

SERIOUS PLAY: SOFTWARE PROJECT POOL

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ABSTRACT

Software project pool game is a simulation of a process for bidding software projects. Such a game is created by using Shark Tank™ game elements and by applying a metaphor about software project bidding. Schedule, budget, specialty areas, and competencies are important factors for hiring a software company. The game comprises rounds and each round have pitches for acquiring software projects.

DESCRIPTION OF THE GAME

Bidding process is a phase of project marketing. Such a phase starts when a stakeholder contacts buyers by using a bid invitation. Buyers prepare the bidding documents and make decisions concerning price, time, and use of local resources (Savolainen, Ahonen, & Richardson, 2015).

Software project pool is based on the well-know negotiation game SharkTank™. In this 3-to-6 player game, each player represents a company. Such a company has certifications (*e.g.*, ISO 9001, Project Management Institute—PMI—, and Capability Maturity Model Integration—CMMI—, among others), competencies (*e.g.* stakeholder representation, analysis, and testing, among

EXHIBIT 1 RELATION BETWEEN SCHEDULE AND BUDGET

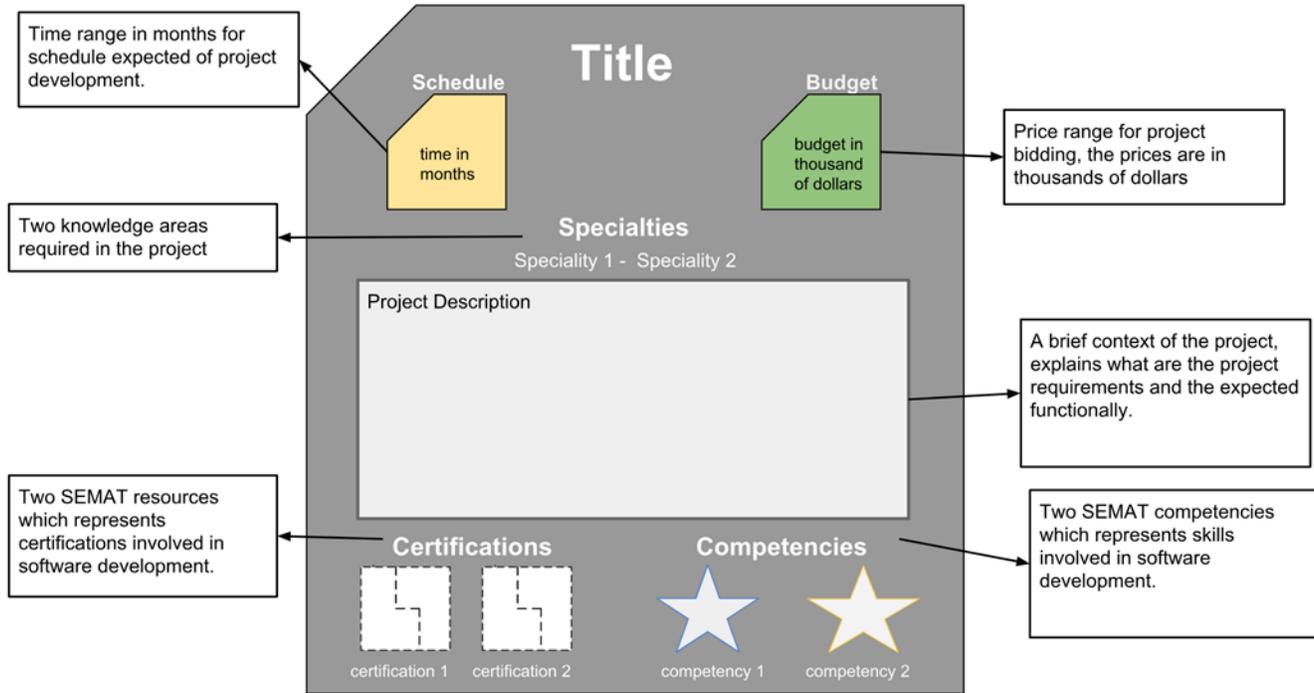
Category	Schedule (Months)	Budget (US\$M)
Very high	9 - 12	500 - 700
High	7 - 9	350 - 500
Medium	5 - 7	250 - 400
Low	3 - 5	100 - 250

others), and specialty areas (e.g. artificial intelligence, web development, and internet of things, among others).

Project cost and time have a direct relation depending on the technology and the development effort. The range of values for schedule and budget of the project inside the game are detailed in exhibit 1.

During a round, each player adopts the stakeholder role. Stakeholder selects a project card and just read the name and description of the project (see exhibit 2). This action is called a pitch. A pitch is claimed in a round for every player in the game.

EXHIBIT 2 REPRESENTATION OF A PROJECT CARD



The other players adopt the buyer role and privately estimate time and cost of the project. Stakeholder evaluate the company offers by using the following criteria:

- Time and cost matching schedule and budget of the project.
- Company belonging to the specialty area.
- Company with some certification related to the project.
- Company with competencies related to the project.
- Projects previously assigned to a company.

In case of a tie, the winner is selected by implementing a new offer for the project. Software project pool comprises six rounds and the winner is the company with more projects assigned. At the end of each round, the company can acquire new competencies and certifications for improving the quality of the company.

The elements of the game are represented by using the SEMAT (Software Engineering Method and Theory; OMG, 2015) kernel. Project budget and schedule are considered work products and certifications are represented as resources. Software project pool can be practiced by undergraduate students as a representation of the real-world bidding process. This game is an interpretation of the process and competencies required by software companies. Certifications, specialty areas, and competencies are quality parameters considered in the evaluation of outsourcing vendors (Khan, Niazi, & Ahmad, 2009).

Students can identify and learn the following aspects:

- Product types and connections with technology and software areas.
- Time and cost matching budget and proposed schedule of the client.
- Projects assignation based on the specialty of the development company.
- Company quality based on successful projects, certifications, and competencies.

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