement Events include:

- Faster, streamlined performance
- Labor cost reduction
- Improved quality
- Fewer finished goods
- Energized workforce
- Fast payback for improvements

## Pitfalls to Avoid

Potential pitfalls include:

- Lack of proper planning
- Poor team selection
- Improper communication
- Value Stream scope creep
- Lack of metrics and attribute data
- Mapping current state as you think it is rather than as it truly is
- Poor demand data from forecasting, demand planning or master scheduling