IT PROJECT MANAGEMENT-LESSON 4/2

4th LESSON

SCRUM

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2nd LESSON: **AGILE GOALS&PRINCIPLES**
SECOND PART FILE ROUGE

1. INNOVATION AND METHODOLOGIES
2. AGILE GOALS&PRINCIPLES
3. AGILE METHODOLOGIES OVERVIEW WITHOUT SCRUM
4. **SCRUM**
5. LEAN
6. DESIGN THINKING
7. VALUE DRIVEN DELIVERY
8. STAKEHOLDERS,TEAMS,ADAPTIVE PLANNING
9. CASE STUDIES
10. EXERCISES
11. CONTINUOUS IMPROVEMENT
12. CONCLUSION AND REVIEW

PROJECT MANAGEMENT FOR IT REVIEW LESSONS 1-4

AGILE ITERATION&REQUIREMENT

«DONE»

METHODOLOGIES to get VALUE

PROJECT MANAGEMENT FOR IT REVIEW LESSONS 1-4

...after a general analysis of AGILE APPROACH we presented 3+5 METHODOLOGIES **outlining 3 words:**

ITERATION-REQUIREMENT-DONE

presenting these methodologies:

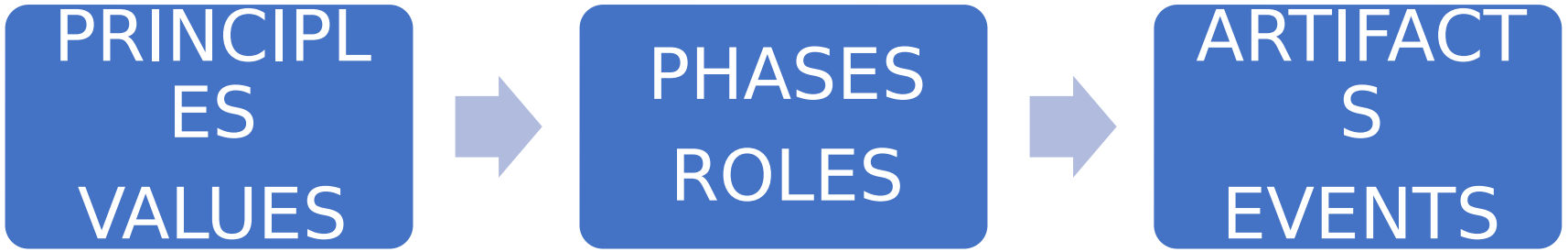
FDD,DSDM,AUP

XP,LEAN,KANBAN,CRYSTAL and finally to day

SCRUM

SCRUM (✉*EASY TO UNDERSTAND, HARD TO MASTER)*

FILE ROUGE OF THIS PRESENTATION



SCRUM GENERAL QUICK VIEW

Scrum comes from rugby,meaning melee,a shooting phase of the game when the ball is contended between 2 groups of players pushing each other

Currently more than 50% of companies which adopt agile, use *Scrum*

SCRUM is a simple methodology, based on :

6 principles

4 phases

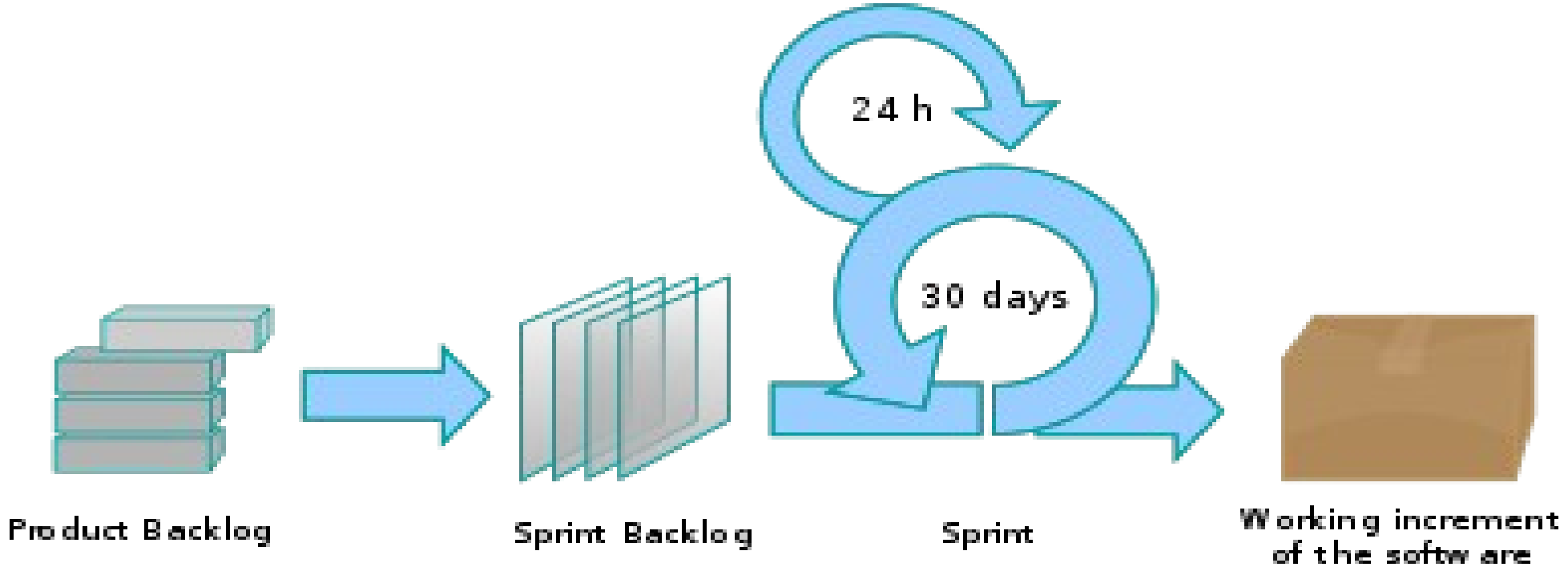
3 roles

4 artifacts

5 events

EASY TO UNDERSTAND, HARD TO MASTER

SCRUM IN A PICTURE



WHEN DOES SCRUM EXCELS?

SCRUM EXCELS WHEN SOFTWARE PROJECTS ARE:

-URGENT

-COMPLEX

-CRITICAL TO AN ORGANIZATION

-WITH UNKNOWN,UNKNOWABLE,CHANGING REQUIREMENTS

SCRUM: YES/NO

NO

- PRESCRIPTIVE PROCESS
- GANTT CHARTS
- TIME REPORTS
- TASK ASSIGNMENTS

YES

- A FEW SIMPLE RULES
- MANY INSPECT CYCLES
- FREQUENT ADAPT CYCLES
- EVERYTHING

SCRUM MINDSET IS FOCUSED ON:

PROJECT MANAGEMENT LEVEL

BY PRIORITIZING WORK AND GETTING FEEDBACK

SCRUM:**SIMPLICITY MUST NOT BE DECEPTIVE**

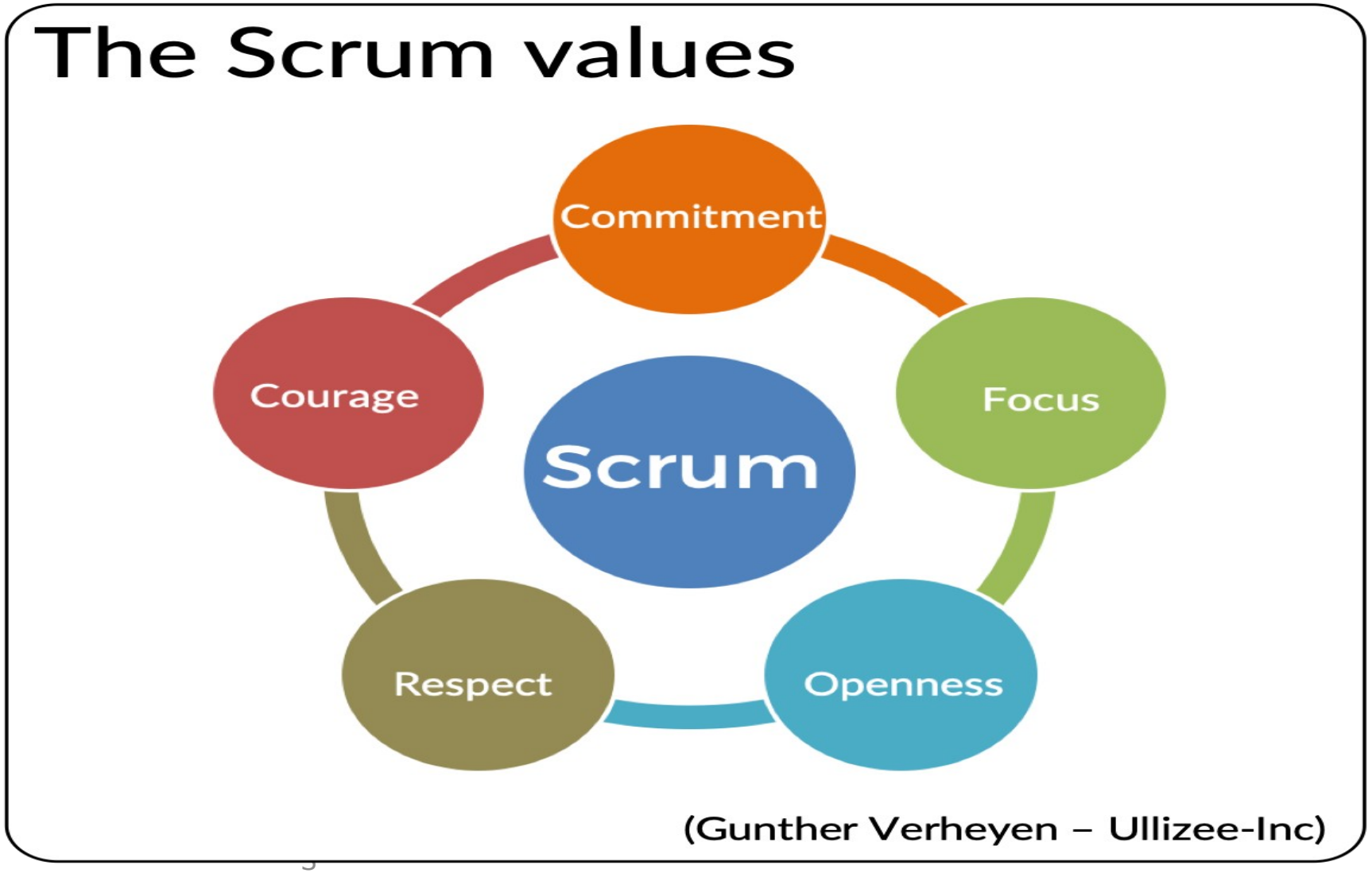
SCRUM IS DISARMING SIMPLE WITH FEW AND **STRAIGHTFORWARD** RULES

-NOT PRESCRIPTIVE=IT DOES NOT DESCRIBE WHAT TO DO ALWAYS

-FOR COMPLEX WORK WHEN IT IS IMPOSSIBLE TO PREDICT EVERYTHING

-BUT EVERYTHING IS KEPT VISIBLE SO ALLOWING QUICK ADJUSTMENTS

SCRUM *VALUES*



SCRUM FUNDAMENTAL PRINCIPLES

1. Iterative development
2. Collaboration
3. Activities with certain duration
4. Management of priorities according to value
5. Process empirical control
6. Self organization

SPRINTS

Scrum breaks down the traditional project management to gather it in

small projects

Sprints are time-boxed iterations with planned durations of meetings.

SCRUM *:PRINCIPLE 1:* Iterative development

MANY PROCESSES WORK ONLY BECAUSE THE IMPRECISION DEGREE IS ACCEPTED

A PROCESS THAT REPEATABLY PRODUCES ACCEPTABLE QUALITY IS CALLED ***DEFINED PROCESS CONTROL***

WHEN THIS IS IMPOSSIBLE BECAUSE OF COMPLEXITY IT IS NECESSARY TO EMPLOY

EMPIRICAL PROCESS CONTROL

PRINCIPLE 1: Iterative development with poor quality

Defined processes *are used whenever possible unless the rework for poor quality is unacceptable:in these cases it has to turn to*

empirical process control

which might become cheaper as it provides the right product at the first run

3 LEGS OF THE EMPIRICAL PROCESS CONTROL:

1.VISIBILITY
2.INSPECTION
3.ADAPTATION

3 DIMENSIONS OF COMPLEXITY IN SOFTWARE DEVELOPMENT

1. **REQUIREMENTS:how to get simple SW requirements by stakeholders with multiple and changing needs, understood by them only?**

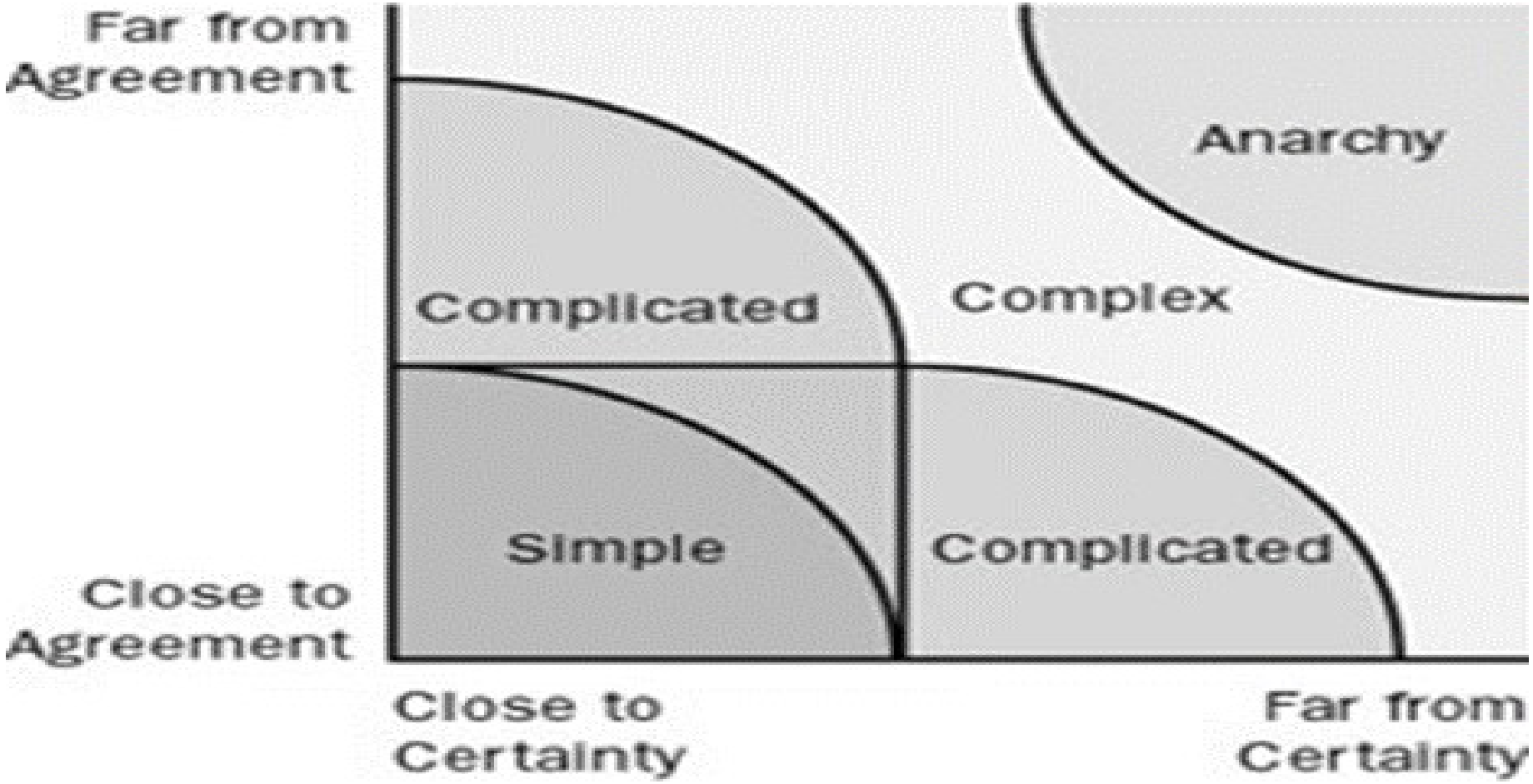
✉get someone's else impression of what they want

2. **SIMPLE TECHNOLOGY: rarely used in SW development often become chaotic ✉issue to be resolved before work progress**

3. **PEOPLE: different skills, intelligences, experiences, viewponts, attitudes; working together complexity goes through the roof**

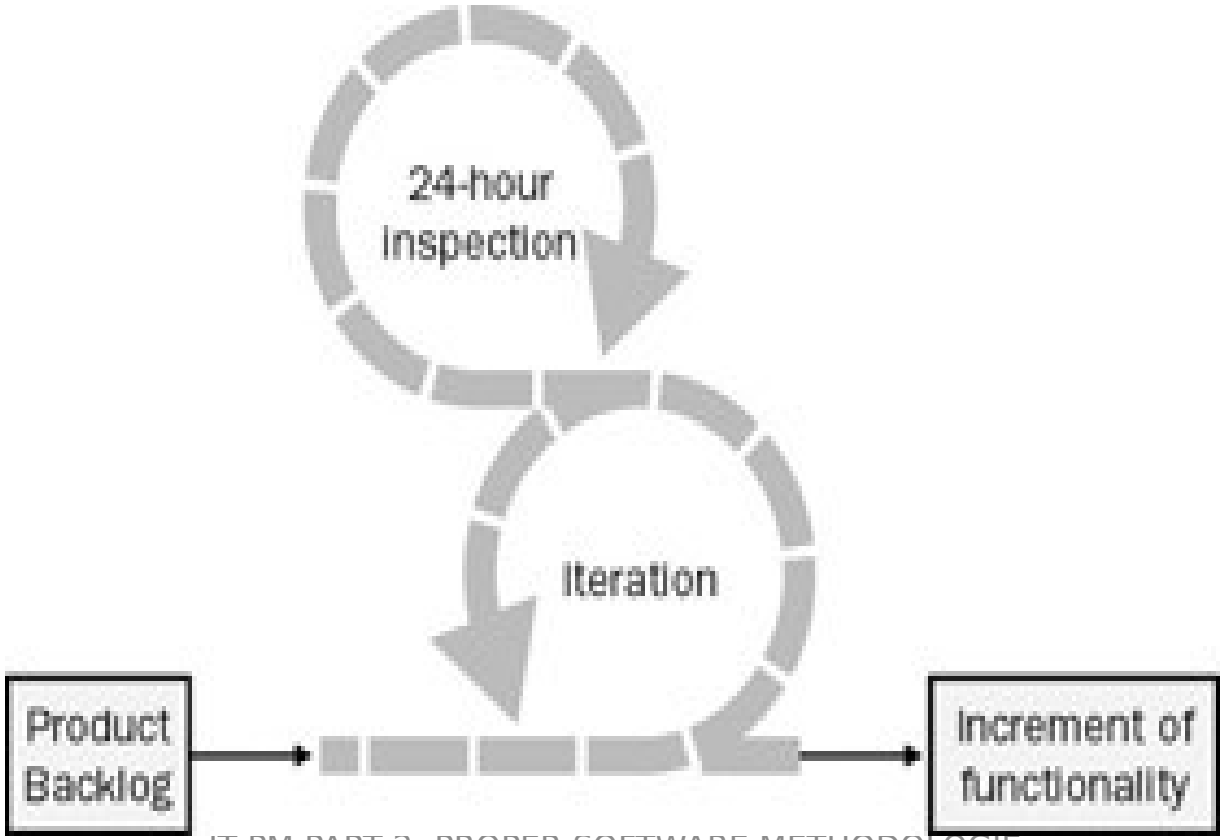
✉visibility,inspections, adaptation practices must be implemented

COMPLEXITY ASSESSMENT GRAPH:
REQUIREMENTS VERSUS COMPLEXITY



SCRUM SKELETON& RULES

ALL SCRUM PRACTICES ARE BASED ON AN ITERATIVE,INCREMENTAL PROCESS



SCRUM PHASES: quite similar to those by PMI traditional/predictive approach

1. ITERATION START:REVIEW BY THE TEAM OF WHAT IT MUST BE DONE

2. SELECTION OF WHAT CAN BE TURNED INTO A SHIPPABLE FUNCTIONALITY (**plan and estimate)**

3. WORK (**implementation)**

4. PRESENTATION OF THE WORK TO STAKEHOLDERS AND TIMELY ADAPTATIONS **(retrospective and release)**

SCRUM FLOW

Vision purpose of a project with clear set of working agreements

Backlog list of requirements

Sprints time-boxed iterations with planned durations of meetings.

Retrospective meeting regularly occurred workshop for work and results exploration to improve product and process

SCRUM FLOW (1): VISION

A SCRUM PROJECT STARTS WITH A <u>VISION</u> OF THE SYSTEM TO BE DEVELOPED

-THE PRODUCT OWNER (REPRESENTIVE OF STAKESHOLDERS' INTERESTS) **PROVIDES:**

1-FUNDING OF THE PROJECT FOR DELIVERING A VISION THAT MAXIMISES ROI

2-ISSUING A PLAN WITH PRODUCT BACKLOG AND LIST OF REQUIREMENTS

THE PRODUCT BACKLOG IS PRIORITIZED ACCORDING TO ISSUING VALUE ITEMS

SCRUM FLOW (2):BACKLOG

-ALL WORK IS DONE IN SPRINTS (ITERATIONS OF ABOUT 30 DAYS)

-EACH SPRINT STARTS WITH A PLANNING MEETING (MAX 8 hours) SELECTING FROM THE HIGHEST PRIORITY PRODUCT BACKLOG

-THE TEAM EVALUATES HOW MUCH OF THE DESIRED REQUIREMENTS CAN BE TURNED INTO FUNCTIONALITY OVER THE NEXT SPRINT

-EVERY DAY A SCRUM MEETING IS HELD WHERE EACH MEMBER DECLARES WHAT HE HAS DONE, WHAT HE PLANS,WHAT IMPEDIMENTS HE SEES

SCRUM FLOW (3):SPRINTS

-AT THE END OF A SPRINT A REVIEW MEETING IS HELD (ABOUT 4 hours)

-THE TEAM PRESENTS THE WORK DONE DETERMINING WHAT TO DO NEXT

SCRUM FLOW (4):RETROSPECTIVE MEETING

A RETROSPECTIVE MEETING (ABOUT 3 HOURS) IS HELD TO REVISE THE PROCESS

TO MAKE IT MORE EFFECTIVE

ROLES IN SCRUM

1.PRODUCT OWNER
2.TEAM
3.SCRUM-MASTER
4.PIGS&CHICKENS

PRODUCT OWNER

- REPRESENTIVE OF THE INTERESTS OF THE STAKESHOLDERS
- HE ACHIEVES FUNDING BY CREATING INITIAL REQUIREMENTS,ROI GOALS,PLAN

LIST OF REQUIREMENTS=PRODUCT BACKLOG, TO BE USED TO PRODUCE THE MOST VALUABLE FUNCTIONALITY FIRST

TEAM

1. RESPONSIBLE FOR DEVELOPING FUNCTIONALITY
2. RESPONSIBLE FOR TURNING BACKLOG IN A FUNCTIONALITY INCREMENT
3. **SELF-MANAGING**
4. **SELF-ORGANIZING**
5. CROSS FUNCTIONAL

SCRUM-MASTER

1. RESPONSIBLE FOR THE SCRUM PROCESS
2. RESPONSIBLE FOR TEACHING SCRUM TO EVERYONE IN THE PROJECT
3. RESPONSIBLE FOR IMPLEMENTING SCRUM IN THE ORGANIZATION’S CULTURE
4. RESPONSIBLE TO SHOW THAT EXPECTED BENEFITS ARE ACHIEVED
5. RESPONSIBLE TO ENSURE THAT EVERYONE FOLLOWS SCRUM RULES

PIGS&CHICKENS

PIGS: CREATE MOMENTUM

OCCUPANTS OF ONE OF THE 3 SCRUM ROLES (TEAM, PRODUCT OWNER,SCRUMMASTER) WHO HAVE MADE A COMMITTMENT AND HAVE THE AUTHORITY TO FULFILL IT

CHICKENS =IN THE PROJECT,NO RESPONSIBILITY

THOSE WHO ARE INTERESTED IN THE PROJECT BUT DO NOT HAVE FORMAL RESPONSIBILITIES AND ACCOUNTABILITIES

SCRUM MASTER VERSUS PROJECT MANAGER

- They are two completely different roles
- The PM is responsible to guide the project towards goals
- The scrum master is not the main responsible nor a team leader
- He is the facilitator who has relationships with both the product owner and the team tracking the work done while team acts in autonomy,

PRODUCT OWNER VERSUS PROJECT MANAGER

- The product owner is closer to the PM, representing the natural future evolution.

- In software there is a lower attention on projects and a higher one on **product creation**, much more beneficial for software houses.

ARTIFACTS

Something observed in a scientific investigation, not naturally present but as a result of the investigative procedure”

EXAMPLES:

-the Product Backlog

-the Sprint Backlog

-the Product Increment AS INCREMENT OF SHIPPABLE FUNCTIONALITY

PRODUCT BACKLOG

LIST OF REQUIREMENTS (RESPONSIBLE PRODUCT OWNER)

NEVER COMPLETE:

INITIAL ESTIMATE OF REQUIREMENTS AND EVOLUTION WITH THE PRODUCT IN

A DYNAMIC WAY

PRODUCT BACKLOG TEMPLATE

stakeholdermap.com

Project Management, project planning, templates and advice

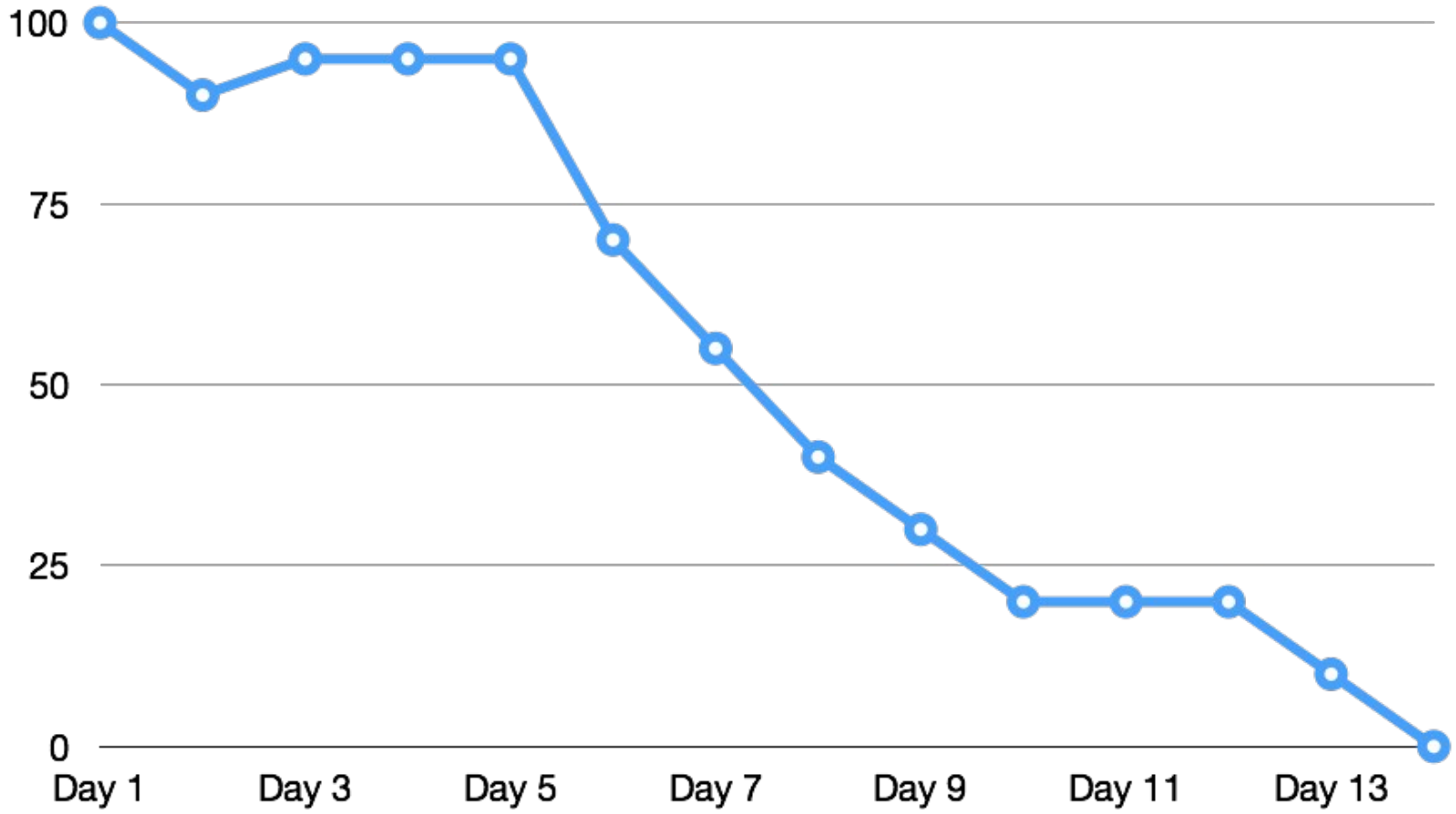
PRODUCT BACKLOG						
User Story ID	User Story	Estimate (size)	Priority	Sprint	Task owner	Estimated effort
US001	As a call centre agent I need to be able to see the caller's previous tickets in their contact record.	Small	5	2	J Smith	16
US002	A a customer I need to be able to login to my account from any page on the website.	Large	4	4	F Dole	48
US003	As a customer I need to be able to look up my address using my postcode.	Medium	4	2	P Murphy	24

Burndown chart

Graphic representation of how quickly the team is working through a customer’s requirements

It shows the total effort against the amount of work for each iteration

Burndown chart



SPRINT BACKLOG

DEFINITION OF TASKS FOR TURNING THE PRODUCT BACKLOG OF A SPECIFIC SPRINT IN AN INCREMENT OF POTENTIALLY SHIPPABLE PRODUCT FUNCTIONALITY

DONE INCREMENT

INCREMENT OF SHIPPABLE PRODUCT FUNCTIONALITY REQUIRED IN EVERY SPRINT

THE PRODUCT OWNER MIGHT CHOOSE TO IMPLEMENT AT ONCE THAT FUNCTIONALITY SO IT REQUIRES A THOROUGH TEST WITH A STRUCTURED,WRITTEN, DOCUMENTED CODE

PRODUCT INCREMENT

GENERALLY AFTER THE PROVEN TESTS PERFORMED

4 main sprint events, each respecting a deadline stated at the beginning

1 definition of a simple process structure

2 promotion of collaboration and sharing

3 making activities advancement transparent

4 reduction or even removal of not planned meetings

Events

- Sprint Planning
- Daily Scrum
- Sprint Review
- Sprint Retrospective

SCALING PROJECTS USING SCRUM

Many projects require more effort than a single SCRUM TEAM can provide

So MULTIPLE TEAMS can be employed working in parallel with proper coordination

Projects exist of 1000 people with teams of 100 people each in multiple locations!

SCRUM SCALING

STAGING PROCESS=definition and prioritization of non functional requirements:

1-Put in place an appropriate infrastructure

2-Devise and implement a synchronization mechanism

3-Devise a technical architecture for a proper work division among the teams

WHY SCRUM WORKS,COMPARED TO WATERFALL STRUCTURES

-WATERFALL IS CENTRAL CONTROL STRUCTURE

-AS COMPLEXITY INCREASES CENTRAL CONTROL BREAKS DOWN

-SO COMPANIES DECENTRALIZE , LEAVING CONTROL TO INDEPENDENT AGENTS

SCRUM TRAVELS THE DELEGATION PATH TO THOSE CLOSE TO THE WORK

WHY SCRUM WORKS

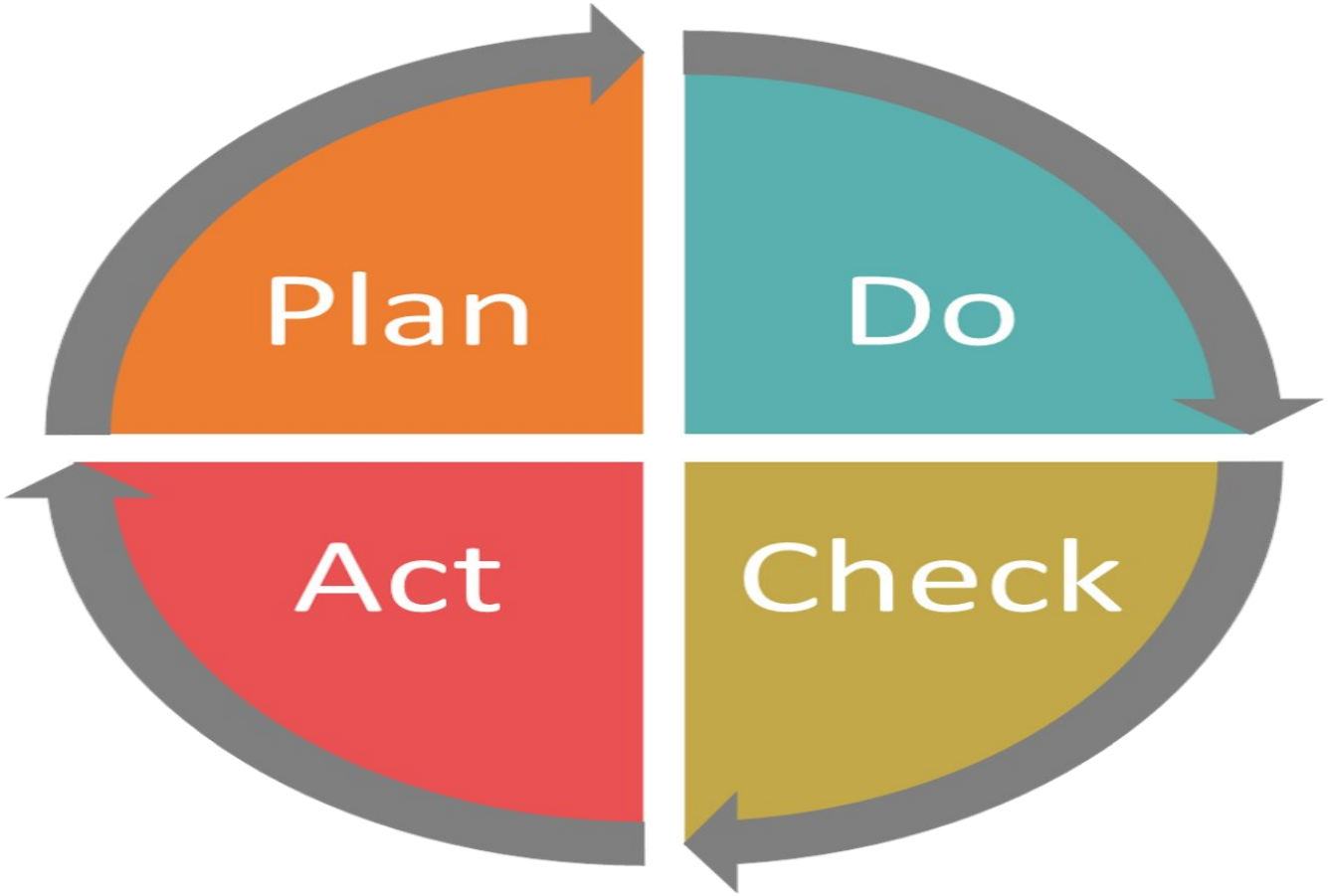
1-SCRUM SHORTENS THE FEEDBACK LOOP BETWEN

- CUSTOMER AND DEVELOPER,
- WISH LIST AND IMPLEMENTATION,
- INVESTMENT AND ROI

2-DEALING WITH A CHANGE OR WITH A NEVER ENDING EVOLUTION

LEARNING THROUGH SHORT CYCLES OF DISCOVERY IS THE PROBLEM SOLVING APPROACH

DEMING CYCLE



WHY SCRUM WORKS,COMPARED TO WATERFALL APPROACH

ALL PROCESS IMPROVEMENT PROGRAMS USE THE **DEMING CYCLE** TO

- EXPLORE A PROBLEM,
- TRY A SOLUTION,
- CHECK RESULTS,
- ADOPT PROVEN GAINS

THIS WORKS MUCH BETTER THAN FRONT-END PREDICTIVE APPROACHES IN SOFTWARE AND VERY INNOVATIVE PROJECTS

SCRUM FOCUSES ON DELIVERING PRIORITIES

SCRUM DOES NOT FOCUS ON DELIVERING JUST ANY INCREMENT OF BUSINESS VALUE

SCRUM FOCUSES ON DELIVERING THE HIGHEST PRIORITY BUSINESS VALUE AS DEFINED BY THE CUSTOMER

MAGIC BY SCRUM

- SCRUM UNLEASHES THE BRAINPOWER OF MANY MINDS ON A PROBLEM
- SCRUM TURNS SMALL TEAMS INTO MANAGERS OF THEIR OWN FATE

SCRUM WORKS...

SCRUM WORKS AS ITS PHILOSOPHY EMPOWERS TEAMS

SCRUM WORKS AS ITS PHILOSOPHY SATISFIES CUSTOMERS

SCRUM WORKS AS ITS MANAGERIAL CULTURE MAKE OTHERS HELPED

SCRUM WORKS AS ITS TECHNICAL TOOLS MAKE FACT-BASED DECISIONS

SCRUM exercise

Place a check mark in the proper column for the team.the owner,the scrummaster

to indicate

ITEM	DEVELOPMENT TEAM	PRODUCT OWNER	SCRUMMASTER
Estimates			
Backlog priorities			
Agile coaching			
Work coordination			
Definition of «done»			
Process adherence			
Technical			

SCRUM QUESTIONS for THE EXAM

1-As Scrummaster you assess that the competitive market has shifted and the product the team is developing is no longer viable

What should you do?

2-The definition of «done» is created with the input of everyone except the:

A-development team;B-product owner;C-scrummaster;D-process owner

3-Which of these is one of the planned opportunities for inspection& adaptation?

A-Velocity review meeting;B-Risk meeting;C-Daily scrum;D-

THANKS!

NEXT LESSON IS N.5:

LEAN

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