

Carnegie Mellon University

Dietrich College

Information Systems

Systems Development Life Cycle (SDLC) Approaches I

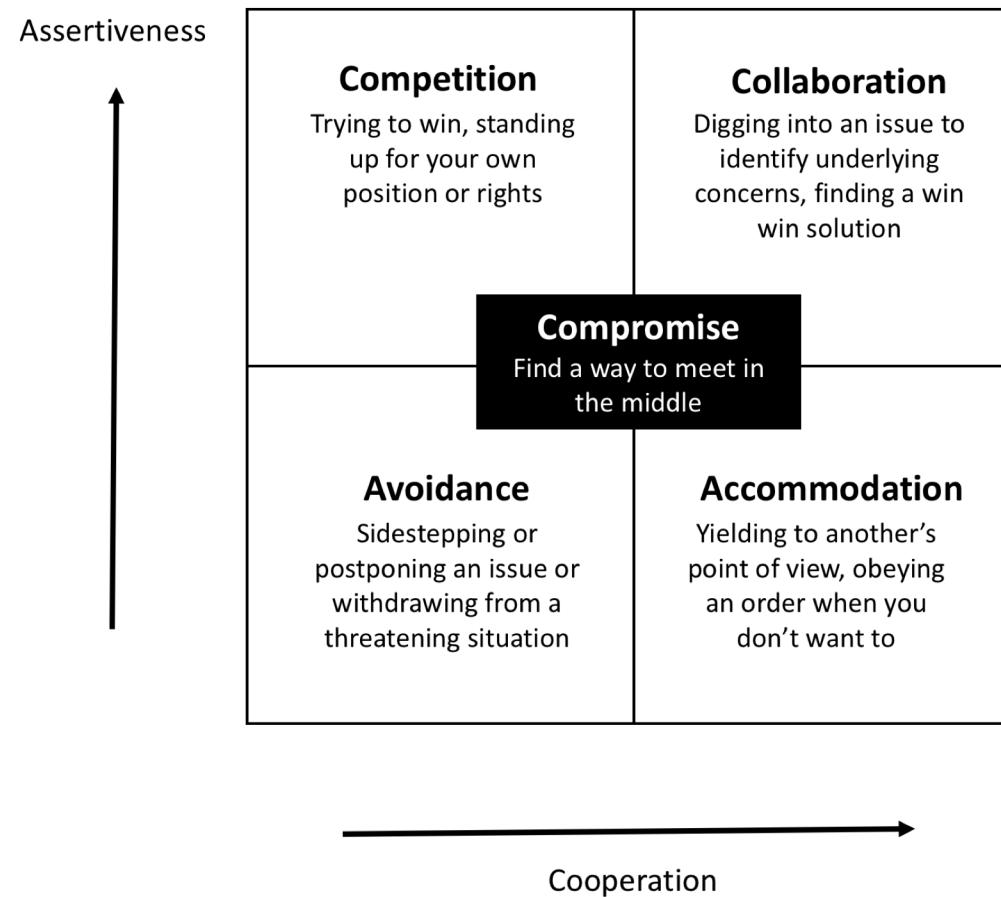
September 18, 2019

Today's Agenda:

- Review
- Quiz
- Activity: PM in an agile environment
- Lecture: The SDLC and structured versus agile methods
- Next class
- Lab session: GP1

Thomas-Kilmann Conflict Modes

Thomas and Kilmann (1970s)



9/18 :: Systems Development Life Cycle (SDLC) Approaches I

Read before class:

[Agile Project Management](#)  (IESE Case Study)

Materials used during class:

[Quiz 9/18](#)

Quiz 9/18

Access code: eggs

Traditional vs. Agile Approach of Managing Work

(aka the coloring eggs challenge)

<http://www.360pmo.com/traditional-vs-agile-approach-managing-work/>

Activity Prep

Setup: Form teams of 4-5. Each team will have minimum of 3 roles. (i.e. cutter, 2 painters, and a QA/tester). Each team will have crayons, scissors and coloring pages.

How to Win: The team that produces the greatest number of colorful eggs will win (with minimum waste).

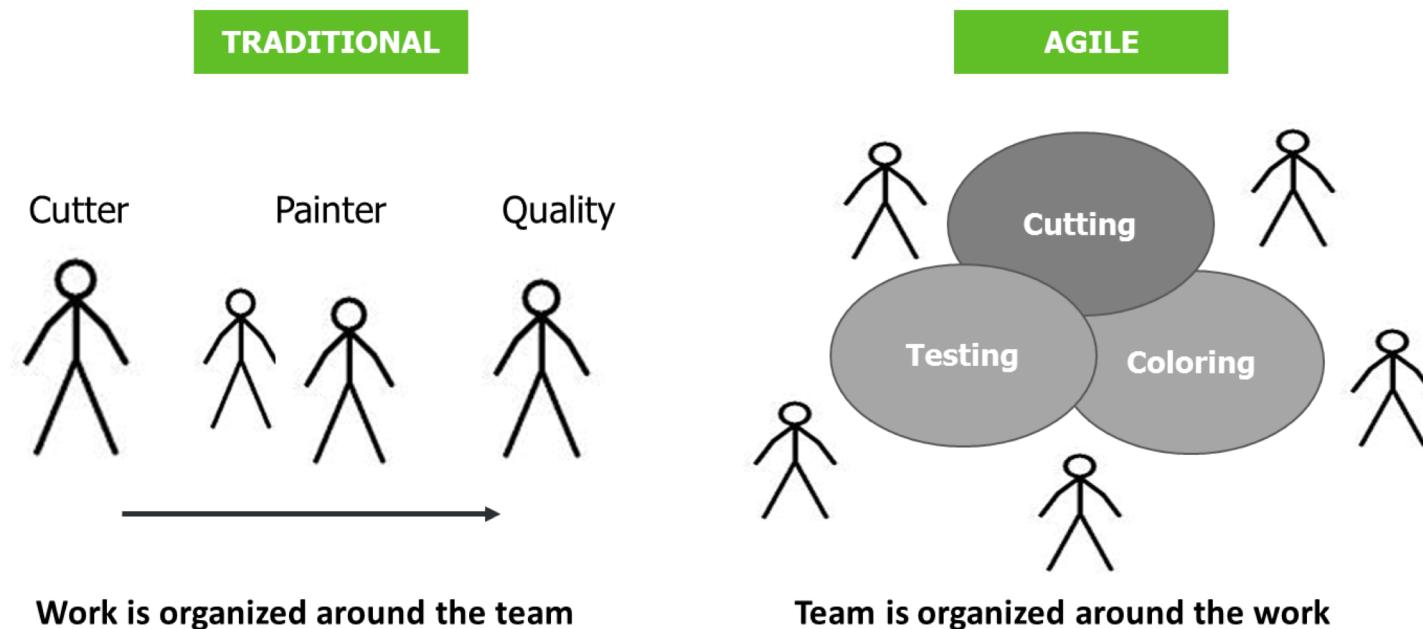
Rules of the Game:

1. Each egg must have at least two different colors.
2. Different colors can't be used in the same area (within edges).
3. Two separate people must complete each coloring activity.
4. Each egg should be minimum 90% filled with color.
5. White space doesn't count as color.
6. Cutting must be around oval edges of the egg
7. Eggs with major distractions in color or cutting will be disqualified.



Activity Prep

Procedure: The game will be played with two approaches: traditional waterfall and then agile iterative/incremental



Method 1 - Plan driven approach with traditional/silo team structure

- Assign the roles to each team member. (e.g. cutter, 2 painters, QA/tester).
- Each team member will work in his/her silo which means only the cutter is allowed to cut the paper, painter allowed to color and tester will perform inspection and verify the acceptance criteria.
- Prof Q accepts or rejects the work based on the rules defined above.
- Total time allowed is 12 minutes: 3 minutes planning, 6 minutes of cutting/coloring activities, and 3 minutes for lessons learned.
- The team is to provide estimates after 3 minutes of planning on a number of eggs they will try to finish within 6 minutes.

Plan	Execution	
3 Min.	6 Min.	3 Min.



Method 2: Multiple iterations with cross-functional team structure

- In this method, a team is self-organized, no silos. Any team member can work on any task (e.g. cutter is allowed to do coloring and painter is allowed to cut the egg). This section of the game is divided into three iterations.
- Each iteration will be 4 minutes long: 1-minute planning, 2 minutes of cutting/coloring activities, and 1 minute to do review/retrospective.
- Team to provide estimate after each planning session for the sprint.

Plan	Execution	Retro
1 Min.	2 Min.	1 Min.

Plan	Execution	Retro
1 Min.	2 Min.	1 Min.

Plan	Execution	Retro
1 Min.	2 Min.	1 Min.



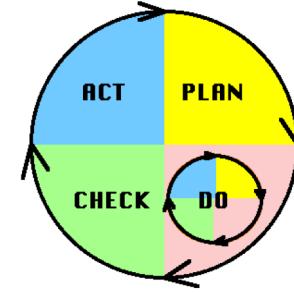
Activity Debrief

Which method resulted in more eggs?

What observations can you make about the methods in terms of:

- Team structure
- Waste
- Push vs. Pull system
- Lesson Learned vs. Retrospectives

Activity Take-aways



- Shared goal and common purpose
- Teaches the value of teams autonomy to self organize and the advantage of iterative delivery process over waterfall approach
- Iterations / sprint approach - Deming Cycle or the plan-do-check-act (PDCA)
- Inspect and adapt in agile – power of retrospective and ‘fail fast’
- Important to understand business requirements – how product adds value
- By adding some modifications (sudden shift in business requirements) can showcase the strength of the lean approach in responding to change
- As system has a natural velocity
- Pull systems maximizes flow
- Scrumflow - The challenge is doable if people are not disturbed during iteration and the work has a meaning

Next class – Monday, September 23rd

Topic: SDLC Approaches II

Due before class:

- Homework #3
- Read (expect a quiz) - Cracking the Monolith: California's Child Welfare Services Disrupts Technology Procurement (Part A and B)

Reminder: Global Project 1 Ice Breaker Due
Sunday, 22nd September at 6:00 AM GMT

GP1 reminders and suggestions

Reminder: Global Project 1 Ice Breaker Due
Sunday, 22nd September at 6:00 AM GMT

- Time zones differences:
 - 9:00 AM Qatar = 6:00 AM GMT = 2:00 AM Eastern (7 hours behind Qatar)
- Try using When2Meet instead of Doodle
- Qatar students may not use their Andrew IDs for google access
- Qatar students may wish to connect on campus (not from home)