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Ecosystems of indie porn game development: co-dependent partial organisations

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ABSTRACT

Building on case study data, this paper identifies processes and actors that form an enabling ecosystem for indie porn game development consisting of: game platform technologies, asset stores, commission-based artists, F95zone, Steam, Discord, and crowdfunding platforms (e.g., Patreon). Co-creational and organisational perspectives provide a rewarding exploration of this phenomenon.

CCS CONCEPTS

• **Applied computing** → **Computer games**.

KEYWORDS

videogames, pornography, ecosystems, crowdfunding, indie games

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1 INTRODUCTION

This paper explores indie game development of pornographic games, their funding and distribution. Data by Lankoski and Dymek [7] indicate that crowdfunding is successfully used to fund pornographic game development. Our case illustrates how the crowdfunding space for game developers is flourishing and becoming part of a wider ecosystem of game development resources. Building on an empirical data set based on Patreon, Steam, forums (predominantly F95zone) and several best practice cases, this study explores ecosystems of crowdfunded indie porn games from co-creational and organisational perspectives.

2 METHOD

The study uses an explorative case study approach [5, 15] focusing on sets, from multiple sources, of pornographic indie game developers and their games based on F95Zone scores and Patreon's most funded lists. Multiple game releases were coded as success

factors. Data sources for qualitative analyses: F95zone (an online community for adult games and comics) beta-release posts, including release notes, updates frequency and intervals; developers' public posts on Patreon and Steam pages; Steam sales numbers are estimated using (conservative) 12 sold copies per like ratio [4]; Graphtreon (a Patreon-funded Patreon statistics project) is the source for the number of funders and Patreon sales numbers, and games by developers NLT (*Visiting Aunt Sara*, *My Summer with Mom and Sis*, *Lust Epidemic*, and *Treasure of Nadia*) and DrPinkCake games (*Acting Lessons*, *Being DIK: Season 1*, and *Being DIK: Season 2*) are compared (designs, models, graphics) to track development based on full playthroughs, peeking at assets and walk-throughs. Majority of qualitative data was collected during spring 2022, but some developers (NLT and Dr Pink Cake) since 2020. These cases were selected based on differences in how they operate in the development ecosystem.

3 THEORETICAL FRAMEWORK

Our study's exploration of porn game development ecosystems, including crowdfunding, is analysed with a theoretical framework based on value co-creational ecosystems, complemented with perspectives on complete and partial organisations based on socio-technical approaches from organisation studies.

3.1 Co-creational ecosystems of crowdfunding

Quero and Ventura's [14] framework of value co-creation in crowdfunding posits a dynamic interplay of three ecosystem levels of value co-creation actors: *micro* (A1–3), *meso* (A4–6) and *macro* ecosystem levels (A7–8), and those are comprised of eight types of actors: A1. *Creative core*: proposes the ideas/project; A2. *Platforms*: bring together and mediate financing customers; A3. *Financing customers*: pay to finance the project; A4. *Non-financing customers*: promote and support the project, without financing it; A5. *Experts*: particular interest in the field; A6. *Investors* – professionally fund a commercial project; A7. *Crowdfunding associations*: institutionalisation process of crowdfunding that link actors; A8. *Public institutions*: regulation and legal contexts. The framework does have a major insufficiency when applied to the specific case of (indie) game development: the lack of socio-technical dimensions, which is an approach which intersects with the technological and organisational aspects [8, 12, 13, 16, 17]. The application of these perspectives on crowdfunding are infrequent (see exceptions by [3, 6]) or non-existent in the particular case of crowdfunded game development.



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3.2 Socio-technical organisational perspectives on development eco-systems: complete and partial organisations

Socio-technical dimensions are introduced through Nielsen's [10] research on partial and co-dependent organisations of crowdfunding, building on the notions of five core elements of a complete organisation [1, 2] and [9]: *Membership*: demarks involved and uninvolved actors; *Hierarchy*: roles of individuals in terms of power within an organisation; *Rules*: parameters for members, actions, and behaviours; *Monitoring*: to ensure compliance with organisational rules, and measure performance and Sanctions – reward or punish member's behaviours. Unlike a complete organisation, a partial lack one or more of these five elements. Moreover, Nielsen [10] outlines four dominant analytical frameworks to investigate crowdfunding in terms of organisational metaphors: network, community, market and organisation. These are supplanted by his own proposed contribution of partial and co-dependent development organisations that capture the complex, boundary-crossing, and co-dependent nature of the crowdfunding phenomenon.

3.3 Crowdfunding as network, community, market and organisation

In organisational crowdfunding literature [10] network is understood as a peer-to-peer social network platform that disseminates, funds and peer-screens crowdfunded projects. Community is conceptualised around notions of (social) belonging and shared purpose (cf. previous value co-creational perspective) that go beyond extrinsic reward type buyer/seller interactions. Market perspectives focus on crowdfunding platforms as middlemen, or market-makers, between buyers (crowdfunders) and sellers (founders) driven by economic market logic. Finally, crowdfunding as an organisation centres on actors that work together in semi-autonomous organisation exchanges. Nielsen [10] concludes that crowdfunding cannot be entirely explained with one, or several, of these organisational perspectives, and instead proposes a framework based on three actor types (platforms, founders and crowdfunders) and their specific processes according to the five elements of the complete/partial organisation (described above). Subsequently, platforms organise founders with strict decisions on membership, rules, sanctions, and monitoring. Founders proceed by organising crowdfunders through decisions on membership, limited rules, and positive sanctions. Founders also negotiate hierarchy, rules, and membership by providing platforms with content. Crowdfunders participate by monitoring and sanctioning campaign founders.

4 RESULTS

The primary ecosystem component is constituted by crowdfunding platforms such as *Patreon*, *SubscribeStar* or *Kickstarter* that provide development financing by means of a monthly payment (or upfront development budget). In successful *Patreon* cases such Hachi (developer of *Hail Dictator*), Robin (*Space Rescue: Code Pink*), As-taros3d (e.g., *My Cute Roommate*) the subscription platforms have enabled transformation into full-time indie porn game developers. Some developers have a goal on *Patreon* explicating this, e.g., Robin:

"When we reach this point [financing budget], I can work full-time on this project & provide even more content & updates."

Crowdfunded porn game development is successful on other platforms such as *Kickstarter*. For instance *Negligee: Love Stories* (Dharker Studio, 2018), the first adult game published on (distribution platform) *Steam* uncensored [11], was *Kickstarter*-funded (see (*Kickstarter*, n.d.)). Its developer, Dharker Studios, also used *Kickstarter* in other game projects. However, eight out of their 15 *Kickstarter* projects ended unsuccessfully. Based on the Dharker Studio's case, *Kickstarter* seems more unreliable than *Patreon* in terms of success rate but also total funding/income size.

Game platform technologies such as game engines are part of an enabling platform ecosystem. Of particular importance is *Ren'Py*, a visual novel game engine (intriguingly *Patreon* funded), and role-play game engine *RPG Maker* since both lower the skill sets (technology and game programming proficiency) of higher-level game development by requiring a minimal understanding of game programming.

Commission-based game artists (online) or asset stores (e.g. *Daz3D*), provide high quality 3D vector models for sale. Titles such as *Being Dik*, *Fetish Locator*, *Milfs of Sunville*, and *Dreams of Desire* are based on third-party assets. This practice also lowers the developer's entry barriers for creating visually impressive quality content.

One of the most prominent indie porn game communities is *F95zone.to*, which based on their statistics has 4.8 million members whose community work generates interest, feedback, and marketing communications for a market of potential buyers. Although the forum does allow links to pirated copies of porn games, it also constitutes an advertising/marketing communication platform for crowdfunded porn games.

Empirical evidence indicates that crowdfunded porn game developers are aspiring for more established mainstream contexts, as quoted by Team Nimbus on *Cloud Meadows'* *Steam* game store page "... bringing the game to Early Access, we will be able to reach a larger audience of engaged fans ..." Early Access is a programme by digital distribution platform *Steam* that distributes beta versions of games. Our empirical data, e.g. game developers NLT, Lewdlab, and DrPinkCake, indicate a publishing model where development is *Patreon* funded but the (almost) final game is published on *Steam*. All three cases are top 50 *Patreon*-funded projects according to *GraphTreon*. While this might be perceived as a betrayal by the *Patreon* community, this does not seem to be the case. When one *Patreon* project is finalised, it is substituted by a new project that the existing funders hopefully continue financing. *Steam* thus provides extra income, while the focus is turned to the next *Patreon* project.

Developer Venus Noire's *Seeds of Chaos* uses a different approach with simultaneous listings on *Patreon* and *Steam* early access. Through *Patreon*, the game is completed with revisions and new content. Similarly, L7team, developer of *Milfs of Sunville* and Robin's *Space Rescue* are basically releasing the same update increments on *Patreon* (billed monthly) and on *Steam* (fixed price) as included updates. *Vinovella Games'* *Fetish Locator* (Week 1 and Week 2) are both on *Patreon* and *Steam*, but curiously with a separate *Patreon* page for *Vinovella University*.

By looking at NLT and DrPinkCake’s game development history (cf. fig 1) and their games in detail we can analyze their progression as developers. DrPinkCake’s first game *Acting Lessons* is a visual novel game with a complex branching progression structure. Visual game quality is impressive as it is based on third-party assets. The game is shorter compared to later games *Being DiK: Season 1* and *Being DiK: Season 2*. *Being DiK: Season 2* reuses many assets from *Being DiK: Season 1*, and both are based on Ren’Py, thus lowering development costs.

Developer NLT started with comics before expanding to game development. Its first game, *Visiting Aunt Sara* is a short point-and-click adventure mother/older woman fetish game. *A Summer with Aunt of Sis* is a similar small game in the incest fetish genre, both based on the RPG Maker game engine and custom-made 3D models or customized third-party models that improved art quality for every release. NLT’s next game, *Lust Epidemic*, is a longer game utilizing much more refined mechanics tested in earlier games. Incest fetish content ended due to Patreon’s 2017 restrictions and NLT’s increased popularity. NLT sells *Lust Epidemic* on Steam. *Treasure of Nadia*, NLT’s next game, recycled many mechanics from *Lust Epidemic* with GUI and mechanics improvements. Similarly, 3D models from *Lust Epidemic* were reused in *Treasure of Nadia*. The game continues the *Lust Epidemic* story with several repeat characters. The latest update of *Treasure of Nadia* on Steam included discount and integration with *Lovesense* – a remote-controlled vibrator.

We hypothesise that small games are used to develop skills for more complex later games. Reusing 3D models, textures, and code-base makes development faster and less expensive. NLT publishes new game versions every two weeks. DrPinkCake regularly publishes new versions. Regular publishing intervals might be relevant to keep Patreon funders financing the game (cf. [7]).

Based on estimated Steam and Patreon sales figures for NLT, Patreon constitutes the main source of income while *Treasure of Nadia* provides additional income with an estimated 45 000 copies sold since Feb 2022. DrPinkCake’s *Being DiK: Season 1* has sold 100 000 copies after Feb 2020.¹ Moreover, Patreon has facilitated longer development times: e.g., *Treasure of Nadia*’s first Patreon update in Oct 2019 was later published on Steam in Dec 2022 and the first Patreon update of *Being DiK: Season 1* came in Feb 2019 and then published on Steam in Feb 2020.

5 DISCUSSION

5.1 Co-creational ecosystem perspectives

On the co-creational micro-ecosystem level, as defined by Quero and Ventura (2019) relationships are facilitated by various types of platforms (A2), not only the actual crowdfunding platform but also other platforms such as the communication platform Discord, featured prominently in our empirical cases providing relationships beyond the mere transactional exchange. Reward structures constitute in this context a pivotal aspect as explored by others [7]. On the meso-level (stakeholder) relationships connect different spheres of value creation that involve among, others, co-ideation with various A3–A6 actors. However, in our study, investors (A6) are non-existing in the empirical data, since it is highly unlikely

that a mainstream game publisher would invest commercially in the development of an indie porn game development. Finally, the macro-level consists of a service ecosystem (macro-level and meta-layer of context and institutionalisation) supported by crowdfunding associations (A7) and public institutions (A8). Similarly to investors (A6), few established industry associations would risk associating themselves with controversial indie porn game development. The F95zone multi-million member community also partially enacts as an institutional authority that links actors. Public institutions (A8) provide regulation and legal contexts to traditional crowdfunding ventures, but in the case of indie porn games, the specific legal contexts are still somewhat unclear. This transforms the crowdfunding platform into a pivotal gatekeeper on the macro level of ecosystems, as illustrated vividly by the gradual transition, by the world’s biggest game digital distribution service Steam, to a more permissive approach to indie porn games when it in 2018 allowed uncensored adult games to the platform or the opposite; Patreon’s 2017 terms of service prohibiting incest content.

5.2 Co-dependent partial organisations

Nielsen’s [10] model can be rewardingly applied to this study’s empirical data, but with some added extensions to incorporate specific actors such as F95zone, game engines, asset stores, commission-based game artists, Steam platform, and Discord. Patreon organises indie porn game developers with terms of service (rules) regarding their content making the platform’s permissive content rules a decisive factor. The platform determines membership (for developers/crowdfunders), rules of conduct (porn games permitted), sanctions (payments, transactions, fees) and monitoring (banning developers/crowdfunders). Developers also decide crowdfunder membership since Patreon allows blocking of crowdfunders but is mainly used to regulate rewards (positive sanctions). However, developers also determine crowdfunding platforms – there is a case with a developer switching from Patreon to Steam when given the opportunity, probably due to favourable rules/sanctions. Crowdfunders decide (monitor) strictly recipients of their funding/contribution with peer-screening processes (on various forums) and allowance (sanctions).

5.3 Specific ecosystem actors

Specific ecosystem actors need to be individually analysed and extended using the four organisational models, and according to the complete organisation components.

F95zone is primarily a community with “soft power” over crowd-funded projects yielding certain peripheral monitoring and sanction functions. It also acts as a network since developers are also active members with objectives beyond intrinsic community aspects. F95zone partially constitutes a distribution network for pirated porn games, thus providing extrinsic rewards (free games); notably, some developers provide their games for free while simultaneously maintaining a Patreon crowdfunding project.

Asset stores sell development resources to developers: a market relationship. Commission-based game artists also provide a market relationship, or a (semi-autonomous) organisation relationship but maintain monitoring power; not all game artists are interested in selling pornographic game assets.

¹Treasure of Nadia has 3 747 reviews and Being DiK: Season 1 has 8 595 reviews on Steam. The sales were calculated using a ratio of 12 sold games per review.

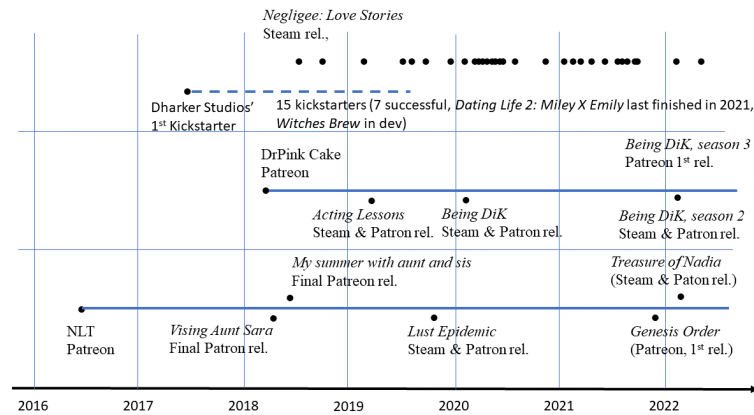


Figure 1: Game development timeline for Dharker Studios (as a comparison point), NLT and DrPinkCake

Discord provides a community-type relationship, but in some cases becomes a highly prized reward category, subsequently becoming a market-type relationship (service sold as a reward).

Finally, Steam acts as a (Patron) platform substitute, a core actor as part of the peripheral ecosystem generating alternative revenue streams, becoming an indirect actor role.

6 CONCLUSIONS

The results have determined crowdfunding services (such as Patreon, SubscribeStar or Kickstarter) together with certain other services and actors (game platform technologies, asset stores, commission-based artists, F95zone, Steam, Discord) as ecosystems for game developers, in line with earlier crowdfunding literature. Analyses from co-creational, socio-technical and organisational frameworks contribute to the field of indie game development in general and crowdfunded development in particular. This study contributes towards socio-technical approaches to crowdfunded game development based on organisation studies frameworks with four organisational models (network, community, market and organisation) combined with complete and partial organisation perspectives, proposing the notion of crowdfunded indie porn game development as ecosystems of co-dependent partial organisations with added extensions to incorporate specific indie porn game development ecosystem actors.

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