PROFESSIONAL SOCIETIES AS A SOURCE OF SYSTEMS ENGINEERING EDUCATION

Ms. Courtney Wright, CSEP
Mr. Jason Sohlke, CSEP
October 2015
OR

LET’S RANT ABOUT MILLENNIALS
Overview

• Statement of Problem

• Common Options
  • Graduate coursework and degrees
  • Organization-developed training
  • Rotational assignments
  • Gain experience over time
  • Mentoring

• Shortfalls with Options

• Relevant Research

• Value of Professional Societies

• Conclusions
Why are we here?

- Is this conference a good way to learn about Systems Engineering?
Why aren’t they here?

• How are millennials learning about Systems Engineering?
Where are they?

• Why are millennials learning that way?
So what?

• What’s wrong with the way millennials are learning?
Statement of Problem: Better, Faster, Cheaper

- How to increase competence in systems thinking without losing productivity?
  - Particular entry-level and mid-career
  - Building on existing technical competence
  - Ensure they are learning the right things
## Common Options

<table>
<thead>
<tr>
<th>SE Education Sources</th>
<th>Description of Strengths</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Courses, Certificates and Degrees</td>
<td>Strong theoretical and academic based environment focusing on a holistic approach to SE</td>
</tr>
<tr>
<td>Organizational Internally Developed Training</td>
<td>In-house training provides organizational based best practices, procedures, and policies</td>
</tr>
<tr>
<td>Rotational Assignments</td>
<td>Provides SE breadth of experience that enables the SE to better communicate and facilitate</td>
</tr>
<tr>
<td>Gain Experience over Time (or On the Job Training)</td>
<td>Gain experience and maturity in understanding domain to enable strong SE technical expertise</td>
</tr>
<tr>
<td>Mentoring</td>
<td>Provides experienced Systems Thinking in a non performance based role. Allows flexibility to breadth and depth desired</td>
</tr>
</tbody>
</table>
## Shortfalls with Options

<table>
<thead>
<tr>
<th>SE Education Sources</th>
<th>Potential shortfalls and gaps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate Courses, Certificates and Degrees</td>
<td>Often lengthy and costly with no immediate return on investment. Lacks real world application and implementation.</td>
</tr>
<tr>
<td>Organizational Internally Developed Training</td>
<td>Usually reserved for larger organizations. Training is usually non-transferable and only applicable to the organization</td>
</tr>
<tr>
<td>Rotational Assignments</td>
<td>Large overhead cost with training, development and oversight of the rotational program</td>
</tr>
<tr>
<td>Gain Experience over Time (or On the Job Training)</td>
<td>Most informal form of training. Scope and breadth of knowledge relies solely on personal experience</td>
</tr>
<tr>
<td>Mentoring</td>
<td>Maturity of experience is difficult to transfer. Most mentoring programs are temporary.</td>
</tr>
</tbody>
</table>
Relevant Research

Major Shortfalls

- Millennial learning styles
  - Self-paced or slow-release learning
- Boomer availability for mentoring
- High costs for formal training
- Training time competes with working / client-billing time
- Narrow focus of training
- Chicken and egg of responsibility and experience
Value of Professional Societies

- Self-paced
- Inexpensive
- Personal networking
  - Size and shape of network very different from internal to company
  - External verification (or level-setting) of organizational perspective
- Development opportunities
  - Leadership
  - Financial management
  - Personal interaction
  - Cat herding - Volunteer oversight
Conclusions

• Professional societies are a strategic option for employee development, worthy of consideration by individuals and support from organizations.
Presenter Contact Information

Courtney Wright, CSEP

Courtney.Wright@incose.org

Jason Sohlke, CSEP

Jason.Sohlke@jhuapl.edu