IN5140

Smart processes and agile methods in Software Engineering

Group session 9

Agenda - you decide!

1. Info on Deliverable 2
2. Repetition - debt
3. Exam questions
4. You choose! Work on project, repetition

Project milestones throughout IN5140

What	Due date	% of total score
Deliverable 1 – Process Model	21st of September, 23:59	passed/not passed
Project Presentations on Zoom	October	-
Deliverable 2 – Project Report	9th of November, 23:59	30

- Your project group will get a shared score
- Submit deliverables here: https://devilry.ifi.uio.no/

Project milestones throughout IN5140

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Deliverable 2 – Project Report	9th of November, 23:59	30

- Next up: Deliverable 2

Deliverable 2: Length

- Group size of...

1 person	→	15 to 20 pages
2 persons	→	18 to 23 pages
3 persons	→	20 to 25 pages
4-5 persons	→	22 to 27 pages

- Same quality expected no matter group size

Deliverable 2: What is considered a page?

- Front page, table of contents and sources are not included in the page count
- Figures, tables, diagrams, etc. is included in the page count
- Figures shouldn't take more than roughly 1/3 of a page, if bigger they should be included as attachments
- There are no formal requirements to font, font size, etc., except that it should follow academic standards.
    - Considered normal: font size: 11 or 12, line spacing: 1,15 or 1,5, fonts: Arial, Times New Roman, Calibri

- Remember: Deliver only **one PDF**-file
- Deliver on Devilry (same as Deliverable 1)

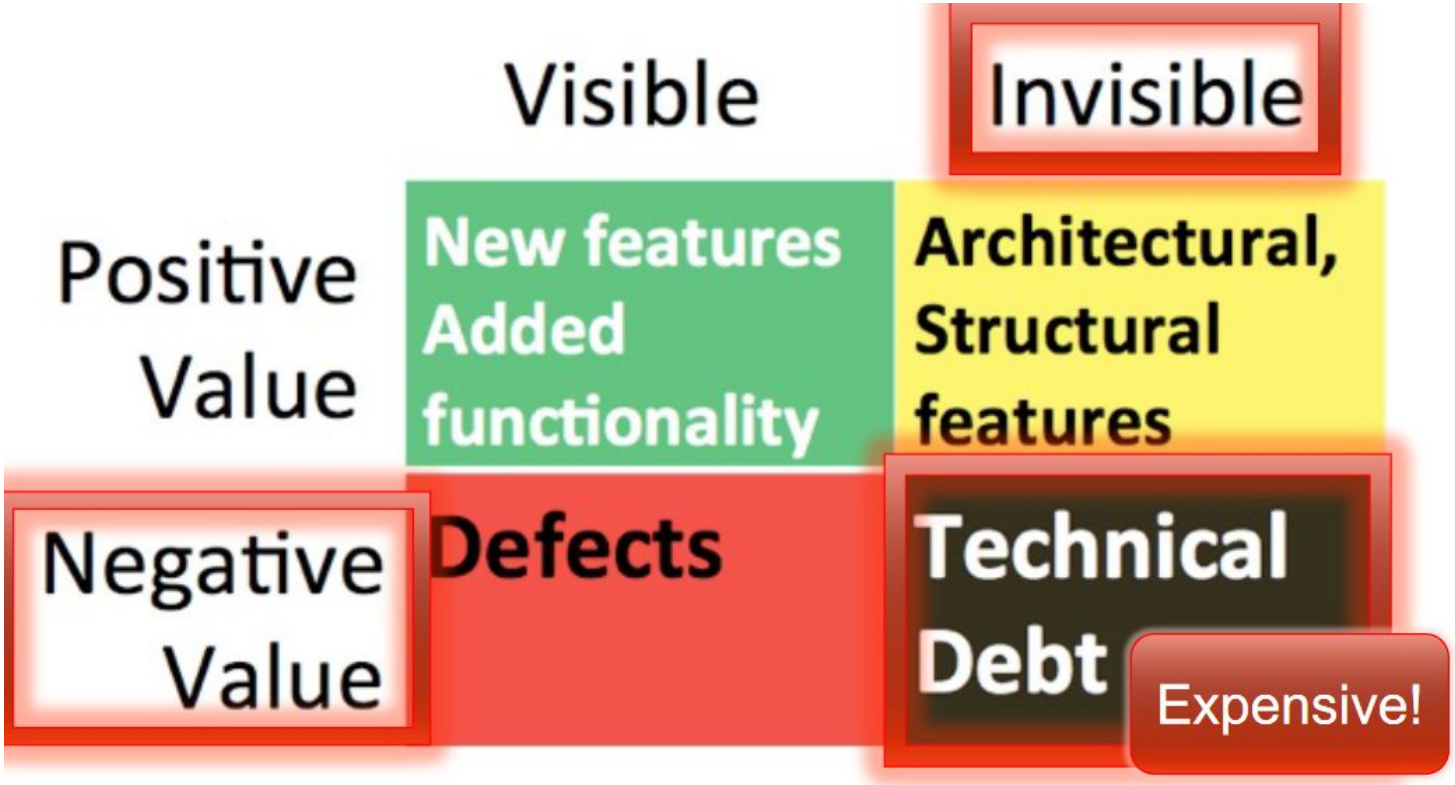
Deliverable 2:

- The report should be well-written and up to academic standards
- The report should be written in English or Norwegian. The entire report must be written in the same language
- Number of pages
- The report should have a well defined structure
- Correct use of references, with **one** consistent reference style throughout the report

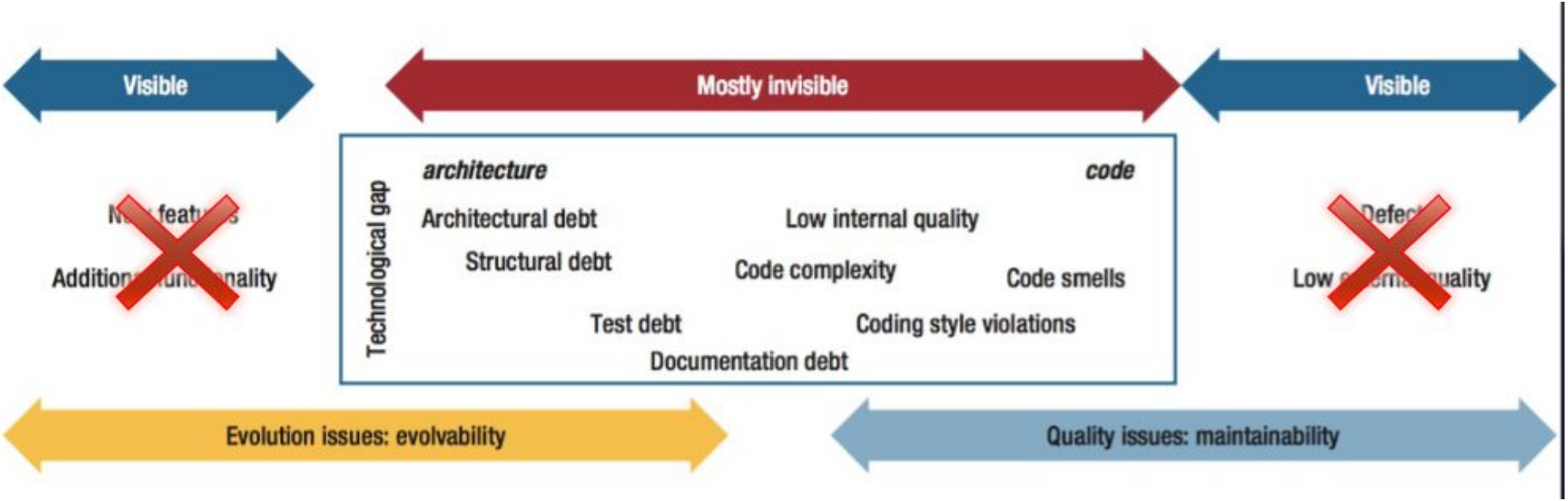
Questions?

Technical-, social- and process debt

Technical debt



Technical debt

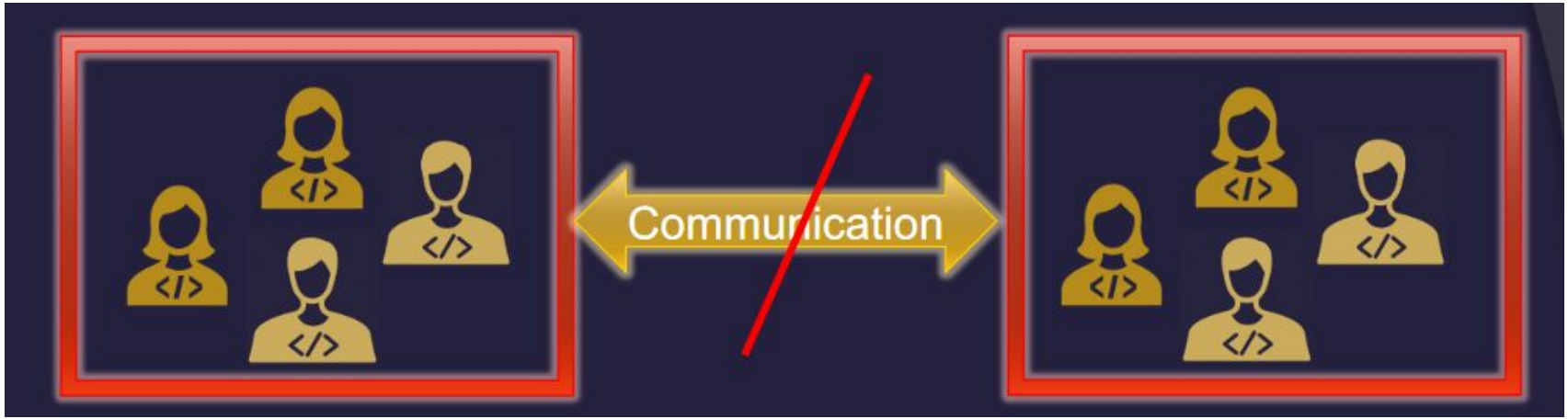


Are there any cases where technical debt can be useful?

- High business risk involved
  - e.g. start-ups
- Prototyping

Social debt

- “The presence of sub-optimality in the development community, which causes a negative effect”



Process debt

- Sub-optimal process design
- Divergence from optimal formal process
- Deficiencies in the infrastructure that might be beneficial in the short term
- Negative long term effects

How do we fix technical debt?

Proactive approaches:

- Education
- Culture
- Organization
- Process
- Guidelines
- Visualization

Continuous approaches:

- Semi-automatic identifications
- Code reviews
- Retrospectives
- Technical leadership
- Dedicated refactoring sprints

Reactive approaches:

- Impact map
- Roadmap evaluation
- Resources to remove TD
- TD information used in planning and budget

How can we prevent or fix the other types of debt?

- Social debt
- Process debt

Open question.

IN5140 - Exam 2017

- Which types of waste (as defined in Lean) are you likely to encounter in Scrum?

IN5140 - Exam 2017

- Wishful thinking
  - Focusing on features and functionality which potentially can be useful in the future for customer
    ➔ can be regarded as non-added value, and therefore waste.
- Overengineering
  - Investing too much time into architecture and design of software product in the beginning is wasteful
- Unfinished work at the end of a sprint
  - Can cause team members to be idle
- Too much planning and documentation for a product which does not exist yet is also considered to be waste.

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IN5140 - Exam 2017

- **List and describe the four most popular agile meetings**

IN5140 - Exam 2017

- **List and describe the four most popular agile meetings**

- Sprint planning
- Daily standup meeting
- Sprint review meeting
- Sprint retrospective meeting

Exercise

Answer the following questions:

- Describe the difference between objective and subjective data.
- Describe the difference between quantitative and qualitative data.
- Give one example of each of the types objective, subjective, quantitative and qualitative data that you used or could have used in your compulsory project in IN5140.

Exercise

Answer the following questions:

- **Describe the difference between objective and subjective data.**
- Describe the difference between quantitative and qualitative data.
- Give one example of each of the types objective, subjective, quantitative and qualitative data that you used or could have used in your compulsory project in IN5140.

Objective data vs subjective data

Objective data is data based on facts. Sources for objective data is empirical research such as experiments, and to some extent case study (although this one can be either subjective or objective depending on the data collected, as well as other biases that may be present).

Subjective data is data based on emotions and/or personal beliefs. Any other "data" that is not objective, is subjective. This means that research methods like surveys, interviews, field studies (depending on how the field study is performed) are sources for subjective data, even if the data is "honest" or in huge amounts, it will still remain subjective as long as it's not based on factual evidence.

Objective data vs subjective data

It is important to differentiate between these two, and use the two kinds of data only where they are appropriate. For example, people tend to quote subjective data as if it was fact. Here it is important to be aware of not just what the data says, but also the sources for the data. If you are doing software process improvement in your organization or project team and want to use data to support your changes, you have to be aware of what kind of data you are using.

Exercise

Answer the following questions:

- Describe the difference between objective and subjective data.
- **Describe the difference between quantitative and qualitative data.**
- Give one example of each of the types objective, subjective, quantitative and qualitative data that you used or could have used in your compulsory project in IN5140.

Quantitative data vs qualitative data

Quantitative data is data that is quantifiable such as numbers.

Qualitative data is data that comes in text form, or other representations that are not quantifiable, but can be a lot more in-depth.

Quantitative data vs qualitative data

There is a common misconception that quantitative data is objective data, and that qualitative data is subjective data. This completely depends on what kind of data representation the data is in. Quantitative data is often found in research methods like surveys, where you can either answer to questions in numbers, or you can use Likert scales that can be translated to numeric values (very bad = 1, neutral = 3, very good = 5, etc.), whereas qualitative data often comes from interviews and discussions where the data can be a lot more in-depth. The quantitative data is a lot more limited in its representation, so it is important to get the kind of data that you need for your purpose.

Quantitative data vs qualitative data

If you want to know the opinion of many people then it makes sense to collect quantitative data, instead of qualitative data. Imagine going through thousands of replies that are all in text form, describing indepth the positives and negatives (qualitative data), compared to data saying that 1200 people think this, and 500 people think that (quantitative). Big amounts of qualitative data has its place though, for example in product reviews online, it is nice knowing what people who bought the product thinks of it more in-depth than a number ranging from 1-10.

Exercise

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- **Give one example of each of the types objective, subjective, quantitative and qualitative data that you used or could have used in your compulsory project in IN5140.**

Give one example of each of the types objective, subjective, quantitative and qualitative data that you used or could have used in your compulsory project in IN5140.

No clear answer, will depend on your project.

Most important that you know the difference between the data types attributes while discussing.

BPMN exam exercise

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).

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.

BPMN exam exercise to be continued next week in detail

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).

Project Report Help-session

🙌 if you need any help :)