IN5140

Smart processes and agile methods in Software Engineering

Group session 10

Agenda - you decide!

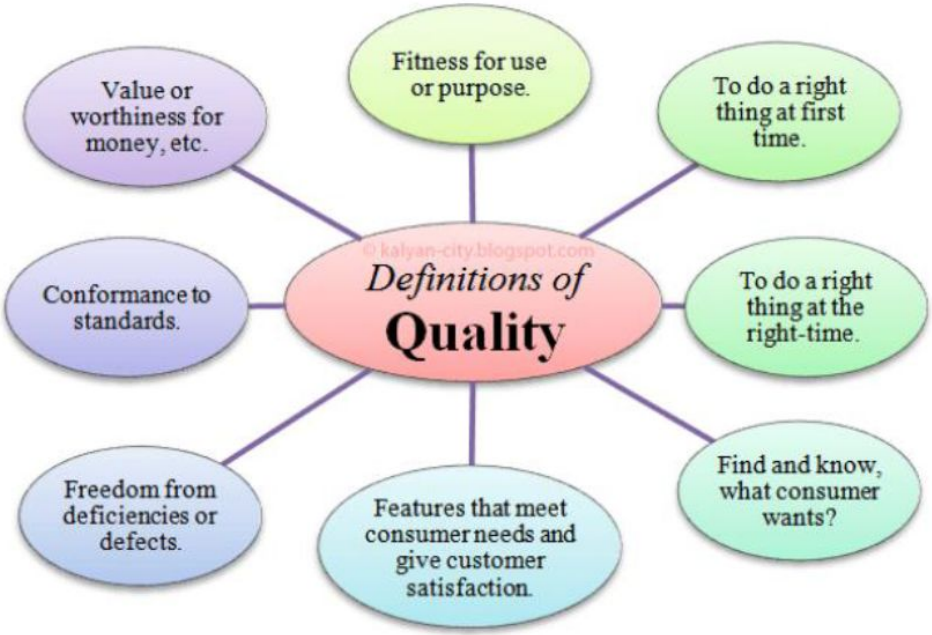
1. Repetition - quality assurance
2. Exam questions

4. You choose! Work on project, repetition

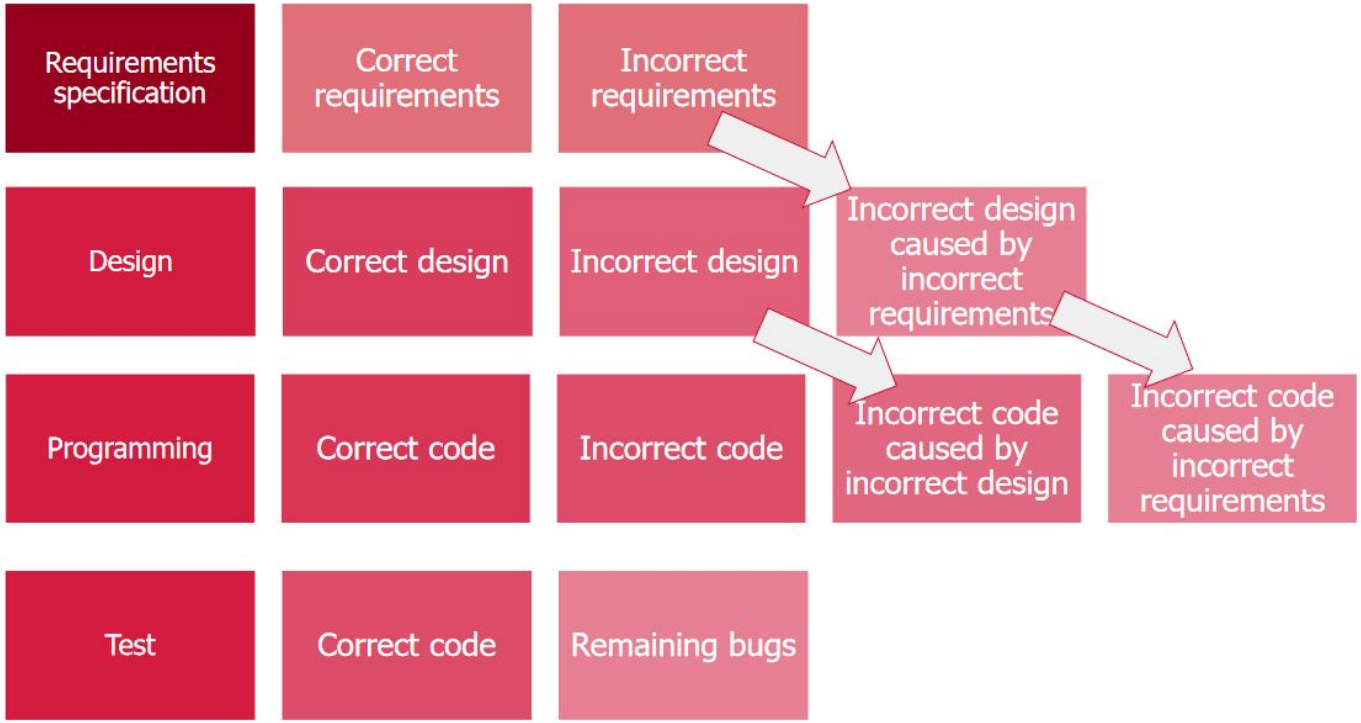
Quality Assurance

Figures are from this week's lecture

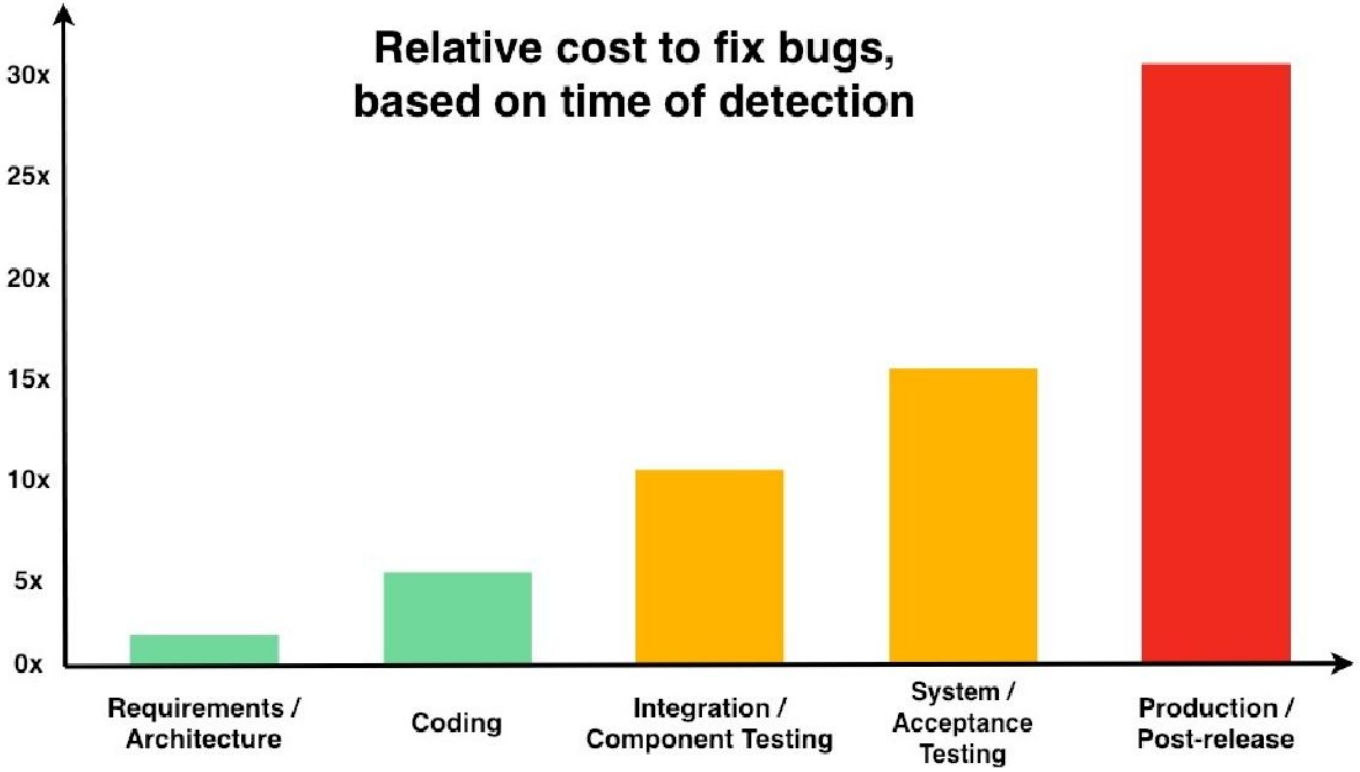
What is quality?



When do bugs occur?



Cost of bugs


Relative cost to fix bugs,
based on time of detection
30x
25x
20x
15x
10x
5x
0x
Requirements / Architecture
Coding
Integration / Component Testing
System / Acceptance Testing
Production / Post-release

What is the idea of DevOps? Why DevOps?

Exam from 2017 - part 2

Exercise (35%)

a) **Document the process described above in a process model using BPMN.**

b) Propose improvements to the process described in the case description.

c) Describe three measures (variables) that the project could use to evaluate the effects of the changes in the development process that you proposed in (b).

Exercise - Case description

A software company in Norway (Company X) is developing an administrative system for the Norwegian public sector (the customer). The current development process is as follows: Company X receives a fixed list of requirements from the customer. Company X then first rewrites the requirements into user stories and then groups them into a set of deliverables. For example, requirements that deal with profile administration are grouped into a deliverable entitled “User Profile”. After defining a deliverable, Company X sends it to the customer representatives for approval. Once the customer approves the deliverable, Company X sends the deliverable to a development team in Ireland that is owned by company X. The Irish team codes the requested functionality and sends back a demo to Company X. Company X and the customer assess in collaboration the work of the Irish development team. If the deliverable (demo) is accepted by the customer, Company X starts to plan a new deliverable. However, if the deliverable (demo) is rejected, Company X must ensure the necessary changes, including fixing bugs, performed by the Irish development team. After implementation, they return a new demo for approval. This cycle is repeated until the customer finally approves the deliverable.

Exercise - Find organizations

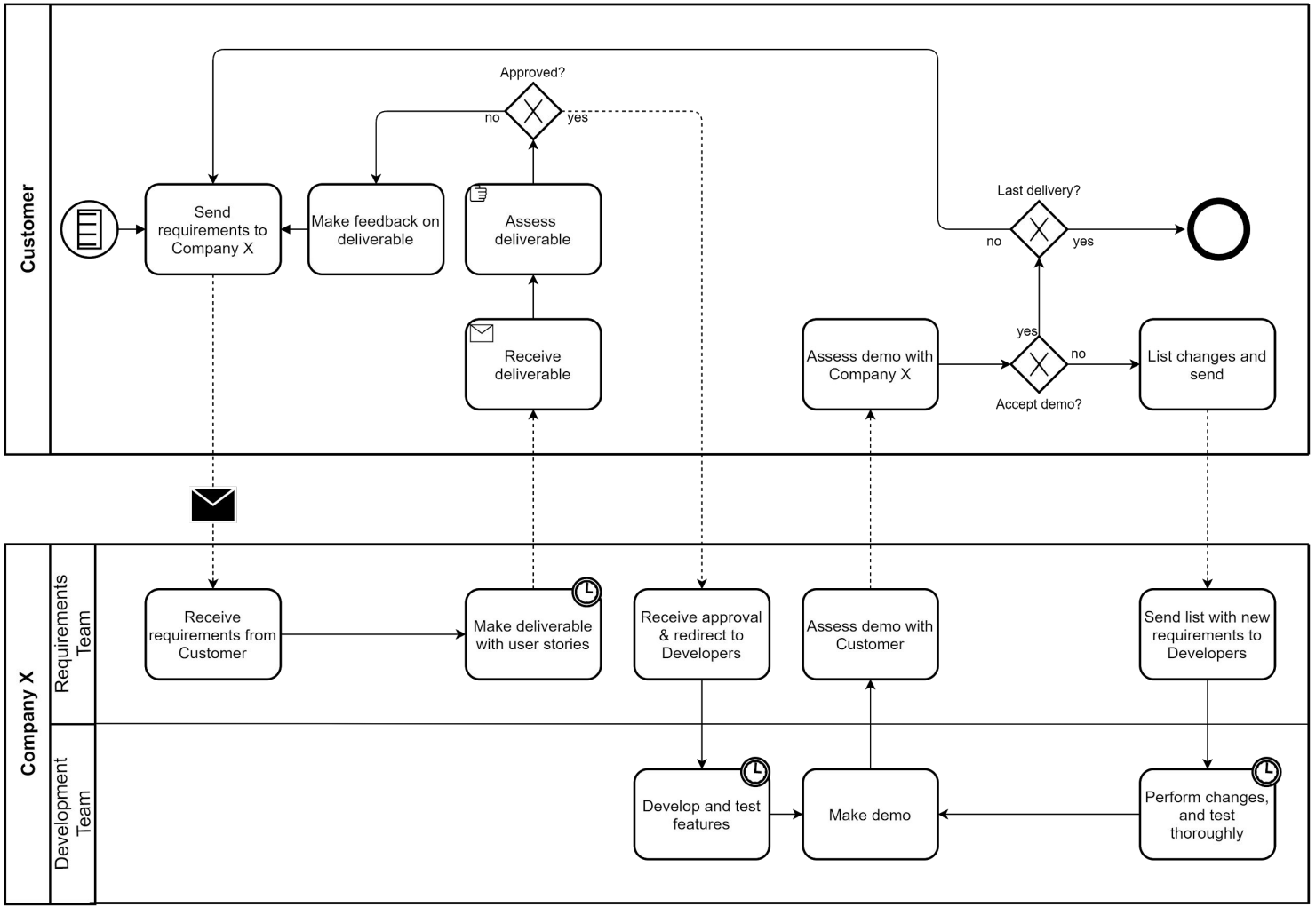
A software company in Norway **(Company X)** is developing an administrative system for the Norwegian public sector **(the customer)**. The current development process is as follows: Company X receives a fixed list of requirements from the customer. Company X then first rewrites the requirements into user stories and then groups them into a set of deliverables. For example, requirements that deal with profile administration are grouped into a deliverable entitled “User Profile”. After defining a deliverable, Company X sends it to the customer representatives for approval. Once the customer approves the deliverable, Company X sends the deliverable to a development team in Ireland that is owned by company X. The Irish team codes the requested functionality and sends back a demo to Company X. Company X and the customer assess in collaboration the work of the Irish development team. If the deliverable (demo) is accepted by the customer, Company X starts to plan a new deliverable. However, if the deliverable (demo) is rejected, Company X must ensure the necessary changes, including fixing bugs, performed by the Irish development team. After implementation, they return a new demo for approval. This cycle is repeated until the customer finally approves the deliverable.

Exercise - Find actors within the organization

A software company in Norway (Company X) is developing an administrative system for the Norwegian public sector (the customer). The current development process is as follows: **Company X receives a fixed list of requirements** from the customer. Company X then first rewrites the requirements into user stories and then groups them into a set of deliverables. For example, requirements that deal with profile administration are grouped into a deliverable entitled “User Profile”. After defining a deliverable, Company X sends it to the **customer representatives** for approval. Once the customer approves the deliverable, Company X sends the deliverable to a **development team in Ireland** that is owned by company X. The Irish team codes the requested functionality and sends back a demo to Company X. Company X and the customer assess in collaboration the work of the Irish development team. If the deliverable (demo) is accepted by the customer, Company X starts to plan a new deliverable. However, if the deliverable (demo) is rejected, Company X must ensure the necessary changes, including fixing bugs, performed by the Irish development team. After implementation, they return a new demo for approval. This cycle is repeated until the customer finally approves the deliverable.

Exercise - Figure out the current process

A software company in Norway (Company X) is developing an administrative system for the Norwegian public sector (the customer). The current development process is as follows: Company X receives a fixed list of requirements from the customer. Company X then first rewrites the requirements into user stories and then groups them into a set of deliverables. For example, requirements that deal with profile administration are grouped into a deliverable entitled “User Profile”. After defining a deliverable, Company X sends it to the customer representatives for approval. Once the customer approves the deliverable, Company X sends the deliverable to a development team in Ireland that is owned by company X. The Irish team codes the requested functionality and sends back a demo to Company X. Company X and the customer assess in collaboration the work of the Irish development team. If the deliverable (demo) is accepted by the customer, Company X starts to plan a new deliverable. However, if the deliverable (demo) is rejected, Company X must ensure the necessary changes, including fixing bugs, performed by the Irish development team. After implementation, they return a new demo for approval. This cycle is repeated until the customer finally approves the deliverable.


Customer
Approved?
no
yes
Send requirements to Company X
Make feedback on deliverable
Assess deliverable
Receive deliverable
Last delivery?
no
yes
Assess demo with Company X
yes
no
Accept demo?
List changes and send
Company X
Requirements Team
Development Team
Receive requirements from Customer
Make deliverable with user stories
Receive approval & redirect to Developers
Assess demo with Customer
Send list with new requirements to Developers
Develop and test features
Make demo
Perform changes, and test thoroughly

Exercise 4 (35%)

a) Document the process described above in a process model using BPMN.

b) Propose improvements to the process described in the case description.

c) Describe three measures (variables) that the project could use to evaluate the effects of the changes in the development process that you proposed in (b).

Propose improvements to the process described in the case description

I would start by letting the customer directly communicate with the development team in Ireland after the initial deliverable have been accepted. This will ensure that the exact information is delivered from the customer to the development team without any intermediary link.

Second of all, I would have a product owner be in constant contact with the actual development team in Ireland. Currently the development team creates the whole deliverable before it is assessed, which is a huge waste. Instead they should have a product owner either on-site in Ireland, or communicate through other means on a weekly or even daily basis to ensure that the development team is on the right track. This would remove any situation where the development team creates something that is not wanted by the customer, and it will reduce the overall time spent on useless/unwanted functionality.

Propose improvements to the process described in the case description

Separate actions will however have to be implemented if the development team continues to create bugs in the system, which is a sign of incapability or inexperience. It has to be fixed with other means such as an assessment of whether or not the some team members needs to be replaced, or if the development practices have to be changed. It is not stated in the case study what type of development process the team in Ireland uses, but I would suggest adopting a more agile process like Scrum, which would work swimmingly with my second suggestion of continuous communication with the product owner.

Exercise 4 (35%)

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Three measures used in project

- **Measure one:** Number of iterations needed for complete acceptance of a delivery.
- **Measure two:** Data about the overall time spent on each deliverable, averaged out over certain period of time can be compared to data before the process changes to see how the changes affected the average time per deliverable.
- **Measure three:** Data about the total number of bugs on average in a deliverable.

Project Report Help-session

🙌 if you need any help :)