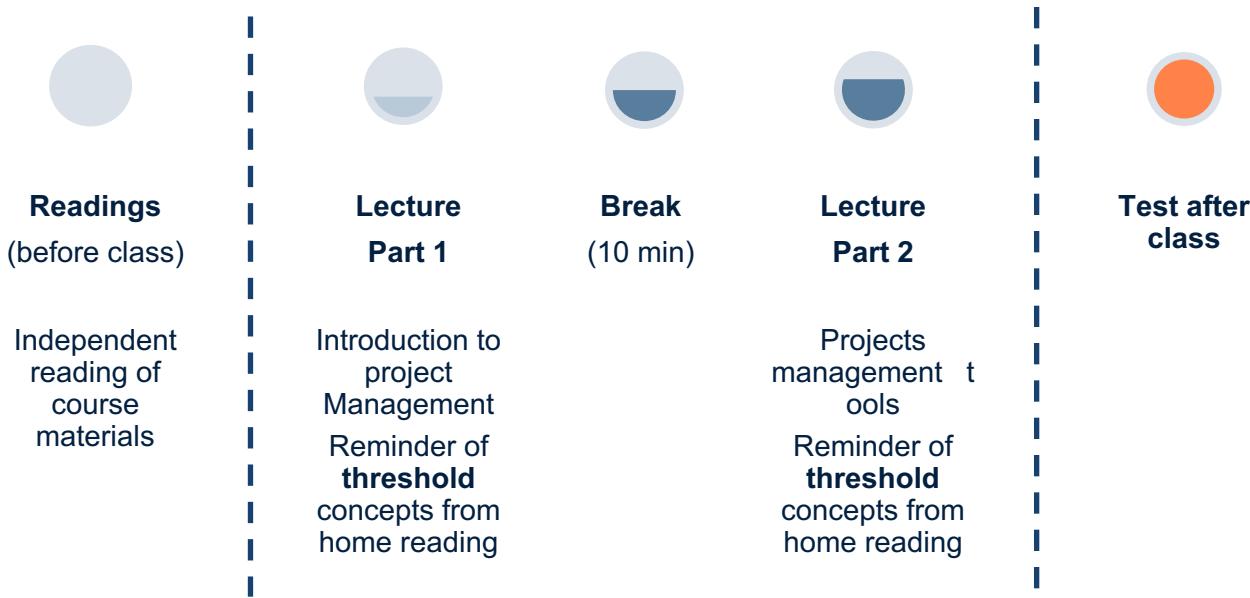


# PROJECT MANAGEMENT

Nerine Mary George  
Entrepreneurship & Innovation (ETKS)  
Luleå University of Technology



# Agenda



# Preparatory Readings

- Prior to this session you should have read:



## Compulsory:

- Project Management, 4<sup>th</sup> Edition, Bo Tonnquist
  - Chapter 1 – Governance – **p13-26**
  - Chapter 2 – The Project Methodology – **p27-34**
  - Chapter 3 – Agile Methods – **p45-60**

## Optional:

- Anthony et al, 2019 – The Top 20 Business Transformations of the Last Decade
- Pinto, 1996 – How to fail in project management (without really trying)
- Anthony et al, 2019 – The Transformation 20
- Abraham-Dukuma, 2021 – Dirty to clean energy
- Orsted, 2021 – Our Green Business Transformation

# Intended Learning Outcomes

After completion of this module you should be able to:

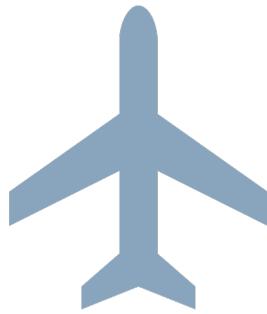
- a) Describe what an organization is, demonstrate knowledge of foundational theories that explain the emergence of organizations, and detail various perspectives on organizational design. Argue for why organizational design and management is relevant in the context of engineering.
- b) Outline and contrast different types of physical organizational structures and explain the influence of technological development on recent trends in organizational design.
- c) Specify the different attributes of internal organizational culture and external environment and connect this to their role in organizational design.
- d) Account for innovation and change and their impact in how industrial activities are managed
- e) Be able to discuss attributes of technology-based business models and the dynamic of value creation, value delivery and value capture in industrial enterprises, including interaction with the value chain.
- f) Identify and name different **types** of projects, **stages** of a project, project **roles**, project management perspectives and project management **tools**.

# REFRESHER OF KEY CONCEPTS #1

# Questions

- Have you previously worked in projects?
- Do you have any practical knowledge on project management methodology?
- Do you see yourself as project managers?

# Project

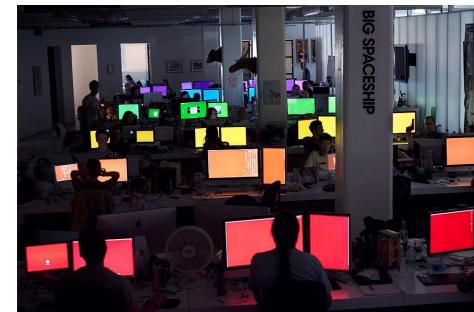


A temporary endeavour  
that has



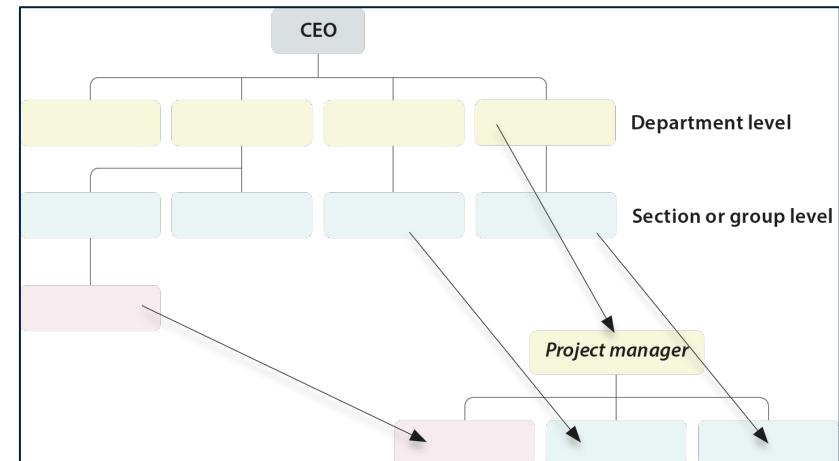
a specific and unique goal,  
and usually a budget

# The Cases



# What defines a project?

- A **temporary** organization
  - Time constrained and 'independent' from parent organization
  - Non-repetitive and unique results
  - Can be both internal (for company) and external (for clients)
  - Project should achieve some kind of goals
  - Individuals can be involved in several projects at once



# 4 key criteria for projects

1. **Specific goal** – a unique assignment
  - Preparing stadiums for the world cup
2. **Specific time period**
  - 2022
3. **Specific resources** – an independent budget
  - Estimated 222 billion USD
4. **Unique work arrangements**: a temporary organization
  - AECOM, Albert Speer & Partners & others



*Preparations in Qatar for the FIFA World Cup 2022*

# Tasks that fit the project definition – but typically aren't projects



**Question:** are these projects according to the project definition?

- ✓ Specific goal
- ✓ Specific time period
- ✓ Specific resources
- ✓ Temporary organization

**Question:** why is it unsuitable to complete all tasks that comply with the project definition, as projects?

- Project methodology time consuming
- Business-as-usual (same as it is for companies)

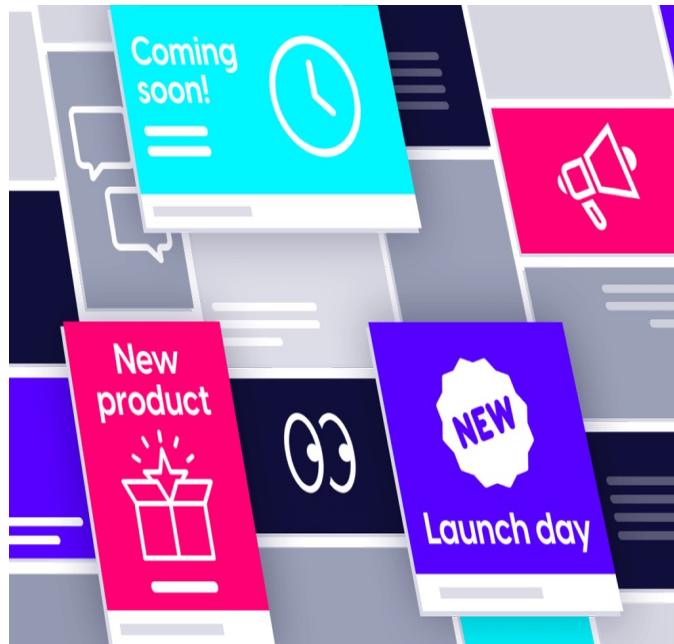
# Project – Programme - Portfolio



- Project = Unique, transient endeavour, clearly defined deliverable
- Programme = Groups of related projects, aggregated business value
- Portfolio = Groups of programmes and projects, strategic

<https://www.ozassignments.com/solution/ppmp20012-program-and-portfolio-management-information-systems>

# Project – Programme – Portfolio - Example



LULEÅ  
UNIVERSITY  
OF TECHNOLOGY

# The Project Model



+



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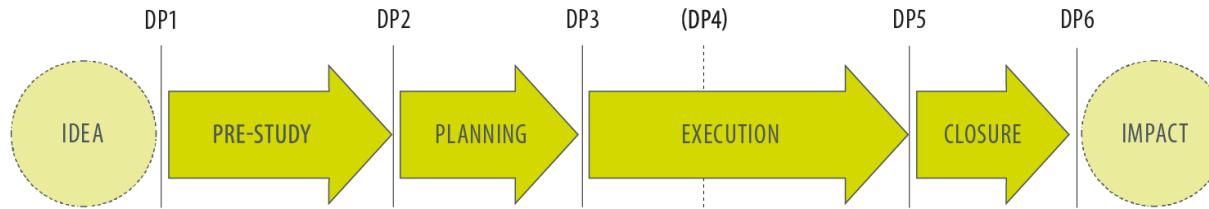
A description of the project process with defined phases and decision points



A description of responsibility and authority for each role within the project

Templates of documents needed to initiate, plan and follow up on a project

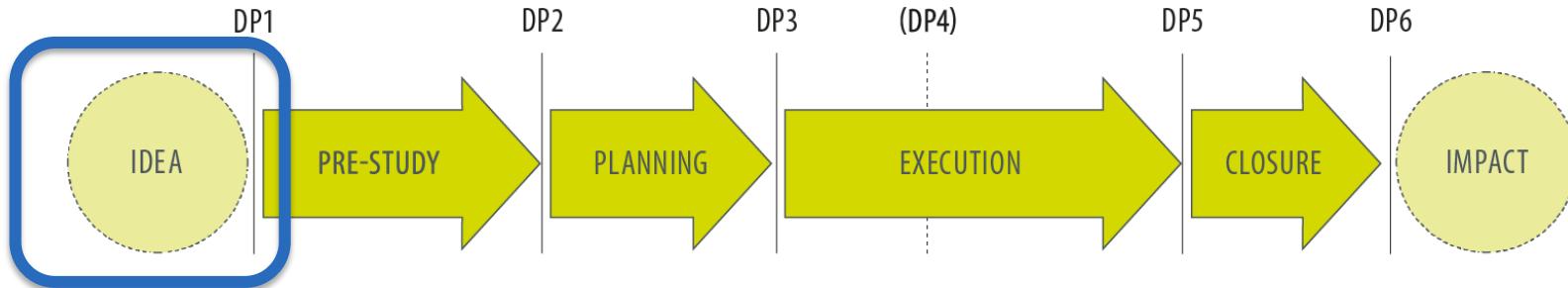
# The Project Lifecycle: New Product Example



► The phases of the general project model: *Idea, Pre-study, Planning, Execution, Closure, Impact*.



# Idea



► The phases of the general project model: *Idea, Pre-study, Planning, Execution, Closure, Impact.*

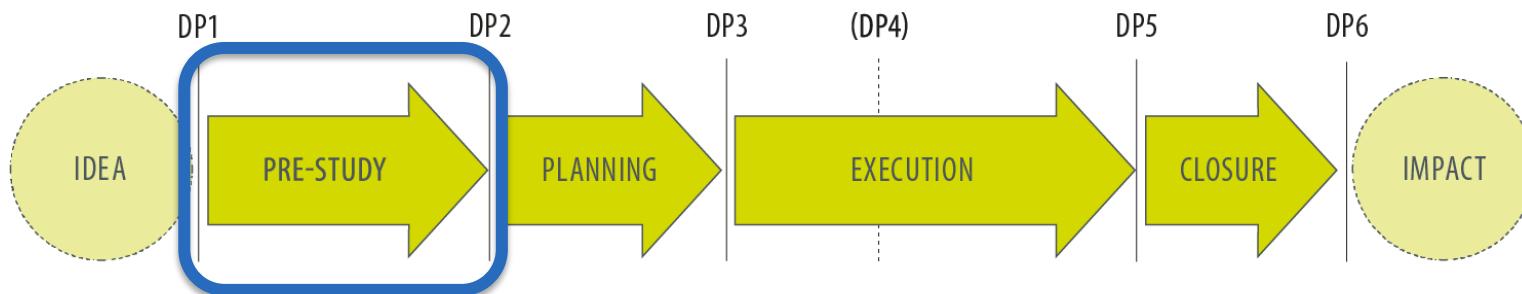
**Idea:** *This is where the idea of launching a new product is born.*

*Team brainstorming, market research, and identifying opportunities.*

- Ideation not technically part of the project, but fundamental to its creation



# Pre-Study

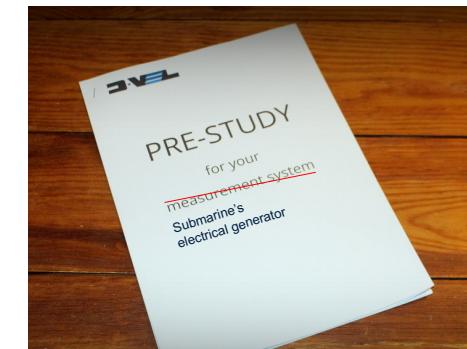


► The phases of the general project model: *Idea, Pre-study, Planning, Execution, Closure, Impact.*

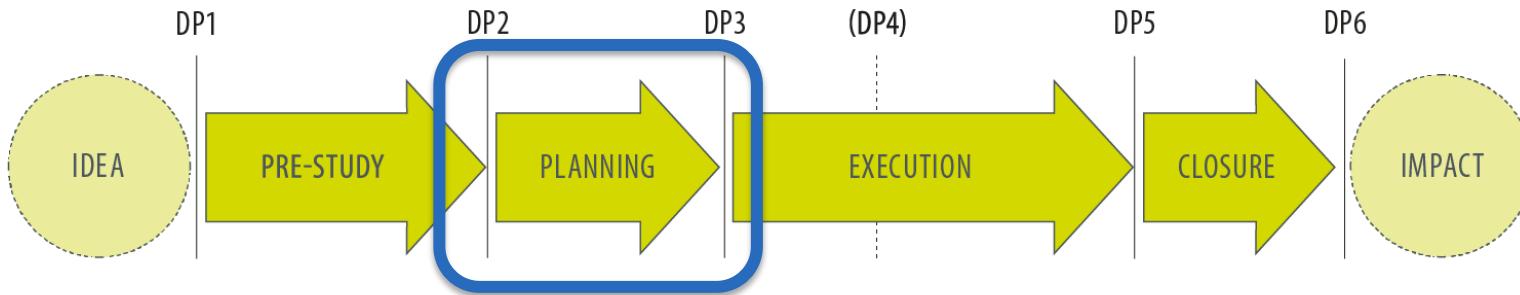
**Pre-study:** *Analyzing the feasibility and viability of the new product.*

Market analysis, competitive analysis, initial concept development, and rough cost estimates.

- The pre-study decreases uncertainties about the proposed project.



# Planning

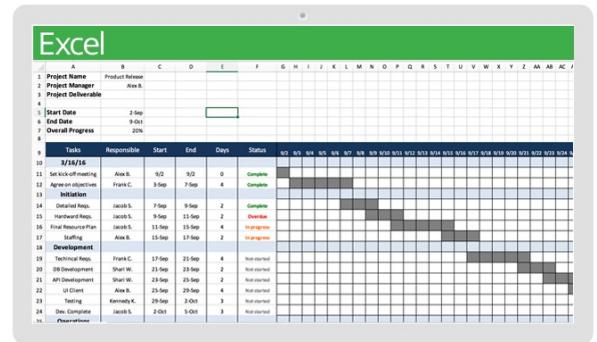


- The phases of the general project model: *Idea, Pre-study, Planning, Execution, Closure, Impact.*

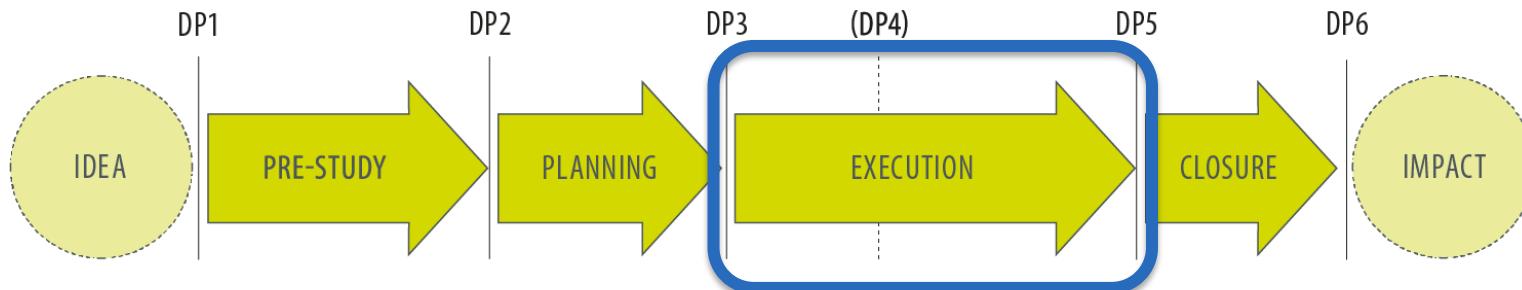
**Planning:** *Creating a detailed plan for the new product launch project.*

*Developing a project plan, setting goals, defining scope, scheduling tasks, budgeting, and resource allocation.*

- Drawing up a plan for the project



# Execution



► The phases of the general project model: *Idea, Pre-study, Planning, Execution, Closure, Impact.*

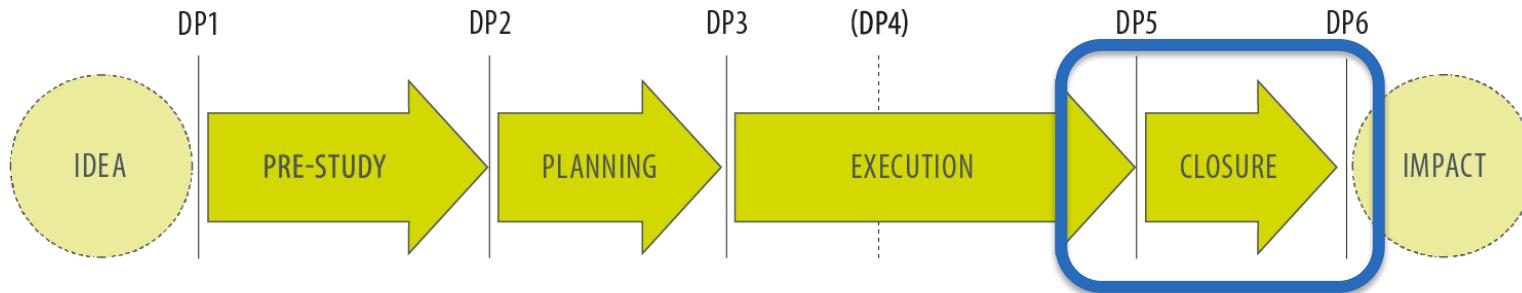
**Execution:** *The project is ‘live’- carrying out the actual work to bring the new product to market.*

Product development, quality assurance, marketing campaigns, production, and sales activities.

- Getting the project “done”



# Closure



► The phases of the general project model: *Idea, Pre-study, Planning, Execution, Closure, Impact.*

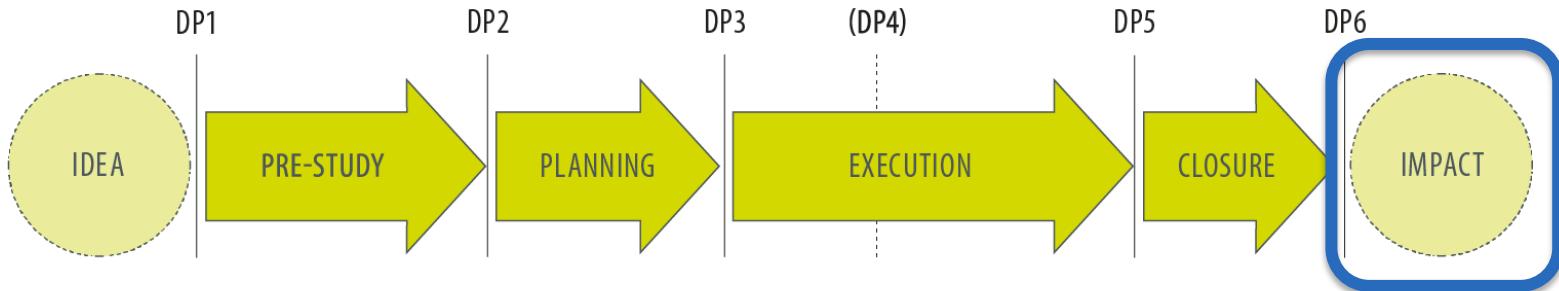
**Closure:** *What are the lessons learned from the project? How can these lessons be shared with the rest of the organization? Did we deviate from the cost and time plan?*

- Phasing out the project team and capturing lessons learned

**LESSONS  
LEARNED**



# Impact



► The phases of the general project model: *Idea, Pre-study, Planning, Execution, Closure, Impact.*

**Impact:** Assessing the effects and results of the new product launch

Monitoring sales, customer feedback, market share, and measuring the impact on the organization.

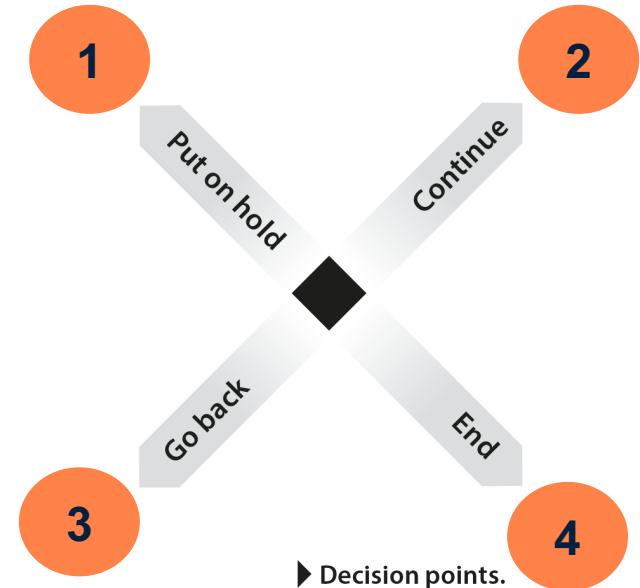
- Not technically part of the project, but important for assessing whether the project delivered the promised benefits



# Project Lifecycle Decision Points

Gates		Description
G1	Initiating the project	Defining the task Setting boundaries for the project and pre-study
G2	Initiating planning	Approving the pre-study /Business Case Setting boundaries for planning
G3	Initiating execution	Approving the project plan Giving the go-ahead on initiating the project
G4	Reviewing	Approving sub-results, deciding on larger changes (Not mandatory as a decision point)
G5	Approving handover	Approving the delivery Initiating impact realization
G6	Closing the project	Approving the final report Ending the project

► Gates in the general project model.



# Project Management Triangle



- Project Management Triangle (triple constraint, iron triangle, project triangle)
- The quality of work is constrained by the project's budget, deadlines and scope (features).
- The project manager can trade between constraints.
- Changes in one constraint necessitate changes in others to compensate or quality will suffer.

"Good, fast, cheap. Choose two."

# A clip on TCQ Triangle

The slide features a yellow triangle icon on the left and the APM logo on the right. The text 'Starting Out in Project Management' is displayed in orange, followed by 'The relationship between time, cost and quality' in black. A small button at the bottom right says 'START YOUR PROJECT'.

Starting Out in Project Management  
The relationship between time, cost and quality

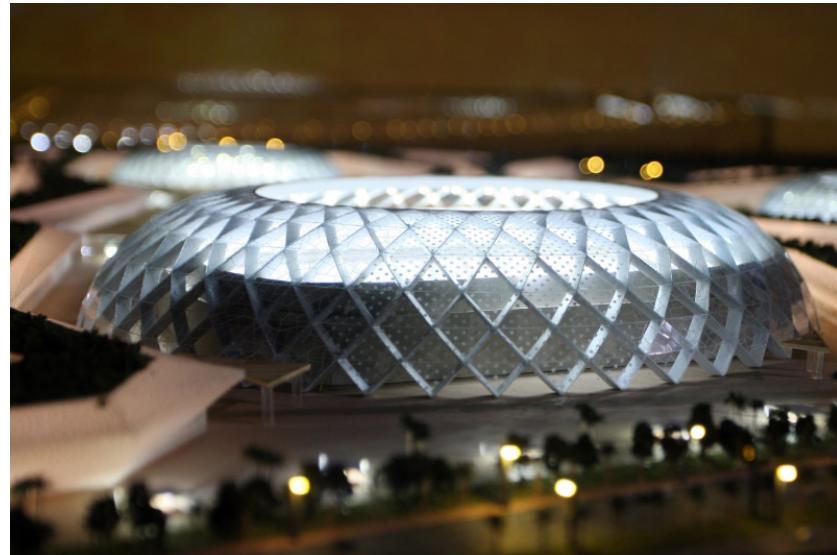
Start your project

# Discuss

Can you think of an example of a project that has had to compromise/adjust either the time, cost, or quality dimension of the project management triangle? What happened and does the logic of the triangle hold?

# TCQ Triangle and Qatar

- “Organisers of the 2022 FIFA World Cup in Qatar are planning to build just eight stadiums ahead of the tournament, despite originally pledging to use 12....with work on the airport and metro links suffering major delays, along with rising costs relating to tournament preparations, the organisers have decided to cut a third of the originally suggested stadiums.”



# The Project Model



+



+



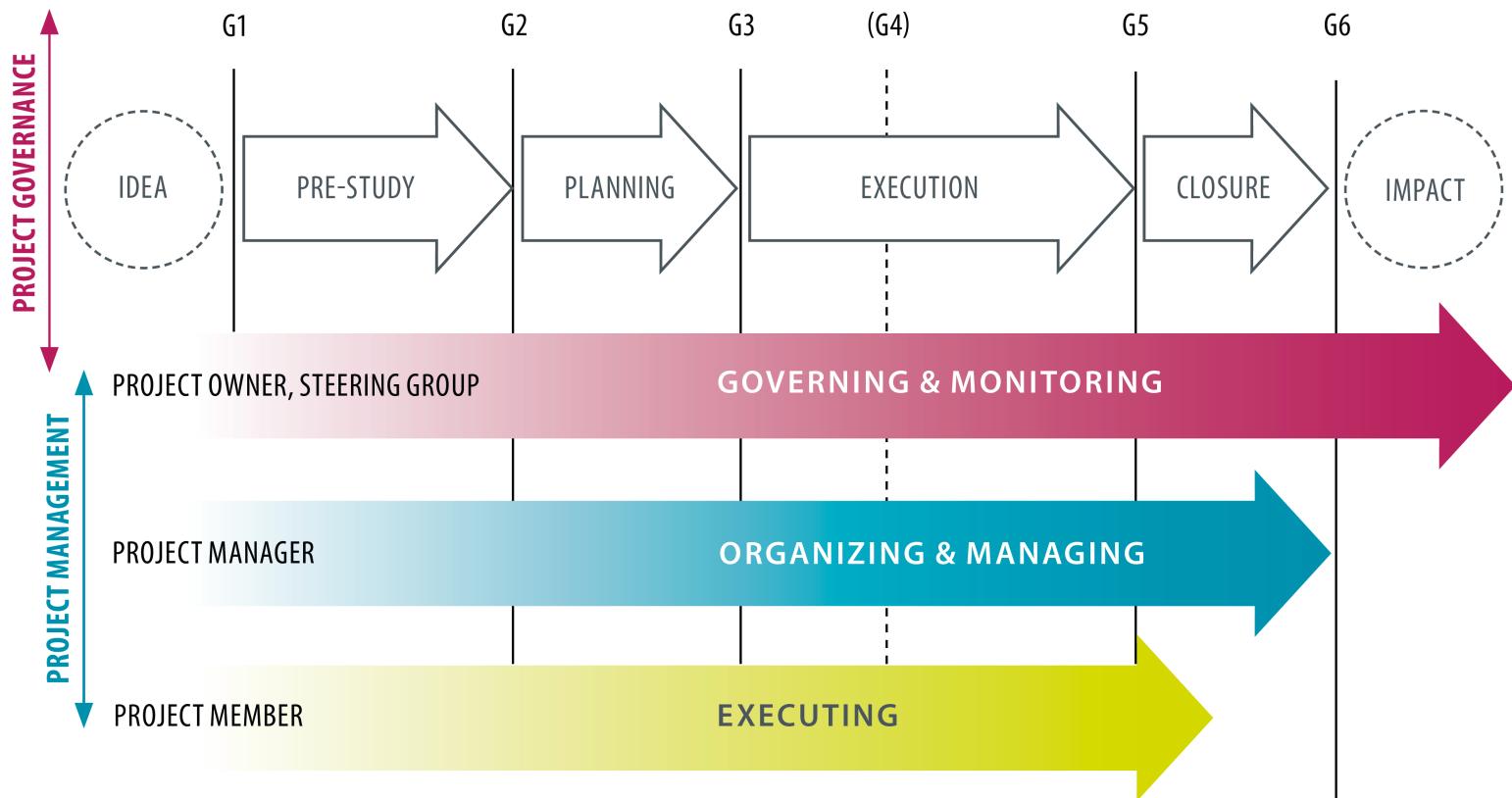
A description of the project process with defined phases and decision points

A description of responsibility and authority for each role within the project

Templates of documents needed to initiate, plan and follow up on a project



# Organization and Roles





## Ministry of Defence

### Project Owner (Governance)

- Project sponsor
- In charge of business impact realization and goals
- Selects project manager and allocates resources
- Initiates, follows up and terminates project



# Organization and Roles

### Steering Committee (Governance)

- In similar role to project owner
- Ensuring project aligns with goals of operations
- Handling business opportunities / changes
- Approving decision points



### Project Manager (Managerial)

- Delivering the project (ensuring goal is achieved)
- Managing project activities
- Managing deviations
- Reporting
- Solving problems and handling conflicts



### Project Group (Executing)

- Executing project activities
- Reporting to project manager



# The Project Model



+



+



A description of the project process with defined phases and decision points

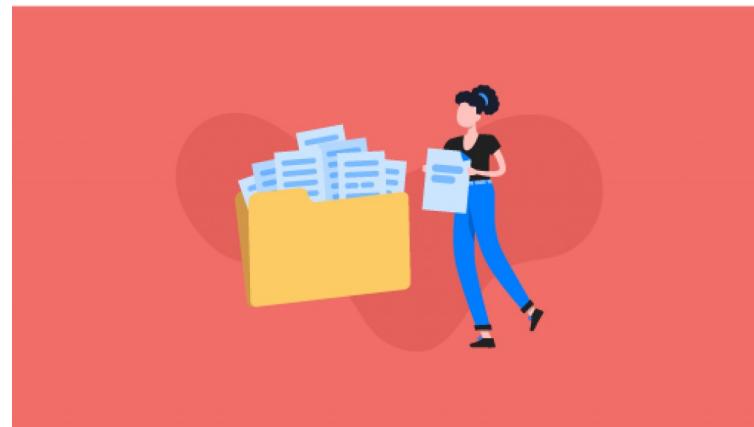
A description of responsibility and authority for each role within the project

Templates of documents needed to initiate, plan and follow up on a project



# Governing Documents

- **Project Charter** – a description of the project idea and boundaries
- **Project Directive** – Business cases, decision support based on the pre-study
- **Project Management Plan** – Plans, calculations on how to execute the project
- **Final Report** – an evaluation of the project and lessons learned
- **Status Report** – the basis for continual follow-up
- **Decision Log** – records of decisions and decision points



- Governing docs project specific
- Provide structure and organization
- Different project management methodologies: Lean, Six Sigma, Prince 2, Agile

# BREAK

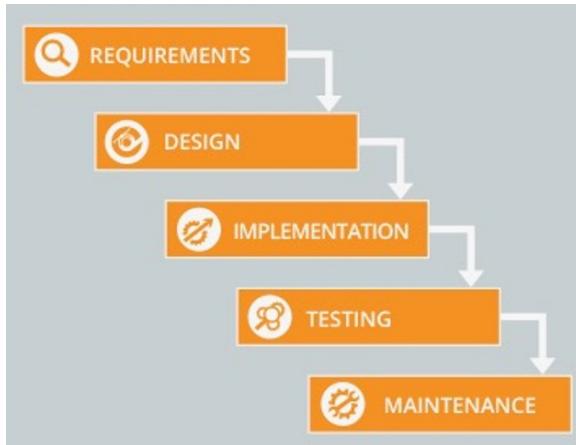


# **WATERFALL VS. AGILE**

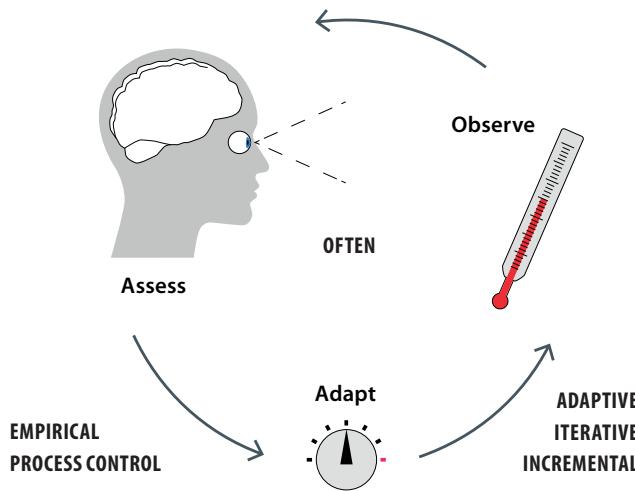
## **TWO COMMON PROJECT METHODOLOGIES**

# Waterfall

- Clearly defined sequence of execution
- Stage-gate control
- Linear
- Front-end heavy – planning activities
- Reduced customer feedback (no incremental deliverables)
- Inflexible
- More predictable – better suited to environments with less change
- Better at handling larger number of interdependencies

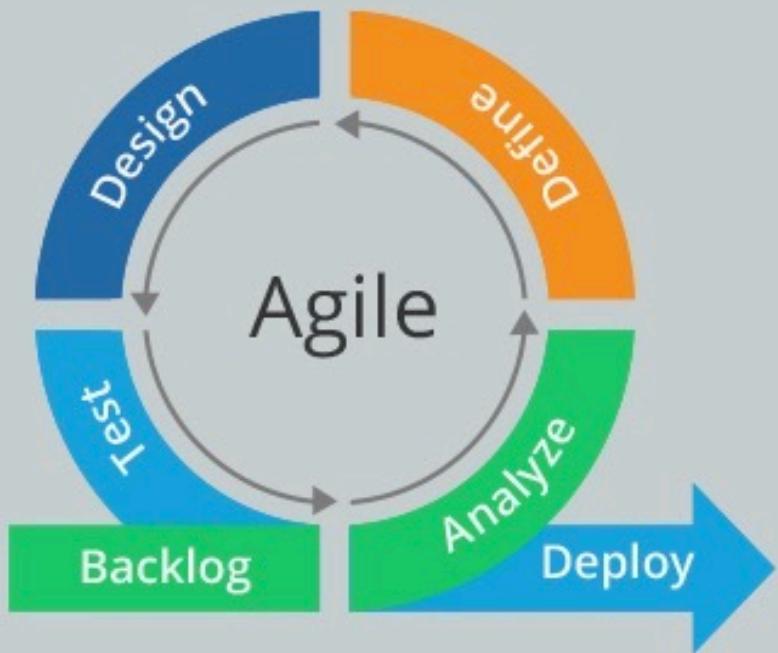


# Agile

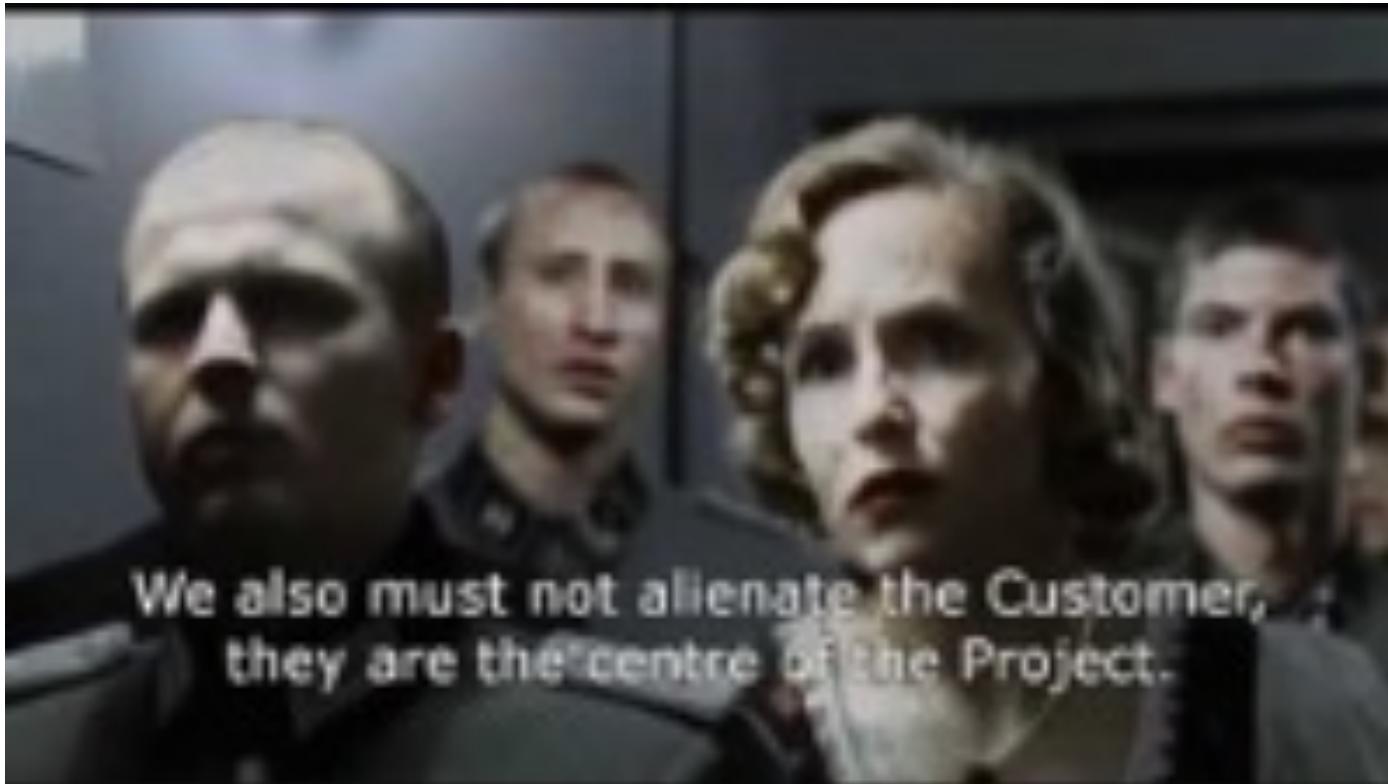


- Agile – a collective name for flexible working methods
- Built on a cyclic process
- Incremental, iterative and adaptive
- Customer focused
- Changes based on customer feedback
- Continuous delivery
- Suitable when goals and requirements unclear
- Good for project that can be delivered incrementally

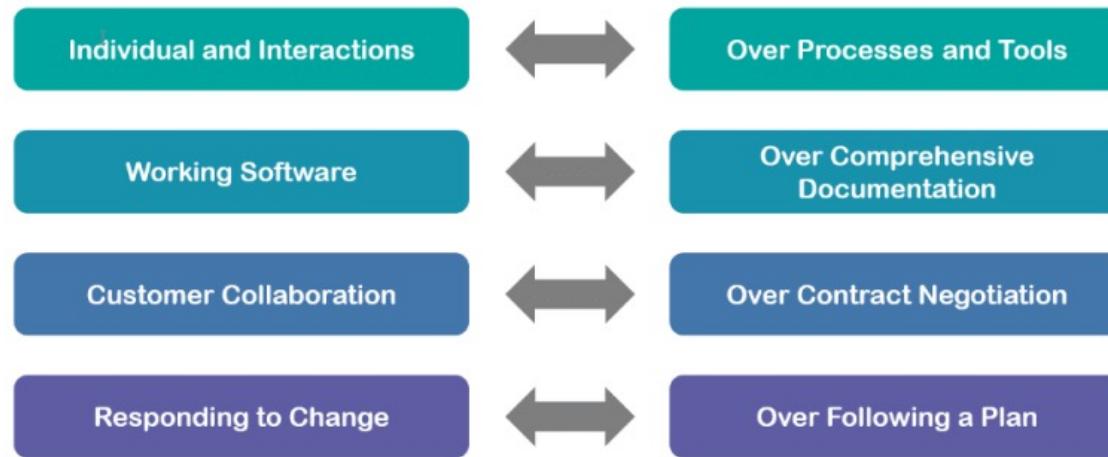
# Waterfall vs. Agile



# Students of Agile



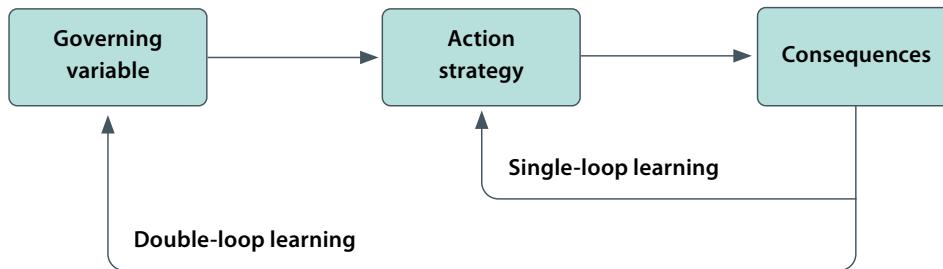
# The Agile Manifesto



“The Agile movement is not anti-methodology, in fact many of us want to restore credibility to the word methodology. **We want to restore a balance.** We embrace modelling, but not in order to file some diagram in a dusty corporate repository. We embrace documentation, but not hundreds of pages of never-maintained and rarely-used tomes. We plan, but recognize the limits of planning in a turbulent environment”

— Jim Highsmith, *History: The Agile Manifesto*

# Learning Organization – connected to Agile



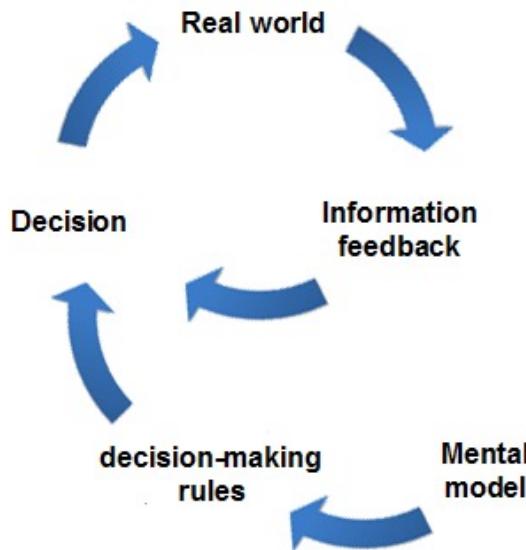
[A] thermostat that automatically turns on the heat whenever the temperature in a room drops below 68F is a good example of single-loop learning. A thermostat that could ask, "why am I set to 68 ° F?" and then explore whether or not some other temperature might more economically achieve the goal of heating the room would be engaged in double-loop learning

— [Chris Argyris](#), Teaching Smart People How To Learn

- **Single-loop learning:** Modifying actions according to established rules in order to get a new result
- **Double-loop learning:** Modifying the rules in light of the experience

# Single vs Double-Loop Learning

## Single-loop learning



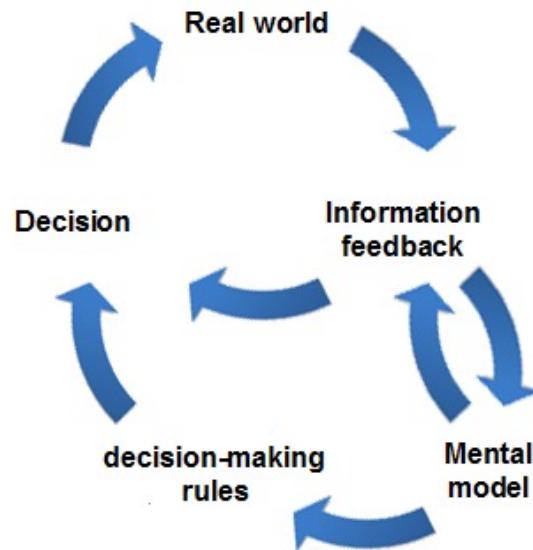
[https://en.wikipedia.org/wiki/Double-loop\\_learning](https://en.wikipedia.org/wiki/Double-loop_learning)

## Smart Elevator



- Uses traffic information to optimize energy usage
- Will know likely destinations based on past usage
- Can use multiple data sources to strengthen predictive ability (e.g. weather reports)
- Example of double loop learning when decision making rules modified

## Double-loop learning



# Introduce Tools

- Trello
- Asana
- Clickup
- TeamGantt
- Wrike
- Monday.com
- Excel

TRELLO

# What's a Trello Board?



# ANY QUESTIONS?

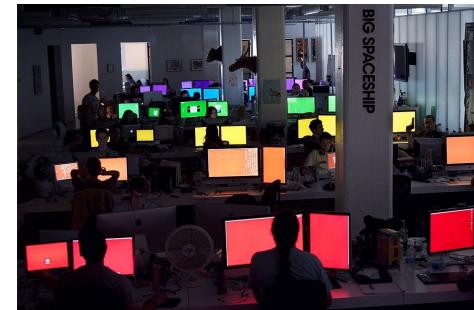
# **EXAMINATION 2: A GROUP CASE STUDY AND PRESENTATION**

# The case study

- Student groups are expected to analyze a real-life case of an industrial enterprise.
- **The objective of the group case study is to provide a critical analysis of your chosen case using an organizational theory and design perspective.**
- Student groups can choose freely between a selection of available cases (all undergone organizational changes with regards to their structure)
- See canvas **“Examination 2: A Group Case Study and Presentation”**



# The Cases

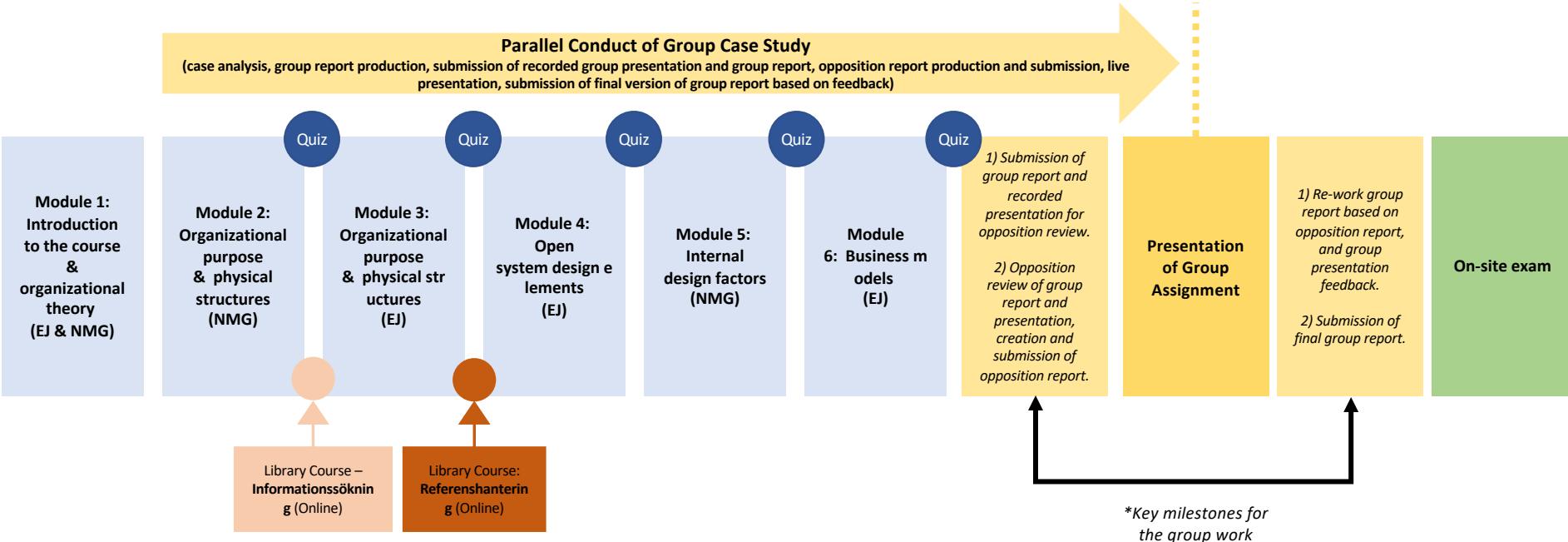


# What you need to deliver

The group case study and presentation has three main deliverables:

- 1) A group report:** a working version is submitted prior to the seminars. A final version is submitted after the seminars when opposition comments have been addressed.
- 2) An opposition report:** opposition groups review the working version of the group reports from their assigned teams, as well as a recorded version of group presentations. Written feedback is provided in an opposition report. The opposition report is submitted prior to seminars.
- 3) A group presentation:** a recorded version of the group presentation is submitted for review prior to the seminars (see above). A final version of the presentation is delivered during the seminars. The opposition team engages in verbal feedback by asking questions and providing comments on the group case study presentation.

# Course outline



# 1) Group Report

- Each student group will be required to produce a group report detailing their case study analysis.
- By "report" we mean a PPT slide deck, not a separate text document.

## Two versions of the report:

- **Version 1:** A working copy of the group PPT report is submitted by each group prior to the case study presentation seminars. (*see schedule and canvas for dates and times*).
- **Version 2:** Following the case study presentation seminars, each group will have the opportunity to address the comments and questions raised by the opponent group and seminar audience.

Please note: On the front page of the report, briefly summarise the contribution from each member of the team. For example:

- Patrik Sjöberg - introduction, internal design elements, business model
- Elsa Johnson - external design elements, business model

## 2) Opposition Report

- Each case study group is assigned an opposing group.
- The job of the opposing group is to review the working paper of the PPT group report, as well as a recorded version of the group presentation (submitted prior to the seminar presentations), and provide comments and feedback on how they can be improved.
- Suggested formats and hand-in dates for the opposition reports provided in canvas

# 3) Group Presentation

- Two versions of the group presentation will be delivered.
  - **Version 1** is a recorded version of the group presentation that is submitted prior to the seminar days for opposition review and comment (*please see canvas and schedule for further details of deadlines*).
  - **Version 2** is a live delivery of the group presentation during the seminar days (*please see schedule and canvas for further details*).

# Tips: Report and Presentation

- **Use models and theoretical frameworks to support your analysis.** Higher grades will require you to be able to motivate your analysis with concepts from the course. Not just "filling in the blanks" on existing theoretical frameworks and models.
- **A key lesson from earlier group presentations:** It is important that you engage with the case study as a critical and reflective observer. **You are not an ambassador for the company - you are a critical analyst!**
- Make sure to limit your presentation to **10 minutes**, the remaining 10 minutes will be allocated for discussion around your presentation. If you exceed the allocated time slot for your presentation, the final grade will be negatively impacted.
- Try to develop a clear "**red thread**"/"**röd tråd**" throughout the report - please avoid the common trap of assigning each member of the group their own section of the report, and then simply combining them in the document without any further thought about how the transitions will work. This approach tends to lead to disjointed ideas, repetition, and a general lack of coherence.

# Being a good opponent

- As an opponent, focus on providing constructive feedback and raising questions which can help to improve understanding and reveal areas for improvement.
- It is very important that the opponent group focuses on **both** highlighting positive aspects and suggestions for improvement and has a **fair and constructive tone**.

Assessment Criteria	Excellent (40 points)	Good (35 points)	Fair (26 Points)	Poor (0-25 points)
Opposition Report (Opposition Report produced, submitted on time, meets the stipulated requirements)	<p><u>"Excellent"</u> builds on "good" and can look like this:</p> <p>All mandatory AND almost all report recommendations for how to conduct and present the group case study report and analysis have been well satisfied.</p> <p>The group demonstrates a thorough understanding of the case as well as the theoretical tools and concepts that have been applied in the analysis of it. The group likely displays originality in their case analysis. Critical insights are drawn that, for example, demonstrate a solid understanding of the connections between course literature, tools, theories and concepts with the studied case.</p> <p>Engaging delivery of the presentation with clear messaging.</p>	<p><u>"Good"</u> builds on "fair" and can look like this:</p> <p>All mandatory AND most of the recommendations for how to conduct and present the group case study report and analysis have been satisfied/followed.</p> <p>Identified/formulated relevant issues/problems, generally insightful and detailed analyses, appropriate use of relevant data/facts, effective application of management concepts and theories, generally logical and feasible, well-structured.</p> <p>This grade typically represents that the group moved beyond simply recounting a presentation of the case and the focal company, to conducting their own analysis of it and drawing their own conclusions.</p> <p>Effective delivery of the presentation and engagement with the audience.</p>	<p><u>"Fair"</u> can look like this:</p> <p>The group case study report, the opposition report, and the recorded group presentation are submitted on time, and meet the mandatory requirements</p> <p>The quality of analysis could be improved. Less relevant issues/problems are identified/formulated, only somewhat insightful and detailed analyses, insufficient use of relevant data/examples, limited application of theory and tools from the course.</p> <p>This grade typically represents that the group "filled in the blanks" on established concepts and models/theories, without attempting to conduct any of their own analysis.</p> <p>Somewhat effective delivery of the presentation and engagement with the audience.</p>	<p><u>"Poor"</u> can look like this:</p> <p>The group case study report, recorded video, the opposition report, live presentation are either not produced, or submitted on time, or don't meet the mandatory requirements</p> <p>Failure to demonstrate an adequate understanding of the case, theories, and concepts in the group case study report and group case study presentation.</p> <p>Inadequate use of examples.</p> <p>Poor delivery of the group presentation. Lack of co-ordination. Unclear message. Ineffective time management.</p>
Group Report (Clarity and coherence of argumentation, usage of fact base to substantiate claims, appropriate use of theory in analysis, drawing logical conclusions, a critical analysis)				
Quality of Presentation (Effective time management, appropriate language, engagement with audience, co-ordination between speakers, logical structure of presentation, effective design, and layout of visuals (e.g., PPT slides), clear red thread in delivery of presentation)				

## Group case study & presentation: Assessment Criteria

# The Groups

The screenshot shows a user interface for managing student groups. On the left, a sidebar lists various modules: Startsida, Moduler, Uppgifter, Diskussioner, Anslag, Personer, Omdömen, Lärandemål, Kursöversikt, Matriser, BigBlueButton, Samarbeten, Filer, Quiz, Sidor, and Frågebanker. The 'Personer' module is currently selected. At the top, there are tabs for 'Alla', 'Case Study Groups' (which is selected), and 'Project Groups'. A large button '+ Gruppuppsättning' is visible. Below the tabs, there are buttons for '+ Importera', '+ Grupp', and three vertical dots. The main area is divided into two sections: 'Icke-tilldelade studenter (0)' and 'Grupper (16)'. The 'Grupper' section contains four expandable groups: 'Case Study Groups 1' (5 students: Linnea Barrdunge, Johanna Jarskog, Oskar Karlsson, Johan Rosby, Carl Johan Willdal), 'Case Study Groups 2' (5 students: Lucas Devismes, Lovisa Hakeröd, Anna Jonsson, Rebecka Ringström, Wilmer Thuresson), 'Case Study Groups 3' (5 students), and 'Case Study Groups 4' (5 students). Each student entry has a three-dot menu icon.

H22

Startsida

Alla Case Study Groups Project Groups + Gruppuppsättning

+ Importera + Grupp ...

Icke-tilldelade studenter (0)

Sök efter användare

Det finns för tillfället inga studenter i den här gruppen. Lägg till en student för att komma igång.

Grupper (16)

▼ Case Study Groups 1 5 studenter

Linnea Barrdunge ...  
Johanna Jarskog ...  
Oskar Karlsson ...  
Johan Rosby ...  
Carl Johan Willdal ...

▼ Case Study Groups 2 5 studenter

Lucas Devismes ...  
Lovisa Hakeröd ...  
Anna Jonsson ...  
Rebecka Ringström ...  
Wilmer Thuresson ...

► Case Study Groups 3 5 studenter

► Case Study Groups 4 5 studenter

# The Seminars

2023-12-14	13:00-14:30	A1543	EJ, NMG	Seminar #1	<i>Student groups will be split over the different seminars. Groups 1-4 attend seminar #1.</i>
2023-12-14	14:45-16:15	A1543	EJ, NMG	Seminar #2	<i>Student groups will be split over the different seminars. Groups 1-4 attend seminar #2.</i>
2023-12-15	08:15-09:45	A2029	EJ, NMG	Seminar #3	<i>Student groups will be split over the different seminars. Groups 9-12 attend seminar #3.</i>
2023-12-15	10:15-11:45	A2029	EJ, NMG	Seminar #4	<i>Student groups will be split over the different seminars. Groups 13-16 attend seminar #4.</i>

# Suggested Next Steps

1. Meet your group (physically is often best)
2. Discuss and choose your case
3. Review the grading matrix
4. Review the recommended and mandatory guidelines
5. Discuss and agree which grade you are aiming for – be realistic, this sets the expectations
6. Create a plan (it can be very simple) with agreed timeline and scope for delivery
7. Develop a PPT skeleton
8. Agree when your next meeting should be and book it in
9. Begin your analysis and presentation of findings

# QUESTIONS?

# MULTIPLE CHOICE TEST

# Multiple Choice Test

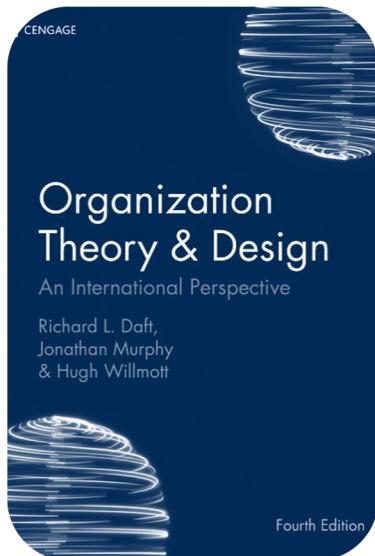
- Following this class – a multiple choice test will be made available for you to complete on canvas.
- 16 questions – (the questions are based on the course readings and lectures)
- Number of attempts = 2
- Time limit – 2 working days
- Each multiple choice = max 4 points out of 20, each question 0.25points.

# NEXT SESSION



# Preparatory Readings

- For next session you should read:



## Mandatory:

Scan through prior to session (more careful read in preparation for assignments)

- Chapter 3-4 in the Daft et al. (2020) course book

## Read carefully prior to session:

- [Podolny & Hansen \(2020\).PDF](#)

## Optional reading:

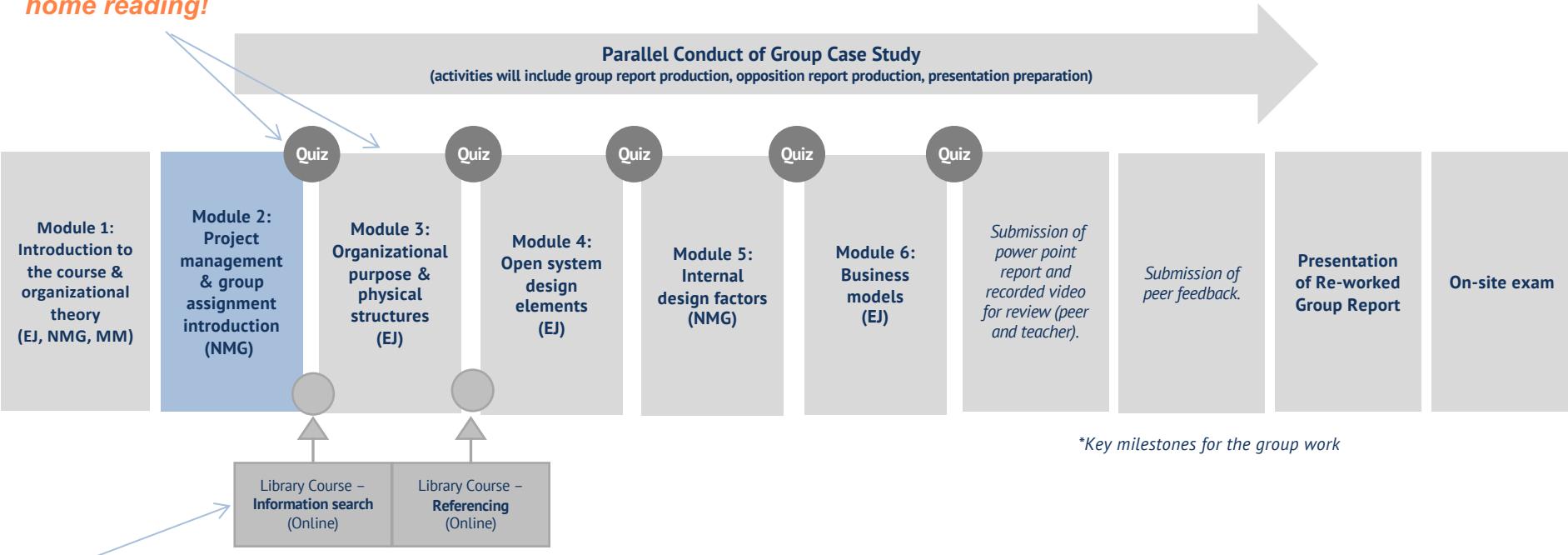
- [Davis & Lawrence \(1978\).PDF](#) "Problems of matrix organisations"
- [Battilana & Lee, 2014. Advancing research on hybrid organizing.pdf](#)
- Canvas Material

Please note that you are especially expected to carefully read **the Apple case above** because part of the session will be dedicated to discussions based on the case!



**Check out  
instructions on  
Canvas for  
home reading!**

# Course outline: Next up



**Check out  
instructions on  
Canvas**

# Library Course



Innan workshoppen ska du göra följande uppgifter som en förberedelse

1. Gå igenom kursen informationssökning i länken nedan, vi ska göra gruppövningar baserat på den i workshoppen: [Informationssökning](#)
2. Åtkomst till vetenskapligt material hemifrån/utanför campus. Gå via [ltu.se](#), klicka på Student, MITT LTU och logga in med din LTU-användare för att få åtkomst till vetenskapligt material. Använd sedan länken till biblioteket via menyn i din LTU-användare.  
**Testa att detta fungerar inför workshop!**
3. Förbered dig inför workshop i Zoom. **Ta del av informationen i bifogad pdf!**

# Library Course

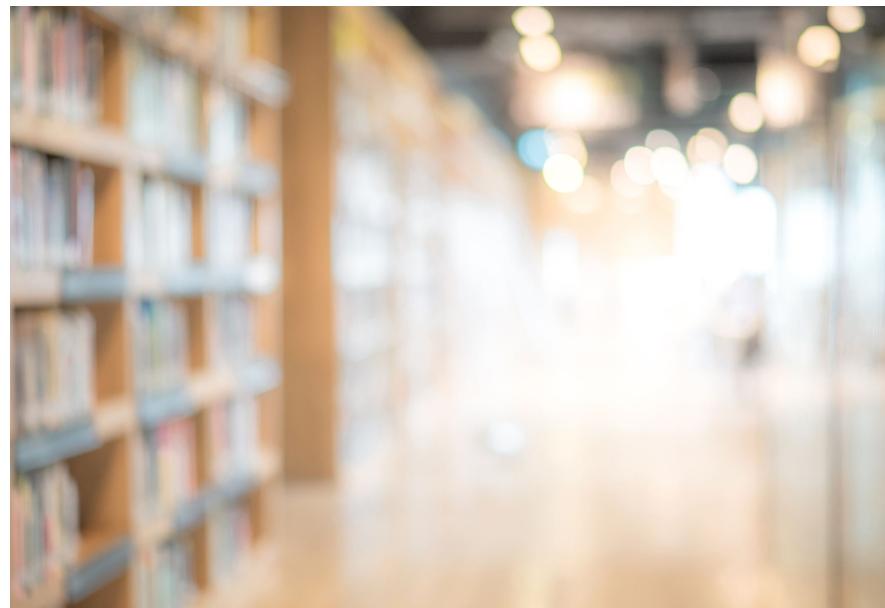
**Workshop dag och tid : Tisdag 7/11**

*Students with **surnames** beginning with the letter A-M attend session #1.*

- 08.15-09.45: Gruppindelning meddelas av kurslärare
- Zoomlänk <https://ltu-se.zoom.us/j/61667718907>

*Students with **surnames** beginning with the letter N-Ö attend session #2.*

- 10.15-11.45: Gruppindelning meddelas av kurslärare
- Zoomlänk <https://ltu-se.zoom.us/j/62594559561>
- Förberedelser inför workshop via Zoom (1).pdf - 228 KB <https://canvas.ltu.se/courses/20183/files/3463618/download>
- Contact: Maria Nyström email: [marnys@ltu.se](mailto:marnys@ltu.se)



# Teacher

**Nerine Mary George,  
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# THANK YOU!



