



RESOURCING IMPROVEMENT
PROJECTS

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Minnesota Quality Conference
November 4 & 5, 2020



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Learning Objectives

- In this session you will:
 - Triage improvement projects
 - Justify resource and schedule requirements as things evolve
 - Prioritize individual and team workload
 - How to avoid being overwhelmed as an improvement leader



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Examples

- Corrective And Preventive Action (CAPA)
- Yield issue
- Field issue
- Recall
- Development
 - Design
 - Manufacturing



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Typical

- Issue identified
- Owner established
- Pressure to close out by standard date
- Specific issue is special conditions
- Deal with the symptoms
- If sense scope is bigger, would need a team and resources – but that is not within the close out schedule



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Challenges

- Verify problem exists – we often assume customer is right
- Uncertainty of when problem will be resolved
 - How big is it?
 - Could be resolved tomorrow
 - Could take months
- Impact of changes – does it even matter?
- Simple fixes versus complex fixes



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Estimating Incrementally

- Initial planning – no budget, but target date
- Initial research – no budget, but target date
- Simple situation – simple budget and target date
- Complex situation (multiple potential variables)
 - Plan first DOE, estimate labor and materials
 - Allow for team detailed planning (including operators)
 - Test execution and analysis
 - Add multiplier based on complexity/ verification tests
- Implementation – only possible after solution



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Problem Understanding

- Defining problem is not enough. We need to understand the problem.
- Beware of solving the obvious problem instead of the true problem
 - Is this even a technical problem at all?
 - Some customer complaints may need to ensure their language matches how we use phrases
 - We are experts of our product, so we need to verify
 - It could be a communication or use problem. Is it a reasonable unexpected use?



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Problem Complexity

- Is this a simple problem? Can simple tools uncover and prove it?
 - See our video on the 7 Simple Tools, <https://youtu.be/tKTaCsYLJJs>
- Is this a complex problem?
 - Needs more resources
 - Needs advanced approaches
 - See our video on Root Cause Analysis, <https://youtu.be/LYkvpvVD2Xg>



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Estimating Basis For Complex

- Detailed – bottoms up
- Similarity
- Comparative (twice as much as project A)
- Parametric model
- Expert opinion
- Combination
 - Remember – effort and duration



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Estimating Rules of Thumb

- Use multiplier on first Design Of Experiments cost estimate
 - Same as before/ Verification: 1.25
 - Similar with changes: 2.0
 - New idea: 4.0
- Also see video
<https://youtu.be/CNprKrKCBEM> about



DOE setup
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Workload Impact

- Options to gain resources
 - Delay your other projects
 - Communicate what will be moving out, and for how long
 - Get help from others
 - Find outside assistance
- There is likely some level of “no resource” tasks that can be absorbed in a given period of time
 - Example: 4 simultaneous simple tasks and project definitions that can be performed by one person (along with other duties)



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Solution Risk

- How does this impact supply chain
 - Continue building/ shipping, supplier keep shipping, change suppliers
- Does problem return? If so – this is really bad news



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Implementation Risk

- Consider technical risks of solution being achieved
 - How complex is the situation
 - Do we have the skills
 - Knowledge
 - Resources
- Also consider business risk
 - Will customers accept our short term solution
 - Should we only provide the long term option
 - Can they temporarily handle the current condition



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Manufacturing Options

- Consider short and long term solutions
- Short term solutions may be less than ideal
 - Several options always exist
 - May not be efficient, or may cost too much
- Long term solutions may take too long
 - Several options always exist
 - Is there enough life remaining to justify investment?
- This means we want to estimate the short and long term solution, and be clear what is included



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Business Option

- One option is to live with it for now, and new product will resolve it
 - Example: Why implement a solution on an old product, when the new product will resolve it in 6 months.
- This is a business decision. Evaluate tradeoff of resource use on temporary product or use for long term project instead?



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Take-aways

- Verify problem exists (first increment)
- Uncertainty of when problem will be resolved (define after short period of time versus day 1 or some standard time)
- Impact of changes (is this worth our time and should it be done now)
- Simple fixes versus complex fixes (allowing for this option positions our discussions for follow up)



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Questions?

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