

Chapter 27

Serious Games in Business

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ABSTRACT

The intention of this book chapter is to give an overview about Serious Games from a scientific as well as from a business related point of view. As a first step, several existing definitions of Serious Games are examined, and the differences and similarities of these games and common computer games are presented. In the next step, some goals of Serious Games and their dependency on the application scenario and/or the kind of business in which the game is used are analyzed. Afterwards, the focus switches to Serious Games developed for an economic context. The specific goals of such games are presented, and the influence of these goals on design and development requirements is discussed. Furthermore, how the application scenario influences Serious Game design is examined. Last but not least, some use cases are presented in order to demonstrate the possibilities of Serious Games for training and learning purposes.

INTRODUCTION

Computer games have grown to be a part of the learning culture for people from all age groups. According to a Nielsen Study from 2008 (Nielsen Games, 2008), one in three gamers is convinced that games constitute an effective learning tool. However, computer games as a means of education

and knowledge transfer – the so-called Serious Games - are a comparably new subject. Serious Games recognize the growing interest in computer games as a learning tool and already influence and broaden the range of digital games and their topics as discussed for example by Oborski (2007). This can be mainly traced back to the fact that business enterprises as well as research institutes have realized the potential of common computer games and their underlying technologies and have

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thereby discovered new concepts for serious application areas like basic, advanced and hands-on training and simulation. These concepts are first and foremost used to make educational offers more attractive, to explain complex applications and task sequences fast and easily and to impart knowledge in an enthralling and entertaining manner (Lukacin, 2007).

Nowadays, special software to train and instruct employees is used in different industries like medical science or military because it allows for effective learning by using immersive effects and/or intuitive user interfaces. Serious Games are especially helpful if complex relations have to be represented allowing the user to make mistakes that would have fatal consequences in reality. Customized for every audience, information is relayed, thinking processes are encouraged, competences are trained and work processes are improved. This way of learning in a secure environment close to reality is a distinct advantage of Serious Games, which opens up new and reasonable perspectives for business enterprises in the sector of on-the-job training.

The term “Serious Games” thereby stands for innovative learning and the purposeful use of computers and the internet for the effective imparting of knowledge. The potential of this learning style has already been recognized by the biggest enterprises worldwide (Global Fortune 500) - 70% of these enterprises use interactive software and games in the area of employee training nowadays. According to The Apply Group, the number of Global Fortune 500 – enterprises using Serious Games for on-the-job training will grow from 100 to 135 enterprises until 2012, tendency rising (Entertainment Software Association, 2010).

Keeping in mind the emerging markets for Serious Games, the intention of the chapter at hand is to give an overview about this new learning style from a scientific as well as from a business point of view. In a first step, the chapter provides a general overview about different definitions and characteristics as well as different types of Serious Games and their advantages and disadvantages.

Afterwards, the focus will shift to Serious Games developed in an economic context. By describing and analyzing several case studies, specific goals of such games will be presented and the influence of these goals on design and development requirements will be discussed. Furthermore, it will be examined how the application scenario influences the Serious Game design. Last but not least, real-life use cases will be presented in order to demonstrate the possibilities of Serious Games for training and learning purposes. These use cases are derived from the ongoing European Research Project “Mirror” (The Mirror Project, 2011) and are therefore able to highlight some current research questions and issues in this area.

HOW CAN THE TERM “SERIOUS GAME” BE DEFINED?

In order to answer the question what constitutes a Serious Game and which aspects of this learning style are serious, it is important to consider from which perspective the term is analyzed. Gamer and game developers generally consider “their” games to be serious since it is about their profession. What could not be serious about that? For non-gamers and non-game-developers, however, the term “Serious Games” sounds like an oxymoron. How can something be serious and have the character of a game at the same time?

The Term “Serious Game”

A consistent and generally accepted definition of the term “Serious Games” has not been agreed upon so far. However, long before the digital revolution became part of everyday life of individuals and organizations, there were first ideas for Serious Games. As a first representative, Abt (1970) described the term “Serious Games” in 1970 as “serious games in the sense that these games have an explicit and carefully thought-out educational purpose and are not intended to be played primarily for amusement.”

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