

16.682 The Aerospace Industry

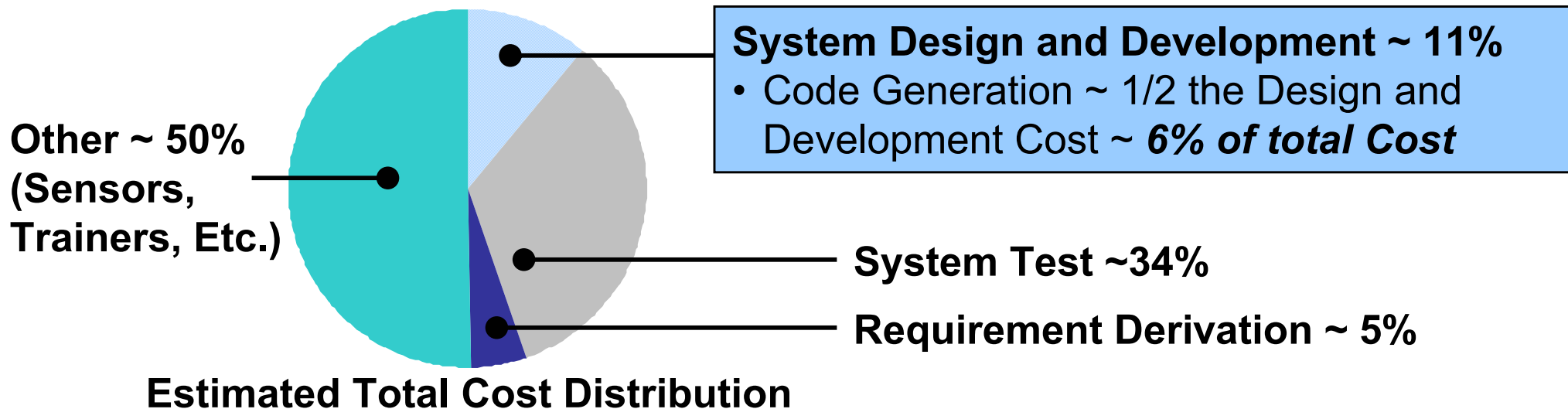
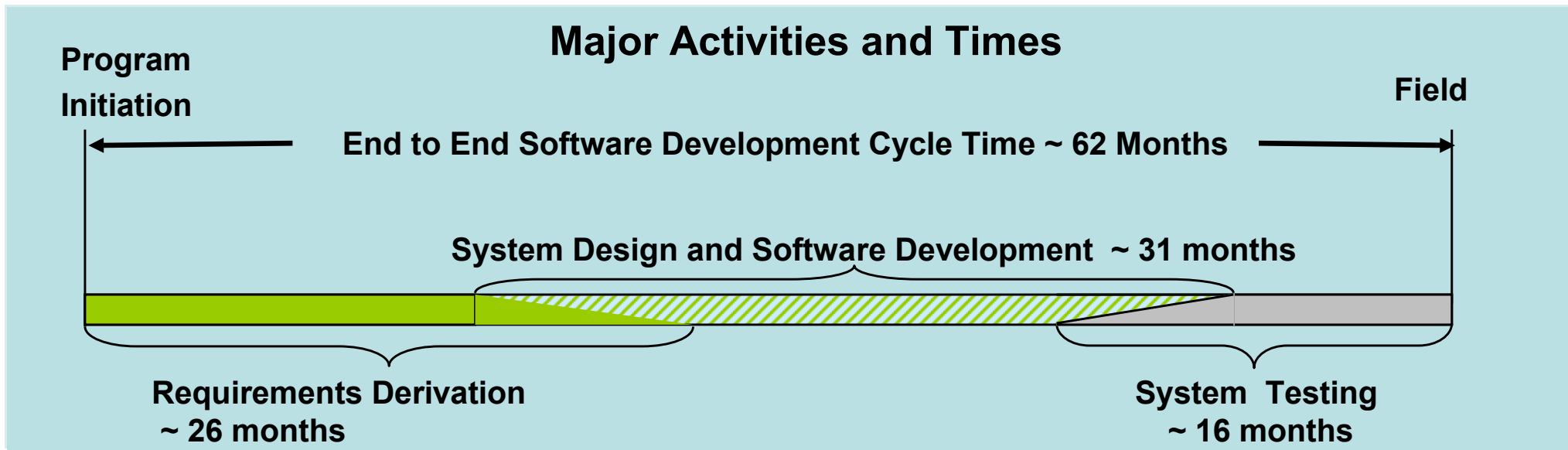
March 16 Class

Special Guest: Prof. Wesley Harris

Plan for the Class

- 3:05-3:10 Announcements and Introductions
- 3:10-3:55 LEV Ch 5 Discussion
- 3:55-4:05 Break
- 4:05-4:50 Av Week Article Discussion
- 4:50-4:55 Return Journal Assignments
- Muddy cards
- 4:55 Adjourn

Software Upgrades More Than Code:



Source: Ippolito and Murman, DASC 2001

Adapted from Murman et al., "Challenges in the better, faster, cheaper era of aeronautical design, engineering and manufacturing, The Aeronautical Journal, Oct. 2000.

Points Captured from Class Discussion

Islands of Success

- How do IOS get started and form?
 - From pressure such as to save money
 - Long term vision for the company
 - New project opportunity
 - Isolated groups idea
 - Culture accepting of change
 - Competition pressure
- What barriers inhibit IOS growth or spread?
 - Infrastructure already in place
 - Low-hanging fruit or don't see whole value stream
 - It is hard to change people mindset
 - Lack of vision or leadership
 - Requires investment, high risk, untested
 - NIH
 - Not transferable
 - Value added may be different between fields in different areas
 - Geographic barriers

Aspects of “Culture”

- Socially transmitted behavior patterns or beliefs that are shared by a particular group.
- The predominant attitudes and behavior that characterize the functioning of a group or organization.
- The patterns or traits that seem to express something essential about a group, community, or population.

Applying Lean Thinking to MIT

- Can you identify any Lean Thinking IOS in the following areas of MIT?
 - Aero-Astro department curriculum
 - MIT curriculum outside of AA
 - Student life and living
 - Administrative support systems for students
- If Yes: What are they? What is preventing them from growing into “Mainlands of Success”?
- If No: What are some opportunities for starting some IOS? How could they be started?

Points Captured from Class Discussion

MIT IOS

- AA curriculum
 - Muddy cards: quick feedback
 - PRS: even faster feedback
 - Prof. Darmofal,
 - 16.100 homework before class, oral exams
 - 16.901, homework daily
- Barriers
 - Cultural between depts
 - Teachers have different values
 - Get the Dean on board
- Course III is attempting unifying approach
- MIT curriculum
 - Students come from varied backgrounds and MIT is addressing this with
 - Interphase
 - Concourse
 - ESP
- Barriers
 - Cost
 - Interest of students to try the alternate path
 - Getting the information

Points Captured from Class Discussion

MIT IOS Continued

- Student life and living
 - ARC and counseling support services
 - Dorm structure IOS on student level
 - Helping new students
 - Floor help
 - Barrier: Top down thinking
 - Meal Plan not the value that students want
- Adm support systems
 - Counseling support services.
 - Prof Vanevera: fragmented approach or mindset. Lack of holistic approach
 - Computer support system in AA
 - Lack of integrated approach
 - Seamans' lab
 - Is the library being used
 - Continuous flow, seamless of structure

AvWeek Discussion

- In addition to your prompting questions for each article, consider:

Are the principles of Lean Thinking relevant to this article, and why or why not?