Games 2.0: Participatory Game Creation

José Pedro Tavares, Licínio Roque

CISUC, Department of Informatics Engineering, University of Coimbra, Portugal

Abstract

In this paper the authors analyse the authorship roles players play in today's gaming context and some of the tools that they use to perform such roles. The authors tipify authorship activities and define profiles in relation to the types of authorship roles players engage in. Comparing with the Web 2.0 and other phenomena in popular music, and trying to recognize the emergence of similar production patterns in the context of gaming media we find some development dificulties. Promising phenomena such as "moding" require rare levels of technical mastery and the complexity of game design and creation activities require non trivial efforts.

Yet we also recognize that the web 2.0 model of participatory media and engagement that promotes a prosumer model based on user created content and collaboration between authors could develop in the gaming context as long as adequate intruments are developed. This study suggests that this could be achieved by lowering entry barriers such as by adopting standards for design and delievery of games inclusive of the various participation profiles and, expression languages simple enough to be explored and tamed by wider audiences, as the overly simple, yet very expressive, "line rider" case shows.

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Authors' contact:
{jtavares,lir}@dei.uc.pt

1. Introduction

In December the 13th Time Magazine announced the personality of 2006. In the cover of the magazine three letters appeared: "YOU". The new Web 2.0 brings together the contributions of millions of people and makes them matter. As a result we witnessed an explosion of productivity and innovation, that it is just getting started. So, Time awarded the people that after a long day at work sit down and turn on the computer and say, ``I'm going to make a crazy movie starring my cat'' [Time 2006]. Yet, the game industry seems to fail to understand the potential in productivity and innovation that Time has recognized as the result of evolving consumers into producers.

There has been, however, an increasing amount and diversity of creation being achieved by game players. Machinima, for example, is a recent film category that reflects on works created by using 3D game environments to shoot Animation movies [AOMAS]. In Virtual Environments (VE) like Second Life™ users are allowed to import textures into the play world and then sell, trade or just wear them. They can also develop virtual structures by manipulating simple modeling tools. This is actually one rare example of users having a reasonable amount of control over their creations. In contrast, Id Software, for example, in their game's End-User License Agreement (EULA) explicitly prohibited mod creators to distribute their mods commercially.

Linden Labs' (the creators of Second Life) strategy created a vivid market. In December 2006 statistics available in [SL] reported 700.000 users logged in and over 17.000 were profitable in-world business owners. More than 450 of them made a profit of over USD$1,000. It is important to notice that while the content that can be created in SL is rather limited, the feeling of control over their creations and the recognition boosted user production.

In music the hip-hop genre is an example of artistic production based on previous work. In the beginning DJs would throw block parties where they would isolate the breakbeats - small parts of popular songs, usually from R&B, Funk and Soul artists - repeating and manipulating them, thus creating a new form of artistic expression. Today that practice evolved into more complex techniques like *turntablism* and *sampling* [Hip-Hop].

Hip-Hop way of creating music embodies how the digital era is changing cultural production of which the Web 2.0 is the latest expression. All media are now having truly participatory expressions. All the media had already some levels of participation of its consumers. Radios have free-of-charge telephone numbers so listeners can call in and inform about traffic jams. Newspapers and magazines have Readers' Corner where the views and opinions of readers are published. Television talk shows allow the viewers to call, to view on location and to participate live. And lets not forget the television game shows where the viewers participation is the essence of the show. Anyone could do the whole thing, either illegally - a pirate radio, for example - or legally - print a book or a newspaper at home and distribute it on the streets. The difference now is how easy you can distribute your creations to millions with almost no marginal cost, just by using the Internet. And this is changing the way we see ourselves and the social structure and development of younger generations, forging a new relationship with media in a Participatory Culture [Jenkins et al 2006].

The problem with games as an expressive medium is the price, effort and difficulty of producing a game. That is why players who are willing to do so resort to existing games and modify them instead of creating them from scratch. The exception is the growing number of Flash games around the Internet. These

appear because Flash is a relatively easy to use technology that allows many people to create relatively simple interactive content. Yet, we think that to elevate games as a truly participatory medium, individual production must be made easier and cheaper. If so, could the Hip-Hop phenomenon be repeated in video games? Our belief is that if the creation of videogames would become truly participatory then a similar phenomenon could emerge. But challenges arise when trying to bring experienced players to the process of creating games. Many of these players don't have much technological knowledge but have shown willingness to surpass that barrier in order to participate in this process, as seen in the *mod* community.

In this paper we analyse the creative roles that players enroll in today's videogames and propose a classification of players in profiles according to their roles in game authorship. Then we analyse some tools available for players to produce content to existing game engines and identify types of activities in which players engage when producing such game content. In the end a comparison between the Web 2.0 and what we call Games 2.0 scenario is made and some conclusions are drawn.

2. Current Player-Author Roles

How are players seen by the industry today? Are they only seen as players? In fact some companies are changing their perspective on players' roles. E.g., BioWare, responsible for the development of *Neverwinter Nights* and *Star Wars: Knights of the Old Republic*, is seeing players in a different way. Besides developing specific tools for players to create content for the game, they also take in some community members into the development teams of new modules. The contents created by players are usually 3D models, textures, sounds and also modules. Modules are adventures that players can download, install and then play with their characters. These adventures can be as simple as single quests or as complex as complete stories formed by multiple quests. In September 2005 there were 4423 modules available for download, most of them entirely created by players. In March 2004 BioWare released the first version of the Community Expansion Pack (CEP) which was composed of content created solely by players. The goal of CEP was to aid players to create new modules since CEP is composed of 3D models, sounds, NPCs, and other game elements. For a game that has been released in June 2002 there is still much player activity around it. Continuing their collaboration with the community, BioWare launched a forum to discuss the development of Neverwinter Nights 2. This leads us to think that at least the longevity and loyalty effects of such an inclusive strategy must not be overlooked.

As early as 1993, with Doom, started an earlier phenomenon that showed the players ability and willingness to assume more active roles: those of game modders or mod. Most mods are still made for FPSs. Now, many game developers often release tools to help players create new mods. Although the industry recognizes the work of players as authors of the mods, most of the time, in the game EULA (End-User License Agreement) they prohibit the mod creator (modder) to distribute these mods on their own. Sometimes the game publisher promotes competitions between players to promote the best mod or the best map or whatever content category the players are creating. Even in such competitions the agreement the player has to sign to enter the competition usually implies a complete transfer of rights or the recognition by players that all is property of the game publisher and can be commercially explored by him.

One of the most successful mods created to date was Counter Strike for the Half-Life engine. Half-Life was released in October 1998 and the first beta version of Counter Strike was released in June 1999. In 2000 Valve “acquired” the Counter Strike team and Counter Strike became an official Half-Life mod. Counter Strike remained free, but Valve released in November 2000 a stand-alone version of the mod. The mod is so successful that five years after the release of the first beta version there were 85,000 players simultaneously playing Counter Strike at any point in time, which accounted for almost 70 percent of the online FPS activity.

Also with recent trends in Massively Multiplayer Online Games (MMOGs), especially Massively Multiplayer Online Role-Playing Games (MMORPGs) and Virtual Worlds, players are increasingly taking a more active role. In the majority of Virtual Worlds the world is created by the players with more or less creative freedom and made persistent. In the case of Linden Labs' Second Life, players completely build the virtual world. Linden Labs acts like a real estate agent renting virtual land to players. These players can then develop their lands in the manner they want, with houses, businesses, etc, that they, in time, rent to other players or charge for services provided. Besides this, real-estate business players can create objects that they can use or sell. Linden Labs allows players to make real world profits with their in-game creations enabling the emergence of professional players that profit not from traditional playing activities, but from building the virtual world.

There are also professional and amateur leagues for clans of players, mainly of FPS games, that compete for big money prizes. The Cyberathlete Professional League [CPL] was created in 1997 and its main sponsors are Intel, Nvidia and Hitachi. CPL has awarded in the last eight years $3,000,000 in prizes and this year World Tour will award $1,000,000 in prizes. All these cases let us be confident of the potential value in user created content in games.

3. Player-Author Profiles

Based on the roles players are assuming in today's gaming context we can identify three author profiles of players according to their participatory modes:

- **Level 0 – Actors** are players that play either in a more traditional role, as in FPS type of games or as actors in a theatrical way, as

some players do in MMORPGs like World of Warcraft. Occasionally some of these players engage in some kind of self-production customizing their characters or producing some kind of content for them;

- **Level 1 – Reconfigurators** are players with little or no technical knowledge that are willing to create ludic contexts by working inside or beyond original game infrastructures by endowing them with new purposes and interpretations (e.g. a history Professor recreating a historic moment, or simply a player who wants to transform the game rules, associated norms or codes of conduct);
- **Level 2 – Coders** are those players with enough technical skill to participate in the creation of new content. This knowledge group includes scripters, modelers, designers, etc. These are at the moment the players who engage more significantly in creating game mods and scripting in MMOG and Virtual Environments.

We think most mods are being created by coders, simply because of the fact that there are insufficient easy instruments to broaden the creative function to reconfigurators. Raessens [2005] maps participation in three domains: interpretation, reconfiguration, and construction. The first domain refers to the interpretation (and translation) players make of what they are playing and its significance. This domain doesn't change nor create games by themselves but can change the way other people look at a particular gaming experience. Raessens considers reconfiguration has two player functions as identified by Aarseth [1997]: the explorative function and the configurative function. In the explorative function the player explores the virtual world but this doesn't change the plot nor has any impact on the game world. While exploring the virtual world the player will be able to take actions that are preprogrammed in the game thus changing the way the story goes. The last domain - construction - implies a more extensive creative role from the players. In this domain the player creates new games or modifies existing games as technical objects. For the last mode some game producers stimulate the creation of new game elements by distributing editors so players can create them. The biggest manifestation of this domain is the modding phenomenon allready described.

Mapping our profiles with Raessens' domains of participation we could say that an actor engages in the domain of interpretation and to a certain extent in the domain of reconfiguration (with the explorative function). Reconfigurators would fully engage in both the interpretation and reconfiguration domain. Coders could fully engage in all three participation's domains.

4. Instruments of Participation

There are several types of tools players currently use to develop content for games. These tools include general purpose 3D modeling tools, like Maya or 3D Studio Max, Blender, image-editing tools, like Photoshop or Paint Shop Pro, and sound-editing tools like Cool Edit. There are some more complex tools created mostly by modders to help create some game components that are often unique to specific games. For example, in some games the sky is defined by a sky box. This sky box is composed of six images that define the sky textures that are seen by the player within the game. Terragen can be used to generate not only these sky box textures, but can also generate heightmaps for landscapes. These maps are greyscale textures that some games use to define the terrain level or morphology. On top of this texture, additional textures can be added to define the aspect of the terrain. All these instruments require significant technical background. Game developers often develop tools that can be used to create levels and/or maps for their engines. A representative list:

- Q3Radiant
- Neverwinter Nights 2 Toolset (NWN2)
- The Elder Scrolls Construction Set (TES)
- Valves's Source SDK
- Second Life (client)

Q3Radiant is a tool that allows the author to create maps for the Quake 3 Engine. Is somehow similar to other 3D modeling tools in the sense that Quake 3 maps are 3D models but is specialized in creating large static areas, mostly indoors. The game source of Quake 3 Arena is available to download from id Software website. The most common way to create a mod for Quake 3 is to download the source and change it to create new objects, menus, etc, and then add the map previously made in Q3Radiant.

NWN2 Toolset is a complete tool to create modules to Neverwinter Nights 2. Modules are new adventures to the game. They are not accessible through the single player game/campaign, but from a menu option in the main menu. They include new maps, objects, spells, NPCs, etc. In the NWN2 Toolset authors are able to create objects, events, effects from a set of predefined types (trees, creatures, spells, traps, etc). There are a lot of templates for these types of objects so they need only to be customizable. NWN2 also has an IDE to program the objects with a scripting language created by BioWare, the producers of the first Nevewinter Nights. Script templates are also available and can be added. There are also some plugins that help achieve more complex actions. These plugins include: Campaign Editor, Blueprint Changer, Visual Effects Editor and World Map Editor. New content, templates, scripts, objects, etc, can be downloaded from the internet, either made by the NWN2 producers or by fans. The game itself has a Dungeon Master mode that allows playing as a RPG would be played live.

TES Construction Set is very similar to the NWN2 Toolset but it doesn't have default game objects or events. It has some more advanced features to edit the terrain and the sky and other visual effects. This is used to create modules for Oblivion. In Oblivion modules are modifications to the single player game itself. So you actually play a different game depending on what

modules you have installed. Modules can be Quests, objects or NPCs.

Valve's Source SDK is a complete set of tools that allows you to create a complete game, not just a mod. It uses the game engine in which Half-Life 2 was created. The licensing cost to make a game using this SDK is under Non Discloser Agreement but is probably too high for the hobbyist. So it is not targeted at the common player that might want to make games, but the creation of Half-Life 2 mods using this SDK is allowed. The tools included are: a level designer, choreography, artificial intelligence and GUI editors, and special materials and sound system. Mods or games can be distributed with Valve's Steam service (a kind of iTunes for games).

Second Life is a persistent Virtual Environment where you have some in-world creation capability. Besides extensive character editing capability you can create objects online (its 3D models and behaviour, using an in-world script editor). You can buy in-world land and the Terrain Editor for editing your land is an offline editor. There is also an offline editor for the creation of animations for the characters. Textures are also made offline using a standard image editor. You can then upload the files you have created offline and they become owned by the player's character. One interesting thing is that you can trade animations and scripts between characters and execute them over different characters and objects. So if you have made an animation of a character making some breakdance moves you can sell it to other players whose characters become able to execute those animations. The same thing happens with a script. You can add it to any object that you own. Second Life also allows users to take snapshots and record movies in-world. In the world map Linden Labs offers in Second Life homepage there are places with postcards attached. These postcards are screenshots taken inside the world.

5. Participation Methods

Analyzing these tools we can see five ways in which players can engage with a participatory role in game authorship:

- Instanciation
- Parameterization
- Reconfiguration
- Recombination
- Construction

By instantiation we understand the creation of a character or the creation of any type of object that is available in a Library of available object models or templates. While in the Actor role (L0) the player may use a in-game tool to create a predefined object, a Re-configurator (L1) may create a scenario or ludic context by combining such objects.

Parameterization would be a Level 1 tool which would allow the player to alter an existing object by changing its parameters thus adjusting its behaviour to the player-author needs. Re-configuration implies the redefinition of object behaviour and how it relates with other objects within the game world. Both these types (parameterization and re-configuration) can be applied with both object instances or with object templates. These templates are pre-defined object models that can enable different types of customization: instantiation, parameterization and re-configuration. This blackboxing effect can be driven further to include animations of 3D models that can be packed and applied to other 3D models. This type of interaction is what we term Re-combination. We could also recombine two boxes creating an object with shared characteristics selected by the player. Creating these blackboxes implies Level 2 players with the technical knowledge to go deeper and build objects and templates, either from scratch or by re-writing them. Instantiation, parameterization and reconfiguration can be part of Raessens' reconfiguration domain while recombination and construction would be part of the construction domain. In fact when a player chooses a character class and race in any RPG game she is instantiating and parameterizing and when she chooses what weapon or what object his character is wearing the player could in fact be doing reconfiguration that could be made persistent.

All these types of participatory experiences can be found in the tools mentioned previously. In Q3Radiant the author engages only in a building activity. He actually has to create the map from scratch or by opening a map and change it. While building a Quake3 mod the author actually engage in some parameterization activities - when customizing the objects parameters - in some re-configuration activities - when changing the behaviour of objects - and in other building activities - when rewriting the source code of the game.

In NWN2 Toolset the author can engage in almost every kind of participatory activity. He instantiates when he adds an object to the module that had downloaded and do not change it. He does some parameterization and reconfiguration when he adds an object and customizes its parameters and behaviours. He can also build to some extent. He cannot build a new object from scratch because he is limited to the types of objects that the Toolset has in library. But he can re-write an object's code. We can consider that re-combination happens when an author copies a script from one object to another in the IDE. In fact what the author is doing is to combine two objects by adding to an object the interaction of another object.

With TES Construction Set the authors engage in more building activities than any other activity. You can engage in any activities but they are not explicitly through the program interface. You can do them by importing an object previously made downloadable and just instantiate, parameterize, re-configure or re-combine it.

With Valve's SDK's complete set of tools and editors all activities can be engaged. The main activity should be building but some editors have in their essence the parameterization of predefined sets of variables.

In Second Life the main distinguishing characteristic is that some of these activities can be made inside the virtual world while interacting with it. The creation of

3D models can be considered to be recombination instead of building because models are built by combining different forms that are pre-established. The player can instantiate by just customizing his character. He can also re-configure an object he has created by changing the object behaviour through the script editor. He can also re-combine by changing animations through several objects. The building activities are made offline using the animation editor for creating animations, the terrain editor to create the terrain, and an image editor to create textures.

6. Games 2.0

Although there are tools available, and more will continue to appear, that allow players to build games or game elements, we think they can hardly promote a Web 2.0 similar phenomena in games. The main reasons can be sumarized:

- Greater Technological Dependency
- Required Skill Set
- Target Audience

On the one hand the internet is becoming more and more a medium for the masses. And almost every personal computer can operate an Internet connection, contrary to what happens with games where you have to have a State of the Art computer to play the more recent games. Sure NWN2 has a toolset that allows players to create content, but if you do not have the latest technology in graphics you will not be able to play them. Moreover, the diversity in computer configurations requires technical mastery to overcome when designing for a wider hardware base. Additionaly, the skills needed to create a game can be considerably harder than to create a blog or to share a photo album. You only need to fill up a form, write a posts or upload photos. Sure you can do a better or worse jub at even with text, but to create a game you need game design skills, programming skills, artistics skills, all of which are not evenly spread among players. One common problem with game mods is that even if you were allowed to commercially explore them, the consumers would have to be also consumers of the original product. Hence the target audience for such games is limited to the people already clients of the base title. For these reasons a lot must be done to level the participatory process of creating games to the success of Web 2.0. But there are some things that would boost user created games:

- Creation of a common technological base
- Mediate the relationship between players with different skills
- Broaden the distribution channels
- Allow for online creation and collaboration

The creation of a technological base that would deviate players' attention from technical difficulties and focus them on what really matters - widening the number of players that can take authorship roles.

A platform can be designed to would mediate the relationship between players with different skills. The skills needed to create a good game usualy surpass what we can get from a single person. Therefore, a platform which connects players with different skill sets could significantly boost the production of new games from player-authors.

A traditional distribution channel that distributes content from producers to consumers, like Valve's Steam Engine, can be limitative to a collaborative medium such as the envisaged Games 2.0 could be. A distribution channel should enable content sharing and trading among producers not only between producers and consumers, thus enabling more complex value networks to take shape. And in a world where everything is more and more connected and collaboration is essential, why not allow the creation acts to happen online at the same time that players are actually experimenting with the game? This would endow the Games 2.0 scenario with an essential quality of instantaneous feedback that we get from web 2.0.

The success of Web 2.0 can be found on the ease of production and publication, but also of collaboration, referencing, and recommendation, building on the very nature of the World Wide Web that allows you to check your favourite blogs and videos from your laptop, mobile phone videogame console, from virtually anywhere, building the sense of community of social networking sites, and feeding on the media exposure blogs and bloggers are getting nowadays.

Some of these factors could also be exploited to some extent to the game developing as a new mode of production and participatory culture.

7. Conclusions

As we have seen despite all the tools available to players to create content, the fact is that the boost of user created content that we saw in Web 2.0 is not, and will not, have a match in the context of videogames with current production and distribution media. Creating games is a complex technical task when compared to creating a blog. And as much as we try to ease the task of creating games it will never be as easy.

But we can learn from the success of the Web 2.0 and try a new type of game developing model. A model that relies on the players' willingness to author new game content and to engage in collaborations between them to be able to harness wider skill sets. Our hope is that with this model similar communities and value networks as those that originated with the Web 2.0 may emerge. That is what we are calling Games 2.0.

Our basic idea is to have an infrastructure that would allow the authors' attention to center on issues of gameplay, interaction, game and artistic design.

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