

Virtual Business Strategic Games in Online Higher Education

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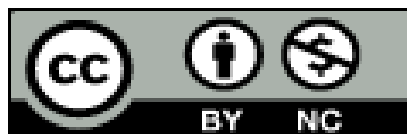
Intellectual Output no 2

New game scenario



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Below on the next pages, there is a presentation of Intellectual Output No. 2, titled "**New Game Scenario.**" However, it's crucial to understand that only a descriptive portion of this output, which provides players with context and some contextual information, is publicly accessible. The other part, containing detailed parameters, remains confidential — and for good reason. Disclosing the specific parameters of the scenario would compromise its playability. Player's privy to these details could play an optimal game, gaining an unfair advantage over those unaware of these specifics. At the same time, the section related to parameters is the most advanced part of the scenario, necessitating hundreds of hours of testing and refining. This effort involves individuals who are familiar with the game's intricacies and understand the engine's algorithms. Developing and testing the scenario parameters is, therefore, a lengthy and costly process that requires the commitment of numerous individuals and resources. Consequently, the Consortium must protect this data to prevent any external leaks. Hence, we only disclose the context of the scenario, which is essential knowledge for every player. The detailed parameters, embedded within the game, are exclusively accessible to authorized users with administrative privileges.

Importance of the scenario

The art of storytelling has always been a powerful method of communicating ideas, teaching lessons, and drawing audiences into intricate webs of experience and learning. In the realm of virtual strategic games, particularly in an academic context like the "**Virtual Business Strategic Games in Online Higher Education**," this art transforms into the creation of a game scenario. A game without its scenario is much like a ship without a compass; it might be technologically advanced and beautiful to behold, but without direction, purpose, or context.

- **Contextual Framework:** The game scenario serves as the backbone of the entire gaming experience. It provides the context in which players operate, make decisions, and navigate challenges. This context is paramount in grounding the virtual experience in a semblance of reality, ensuring players can relate to, engage with, and derive value from the game. Without this scenario, the game risks being an abstract exercise detached from practical application.
- **Guided Learning Experience:** In an educational setting, the primary objective of any tool, including games, is to facilitate learning. The game scenario, by simulating real-world business situations, provides a roadmap for players, guiding them through specific learning objectives, challenges, and decision-making junctures. It ensures that the game progresses in a manner aligned with the desired learning outcomes, making the exercise both entertaining and educational.
- **Realism and Relatability:** A well-crafted scenario brings a touch of realism to the game. It bridges the gap between theoretical knowledge and real-world application. By immersing players in situations, they might encounter in actual business environments, the game scenario enhances the relatability of the content, making the learning experience more authentic and impactful.
- **Engagement and Retention:** The essence of a game lies in its ability to captivate its audience. A robust game scenario, replete with challenges, twists, and turns, ensures sustained player engagement. Furthermore, by anchoring game events and decisions in a coherent narrative, the scenario aids in better retention of concepts and lessons, leveraging the human propensity to remember stories more effectively than isolated facts.

- **Decision-making Framework:** Business simulations are fundamentally about making decisions and observing outcomes. The game scenario provides the framework within which these decisions are made. It offers players a structured environment, complete with objectives, constraints, competitors, and market dynamics, ensuring that every decision made is contextual, reasoned, and aligned with the overarching game narrative.
- **Emotional Resonance:** Beyond the intellectual engagement of strategizing and decision-making, games also need to resonate emotionally with players. A well-thought-out game scenario, with its characters, challenges, and story arcs, taps into the players' emotions, making them more invested in the game's outcomes and more empathetic to the situations presented.
- **Flexibility and Scalability:** A well-designed game scenario is flexible and scalable. It allows for the introduction of new elements, challenges, or changes in the game environment, ensuring that the game remains dynamic and relevant. This adaptability is crucial for educational tools, as it ensures that they can evolve with changing academic objectives or real-world business landscapes.
- **Collaborative Learning:** A game scenario often involves multiple players or teams, each with roles, objectives, and challenges. This setup promotes collaborative learning, with players discussing strategies, sharing insights, and learning from each other. The scenario, in setting the stage for these interactions, fosters teamwork, negotiation, and consensus-building skills.
- **Feedback Mechanism:** The outcome of every decision made within the game scenario provides feedback to the players. Whether it's a successful strategy, a failed venture, or an unexpected twist, these outcomes, rooted in the scenario, offer players insights into their decision-making prowess, strengths, weaknesses, and areas of improvement.
- **Future Preparedness:** By simulating real-world business scenarios, the game prepares players for future challenges they might encounter in their professional lives. It offers a safe space for experimentation, allowing players to test strategies, make mistakes, learn, and adapt, ensuring they are better prepared to navigate similar challenges.

The game scenario in the "**Virtual Business Strategic Games in Online Higher Education**" project isn't just a narrative or a backdrop; it's the soul of the game. It transforms a technological marvel into a living, breathing world where players learn, adapt, succeed, and

sometimes falter, but always emerge richer in knowledge and experience. As the world of online education continues to evolve, the significance of such immersive and impactful game scenarios will only grow, defining the future of experiential learning.

SCENARIO OF VIRTUAL STRATEGIC MANAGEMENT GAME

BICYCLES FOR ALL

1. GENERAL ASSUMPTIONS OF STRATEGIC MANAGEMENT GAME

1.1. Goals of the game

The buGAM business simulation game offers students a dynamic opportunity to step into the world of entrepreneurship and business management. Through this immersive experience, participants embark on the journey of founding, growing, and steering a virtual company, while facing competition from other teams. This game-based approach illuminates the intricate processes behind starting up and the multifaceted roles of management, allowing students to grasp the interconnected nature of different organizational functions.

Throughout the game, students tackle a range of managerial responsibilities, including:

- **Strategic Planning:** Crafting a clear mission and outlining a strategy that pinpoints target segments and ideal geographical locations.
- **Research and Development:** Innovating by designing products and refining production lines.
- **Operations:** Overseeing the production of goods and ensuring their timely delivery to retail branches in various markets.
- **Marketing and Sales:** Strategizing to effectively promote and sell products, ensuring they reach the intended audience.
- **Human Resources Management:** Assembling a competent team, from production to sales, and fostering a motivated work environment.

- **Finances:** Ensuring financial stability and profitability, maintaining a keen eye on the company's fiscal health.

Success in the game hinges on the teams' ability to keenly assess market demands. Each customer group in the game possesses distinct preferences, and aligning strategies to meet these expectations is pivotal. If students can tailor their decisions to these market nuances, they not only boost sales but also enhance their chances of emerging victorious.

Structured as a turn-based simulation, buGAM guides students through ten decision-making rounds, challenging them to evolve, adapt, and strategize with each turn, simulating the ever-evolving nature of real-world business.

1.2. The business logic of the simulation

In the immersive environment of the simulation, students are at the helm of a bicycle manufacturing company. Their journey through the business landscape unfolds in a sequence of strategic decisions:

- **Design Innovation:** Drawing insights from the preferences of their target customer segments, students embark on the R&D journey, crafting bicycle models that resonate with potential buyers.
- **Production Line Configuration:** Depending on the quality and requirements of the models they design, students then set the stage for actual production, optimizing their assembly lines to accommodate the intricacies of each model.
- **Manufacturing Drive:** The heart of the operation comes alive as students determine the volume of bicycles to be produced, ensuring alignment with market demand.
- **Logistical Management:** After manufacturing, it's a logistical challenge. Students are tasked with orchestrating the transportation of the produced bicycles, ensuring they reach sales outlets promptly.
- **Distribution:** As they navigate the market, any unsold bicycles transition to inventory. Here, students must manage warehousing, ensuring optimal stock levels and minimizing overheads.
- **Market Outreach:** The culmination of their efforts is realized in the marketplace. Armed with their fleet of bicycles, students strategize their marketing efforts to ensure maximum outreach and sales.

Each step is a testament to the intricate dance of business operations, offering students a holistic view of running a production enterprise.

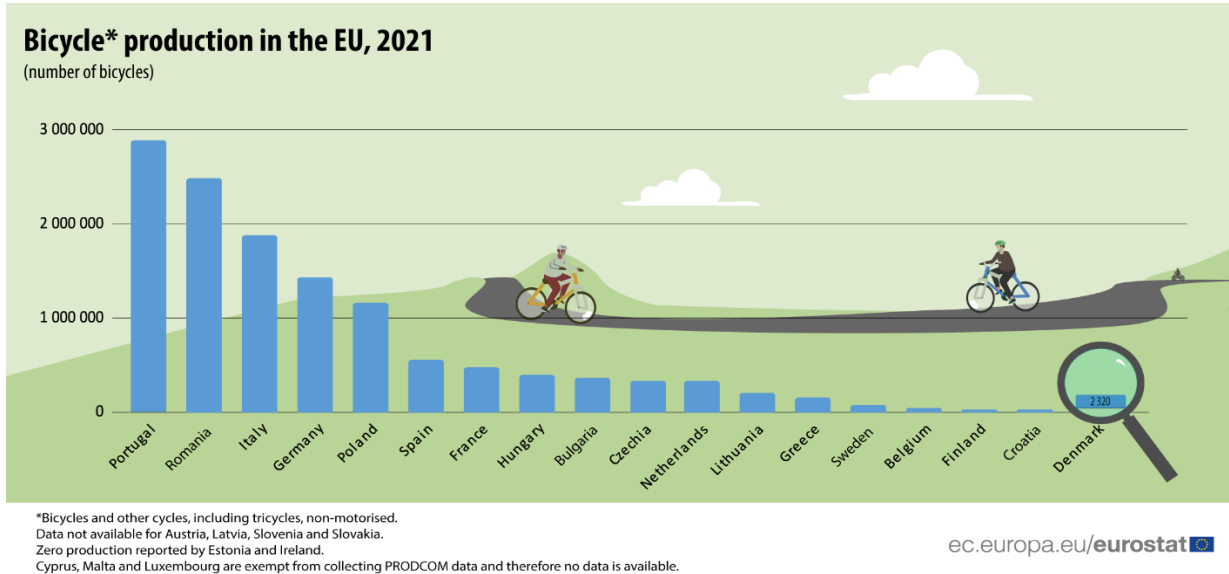
2. BICYCLE INDUSTRY - OVERVIEW

Set against the backdrop of the vibrant bicycle market, the strategic simulation game immerses players in a sector teeming with potential. In the real world, the bicycle market is pedalling forward at an impressive pace, reflecting both its commercial promise, and growing societal relevance. Yet, within the buGAM simulation, certain market complexities have been streamlined to ensure a fluid gaming experience.

Two pivotal forces propel the bicycle market:

- **Health & Well-being:** Beyond being a mode of transport, cycling stands as a testament to an active lifestyle. It's not just about moving from one point to another; it's about embracing a regimen of regular exercise and the benefits it brings to individual well-being.
- **Environmental Advocacy:** The bicycle is more than a vehicle; it's a statement. With growing concerns over environmental degradation and urban congestion, bicycles offer an eco-friendly alternative to cars, signalling a commitment to cleaner air and reduced traffic.

To offer a perspective on the market's scale: in 2021, the global bicycle market commanded a value of approximately 78 billion USD, with projections indicating a climb to 127.83 billion USD by 2029. Zooming into the European landscape, 2021 saw the production of 13.5 million bicycles, marking an 11% uptick from the previous year. Leading this manufacturing charge were countries like Portugal (2.9 million bicycles), Romania (2.5 million), Italy (1.9 million), Germany (1.4 million), and Poland (1.2 million), emphasizing Europe's prominent role in this green revolution.



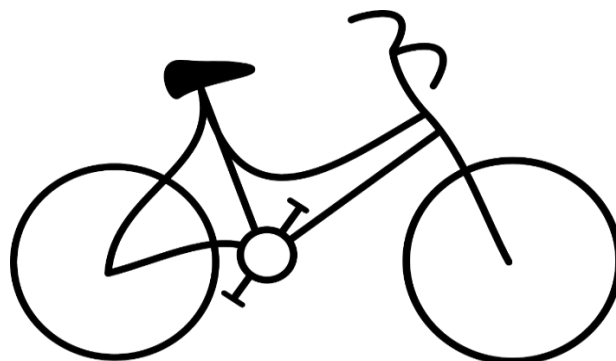
Each year, about 5% of people worldwide buy a new bicycle, and the number of produced bicycles is about 2.5 times higher than number of produced carsⁱ.

3. PRODUCT

3.1. Product description

There are the following types of produced and traded bicyclesⁱⁱ:

- Road bicycle,
- Mountain bicycle,
- Hybrid bicycle (combination of road and mountain bicycle),
- Others.



Source: <https://pixabay.com/pl/vectors/rower-transport-146960/>

Bicycles are also conventional (around 81% of total production in 2021) and electric ones (around 19% of total production in 2021)ⁱⁱⁱ.

From the price perspective, bicycles are divided into^{iv}:

- Bicycles of low price – less than 100 USD,
- Bicycles of medium price – between 100 and 400 USD,
- Premium bicycles – over 400 USD.

From the perspective of end users, bicycles are dedicated to men, women, and kids^v.

3.2. Names and characteristics of indexes (attributes)

As in real world, designing a model of bicycle requires very specific knowledge in the field of engraving and is time-consuming process, in buGAM simulation the product features are simplified and described as three attributes: **Tech advancement (TECH)**, **Aesthetics (AES)**, and **Ethics (ETH)**.

Attribute	Description	Values
Tech advancement (TECH)	The realm of bicycle technology has seen a renaissance, thanks to cutting-edge innovations and the integration of high-quality components. From the lightweight strength of carbon fibre frames to the resilience of shock-absorbers, every element plays its part in crafting a superior cycling experience. Pneumatic tyres ensure smoother rides, while aluminium wheel rims offer both durability and reduced weight. And in this digital age, the inclusion of GPS computers not only tracks one's journey but also elevates the rider's understanding of their performance. Each of these components, masterfully integrated, symbolizes the union of	1 - 10, where: 1 – a very basic materials and technology are used 10 – the most advanced technology of production and quality of components

	tradition and technology in modern cycling.	
Aesthetics (AES)	The allure of bicycle design spans a broad spectrum. On one end, there's the minimalist charm of basic bikes, stripped of frills yet beautifully functional. On the other, bicycles burst with added extras, elevating both aesthetics and performance. These eye-catching designs, enriched with thoughtful additions, not only cater to specific rider preferences but also showcase the perfect blend of simplicity and sophistication in the world of cycling.	1 – 10, where: 1 – a basic design that is not attractive to customers, 10 – a highly aesthetic and attractive design.
Ethics (ETH)	Ethical production encompasses a holistic approach that prioritizes our planet and its people. This includes the adoption of eco-friendly technologies and the use of sustainable materials that can be both recycled and are recyclable post product-use, ensuring a minimal environmental footprint. But it doesn't end there. Ethical considerations also extend to nurturing respectful partnerships with suppliers and championing the rights and well-being of employees. Embracing a socially responsible ethos, manufacturers not only ensure the quality of their products but also their commitment to the larger global community.	1 – 10, where: 1 – a low level of ethical aspects of production, 10 – a highly ethical strategy of a manufacturer.

4. CUSTOMERS

Bicycle enthusiasts come in a myriad of forms, each with distinct preferences. Let's delve into the four core customer segments:

- **AMAT (Amateurs):** These individuals prioritize affordability over all else. They seek functional bicycles without the bells and whistles, making them particularly price sensitive.
- **PROF (Professionals):** Professionals look for top-tier quality. They're willing to invest in high-performance bicycles, not minding a steeper price tag. While design aesthetics aren't their primary concern, uncompromised functionality is.
- **AYAS (As You Are Seen):** For this group, a bicycle isn't just a mode of transport—it's a fashion statement. They value eye-catching designs and often choose a bicycle that complements their style.
- **FAIR (Fair-Freaks):** Advocates for sustainability and ethics, the FAIR group carefully selects bicycles that resonate with their values. They prioritize bicycles that are ethically produced and environmentally friendly, ensuring their purchase aligns with their conscious ethos.

The importance of bicycle parameters is the following for target groups:

	(TECH)	(AES)	(ETH)	Price and marketing expectations
AMAT: Amateur	Low	Low	Low	Low
PROF: Professional	High	Medium	Medium	High
AYAS: As you are seen	High	High	Low	Upper medium
FAIR: Fair freak	Medium	Low	High	Medium

The product marketing efforts are perceived differently by each target groups, effectiveness of the marketing channels is the following:

Target groups	Product ambassador	Commercials (TV, radio, newspapers)	Social media	Sport events
AMAT: Amateur	Low	Medium	High	Low
PROF: Professional	High	Medium	High	High
AYAS: As you are seen	High	Low	High	Medium
FAIR: Fair freak	Low	Medium	High	Medium

5. MARKETS

Location of geographical markets

Each year, about 5% of population buy a new bicycle.

The following locations of sales offices are available:

- Austria – sales offices in Vienna, selling to other cities and towns in Austria.
- Belgium – sales offices in Brussel, selling to other cities and towns in Belgium.
- Italy – sales offices in Rome, selling to other cities and towns in Italy.
- Poland – sales offices in Warsaw, selling to other cities and towns in Poland.

ⁱ Source <https://www.bicycle-guider.com/bike-facts-stats/>, access: 21/10/2022

ⁱⁱ Source: <https://www.fortunebusinessinsights.com/bicycle-market-104524>, access: 21/10/2022

ⁱⁱⁱ Source: <https://www.precedenceresearch.com/bicycle-market>, access: 21/10/2022

^{iv} Source: <https://mobilityforesights.com/product/bicycle-market>, access: 21/10/2022

^v Source: <https://www.fortunebusinessinsights.com/bicycle-market-104524>, access: 21/10/2022