A Study for Requirements of Video Games for Cataloging

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Preservation Activities at Ritsumeikan University

• First project started in 1998.
  • Game Archive Project. [http://www.gamearchive.jp/](http://www.gamearchive.jp/)

• Ritsumeikan Center for Game Studies (RCGS) was established in 2011.
  • Ritsumeikan Center for Game Studies. [http://www.rcgs.jp/](http://www.rcgs.jp/)
  • Nakamura et al. (2017)
Owned Resources

• 10,000 computer resources
  • Video games

• 180 devices
  • Consoles, Personal Computers, Peripheral Equipment

• 4,000 volumes
  • Video game Magazines, Strategy Guides, Catalogs, Game Studies, Journals, Reports
Published Data

• **Media-Arts Database (2015-)**
  - [https://mediaarts-db.bunka.go.jp/gm/](https://mediaarts-db.bunka.go.jp/gm/)
  - Development version (Official Version scheduled to be released in 2020)
  - Comprehensive Catalogs for manga, anime, game and media arts
  - It is produced by Agency Cultural Affair. RCGS is in charge of design and construction of the game field database.

• **RCGS OPAC (2017-)**
  - [http://www.dh-jac.net/db/rcgs/search.php](http://www.dh-jac.net/db/rcgs/search.php)
  - Online Public Access Catalogue
  - Records of owned resources are registered.
Background

• Huge number of video games are distributed to date.
• In fact, 47,959 bibliographic records are registered in Media-Art Database.
  • [https://mediaarts-db.bunka.go.jp/gm/](https://mediaarts-db.bunka.go.jp/gm/)
  • Only console games and arcade games are registered in this catalog. Mobile games and PC games are not included.
Background

• As the information environment changes, the video game platform is becoming borderless. Especially it is assumed that the huge number of mobile games are released.

• Appropriate accessibility is required for video games.

• There is no metadata model for adequately cataloging video games and providing access. It is currently being discussed.
Purpose

• The purpose of this study is to extract requirements which are necessary for design of metadata model for cataloging video game.
• Main targets are console games and PC games in this study
• Based on FRBR (IFLA Study Group on the FRBR 2009) and IFLA Library Reference Model (IFLA LRM: Riva et al. 2017)
  • McDonough et al. 2010, Online Audiovisual Catalogers Inc. 2015
• Method
  • Topics gained through practice of cataloging
  • Analysis of previous studies
Figure 3.1: Group 1 Entities and Primary Relationships

WORK

is realized through

EXPRESSION

is embodied in

MANIFESTATION

is exemplified by

ITEM

Figure. FRBR model entities from FRBR final reports
Previous Research

• There are few studies focusing on resource characteristics of video games.

• On the other hand, there are several studies on the data model.
  • McDonough (2010)
  • Online Audiovisual Catalogers Inc (2015)
  • Jett et al. (2017)
  • Fukuda & Mihara (2018)
**Item** (Manifestation)

- Almost physical video games are composed of a plurality of parts. This is a distinct difference from books in traditional library materials.
- These typically consist of one or more carriers containing the game content, manual in volume and containers.
- It is required that bibliographic units are designed to be described each items.
Title (Manifestation)

• The selected title is usually recorded in the local language or script. In the case of video games, statement in alphabets sometimes becomes a selected title.
  • The trend of englishization of video game titles has been strengthened in recent years (Fukuda et al. 2017).

• How to control and mean by language tags.
ゲーム名の平均文字数と文字種ごとの推移
Notes and Source (Manifestation)

• Video game materials do not have a custom of recording colophons.
  • Release dates, price and responsibility statements are often not recorded in the materials.

• These items are obtained from other resources such as magazines, catalogs or website. These sources of records are must be recorded.
Online Resource (Manifestation)

• Rapid growth of the online resource game market
  • Distribution by online resources has been a popular format on mobile and PCs for several years. It has also become common in home games in recent years.
• The online resource platform has a huge number of game titles. It is assumed that this is the reason that the barrier to the indie game has declined.
  • Game titles distributed on Google Play and APPSTORE exceed 1,000,000 in trial calculations.
Platform & Device (Manifestation & Expression)

• Platform is a "Standard" or "Specification" that is strongly related to playing and implementing most video games, and even development and production.

• It was assumed that users also uses this as a reference in identifying the game.
  • Montfort and Bogost (2009)
  • Kaltman et al. (2016)
Platform & Device (Manifestation & Expression)

• The platform is an abstract entity. In practice users often distinguish them with device and software. However, the platform and the device are not identical.

• Some devices implement two or more platforms
  • ex: Nintendo DS implements Nintendo DS and Gameboy Advance

• We need to construct authorities for platforms and devices.

Figure. Relationship among Platform entity and Device entity
Middleware & Game Engine (Manifestation & Expression)

• Middleware and game engines provide (integrated) development environment for video games.
• These are often expressed in videogame carrier, container and game contents.
• Authorities or Controlled Vocabulary
Content Rating (Manifestation & Work)

• Several standards of content rating are diffused for each region.
  • ex: ESRB, CERO, PEGI, IARC, USK, AustralianClassification, BBFC

• These are important attributes concerning game access and usage restrictions

• It is also common that “content rating descriptors” indicating reasons for ratings are also shown together.

• They are effective to records these using controlled vocabulary.
Software Version (Expression)

- Popularization of online update
- A huge number of derivatives arise from a (popular) game

Figure. Version History of “Pokémon Go (Appstore)"
<accessed: 2019-01-06>
Identical Content (Expression)

• Even with the same title, the game content may be different depending on the version
• Ex “Biohazard 7 resident evil”
  • 30 type of packages are distributed in Japan
  • 9 games are created when distinguished by game contents
    • Normal Edition
      • Grotesque Version (PS4, Xbox One)
      • Normal Version (PS4, Xbox One)
    • Gold Edition
      • Grotesque Version (PS4, Xbox One)
      • Normal Version (PS4, Xbox One)
    • TEASER

Figure. Image of “Biohazard 7 resident evil”
Figure. Apply to FRBR model of "Biohazard 7 resident evil"
Contributor (Expression)

• Numerous people contribute for video game development.
• As the scale of video game development grows, the number of contributors will increase.
• Contributors will not be shown in many game careers or instruction books. We need to reach the ending by playing the game for input them.

Figure. Number of Staffs noted in the ending
Creator (Work)

• Video games are collective productions as mentioned above. Therefore it is not easy to clarify the creator of video games.

• On the other hand, right holders are explicit. However, it is not clear whether it can be said that this is the creator.

• It is an issue that there are many cases where notation of such particularly important responsibility is not clearly indicated.
Series (Work & Expression)

- The series of video games will have an important role in the identification of the resource.
- Basically the series of video games can be regarded as one work.
  - “The intellectual or artistic content of a distinct creation” (Riva et al. 2017, p. 21)
  - “Aggregate and Component Entity” (IFLA Study Group 2009)
  - This can be recorded in a nested structure.

- W1 The Legend of Zelda
  - W1.1 The Legend of Zelda
  - W1.2 The Adventure of Link
  - W1.3 The Legend of Zelda: A Link to Past
  - W1.4 The Legend of Zelda: Link’s Awakening
  - W1.5 The Legend of Zelda: Ocarina of Time
  ...

Figure. Nested Structure of The work of “The Legend of Zelda”
Series (Work & Expression)

- While, a part of video game series has twisted relationships (McDonough 2010)
  - Ex: Super Smash Bros.
  - Ex: Torneko no Daibōken: Fushigi no Dungeon

Figure. Image of “Dairanto Smash Brothers Special (Nintendo Switch)”
Subject (Work)

• Various facets are assumed to describe the contents of the video game (Lee et al. 2014)
• It is necessary to construct a list for each facet.
• Shortage is expected in the existing vocabulary made by library community.
• Using Wikipedia as a dictionary of these records is considered an effective option
Compilation (Work & Expression)

- Many compilation or collection type video games are distributed.
- How to describe such content aggregation is an important issue in metadata modeling.
  - “Collection” entity (Jett et al. 2017)
- In the case of video games, it is also required to record the upgrade package in relation to its foundation.
Conclusion

• FRBR model is useful as a basis for description of video games.
• However, interpretation and application of models based on the characteristics of video games are required.
• In addition, it is necessary to advance the construction of controlled vocabulary and authority file peculiar to the game.
Future Works

• Designing metadata model for videogame **cataloging** and **publishing**

• Update RCGS-OPAC
  • Implementing web publishing system
  • Publish Linked Data

• Developing Media-arts Database
  • From “development version” to “official version”
  • Designing a integration with multiple popular culture database such as manga and anime (大石 et al. 2018)
References