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CISTER-TR-150902

2015/09/07

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Abstract

The ever increasing popularity of social media makes them a promising source for the personalization of gameplay experiences. Furthermore, involving social network friends in a game can greatly enrich the satisfaction of the player and also attract potential novel players to a game. This paper describes a social overlay designed for desktop games. It allows players to easily capture and share on multiple social networks screenshots, videos and even game-related stories. Unlike most social sharing systems our social overlay is designed to interact with the user in a non-intrusive way allowing him/her to be in complete control of what is shared. Our goal is to make players look and ask for social integration. The development of this social overlay will allow players to take full advantage of their social communities to improve their gaming experience.

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Abstract. The ever increasing popularity of social media makes them a promising source for the personalization of gameplay experiences. Furthermore, involving social network friends in a game can greatly enrich the satisfaction of the player and also attract potential novel players to a game. This paper describes a social overlay designed for desktop games. It allows players to easily capture and share on multiple social networks screenshots, videos and even game-related stories. Unlike most social sharing systems our social overlay is designed to interact with the user in a non-intrusive way allowing him/her to be in complete control of what is shared. Our goal is to make players look and ask for social integration. The development of this social overlay will allow players to take full advantage of their social communities to improve their gaming experience.

Keywords: Social media integration, Desktop games, Social overlay, Social networks, Gameplay experiences

1 Introduction

Gamers often compete, collaborate and share stories of gaming accomplishments. Over the years this leads to game developers realizing that they have to support the growth of gaming as a social hobby. This fact can also contribute to the creation of collaborative environments to improve the game quality of every participant [1]. However, social media integration can quickly evolve into a spam-like promotion system [2] for the players who connect their games to social networks accounts, so developers need to carefully consider the benefits and disadvantages of social media as an opt-in experience.

To promote social media integration in desktop games we have developed and tested a social overlay in the context of a small multiplatform game project, called Adventure! The Paladin Order (APO) [3], however it intends to be applied to different desktop game environments. Our social overlay is designed for desktop players of all age groups, but with a focus in young people (typically aged from 18 to 25) that are regular users of social networks like Facebook and Twitter [4]. With our overlay, players will always be able to choose not to use the social features, but if they opt to use them, they will have benefits such as the capacity to capture and share their game

experiences in different social networks and in the future, the creation of collaborative environments with social network friends for the personalization of their game experiences.

This paper describes a user-friendly, non-intrusive and multiplatform social overlay for desktop games to allow players to enhance their gaming experiences using the social communities. It is structured in 7 sections. Following this general introduction section 2 reviews the state-of-the-art of the related literature and compares the existing systems with our social overlay prototype. Sections 3-6 are devoted to present our social overlay including its requirement specifications, system design, prototype implementation and prototype alpha evaluation. Finally, in section 7 we summarize the conclusions and main future work.

2 Background on Social Media Integration

Full social media integration in games is often seen in online games that can be played through social networks. Usually these games include multiplayer features or asynchronous gameplay mechanics. These games are frequently implemented in the web browser or in mobile device apps [5]. Social network games are among the most popular games in the world, with games such as FarmVille [6], Mafia Wars [7], The Sims Social [8] and Candy Crush [9].

Recently, the gamers have realized that they can expand the gaming community directly through YouTube, Twitter, Facebook and other popular social media sites. Gamers now often record and upload their gameplays to YouTube to receive comments and share gaming strategies and principles. These new habits created business opportunities that are starting to be explored. For example, Achievement Hunter, a Rooster Teeth spinoff, is exclusively dedicated to the upload gameplay videos to the Let's Play YouTube Channel [10]. Live-streaming, particularly Twitch.Tv, has also become popular lately [11], it fostered the appearance of "gamer celebrities" that congregate in real time a large numbers of fans to watch and comment the game live. Gamer Sacriel was one of the top leaders on Twitch.tv in 2013 and he has a regular audience of more than 2,000 simultaneous viewers on his game streams. This has allowed him to become a professional gamer making his income solely on revenues from YouTube and Twitch.tv [12].

To address this new reality, social media integration in video games evolved to a new dimension and it is increasingly available on game consoles, such as Microsoft Xbox [13] or Sony's PlayStation 4 [14] and also on desktop games [15, 16]. Typically the social features for these types of platforms are media sharing, live broadcasting and exchanging playing experiences.

2.1 Strategies of social media integration

Kietzmann et al. [17] presented a model that stratifies different types of social media accordingly to the focus placed on seven functional blocks: identity, conversations, sharing, presence, relationships, reputation and groups. Exploring this model can help developers and companies to better design their social network targeting strategies.

Based on this model Facebook is used to promote long-term relationships with the target audience and can be integrated in almost all contexts. In this platform there is a strong connection between identity and relationships. In the gaming context Facebook-users have specific profiles for self-promotion (real identity vs. virtual identity) and share motivations, causes, events and activities with friends. On other hand, Twitter is more focused in the conversation than in the identity of users. In this platform, users "tweet" short and real-time messages which are often scores, real-time status updates or game stories with no obligation to answer. Kietzmann model can equally be applied to YouTube, which is centred in the sharing of previously recorded videos. Initially, YouTube only allowed users to upload homemade videos, but now is also used to improve the marketing of companies and for sharing game videos. Unlike Facebook that uses "likes" for reputation, YouTube reputation is based on "view counts" and "ratings". In this platform the group relationships really matter, so this type of platform is also indicated for user experience sharing.

2.2 Similar Systems and Prototype Progress

Presently, there are several successful stories of the use of social integration tools for game promotion and enhancement. In the last decade these tools vary greatly on its characteristics, complexity and dedicated financial investment.

One of the first relevant examples of game-related social media integration was revealed on November 17th of 2009 upon the presentation of Xbox 360. It had native applications for Facebook, Twitter and Last.fm [13]. The Facebook application allowed gamers to update their status, comment, like and view friends' pictures. Additionally, "Xbox Live Friend Finder" allowed gamers to identify Facebook friends that used Xbox Live [18]. For unclarified reasons, on October 16th 2012 Facebook and Twitter applications were removed from Xbox Live limiting users to access Facebook and Twitter through the Xbox 360 web browser [19].

In August 2011, Overwolf Ltd. announced a free social overlay for Windows desktop games [15] that included a variety of social features inside the game environment such as the ability to browse contents, share pictures and statuses on Facebook and Twitter (including game-related stories and pictures), upload and watch YouTube videos and make Skype calls. It also allowed game recording and live gameplay streaming to Twitch. Currently, Overwolf provides official support for more than 1000 different Windows desktop games [20] and a store with a wide range of free social network applications. However, some of these applications for example the ones for conversation or ongoing game detection are still limited in functionality comparatively to other social overlays and there is a complete lack of versions for other platforms other than Windows. In our social overlay we also provide support for the common share and screen capture actions, however to bypass the Overwolf compatibility limitation, our overlay was developed using Unity3D [21] and offers support to Windows, Mac OSX and Linux. Later in this year, Echobit released Evolve [22] a gaming platform for Windows desktop games with a hotkey accessible social overlay. Beyond the basic social overlay functions (e.g. gameplay sharing and chatting) this platform developed a new feature called "Party" that can be initiated for multiple games at the same time. It allows players to search the game statuses of their

friends and create parties (teams) in the games that they are playing. Presently, Evolve officially supports more than 4300 games, four social networks: Twitter, Facebook, YouTube and Twitch and for four platform distribution services: Steam, Battle, Origin and PSN [16]. The major limitation of Evolve beside the absence of a multiplatform version, is the lack of APIs and SDKs to easily customize and integrate this tool in games. Similar to this overlay, our prototype includes a “share” hotkey and allows integration of Twitter, Facebook and YouTube, which according to Ann Hurk [23] are the most used social media platforms. Contrary to Evolve, we can export our social overlay tools as Unity3D assets [24] and integrate them in different Unity3D development environments for desktop games.

More recently, Sony took a decisive step forward in social media integration in their games by incorporating a "Share button" in the back of the PlayStation 4 (PS4) game controller. This button was revealed during the worldwide presentation of PS4 on February 20th of 2013 [14] and allows players to easily share their gaming experiences directly to the PlayStation network, Facebook, Twitter, Twitch and USTREAM. This "Share" button is the first existing social feature of its kind and is analogous to our “share” hotkey, however instead of only share gameplay experiences, we will also provide asynchronous game mechanics to integrate social networks friends in the creation of new game elements and in the obtainment of different game bonus.

3 Requirements Specifications

The main goal of our social overlay is to enhance the gameplay experience of the players using social media communities as resource. The involvement of friends and communities can promote sharing of game strategies and achievements among players and avoid eventual irritation or boredom states in the player that may drive him to stop playing [25].

Requirements were divided into two types: functional requirements and non-functional requirements. The first type of requirements presents what the prototype should do and the second type describes how the prototype should work.

The functional requirements were prioritized into three categories (essential, conditional and optional), according to their importance for the prototype. Table 1 presents the prioritization scale of functional requirements, as well their descriptions.

Table 1. Prioritization scale of functional requirements.

Scale level	Description
Essential	Critical requirements, without them the product is not acceptable.
Conditional	These requirements would improve the product quality.
Optional	The requirements that would be nice to have, but are not indispensable to the product.

As the social overlay is being integrated in Adventure! The Paladin Order (APO) for tests purposes, the agreement on essential requirements was made informally. In what regards to conditional and optional requirements the prioritizing was based on the opinions of APO’s test team that were collected using a survey. APO’s test team are an external group of 10 young players with ages between 19 and 25 that were recruited by our Clockwork Inc. team [3] for the preliminary testing phases. We considered “optional requirements” all the requirements with average between 1 and 2.5. The requirements with average between 2.5 and 5 were considered “conditional requirements”. The opinions of APO’s test team about use case-based requirements related with “Broadcast Gameplay” have an average result of 3.5 (Fig.1) in a scale of 1 to 5. Regarding to the “Craft” use case-based requirements, their opinions have an average result of 4.1 (Fig.1) in a scale of 1 to 5. Finally, the opinions about use case-based requirements associated with “Use passive party system” have an average result of 2.1 (Fig.1) in a scale of 1 to 5.

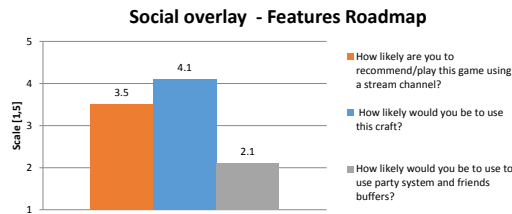


Fig. 1. Average of APO’s test team opinions (scale of 1 to 5) about broadcast gameplay (orange), craft system (blue) and passive party system (gray).

Below we present our use case diagram, as well the prioritization scale of use case-based requirements.

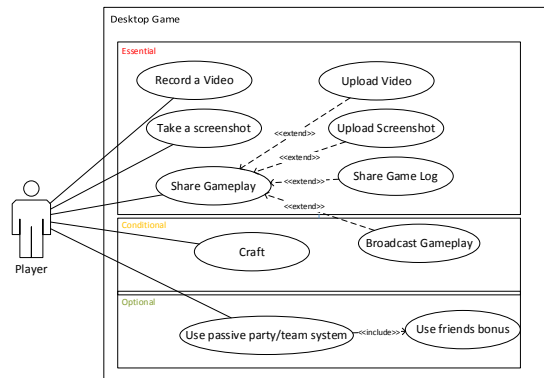


Fig. 2. Use case diagram of social overlay prototype with prioritization scale.

“Record video” and “Take a screenshots” use cases, classified as essential, allow players to record short videos (up to 15 minutes) and take screenshots during the

game. The resulting videos and screenshots can be uploaded to social networks using the “upload video menu” and “upload screenshot menu”.

The use case “Share Gameplay”, classified as essential, resulted from the “share menu” feature. This menu has four options: (1) “Upload Video”; (2) “Upload Screenshot”; (3) “Broadcast Gameplay”; (4) “Share Game Log”. It is presented by clicking the social button from the game options menu or the share menu shortcut. “Upload Video” is classified as essential and resulted from the “video clips menu” feature. It allows players to select and upload gameplay videos to social networks. Similarly, “Upload Screenshot” results from an “upload screenshot menu” feature. It allows the social network upload of player-selected screenshots. The “Share Game Log” use case resulted from the “share game log menu” feature and is dedicated to the social networks sharing of achievements, game stories and other information. The “Broadcast gameplay” use case, classified as conditional, resulted from the “broadcast gameplay menu” feature. It allows live social network broadcasting (streaming) of gameplays.

Our social overlay will also allow player to craft items or collections faster using social networks. Crafting is a method to create new game items or to complete collections, using different game elements that can be found in the game such as materials, pieces and cards. This feature resulted in “Craft” use case that was classified as a conditional. It enables players to send private messages asking missing game elements from their social network friends.

Finally, the passive party/team system, classified as an optional requirement, allows social network friends to act as passive members by performing actions even when not playing the game. These actions result in different game bonus that can be used to improve game-related experiences, e.g. get more attack for each friend that have the game installed. These bonus are optional and can be used to improve game-related experiences.

Among the different non-functional requirements of the social overlay we highlight the following: (1) support APO integration and full compatibility with Unity3D [21] for desktop games; (2) full Windows compatibility and when possible multiplatform support (Windows, Mac OS X and Linux).

4 System Design and Architecture

This section describes the design and architecture of the social overlay based on the requirements that were proposed.

Our system can be divided into three components. The first one is the desktop game client which includes the desktop game application and the social overlay tools. The second component is the web server. The web server includes the web services that receive and send information to the social overlay and the database that is used to store the information about the players’ requests. Lastly, the fourth component are the external social networks which include all the public media services. Fig. 3. shows the architecture of our system.

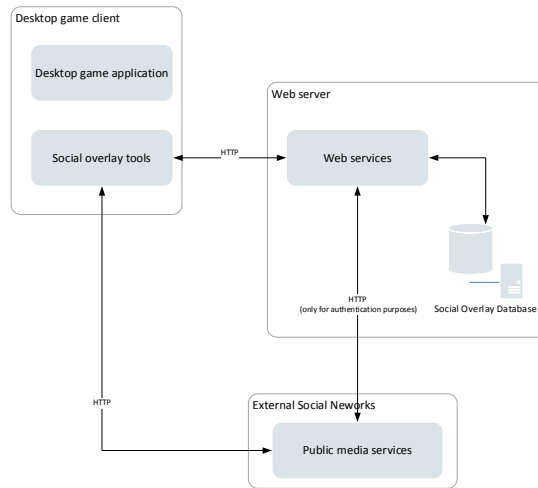


Fig. 3. System architecture for the social overlay integration in a desktop game.

4.1 Desktop game client

Desktop game client consists in two components: the desktop game application component, which is the part of desktop game client that contains the game's core logic and mechanics and the social overlay tools, which include all the social overlay features. To maintain some game styles attributes, the UI components or styles of each of these two components can be shared.

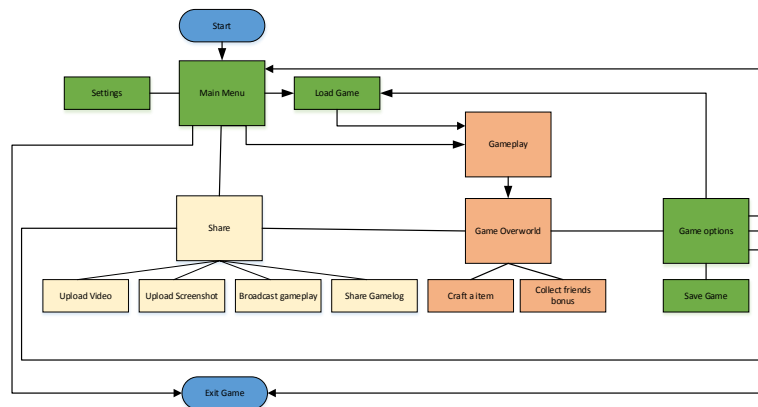


Fig. 4. Navigation chart/Game flow of social overlay integration with APO.

Fig. 4. presents a simplified navigation chart that includes integration of share, craft and passive party system tools with desktop game application. The first one includes a menu for the sharing of videos, screenshots and game-related stories and

for the broadcasting of the gameplay. Players can access to the share menu by clicking in the share option of the game menus or directly using the share menu hotkey. The second and third tools are only accessible inside the game overworld, which is the area that interconnects all the game locations, e.g. combat areas. With the craft, players can request help of social network friends' to create new inventory items and finally with passive party, players can collect social network friends' bonus to use game quests or fights. Additionally, social overlay allows the video record and screenshot capture in any part of the game using hotkeys or through the record and capture buttons. This game flow can be adapted in accordance to different game environments to create specific game tools or to customize the existing ones.

4.2 Social overlay tools

The social overlay tools include support for read and write data in the public media services (e.g. Graph API, Twitter API and Google API). In addition, the social overlay tools communicate with web services for grant permissions to players' social networks accounts and also to store and receive information about their social network requests. These tools are Unity3D Assets [24] for desktop games and are written in C#.

The choice of additional development technologies for the implementation of social overlay tools was made only based in the evaluation of the technical implementation specifications and in the verification of which tools responded better to the project needs. Screenshot Capture was implemented using the native function [26] of Unity3D for this effect. This function is compatible with Windows, Mac OSX and Linux. Regarding to video recording was concluded that the two best development options were: (1) the use of DirectShowNET [27]; (2) the use of FFMPEG [28]. As DirectShowNET is only available for Windows applications was decided to use the FFMPEG library, because it supports Windows, MAC OSX and Linux. This library was implemented with the help of Ruslan-B FFmpeg.AutoGen [29], which is an open-source wrapper for FFMPEG 2.5.2, compatible with Mono. In what regards to share, craft and passive party tools were analysed technologies for three types of social network integrations: Facebook integration, Twitter integration and Google integration. As these social overlay features are intimately related to the "external social networks" component, they will be presented in the next section.

4.3 External Social Networks

The social overlay tools, as well the web server are capable to interact with existing social networks. The credentials of the users are only used inside of social networks sites to acquire access tokens and are not stored. Our system includes support for the integration of Facebook's Graph API, Twitter REST API and Google APIs.

The **Facebook's Graph API** [30] is the low-level HTTP-based Application Programming Interface (API) of Facebook Platform that allow developers to read and write data into Facebook, to interact with it developers' applications need to use the OAuth 2.0 protocol [31] to obtain a Facebook access token for each user. Regarding

to Facebook integration was analysed a solution proposed by Paul Price [32]. This solution uses a web server to handles the tokens exchange with HTTP Requests and a Mono 2.6 [33] compatibility version of Facebook SDK C# [34] to access to Graph API. The main disadvantage of the solution provided by Paul Price is that every time Graph API methods are used a new access token is requested, even if it is not expired. To overcome this disadvantage was decided to implement a reformulation of Paul Price solution with the following changes: (1) The internet Connection is validate every time that the players do Facebook requests; (2) The login prompt and generation of access token are only requested the first time that players use Facebook in game; (3) The last Facebook session is stored between game sessions until user decides to logout or revokes application access; (4) Facebook session is validate before the user makes Facebook requests to check if a new access token need to be requested; (5) the wrapper of Facebook SDK C#, as well the web server implementation were reformulated according to technical implementation specifications.

The **Twitter REST API** [35] is the main application programming interface that allows developers to read and write Twitter platform data, to interact with it developers' applications need to use OAuth 1.0 protocol [36], similar to Facebook this protocol is used to acquire an access token for each user. As none of libraries analysed were compatible with mono 2.6, to build a more flexible integration of Twitter was decided to do a new implementation that combines both "Let's Twitter in Unity" asset [37] and Paul Price Facebook solution [32]. "Let's Twitter in Unity" is a free and open-source Unity asset that helps developers to deal with OAuth 1.0 protocol authentication of Twitter API 1.1. This asset only provides a pin-based authentication flow, so users have to manually insert a pin code in the game. To overcome this limitation our Twitter integration uses a web server and includes the following steps: (1) The internet Connection is validate every time that gamers do Twitter requests; (2) A HTTP POST calling a request token to the API is done. The login prompt and generation of request token are only requested the first time that players use Twitter in game; (3) default user browser is opened and he logins with Twitter account and accepts application permissions; (4) user is redirected to a web server page and success message is shown, meanwhile the OAuth verifier is passed back to the game; (5) the request token and OAuth verifier are converted to a access token; (6) The access token is used to do HTTP requests to the Twitter API; (7) OAuth tokens are stored until they are valid or until the user decides to do logout.

Google APIs [38] is a group of Application Programming Interfaces (APIs) provided by Google that allow the communication of third-party applications with Google services. Similar to Facebook, Google APIs use the OAuth 2.0 protocol for authentication and authorization. For the integration of Google services was decided to develop a new implementation that combine the use of Google APIs with HTTP Requests and Paul Price Facebook solution [32]. Similar to the solutions presented to Facebook and Twitter, this implementation contains the following steps: (1) The internet Connection is validate every time that gamers do Google requests; (2) A HTTP GET calling a request authorization token to the API is done. The login prompt and generation of request token are only requested the first time that players use Google account in game; (3) default user browser is opened and he logins with Google account and accepts application permissions; (4) user is redirected to a web

server page and success message is shown, meanwhile the authorization token obtained via login dialog is exchanged for a access token and a refresh token; (5) the desktop game polls the web server to check if access token for that user is already available; (6) The access token is used to do HTTP requests to Google APIs; (7) Access and refresh tokens are stored until they are valid or until the user decides to do logout. Contrary to Facebook and Twitter APIs, an additional access token verification step is done, because Google access tokens have a short live time and they need to be updated from time to time using a specific refresh token [39].

4.4 Web Server

The web server uses a basic ASP.NET MVC website and a MySQL database for the monitoring of players requests. In addition to the support of different HTTP request methods (e.g. GET, POST, PUT), the ASP.NET MVC application also includes a JSON library [40] to send and receive data information in this format.

The web server contains two different tiers: the user interface component (UI component), which is the part of the web server that include the views for the presentation of user interface layer to the players and the backend component, which is the part of the web server that provides the business and logic layer. The UI component provides the interface of the web browser instances in the desktop game client and also presents the basic information about the game and privacy policy. The backend component is the core of the web server and is responsible for ensuring the communication between the desktop game client and the other two components of the web server: the Database and the UI Component. Besides this, the backend component also include support for authentication and authorization of the desktop game client application in the social networks. Since this functionality is common to all social overlay tools the web server provides a simple and clear interface for each social network that can be used by all the modules of the social overlay.

The database is responsible for the persistence and monitoring of players' activity in social networks, for example, for obtain the statuses of social networks requests and for prevent duplicate social networks requests. This external database is also used as an information repository for the public players' information in social networks (name, gender, username and user ID).

5 Prototype Implementation

This prototype was developed in C# with Unity3D, additionally we used FFMPEG libraries for capturing system and a modified version of Facebook SDK C# for the connection with the Facebook. Our web application on the server is developed in ASP.NET and use MVC web application to ensure communication between the social overlay of the game client and the database and external social networks components.

The social overlay can be execute on Windows, Mac OSX and Linux, but we currently working in a compatibility version of the record feature for Mac OSX and Linux, because it requires different installations of FFMPEG libraries. Below is presented a compatibility table for each social overlay feature:

Table 2. Compatibility table of social overlay features.

Feature	Windows x86/x64	Mac OS X x86/x64	Linux x86/x64
UI components	✓	✓	✓
Capture Screenshots	✓	✓	✓
Record Videos	✓	✗	✗
Facebook Share (upload videos, screenshots and stories)	✓	✓	✓
Twitter Share (upload videos, screenshots and stories)	✓	✓	✓
YouTube Share (upload videos)	✓	✓	✓

As the prototype is in first stage only the essential requirements were fully implemented, this requirements will be presented in four sections: (1) Share Menu; (2) Record and Upload Videos; (3) Capture and Upload Screenshots; (4) Share Game Log.

5.1 Share Menu

To share videos, screenshots, gameplays and game-related stories, all the player needs is a Facebook, Twitter or Google account. The players have access to the following menu (Fig.5):

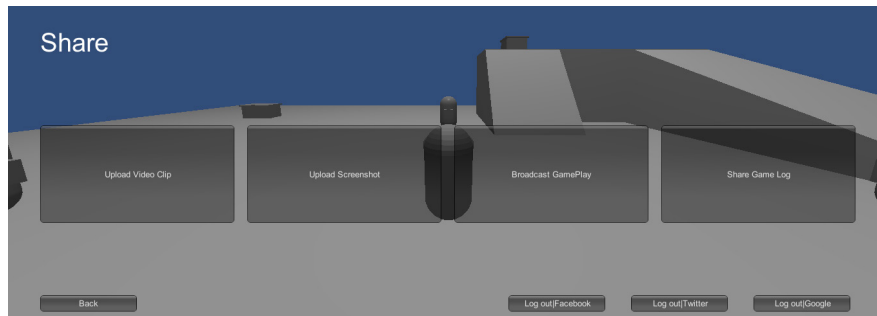


Fig. 5. Share menu of APO' social overlay

This menu includes “Upload Video Clip”, “Upload Screenshot”, “Broadcast Gameplay” and “Share Game Log” options, but currently the option “Broadcast Gameplay” is not enabled.

5.2 Record and Upload Videos

The players can record short video clips (3s~15 minutes) while playing a game and upload them to social networks. To record players have to press and hold the record button (or record shortcut) for at least 1 second.

To upload a video clip (Fig. 6) the player needs to: (1) Select a video; (2) Select a social network (Facebook, YouTube or Twitter or all the three); (3) (Optional step) Enter a comment; (4) (Optional step) Change video title; (5) Click in the share button.

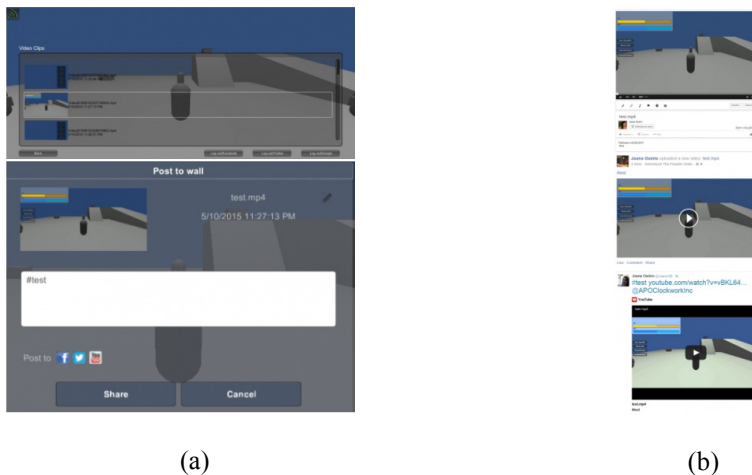


Fig. 6. Upload an APO' video to Facebook, Twitter and YouTube using the social overlay: (a) select a video to upload to social networks; (b) samples of posted videos in the social networks.

In the case of Twitter, as this platform does not currently support the uploading of videos in desktop platforms, users are asked to upload their videos to their youtube account and share the link to Twitter (Fig. 7). This option can be saved for next requests.

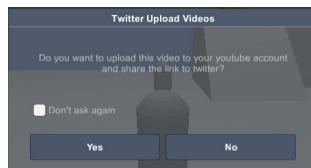


Fig. 7. User prompt to request permission for upload video to players' YouTube accounts and share the link in Twitter.

5.3 Capture and Upload Screenshots

The players can take screenshots while playing a game and upload them to social networks. To take a screenshot players have to press and hold Screenshot button (or screenshot shortcut) for at least 1 second.

To upload a screenshot (Fig. 8) the player needs to: (1) Select a screenshot; (2) Select a social network (Facebook, Twitter or both); (3) (Optional step) Enter a comment; (4) Click in the share button.

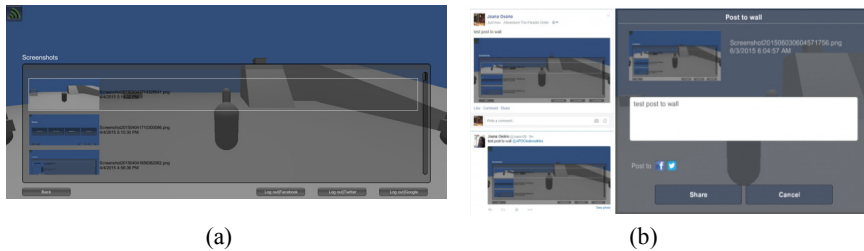


Fig. 8. Upload an APO’ screenshot to Facebook and Twitter using the social overlay: (a) Select a screenshot to upload to social networks; (b) Share the selected screenshot to Facebook and Twitter with message “test post to wall”.

5.4 Share Game Log

Players can share information about trophies and game events on social networks. Game-related stories are captured and stored by the desktop game application automatically and then they are read by the social overlay game log tool. By default, social overlay game log tool already capture some common stories of the games such as “started playing a game” event. To share a story (Fig. 9) the user needs to: (1) Select a story; (2) Select a social network (e.g. Facebook, Twitter); (3) (Optional step) Enter a comment; (4) Click in the share button.

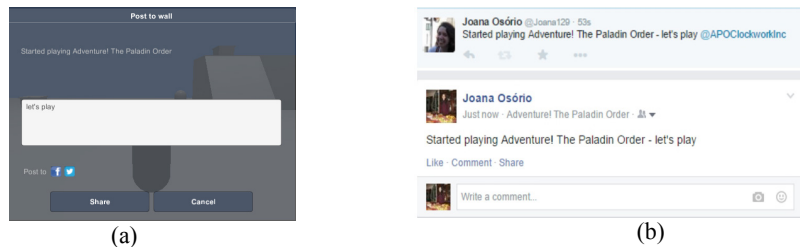


Fig. 9. Upload story to Facebook and Twitter using the social overlay: (a) Share windows of game log option after select “Started playing” story; (b) “Started playing” story in Twitter and Facebook.

6 Alpha testing

The prototype of the social overlay based on the presented implementation, has undergone a preliminary testing phase that we called alpha testing. During this phase the social overlay among with Adventure! The Paladin Order (APO) game were evaluated with a survey using Google Forms, by a small number of players aged

between 19 and 25 that are members of the APO's test team. The testers received a link with game documentation and instructions. The testing was focused on the user needs and workflow desires for this kind of system more than on usability and graphics, and the users executed the tests by themselves without direct or indirect supervision. After testing they filled up the Google Form. Although the main purpose of the alpha testing was to identify the main limitations of our overlay, this testing also gave some insights to product awareness and future work.



Fig. 10. APO' test team opinions: (a) Product awareness (scale of 1 to 5); (b) Product problems and limitations (open answer).

Regarding the product awareness (Fig. 10 (a)) testers found that the documentation and overall of the social overlay tools work well, however they did not consider our product distinguishable enough. We think that with the roadmap features planned we will manage to improve this aspect.

The major part of testers (30%, Fig. 10 (b)) did not report any limitations or problems of the features that are currently implemented, but some testers (20%, Fig. 10 (b)) do not like to post directly to their public social network wall and would rather post only to their friend list or gaming groups. A minor part of them (9%, Fig. 10 (b)) also want to change the default path where videos and screenshots are stored, compare achievements with friends and create personalized stories in game log. Finally, they request to change the settings for video recording, for example change the video frame rate (9%, Fig. 10 (b)) and to view a trailer of the video (9%, Fig. 10 (b)) instead of showing only a thumbnail. These limitations will be analysed and prioritized for future developments.

Our Clockwork Inc. team also suggested some roadmap features for the options of share menu that are already implemented, from which we highlight the following: (1) record the recent minutes of gameplay continuously and automatically recorded; (2) record the best moments of the game automatically; (3) capture screenshots of the best moments of the game automatically; (4) post to specific group/communities; (5) use private message to share screenshot; (6) use private message to share game log message. All these suggestions were classified by the testers with an average score of 3.7 or above in a scale of 1 to 5. Besides the roadmap features suggested by our team APO's test team would like to have: (1) support for Stream; (2) support for Skype; (3) support for specific game community such as Achievement hunter and Speedrunning community; (4) support for Reddit; (5) support for Vine.

7 Conclusion and Future Work

In this paper, we presented a prototype of a social overlay for desktop games that was tested and developed in the context of Adventure! The Paladin Order game, in order to provide social media resources for the personalization of gameplay experiences of the players.

This prototype is in its first stage (alpha version), therefore only the essential requirements were implemented and significant development is required to improve these requirements and implement the other three missing requirements: “Broadcast gameplay”, “Craft an item” and “Use passive party system”.

The next step of this work, during the beta phase implementation, is the evaluation and prioritization of the suggestions and problems reported by the test users. The beta testing phase will conduce to a bigger engagements of the APO’s test team in the game. All the suggestions, problems and bugs reported will be collected using online surveys and individual test sessions with screen sharing or alternatively with recorded videos, so we can observe and analyse the reactions and complains for each tester. In addition, regarding to the recording of videos and the sharing of videos on Twitter we need to improve some aspects related to the compatibility and usability, because currently players cannot record in Linux and Mac OSX systems and to share videos on Twitter the player’s Google account is needed. Although our service does not address anyone under the age of 13 (“Children”), our targets are players of different age groups, so we also have to take special care in the developing of the user interface which needs to be more player-friendly and predictable.

With this first alpha testing analysis we conclude that this social overlay will not only play an essential role in the integration of a social overlay for multiplatform desktop games (Windows, Linux and Mac OSX), but it will also contribute to the development of social media integration in games.

Acknowledgments. Our thanks go to Tiago Magalhães, creator of “Adventure! The Paladin Order” game and also for APO’s test team for all the help and dedication in the construction of this prototype. This work was supported by Instituto Superior de Engenharia do Porto (ISEP) and supervised by Professor Filipe Pacheco.

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