RE-O-POLY
A Game to Introduce Lightweight Requirements Engineering Good Practices

Renel Smith and Orlena Gotel
Pace University, New York

REET’07 - Monday 15th October, 2007 (India)
Learning about RE practices can be boring / costly:
  – Too much textually dense material
  – Have to grab attention within an hour (or two)
Many RE practices rely on participation with others and discursive activities
Practices make better sense if contextualized
Practices are not retained if not used
Objectives / Method

• Focus on awareness of key practices, their value, role of negotiation / decision making

• Review RE good practices and identify a lightweight set to help small novice organizations in requirements efforts

• Develop a simple game to teach RE good practices to novice requirements engineers by reinforcing a small set of lessons based upon the above
Game-Play Prerequisites

• Players new(ish) to RE
• Players from same domain
• Played in conjunction with RE training
• Facilitated
• Contextualized:
  – One hour introduction
  – Organization-specific projects
• Fast play / time-boxing
RE-O-Poly Game Concepts

• Based on Monopoly
• Money -> Stakeholder Satisfaction Points
• Board
• Chance -> Scenarios
• Community Chest -> Tasks
• Properties -> Projects
• Wild Cards
• Board circuits -> Iterations
• Decks to keep
• Houses and hotels -> Resources
Stakeholder Satisfaction Points

• Players earn or forfeit SSPs as game progresses
• How do you compete?
• How do you win?
The Board
Scenario Cards

Shows what happens when good RE practices are implemented or not

We need your teaching tips!
Task Cards

• Opportunity to earn (or lose) SSPs by answering RE questions
• Time-boxed
• Verdict by vote
### Project Cards

**Front**

- **Complex Project**
- Real-time Fund
- Exchange System
- 300 SSP

**Back**

- Identify 2 key stakeholders for this project (20 SSP)
- What technique(s) would you use to elicit requirements from the key stakeholders (25 SSP)
- What non-functional requirements are going to be critical to explore for this project and why? (30 SSP)

For players to own, run and buy resources for, using SSPs and by managing tasks.
Wild Cards

**Requirements are ambiguous** -- miss a turn to rewrite them

**Requirements are completed early** -- go to next iteration

**Requirements scope creeps** -- return to start of this iteration

**Unique IDs helped track a change** -- roll again

**Go directly to RE training**

**Get out of RE training FREE**

**You buy a tool thinking it will solve problems** -- pay 50 SSP

**Tool used with no process in place** -- pay 100 SSP

**Tool used with process in place** -- receive 100 SSP
Other Concepts

- Iterations - one time round the board equates to one iteration of RE activities
- Decks - players get to keep a copy of the scenario cards as learning material
- Resources - SSPs can be used to buy books, templates and tools for project activities
- Quality - it is in everyone’s hands
Ongoing Work

- Creating more projects, scenarios and tasks
- Fine tuning game play
- Playing some games:
  - 2 sessions planned for fall 07 - one with Pace graduates, one with bank employees
- Understanding impact of the game:
  - Designing pre and post game-play educational assessment instruments
  - Comparing to other forms of RE education and training
- Exploring other gaming genres
RE-O-POLY: A GAME TO INTRODUCE LIGHTWEIGHT REQUIREMENTS ENGINEERING GOOD PRACTICES

Renel Smith and Orelna Gotel
Department of Computer Science, Pace University, New York
r-smith@comcast.net; ogotel@pace.edu

This work reviews the many good RE practices described in the literature and identifies a lightweight set that will help small novice organizations in their requirements development efforts. It proposes a game-based approach to do this. RE-O-Poly is based on the popular game Monopoly and is intended to teach RE good practices to novice requirements engineers by reinforcing lessons previously learned.

Good Practices that Target RE Challenges

<table>
<thead>
<tr>
<th>Good Practice</th>
<th>Description</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goals</td>
<td>An intention that a stakeholder has for a development project.</td>
<td>Translates one or more actions.</td>
</tr>
<tr>
<td>Stakeholders</td>
<td>Anyone who gains or loses something as a result of the project.</td>
<td>Ensures written requirements are what the stakeholders want.</td>
</tr>
<tr>
<td>Structure</td>
<td>Use a standard structure in requirements documents.</td>
<td>Provides higher quality and lower cost of requirements documents.</td>
</tr>
<tr>
<td>Verifying</td>
<td>Make the document easy to change.</td>
<td>Reduces costs of changing requirements.</td>
</tr>
<tr>
<td>Identifiers</td>
<td>Uniquely identify each requirement.</td>
<td>Provides unambiguous references to specific requirements.</td>
</tr>
<tr>
<td>Policy</td>
<td>Use policies for requirements management and conflict resolution.</td>
<td>Provides guidance for all involved in project. Faster resolution of requirements.</td>
</tr>
<tr>
<td>Policy</td>
<td>Use standard templates for representing individual requirements.</td>
<td>Presents requirements in a consistent way they are more understandable.</td>
</tr>
<tr>
<td>Language</td>
<td>Use language simply, consisently and concisely.</td>
<td>Presents requirements that are easier to read and understand.</td>
</tr>
<tr>
<td>Inspections</td>
<td>Organize formal requirements inspections and acceptance testing.</td>
<td>Provides a high leverage of requirements problems.</td>
</tr>
<tr>
<td>Checks</td>
<td>Use checklists for validation and analysis.</td>
<td>Helps to focus the validation process. Faster, more complete analysis of requirements.</td>
</tr>
</tbody>
</table>

RE-O-Poly is designed for players new to RE. It is meant to be used in conjunction with RE training and to have a facilitator. Key game concepts include:

- Stakeholder Satisfactory Points (SSPs), which players earn or forfeit as the game progresses.
- Projects for the player to own, run and buy resources for, using SSPs and undertaking tasks.
- Scenario Cards, which show what happens when good RE practices are implemented or not, such as the use of requirements templates and traceability matrices.
- Task Cards, which provide an opportunity to earn (or lose) SSPs by answering RE questions, such as re-wording a problematic requirement.
- Iterations, one time round the board equates to one iteration of requirements activities.

References