

<b>Background</b>	<b>Plan</b>
<ul style="list-style-type: none"> <li>• Why is this important?</li> <li>• Why should the reader care about this situation and be motivated to participate in improving?</li> </ul> <p>Assessment Questions</p> <ol style="list-style-type: none"> <li>1. Is there a clear theme for the problem report that reflects the contents?</li> <li>2. Is the topic relevant to the organization's objectives</li> <li>3. Is there any other reason for working on this topic (e.g., learning purposes)?</li> </ol>	
<b>Current Condition</b>	<b>Plan</b>
<ul style="list-style-type: none"> <li>• How do things work today?</li> <li>• What is the problem?</li> <li>• Baseline Metrics?</li> </ul> <p>Assessment Questions</p> <ol style="list-style-type: none"> <li>1. Is the current condition clear and logically depicted in a visual manner?</li> <li>2. How could the current condition be made clearer for the audience?</li> <li>3. Is the current condition depiction framing a problem or situation to be resolved?</li> <li>4. What is the actual problem in the current condition?</li> <li>5. Are the facts of the situation clear, or are there just observations and opinions?</li> <li>6. Is the problem quantified in some manner or is it too qualitative?</li> </ol>	
<b>Goal / Target Condition</b>	<b>Plan</b>
<ul style="list-style-type: none"> <li>• What outcomes are expected for what reasons?</li> <li>• What changes in metrics can be plausibly expected?</li> </ul> <p>Assessment Questions</p> <ol style="list-style-type: none"> <li>1. Is there a clear goal or target?</li> <li>2. What, specifically, is to be accomplished?</li> <li>3. How will this goal be measured or evaluated?</li> <li>4. What will improve, by how much, and when?</li> </ol>	
<b>Root Cause Analysis</b>	<b>Plan</b>
<ul style="list-style-type: none"> <li>• What is the root cause(s) of the problem?</li> <li>• Use a simple problem analysis tool (e.g., 5 why's, fishbone diagram, cause/effect network) to show cause-and-effect relationships.</li> </ul> <p>Assessment Questions</p> <ol style="list-style-type: none"> <li>1. Is the analysis comprehensive at a broad level?</li> <li>2. Is the analysis detailed enough and did it probe deeply enough on the right issues?</li> <li>3. Is there evidence of proper five-whys thinking about the true cause?</li> <li>4. Has cause and effect been demonstrated or linked in some manner?</li> <li>5. Are all the relevant factors considered (human, machine, material, method, environment, measurement, and so on)?</li> <li>6. Do all those who will need to collaborate in implementing the countermeasures agree on the cause/effect model reasoning?</li> </ol>	

**Owner:** Author leading the problem solving  
**Mentor:** Person guiding and assessing process  
**Date:** Current version Date

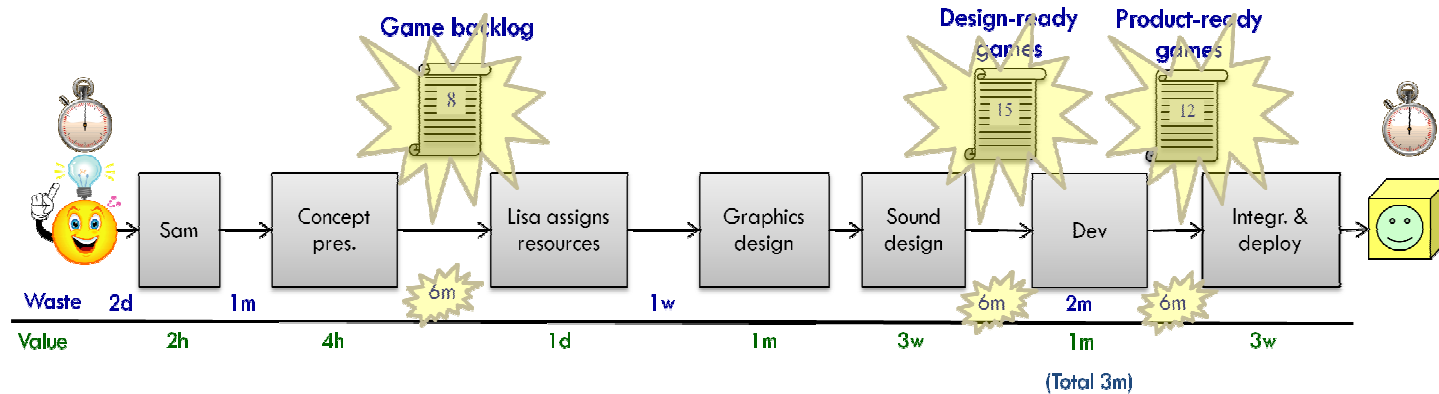
<b>Countermeasures (Experiments)</b>	<b>Do</b>
<ul style="list-style-type: none"> <li>• Proposed countermeasure(s) to address each candidate root cause. [This should be a series of quick experiments to validate causal model analysis.]</li> <li>• Predicted results for each countermeasure.</li> </ul> <p>Assessment Questions</p> <ol style="list-style-type: none"> <li>1. Are there clear countermeasures steps identified?</li> <li>2. Do the countermeasures link to the root cause of the problem?</li> <li>3. Are the countermeasures focused on the right areas?</li> <li>4. Who is responsible for doing what, by when (is 5Why-1How clear)</li> <li>5. Will these action items prevent recurrence of the problem?</li> <li>6. Is the implementation order clear and reasonable?</li> <li>7. How will the effects of the countermeasures be verified?</li> </ol>	
<b>Confirmation (Results )</b>	<b>Check</b>
<ul style="list-style-type: none"> <li>• Actual result of each countermeasure (experiment).</li> <li>• How does the system actually behave with the countermeasures that are being proposed for implementation in place?</li> </ul> <p>Assessment Questions</p> <ol style="list-style-type: none"> <li>1. How will you measure the effectiveness of the countermeasures?</li> <li>2. Does the check item align with the previous goal statement?</li> <li>3. Has actual performance moved line with the goal statement?</li> <li>4. If performance has not improved, then why? What was missed?</li> </ol>	
<b>Follow-up (Actions)</b>	<b>Act</b>
<ul style="list-style-type: none"> <li>• What have we learned that does or does not improve the situation?</li> <li>• In the light of the learning, what should be done?</li> <li>• How should the way we work or our standards be adjusted to reflect what we learned?</li> <li>• What do we need to learn next?</li> </ul> <p>Assessment Questions</p> <ol style="list-style-type: none"> <li>1. What is necessary to prevent recurrence of the problem?</li> <li>2. What remains to be accomplished?</li> <li>3. What other parts of the organization need to be informed of this result?</li> <li>4. How will this be standardized and communicated?</li> </ol>	

### Background

Games out of date

- ⇒ Missed market windows – Revenue is declining
- ⇒ Demotivated teams – Key developers about to quit
- ⇒ Overhead costs – Time to develop games steadily increasing due to declining technical quality
- ⇒ Pressure to Work FASTER!

### Current Condition

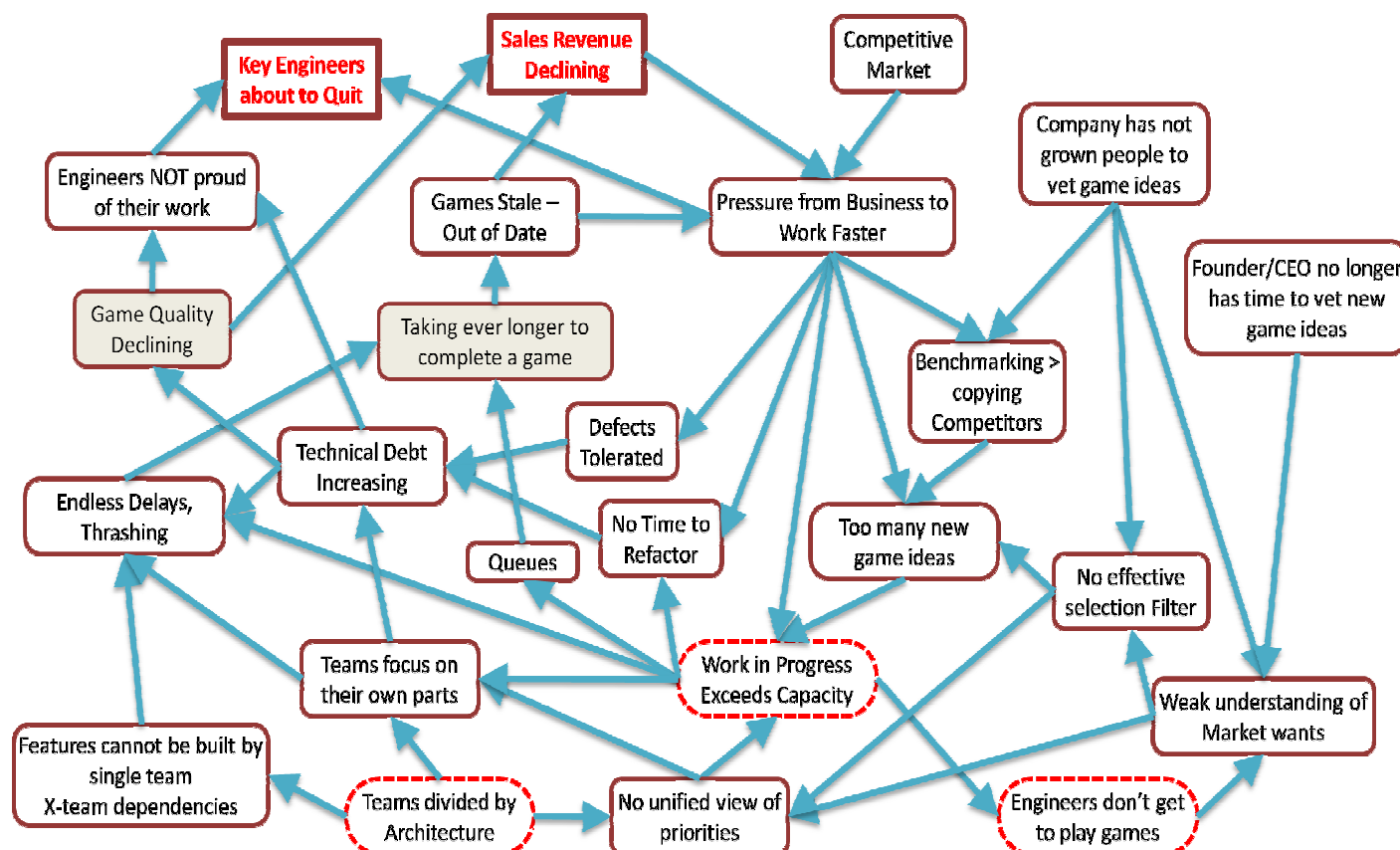


- Process cycle efficiency = 3 months add value / 25 months cycle time = 12%

### Goal / Target Condition

- 8x faster cycle time
- 5x fewer escaped defects
- 20% improvement in revenue

### Root Cause Analysis



Owner: Lisa

Mentor: Heinrich

Date: 18 May 2009

### Countermeasures

1. **Cross Functional Teams – Graphics design through deployment**
  - ✓ Predict 2x Faster Delivery
    - ⇒ End dependencies – now spend 75% of time waiting/negotiating
2. **Abandon all but most promising 3 games in each queue. Do ONE game per cross functional team at a time.**
  - ✓ 4x faster delivery from reduced task switching
  - ✓ Eliminating queues will cut 1.3 years from schedule
3. **Engage developers in playing games and selecting ideas**
  - ✓ 30% more profit to par with best competitor
    - ⇒ Improved filtering on which games to develop
    - ⇒ More fun games, more popular

### Confirmation (Results )

1. **Cross Functional Teams**
  - ⇒ Half as much time waiting
2. **One game at a time**
  - ⇒ Queues eliminated, time to complete game is 4 months (6x)
  - ⇒ Technical Debt decreasing – Escaped defects down by 2x so far
3. **Engage developers in playing games and selecting ideas**
  - ⇒ One team taking time to play is producing more innovative games.
  - ⇒ Impact on profit is TBD.

### Follow-up

1. Consider more cross training of team members to reduce waiting for expertise
2. Reduce difficulty of integration and deployment steps
3. Improve processes for generating and selecting game ideas
  - a. Recruit talent if identifiable/available
  - b. Improve skills/process of best people already in company
  - c. Broaden both participation in selection and game playing experience of everyone in the company.
4. Continue improvement of reused game components/engines to improve development throughput and reduce defects.