PROCESS

AGILE & ITERATIVE DEVELOPMENT (CHAPTER 3)

A MANAGER'S GUIDE BY: CRAIG LARMAN

WEEK 4: AGILE METHODS

BY: JOSEPH MARTINAZZI

AGILE DEVELOPMENT

AGILE DEVELOPMENT HAS A MOTTO "EMBRACE CHANGE"

- AGILE DEVELOPMENT METHODS ARE A SUBSET OF ITERATIVE AND EVOLUTIONARY DEVELOPMENT METHODS.

- ALTHOUGH AGILE METHODS VARY IN STYLE, THEY ALL EMPLOY SHORT TIMEBOXED ITERATIONS WITH EVOLUTIONARY PLANNING TECHNIQUES.

- AGILE DEVELOPMENT EMPHASIZES SIMPLICITY, DIRECT COMMUNICATIONS, SELF-DIRECTED TEAMS, AND WORKING CODE.

  A SCRUM EXAMPLE: INVOLVES SELF-DIRECTED TEAMS WORKING IN A COMMON PROJECT ROOM. EACH TEAM COORDINATES ACTIVITIES AND PROGRESS VIA DAILY STANDUP MEETINGS IN WHICH EACH TEAM MEMBER IS HELD ACCOUNTABLE BY RESPONDING TO A SET LIST OF QUESTIONS.
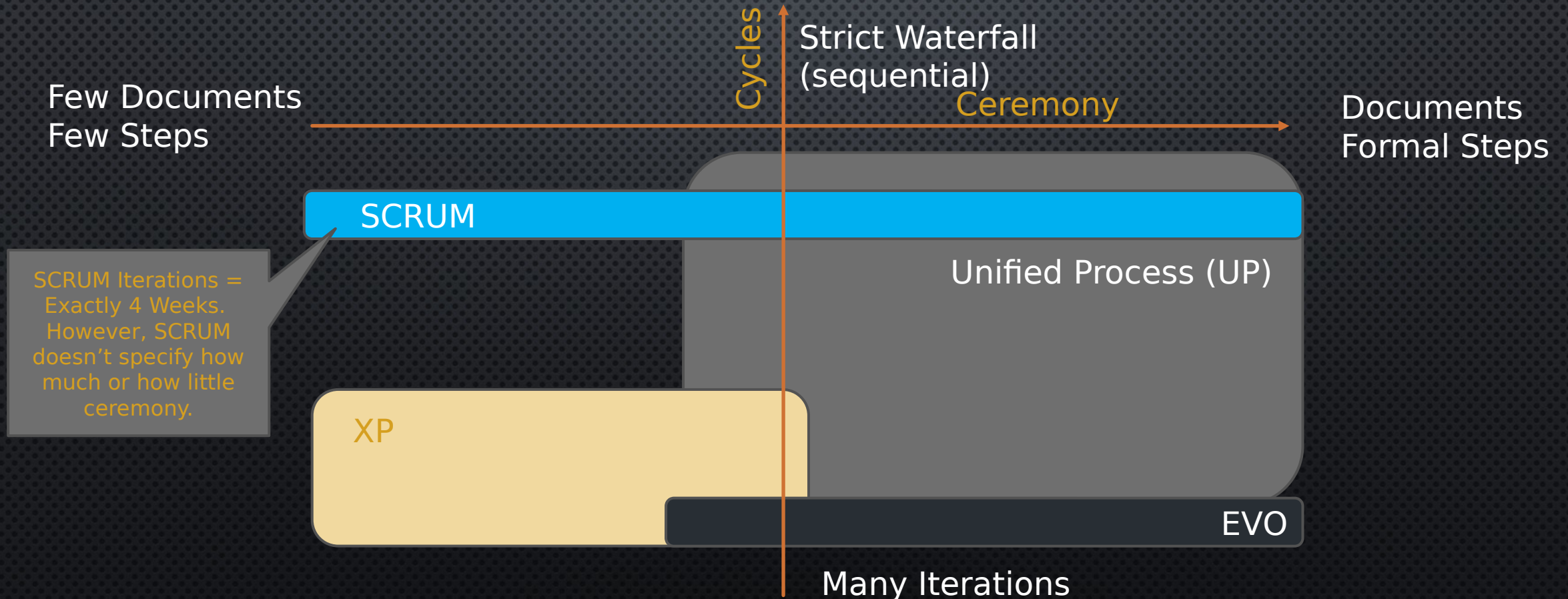
  AN XP EXAMPLE: INVOLVES SELF-DIRECTED TEAMS CONTAINING A DEDICATED SE TO EXPLAIN/DECOMPOSE REQUIREMENTS TO GROUPS OF PAIRED-PROGRAMMERS WORKING IN A COMMON ROOM.

CLASSIFICATION OF METHODS

AGILE METHODS ARE CLASSIFIED BASED ON "CEREMONY" AND "CYCLES".

CEREMONY – IS THE AMOUNT OF DOCUMENTATION, FORMAL STEPS, REVIEWS, ETC.

CYCLES – IS THE NUMBER AND LENGTH OF ITERATIONS.

Cycles

Strict Waterfall
(sequential)

Ceremony

Few Documents
Few Steps

Documents
Formal Steps

SCRUM

SCRUM Iterations = Exactly 4 Weeks. However, SCRUM doesn't specify how much or how little ceremony.

Unified Process (UP)

XP

EVO

Many Iterations

THE AGILE MANIFESTO

IN 2001 A GROUP OF INDIVIDUALS DEFINED THE AGILE MANIFESTO AND A SET OF PRINCIPLES THAT AGILE TECHNIQUES SHOULD TAKE INTO CONSIDERATION.

THE AGILE PRINCIPLES

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AGILE PROJECT MANAGEMENT

THE JOB OF THE AGILE PROJECT MANAGER IS TO PROMOTE THE VISION BY HAVING OPEN COMMUNICATION AND AVOIDING (MINIMIZING) COMMAND AND CONTROL.

JIM HIGHSMITH SUMMARIZES 9 PRINCIPLES FOR AGILE PROJECT MANAGEMENT.

HIGHSMITH, J. 2002. AGILE SOFTWARE DEVELOPMENT ECOSYSTEMS. ADDISON-WESLEY

RECOMMENDATIONS PROJECT MANAGEMENT

AUGUSTINE AND WOODCOCK, RECOMMEND THE FOLLOWING 6 PRACTICES FOR AGILE PROJECTS.

AUGUSTINE, S. AND WOODCOCK. S. 2002. "AGILE PROJECT MANAGEMENT: EMERGENT ORDER THROUGH VISIONARY LEADERSHIP." CC PACE SYSTEMS. JULY 2002.

AGILE PROJECT MANAGEMENT

THE AUTHOR STATES THAT THE ENTIRE TEAM NEEDS TO PARTICIPATE IN CONTROL AND PLANNING ON AGILE PROJECTS. THE MANAGER DOESN'T CREATE THE WBS, DEFINE THE SCHEDULE, AND ESTABLISH BUDGETS, BUT THE TEAM DOES!

ALTHOUGH THIS MAY WORK FOR SMALL TEAMS IN WHICH COST AND SCHEDULE DO NOT MATTER, IT WILL NOT WORK FOR LARGE SCALE SOFTWARE DEVELOPMENT EFFORTS OR FIRM FIXED PRICE CONTRACTS.

REMEMBER THE IMP, A HIGH-LEVEL IMS AND THE WBS STRUCTURE ARE TYPICALLY CONTAINED IN A COMPANY'S PROPOSAL IN RESPONSE TO A CUSTOMER'S RFP.

AGILE PROJECT MANAGEMENT

SO, DOES THAT MEAN AGILE DEVELOPMENT SHOULD NOT BE USED ON A LARGE-SCALE SOFTWARE DEVELOPMENT EFFORT? ABSOLUTELY NOT!

THE TEAM CAN STILL PLAN HOW THEY

- *DEVELOP THE USE CASE INCLUDING DEFINING THE BACKLOG, AND*
- *VALIDATE THE BUDGET ALLOCATED TO THE USE CASE.*

THE MANAGER'S JOB IS TO:

- *DETERMINER THE SIZE OF THE TEAM NEEDED TO COMPLETE THE WORK WITHIN THE TIMEBOX,*
- *COMMUNICATE WITH THE TEAM IN ORDER TO UNDERSTAND THEIR ISSUES,*
- *REMOVE ROADBLOCKS IMPEDING THE TEAM'S PROGRESS,*
- *VALUE AGILE PRINCIPLES BY FEEDING BACK RECOMMENDATIONS FROM THE TEAM TO STREAM-LINE PROCESS, REMOVE ROADBLOCKS, ETC., AND*
- *BECOME CAPTAIN AMERICA AND SHIELD THE TEAM FROM OUTSIDE INFLUENCES.*

AGILE PROJECT DEVELOPMENT

EMBRACE CHANGE

THE AGILE PRIME DIRECTIVE IS TO EMBRACE CHANGE BY BEING ADAPTIVE.

EMBRACE COMMUNICATIONS AND FEEDBACK

AGILE DEVELOPMENT STRIVES TO INCREASE DAILY FACE-TO-FACE COMMUNICATION THROUGH DAILY MEETINGS (SCRUM) OR BY HAVING A CUSTOMER PRESENT IN THE COMMON PROJECT ROOM (XP).

AGILE DEVELOPMENT IS CONSTANTLY ADAPTING BY PROVIDING DEMOS TO GET CUSTOMER FEEDBACK ON PRODUCT DEVELOPMENT AND TEAM FEEDBACK ON WHAT WORKS AND WHAT DOESN'T WORK (PROCESS).

PROGRAMMING AS IF PEOPLE MATTERED

A HAPPY TEAM IS MORE PRODUCTIVE WHICH RESULTS IN SUSTAINABLE DEVELOPMENT

MAINTAIN A WORK/LIFE BALANCE AND MINIMIZE OVERTIME

KNOWLEDGE AND WORK HABITS PLAY A SIGNIFICANT ROLE IN AN INDIVIDUAL'S PRODUCTIVITY

MENTOR NEW TEAM MEMBERS

SIMPLICITY IS A KEY TO SUCCESS

DO THINGS THE SIMPLEST WAY POSSIBLE, AVOID HIGH TECH SOLUTIONS IF POSSIBLE.

AGILE PROJECT DEVELOPMENT

EMPIRICAL VS. DEFINED (PRESCRIPTIVE) PROCESS

THE AUTHOR STATES THAT DEFINED PROCESSES ARE SUITABLE FOR PREDICTABLE MANUFACTURING DOMAINS AND THAT EMPIRICAL PROCESS IS MORE FOR AGILE DEVELOPMENT. HOWEVER, HE ALSO STATES THAT SCRUM DOESN'T SPECIFY THE AMOUNT OF CEREMONY.

A DEFINED PROCESS – HAS MANY PREDEFINED AND SEQUENTIAL ACTIVITIES.

AN EMPIRICAL PROCESS – ARE BASED ON FREQUENCY MEASUREMENT AND DYNAMIC RESPONSES TO VARIABLE EVENTS *(E.G. , AGILE PRINCIPLES 12 & 13).*
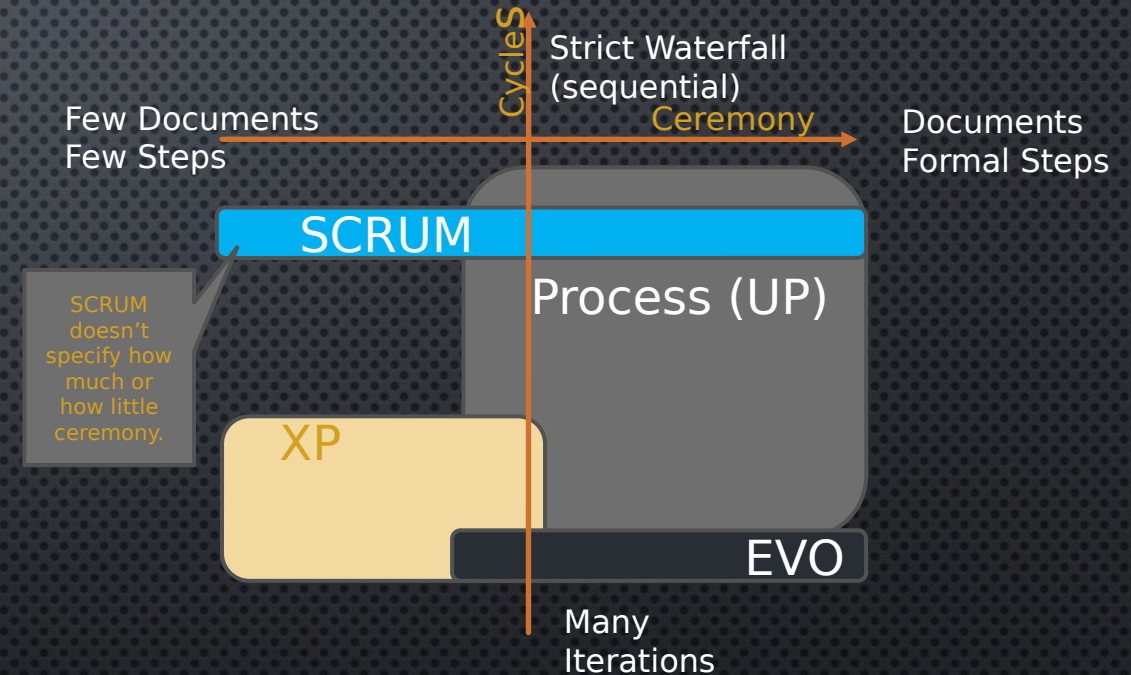
SPECIFIC AGILE METHODS

SCRUM

SCRUM EMPHASIZES SELF-ORGANIZED TEAMS, WITH DAILY STANDUP MEETINGS (COMMUNICATION/FEEDBACK), AND DAILY TEAM MEASUREMENT (PEER PRESSURE TO DRIVE PERFORMANCE).

SCRUM ITERATIONS ARE 4 WEEKS IN DURATION, WITH A DEMO TO EXTERNAL STAKEHOLDERS AT THE END OF THE ITERATION.

XP

XP EMPHASIZES COLLABORATION (VIA PEER PROGRAMMING, TEAM WORKING IN A COMMON PROJECT ROOM), CONSTANT REFACTORING OF THE CODE, AND TEST-DRIVEN DEVELOPMENT *(PRACTICE OF DEVELOPING TEST CASES PRIOR TO DEVELOPING THE CODE)*.

IT IS FOUNDED ON 4 VALUES: COMMUNICATION, SIMPLICITY, FEEDBACK, AND COURAGE.

CRYSTAL FAMILY OF AGILE METHODS

DEVELOPED BY ALISTAIR COCKBURN

DEFINES PROJECT COMPLEXITY BASED ON THE CRITICALITY OF THE END-PRODUCT AND SIZE OF STAFF REQUIRED TO COMPLETE THE PROJECT.

PROCESS CEREMONY (DEFINED STEPS, DOCUMENTATION, REVIEWS, ETC.) INCREASE BASED ON THESE FACTORS.

DEVELOPED A CLASSIFICATION MODEL TO ASSIST IN SCALING PROGRAMS.

AN E6 EQUATES TO A PROJECT REQUIRING A STAFF OF 1-6 INDIVIDUALS AND IN WHICH A FAILURE WOULD RESULT IN A LOSS OF ESSENTIAL MONEY.

AN L100 EQUATES TO A PROJECT REQUIRING A STAFF OF 41-100 INDIVIDUALS AND IN WHICH A FAILURE WOULD RESULT IN A LOSS OF LIFE!

This classification model is used to identify methodologies best suited for UP, SCRUM, XP, and/or Evo process models.

Life-Critical

Company Fails

Lost Profits

Annoyance

REFERENCES

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