

# Lecture 19

## Validating the Requirements: *Agile, Lean, ITIL and DevOps*

Com S/SE 409/509

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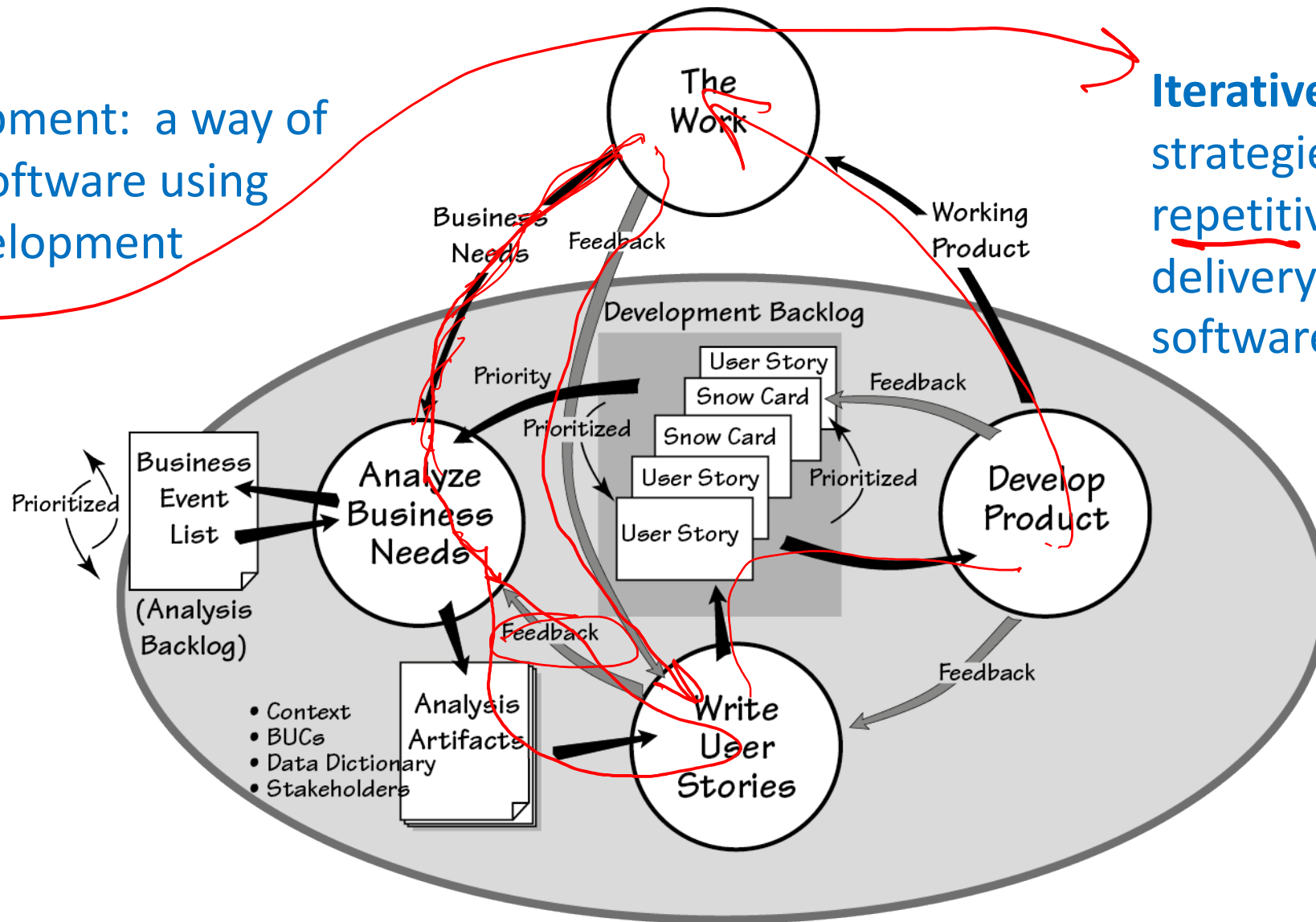
Olukorede's Office Hours--**Wed 10**



triathlon.org

**Agile** development: a way of developing software using iterative development

**Iterative** development: strategies that facilitate repetitive & continuous delivery of software solutions

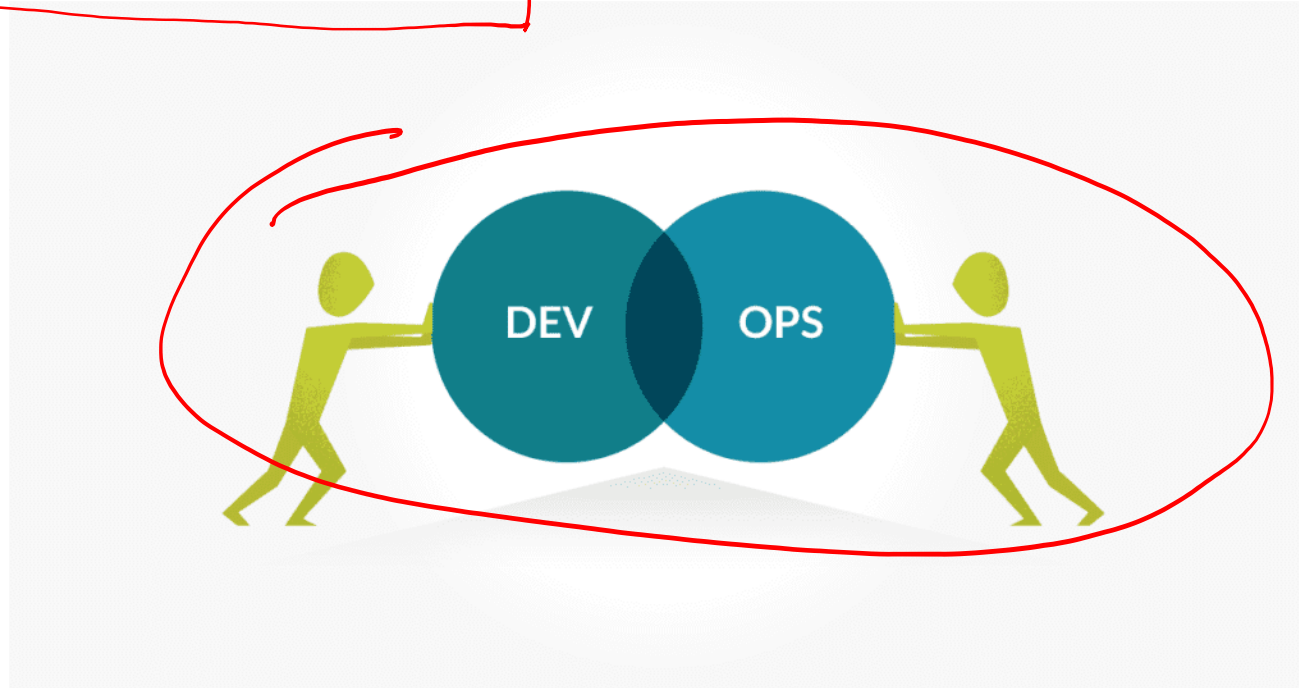


**Figure 14.1**  
Requirements in an iterative development process.

Lecture based on:

[Galup, Dattero & Quan, “What do Agile, Lean, & ITIL Mean to DevOps?, CACM, Oct 20], posted on Canvas

DevOps = Agile + Lean + ITSM



TestLodgeBlog

Development  
Operations

Agile is a mindset

Develop software in a collaborative, iterative & incremental manner

\* For requirements, this means:

shorter feedback loops improve customer value

interaction with customer is key

"lens" (product owner, in Scrum) focuses attention on customers' needs  
progress toward fulfilling customers' needs assessed at each stage

— 2010 study:

- most widely valued Agile principle: Developers & business people working together
- ② • 2<sup>nd</sup> place: Achieving customer satisfaction through early & continuous delivery of valuable software

Lean: an agile software development method

Lean aims to maximize customer value and minimize wasted efforts

\* For requirements, this means:

voice of the customer: in-depth process of capturing customer's expectations, preferences, and dislikes

*intent*

systems thinking: focus on relationships between parts over time

developers measure quality at each step

shorten feedback loops

develop only what's needed/when needed (just-in-time)



ITIL\*: quality management for services

Integrate agile, lean & DevOps

Services: development & operation (feedback, bugs, requests) overlap

\* For requirements, this means:

service value: services deliver value to customers by facilitating outcomes customers want to achieve:

1. utility: a service's functional requirements *what*
2. warranty: a service's nonfunctional requirements (availability, capacity, continuity & security) *how well*

\* Information Technology Infrastructure Library

## DevOps skills are needed & valued

Galup, Dattero & Quan findings, based on 2018 Dice report:

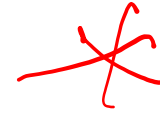
Value gained by skillsets/knowledge:

✓ Agile (salary premium 26%)

Lean (9%)

ITIL (18%)

DevOps = Agile + Lean + ITSM



Break down barriers (silos) between development & operations

\* For requirements, this means:

systems focus: performance of entire system rather than a part

responsive feedback loops to continually improve

culture: take risks/learn from failures; practice/mastery [DevOps Handbook]

enabled by automation: s/w tools for continuous development, build, integration & delivery