



**BUSINESS ANALYTICS
SKILLS FOR THE FUTURE-
PROOF SUPPLY CHAINS**

**BAS4SC
LOGISTICS
GAME**



Introduction

In addition to textbooks and teaching materials, the BAS4SC project also developed a game concept that enhances the teaching process from the student's perspective. The game builds on the teaching elements developed in Work Package 3. The rules of the game are defined by:

- Teaching materials used in the game (Elements of the game);
- Scoring rules (Rules of the game);
- Recommended path for implementing the game (Implementation of the game).



Elements of the game

The logistics game will use elements developed in Work Package 3:

- pre and post tests – each of the three courses includes pre and post tests – each contains 50 multiple-choice test questions;
- case study – Two case studies were developed for each course:
 - C1:
 - DISTRIBUTION NETWORK OPTIMIZATION USING GRAVITY POINT;
 - TRANSPORT OPTIMIZATION.
 - C2:
 - MACHINE LEARNING;
 - DATA VISUALISATION METHODS.
 - C3:
 - STATISTICAL DATA PROCESSING SPSS;
 - BUSINESS ANALYTICS FOUNDATIONS INCLUDING R, SQL.
- A case study summarizing all the content – a competition task:
 - Part One – covering basic and advanced analyses, including the need to use the center of gravity method and cost-benefit analysis;
 - Part Two – data visualization using various analytical tools and statistical analysis.



Rules of the game

Below are the basic rules of a logistics game that can be implemented using materials developed in the BAS4SC project.

- The game can be played in teams or individually. The academic teacher implementing the game decides on the team size. However, it is recommended that the game be played in teams – this will also develop competencies related to group problem-solving, division of labor, and cooperation between units.
- The academic teacher(s) organizing the game determine the game's end date, at which the scoring will be tallied. Intermediate deadlines for completing individual game elements can also be set.
- The team (the game can also be played individually) that earns the most points within the designated time period is the winner.
- Recommended scoring rules are presented in Table 1.

Table 1. Scoring rules

Element of the game	Max points	Criteria
Pretest	0 points	<ul style="list-style-type: none">• its task is to determine the level of self-esteem of those taking part in the game
Posttest	50 points	<ul style="list-style-type: none">• 1 point for each correct answer• no negative points for incorrect answers
Case study (inside the course)	150 points	<ul style="list-style-type: none">• 10p - defining the purpose of the analysis• 30p - Data Analysis• 20p - Data Visualization• 20p - Method Application• 50p - Analysis Results• 20p - Results Presentation
Case study (summarizing all the content)	300 points	<ul style="list-style-type: none">• 10p - Defining the purpose of the analysis• 30p - Data Analysis• 20p - Data Visualization• 20p - Method Application• 50p - Analysis Results• 20p - Results Presentation



Two methods of implementing the game into the learning process are recommended. Regardless of the implementation method, the scoring system remains the same. A detailed description of how to implement the game into the learning process is presented in the next section.



Implementation of the game

The game can be played in two modes:

- **A single course** – the game elements used are exclusively those from the selected course: pre- and post-tests and two case studies. In this variant, the academic teacher can implement gamification within a single subject or course they teach. Therefore, the gamification results can be fully considered in the evaluation of the learning process implemented in a given course. This approach is also possible when the BAS4SC project results are only partially implemented into the curriculum (by selecting one of the courses and using its dedicated materials).
- **A complete game**, which will utilize all game elements developed within the BAS4SC project, from all three courses. This approach allows for the assessment of the full set of competencies required of a business analyst. The use of competitive case studies is particularly important in this game, as they allow for a comprehensive evaluation of analytical competencies. This solution is recommended for universities that have implemented the complete program developed within the BAS4SC project into their current curriculum. However, implementing this solution requires coordinated action between academic teachers, as the game will be implemented across various courses/subjects.



Summary

The game's rules are designed to enhance the teaching process for students and facilitate the evaluation of acquired competencies by academic teachers. The game itself does not introduce any new analytical competencies beyond those planned and implemented in the textbooks and teaching materials (in all their forms) in WP3.