



CESIM PROJECT

Introduction

Simulation for project management

What is Cesim Project?

Cesim Project is a team-based, interactive project management simulation that allows the participants to experience the dynamics and complexity of a project that consists of multiple interrelated sub-projects.

The teams' goal is to complete the main project by carefully planning and executing their respective sub-projects, while sticking to the budget estimations and schedules. Cooperation between teams is essential in order for the main project to be completed efficiently.

The simulation illustrates and tracks the progression of the project and the project costs, as well as the work hours used. The simulation is fully browser-based and requires no software downloads. A considerable part of the planning, reporting and organizing takes place outside of the simulation itself.

Learning Goals

To develop capabilities in identifying & analyzing key organizational variables that influence the successful completion of a project.

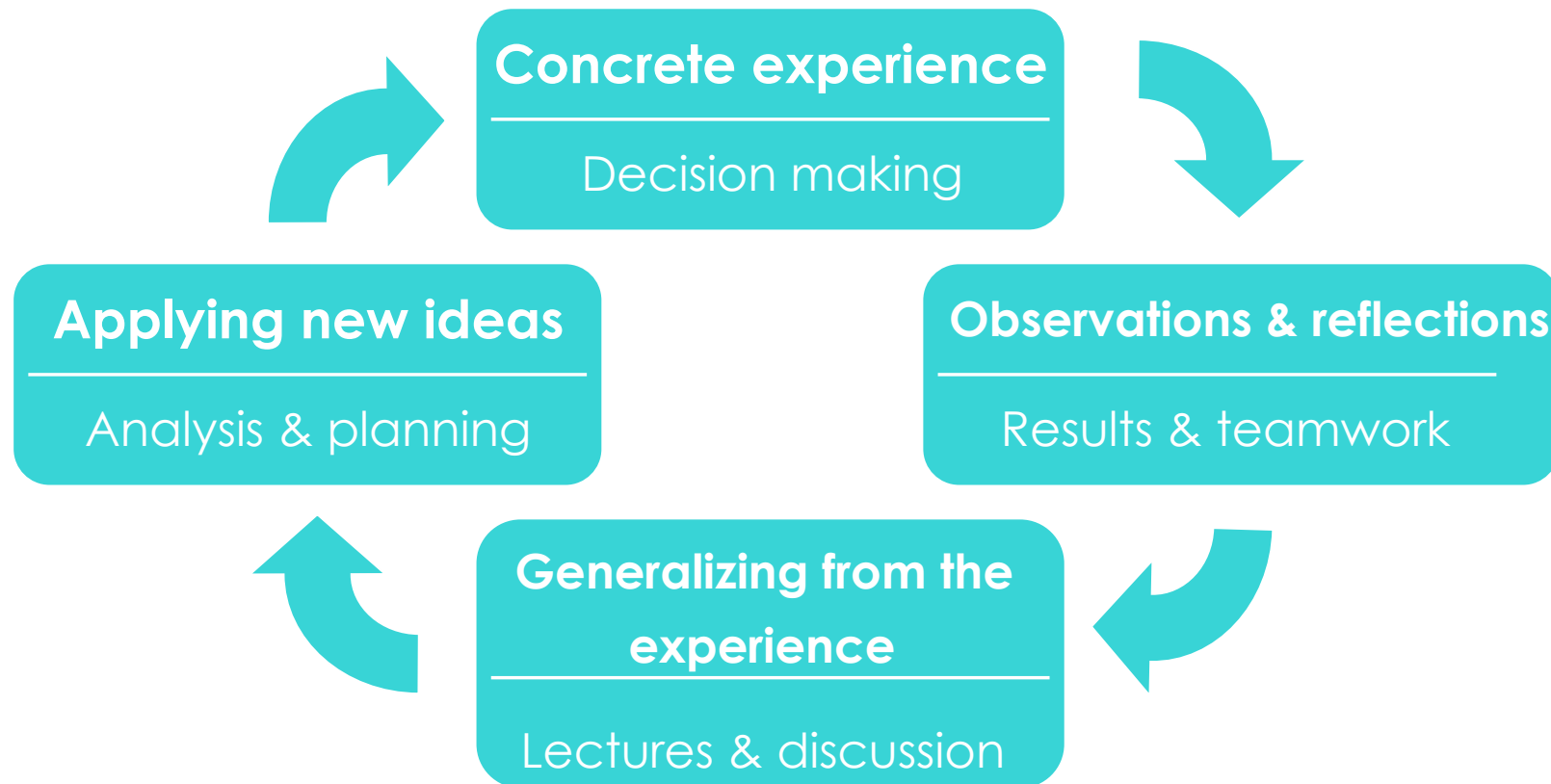
To increase the participants awareness of the complexity of operating in a diverse team with a common goal of completing a project.

To encourage formulating, implementing, and adapting strategies with a focus on avoiding bottlenecks and impediments in progression of the project during future rounds.

To enhance fact-based analytical decision-making and crystallize the financial implications of decisions by linking the decisions to cash flows and bottom line performance.

To give students practical experiences in teamwork and problem solving, and excite competitive spirits in a semi-cooperative project environment.

Learning Process



Web Based Solution

The simulation is completely web based. There is no need to install any separate applications and the simulation can be accessed from any PC or tablet that has an internet connection.

The simulation platform allows team members to work virtually if they wish. Each team member has her/his own account that enables them to make decisions and scenarios on their own and later combine the outcomes with the other team members on the [decision checklist] - page.

The platform also includes a communications forum that can be used to communicate within teams and between teams.

Simulation Platform Structure



The simulation platform includes the following pages:

[Home] - Overview page with deadlines

[Decisions] - All decisions are made under 'Decisions'

[Results] - Results become available in this area after each deadline

[Schedule] - Simulation schedule is available on this page

[Teams] - Teams and team members in your market can be viewed here

[Readings] - Access to the decision making instructions and case description

[Forums] - Access to the discussion forums for team and market



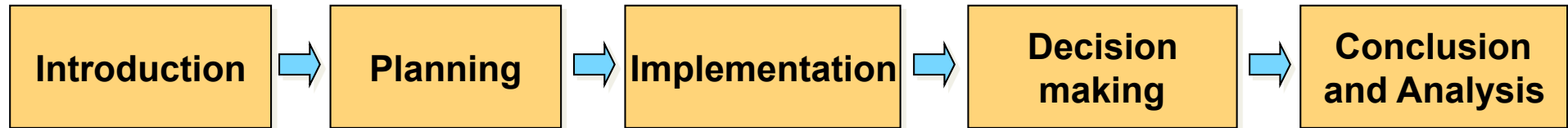
Simulation Organization

Each simulation project consists of 1-5 teams, with 1-8 members in each. The number of parallel simulation markets is not limited, making it possible to utilize the simulation for any number of students in the class.

All teams start with a pre-generated team, with each member having their own particular skill sets. It is up to the project leaders to gather together the most efficient group of members for their respective sub-projects.

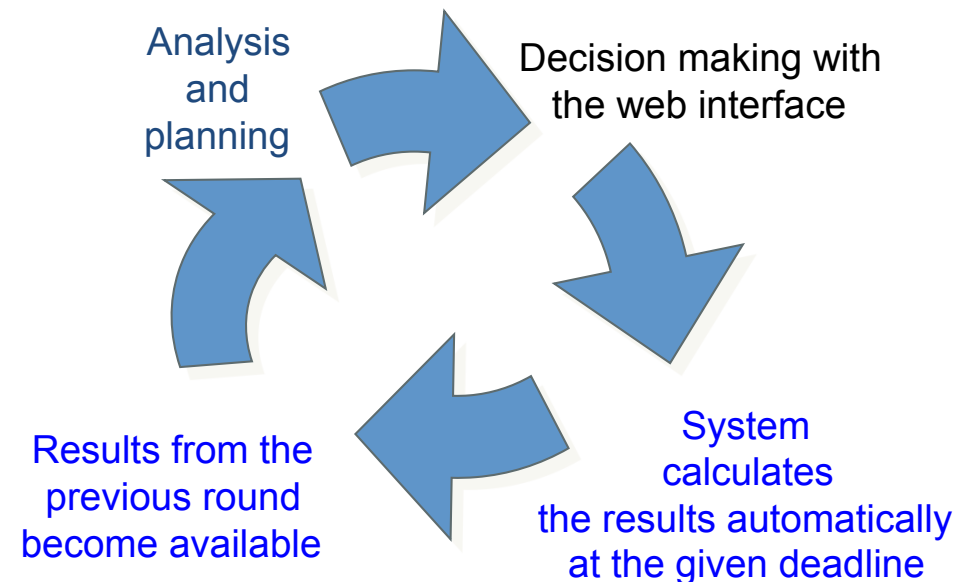
Note that the teams operate with(and against) other teams within the project, not against a computer. The decisions of each team may directly or indirectly influence the results of other teams, and ultimately the completion of the main project.

Flow of Operations



After the introduction, the teams start to familiarize themselves with the decision making process during the first round.

The instructor decides the number of actual decision making rounds, and decision making follows the cycle on the right.



Note that it is not possible to modify the decisions after the round deadline. If the team has not made its decisions for a round, the system will automatically use the results of the previous round.

Main Objective & Winning Criteria



The main objective for the teams is to deliver a project on schedule and on budget, and providing maximum value to the customer. A balance between keeping expenses within the estimated budget and completing the project on time should be found.

The simulation is primarily collaborative so it is not necessary to define a particular winning criteria. However, special recognition should be made to those teams who complete their project on time and within the given budget constraints. In addition, the teams' collaboration activity and capability could be taken into account.



Decision Making Fundamentals I



Decision making in the simulation is round based. One decision making period is typically regarded as one week.

In the beginning of the game players should assemble themselves in efficient sub-project teams, as well as make the initial budget estimations. Once the final teams are assembled, players can start to coordinate the available tasks.

The manual and the case description should be read before the first round. All course related material can be found under the "Materials"("Readings" for students) section.



Decision Making Fundamentals II



Decisions are entered in the **white cells**. These will be used in the actual calculation of the results.

Checkboxes are used to enable certain optional decisions.

Drop-down menus are used in certain decisions where there are some specific options to choose from.

The initial team roster is composed of participants whose skill sets are randomly defined by the simulation. The first step in the process should be to find the best matches between the participants' skills and the skill requirements of each sub-project.



Model Contents I

The main project consists of 1-5 sub-projects. Each sub-project has approximately 60 individual tasks that can be worked on.

Each sub-project team is composed of 1-8 players, with a total project maximum of 30 participants. The objective of individual teams is to complete their respective sub-projects as cost-effectively as possible within the schedule.

Players are all assigned certain roles within the team, which have somewhat different functions. There are three distinct roles, as follows:

1. Project owner (1 person for the entire project)
2. Project leader (1 person per sub-project)
3. Project member (max 24 people)

All roles can be circulated during the course of the simulation.

Model Contents II

Each individual participant has certain skills generated for them at the beginning of the game. The participant should coordinate with the different project leaders in order to be placed in a sub-project that complements their skillset.

- There are 10 skills all in all, though a single player will not be proficient in all
- An individual task requires a combination of a maximum of 6 skills
- Players should always strive to work on tasks that match their skillset the closest

A player has a total of 40 working hours per round to allocate for tasks, with the possibility of receiving a maximum of 20 overtime hours if the project leader sees it as necessary.

Team member responsibilities I

1. Project Owner

- The project owner is primarily responsible for reviewing the budget proposals made by the project leaders in the beginning of the game, and ensuring that they stay on budget throughout the game. If budgets are exceeded, then the owner must grant the sub-project in question special permission before the team can continue with their sub-project.
- The owner is responsible for approving or denying requests for team transferral. Without owner approval, team members cannot switch teams after the first round.
- The owner also approves project plans made outside of the model, and follows how well teams stick to them.

Summary

	Project 1	Project 2	Project 3	Project 4	Project 5	Total
Estimated total hours	1980	1980	1980	1980	1980	9900
Budget proposal, \$	0	0	0	0	0	0
Budget decision, \$	0	0	0	0	0	0
Hours spent	60	0	0	0	0	60
Costs, \$	1875	0	0	0	0	1875
Budget remaining, %	0.0	0.0	0.0	0.0	0.0	0.0
Completion level, %	1.0	1.9	0.0	0.0	0.0	0.6

Student	Requested team	
Dianne Nelson	-	Approve Deny
Allison Miller	-	Approve Deny
Misty Jenkins	-	Approve Deny
Marion Young	-	Approve Deny
Morris Pérez	-	Approve Deny
Lawrence Jackson	-	Approve Deny
Fernando Ramírez	-	Approve Deny
Aimee Adams	-	Approve Deny
Teresa White	-	Approve Deny
Denise King	-	Approve Deny

Team member responsibilities II



2. Project leader

- a) The leader's main responsibility is to make sure that the sub-project stays on schedule and on budget. To make sure it does, the leader has several additional decision making options. If the sub-project is lagging in terms of schedule, the leader has the following tools to utilize:
 - i. The first is to grant team members overtime hours, which are more expensive than normal hours
 - ii. Additionally, the leader can choose to outsource certain predefined tasks
 - iii. Finally, the leader can communicate with other sub-projects, who may have members that aren't fully utilized. One team can work across sub-projects, and by doing so help other teams keep to the overall project schedule. Any expenses incurred can be paid for by the team whose task is being done through a cash transfer
- b) The leader plans the project and gathers a team of capable members.



Team member responsibilities III



3. Project member

- a) A normal team member is the backbone of the team. Members should strive to complete tasks that are best complemented by their particular skill sets.
- b) A member should be proactive in finding tasks that are the most suitable for her skills and she should also communicate with the project leader about the choices.
- c) It is also important for the members to keep an eye on what other team members are doing (through the "Progress" tab), so that wasting time on the same task won't occur.



The use of the simulation

The model simulates the progression of a project and follows the actual expenses incurred, as well as actual hours used to complete it.

An essential part of the model is the multilateral discussion between teams, project coordination and planning.

- Due to dependencies between sub-projects, it is critical for project leaders to communicate with each other to ensure no bottlenecks occur later in the game

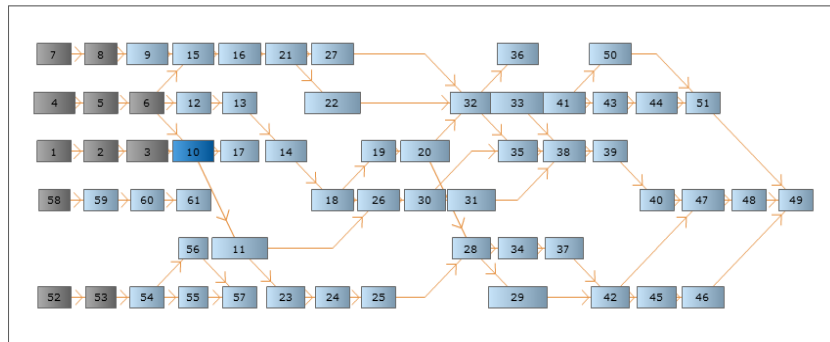
In the simulation, players assume considerable responsibility for their actions. Mistakes in planning task completion can set back the project considerably.

- It is crucial for each team member to be active and interfere if necessary when erroneous decision are being made.

Progress I

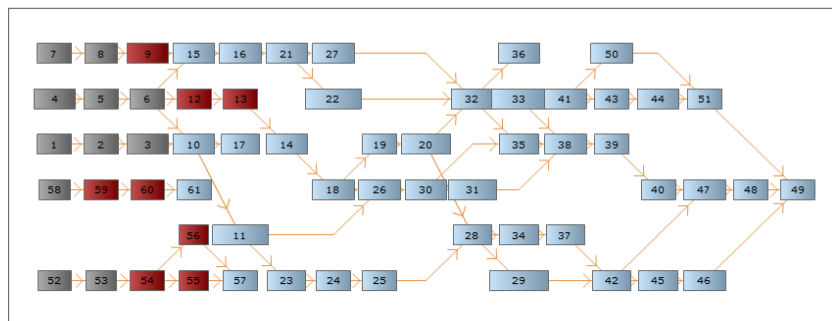
Project map

Completion status



Project map

Team decisions



The picture on the left illustrates the task map of the project. With the dropdown selection "Completion status", the map indicates by color which tasks are completed (gray), which have been started but not finished yet (dark blue), and which are yet to be started (light blue). Using different dropdown selections (marks boxes with red color) players can easily identify which tasks suit them best, which have yet to be selected by other team members, and even see if tasks have dependencies in other sub-projects.

Additionally, the map illustrates the number of hours required for a task through the length of the box. Shorter tasks get smaller boxes, while time-intensive tasks get bigger boxes.

Progress II

Additionally, all team members can access a table, which shows each team members task choices and level of prioritization, as well as how many hours they will be using for the task, and how complete the task will be after their work(indicated in percent).

The chart allows for each member to carefully monitor their own choices, as well as their fellow team members' choices. Each member should be careful not to pick overlapping tasks, as the work effort is not cumulative. In case of overlapping task selections, the one who would manage to complete less of the task has their hours wasted.

Information on priority 1

Name	Marion Stewart	Nathan Ortiz	Joel Ward	Todd Barnes	Tara González	Roxanne Nguyen
Task number	0	0	0	0	0	0
Hours spent	0.0	0.0	0.0	0.0	0.0	0.0
Completion level, %	0	0	0	0	0	0

Information on priority 2

Name	Marion Stewart	Nathan Ortiz	Joel Ward	Todd Barnes	Tara González	Roxanne Nguyen
Task number	0	0	0	0	0	0
Hours spent	0.0	0.0	0.0	0.0	0.0	0.0
Completion level, %	0	0	0	0	0	0

Information on priority 3

Name	Marion Stewart	Nathan Ortiz	Joel Ward	Todd Barnes	Tara González	Roxanne Nguyen
Task number	0	0	0	0	0	0
Hours spent	0.0	0.0	0.0	0.0	0.0	0.0
Completion level, %	0	0	0	0	0	0

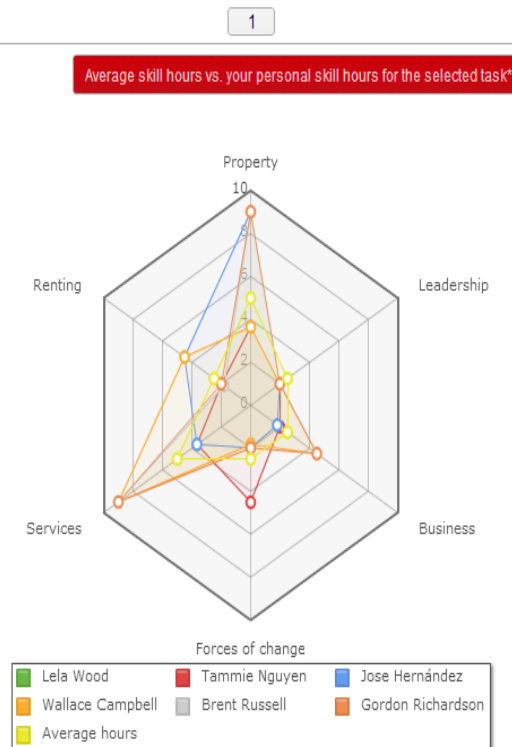
Information on priority 4

Name	Marion Stewart	Nathan Ortiz	Joel Ward	Todd Barnes	Tara González	Roxanne Nguyen
Task number	0	0	0	0	0	0
Hours spent	0.0	0.0	0.0	0.0	0.0	0.0
Completion level, %	0	0	0	0	0	0

Tasks

Hour requirements for task #

	Average hours	Multiplier	Personal hours
Property	5.0	0.7	3.6
Renting	2.5	0.8	2.0
Customer relations	0.0	0.8	0.0
Portfolio	0.0	1.8	0.0
Services	5.0	0.7	3.6
Networks	0.0	1.8	0.0
Forces of change	2.5	1.8	4.5
Business	2.5	0.8	2.0
Leadership	2.5	0.8	2.0
Organization and values	0.0	1.8	0.0
Total hours	20.0	0.9	17.8



On the "Tasks" page, players make their decisions regarding which tasks they want to do during the round. The page provides plenty of useful data on a task specific basis, especially in the form of the task related skill chart.

The chart visualizes the effectiveness with which team members can complete a certain task by comparing their skills to the average skill level. The same information is also shown numerically in the table to the left. It is possible to use the chart to view individual player skills, or the whole teams' skills at the same time.

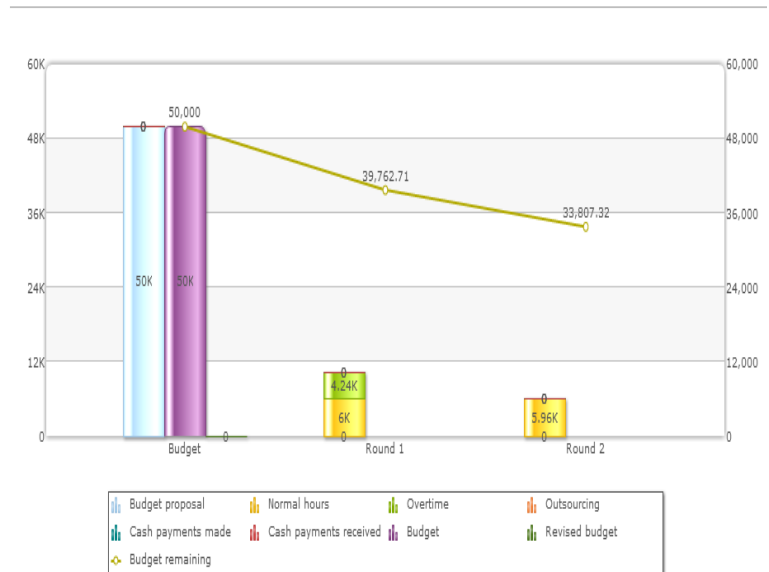
Project tracking and parameters

Seeing as keeping the project on budget is essential for the success of the project, the project leaders have access to a special page with specific information on expenses. The chart shows what the initial budget for the sub-project was, as well as a time series chart showing how much money has been spent each round, and finally how much money is left from the original budget.

Additionally the page provides a table showing the total hour usage and actual costs of each team member for the current and previous rounds.

Finally, the parameters tab gives all the main indicators that a project leader may need to make his estimations, such as the number of hours that members have available and the cost of work (split to normal, overtime 1 and overtime 2 classes).

Team budget, €



Results I

After the first round deadline has passed, the results area will become available with information on the team performances of the previous rounds. From the results, you can find information in the form of a total project summary, or on an individual sub-project basis. Below you can see an example of the data available for viewing on the project summary page.

Project summary

Project TEST - Universe 1

Round 1

Project details

This round	Product development and planning	Real estate	Customer relations	Services	State strategy	Total
Completed tasks	1	0	0	0	0	1
Time, hours	58	0	0	0	0	58
Overtime, hours	0	0	0	0	0	0
Cost, €	1444	0	0	0	0	1444

Total	Product development and planning	Real estate	Customer relations	Services	State strategy	Total
Remaining tasks	60	61	61	61	61	304
Time, hours	58	0	0	0	0	58
Overtime, hours	0	0	0	0	0	0
Cost, €	1444	0	0	0	0	1444
Completion level, %	3	0	0	0	0	0
Excess hours	7	0	0	0	0	7
Relative efficiency	0.88	0.00	0.00	0.00	0.00	0.88

Results II

Time, cost and quality

Project TEST - Universe 1

Round 1

Project total figures	This round	Last round	Total, including this	Total, until this
Normal hours used	240	0	240	0
Cost, €	6000	0	6000	0
Overtime 1 hours	60	0	60	0
Cost, €	2250	0	2250	0
Overtime 2 hours	40	0	40	0
Cost, €	1987	0	1987	0
Cost of outsourcing, €	0	0	0	0
Total cost, €	0	0	0	0

Additionally, the results area provides detailed data on the time, cost and quality aspects of the game, as well as budget related charts portraying expenditure relative to the initial budgets over the course of the game. The figure above shows the total figures for the entire project, but each sub-project also has it's respective tables.

More Information

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