SYST 490

Fall Semester Debrief
Evaluators Scores/Grades
2011
Congratulations!

- Overall, good “project proposal” briefings.
- Communication skills – outstanding
- Slide preparation – very good
- Technical content and project planning – good, but problems with completeness, consistency, and logical/linear communication of ideas
System Engineering is all about finding the problems/faults before the system is built and fielded
Feedback from stakeholders, crowd-sourcing, focus groups, SME is critical to success (need to be “thick-skinned”)
“Adversity breeds success”
Quality, Completeness, Consistency

What was assessed – “gap”

What should have been assessed – vector (magnitude and direction)
Self Assessment

• Complete “Project Self Assessment”
## Evaluator Scores

<table>
<thead>
<tr>
<th>Team</th>
<th>Evaluators Score</th>
<th>Grade for Scores</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>AQ</td>
<td>86%</td>
<td>B</td>
<td>8%</td>
</tr>
<tr>
<td>T&amp;E TSO</td>
<td>79%</td>
<td>C+</td>
<td>10%</td>
</tr>
<tr>
<td>EM</td>
<td>78%</td>
<td>C+</td>
<td>13%</td>
</tr>
<tr>
<td>HCA</td>
<td>72%</td>
<td>C</td>
<td>13%</td>
</tr>
<tr>
<td>GHG/CAN</td>
<td>71%</td>
<td>C</td>
<td>12%</td>
</tr>
<tr>
<td>SpExp</td>
<td>71%</td>
<td>C</td>
<td>13%</td>
</tr>
</tbody>
</table>
## Overall Grades

<table>
<thead>
<tr>
<th>Team</th>
<th>Evaluators Score</th>
<th>Letter Grade for Score</th>
<th>Std Dev</th>
<th>Overall Grade</th>
<th>Letter Grade for Overall Grade</th>
<th>Std Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>AQ</td>
<td>86%</td>
<td>B</td>
<td>8%</td>
<td>93%</td>
<td>A</td>
<td>2%</td>
</tr>
<tr>
<td>T&amp;E TSO</td>
<td>79%</td>
<td>C+</td>
<td>10%</td>
<td>90%</td>
<td>A-</td>
<td>4%</td>
</tr>
<tr>
<td>EM</td>
<td>78%</td>
<td>C+</td>
<td>13%</td>
<td>89%</td>
<td>B+</td>
<td>5%</td>
</tr>
<tr>
<td>HCA</td>
<td>72%</td>
<td>C</td>
<td>13%</td>
<td>87%</td>
<td>B</td>
<td>4%</td>
</tr>
<tr>
<td>GHG/CAN</td>
<td>71%</td>
<td>C</td>
<td>12%</td>
<td>84%</td>
<td>B</td>
<td>8%</td>
</tr>
<tr>
<td>SpExp</td>
<td>71%</td>
<td>C</td>
<td>13%</td>
<td>85%</td>
<td>B</td>
<td>6%</td>
</tr>
</tbody>
</table>
Perceptions of Faculty, Sponsors, and Judges

• These are perceptions
  – Perceptions not consistent between all evaluators

• Not all perceptions are valid
  – Depends on evaluators background, biases, etc.

• Take all comments into consideration
  – All system engineering projects have multiple stakeholders/clients.
  – Need to practice listening and taking all view points into consideration.
• “what is output of this project? Stepping stones, ROI?”
• “it is not clear what sponsor gets from this project”
• “what will actually be done on this project”
• “what is value to project of model demonstrated?”
• “can all these models be built and analyzed in the remaining time”
• “Some charts hard to read”
• “Presenters are reading from slides”
• “Q&A performance not good”

• PD:
  – “reduce scope”
  – “scope too large”
  – “not coherent leading to design tradeoff”
  – “not clear”

• NS:
  – “A lot of stakeholders with conflicting needs. Did not show how solution addressed”
  – “not clear”

• MReq:
  – “How will costs be measured”
  – “needs more refined reqs’”
  – “You are selling a solution”
  – “This is not objective analysis”
  – “Did not distinguish between operational reqs and technical reqs”

• DA:
  – “Did you consider earth-based alternative”
  – “what are the design alternatives”

• M/DOE:
  – “quality/fidelity of results?”
  – “DOE not described”
  – “Aggressive modeling plan. Is this doable?”
  – “what about risk? What about optimistic vs pessimistic vs most likely”
AQ

- **Q&A:**
  - Confusion between “pollutants” and “excess nutrients”

- **PD:**
  - “not clear where quantifiable goals come from”

- **MR:**
  - “reqs specified but not related to context/assumptions”

- **DA:**
  - “not clear. Are they design alternatives or independent variables”
  - “needs more work”
  - “could have been more clearly defined’

- **M/DOE:**
  - “clean presentation of simulation”
  - “what is new from last year – nothing”
  - “cost model is confusing”
  - “they actually did a DOE”
  - “did not explain Monte Carlo runs/replications ...”
  - “not clear what recommendations will be given to sponsor?”
HCA

- **PD:**
  - “lots of interesting information but did not show any details of defined scope “single facility””
  - “identified scope = single facility, but provided no model of operation of facility – THIS IS A BIG FLAW”
  - “team has not worked to adequately scoped project”

- **NS:**
  - “stakeholder [description] is confusing”
  - “not sure who the key stakeholder is? Who is the client/user of these results?”

- **MR:**
  - “too many undefined terms”
  - “implementation EMR slides has two different cost numbers for same thing”
  - “could not see relationship to all those context slides”

- **DA:**
  - “did not provide alternative designs”

- **M/DOE:**
  - “model does not relate to design problem”
  - “probability formulas are weird”
  - “need to emphasize model assumptions”
  - “how does model answer problem definition questions’
  - “a value hierarchy would be useful for this project”
  - “how will model be validated””
  - Did not show any experimental design”
  - “where does data come from”

- **Comm:**
  - “some charts/tables too difficult to read”
  - “slides color combinations not readable” (e.g. 52)

- “Unprofessional to bash customer n public briefing”
- “this team seems to blame others for their problems”
- “team does not seem to realize that it is their job to scope the project”
Q&A:
- “Markov assumption”
- “why model and not just assess”

PD:
- “provide some videos of made and missed calls. Emphasize speed and dynamics”
- “needs coherent description of how sponsor will use”

NS:
- “is 80% accuracy arbitrary”

Mreqs:
- “not clear”
- “need to tie mission, function, design reqs”
- “metrics not well defined”

DA:
- “did not see clear set of design alternatives”

M/DOE:
- “what is new about this simulation. Recoding, why?”
- “how will model be validated?”
- “how will sim output be used?”
- “how will sponsor use results’

“not clear definition between problem stated and results of simulation. I think this is just a communication problem”

“Goal of project is to predict how well referees will perform at higher level of play?”

“is’nt it obvious. Only referee with best profile will succeed”

“Questionable wether model can improve assessment”
GHG/Carbon Neutral Airport

- **Q&A:**
  - “what is the purpose of this project? Build a tool or design a carbon neutral airport”
  - “if carbon neutrality, what proposal to remove carbon?”
  - “decimal places”
  - “37K carbon?”
  - “who is the client for this project”

- **PD:**
  - “presentation did not present work clearly”
  - “team is not clear about goals of project”

- **NS:**
  - “great stakeholders interaction diagram”

- **MR:**
  - “reqs qualitative?”
  - “confusing”

- **DA:**
  - “what is alternative for removing carbon”
  - “are alternatives independent”

- **M:**
  - “discussion of model too shallow”
  - “how are you going to use the model”
  - “what data will be sued?”
  - Value hierarchy includes cost. Not appropriate
  - “glad to see test and validation”
  - “is this analysis deterministic or stochastic. Where are random variables?”
  - “DOE very sketchy”

- “this project has barely even started”
- “still have a lot to do in short time”
- “project lacks energy – needs more energy and optimism”
• Q&A:
  – Tradeoff of costs vs utility not discussed
  – “What system are you describing?”
  – “who is the end-user of the model?”
• PD:
  – “false precision – duration to 4 decimal places”
• MReq:
  – “Variability of time, not mean”
  – “threshold values not justified”
• DA:
  – “alternatives not well explained’ Nordberg
  – “how do alternatives meet reqs?”
  – “needs more development of details”
  – “what is deliverable to customer”
  – “additional staffing has a downside – additional comm. This was not discussed or modeled’
  – ‘alternatives not exclusive. Could include both”
• M/DOE
  – “good description of model”
  – “needs more depth”
  – “not much about DOE”
  – “no value hierarchy. No DOE. No costs included”
  – “needs to include COST”
• “Several slides are unreadable”
• “All work left to 2nd semester. Project not likely to be done on time”
• “Q&A was not effective”
• “Technical part of project was not strong”