GIS-E4030 GIS Development D

Learning session 6

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School of Engineering

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Today’s topics

Project delivery

- **Providing the agreed-upon artefacts and/or services to the customer**

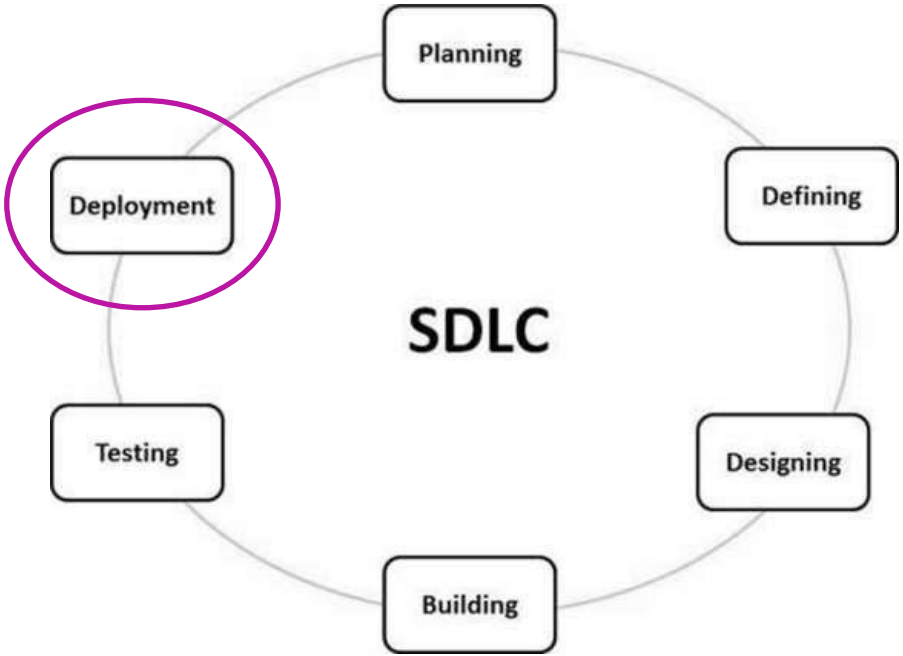
Project closing

- **Concluding all the work related to the project**

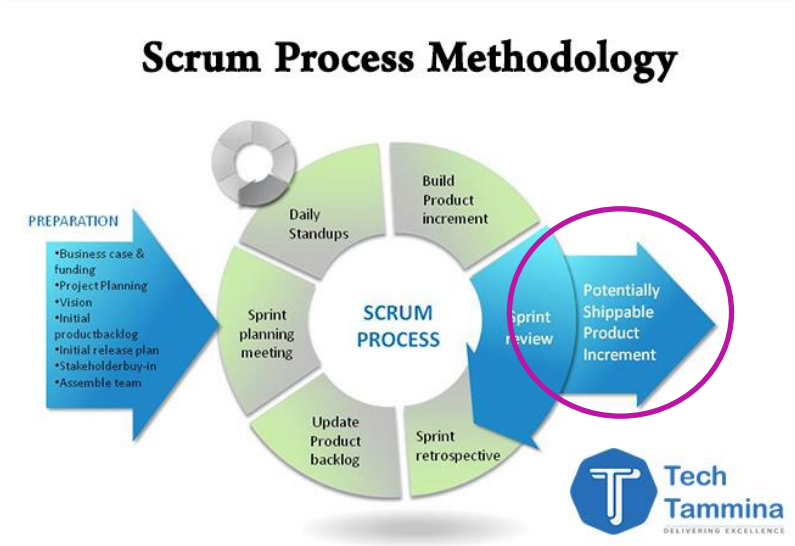
Project delivery

The software project lifecycle

The whole project



Each Scrum sprint



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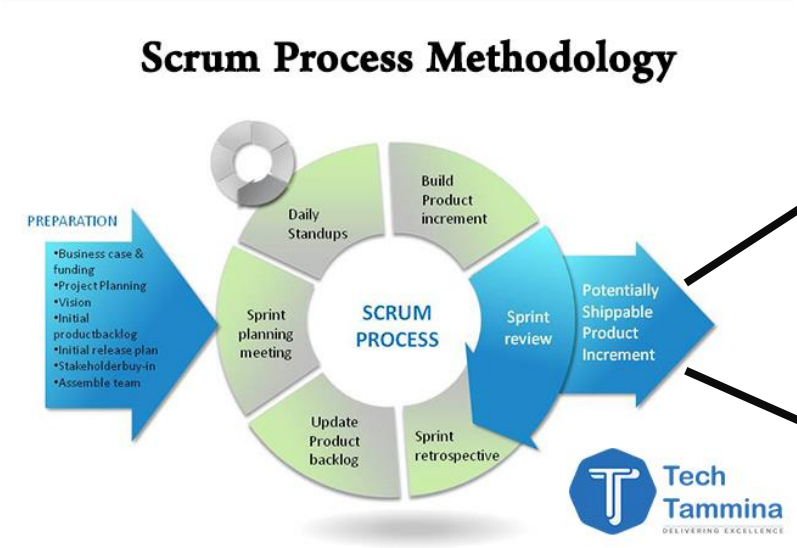
Sources: https://www.tutorialspoint.com/sdlc/sdlc_overview.htm
http://www.techtammina.com/blog/how-is-software-application-development-process-executed-by-scrum-methodology/

Project lifecycle beyond the end of the development project



Further development planning → Next version / new product development decision → The next project starts (more Scrum)

Maintenance (more Scrum?) → End-of-life and replacement → Work on this version ends

What it means to deliver a project?

- **What kind of delivery are you making?**
  - Demo to a customer
  - Alpha version to customer/testers/public
  - Internal release
  - Major release to customer
  - Public release
- **What kind of agreement do you have with your customer(s)**
  - What needs to be delivered?
  - How will the delivery happen?
  - What will happen after the delivery?
  - What will happen if the delivery fails/is late/etc.?

What needs to be delivered?

- **The service running somewhere?**
- **Documentation?**
- **Project report?**
- **Source code?**
- **Presentation?**
- **Something else?**

- **Will the delivery (or parts of it) be public**
  - Source code in a public git repository
  - Public final report / seminar
- **Will delivery (or parts of it) be confidential**
  - Private repository, private documentation, NDAs?

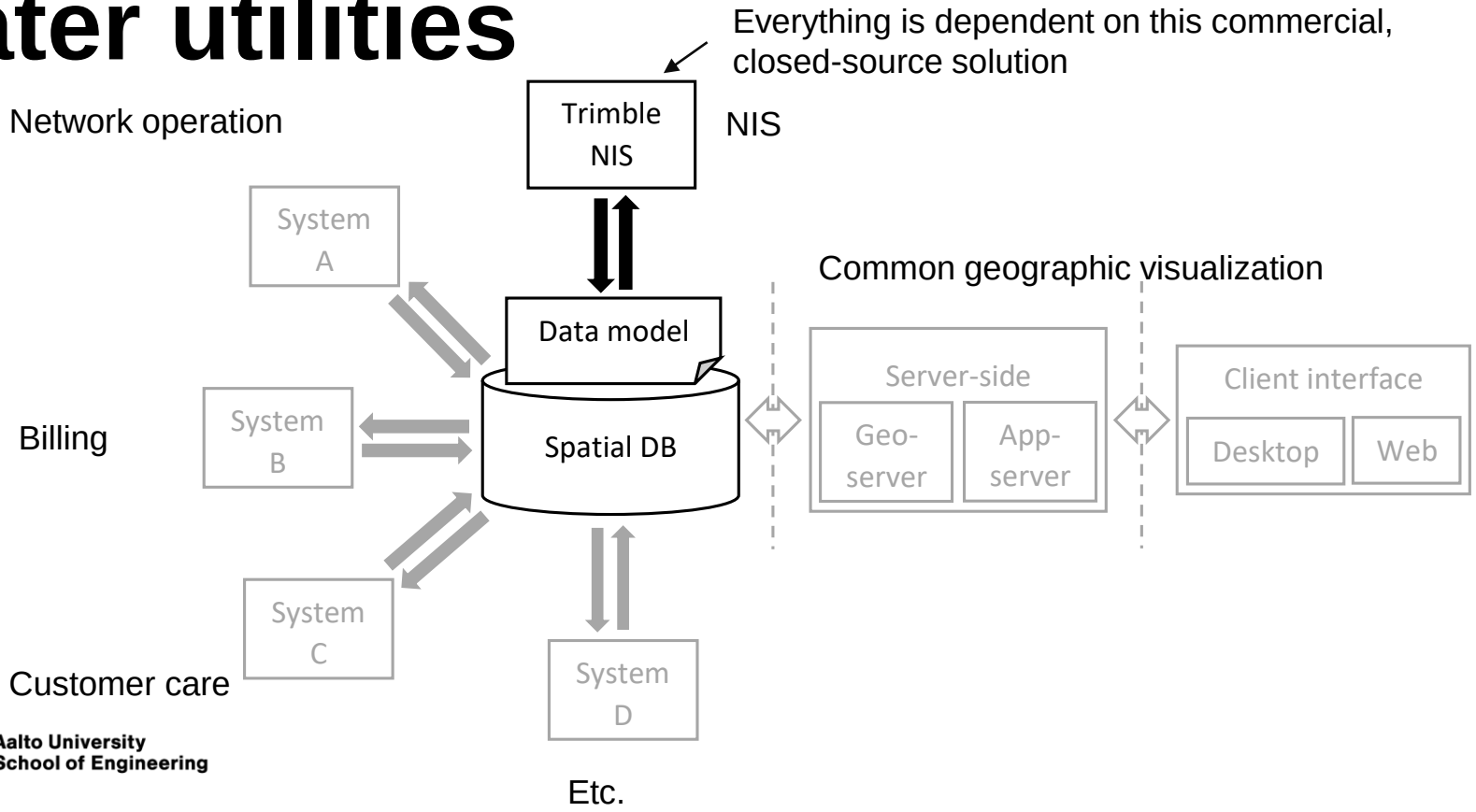
Who will the software be delivered to?

- **Who is the customer?**
  - Who in the customer organization is responsible for accepting the delivery?
- **Are there other stakeholders that are part of the delivery?**
- **Are there many customers?**
  - E.g. Apotti, other large public sector services

Receive a service

- **When customer receives a service created by the developer they**
  - Gain ownership of the service (to the extent agreed on in a contract)
  - Can also receive the responsibility for the technical management and future development of the service
- **How, and to what extent, a service is transferred from the developer to the customer can vary a lot**
- **Many organizations outsource majority of the technical responsibility for services**

Service lock-in example: municipal water utilities



Receive a report

- **A project report typically is not a technical description of the results, but often more focused on**
  - What is the significance of the project
  - What is the benefit gained from the project results
  - What the project results can be used for
- **Report can also describe what was done in the project**
  - report of amount of work done
  - Other expenses
  - Related results (if applicable)

Report outline example (research project)

- **Small**
  - Three partners
  - < 200 000€ total funding
  - 2 years
- **Focuses on research, and description of the research results**
  - Commercial project report probably has different focus

1. **Introduction**
2. **Research objectives**
3. **Research partners**
4. **Results**
5. **Discussion**
6. **Project finances**

Reporting project finances

- **The customer wants to know how the expenses you're going to bill them have been created**
- **Typically project expenses can be divided into**
  - Wage-related expenses
  - Other expenses

- **Wage-related expenses**
  - Salaries (e.g. 5000€/month)
  - Indirect labor costs (e.g. 50%)
  - Overheads (e.g. 80%)
  - Profit (e.g. 20%)
- **Wage-related expense example:**

$$5000 * 1.5 * 1.8 * 1.2 = 16200$$

Reporting project finances

- **The customer typically wants to know how wage expenses have been formed**
  - Level of detail can vary from “total number of person-months used” to “15 minute precision with description of work”

- **Other expenses can include**
  - Travel (project-related)
  - Outsourcing
  - Materials and equipment
  - Miscellaneous (e.g. postal expenses)

- **In my experience, wage-related costs are the majority of project expenses**

Receive documentation

- **What is the goal of the documentation you want from the developer?**
- **Describe the system?**
  - Introduce it?
  - Act as a user manual (end user, or administrator)?
  - Act as a developer’s manual?
  - Describe non-technical aspects of the system?

- **What is the difference between documentation and report?**
  - Or is there one?

Receive source code

- **Source code is often not, by itself, sufficient to run a software system!**
  - Libraries and 3rd party software
  - Connections to external services
  - Data
- **Build automation tools can help with managing some aspects**
  - Libraries and dependencies

- **Often, source code is also useless without documentation to explain it (and the system)**

Receive an installation package

- **An installation package is something you can run to install the system into condition where it can be run**
  - A newly-installed system might not be useful, however
- **The installation package can compile the system in place**
  - Used sometimes in *nix environments (but I wouldn't recommend it)
- **The installation can use a compiled version of the system**
  - Complicated if the same installation routine needs to cover a number of environments (can solved by having separate installation packages)

Receive a presentation

- **Final seminar is a staple of research projects**
  - The goal is to disseminate the research results
    - It's not very effective for that, really
- **What would be the reason for a private sector client to request presentation?**
  - What would they want out of it?

- **Presentation is given typically once (or limited number of times)**
  - Thus it has a different function from documentation etc.

- **Does the presentation just show you're done what you promised?**
  - Is the client assessing you?

After project delivery

- **Maintenance?**
- **Further development?**
- **Other projects for the same customer?**
- **No further business**
  - Customer does not want to cooperate with you
  - You don’t want to cooperate with the customer

- **If you maintain the software, the work can continue for years after the end of the development project**

- **NEVER assume that the work on a project is over when it has been delivered to the customer**

Project closure

Delivery and closure

- **Project delivery happens when you turn the project results over to the customer**
- **Project closing is when you conclude the work in the project**
  - **In a controlled manner** that allows you to continue with further operations

Closing a project

1. **Assurance that all work has been completed**
2. **Assurance that all agreed upon project management processes have been executed**
3. **Everyone agrees that the project has been completed**

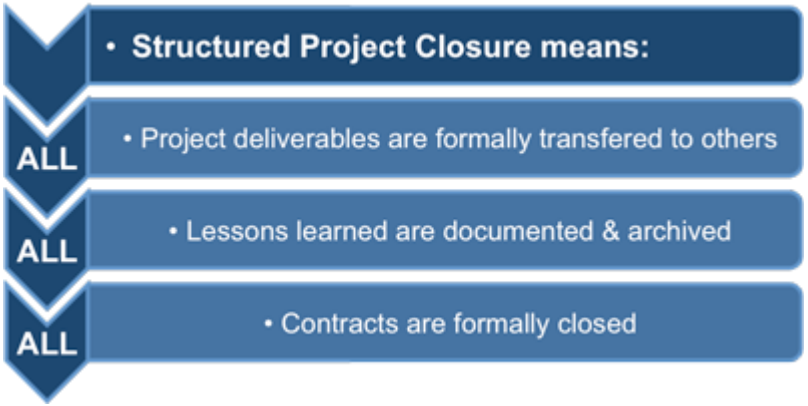
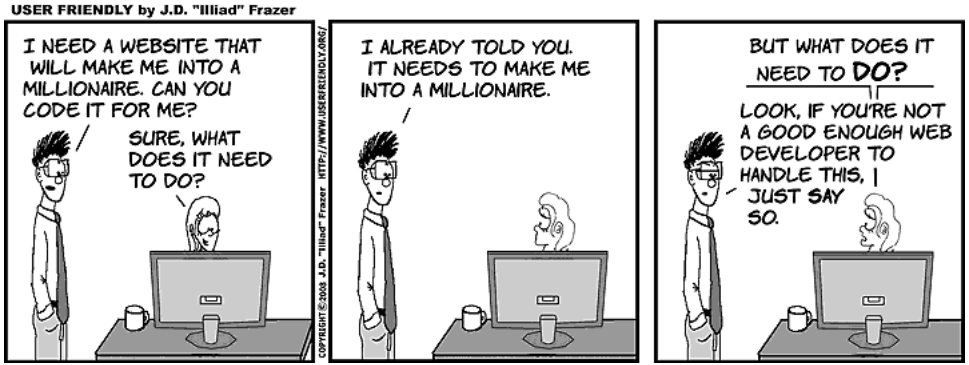


Image source: http://www.free-management-ebooks.com/faqpm/processes-07.htm

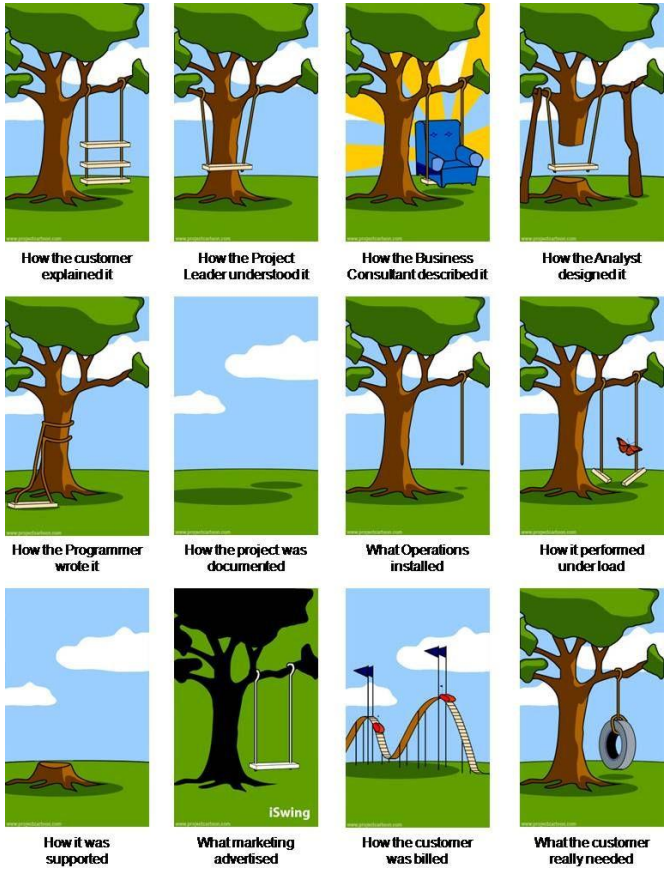
Project closure and completed work

- **In software projects work often continues after the end of a development project**
  - Then all work has not been completed
  - This becomes a problem especially if the work ties up development resources that would be better used for new development work
  - In such case the project has not been properly closed and responsibilities transferred to people in charge of further work



Project closure and agreed work

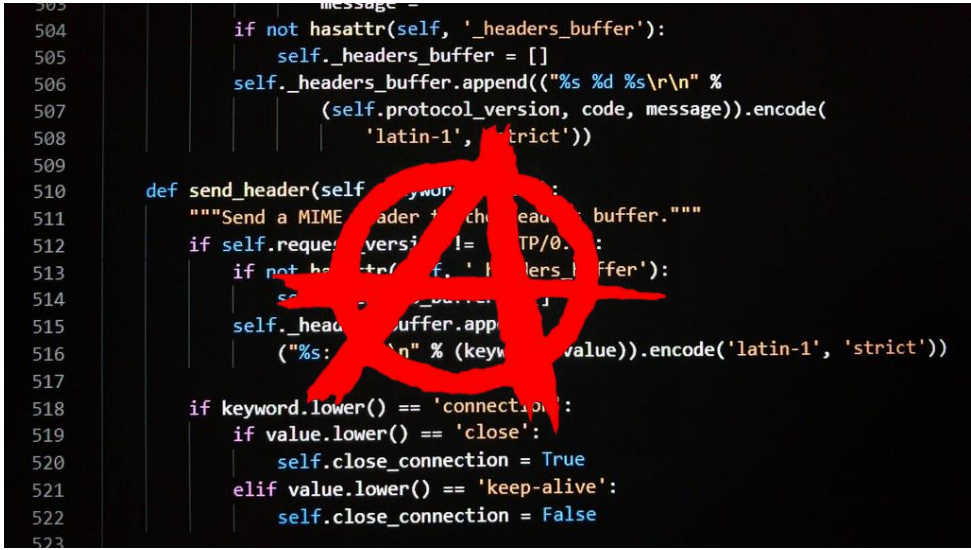
- **In software projects it is all too common to deliver unfinished products**
  - Then the agreed upon work is not finished
  - The reason can be bad developer: the delivery intentionally does not contain what it should
    - Developer can ask for more money for future patches
  - But the reason can also be bad customer
    - Developer might provide what was asked for, but it is not what customer needed



Project closure and continuing work

- A big problem I've encountered several times is:

1. Formally, the project has ended
2. Software development / maintenance work continues
3. Nobody is responsible for managing the work
4. Nobody is paying for the work (This problem might not be that prevalent in the private sector)



Project closure and abandonment of results

- **Another problem I've encountered often is:**

1. **Project is delivered**
2. **Everyone goes home**
3. **Nothing is done with the results**
    1. Although sometimes this is not exactly true: even if the project is never followed, the lessons learned can be of some use

Course project delivery

Course deliverables

- **The project**
- **Will be delivered in a manner and format arranged with the customer**
- **Delivery on Friday, May 21st**
- **The learning portfolio**
- **Will be returned to MyCourses (Materials and Portfolio submission –page)**
- **Deadline is on Sunday, May 30th, at 23:55**

Project delivery on this course

- **The delivery you need to do is based on the state of your project on Friday, May 21st**
- **The delivery includes**
  - Presentation of the project that consists of demonstration of working software and discussion
  - Source code delivered to the client
  - Documentation

Documentation for the project

- **Documentation should include**
  - Overview of the system
  - instructions for installing starting the system
  - Description of the system architecture
  - Detailed description of the implementation
  - Description of the data model
  - Explanation how the data model takes expandability into account
- **Most importantly, the documentation should be well-structured, readable, informative, and concise**

Source code delivery

- **Package the code in a manner where it can be sent to the customer**
  - By email, by providing a place where to download, etc.
  - Just access to code repository is not sufficient
- **Sufficient data to demonstrate the system should be included**
- **Documentation should include instructions how to set up the system and get it running**
  - Make the instructions clear, and test that the procedure work

Portfolio

- **Part 1: what have you learned on this course?**
  - Focus on the project work
  - Remember pre-assignments
  - You can also cover the learning sessions, etc.
  - It would be beneficial to include the good, the bad, as well as the ugly
- **Part 2: Time keeping**
  - This is the excel, basically
- **Part 3: reflection**
  - In this part, you should go beyond “what was done”
  - Reflection means to become aware of your own thinking processes and being able to explain them to others
  - E.g. “what did you expect to learn” vs. “what did you learn”