



# Draweva: a Serious Game for Strategic Collaboration

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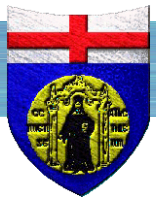
## Outlook

- Objectives
- Requirements
  - ⇒ Observation and Search for Trends, Ask the right question, Collaboration, Non-realistic settings, Dilemmas and Pitfalls, Planning
- Technological Architecture
  - ⇒ 3D fantasy scenario, Multiplayer support, Assessment component, Dialog manager module, Points-of-decision, Online chat room
- The Draweva Game
  - ⇒ Roles, plot, phases
- Preliminary results
- Conclusions



## Objectives

- Leadership and collaboration are key factors for decision making
  - ⇒ particularly at strategy level
  - ⇒ sharing goals, tasks and knowledge is difficult
- Draweva
  - ⇒ a 3D multiplayer game to teach leadership skills
- Developed in collaboration
  - ⇒ University of Genoa (design)
  - ⇒ Wondertech SRL (implementation)
  - ⇒ QChallenge LTD (requirements)
- Game goal:
  - ⇒ create awareness about the wrong pattern of “invisible silos”
  - ⇒ managers are aware only of their own targets, missing the opportunity to create synergies



## Requirements (1/3)

### ➤ **Observation and Search for Trends (1)**

- ⇒ the decision maker needs a complete understanding of his context, trends, and business drivers
- ⇒ he has to routinely explore and synthesize trends in his day-by-day work

### ➤ **Ask the right question (2)**

- ⇒ questions are fundamental for strategy planning
- ⇒ the decision maker should be able to reduce the uncertainty and see different possibilities, approaches, and potential outcomes

### ➤ **Collaboration (3)**

- ⇒ the decision maker has to be proactive about connecting with colleagues and peers
  - ▼ in his organization and business context
- ⇒ in order to understand what happens and then share findings



## Requirements (2/3)

### ➤ **Non-realistic settings (4)**

- ⇒ the decisions have to be taken in an abstract context, different from the one in which the user performs his activity
- ⇒ to allow the training to be effective for various contexts
- ⇒ to focus on the skills needed to strategic decision making instead of the details of a specific context

### ➤ **Dilemmas and Pitfalls (5)**

- ⇒ success is not a matter of absolute performance, but depends on how well the decision maker does relative to others
  - ▼ colleagues and competitors
- ⇒ situations like the “prisoner’s dilemma”
  - ▼ the winner is determined by the interaction of all players’ decisions



## Requirements (3/3)

### ➤ **Planning (6)**

- ⇒ people should be rewarded for evidence of thinking, not just for reaction
- ⇒ to encourage the anticipation of opportunities and the avoidance of problems





## Technological architecture (1/2)

### ➤ **3D fantasy scenario**

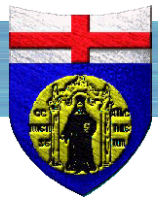
- ⇒ naturalistic and fantasy places (e.g. rivers, mountains, caves, etc.) with a medieval castle in the center
- ⇒ the 3D world module leverages all the features already available in the Unity Game Engine
  - ▼ rendering, event management, scripting, etc.

### ➤ **Multiplayer support**

- ⇒ to collect events and information from game clients (used by the players)
- ⇒ to maintain a complete version of the game world
  - ▼ current position and action of other players

### ➤ **Assessment component**

- ⇒ interprets actions performed by players (e.g. make a right decision, collaborate or compete with others, etc.) and decides on the current evaluation



## Technological architecture (2/2)

### ➤ **Dialog manager module**

- ⇒ to allow users to interact in natural language with Non-Player Characters (NPCs)
- ⇒ the user can freely express questions in textual form and provides the user with an adequate answer.

### ➤ **Points-of-decision**

- ⇒ present the user with dilemmas during the game
- ⇒ for example: the player has to decide to use a tool alone or waiting for others

### ➤ **Online chat room**

- ⇒ to allow players to communicate among each other in real-time during the game sessions







## Draweva plot (1/4)

- Played contemporaneously by **three teams of seven players** each with **different roles**
  - ⇒ find items, logistic support, collecting information, path finding, protect the team, lead, etc.



## Draweva plot (2/4)

- The major goal is to kill a monster: each team is led to believe that it is fighting **its own individual** creature
  - ⇒ the strategic decisions during the game are related only to a part of the whole



**Dragon**



**Wolf**



**Vampire**

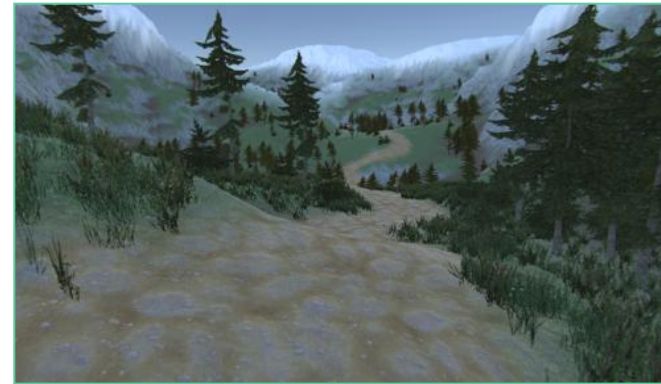


## Draweva plot (3/4)

- The game is played through a 3D fantasy scenario



**River**



**Mountain**



**Cemetery**



**Castle**



## Draweva plot (4/5)

- But, actually, the three monsters are **just one creature (Dra-we-va)** composed of the three different personas
  - ⇒ lives in a castle in the center of the game map
  - ⇒ requires to be killed in a **special way** and **before a certain time**
- Draweva represents **the real big problem** to overcome
  - ⇒ which needs a complete strategic view





## Game phases (1/2)

- The game is divided into five phases to simulate regular decision-making situations in an international company
- Phase 1 (**Collecting information**)
  - ⇒ collect information according to the role by interacting with NPCs
  - ⇒ take decisions in order to collect relevant information
- Phase 2 (**Empowerment**)
  - ⇒ ask for help from other team members
  - ⇒ focus on the overall team objective
- Phase 3 (**Challenge with rivals**)
  - ⇒ get to a point only passable once
  - ⇒ help others in the team and challenge others





## Game phases (2/2)

### ➤ Phase 4 (**Synergies**)

- ⇒ to get in the castle it is needed to overcome guardians
- ⇒ possibility for the teams to share efforts to save time
- ⇒ a crucial point to show that strategic decisions should consider an exploitation of synergies

### ➤ Phase 5 (**Killing**)

- ⇒ players confront with the monster, realizing that it is one creature
- ⇒ use all information and items collected earlier to kill Draweva
- ⇒ it is critical to achieve the goal in the right time



## Preliminary Results

### ➤ Status

- ⇒ currently in the testing phase
- ⇒ used with real users in real contexts of use starting from 2019 Q1

### ➤ Extensive user test are planned

- ⇒ to assess its impact on decision-making skills

### ➤ By now, we have just evaluated the technical architecture

- ⇒ designed to support versatility, maintainability and extensibility

- ⇒ three game developers from Wondertech SRL

- ▼ asked to develop one phase of the game
- ▼ six months

- ⇒ responses highlights

- ▼ all the programmers correctly understood the meaning of the components and the rules for leveraging them for the implementation of the game phase



## Conclusions

- The Draweva game was designed to help leaders in organizations develop leadership and collaboration skills
  - ⇒ key factors for decision making, particularly at strategy level
- In order to implement the game, we have designed a set of game modules
  - ⇒ to meet requirements coming from experts in strategic thinking teaching
- Preliminary tests showed that the proposed architecture can be fruitfully adopted for designing SGs
- The next step of our research will involve the test of Draweva in its real context of use







**Questions?  
Thank you!**

