“Convince Woody”, a serious game on competence development in a distributed collaborative environment

Fabien Girardin*
Department of Technologies, Pompeu Fabra University, Barcelona, Spain
E-mail: Fabien.Girardin@upf.edu
*Corresponding author

Eleni Boursinou
Centre for Advanced Learning Technologies (CALT), INSEAD, France
E-mail: Eleni.Boursinou@insead.edu

Ayman Moghnieh
Department of Technologies, Pompeu Fabra University, Barcelona, Spain
E-mail: Ayman.Moghnieh@upf.edu

Abstract: In this paper, we present the adaptation of a serious game in the context of an e-learning framework supporting distributed social networks. The game, “Convince Woody” takes stage in the digital movie production highlighting the problem of managing the competence development dimension involved in interdependent yet highly spread organizations. Our first objective is to demonstrate the utility of serious games in complex cooperative environments and converge on the provision of a suitable environment for validating and evaluating informal learning perspectives in an e-learning framework. Secondly, the pilot will prove a state-of-the-art environment for revising remote collaboration from an asynchronous communication perspective in order to evaluate the relevant tools’ efficiency in responding to the needs of our scenario. Lastly, we plan to explore the use of synchronous and asynchronous collaborative tools to maintain the flow of information, the interaction and the cooperation.

Keywords: e-Learning, serious games, simulation, computer-supported collaborative learning, social software, competence development

1 INTRODUCTION

By 2011, gaming will emerge as a critical component in a majority of corporate learning solutions (Prensky, 2001). This was a prediction made by Gartner in its recent report on ‘Key Reasons Why You Should Consider A ‘Learning by Gaming’ Strategy’. The report found that game-based learning can help organisations improve their knowledge transfer processes and outcomes, and motivate learners to perform better. Based upon the literature review in the field game-based learning provides a higher understanding and retention from students. “Game-like processes and systems have been used to involve a very heterogeneous target population in gradually becoming more aware and more willing and able to explore collaboratively and playfully new forms of knowledge exchange and interactions” (Angehrn, 2004). Games may be used for “connecting” diverse and distributed people as well as groups, networks, organizations and communities. They proactively support the identification of potentially high-value connections, and the gradual development of collaborative relationships. Games can also serve as interactive frameworks that enable players to collaboratively participate in the creation of collective meaning. When properly designed, they present collaboration opportunities that may lead to the exchange and creation of knowledge, and the generation of value both
at the learner and learning-network levels. Value creation is deemed essential if such games are to succeed and to be broadly employed in business and collaborative environments. The main aspect of these simulations lies in the experience-based learning. It assigns a role and mission to the learner and places him/her within a specific scenario. The learner then takes on the role and responsibilities in the virtual environment gains valuable targeted skills through the game experience.

In the educational contexts, games have been successfully and extensively involved in competence development activities. Relevant scenarios involve managers, engineers and decision-makers in managing the integration of changes and innovation in different types of organizational contexts. However, such game paradigms very limitedly meet today’s e-learning requirements where learners are distributed geographically and seldom have the opportunity to congregate.

In this paper we discuss how to adapt serious games called “Convience Woody” in the context of an e-learning network by integrating them within the TENCompetence framework (Koper and Specht, 2006) that offers the required functionalities for intertwining e-learning communities and provides the necessary tools for distant computer-supported collaborative learning. Subsequently, we plan to develop a prototypical game whose theme revolves around the cinema domain and the integration of digital technologies. Indeed, the context of cinema presents an opportunity to illustrate how serious games adopted for distributed environment can contribute in resolving the difficulties generated by the widespread adoption of new digital technologies.

2 SOCIAL AND COLLABORATIVE TOOLS

Cooperative processes stimulate reflection, with peer interactions improving self-esteem, commitment to work, and a sense of belonging (Anderson et al, 2000). Peers may also bring in a higher-level discourse, which includes the exchange of ideas, explanations, justifications, speculations, inferences, hypotheses and conclusions. A social network approach also situates a learner in an active role, transforming the learner from passive recipients of pre-packaged learning courses and modules to active contributors to the knowledge space. Socio-constructivist theory stipulates that learning is a social activity, and that social and collaborative experiences, individual learning may be extended to what one might accomplish alone (Vygotsky, 1978; Thomas & Funaro, 1990). As such, one of the goals within distributed learning environment is to stimulate and support participation and active contribution to the learning networks. As Woolcook notes (2001), “the latest equipment and most innovative ideas in the hands and minds of the brightest, fittest person, however, will amount to little unless that person also has access to others to inform, correct, improve and disseminate his or her work.”

Current serious games targeting distributed learning lack of strong and well adapted social and collaborative tools. We perceive the recent trends in social software an opportunity to improve the facilitation of connections, interactions and cooperation among members of online communities. Their approach offer a softer, more flexible approach toward encouraging collaboration, by allowing a greater user control of data. Moreover, their peer-supported dynamic leverages the collective intelligence of users. In the context of “Convience Woody” learners will be able to explore and connect to their social network to locate knowledge about competencies, competence assessment mechanisms and competence development opportunities. This social network encompasses many different types of relationships users have and develop with individuals in their professional context as well as in their broader social context.

3 THE DIGITAL CINEMA CONTEXT

The domain of cinema industry is currently witnessing a shift from analogue production means to an integrated digital production chain where major changes in the workflow are taking place. Consequently, new tools and techniques alongside altered roles and positions force specialists to seek new skills and competences in order to adapt to this evolving professional environment.

As the traditional craft is changing, there is a need for cinema industry professionals to develop their competences in order to grasp the induced impact of change. However, these professionals are finding it hard to understand and follow the complex ramifications of the shift to digital technologies since these aspects are highly distributed in the production chain and reach deeply across organizational-spanning collaborations. Since partner groups participating in the production chain are in general highly interdependent, changes to the roles of one group can significantly affect the entire collaborative process. Therefore, the competence development dimension involved in this problem has to be properly managed in order to maintain the vital synchronization among the collaborating entities. In addition, the professionals involved in the cinema production chain tend to be geographically spread in the natural settings of their working environment, rendering their collective training impractical in one location.

For these reasons, the adaptation of simulation-based e-learning experience to the evolving cinema production environment becomes a challenging task. We have designed a game scenario based on the EIS Simulation (Angehrn, 1995) to address the digital shift in cinema production where the collaborative framework between the learners will be based on the TENCompetence environment. We are particularly interested in the social interactions taking place in this learning network while co-working professionals pursue competence-related goals, especially those associated to professional and career development.

4 THE GAME
We conducted a series of interviews with professionals in the movie industry who revealed the difficulties inherent in composing abstract technological specifications for the digital production workflow. Every movie is a whole new project with new specific constraints (e.g., creative, financial). Such variety makes the advantages of using digital technology relative to a case-specific scenario rather than generically defined. Amid this type of technological market, the changes that digital cinema technology brings to the cinema industry are virtually undetectable by comparing between digital and non-digital project scenarios.

The serious game we propose, named “Convince Woody” targets the production chain of a cinema film where a team of planners working for a media company cooperate to devise a production plan for its production. The challenges associated with the production chain are to identify the technological requirements of all the stages that are suitable for the case at hand, and understand the organizational and planning consequences of adopting a specific technology from among many others.

The goal of the game centres on confronting the players with the complexity of integrating digital tools and techniques in the production process. We named this game “Convince Woody” since the game’s main scenario is based around Woody Allen’s alleged resistance to the use of digital technology in artistic production.

In cinema production, independent directors of photography seldom negotiate their artistic choices with other directors. They are more concerned with the creative and artistic aspects of cinema than the economical and managerial repercussions of such aspects. From the other side, the producer sets the budget without interfering with the creative aspects, generally leaving enough space so directors can manoeuvre on their guise. Financial and administrative directions (i.e., producers) do not interact a lot with the creative directions (general director and director of photography), despite the fact that technological decision making in one phase of the production may heavily affect another phase. For example, if the director of photography chooses to adopt a virtual set setup for shooting a scene, the makeup artists have to switch to digital techniques. Therefore we propose to consider a scenario of a movie planning that emphasizes on the (in)compatibility of analogical and digital competences and market/social constraints in movie production. It will be based on a set of little missions during which initiatives and decisions impact the whole production planning. Each mission would focus on a specific learning value.

The properties of this pilot focus on its informal game-like learning pedagogical model along with the cooperative requirements for its scenarios. In other words, the main objective of building this pilot is to demonstrate the utility of serious games in complex cooperative environments, and converge on the provision of a suitable environment for validating and evaluating informal learning perspectives using the TENCompetence framework. In this context, the pilot will be deployed and evaluated within the international media group, MediaPro, and will address experienced professionals working on different locations and having different roles, competences and specialities. These professionals are currently experiencing the managerial consequences of hasty competition-driven integration of new technologies in the cinema production chain.

5 DISCUSSION

5.1. The Learning Insights

Our hypothesis for the participants in the game is that they are expected to gain a number of insights including:

- An awareness of the need of long term change.
- An understanding of the advantages and disadvantages of digital cinema technologies, and the roles of people involved during all the production phases.
- A clearer idea of the major different change strategies, and their respective advantages and disadvantages.
- A strong message that change doesn’t just happen - it needs to be managed, and that implementing organisational change involves the mastery of a multitude of variables.

In order to evaluate the learning insights provided by the experience of playing the game, we will use qualitative methodology by combining ethnographic fieldwork and participative observation. These two techniques defined by the Chicago School in sociology. Interviews and focus groups with the users could also assist us in a better understanding of the learning process and its benefits.

5.2. Synchronous and Asynchronous Collaboration

One of the challenging aspects of this serious game is to maintain the flow of information, interaction, and cooperation among the members of the playing team who can be located on different sites and available during incongruent time segments. In other words, the remote-access functionalities provided by the TENCompetence framework allow players to participate at their ease and personalize their participation level and time accordingly. Such set of abilities may hinder the cooperative aspect of the game since the latter requires a type of inclusive presence generally found in synchronous collaborative environment.

Many tools, such as forums, blogs, and email, have been developed to support asynchronous collaboration among people. However such tools were conceived upon the notion that collaborators working asynchronously have no need for maintaining frequent contact or minute teamwork coordination with their peers (Edwards, 1997). This notion arguably does not apply to our scenario where coordination should be vitally carried out on a minute scale, based on the
nature of the strategic planning efforts and tactical decision-making inherent in the game pilot.

The pilot will hence provide a state-of-the-art environment for revisiting remote collaboration from an asynchronous communication perspective in order to evaluate the relevant tools’ efficiency in responding to the needs of our scenario.

On the other hand, we will explore an approach where the flow of information, interaction, and cooperation is maintained by a hybrid synchronous and asynchronous collaboration environment. The purpose of this approach is to provide both a lenient and efficient communication framework that can maintain the collaboration among the team members. The framework will be composed of components inherent in the TENCompetence environment, mainly a discussion forum, a chat window, and a scheduling tool.

CONCLUSION

“Convince Woody” will provide a ‘play-ground’ in which people involved in cinema production can collaboratively experiment with the use of different tactics to manage a shift in digital technologies, generate rich discussions about their appropriateness, and acquire feedback for the most effective and appropriate way of achieving the learning objectives of the game.

The simulation aims at providing the participants in digital cinema production with a shared experience, which brings them in direct touch with a variety of factors impacting the dynamics of change in organizational contexts. It is addressing relevant competencies related to distributed teamwork, collaboration dynamics and social networks.

Finally, we plan on demonstrating the utility of serious games in complex cooperative environments, and converge on the provision of a suitable environment for validating and evaluating informal learning perspectives using the TENCompetence framework.

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