Project Process Improvement

Improving Project Performance through Process Re-Design

Better Performance from the Management of Processes

Kevin Raum
Phil Cooke
Welcome

Kevin Raum

- Principal Consultant with Ten Six
- Project and risk management systems, process, tools implementation expert with 30+ years in Biotech, IT, DoD, state-local-federal government and international experience
- Certified mediator

Phil Cooke

- Principal Consultant with Ten Six
- Project Process Improvement expert with 17 years in food and beverage, supply chain and distribution, industrial equipment manufacturing
About Ten Six

• Specialists in enterprise Project Portfolio Management and Earned Value Management
  – Global customer list
  – Offices in USA & UK
  – Experienced staff – average 25+ years
  – Experts in Oracle Primavera P6 & Deltek tool suites
  – Unique consulting & training services
Why This Topic

**Topic:** Project Process Improvement

**Purpose:** Present a powerful, and not well-known, way to improve project performance

- Project overruns result from poor processes that aren’t delivering expected results
- Project process improvement is not well understood
  - PMBOK says it’s outside the scope of formal project management!
Learning Objectives

• Provide an overview of Project Process Improvement, which can dramatically improve project performance

• Provide you with some techniques for determining if you have problems that process improvement can address, and what to do about it

• Share our experiences and lessons from the successful implementation of process improvement on projects and programs
Common Challenges

• Late delivery -> Schedule
• Over-budget -> Budget
• Issues and complaints from customers -> Quality

Common Symptoms

– Crisis-mode, fire-fighting mode
– Too many meetings
– Constant surprises, and recurring problems
– Long hours (working hard, but still late and with errors)
– Low employee morale
– Project re-planning
– Increased oversight from customer
– High turnover
PMI Process Groups

Monitoring & Controlling Processes
- Planning Processes -> process design and establishment
- Executing Processes -> process improvement and maintenance

Productivity
Quality
PMBOK on Process Improvement

What does PMBOK say about process improvement?

• Not much
  – Outside scope, but project managers are still responsible
  – Concerned with ongoing production (not development!)
  – Very basic info in Project Quality Management section
What is Process Improvement?

Process Improvement -> Systematic approach to closing system performance gaps through streamlining and cycle time reduction, and identification and elimination of the causes of quality issues, process variation, and non-value-adding activities.

Productivity & Quality
• Productivity: How fast we can complete the work
• Quality: How many errors we make
Are Processes Contributing to Your Problem?

How do you know you have quality problems?

• Rework
  – External to project: returns, complaints from customer, product recalls
  – Internal to project: returns, complaints from downstream teams/departments
How to Resolve Quality Problems

• Simple process improvements to help with quality problems
  – List process inputs (spec, tools, upstream deliverables)
  – Make sure process steps are clear, easy to follow
  – List process outputs, and define 100% quality!
How to Resolve Quality Problems

• Input – Process – Output (IPO)

Step 1

Inputs → Process Steps → Outputs

Step 2

Inputs → Process Steps → Outputs
Are Processes Contributing to Your Problem?

How do you know you have **productivity** problems?

• Delivery delays
  – External to project: complaints from customer
  – Internal to project: complaints, or stop-work, from teams/departments

• Idle workers, teams

• Teams working hard, but not producing much
How to Resolve Productivity Problems

• What’s causing delivery delays, idle teams, or overworking?
  – Uneven workflow
  – Steps that don’t need to be done (i.e. don’t add value)
  – Too many hand-offs/touch-points, siloes
  – Unclear process step sequence leading to work “dead zones”
  – Miscommunication/no communication

• Simple process improvements
  – Establish a rhythm to process steps
  – Reduce hand-offs
  – Build communication into the process
# Process Improvement Tools: Mapping Problems to Processes

## Common Causes

<table>
<thead>
<tr>
<th>Common Cause</th>
<th>1) Delays</th>
<th>2) Quality Issues</th>
<th>Process Improvements Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>a) Lack of approved spec</td>
<td>X</td>
<td>X</td>
<td>Add design review and release</td>
</tr>
<tr>
<td>b) Lack of thorough testing</td>
<td></td>
<td>X</td>
<td>Build tests into process steps</td>
</tr>
<tr>
<td>c) Inadequate tools</td>
<td>X</td>
<td></td>
<td>Procure/build software and hardware tools</td>
</tr>
<tr>
<td>d) No process for controlling changes</td>
<td>X</td>
<td></td>
<td>Introduce change management system</td>
</tr>
<tr>
<td>e) Lack of leadership/management</td>
<td>X</td>
<td>X</td>
<td>N/A</td>
</tr>
<tr>
<td>f) PM not involved in making key decisions</td>
<td>X</td>
<td>X</td>
<td>Add process decision points</td>
</tr>
<tr>
<td>g) Communication issues</td>
<td>X</td>
<td>X</td>
<td>Build coordination steps into process</td>
</tr>
<tr>
<td>h) Wasteful steps</td>
<td>X</td>
<td>X</td>
<td>Remove/reduce wasteful steps</td>
</tr>
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</table>

## Process Improvement Tools

- Mapping Problems to Processes
  - Delays
  - Quality issues
# Process Improvement Tools: Mapping Problems to Processes

## COMMON CAUSES

<table>
<thead>
<tr>
<th>PROBLEMS</th>
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<th>2) Quality issues</th>
<th>Causes addressed, at least in part, by process updates</th>
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<tr>
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88% of causes are addressed by process improvements!
Process Improvement Tools: The Process Map

- Steps and sequence
- Time required
- Rework loops
Process Improvement Tools: The Process Map

CURRENT STATE PROCESS FLOW 20 days

FUTURE STATE PROCESS FLOW 12 days

- Step 1
- Step 2
- Step 3
- Step 4
- Step 5
- Step 6
- Step 7

REWORK

- Required step, needed improvement
- Wasteful step, eliminated

- Step 1
- Step 2
- Step 3
- Step 4
- Step 5
- Step 6
- Step 7

DONE!
What Can You Do?

If you think you have a productivity &/or quality problem that process improvement can address:

• Enter a project risk or issue

• Start measuring so you can quantify the problem using simple metrics:
  – Quality - # of errors, # of rework cycles
    • How long rework cycles last, and # of labor hours worked
  – Productivity - duration vs. hours worked, time spent on non-value-adding steps
1) Quick current state process assessment using basic metrics above with improvement recommendations

2) Process design/re-design

3) Process transformation
Scalability of Project Process Improvement

• An individual process on a project
  – Can be coordinated by project manager

• Groups of processes on a project
  – Requires additional stakeholders

• An entire project process portfolio
  – Requires senior management

- Case Study 1
- Case Study 2
Case Study 1: Delivery to Customer

Problem Statement & Objective

Problem Statement

• Delivery of products to customer on $500M scientific monitoring system program was stalled due to extremely poor quality and long delivery delays, resulting in a $3.1 million cost overrun and a very dissatisfied customer.

Objective

• Decrease delivery delays and increase quality, restoring customer satisfaction and trust.
**Case Study 1: Delivery to Customer**

**“Mapping Problems to Processes” Tool**

## PROBLEMS

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<td>X</td>
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<td>Feedback loop on customer needs</td>
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<td>b) Lack of product/system quality checks</td>
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<td>X</td>
<td>Build upstream tests into process steps</td>
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<td>c) Lack of quality checks on deliverables</td>
<td></td>
<td>X</td>
<td>Establish deliverable review process</td>
</tr>
<tr>
<td>d) Deliverables submitted at different times</td>
<td>X</td>
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<td>All deliverables due at start of process</td>
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<td>e) Missing, delayed deliverables</td>
<td>X</td>
<td></td>
<td>Require deliverables, and stop process if missing</td>
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<td>f) Multiple handoffs of deliverables</td>
<td>X</td>
<td>X</td>
<td>Assign one team to handle deliverables</td>
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<td>g) PM not involved in approval process</td>
<td></td>
<td>X</td>
<td>Build PM approval step at end of process</td>
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<td>h) Communication issues among teams</td>
<td>X</td>
<td>X</td>
<td>Review process and reports facilitate comms</td>
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### Case Study 1: Delivery to Customer

**“Mapping Problems to Processes” Tool**

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100% of causes are addressed by process improvements!
Case Study 1: Delivery to Customer
“Current State” Metrics

• Average time to deliver to customer
  – 310 days, from internal approval to sending to customer

• Average customer review time, including submitting quality citations and rework
  – 88 days

• Average number of quality issue citations identified by customer
  – 12 per product
Case Study 1: Delivery to Customer
Project Process Improvement

Summary of Improvements Implemented

- Customer needs learned and documented
- All deliverables due at start
- Disciplined review process established
- PM approval added before sending to customer
Case Study 1: Delivery to Customer

Results Achieved

• Restored relationship and trust with customer
• Ended $3.1 million unexpected cost overrun
• Average number of quality issue citations
  – Reduced from 12 per product to 0.1 per product, or...
  – ↑99% quality
Case Study 1: Delivery to Customer
Results Achieved

- **Average time to deliver to customer**
  - Reduced from 310 days to 5 days, or...
  - ↓98% delivery time to customer
- **Average customer review time, involving frustration**
  - Reduced from 88 days to 6 days, or...
  - ↓93% customer review time
Case Study 2: Lighting Installation
Problem Statement & Objective

Problem Statement
• Project was over-budget, and could not keep up with demand. Complexity triggered many mistakes and customer complaints

Objective
• Improve revenue and reduce mistakes by streamlining process
Case Study 2: Lighting Installation

Current (now prior) state: Lighting Installation (75 days, 23 steps)

- **Identify Lead**
- **Contact Lead**
- **Initial Assessment**
- **Schedule follow up**
- **Recontact lead, assess**
- **Estimate savings**
- **Create proposal**

**Day 1-15**

- **Schedule**
- **Present proposal**
- **Revise proposal**
- **Present final proposal**
- **Sign contract**
- **Re-do assessment**
- **Write product needs to BOM**

**Day 16-27**

- **Negotiate prices**
- **Adjust BOM to real need**
- **Order BOM**
- **Coordinate subs**
- **Complete work**
- **Redo work**
- **Do walk through**

**Day 28-48**

**Day 49-75**

- **Submit final invoice**
- **Redo work**
- **Redo work**

Current (now prior) state: Lighting Installation (75 days, 23 steps)
Case Study 2: Lighting Installation

Current (now prior) state: Lighting Installation (75 days, 23 steps)

- **day 1-15**
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  - Adjust BOM to real need
  - Order BOM
  - Coordinate subs
  - Complete work
  - Redo work
  - Do walk through

- **day 49-75**
  - Redo work
  - Submit final invoice

Required step, needed improvement
Wasteful step, eliminated
Case Study 2: Lighting Installation

**Future (now current!) state:** Lighting Installation
Reduced steps from 23 to 13, a 43% reduction

Wasteful step, to be eliminated
Case Study 2: Lighting Installation

Results Achieved

• Paid debt
• Average time to deliver to customer
  – Reduced from 75 days to 7 days, or...
  – ↑90% time from customer contact to payment
• Revenue
  – Quarterly revenue increased 97%
• Profit
  – Quarterly profit increased 157%
• Quality
  – ↓70% complaints
SUMMARY
Is This Familiar?

• Assumed your original plan was “right” and “perfect”
• Discovered that your team is not executing “correctly” or “perfectly”
  – Result – behind schedule, poor quality, over budget
• Decide: Do you want to improve? If yes,
  – Select critical areas of improvement
  – Redesign and implement the changed processes
• Potential Result: A range of improvements
  – Somewhat better to “original perfect plan” to “even better than original perfect plan”
How Do You Get Better?

Improvement Approach
• Submit a project risk/issue
• Make basic measurements
• Assess the gap
• Get buy-in
• Quantify the value of process improvement

Benefits
• Better project performance
• Meeting or exceeding milestones
• Improved sponsor, customer, team, supplier collaboration
• Less fire-fighting
• Fewer surprises
Wrap Up

• Copy of the slides
• Copy of video
• PDU’s for the webinar: tensix.com/webinar
• Project Process Improvement Tools, write: Kevin.Raum@TenSix.com
  – Tool #1: Mapping Problems to Processes
  – Tool #2: Process Maps
# Upcoming Ten Six Webinars

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<tr>
<th>Webinar</th>
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<tbody>
<tr>
<td>Risk Management Maturity</td>
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Questions?

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