

A Game for Simulating the Successful Saga of an Individual Micro Entrepreneur

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Abstract. *This article presents The MEI Game, a videogame implemented as an educational visual novel based on a real story about the creation and management of a small business in Baixada Fluminense. This game provides an entrepreneurship scenario, which ends with the success or failure of the business, based on the player's decisions. From its feedback, users can understand the reasons for their results, and retrace their steps to fix their errors, reinforcing their understanding of the theory.*

Keywords. *Business Game, Entrepreneurship, Visual Novel*

1. Introduction

This article describes The MEI Game, a educational visual novel based on the real story of Alice ¹, a small entrepreneur who was successful in the creation and administration of her company at Nova Iguaçu, Rio de Janeiro. Figure 1 shows its interface.

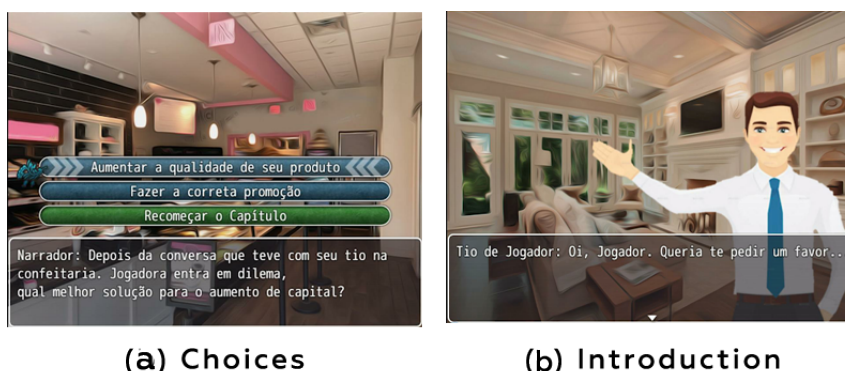


Figura 1. Screenshots from the game.

Alice is a MEI (Individual Micro Entrepreneur), which means she owns a simple type of company created for self-employed and small business. As MEI, the entrepreneur starts to have his own business registration ID, the possibility of issuing invoices and having access to Social Security benefits [Behling et al. 2015].

¹This is a fantasy name, chosen to protect the real identity.

The game challenges the player to retrace Alice's path or make even better business decisions for Alice to achieve success in her company. An effort was made to provide different choices at each decision, and to support the result of those choices through economic theory. At the end, the game evaluates the level of success of the economic path of the company.

2. Game Description

The game follows the history of Alice, a young MEI who develops a cake bakery business. As she is a production engineer, trained to analyze and react to the market, she used several economic techniques, which helped the company to survive and succeed. The game starts with the protagonist finding herself unemployed after losing her job in an economic recession, having created it to serve as a temporary income source, through Entrepreneurship of Necessity [Vale et al. 2014]. Throughout the game, as her business grows, Alice faces strategic decision-making challenges, which guide her business towards success or bankruptcy.

It takes place in the city of Nova Iguaçu, in the mid-2010s. This city is in the periphery of the metropolitan region of Rio de Janeiro, in a place known as "Baixada Fluminense". [Alves 2003] states that this region was subject to poverty and violence. Despite this, urban entrepreneurship and other factors has contributed to changing this situation, so that "the Baixada, as a whole, changes its image, erasing its violent past and present and assuming the image of region that is projected for the future as the most promising alternative for investments in the state." [Alves 2003, pg. 171].

The MEI Gamedesign goals are:

1. to serve as a playful and attractive way to acquire, or reinforce, the knowledge of administrative strategies, especially for students in economics or related areas;
2. to be theoretically accurate and, at the same time, accessible for the general public;
3. to be an interesting and challenging, and
4. to allow for multiple endings, with different levels of success, so that players can compare results, in order to explore multiple management strategies.

2.1. Mechanics

The game is a Visual Novel (VN), a style of game that "has a simple mechanics, in which the player's main objective is to follow the story through texts presented to him, such as dialogues, music, noise from environment and image that work as the player's eyes for scenarios and characters in the context" [Taborda and Alves 2015]. Typically, VN have multiple possible endings, so that the player can advance through the chapters of the story and, once they make different decisions, go through paths that lead to different results.

Considering this freedom of choice, there is a high degree of variability in the game's duration, which depends on reading speed, time taken for the decisions, and, essentially, the player's choices. While successive bad choices can lead to the game ending prematurely, right choices can lead the player through more chapters before the end, thus resulting in longer game time.

It is expected that an average player will take about 30 minutes to complete a game session. In cases of exploring different paths, though multiple sessions, one can achieve

more than one hour of gameplay. Some of the possible combinations of choices lead to “happy endings” (where Alice succeeds with her company), while others combinations lead to “bad endings” (where she fails). Figure 2 illustrates the many possible paths in the game. Happy endings are represented by green leaves, and Bad endings as red leaves.

The game’s difficulty progression was created in a way that the sooner the player makes a wrong decision, the more time he will have to fix it. This is possible because the Bad Endings do not appear at the beginning. That is, as the game progresses, it is more risky to make bad decisions, which easily lead to the worst end faster.

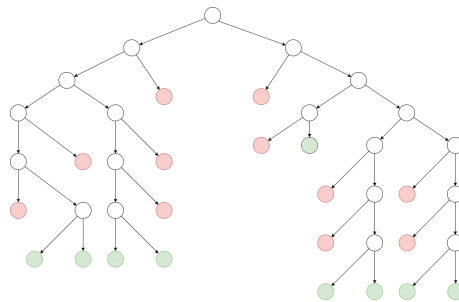


Figura 2. The Game’s Decision Tree

Bad Endings lead to a Game Over screen, where the player receives information about his strategic mistakes, and has the option to start over from the last save. The Happy Endings, on the other hand, are different from each other, especially with regard to how successful the company was. The company’s value is calculated at the end, and can be used as a score in a particular session. The player can play it again, trying to achieve better results by different actions.

The game has nine Happy Endings, and eleven Bad Endings. While to get a Bad Ending just a few consecutive wrong decisions are enough, Happy Endings need many more right decisions.

3. Model Discussion

The model attempts to simulate the effects of strategic administrative management decisions, based on the literature on entrepreneurship. The player decides early on in which controllable variable to invest his efforts first, considering the options proposed in the Marketing Mix: Price, Place, Product and Promotion [McCarthy 1960]. This choice simulates the options that a company has to influence how its product will be sought and perceived [Kotler and Armstrong 2010].

The player is often driven by opportunities to innovate in the cake making processes of the virtual bakery, as well as in the products themselves. The model compares decisions and considers innovations that are original and most effective to be assertive [Frankelius 2009], but it takes into account counterpoints such as the skill of the characters to perform a certain task, or the cost for research and development of products. In general, the player is rewarded when they try to revolutionize the economic structure from the inside out, that is, innovate with better or more efficient processes and products, in addition to distribution in the market, such as the connection from the store to the factory. The model is based on the Schumpeterian theory that affirm to that "creative destruction is the essential fact of capitalism" [Schumpeter 2010].

Another element present in the model is the possibility of making business partnerships. According to [Porter and Advantage 1985], partnerships have an advantage over acquisitions and mergers in terms of being cheaper and faster. According to [Teece 2010], today's companies almost always need to form partnerships to enable their business models. In contrast, internal growth offers advantages in relation to the improvement of the company's knowledge through direct involvement, diluted investment cost, freedom to define goals and strategic independence [Lockett et al. 2011, Dyer et al. 2004]

The model purposely does not rely on random variables, which would be inherent in the real process, in order to prevent the excessively high complexity. While greater complexity would generate a more realistic and credible model, it is understood that, for the main purpose – bring entrepreneurship content closer to the player and to generate entertainment – there are no significant losses, and greater complexity does not necessarily mean better absorption of the learning experience [Vicent Safont et al. 2015]. It can be said that the low complexity, even limiting the ceiling of learning the concepts, increases the efficiency with which the treated concepts are transmitted.

4. Debriefing

Although created for individual experiences, The MEI Game can easily be used in groups, during accounting, economics and administration classes for educational purposes. In these cases, it might be useful to have a debate by the end of the class to evaluate and discuss the concepts. The debater may prompt any relevant discussions to the content. Some suggestions are:

1. Identify the students who were successful in the game and achieved the best results among the participants. Then, ask them to tell others about their character's story throughout the game. Interact with them by making comments about the economic theories they used, and suggest that the paths chosen are assertive for business administration.
2. Similarly, verify which of the participants failed in their virtual companies, and explain which reasons must have contributed for these decisions according to the literature.
3. Although the game is based on econometric models that take into account scientifically accepted theories, the model is an oversimplification - just like every model - and does not reflect the unpredictability of the real business world. Theories pointed out as assertive cannot always result in success in the real world, considering infinite other variables capable of interacting with the process, as well as bad decisions can result in success for the same reasons. Every model is a simplification and there is no recipe for business success without the possibility of failure.

5. Conclusions

This article presents an educational video game of entrepreneurship that uses econometric theories to decide the success or failure of the main character running a company.

The main purpose is to bring players to entrepreneurship in a playful way, with scientifically based and relevant knowledge, serving both for this purpose and also to transmit and fix correct knowledge of the topics discussed.

In future work the game will be evaluated in terms of its ability to motivate classroom discussions, entertainment and teaching capacity.

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