

The Problem of “Additional Content” in Video Games

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ABSTRACT

Additional content for video games such as mods (modifications) or DLC (downloadable content) are increasingly prevalent in the current video game market. For cultural heritage institutions with video game collections, such content introduces various philosophical and practical challenges on multiple aspects including acquisition, description, access/use, and preservation. In this paper, we discuss these challenges and propose a solution that can alleviate the problem of managing a digital library collection including video games with additional content. While our discussion and proposed solution focus on video games, they also have broader implications for cultural heritage institutions that manage other types of digital and multimedia objects with additional content as well as serial publications.

Categories and Subject Descriptors

H.3.7 [Information Storage and Retrieval]: Digital Libraries – Standards, K.8.0 [Personal Computing]: Games

General Terms

Standardization; Theory.

Keywords

Video games; DLC; mods; digital libraries; cataloging practice; conceptual models.

1. INTRODUCTION

The concept of additional content that expands or supplements a bibliographic resource is not new to information science. Supplementary issues containing additional resources, articles, and breaking news are a well-documented feature of serial publications. Similar additional content for games emerged in the 1970s for board and paper-and-pen role-playing games, and became prevalent for video games during the 1980s as a means for adding levels and gameplay features.

Today, additional content plays an enormous role in the cultural, economic, and professional aspects of video game development and gaming communities. It is rare to find a video game which does not have some kind of additional content available for it – whether that content is in the form of official expansion packages, small downloadable extras, or fan-made modifications (mods). Clearly understanding the boundaries of and effectively

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describing content which does not initially come with video games at their points of purchase is a compounding problem for faithfully representing them as objects of interest in libraries and similar cultural heritage institutions. As traditional divisions between media continue to erode in the born-digital world, we see increasing parallels between additional video game content and more traditional bibliographic forms. Whether it be the video game/book mashup of the visual novel or datasets accompanying academic papers, the issue of additional content is not limited to the video game domain.

In this paper, we define the scope of additional content with regards to video games. We first briefly review previous work that remarks on the problem of additional content and situate our working definitions for DLC (downloadable content) and mods within the existing literature. We next remark on the philosophical and practical challenges that digitally distributed add-on content presents for cataloging practices. Finally, we propose a solution that can alleviate the problem in various contexts.

2. DEFINING ADDITIONAL CONTENT

To remediate potential disparities, it is necessary to define boundaries for what we consider as additional content. Our purpose is to explore only the content which improves or extends the experience of gamers beyond what a game offered at its initial point of purchase. Therefore our working definition does not encompass ordinary software patches and bug fixes that software corporations deploy during the normal lifespan of their products. While some authors categorize patches or bug fixes as a type of mod, and therefore part of additional content, such categorization is problematic. A patch released to fix bugs, or blatant problems, in our view, is not content per se. Those patches affect how the code is run, and may correct problems to improve interactions with game content, but they do not expand the content of the game. Here, we consider additional content as that which goes beyond fixing problems and glitches, such as new characters, dungeons, stories, etc. It intentionally extends the playing experience from the gamer’s perspective. Our definition also does not include community efforts that do not add new content, such as aftermarket patches (i.e., mods that specifically patch a malfunctioning game) or emulation architectures.

We consider two types of additional content: mods and DLC, the former of which has a longer and better documented history within video game scholarship. A primary distinction between the two is in the development responsibility. It is universally accepted that mods are developed by members of fan communities while DLC is produced and distributed by corporate entities. Therefore, it might be natural to assume that mods are free and DLC must be paid for. However, while mods tend to be free today, this was not always the case [7], and while many DLC packages cost money, there are many examples of promotional DLC that are free with

the purchase of other related merchandise [16]. The one thing that they do have in common is the required presence of the initially purchased video game that they expand.

Sometimes likened to fan fiction, mods run the gamut from minor code changes up to “total conversions” that change one game into another [13][14]. Modding culture has become so widespread that many video game communities contain sub-communities of modders, and some corporate entities provide tools such as software development kits to facilitate modding activity and the dialogue between fan developers and corporate developers [15].

Unlike mods, DLC rarely includes minor changes to the abstract mechanisms (i.e., code). The scope of DLC is similar to, yet narrower than that of mods. Most work on DLC overlooks the nature of what it adds to a game in favor of remarking on how it affects game commodification models and economics [4][9][17]. Yet with regards to content, DLC ranges from adding or altering cosmetic content (e.g., new character sprites, skins, costumes, or other minor graphic variations) to extending and expanding a game’s core functionality (e.g., through the addition of new characters, new play modes, new maps, etc.). The only pronounced similarity between the various types of DLC is the method by which the content is delivered: an online download.

Although currently most common, mods and DLC are not the only ways gamers can expand their games with additional content. Developers still produce large scale expansions distributed as discs. Libraries and cultural heritage institutions have been dealing with similar situations regarding serial publications and similar bibliographic items for many decades. However, prior literature on serials cataloging also identifies challenges in establishing and maintaining bibliographic control over serials due to their instability (e.g., title change, format change) and tendency to split or merge with other serials [1][2].

3. PROBLEMS

3.1 Philosophical Challenges

A fundamental problem with additional content is how it challenges the notion of work. In the bibliographic universe, works have typically been defined as distinct intellectual or artistic creations [5]. According to this definition, an original release of a video game is a work. Adding additional content to this established work may be comparable to supplementary materials in other formats, such as monographs or films. However for games, additional content can significantly change the gameplay and the narrative itself, resulting in a more substantial deviation from the original work.

Use of DLC as a marketing tool [16] and its distribution as a separate consumer product complicates the issue. For instance, official strategy guides for *Disgaea D2: A Brighter Darkness* and *Ni No Kuni* include redeemable codes for DLC such as new characters. Games like *Disney Infinity* or *Skylanders* encourage players to purchase figurines of additional characters, which use embedded ID tags to import the figure as a playable character in the game. If there is always the possibility to create new DLC that can significantly change the gameplay experience, and it can be distributed as separate information objects, can we really consider any game as a complete work?

The optional nature of additional content also raises issues, as it allows multiple game players to play different variations of the

work. If the mods or DLC substantially alter the game experience, can we really say that players are playing the same game?¹

Mods and DLC can fundamentally alter game content, and thus create new works. But at what point does the distinction of a new work arise? The lack of boundaries for works presents a significant challenge, as there are currently no itemized lists or numbers of changes that need to occur before a mod or a game with DLC is considered a new game. Or, perhaps usage criteria are a more appropriate evaluation of work boundaries: maybe a mod can simply be considered a new game if it is widely used and popular. There are some cases where mods are more popular and well-known than the original games themselves (e.g., *Counter-Strike*, a mod for *Half-Life*; *Dota (Defense of the Ancients)*, a mod for *Warcraft III: Reign of Chaos*).

3.2 Practical Challenges

3.2.1 Acquisition

Distribution methods for additional content have evolved from physical carriers like disks distributed via retail stores or mail-order, to digital distribution platforms like Xbox Live, Steam, PlayStation Network, etc. Each method offers unique challenges. Availability issues abound for both physical and digital carriers for additional content as both may only be available for a limited time and are often withdrawn from publication for a variety of reasons. Official distributors of content do not keep or offer access to records regarding additional content, and user-generated information is also often incomplete and uncontrolled. Another complicating factor is the need for the original game. In most cases, the original game must be present to access its additional content. Unless an organization takes steps to acquire everything, they risk losing the ability to access and play the additional content at all. Also, DLC is increasingly only available via specific consoles, defying any precise distinction from the original game. Much additional content is not offered for free, especially DLC, which will quickly deplete the acquisition budget. Even if availability was not an issue, problems of selection remain. Should organizations acquire all of the content associated with a game? The continued proliferation makes full acquisition unlikely. What criteria for collection development should be used to facilitate selection judgments, considering the end user’s best interest?

3.2.2 Characterization and Description

Lack of vocabulary and clear definitional boundaries bring challenges for description of additional content. Due to the rapid development and transformation of games and their distribution methods, many gamers and other affiliated users do not understand or agree upon distinctions among different kinds of additional content. Therefore, there is no standard controlled vocabulary within the game industry or user communities that defines and describes these different kinds of additional content. This harkens back to the philosophical questions regarding delineations among works. The lack of any formally or popularly established demarcations raises questions about attributes of description (such as title, creator, genre, etc.) that are assigned at the work level. Mods and DLC often have different creators than their original games, which may range from large corporate teams

¹ Cf. Suits, (1978) *The Grasshopper* for full discussions of the intrinsic nature of games.

to individual fans and players. Attributing creation information to additional content is difficult in and of itself, but it also signifies implications for treating additional content as separate works.

In addition to these standard descriptive elements, additional content also requires a thorough and accurate description of system requirements, compatibility, and conflicts between it and the game it modifies. Games often need updates to apply DLC or function with a particular mod. Moreover, some mods require other mods in order to work, while some mods will not work with other mods. These requirements comprise critical description necessary for users to select and obtain desirable functional content.

3.2.3 Access, Use, and Preservation

The variety of distribution methods previously discussed has a significant impact on the ability to access, use and preserve additional content for games. In addition to the physical/digital divide, the multiplicity of platform architectures means that platform-specific workflows must be devised to restore additional content to a usable state. Over the years, developers have used a large number of different strategies to store and deploy the code that bears additional content on end users machines. Among these methods are files on physical media (disks), separate additional content folders, or as customizations within a user profile. This makes it difficult to discern what portion of the data, once accessible, is the additional content in contrast to the game itself. The large variety of access mechanisms affects the ability of cultural heritage institutions to prescribe a one-size-fits-all method or framework that allows use of additional content.

The variety of carriers, distribution methods, and access mechanisms also present technical and legal hurdles to preserving additional game content. Physical media like floppy and optical discs contain a variety of copy protection measures, preventing their migration to sustainable digital infrastructures for

preservation. Digitally distributed content has a particularly unique set of constraints, as the user typically has no way to access the file(s) from which the additional content stems. Accessing this content may be hindered due to system-level encryption which writes information to the system's hard disk in a completely undiscernible format.

3.3 A Proposed Solution

To reconcile some of the aforementioned issues that additional content presents for cultural heritage institutions, we propose a new model (Figure 1) that better defines and represents additional content and its related descriptive information [6]. This model is designed to represent video games as they are published across various markets. This model addresses the work issue by creating a specific separate entity for additional content, defining it as content that is published after the initial publication of a video game. Specific attributes are then assigned to this entity, with controlled vocabulary of community accepted terms for each attribute. Formal metadata records can easily be crafted that will represent the information captured by the model.

This solution solves many of the issues with regards to capturing information that is relevant to collecting and describing additional content for video games. Within the confines of the model, it becomes easy to delineate between content that is a mod, DLC, or some other form of expansion. For instance, *Sid Meyer's Civilization V (CiV)* has a very large and active modding community. The additional content module of the video game conceptual model allows the following descriptive information to be captured for each mod – Name/Title, Type (i.e., that it is a mod rather than DLC or an expansion), and the version/configuration requirements that are necessary for it to work.

To give two illustrations, consider the *CiV* expansion, *Gods & Kings*: the expansion has the title *Gods & Kings*, it is an “expansion” rather than being DLC or a mod, and it only requires

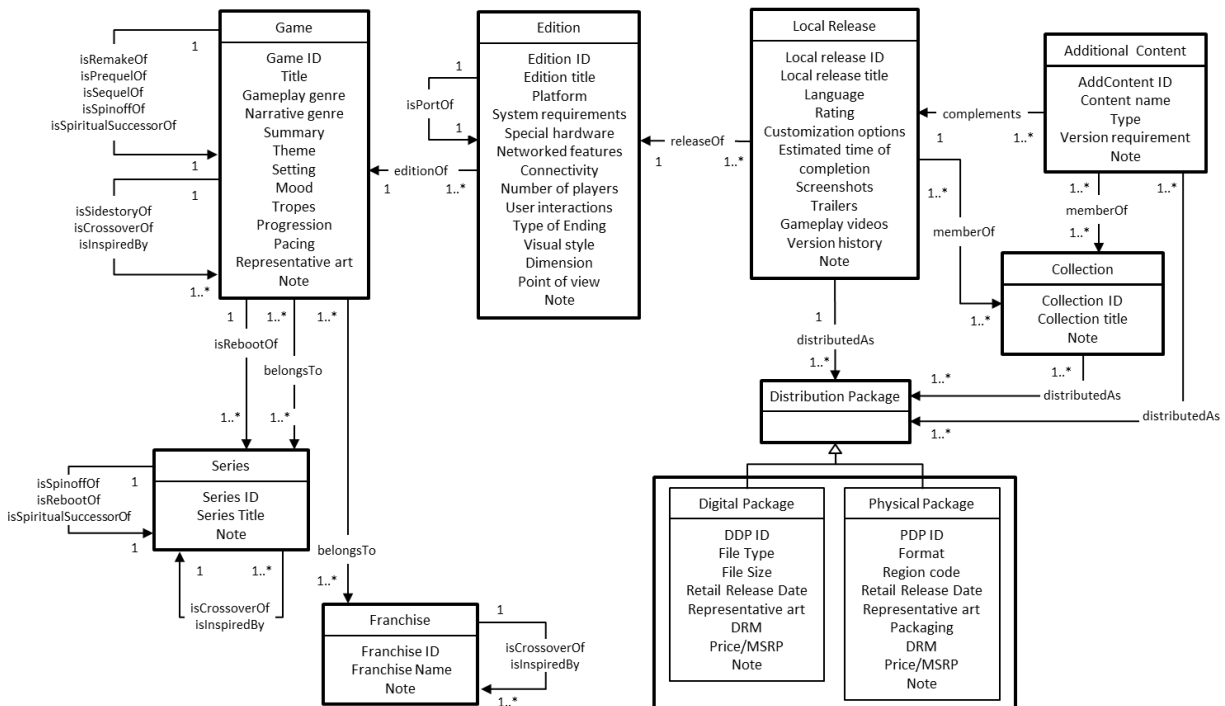


Figure 1. Video Game Conceptual Model (excluding the Agent entity; modified from [6])

the latest version of the base game to work. In contrast, consider the “Camera Rotation” mod for *CiV*. Using the attributes suggested in the model, we would record the title as *CameraRotation*, note that it is a “mod”, and finally remark that it has the following requirements: *CiV*, *Gods & Kings*, and another mod called *Civ V Unofficial Patch for Civilization V: Gods & Kings*.

Despite the effectiveness of this solution, some challenges persist. One issue is that it abandons the FRBR framework [5] that has risen to become the primary conceptual model for bibliographic entities. A growing number of studies demonstrate that FRBR does not fit non-text media forms well [3][8][10][11][12], and is especially limited in representing serial publications and objects with multiple versions (which share many similarities with additional game content) [1][2]. Therefore, a conceptual model specific to the video games will better support the needs of users of game collections at cultural heritage institutions.

While the model does separate established additional content from a game itself, it cannot solve the underlying philosophical issue of when and how to determine that separation. This is an issue that only community best practices can solve. A good rule of thumb to start with is that mods which are total conversions, such as *Dota*, constitute instances of new games rather than additional content for the game they are based upon.

Beyond the inability to solve the issue of when a mod is actually a new game rather than additional content, applying the conceptual model raises the problematic issue of perpetual cataloging. Additional content changes a work from a relatively static bibliographic entity into a more amorphous and constantly evolving one. As more and more additional content is created, more and more descriptions and records must be created as well, creating a cycle of continuous maintenance. Such efforts are not new to the information professions, but rather the expected norm in specialties like serials cataloging. As additional content becomes more prevalent, video games are becoming more analogous to serials than to monographs.

Deriving a formal metadata record format from the conceptual model is only one possible approach. Another direction would be to develop a linked data ontology from the conceptual model. With this approach, the labor for controlled vocabulary development and the recording of individual instances of games is distributed across the entire stakeholder community. Existing linked data ontologies such as BIBFRAME, schema.org, or freebase may be viable alternatives. As such a comparison is not the primary purpose of this paper and we have limited space, we will leave this question to be explored in the future.

4. CONCLUSION AND FUTURE WORK

In this paper, we discussed various problems and challenges posed to cultural heritage institutions with video game collections by the increasing prevalence of additional content for video games. The issues discussed here, although centered on video games, also apply to other media with additional content in e-publication areas. Without a descriptive standard and best practice guidelines for dealing with additional content for video games and other distributed media, cultural heritage institutions risk the ability to successfully acquire, describe, and preserve their collection and ensure future use. In our future work, we plan to continue evaluating and refining the video game conceptual model by applying it to real video games and their additional

content. We will also compare and evaluate the applicability of existing linked data ontologies for representing video games with additional content.

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