

INDEPENDENT GAME DEVELOPERS AND THEIR EXPECTATIONS TOWARDS RECOMMENDER SYSTEMS

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Electronic recommender systems and digital distribution as such have transformed many industries. Digital games is one of those industries where the transformation is particularly evident, as more and more games are appearing on the market, and most of the titles are published by independent game developers. Due to electronic recommender systems developers can now self-publish their content without the mediation of third parties and additional costs for their services. This change has significantly decreased the costs of game production, distribution, and marketing, allowing more studios to engage in releasing their games on their own. However, it is unclear how the developers themselves perceive the effect of electronic recommender systems of their business models. This paper presents a qualitative study on the impact of electronic recommender systems in context of independent game development. Based on semi-structured expert interviews with active game developers who have been engaged in promoting their games through electronic recommender systems, our study provides insights on how independent game developers perceive those systems as part of their value chain and their business model. The results of the study concern to (i) independent game developers to establish, adapt, review, or improve their business model, and (ii) providers and developers of electronic recommender systems as indication of needs and requirements as well as expectations of their potential content creators.

Keywords: Electronic recommender systems, Independent game developers, Digital games, Video games

1 Introduction

Digital games industry has been around for some decade and nowadays it facilitates millions of gamers around the world, with thousands of new games being released every year. It has grown rapidly and transformed in one of the most profitable branches of entertainment, surpassing film-making industry in revenues. With an increasing number of potential consumers of games, the recent decades have given rise in numbers of game developers as well, with more and more people trying to create their own games. Professional game developers, who treat game making as their business and main source of income, have now better opportunities than ever before. Widespread availability of the Internet, personal computers changing from luxury to necessity, fast growing technical capabilities, and digital distribution, all these factors have contributed to the rise of independent game development being more prominent than ever.

Digital distribution is likely the greatest transformation video games industry has experienced in many years. It has significantly lowered the production costs of games and made it easier to be delivered to their target audiences. The latter is possible thanks to electronic recommender systems (ERSs), digital tools that identify consumers' preferences and tastes, and suggest matching items to satisfy their needs. Thanks to automated recommendations, generated with ERSs, players are now able to discover games they have not even known about, without investing a lot of time into search and information gathering. On the other hand, for developers they mean the possibility to self-publish their games without spending resources on the services of third parties or even other promotional and marketing channels, if they choose so. Just like book publishing and film industries, digital games have started shifting to the "long tail" economy model, where niche items can find their potential consumers and ERSs serve as a way to navigate through the vast quantity of games available on the market.

Surprisingly, the influence of ERSs and their role in digital transformation of consumption is mostly researched from the customers' side. This essentially comes down to the ability of ERSs to correctly identify their users' preferences, and propose the corresponding items for them. It is common to study them in context of their items and problems that might arise from their algorithms. However, we know almost nothing about how exactly ERSs influence the content providers of the very consumable goods in their catalogues. These content providers deliver the core of the whole value chain. Without them there would be no value chain at all. With digital distribution and automated recommendations they are able to enter it with new ways of promoting their projects and new business models.

The article at hand is based on [11] and provides a study and categorization of the aspects and effects of ERSs, important for independent game developers, content providers of "tail" for the digital games market. Methodologically the study represents a qualitative approach, intended to explore the perceptions, expectations, requirements, and challenges content creators have while working with ERSs as a comparatively new tool for promotion of their games, and how small businesses are enabled to utilise ERSs to be more efficient, visible and sustainable in digital games industry.

Section 2 describes the methodology and the research question this study has aimed to answer. Section 3 provides information about independent developers in digital games industry and how ERSs have influenced their rise in numbers. Section 4 is the presentation and interpretation of results, obtained from the empirical study. Finally, Section 5 is the discussion of obtained results and ideas for future studies, relevant to the topic.

2 Methodology and Research Question

The ability of ERSs to recognize user's preferences and to match them to the corresponding items is often the main measurement of the ERS's effectiveness. However, it is not broadly represented in available scientific literature how the developers perceive the appearance and rise in popularity of ERSs, how easy the ERS are to use for content creators, how they estimate their impact, and other related questions. This issue might be a result of a larger problem about the general representation of digital game developers in modern scientific discussion. As described by Guevara-Villalobos [7], despite belonging to a highly successful industry and a significant amount of studies on electronic

games and their development, the idea of what is a digital game developer and how they view themselves and their work has not been widely researched from academic point of view, aside from a few studies like the one by [21]. These issues create a significant research gap.

Following the preliminary analysis of scientific studies related to the developers' perception of ERS, this research aims to take an introductory step into discussing the mentioned problems. Its findings are meant to make understandable the experience of ERSs by independent game developers and form suggestions for further research based on its results. Taking this into consideration, the following research question has been formulated as the general research question of the study:

How do independent game developers perceive the usage of electronic recommender systems for the games they create?

More specifically, the selected results of the study, presented in this article, focus on evaluative opinions of independent game developers, although the study as such covers a broader scale of developers' impressions.

The main research method for this study is the qualitative semi-structured expert interview. The impressions of game developers are only vaguely expressed in researches about them, but without the direct link to ERSs (e.g., Kasurinen et al. [10]). This point has resulted in the conclusion that there is a potential for deeper understanding of the relationships between game developers and ERSs, which cannot be achieved in a completely structured interview or survey.

Because of the same vacuum on the topic, it has been presumed that a lot of related issues and phenomena cannot be identified without the input of interviewees. For this reason, the interviews have been conducted in a semi-structured manner, allowing the respondents to contribute on issues which have not been included in the original questions design.

Additionally, explorative interview as the main research method has been used in the previous work of the authors, related to ERSs in the music industry. The corresponding study is dedicated to the non-superstar music artists [1] and their perception of ERSs and their impact. Such research has faced similar challenges, as this one: lack of scientific studies on artists' view and perception of ERSs in their careers, as well as potential to discover new phenomena, related to the theme.

The interview has been designed following the guidelines from Flick [5], with the appropriate adaptation of the initial design types to serve the goals of the study. Snapshot and comparative interview have been selected as the starting interview design types. The first is defined as the study of various manifestations of particular processes and states that exist in a specific field during the time of the research [5]. Since the research question relates to ERSs, a relatively recent phenomenon, in digital games (specific field), snapshot is a suitable base design model. The comparative element has appeared as a result of several interviews being conducted regarding the same theme and the prior expectation of differentiating responses by the interviewees.

In terms of tightness, the research can be defined as middle to tightly designed [5]. The basic goals and questions of the interview have been formulated, the studied phenomenon has clear boundaries and deals with a specific type of interaction between a specific group, independent game developers, and a specific type of tool, ERSs for digital games.

The main dimensions for comparison of the experiences between interviewees has been defined as well. However, the interview has included the section where the interviewees could add anything they have considered relevant to the theme, even if it has not been present in the initial design.

The candidates for the interview have been selected based on a certain set of features [16]. The candidates have had to be independent game developers, either working as individuals or in independent studios. They have released at least one digital game project using any PC and/or gaming console ERS in the past five years. They have first-hand experience in submitting and curating their project in an ERS. The interviews have been gathered in oral and written forms, depending on the respondent's preferences. Written form has turned out to be preferable by most of the respondents.

In total, five interviews have been collected, one in oral and four in written forms. After collecting all the data, the oral interview has been transcribed. The resulting data has been analysed according to the method, suggested by Flick [5]. The written interviews and the transcript have been reread several times, and separate meaningful units from interviewees' statements have been distinguished. Further, separate categories have been defined, that could be used as the base for analysis. Most of these categories have been already pre-coded into the questions of the interview. The meaningful units of each interview have been analysed and assigned to the corresponded pre-coded category.

After all the relevant units have been assigned to the pre-coded categories, the interviews have been reread again, to establish the categories that have been not implemented into the initial questions but contributed by the interviewees. These categories have been added to the end of the list, and relevant meaningful units have been identified and assigned to them.

For the next stage, the results have been presented to the interviewees, and they have confirmed that the study has stayed true to the data they have provided. The respondents could point out any misinterpretation issues, if such have been detected by them, and then the additional analysis of the specified units have been conducted to adjust the incorrect interpretations in order to convey the true meaning, intended by the interviewees. When the analysis has been finished and all the interpretation problems fixed, the results could have been reviewed for discussion and future research suggestions have been developed.

3 Independent Game Developers and Electronic Recommender Systems

Digital games could be described as highly saturated "superstar" type of industry, where a few notable companies control most of the market, before digital distribution has been introduced and online has taken over games retail significantly [3, 4, 10]. Nowadays it remains highly saturated. Given such situation, it might seem unlikely that independent game developers (indies) have any chances on the market in uneven competition with the industry giants [4]. However, researchers have managed to identify a few reasons for their recent increase in popularity. One of the first is the increasing value recognition of product variety and niche products in digital games market, and the phenomenon of independent creativity, expressed by indies. Since the world games industry is dominated by by so few large players, it is unsurprising that a lot of gamers often consider the established brands limited and limiting in regard to satisfying players' personal preferences. Moreover, many developers could define

creating games not only as strictly business, but also as a way of self-expression. In this case, the possibility to publish their creations openly is a very special type of job satisfaction, valuable in self-employment [20]. Independent studios are also regarded as a kind of environment that inspires innovations for the industry in ways not possible for corporate culture. The new discoveries and developments by independent studios have potential to bring benefits to both game publishers and industry in general [4].

General spread of technology in modern life has impacted game development in two ways. First, it means that more people are using electronic devices and thus are potential customers for games and related products and services [13]. Such situation stimulates the appearance of more game suppliers and greater variety of their content on the market. Second, it means that more and more people can access the information and tools related to making digital games, which results into more people willing to actually do it [20].

Previously mentioned digital distribution has decreased the distribution-dependent part of the market entrance barrier. With online game platforms and stores, games in social networks, and the variety of digital game markets across platforms that do not directly compete with each other, it is easier to find a distribution model for the product that matches the chosen market and can be delivered by developer. Although the high saturation of these markets results into a growing competition, they are still considered as a viable opportunity for self-publishing [13]. Additionally, digital distribution significantly changes the cost structure of game release, with traditionally publisher's and distributor's shares becoming part of the developer's share. This provides room for developers to more efficiently use the resources that would have been otherwise claimed by the publishing third parties [8]. Figure 1 shows such change in the distribution model.

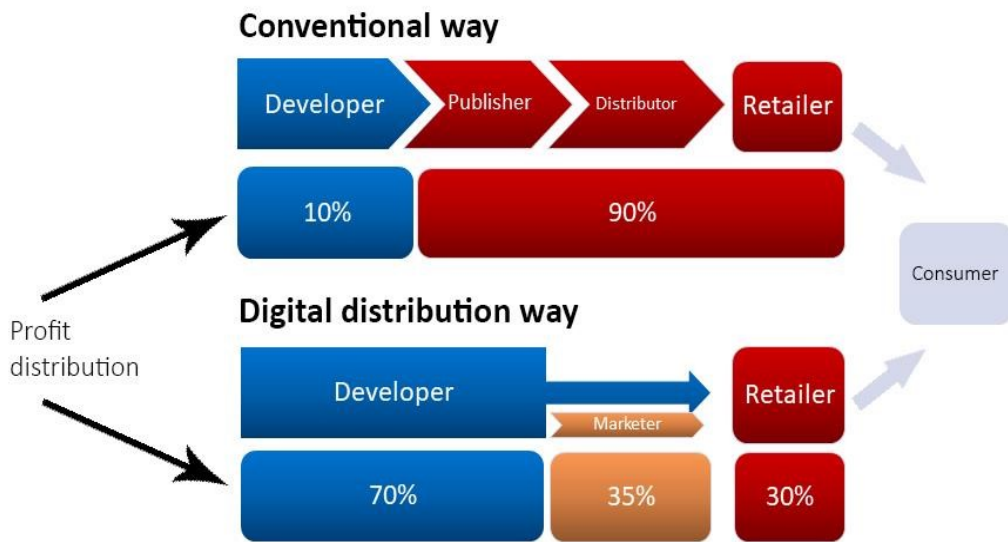


Figure 1 Business Logistics of a Game in Traditional and Digital Distribution Ways. Hiltunen, KooPee, and Latva, Suvi, 2011.

Furthermore, it is important to name the access to Internet and its quality as a major influencer on its own. Its widespread availability and high downloading and browsing speed have given rise to online gaming, browser gaming, social networks gaming, mobile gaming, and other network-type gaming types [13]. Finally, the technological progress allows producing a greater variety of games than before, from realistic 3D graphics to simple sketch styles [4].

However, investments by big publishers still play the key role in funding game development [4], although now there is a range of viable alternatives. Crowdfunding is one of such new models. Another relatively new monetization model is known as “freemium”. Usually, a game using this model has a “light” free version, and then additional, “premium” content can be purchased [17]. Similar to freemium is “free-to-play”. Free-to-play (or FTP), a monetization model, when the game is generally free to play, like the title suggests, but to a limited extent [6]. Additional levels, quests, characters, and other game-related features can be unlocked only by purchasing them. However, unlike freemium, it is still possible to complete a FTP game without paying for anything, but it might take more time and effort to do so [13], sometimes to an unreasonable extent from player’s perspective. Further, worth noting is the growing variety of in-game transactions, also known as “microtransactions”. This term encompasses a number of services, available for purchase in game, for relatively low fees.

To sum up, there are new catalysts that encourage independent game development and publishing more than ever, inspired by technological development and digital distribution in particular. There is a demand for niche games on an otherwise highly saturated market. For both major studios and consumers, there is business interest in independent idea generation and innovative views. There is access to information, technical, and financial opportunities that are available to general public to support the aspirations of indies. Nevertheless, such opportunities do not imply that it is an easy process to reach the target audience and make oneself noticeable among all the other games out there [13].

With the increase of the digital content amount, electronic recommender systems (ERSs) have been developed as one of the tools for customers to navigate the growing numbers of game titles and as publishing and promotion tools for indies. An ERS is a software with the purpose to generate suggestions to its users from the available catalogue of the items within the system. These suggestions – recommendations – are supposed to be interesting to the user based on the data the system has about both the user and the items in the system’s catalogue and should correspond to user’s preferences. The key elements of an ERS can be described as item data, user data, and matching algorithms and techniques that evaluate item and user data and user-item relationships, and generate recommendations based on the results [14, 18].

The general purpose of an ERS is to navigate users through the large collections of items by creating personalised sub-lists that should correspond to user’s preferences [14, 18]. They serve as one of the tools to avoid overload with information in the Internet [2]. ERS also helps its users to overcome their lack of knowledge about the items available in order to make a satisfying choice [18] (e.g., when deciding on a new game to play, user normally has not played the game before and thus cannot predict accurately how good it is for them).

The popular video games ERSs and digital distribution platforms that have been mentioned by the respondents of this study are Steam [32], GOG [23], Kongregate [27], Kartridge [26], and Utomik [31]

for personal computers (PC), Sony PlayStation Store [30], Microsoft Xbox Store [28], and Nintendo store [29] for gaming consoles. App Store [22] for Apple iOS platform and Google Play [25] for Android platforms have been mentioned, but they are not in the focus of this study, since they facilitate mobile gaming platforms.

4 Results

This section presents the results, obtained from the interviews and analyzed as described in Section 2. It contains information about the respondents and some of the categories researched. It also contains information about the participants of the research.

4.1 Collecting Data

Five experts have provided data for this research in total. All of them have been active as independent game developers, some individually or some working independent game studios. Since some of them have requested for their identification data to be confidential, for convenience purposes they are numbered in chronological order the interviews have been conducted (e.g., Interviewee 1, Interviewee 2, etc.). Each respondent has worked in a different European country at the time of the interview. All the interviewees have a few years of experience in indie game creation and have worked through at least one of ERSs to publish and promote their projects in the last years. One interview has been conducted in oral form and four in written. All interviews have taken place between May 2018 and February 2019. The summarised data about the respondents is presented in Table 1.

Table 1. Information about the Interview Respondents. Source: own representation

| Interviewee | Position | Years in Industry | Country | Type of Interview |
|---------------|-----------------------------------|-------------------|----------------|-------------------|
| Interviewee 1 | Co-founder | 5 | Austria | Oral |
| Interviewee 2 | Chief executive officer | 10 | Italy | Written |
| Interviewee 3 | Creative director | 6 | Netherlands | Written |
| Interviewee 4 | Writer/Quest designer/Shareholder | 4 | United Kingdom | Written |
| Interviewee 5 | Self-employed game developer | 5 | Switzerland | Written |

All the respondents have had experience with PC ERSs platforms, since PC platforms are in the focus of this study. Among them, Interviewee 1 has described the pre-launch experience on PC in details. Three of the respondents have worked with console platforms, although Interviewee 4 has provided information only for the PC ERS Steam, since their personal experience has been mostly with Steam. Additionally, one interviewee has worked with mobile platforms, while two others have referenced the mobile games market and the active ERSs there for comparison purposes. Since this study focuses on PC and console games, the data about the corresponding ERSs has been separated and analysed, when possible.

4.2. Results and Interpretation

This section presents the selected findings from the interview data. The findings are grouped into several categories as the result from analysis, each presenting a set of related experiences, described

by the indies who have participated in this study. The selected categories are related to the overall impressions of indies from ERSs and the various aspects of their work with them, as well as how ERSs relate to other promotional tools and how the respondents would improve them.

4.2.1 General Impressions

Three out of four interviewees, who have talked about their PC projects, have defined their impression of the PC ERSs as overall positive, mainly talking about their experience with Steam. Two respondents have expressed disappointment in the console ERSs. Additionally, Interviewee 1 has described their pre-launch experience on Steam as much more positive and simple than the corresponding experience with the console ERSs. One person has evaluated their PC ERSs experience as overall negative.

The interviewees have described a few reasons for their impressions. For consoles, two interviewees with negative impressions have stated that their games have not gotten much attention, or not as much as they have had hoped. Interviewee 1 has pointed out at the complicated submission process and the necessity to go through long and slow communication chains to get assistance, needed for the project publishing. They have mentioned the problems with the ERSs themselves, like the problem of partial meta-search, when it has been impossible to find a game using only part of its title (e.g., typing “straw” instead of “strawberry” would not lead to the games containing the word “strawberry” in their title, which is a made-up game title for illustration purposes). Other major problems are the absence of comprehensive feedback on consoles or direct communication opportunities with players.

For the PC ERSs, especially, Steam as the largest of them, thoughts of the interviewed expects have divided. Interviewee 2 has mentioned the absence of curation as a problem, while Interviewee 5 has evaluated it as advantage of ERSs over stores curated by humans. Two respondents have found the feedback they could get on Steam as very useful, while two have evaluated it as not clear or confusing, or not useful.

All interviewees have agreed that ERSs are playing a major role in the publishing of their projects, and for the three of them Steam contributes the largest part of their profit, regardless of their personal judgement of it. For consoles, the situation is different, since any indie who wishes to publish console games has to submit them to the official console producers’ stores. Most of the respondents have stated that the mechanisms behind the ERS algorithms are not clear enough, although not all consider that it is necessary to know about how their work.

4.2.2 Pre-launch Experiences

In order to understand the pre-launch motives, the respondents have been asked to describe how they have approached the decision of using ERSs, the selection of the ERSs to work with, and the expectations they have had before launching their games in the specific ERSs. Some of the respondents have also described if their expectations have been met or not.

For Interviewee 1, the initial selection of the ERSs has come down to the selection of the publishing platform as more important. Since they have chosen the consoles, it naturally has resulted into publishing in Xbox and PS stores. The key factor in their choice is the competition, which is significantly lower on consoles than on PC. They have considered not to publish their games in some

regions, since in those regions console gaming is not popular enough. In case of going on Steam, the driving influence is the number of players which can result into potentially higher sales. Interviewee 1 has also stated that their game feels organic with a lot of mechanisms, implemented on the Steam platform, like achievement system, multiplayer possibility with friends, etc. The contemplation over launching on Kartridge has been derived from the lower competition and the possibility to be featured there on the platform's launch.

Interviewees 2, 3, 4, and 5 have mentioned the number of active players as a key factor in using the Steam ERS. Interviewee 2 has pointed out the number of spenders as another important factor. Interviewees 3 and 5 have named the commission percentage as one of the decision influences, followed by the value of the services they could get for this commission and the ratio between the two and the effort required to publish the project on the platform. The discovery process has been mentioned by Interviewee 5 (ERS against having "gatekeepers"). Interviewees 1 and 4 have regarded the opportunity to get "more than just store" for their games, which could contribute to their community building efforts, with Interviewee 4 emphasizing the accessibility of additional tools for the developers. Interviewee 3 has talked about the possibility to use platform's features to possibly increase game sales.

When it comes to expectations, most of the respondents have named a few, except Interviewee 4, who has stated that they have had none. Interviewee 1 has been warned about the difficulties of the submission process on consoles, but in the end has estimated it as not as bad, as they have anticipated. They have also hoped for a better visibility than they have achieved. Regarding Steam launch, their expectations are mostly concentrated around the community building process and less focused on sales. Interviewee 2 has hoped for a better understanding of the developers' desires and needs on the side of the platform, and a more responsible approach from Steam to developers. Their expectations have been not met. The expectations of Interviewee 3 have been focused around the possibility to manage the store's page and the acquisition of relevant sales data. They have also wished to acquire information about the important factors, influential for being featured in the store. Interviewee 5 has expressed interest mostly in reaching visibility and regarded Steam as the "default" option to many players" to achieve that. In this regard, their expectations have been fulfilled, although they have mentioned a continuous feeling of insecurity regarding the future fate of their games in the ERS.

4.2.3 Evaluation of Submission Process

To evaluate the submission process, the participants of the study have been asked to describe their impressions of contributing their games to ERSs, the difficulties of the submission process, the tools available for content providers at the platforms with the ERSs, the information they are required to submit and/or choose to publish as their own initiative, and how they evaluate the possibilities of the ERSs in defining their games within the platform. Interviewee 1 has been asked to provide some additional submission details for the better understanding of the process by the authors, since the interview with them has been the first one.

All the interviewees have agreed that the submission process on Steam is relatively easy. Interviewee 5 has described its back-end as "a bit clogged-together", but still likely more pleasant to work with than in other stores with ERSs. Interviewee 4 has stated that Steam provides a good support for the developers who decide to publish within it, and Interviewee 3 has shared a similar opinion

about another platform, Utomik. Interviewee 1 and 2 have pointed out that it is relatively easy to overcome problems on Steam, because many developers have published their games there already and revealed their experience about it online.

To the contrary to their experience on Steam, Interviewee 1 has described their work on the console submissions as extremely complicated. First, the information about the details of how the consoles function and how to submit games to their stores is confidential, which is why it has been hard for them to find the relevant information about the submission process itself. Second, since the information is confidential and there are less developers releasing games on consoles than for PC or mobile platforms, it has been difficult to find prior solutions to the problems that they have encountered with their first project. Third, the communication process with the companies-owners of the platforms has been very slow, because they have had to communicate with large department teams instead of individual persons and they have had to establish new connections with every department. Additionally, console stores are relatively restricted regarding the form of assets the developer can submit to the store, such as having very specific requirements for image resolutions, file types, etc. They also require age ratings, which Steam does not, and developers have to submit separate packages of assets for some regions, which might be too expensive for an indie studio to manage (e.g., publishing in China requires all the text in game and supporting assets to be translated in Chinese, including the decorative elements).

The minimum required information, needed to publish the product, has been established as product name, product price, at least one screenshot, at least a short description, initial tags, and the age rating on consoles. According to Interviewee 1, price is submitted as a recommendation and developer's expectation, and the platform is responsible for forming the final price, with their agreed commission included. The evaluation of the initial information by most of the respondents can be considered as sufficient to identify the game, which includes the most basic information about it (Interviewee 3) and is necessary to distinguish the game and make it visible to players (Interviewee 2). However, developers are usually revealing more about their projects, than the required minimum. All the respondents regard the information available for posting as sufficient to express their game on the platform, although many do not see the direct connection between it and the performance of their project within the ERS.

4.2.4 Post-Submission Activities

Four of the respondents have stated that the project does not explicitly require constant overseeing after submitting it to an ERS, but it is highly recommendable to monitor it and to put in some effort in order to improve its performance on the platforms, such as readjusting information about the game and tag editing, and interaction with the community in post-submission phase.

Interviewee 1 has stated that there is no communication between developers and customers on console platforms they have used, so they have been responding to players using external channels. In case of their game, it did not take much effort. The most of their communications have been with the staff of the platforms to arrange and confirm the featuring of their game in various events, like sales.

Interviewees 2, 3, and 4 have said that the most efforts are dedicated to the community during the launch of the project or the new content for it. Interviewee 1 has shared the plans to invest a lot into

building the community when they launch their game on Steam. Interviewee 5 has also mentioned that monitoring the game's performance might provide some ideas for promotion.

Interviewees 3, 4, and 5 have evaluated the effort they put in after publishing the project as worth the reward, with Interviewee 4 stating that it is "vital" to support a good relationship with the players of their games.

4.2.5 Evaluation of Feedback from ERSs

When talking about feedback, the respondents have been asked to share information about which feedback they are given by the ERS-platform, how they evaluate it, if it is useful for them and the promotion of their project, and what feedback they would like to get that is not included in ERSs.

According to Interviewee 1, console ERSs, in comparison to Steam for PC, provide nearly no feedback. The developers can only see which countries are the people who have bought their games from, but nothing else about their players or people visiting their store page. The information from ratings by players is estimated as irrelevant, because submitting a rating is described as a very difficult process for players, and only a small part of player base does it, if they really want to share their opinion about the game. Same restrictions apply to players' reviews. Interviewee 1 has estimated such state of feedback as almost useless in practice, since it gives developers no insights about why their game is performing in the ERS the way it does and no data to be used in future ERS strategies.

As stated by all the five interviewees, Steam provides more data than the console ERSs, although not all of the interviewed experts find it useful. Among the mentioned data are sales statistics, store page views/visits and click-throughs, from which channels the visitors have accessed the store page, and how players have rated the game. It is also possible to apply Google Analytics [23] service to track additional data about the page.

While some of the respondents have found the data by Steam very useful and relevant for them, the others consider it confusing and not really helpful. Interviewee 2 has stated that without defined benchmarks and an understandable base for comparison such data can assist only in making limited assumptions. Interviewee 5 has described it as "fine-grained but super-confusing information", while stating that a deep analysis of the ERS recommendation choices would be rather tedious. Both Interviewee 2 and Interviewee 5 have expressed a wish for information they get as feedback to be clearer. Interviewee 3 has voiced a wish to get more clarity behind the algorithms the ERSs use and, subsequently, how it might be possible to work with them.

4.2.6 Evaluation of Advantages and Disadvantages of ERSs

When asked about advantages and disadvantages of various ERSs, the respondents have focused on different things in response, although some have been common for most of them. There has been one contradiction between the replies, too.

Interviewee 1 has evaluated the ERS-platforms based on competition as main choice influence for publishing decision. From this standpoint, the console ERSs have the advantage to provide better visibility to each individual game due to a total smaller number of games there compared to Steam. Steam, as the largest PC ERS, is the opposite, providing much less visibility because of the great amounts of games being released there every day. For the consoles, the mentioned expert has named the difficulty of submitting ratings and reviews by players as an important disadvantage, as well as

very limited feedback about the game's consumers. Additionally, they have expressed concerns over the unpredictability of how the game will be doing within the ERS.

Interviewee 5 has stated that they have a great concern about not being able to rely on the ERS choices because of how unclear their performance principles are to the developers. They have also mentioned that there is no way for interesting and high-quality games, with a lot of effort invested into their creation, to stand out compared to the games, developed with the lower amount of contributed effort or with the worse design, since the ERS treats them all equally. At the same time, they have found it an advantage that the ERS-platform is automated and functions without human curation, so there is no need to have personal inside connections to secure success of the game there, and the game is not being judged on submission by people who might dismiss it simply because of their personal preferences.

The same lack of curation has been regarded as a disadvantage by Interviewee 2. For them, the more curated approach and a clearer vision of the platform's publishing standards would be preferred. The same respondent has expressed an opinion that the platform owners should be more conscious about the impact of their platforms on game publishing and behave more responsibly towards the content providers.

Interviewee 2 has stated that the main advantage of ERSs is that they help the games to find their target customers faster. As a disadvantage, they have mentioned the unclear algorithms which are implemented in ERSs.

Finally, Interviewee 4 has stated that the platforms with the well-performing ERSs provide access to a lot of players as their main advantage, which helps developers to sell more and more games. As a disadvantage, they have suggested that small games might be overwhelmed by more prominent ones, although, according to this expert, it is not a problem of the ERS-platforms exclusively and their automated nature, but of other types of distribution platforms as well.

4.2.7 Evaluation of Common Problems in ERSs

To discover how problems, described in the reviewed scientific literature, are relevant for ERSs in electronic games, the study participants have been asked about their opinion on the most prominent ones. Specifically, they have provided their evaluations on the following problems: popularity bias, cold start, and whether or not some types of games benefit more in ERSs than the other types.

All of the respondents agree that ERSs display a popularity bias, meaning, they promote already popular games over not popular ones. Interviewee 4 has assumed it is done to create more profits for the ERS-platform itself. Interviewee 1 has noted that the Steam ERS initially places the new games in a separate, more visible for the potential customers section to make them more noticeable and only later the project's positioning among the other games is determined by its popularity.

When talking about the cold start problem, Interviewee 2 has strongly agreed that it exists most of the time, unless there are promotion events happening on the platform, when it comes to Steam. Interviewees 1 and 4 have disagreed, reminding of the initial exposure mechanism, described above. Interviewee 5 has been unsure, but also referred to the initial placing benefits on Steam. Interviewee 3 has assumed that such problem exists for ERSs in general, but in both their judgements of cold-start

problem and popularity bias problems pointed out, that it is hard to say without knowing precisely how the ERS works.

On the topic of the specific game types that are preferred by ERSs, Interviewees 1, 2, and 5 have provided interesting opinions. Interviewee 1 has assumed that games that are very niche-designed, with a very specific target audience and not many other games in the same niche, are successful within an ERS. Such positioning allows the ERS to work with very precise, well-defined types of game and audience, so it is easy for it to make recommendations. Since there are only a few other games in such specific niche, the chances of each of them being recommended by the ERS are higher. The second type they have mentioned is community-based games. The respondent has described them as games, where a lot of game-related content is created in the player base itself, and people are willing to share it within the ERS. Since Steam in particular provides them with such opportunity, it ends up beneficial for the game itself, giving it more exposure. Interviewee 2 has suggested that so-called “one-hit” games have more chances to become successful in the Steam ERS than any other games. “One-hit” refers to games that have become very popular over a short period of time and their success is greater than that of any other projects their creators have released, in analogy to music industry [12]. Interviewee 5 has confirmed his previously expressed opinion, that with the current level of organization and tagging on Steam it is almost impossible for games to position themselves in a way that would provide them advantage compared to the others.

4.2.8 Evaluation in Comparison to Other Promotional Tools

To understand the role of ERSs in the respondents’ promotion efforts for their projects, the participants of the research have been asked to name other promotion channels they are using and compare the usage of ERS to them.

All interviewees have named the company/game website and social media pages, such as Facebook and Twitter, as their tools of choice. For Interviewee 1, these also serve as the main communication channel with their existing and potential customers, since the console ERSs do not give them communication opportunities within the systems. Four respondents have mentioned attending game industry events, such as fairs and conferences, either to establish business contacts or reach out to customers. Three of the interviewees have said that they are using Discord servers to communicate with their fan bases. Other tools mentioned are Reddit activity, relationship with digital game streamers and video creators, Imgur, games-relevant forums, and outreach to traditional press.

When asked about the impact of using ERSs compared to other promotion tools, all the respondents regard them as important, although to different extents. Interviewee 1 has assumed that ERSs are accountable for most of their sales, but because of the lack of data they cannot estimate which part of those sales is due to them being recommended and which are due to the impact of the other promotion channels. Interviewee 2 has estimated that around 85% of their sales income originate from the ERS-platform. Interviewee 5 estimates that 98% of their income is coming from using Steam, and attributes it to promotions by game streamers and video makers, and the ERS itself. Interviewee 3 has stated that the role of ERSs largely depends on the studio’s overall resources, the game itself, and the community around it, but noted that not using any of the ERS-platforms would be a wasted chance. Interviewee 4 has suggested that the influence of a popular ERS cannot be substituted, especially, if it

recommends the game often. At some point across the interview span four of the respondents have stated that being featured by a large ERS would be a very desirable outcome for their projects.

4.2.9 Evaluation of Synergy between ERS and Other Promotional Tools

The respondents have been asked to share their views if ERSs have any synergy effects with other promotion tools they are using. They have also shared their thoughts, if it is possible to promote a game without using any platforms with ERSs or using only such platforms.

All five participants have agreed that it is possible to develop synergies with PC ERSs, especially, Steam, while Interviewee 1 has stated that there are no synergies when working with console ERSs. The respondents have different ideas how such synergy can be achieved.

Interviewees 1, 2, and 5 have focused on engaging with potential customers through other channels and leading them to the ERS. Such effort would create more traffic on the platform page, which increases the chances of the game to be recommended and sold. This, in turn, positions the game higher on the ERS scale, so the platform will recommend it more often.

Interviewee 3 has suggested it is possible to achieve synergy for the product when it supports some outside game-related networks. Specifically, they have mentioned Twitter and Twitch1.

Interviewee 4 has described the synergy from having a good relationship with the community around their game, which they have called “vital” for an indie studio. If the developers manage to build a good community, its members will give their project higher ratings in the ERS.

When asked about the possibility to promote a game using ERSs only, three of the respondents have said that it is possible, with Interviewee 2 and 4 concluding that it is not optimal for the game. Interviewee 2 has mentioned that they have conducted an experiment like that, by promoting a game in the ERS only. They have focused on the low price of the product and experimented with their overall value proposition, which have led to better than expected sales figures. However, Interviewee 2 themselves do not consider this test as representative for all the games.

Interviewee 1 and 5 have disagreed that promoting the game in ERSs only is possible. Interviewee 5 has described such plan as ending “in tears and failure”, because the ERS page needs visitors, led there through the external channels, to be popular enough for the game to be recommended. Interviewee 1 has described the whole ERS participation process as a dialogue between indies and players through the recommender platform, and so it is important to drive players to this platform to support such “conversation”. They have also noted that it is important for players to see the developers as real people, and communication with them beyond the game makes the players very happy and excited.

Talking about the opposite situation, when the game is being promoted without using ERSs at all, only Interviewee 3 has found it possible. Interviewee 1 has pointed out that on consoles it is impossible simply because it is the rule of console producers, to have all the games for them in their stores. With Steam, it is more a question of players’ convenience, since they like being able to access all their games through one platform. Interviewee 2 has emphasized the position of Steam as practically the monopolist on the PC games market, which developers have to accept. Interviewee 4 has not seen any other possible ways to reach out to a number of players as large, as through Steam, when it comes to

PC gaming. Interviewee 5 has shared this opinion, although they have emphasized that it is more about Steam as platform and not necessarily because it is employing an ERS.

4.2.10 Critique and Improvement Suggestions for ERSs

The respondents have been asked which improvements they would suggest and what they would remove from the ERSs to complete their impressions from working with them. Some of the improvements suggested have been already mentioned throughout the various parts of this section, so this sub-section provides a short summary of such improvements and describes other suggestions, mentioned by the study participants.

A lot of improvement suggestions are revolving around the feedback system. The participating indies would like to have a clearer presented data and some bases for comparison, especially, in case of consoles.

Another suggestion regarding the consoles has been expressed by Interviewee 1, who has stated that while they understand that the bases of gaming consoles have been developed decades ago and are likely not to be replaced any time soon, they would appreciate to a better-structured documentation about how to work and publish game on them. The same respondent has also expressed a wish for a better and more accessible rating system, which would be more encouraging for players to use.

Interviewee 2 would add some human curation to ERSs, a “visionary” approach”, which would be more understandable and relatable towards developers. They would also add a way for developers to name the direct competitors for their games, so that the algorithms within the ERS could process this information and rely of it when generating recommendations.

Two of the study participants, Interviewee 3 and Interviewee 5, would improve the review submission system by players. In case of Interviewee 3, they would remove the possibility to publish and account anonymous reviews, since this feature can be abused for malicious intents towards the game, e.g., people would place irrelevant and unjustified reviews for the game, which would lower its performance in the ERS. Interviewee 5 would like the player feedback regarding technical issues within the game to be separated from the reviews about the general impressions of the game on Steam.

On top of that, Interviewee 5 would like a more differentiated and finer recommender system that would be able to determine players’ tastes more precisely and match them accordingly with relevant games. They have also stated that they would prefer Steam to do some things manually, like detecting and eliminating “fake games” from the catalogue, instead of attempting to automate this process. According to them, because of the fully automated approach many games have been flagged as “fake” unjustly because of the imperfections of the algorithms.

Interviewee 3 has wished for more transparency for the ERS algorithms in general and for the storefront features. Interviewee 4 has mentioned they would like lower commissions for publishing, but, overall, stated that they have been satisfied with Steam in particular and wished for other platforms to reach a similar level of easiness to use and accessibility. Interviewee 2 would like for ERSs to be less focused on the 1% of the most popular games and recommend middle-tier games more for better balance between projects on the platform.

5 Conclusions and Further Research

According to the study results and data, provided by participants, electronic recommender systems are considered, in overall, as beneficial for independent developers in digital games industry. Some of their aspects and influences might not be estimated as positive and the mechanism behind the game's success or failure within them are not entirely clear, the majority of respondents admit that their businesses are not possible without these systems anymore. Such insides imply that the further research of recommender systems as business tool from the perspective of content creators could yield interesting results.

While electronic recommender systems are perceived as one of the most impactful reasons for the fast growth in numbers of independent game developers, there are still a lot of concerns related to them for the developers. The obtained data leads to the suggestion that indies do not feel in control over their games within such systems, despite not having many of the formal restrains, typical for contracts with major games publishers and distributors.

Based on the growth of digital games industry and interviews for this study, it looks like electronic recommender systems are here to stay for a while, with new online shops employing them launching and digital distribution taking over physical. This creates further opportunities for their research in business domain which could be beneficial for both their customers and content providers, and contribute to the general growth of the digital games industry.

The findings of this study might be useful for game creators who intend to start their business as independent developers and integrate electronic recommender systems into their business model as a promotion channel for their projects. It might also interest the owners and designers of the electronic recommender systems as such and provide insides which of their functions and characteristics are the most important for developers, which services the developers are expecting from them, and which aspects could be improved. From the academic point of view, this study could be a start for further research of the independent game production business models that employ electronic recommender systems, as well as the role of electronic recommender systems for the whole industry of digital games. There are also viable possibilities of more refined research and categorization of game characteristics that would help their creators to place their projects more precisely within the system, and for systems to recognize and distinguish games more exactly.

Additionally, similar related studies could be conducted on electronic recommender systems and their effects on electronic games industry, but with less obstructive limitation, i.e., with a significantly larger sample or using different research methods. A larger number of respondents would likely increase the reliability of the study results and might help to discover additional, yet unknown categories regarding the topic. Electronic recommender systems have affected not only the independent game developers, but also large game creating and game publishing entities. Many of them are also using them to release their games, either in addition to their own distribution channels or even completely substituting them. Such companies still possess much larger resources compared to indies, which help them to advertise and market their games on a larger scale, as well as more recognisable company brands and reputation, so it might be interesting to compare the performance of their projects on platforms with electronic recommender systems and the projects by independent

developers, that receive much smaller investments in promotion. The synergies between recommender systems and other platforms, such as social networks, also provide a generous field for research.

Cooperation between researchers and developers could provide opportunities for researching different business strategies that indies use or could use, and find out the key elements on which the success of the game depends. Studying various aspects of projects' performances within electronic recommender systems could yield valuable results to improve developers' business models and provide better understanding of electronic recommender systems as business tools. Considering that indies are often people from technical background and not from business or economics, participation in such studies might benefit them.

Generally, further research on electronic recommender systems might shed some light of how interaction within them works and help developers feel more empowered over their games within them. For many study participants the processes that determine their project's success are completely unclear and make them feel quite helpless. There is a need of clearer information about algorithms, conditions for featuring, feedback structure, and other aspects of electronic recommender systems. The demand for finer self-definition aspects within system is also evident from the responses. Indies are constantly looking for new ways to describe their games and link it to their target audience, while customers are in need of better ways to translate their preferences to the system. Designing such options is challenging, considering the great variety of games even within the same genre, but it would be beneficial not only for content creators and potential players, but also for the owners of the platforms with electronic recommender systems.

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