

*Four R's of Process Improvement: Requirements, Reviews, Retrospectives, and Results*

*The Four R's of Software  
Process Improvement:  
Requirements, Reviews,  
Retrospectives and Results*

Johanna Rothman  
www.jrothman.com  
jr@jrothman.com  
781-641-4046

*Why Do Process Improvement?*

- Projects are hard to do
- Process improvement isn't much easier

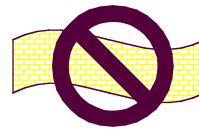
## Four R's of Process Improvement: Requirements, Reviews, Retrospectives, and Results

### Real Life Process Improvement Projects

- From an ad:

*There's a bright future ahead on the right road to process improvement. We know the right road and all the steps in it to achieve process improvement success. Our experts will guide you, making sure every step is aligned with your company's goals and everyone in the organization is headed in the same direction.*

- It's not that simple



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### Every Process Improvement Project Is Different

- Each process improvement effort has its own context and requirements
  - What outcomes do you expect? What are the desired process improvement results?
  - What do you need to do to know about those results? What are the process improvement requirements?
  - How will you know you have achieved those results? What techniques will you use to review, test, and measure your process improvement project?

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# Four R's of Process Improvement: Requirements, Reviews, Retrospectives, and Results

## Use Results to Derive Requirements

- What new capabilities are you trying to achieve?
- Mandates and directives are not results
- Context-free questions
  - Who are the clients of the process improvement project?
  - What does a highly successful solution look like?
  - What is that solution worth to you?
  - Why are these results desirable?
- Once you know the desired results, you have a context for process improvement.



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## From Mandates to Results

- Results provide context
- Context reduces cynicism

Mandate or Directive	Cynical Reaction	Possible Business Reasons And Specific Desired Results
Be at Level x by y	Pass an audit. I wonder if those guys are from the IRS...	Introduce and maintain new project management capabilities. Be able to proactively manage projects, anticipate risks. These new project capabilities would increase our ability to ship product on time, and decrease customer support costs by half.
Reduce cycle time	They think we're wasting time, probably surfing the web. They just want to make us work harder.	Our customers want us to ship more features faster. If we can get each release out faster, we can sell more products and increase our market share by 30% in two years.

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## *Define Process Improvement Requirements*

- Identify requirements
- Verify requirements
- Manage requirements
- Test process against requirements

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## *Identify Process Improvement Requirements*

- Create a matrix of users, attributes, functions

User	Favored and disfavored users, primary and secondary users? Rank user needs, including disfavored users.
Attributes	Predictability, cost, testable, visibility, auditable, maintainable, permanent?
Function	Activities to perform: Architect, design, implement, test, review, and so on. Who is on the process improvement project?



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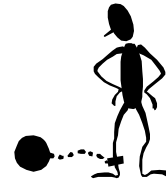
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### Users

- What do your users need from your process improvement project?
- Favored and disfavored users
  - Identify disfavored users to prevent failure
- Primary and secondary users



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### Attributes

- What adjectives do you want to apply to your project?
  - Maintainable
  - Performance
  - Time to market
  - Auditable
  - The attributes that are *critical* to your project's success

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### *Functions*

- What does your process improvement project have to do, as part of its work?
  - Same activities as a normal project...
  - Design
  - Retrospectives

### *Verify Process Improvement Requirements*

- Business requirements define context
- User/attribute/function define the “customer” problem
- Make sure they align!

## *Four R's of Process Improvement: Requirements, Reviews, Retrospectives, and Results*

### *Manage Process Improvement Requirements*

- Process improvement projects are similar to other projects
  - Schedule pressure
  - Cost pressure
  - Requirements churn
- Ask questions
  - What implications does this request have on the customer problem?
  - What are the schedule questions?
  - Can we still meet the desired business results?



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### *Verify Process Improvement Requirements*

- Test with people
- Test that requirements meet business results
- Hold a technical requirements review
  - To find defects
  - Make the project real

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## Test Requirements With People

- Meet all personnel levels of process improvement and function
  - Top management:
    - Does top management enable the process you're creating? Can they change what they do, to make this new process work?
  - Middle Management
    - Does this process address how to do the work? Can they manage the work this way?
  - Technical leads
    - Can they follow this process to make it work? Can they create a project plan with the process embedded in it?

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## Reviews

- Successful process improvement incorporates reviews
- Reflect organization's culture
  - You're willing to examine your work products
- Ask what's missing and why
  - You want to know what's not working now
  - You're willing to question your own work
  - You want to know the problems
  - You're open to changing the culture
- Change is desired and expected



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## Achieving Results

- Can you assess the state of your process improvement efforts?
  - Interim retrospectives on the process improvement project can help
  - Measurements may help



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## Retrospectives

- Interim retrospectives keep you on track
- Retrospectives model the behavior you want in your process improvement project
- Ask four questions
  - What did we we learn (so far)?
  - What would we do differently 9in the future)?
  - What did we do well that we don't want to forget?
  - What still puzzles us?

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## Goal-Question-Metric

- After testing and verifying, it's time to measure
- Goals: business results
- Questions: How you know if you've met your goals
- Measure: Measure the answers to those questions

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## GQM example

<b>Goal: Reduce cycle time to double ROI from major releases</b>	
<b>Questions</b>	<b>Measures</b>
For the last few major releases: <ul style="list-style-type: none"><li>• What were cycle times and the current ROIs?</li><li>• What size were the releases?</li><li>• What was the staffing level?</li><li>• How much time did the staff work on these projects?</li><li>• Did the staff have to share time between projects?</li></ul> Is there anything else that affects ROI?	For those releases: <ul style="list-style-type: none"><li>• Trend cycle time per project</li><li>• Trend ROI per project</li><li>• Trend staff effort by week over the project.</li></ul> Look for correlative factors, and differences  (Include other measures for any of the other ROI related questions.)

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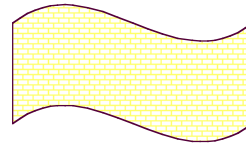
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## Summary

- Process improvement: Acts of changing current results to new results
- Derive the desired results
- Review and test as you go, focusing on the results
- Model the new behavior and culture
- Measure the changes
- You can find your "right road"



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