PROFESSIONAL SOCIETIES AS A SOURCE OF SYSTEMS ENGINEERING EDUCATION

Ms. Courtney Wright, CSEP

Mr. Jason Sohlke, CSEP

October 2015

OR

LET'S RANT ABOUT MILLENIALS

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

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

Shortfalls with Options

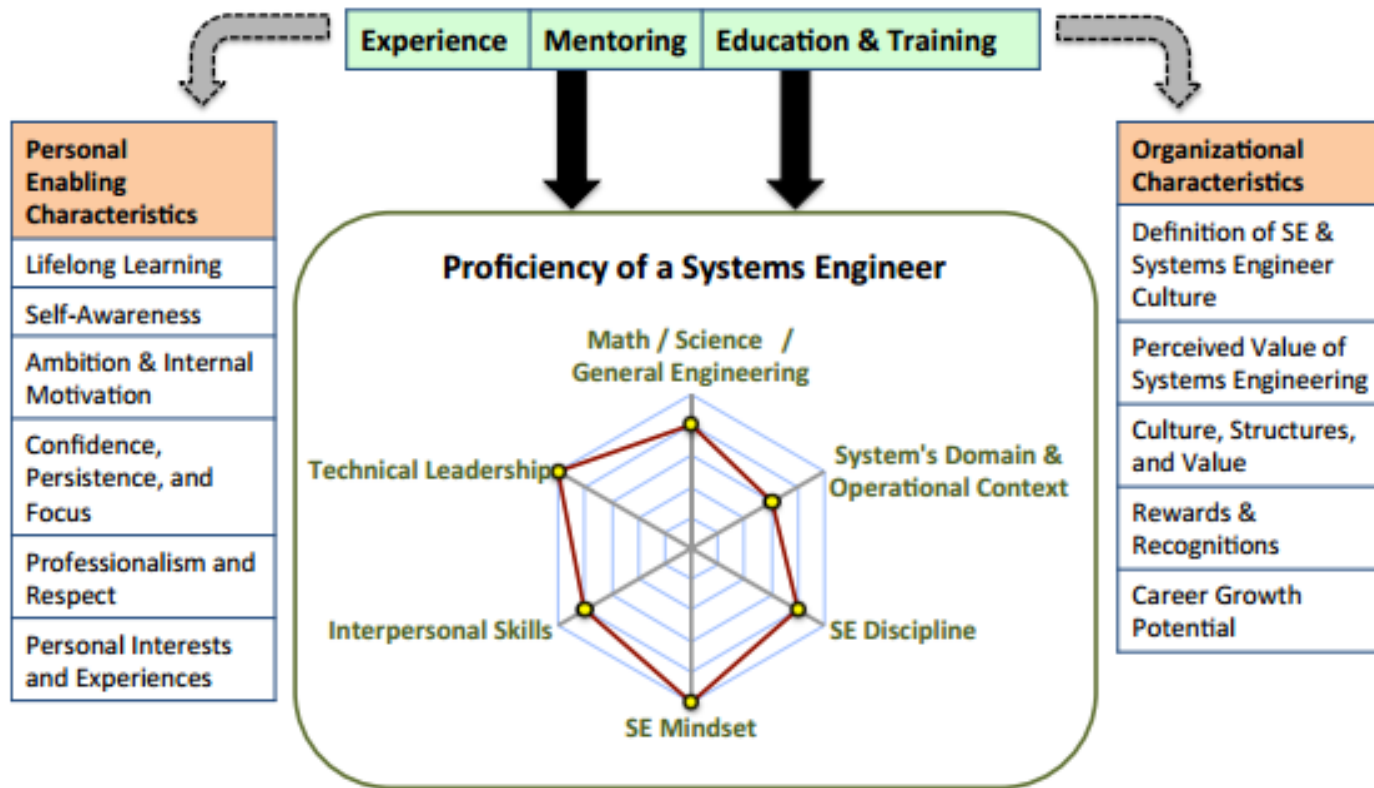| SE Education Sources	Potential shortfalls and gaps
Graduate Courses, Certificates and Degrees	Often lengthy and costly with no immediate return on investment. Lacks real world application and implementation.
Organizational Internally Developed Training	Usually reserved for larger organizations. Training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

Relevant Research

Figure 6. Forces that Impact Proficiency

http://cdn.sercuarc.org/wp-content/uploads/2014/05/Helix-Nov2014Report-Final.Website1.pdf - page 46

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