Background — Plan

- **Why is this important?**
- **Why should the reader care about this situation and be motivated to participate in improving?**

Assessment Questions

1. Is there a clear theme for the problem report that reflects the contents?
2. Is the topic relevant to the organization's objectives
3. Is there any other reason for working on this topic (e.g., learning purposes)?

Current Condition — Plan

- **How do things work today?**
- **What is the problem?**
- **Baseline Metrics?**

Assessment Questions

1. Is the current condition clear and logically depicted in a visual manner?
2. How could the current condition be made clearer for the audience?
3. Is the current condition depiction framing a problem or situation to be resolved?
4. What is the actual problem in the current condition?
5. Are the facts of the situation clear, or are there just observations and opinions?
6. Is the problem quantified in some manner or is it too qualitative?

Goal / Target Condition — Plan

- **What outcomes are expected for what reasons?**
- **What changes in metrics can be plausibly expected?**

Assessment Questions

1. Is there a clear goal or target?
2. What, specifically, is to be accomplished?
3. How will this goal be measured or evaluated?
4. What will improve, by how much, and when?

Root Cause Analysis — Plan

- **What is the root cause(s) of the problem?**
- **Use a simple problem analysis tool (e.g., 5 why's, fishbone diagram, cause/effect network) to show cause-and-effect relationships.**

Assessment Questions

1. Is the analysis comprehensive at a broad level?
2. Is the analysis detailed enough and did it probe deeply enough on the right issues?
3. Is there evidence of proper five-whys thinking about the true cause?
4. Has cause and effect been demonstrated or linked in some manner?
5. Are all the relevant factors considered (human, machine, material, method, environment, measurement, and so on?
6. Do all those who will need to collaborate in implementing the countermeasures agree on the cause/effect model reasoning?

Owner: Author leading the problem solving

Mentor: Person guiding and assessing process

Date: Current version Date

Countermeasures (Experiments) — *Do*

- **Proposed countermeasure(s) to address each candidate root cause.**
  [This should be a series of quick experiments to validate causal model analysis.]
- **Predicted results for each countermeasure.**

Assessment Questions

1. Are there clear countermeasures steps identified?
2. Do the countermeasures link to the root cause of the problem?
3. Are the countermeasures focused on the right areas?
4. Who is responsible for doing what, by when (is 5Why-1How clear)
5. Will these action items prevent recurrence of the problem?
6. Is the implementation order clear and reasonable?
7. How will the effects of the countermeasures be verified?

Confirmation (Results) — Check

- **Actual result of each countermeasure (experiment).**
- **How does the system actually behave with the countermeasures that are being proposed for implementation in place?**

Assessment Questions

1. How will you measure the effectiveness of the countermeasures?
2. Does the check item align with the previous goal statement?
3. Has actual performance moved line with the goal statement?
4. If performance has not improved, then why? What was missed?

Follow-up (Actions) — Act

- **What have we learned that does or does not improve the situation?**
- **In the light of the learning, what should be done?**
- **How should the way we work or our standards be adjusted to reflect what we learned?**
- **What do we need to learn next?**

Assessment Questions

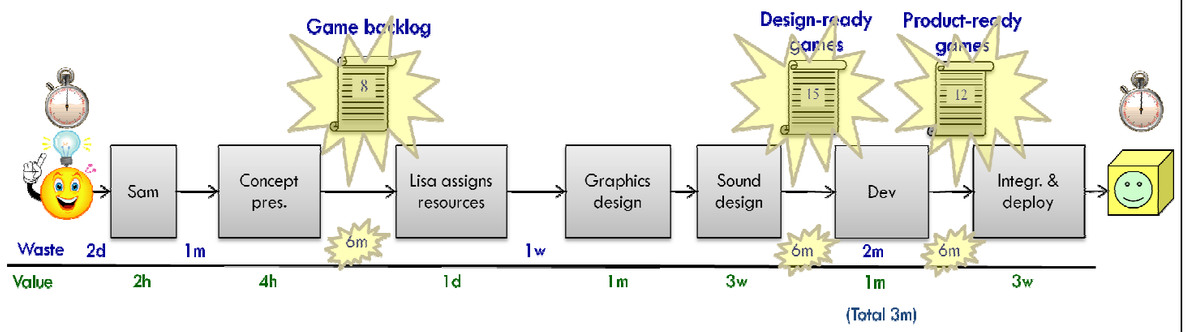
1. What is necessary to prevent recurrence of the problem?
2. What remains to be accomplished?
3. What other parts of the organization need to be informed of this result?
4. How will this be standardized and communicated?

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

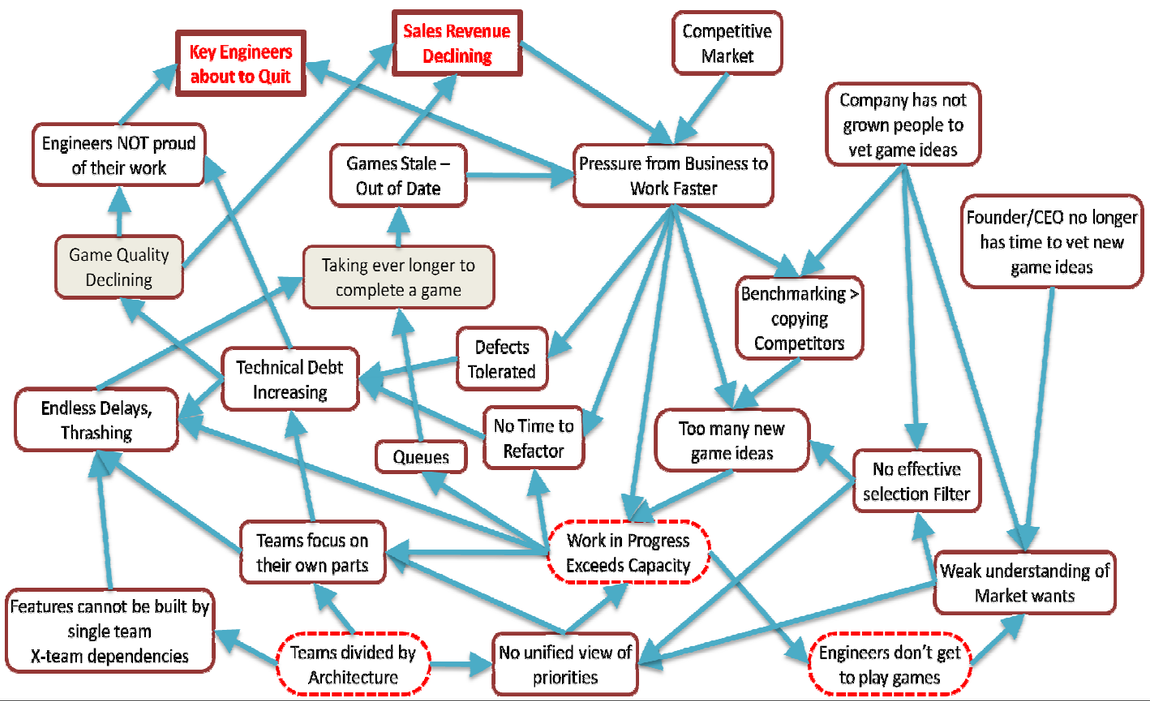


- Process cycle efficiency = 3 months add value / 25 months cycle time = **12%**

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.