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## Re-Shaped by Mobile Technologies' Disruption: The Videogame Industry in Turkey

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### Abstract

**Purpose** - In this paper, we investigate the business disruption effects of mobile technologies for the videogame industry in Turkey. Previous research shows that before mobile gaming became prevalent globally, Turkish videogame industry was extremely small and lacked any success stories for either console or PC platforms.

**Design/methodology/approach** - To capture the nuances of this disruptive transition, we performed structured interviews with industry experts and analyzed prominent discussion forums. We especially focused on answering the following questions: (1) how prepared were Turkish videogame development companies in handling the mobile disruptive change; (2) what kind of transformations they experienced in their business plans and practices; (3) how the disruption affected the way they viewed their customer base; and (4) what future disruptions they expect in their industry.

**Findings** - Analysis of interview and discussion data revealed some recurring themes that we discussed in detail: (1) ability to handle disruptive change (e.g., technical resources and fast-changing industry trends); (2) business transformations (e.g., agile vs. slow development, marketing-oriented business practices, and market burn-outs); (3) re-definition of the customer base (e.g., generalizations, niche categories, piracy, and clone games); (4) future disruptions (e.g., AR/VR and the maturity of mobile gamers); and (5) other general themes (e.g. stigma about gaming and localization of global titles vs. local production of original IPs).

**Social/Economic/Sectoral value** - In order to create a stronger local industry, state bodies and non-governmental organizations can facilitate positive outcomes from these disruption periods by addressing and creating solutions for the issues revealed in this work.

**Originality** - This paper offers unique insights to understand the videogame industry in Turkey.

**Keywords:** Videogames, Digital Games, Games, Mobile, Disruption

**Paper Type:** Research Article

### INTRODUCTION

Although videogames have surpassed the revenues of media industries such as movies (Chatsfield, 2009)—in fact, it has been reported that in 2016 the revenues of mobile videogames only have surpassed movie industry by itself (Superdata, 2017)—and music (Cheng, 2007) in many geographies for a while now, it wasn't until the recent years that they have managed to draw bigger attention from the business scene, academics, and government bodies in Turkey. This rising interest is partly past-due compared to the early years of the

industry (between the 1980s and 2000s) when Turkey had only a few business ventures or production companies for videogames, not to mention the limited human resources and public attention lacking by then. According to an archival research by Yilmaz and Cagiltay (2005), less than 25 videogame titles were produced in Turkey between the years of 1980 and 2005, and the aggregated sales of all these games only amounted to a 4-digit-number.

However, before the first decade of the 2000s came to an end, a burst in production and sales was

experienced. On the consumption side, this growth translated into a young, vibrant, and promising videogame market (Petitte, 2012; Ico Partners, 2013) reported being worth 830-850 million USD annually comprising of 30-32 million players nationwide (Gaming in Turkey, n.d.; Kurt, 2017). The expected annual compound growth rate of the market was 16% till 2018 (Newzoo, 2015), which slightly surpasses the global growth rates that were experienced between 1985 and 2010 ranging from 9% to 15% (Zackariasson and Wilson, 2010). An updated report in 2017 reported the Turkish gaming market as the 18<sup>th</sup> market in the world (Newzoo, 2017). On the production side, there have also been notable improvements. In 2012, the Turkish Federation of Digital Games (currently dispersed) reported that there were 20 videogame production companies in Turkey that employed 10 or more people (Tüdoğ, 2012). A more recent archival research by Tucker, Yılmaz, and Cagiltay (2015) asserted that, as of 2013, there were around 1,000 professionals working in the field. However, these studies typically fail to cover one-person or small (indie) development groups. A research facilitated by OYUNDER, *Game Developers, Designers, and Publishers Association in Turkey*, has shown that almost 60% of developers in Turkey were depending on individual or micro-team efforts, and an additional 20% considered themselves to be only small or indie development groups (Şengün, 2018). As of 2020, OYUNDER had around 160 members ranging from individual developers to companies employing tens of staff.

The disproportion of growth in local consumption vs. local production was also apparent in the market share. In 2015, only 5% of the yearly revenue of Turkish videogame spending was earned by local producers (AA, 2016). This percentage may be recognized as low considering that the previous research shows that Turkish gamers tend to prefer videogames which have Turkish language options and are likely to behave ethnocentric in consumption habits in general (Şengün, 2014; Kahraman, 2015).

While many different factors may be recognized to affect this growth in Turkish videogame production and business scene, its synchronization with what might be called an era of global mobile revolution in the videogame industry is prominent. Egenfeldt-Nielsen, Smith, and Tosca (2016) report that global videogame sales tripled in the first decade of the 2000s and especially after the introduction of Apple's iPhone, the mobile device became a "hotbed for [...] game development" (p. 102). Consequently, videogame developers who specialize in mobile platforms emerged and they were supported by platform owners (e.g., Apple and Google) and

network operators since gaming was one of the hardware and service seller motivations (Feijó, 2012). The share of mobile gaming revenues to total industry revenues (encapsulating software sales in mobile, PC, console, and handheld console platforms) rose from 6% in 2008 to 20% in 2012 (Marchand and Hennig-Thurau, 2013). The rise of mobile platforms also affected the identity of videogame development efforts. Coupled with the enabling of connectivity and higher-performing broadband data, indie communities (see Literature Review section for a discussion of indie developer identity) of developers became the new face of videogame development (Guevara-Villalobos, 2011). Small-scale fast production pipelines resulting in compact videogames optimized for short-term play sessions paved the way to the so-called "casual" videogames and gamers (Kuittinen et al., 2007; Juul, 2010).

In this paper, we analyse this transition process of the Turkish industry from pre-mobile to mobile era within the lens of business disruption terminology. We are especially interested in answering the following questions: (1) how prepared were Turkish videogame development companies in handling the disruptive change; (2) what kind of transformations they experienced in their business plans and practices as a result; (3) how the disruption affected the way they viewed their customer base; and finally (4) what future disruptions they expect in their industry. To capture the region-specific nuances of this transition, we conduct a double-layered investigation. First, we perform structured interviews with eight industry experts. These interviews represent the experiences of small- (participants #8 and #3), medium- (#5 and #2), and large-sized (#1 and #4) companies, and educational institutions (#6 and #7). Second, we gather insights from online discussions within *Game Developers @Turkey* (GDT) closed Facebook group.<sup>1</sup> GDT is an invite-only six years old community which had almost 1,700 members as of July 2020. It is one of the biggest professional game development communities in Turkey that has also achieved exposure internationally (Kaya, 2013; Kretschmer, 2016). We scan for discussion threads that address the state of Turkish industry and that relate to answering our research questions in general.

The rest of this paper is organized as follows. First, we perform a literature review and define the dichotomies of casual vs. hardcore gaming and indie vs. AAA videogame development which partially mirrors the discussions of mobile vs. non-mobile gaming. Additionally, we define the approaches in business disruption research and list other factors that might have affected this process for the Turkish

industry. Second, we outline our methodology in conducting and analysing the interviews and forum data. Finally, we present and discuss our results.

### **Literature Review**

We begin the literature review by defining some dichotomies in videogaming industry (specifically, casual vs. hardcore gaming and gamers, and indie vs. AAA development companies). Next, we briefly introduce the business disruption concept. Although our primary aim is to analyse the transition between the pre-mobile and mobile era in the Turkish videogaming industry through the lens of business disruption research, we also list some other factors that might have affected the change in the industry.

### **Dichotomies of Definitions in Contemporary Videogaming Industry**

The phenomenon of casual gaming is recounted as one of the most prominent transformations that the videogame industry has gone through (Kultima, 2009). Although many definitions of casual videogames exist (Nielsen, 2009; Trefry, 2010; and even examples that resist the casual/hardcore divide like Bogost, 2007), here we adopt Fortugno's (2008) approach that defines casual videogames as "a gateway for non-gamers to engage in digital play." (p. 144) In contrast, hardcore games are typically perceived to require more investment in time, money, as well as more complex control and gameplay schemes (Bogost, 2007). Kuittinen et al. (2007) note that casual videogames are sometimes referred to as a genre within the general gaming taxonomy, and at other times, genres like puzzles, card games, and board games are referred as casual videogames.

The same dichotomy permeates to both the identity of gamers (casual vs. hardcore gamer) and, to a degree, to the development practices (indie vs. AAA developers). In contrast to casual gamers, hardcore gamers are defined as starting gaming at a younger age (Juul, 2010; Adams and Ip, 2002) and spending more time for their gaming hobbies (Elmer-Dewitt, 1993). However, there are various contradictions that revolve around the question of whether the 'casual' identity inherently adheres to the videogames or the gamers (Kuittinen et al., 2007). For example, is a hardcore player who cannot find time to play demoted to the status of a casual player, or a casual player who spends a lot of times on casual videogames can instead be accepted as a hardcore gamer? In any case, the distinction seems convenient in industry terms to facilitate customer base targeting.

In terms of production practices, indie developer companies refer to small-to-medium, independent, and typically under-funded videogame

development groups (Mathews and Wearn, 2016), while AAA (or triple-A) developers refer to big and well-funded development companies that typically produce the platform-seller titles for consoles and PC (Binken and Stremersch, 2009). In perception, casual videogames are typically attributed to indie developers, and platform-seller star videogames are attributed to AAA developers. In close examination though, this also may become a poorly defined, superficial divide.

### **Mobile Transition as a Business Disruption for the Videogame Industry**

In this paper, when we mention mobile disruption for the videogame industry, we refer to a combination of sustaining and disruptive innovation (Christensen and Overdorf, 2001). Sustaining innovation is defined as "innovations that make a product or service perform better," while disruptive innovations are those that "create an entirely new market through the introduction of a new kind of product or service." (Ibid., p. 72) On the one hand, the introduction of mobile gaming, much like a sustaining innovation, made the videogaming industry perform better (more products, more revenue, and more players). On the other hand, mobile gaming, much like a disruptive innovation, also created an entirely new kind of market with distinct dynamics. Transition into mobile provided late-comer regions, like Turkey, competitive advantage in the global videogame development arena. Christensen (2001) asserts that "several factors have conferred powerful advantages on the companies that possessed them-economies of scale and scope, integration and non-integration, and process-based core competencies." (p.105) These factors resonate on the transition between pre-mobile and mobile eras of production: mobile videogames (a) could be produced with less budget (economies of scale); (b) less and compact content (economies of scope); and (c) smaller teams (vertical integration). However, from a disruption vs. disintegration perspective (Christensen et al., 2002a), mobile did not weaken the preceded platforms (e.g., console or PC gaming). In a similar fashion, Gilbert (2003) defines the three stages of business disruption: (1) a new non-competitive lateral market is established; (2) the new lateral market expands and slows the main one; (3) when the lateral market gains enough momentum, it replaces the main. In the case of mobile vs. previous platforms, it is easy to conclude that this process halted half-way, and there seems to be no indication that in the future there is going to be a progress through the remaining stages.

Although in this paper we are specifically focusing on the disruptive effects of mobile technologies in

the Turkish videogaming industry, other research also outlines various factors that affected the growth and transformation of the industry (Binark and Bayraktutan, 2012; Şisler, 2013; Şengün, 2018; Tüker et al., 2015; Tüdoğ, 2012; Yılmaz and Cagiltay, 2005). An aggregated up-to-date snapshot of the factors that have affected Turkish videogame production/business scene within the last decade are: (1) the investments by multinational publisher companies (such as Riot Games Turkish Branch founded in 2012, Peak Games founded in 2011, Crytek Turkish Branch founded in 2013, etc.); (2) the rising interest of the state as demonstrated by grants offered by various state agencies to videogame developers (Tezateşer, 2016); (3) the social coalescence of developers (such as jams, meetings, and online developer groups, etc.); (4) the educational alternatives (as of 2020, five undergraduate and five graduate university degrees,<sup>ii</sup> as well as various other non-academic vocational training programs); (5) the establishment of the local digital distribution channels (e.g., Playstore<sup>iii</sup>); and (6) the emergence of a competent workforce.

**METHODOLOGY**

To understand how mobile gaming disrupted the business scene for Turkish videogame developers, we conducted structured interviews with eight members of OYUNDER, *Game Developers, Designers, and Publishers Association in Turkey*. The interviewees were evenly distributed in the association’s small-, medium-, and large-sized company categories and academic members. The interviewees were proffered by the association authorities and contacted to check whether they

had the time and motivation to participate, thus, constituting a combination of convenience and judgment sampling. Previous research meta-reviews demonstrate that these two sampling methods are already the most popular in business research practices (Randall and Gibson, 1990; Yang et al., 2006). The association endorsed the privacy and anonymity of the provided data to ensure the authenticity of the sensitive information. The structured interviews were conducted over the course of September and October 2017 by email. McCoyd and Kerson (2006) list various advantages and disadvantages of email interviewing compared to face-to-face and telephone interviews. Since, in our case: (1) we were interested in business insights only and not in verbal, tonal, or visual cues; and (2) we were conducting a structured questionnaire instead of unstructured discussions, email communication was adequate for our purposes.

Our interview was based on four questions (see Appendix A), three of which also had three sub-sections each. We formulated these questions based on previous research that outlines the processes and challenges of business disruption.

As our first question (Q1), we asked the participants to compare the resources, processes, and values of their companies before and after the mobile disruption. These three factors were suggested by Christensen and Overdorf (2000) as the main capabilities of companies to meet business challenges and disruptions. As a part of the same question, each factor was asked separately, and we urged the participants to elaborate on pre-determined detailed themes in simplified terms (see Table 1).

**Table 1.** Capabilities of companies to meet disruptive business challenges and changes as offered by Christensen and Overdorf (2000, p. 68-69).

Resources	Tangible resources	“People, equipment, technologies, and cash”
	Intangible resources	“Product designs, information, brands, relationships with suppliers, distributors, and customers”
Processes	“Patterns of interaction, coordination, communication, and decision making”	
Values	“Standards by which employees set priorities,” core structure, and business model	

We adapted the second question (Q2) from Anthony et al.’s “assessing your innovation environment” exercise from their book (2008). This exercise is designed to help companies to assess the suitability of their business environments in transforming disruptive changes into innovative growth. We asked participants to rate the three external environment factors—industry maturity, competitive dynamics, and asset intensity—for their mobile and non-mobile production and business cycles. These three factors respectively outline the dichotomies of mature vs. uncertain,

slow- vs. fast-moving, and major vs. little investment dependent markets. Previous studies outline that videogame industries organized in low-proximity interfirm networks (Balland et al., 2012) with nationally specific evolutionary contexts (Izushi and Aoyama, 2006). Accordingly, we expected the Turkish industry to form a regionally specific and closely interconnected dynamics for dealing with change and disruption.

As the third question (Q3), we asked our participants to define and compare their customer bases for their mobile and non-mobile products. We

based this question on Christensen, Johnson, and Rigby's (2002b) assertion that new customer base definitions were one of the main strategies in creating disruptive business growth. (The other strategy they define is building a business model from the low end.) The process of defining a new customer base depends on three tests: (1) creating alternatives for customers' lack of skill and finance; (2) catering to a segment of customers who desire a simpler product; and (3) transforming previous experiences into more easy and accessible ones. We already established that mobile platforms constructed a casual vs. hardcore player dichotomy globally (see *Literature Review* section), and all these three tests resonate on this novel segmentation. Overall, mobile videogames helped a customer base who had less recreational time and less motivation to invest in mental and physical gameplay skills to acquire gaming habits. We wanted to test if the same definitions and viewpoints echoed in a similar fashion regionally. In our fourth and final question (Q4), we asked our participants about their predictions for future disruptions in the industry. We grounded this question on Ip's (2008) research in the convergence of technology, content, and market in the videogame industry. We asked our participants to elaborate on all three themes and foresee: (1) the technologies that are likely to be adopted by the gaming industry in the near future; (2) the novel content sources and

storytelling techniques that could facilitate business change; and (3) the convergence possibilities of global markets and communities that might affect their practices.

The interviews were conducted in Turkish and the quotes in this paper were translated by the authors. We asked respectively for CEOs, managing directors, or company owners to participate and provide the answers.

To complement our interview data, we scanned the previously mentioned GDT group discussions that took place within 2016. We isolated five discussion threads<sup>v</sup> with a total of 196 entries and 21,756 words and perform a textual analysis of these discussions for additional insight into the outcomes of the disruption processes. Four of these threads took place within 2016 and the fifth was linked through one of the first four.

## RESULTS

Previous research asserts that open-ended questions answered through online channels (e.g., surveys and emails) can provoke richer (Gunter et al., 2002) and more intimate (Miller and Slater, 2000) responses. Similarly, in our case, we also received rich and detailed answers to our questions. The mean word count for an interview was  $\bar{x} = 830$  and the total word count for all responses was  $N = 6,640$  (see Table 2 for detailed word count breakdowns).

**Table 2.** Word count and mean breakdowns for the responses we have received.

	Q1	Q2	Q3	Q4	Total (N)
$\bar{x}$	403.6	176.8	116.8	132.9	830
$n$	3,329	1,414	934	1,063	6,640

Two authors independently coded the responses and identified the themes for each question, as well as the themes in general. Five forum threads were

also analysed and included in the theme discussions for additional insight. These are summarized in Table 3 and discussed in detail below.

**Table 3.** The identified themes from the interviews.

Source	Themes
Q1. Ability to handle disruptive change	Ability to access to technical resources <sup>a</sup>
	Fast-changing industry trends <sup>b</sup>
Q2. Business transformations	Agile vs. slow development practices
	Marketing-oriented business practices
	Market burn-outs (especially investors)
Q3. Re-definition of customer base	Generalizations and niche categories
	Piracy and clone games
Q4. Future disruptions	Next disruption: AR and VR
	Maturity of mobile gamers
General themes	Stigma about gaming in general <sup>c</sup>
	Localization of global successful titles vs. local production of original IPs <sup>d</sup>

<sup>a</sup> Discussion thread #1 also dealt with this issue (21 entries, 1,450 words)

<sup>b</sup> Discussion thread #4 also dealt with this issue (15 entries, 764 words)

<sup>c</sup> Discussion thread #2 also dealt with this issue (8 entries, 876 words)

<sup>d</sup> Discussion threads #3 and #5 also dealt with this issue (152 entries, 18,666 words)

### Themes Regarding the Ability to Handle Disruptive Change

The primary barrier in handling the disruptive change for Turkish videogame industry is offered as the ability to timely access to technical resources. This is in parallel to the previously identified *tech-implementation barrier* for businesses (Wessel and Christensen, 2012). This barrier operates at two levels: (a) language barrier and (b) technology barrier. On the language level, participant #7 notes: "issues about user experience and videogame design are updated very regularly [...] these updates are impossible to keep up with in Turkish." Participant #1 contributes to the issue: "since there are no pervasive [local or Turkish] resources [...] the upcoming labour force has to learn [the industry skills] by themselves through experimentation." Participants concur that the local education alternatives are extremely positive (see *Literature Review* section for a brief overview of these alternatives), however, they only benefit bilingual individuals. 90% of the current graduate and undergraduate game design programs in Turkey are in English. A quick scan through their curricula reveals that the programs typically do not separate mobile design and development versus design and development on other platforms such as gaming consoles and PC. On the technical level, the access barrier regulates the acquirement of development tools, kits, and pre-release hardware. Participants #2 and #6 outline the hardships that they experience in professional access to some development tools and kits. All participants note the positive effects of the changes in business models of popular game development engines (e.g., Unity and Unreal adopting monthly subscription or royalty fees,<sup>v</sup> instead of requiring large single license payments upfront). These effects have already been identified by previous research as *the democratization of game development* (Banks and Deuze, 2009; Ruffino, 2012) wherein easy or free access to high-fidelity development tools pave the way to diverse content and community. However, one participant (#2) additionally notes that they don't have the privilege of receiving hardware or operating systems' upgrade previews from platform owners, which may sometimes limit their abilities to provide timely content. This participant also recounts the time that their company applied to receive a development kit for a leading videogame console, but they were not taken seriously due to the Turkish national industry having little-to-no exposure globally.

Another prominent barrier is recounted as the fast-changing industry trends. This barrier also operates on two levels: (a) business practices and (b)

products. These two were also identified by previous research as a *business model barrier* and an *ecosystem barrier* (Wessel and Christensen, 2012). On the business practices level, participant #3 perceives the videogame development companies as perfect fits for agile start-up mentality and finds the traditional corporate structures cumbersome especially for mobile videogame development. Participants #2 and #6 also underscore that videogame development is more of a creative industry than a technical one. As a result, in their perception, the creative workforce tends to require more flexibility and comfort, which could not be built around traditional business structures. Previous research supports the observation that videogame development is typically organized as a creative industry (Tschang, 2009) and consequently requires balancing the tensions between creative and business decisions (Caves, 2000; Tschang, 2007).

On the product level, mobile gaming trends are reported to be very hard to catch-up with. Participant #8 notes that "the biggest risk in mobile gaming is the very fast changing customer trends, for example, the videogame that you developed in 12 months can stay popular just briefly, only to be surpassed by an upcoming videogame that was developed in one month only." Although regional research asserts that different trends are adopted independently by different regions (e.g., the case of Japan by Chan, 2008; the cases of US, Spain, and the Czech Republic by Okazaki et al., 2008), the constant demand for new types of videogames is identified as an all-encompassing and challenging "divide between the industry and the consumers." (Feijoo et al., 2012, p. 219) Participant #8 also asserts that global companies with strong financials have the power to use large-scale mobile advertising campaigns to orient these trends and use them in their own advantage.

### Themes Regarding Business Transformations

In parallel to fast-changing industry trends, mobile videogame developers feel the need to adopt increasingly agile production and business processes. Participant #6 notes that they are constantly on the lookout for tools and software that will fasten up their production crunches. For the industry, crunch time is described as "periods of extreme work overload [...] mainly in the weeks that precede the final deadline for project delivery [when] more than 12 hours a day is common, from 6 to 7 days per week, without intervals for rest." (Petrillo et al., 2009) It has been reported that crunch times can have serious physical and psychological effects on videogame developers

(Schreier, 2016) and their families (Dyer-Witthoford and Peuter, 2006). Participant #8 additionally notes that although business models for mobile videogames are more or less defined (e.g., freemium, free-to-play, ad revenue, in-app purchase, etc.), there is a race against time to determine and implement the model that can produce the best revenue during the brief period that the videogame stays on top of videogame store or app store charts. Participant #4 observes that this fast-moving structure of the market makes it hard to maintain a consistent quality.

Participants #1, #2, and #3 assert that there is an ongoing burn-out on several layers of the industry that requires change and adaptation. Previous research identified this as a momentum barrier (Wessel and Christensen, 2012). Participants discuss this issue respectively from the lenses of foreign investment, local investment, and production teams. Participant #1 lists some Turkish videogame development companies (e.g. Peak Games, Arcade Monk, and Gram Games) that have acquired venture capitals from international funds but notes that these have sources dried during the past few years almost to a point of total stop. Participant #2 observes that between 2008 and 2010, there was an extensive interest from local sources to invest in the videogame industry, which has also lost momentum in the last few years although not perished. Participant #3 notes that there has also been a burn-out for production teams, especially for those who "blindly transitioned into [the mobile] industry," however, those that have survived the transition became stronger and more mature. The same participant also correlates the burn-out of teams and investors: since developer teams struggle in making quality content within acceptable timeframes and instead resort to producing low-polished and superficial mobile videogames in short timeframes, they fail in a way that drives investors away.

Keith (1960) identifies the journey of emerging companies from a production-oriented one to a marketing-oriented business practice. The transition of a pre-mobile to mobile era for the Turkish industry approximates this journey. Participants #8 and #5 note that to succeed in mobile gaming, the marketing of a videogame is as important as its design and content. Comparing the process with non-mobile platforms, they both assert that marketing is less of a concern (or not one of the primary ones) in non-mobile development. Participant #2 reveals that although mobile videogames require %50-70 fewer production budgets than their games on other platforms, the required marketing budget is equally more. Participant #3 observes that the development

groups which can't afford extensive marketing campaigns, instead try to focus on "community management [and] original context and ideas that advertise themselves." However, participant #6 is pessimistic about the capabilities of Turkish videogame developers in marketing practices and define the handling of marketing in the industry as "lacking methodology and vision." Other association-facilitated research highlights that Turkish videogame developers demonstrate rising interest but low self-efficacy in marketing activities (Şengün, 2018).

### **Themes Regarding the Re-definition of Customer Base**

Participants consistently defined the casual and hardcore player dichotomies, with several of them adding mid-core (#4, #1, and #3) to the mix. Their definitions rely on: (a) time investment (starting from 5-10 minutes a day for casual players to 8 hours a day for hardcore players); (b) age (e.g., young gamers are perceived to be hardcore, while older ones are perceived to be casual); and (c) gender (e.g., hardcore gamers are perceived to be mainly male, older female gamers are perceived to be mainly casual, etc.). However, participants #1 and #4 additionally state that these are only generalizations and that there are many other niche definitions out there that were enabled by mobile gaming. Participant #1 especially notes genre preference as an entrance to defining the niche categories. Participant #4 also warns that although there are various niche gamer bases, not all of them are profitable to cater. As an example, #4 cites age 45+ female players as a surprisingly profitable customer base for casual gaming.

While mobile gaming facilitated the definition of new customer segments, not all of these new gamer bases are equally committed or loyal to brands and videogames. Participant #4 reminds of the widespread practice of piracy in Turkey for pre-mobile or non-mobile gaming. Piracy is not a concern solely for the region and previous research reports a wide-range of revenue loss due to piracy all over the world (Coleman and Dyer-Witthoford, 2007). PC platform is reported to be especially affected by the piracy gaming practices (Simms, 2012). For Turkey, since the distribution chains for videogame products were not established in the early years, piracy was a prevalent and blunt practice (Yilmaz and Cagiltay, 2005; Binark and Bayraktutan, 2012; Şisler, 2013). Although for mobile platforms piracy is not an equally major issue, it is replaced by the issues of clone gaming and low customer loyalty. Since mobile videogames often rely on simplified gameplay mechanics, they are easier to replicate, and successful mobile

videogames typically get cloned within a short time after their release with only marginal differences in graphics and even product names (Fahey, 2017). Clone videogames are defined as “abuse [from] copycats and seekers of quick profits.” (Alha et al., 2014, p. 4) Participant #1 asserts that mobile customer bases display low loyalty to brands and videogames and their main motivation is just fast fun. This low loyalty results in a business environment where clone videogames have prominent potentials to hurt the original ones. Participant #4 also notes that (compared to non-mobile gamers) mobile gamers do not feel enough loyalty for mobile videogames to spend money on. As a result, when they are faced with a payment barrier, the players prefer to move on to the next free mobile videogame instead of investing in the current one. Participant #8 supports this argument by underscoring the perception that hardcore gamers are more likely to have emotional connections with the non-mobile videogames that they invest time and money in. In comparison, mobile players only invest money “when [the investment] makes it easy for them to compete against other players.”

#### **Themes Regarding Future Disruptions**

The consensus of all participants is that the next disruption in the videogame industry will be due to Augmented Reality (AR) and Virtual Reality (VR) technologies. Participant #1 explains that they had already started research and prototyping in this field. Participant #3 asserts that AR and VR will initially be adopted by hardcore gamers and much later by the casual customer base. Participants #6 and #5 additionally point out the new content possibilities that could be introduced with AR and VR technologies: #6 underscores new modes of gameplay, while #5 focuses on new modes of storytelling techniques. For some academic and research perspectives about what AR and VR can bring to the videogame industry research such as that of (Yuen et al., 2011; LaViola, 2008) can be further examined.

A concern that divides the viewpoints of participants is the question of how mobile gamer customer bases will mature in the future. On the one hand, participants #1 and #2 point out that the download numbers of all mobile apps in general are in decline and they foresee a serious drop in the popularity of mobile gaming. This prediction is supported by data such as average US smartphone users’ number of app download per month being zero (Frommer, 2014), or the downloads of popular apps declining by as much as 20% in 2016 (Kafka, 2016). On the other hand, participants #3, #7, and #8 expect a transition of mobile casual gamers

towards hardcore gaming practices on either mobile or other platforms. In this viewpoint, now that these customers are introduced to gaming through simplified mobile videogames, they are more likely to seek advanced gaming experiences instead of abandoning the hobby. Participant #3 especially underscores convergence of platforms or cross-platform gaming as the future disruption. Participants #2, #4, #5, and #8 also speculate that videogame development companies will have to become more specialized to survive. This specialization might be oriented towards certain genres, customers bases, or technologies.

#### **General Themes**

Two general themes were repeated across several discussions: (1) stigma towards videogames, and (2) the dichotomy of localized videogames vs. locally produced ones.

Participants #2 and #3 observe that the gamer identity and gaming as an activity were seen as trivial or in low regard, especially before mobile gaming. After the rise of mobile videogames, participant #3 asserts that “gaming became a more acceptable hobby.” Participant #7 notes that after the mobile disruption “it was easier to explain our business to people.” Participant #8 underscores that even now it is hard to discuss some gaming concepts and issues with the general public because there is “either no experience or too much speculation and secondary information.” Participant #3 also relays an anecdotal occurrence of stigma towards the local industry where a casual gamer complained to them about why “good games” like *1010!*<sup>vi</sup> cannot be produced in Turkey. In reality, *1010!* is a popular mobile videogame with 50 million global downloads developed by the Turkish studio Gram Games. A previous study has also observed the stigma and lack of confidence of local gamers and consumers towards the local industry (Şengün, 2014). The phenomenon was explained as an extreme ethnocentric stance to the point of rejecting local producers’ efforts in the expectancy and fear that they will be of low quality and represent the nation poorly.

In parallel, we see a discussion of comparing the localization practices of global successful titles with the local production of original intellectual properties. Participant #2 points out that Turkish investors typically prefer less risky ventures when it comes to the videogame industry and localizing a global videogame franchise is perceived as less risky than creating a local IP. Participant #3 observes that this tendency to invest in localization rather than production impeded the growth of local videogame development companies before the 2010s. The same participant also observes that this

was partially engendered by initial videogame production companies in Turkey which originally organized in software company structures instead of design, media, or entertainment ones. Accordingly, many first videogame ventures failed, leading the investors to believe that local production was a risky endeavour. Participant #3 also comments on the use of local and ethnic elements in videogames and asserts that they are not effective enough to pull Turkish consumers into investing in the videogame by themselves. Although local stories, characters, and locations may initially feel interesting or marketable to investors, “the element of fun and the principles of videogame design” override their presence. In this light, it is asserted that some local IPs focused heavily on local content but not enough in design aspects, resulting in a failure.

### **Discussion**

In this paper, we aimed to capture the local nuances of the transition from the pre-mobile to the mobile era of the videogame industry in Turkey. Introduction of mobile technologies—particularly smartphones—provided late-comer countries that also include Turkey with an opportunity to gain competitive advantage in the global videogame development scenery. We approached this transition from the lens of business disruption research and performed a double-layered analysis. First, we conducted structured interviews with eight industry experts. These companies and contacts were proffered by OYUNDER, *Game Developers, Designers, and Publishers Association in Turkey*. Next, we scanned the *Game Developers @Turkey* (GDT) Facebook social group for discussions regarding our research topics. GDT is one of the biggest and most prominent social hangouts for videogame development scene in Turkey. We identified five rich discussion threads about our topics and analysed them for additional insights.

By analysing the interviews and reinforcing our results with the forum data, we identified several themes and discussed them in detail. In summary, the barriers to handle disruptive change for Turkish videogame developers were offered as their lack of ability to gain timely access to technical resources and the demanding and fast-changing structure of the industry. The developers had to transform their businesses to conform to agile development cycles and marketing-oriented approaches. Their transformation processes also focused heavily on avoiding burnouts of resources and funding. They were aware of the superficiality of the casual vs. hardcore player divide, and they seemed to be in search of other niche customer segment definitions.

Low customer loyalty was the main concern, especially for fast-moving markets like mobile, where free alternatives and clone videogames were almost always available. Their consensus about the future was identifying AR and VR technologies as the next big disruption for the industry, however, they were also unsure about the future behaviours of the gamer segment who were introduced into videogames through mobile platforms. Finally, two themes kept repeating across all of their answers: stigmas about gaming in general and the tensions between the localized global franchises and locally produced IPs.

Despite each local industry having its own dynamics, the dilemmas experienced by the Turkish videogame industry might be applicable to other emerging national videogame development scenes. The disruptive force of mobile revolution for videogame development may have provided the local industry with an opportunity to become more competitive globally, however, it is not perpetual. Overall, Turkish videogame developers seem to project a strong determination to catch the next technological disruption (e.g., AR and VR) and put their learnings from the mobile transition to use. To create a stronger local industry, the state bodies and non-governmental organizations can facilitate positive outcomes from these disruption periods by addressing and creating solutions for the issues revealed in this work.

### **References**

- AA Anadolu Agency. (20 February 2016). Turkish gamers and designers eye \$91 billion worth lucrative market. *Daily Sabah*. Retrieved from <http://www.dailysabah.com/technology/2016/02/20/turkish-gamers-and-designers-eye-91-billion-worth-lucrative-market>
- Adams, E., & Ip, B. (5 June 2002). From casual to core: a statistical mechanism for studying gamer dedication. *Gamasutra*. Retrieved from [http://www.gamasutra.com/view/feature/131397/from\\_casual\\_to\\_core\\_a\\_statistical.php](http://www.gamasutra.com/view/feature/131397/from_casual_to_core_a_statistical.php)
- Alha, K., Koskinen, E., Paavilainen, J., Hamari, J., & Kinnunen, J. (2014). Free-to-play games: professionals' perspectives. In *Proceedings of Nordic Digra Conference*.
- Anthony, S. D., Johnson, M. W., Sinfield, J. V., & Altman, E. J. (2008). *Innovator's guide to growth: putting disruptive innovation to work*. Boston, MA, USA: Harvard Business Press.
- Balland, P. A., De Vaan, M., & Boschma, R. (2012). The dynamics of interfirm networks along the industry life cycle: the case of the global video game industry, 1987-2007. *Journal of Economic Geography*, 13 (5), 741-765.

- Banks, J. & Deuze, M. (2009). Co-creative labour. *International Journal of Cultural Studies*, 12 (5), 419-431.
- Binark, M. & Bayraktutan, G. (2012). A critical interpretation of a new "creative industry" in Turkey: game studios and the production of a value chain. In J. Fromme & A. Unger (Eds.), *Computer games and new media cultures* (pp. 371-391). Netherlands: Springer.
- Binken, J. L. & Stremersch, S. (2009). The effect of superstar software on hardware sales in system markets. *Journal of Marketing*, 73 (2), 88-104.
- Bogost, I. (9 October 2007). Persuasive games: casual as in sex, not casual as in friday. *Gamasutra*. Retrieved from [https://www.gamasutra.com/view/feature/1937/persuasive\\_games\\_casual\\_as\\_in\\_](https://www.gamasutra.com/view/feature/1937/persuasive_games_casual_as_in_)
- Caves, R. E. (2000). *Creative industries: contracts between art and commerce*. Cambridge, MA, USA: Harvard University Press.
- Chan, D. (2008). Convergence, connectivity, and the case of Japanese mobile gaming. *Games and Culture*, 3 (1), 13-25.
- Chatsfield, T. (27 September 2009). Videogames now outperform Hollywood movies. *The Guardian*. Retrieved from <http://www.theguardian.com/technology/gamesblog/2009/sep/27/videogames-hollywood>
- Cheng, J. (23 June 2007). Report: video game spending to surpass music spending this year. *Ars Technica*. Retrieved from <http://arstechnica.com/gaming/2007/06/report-video-game-spending-to-surpass-music-spending-this-year/>
- Christensen, C. M. (2001). The past and future of competitive advantage. *MIT Sloan Management Review*, 42 (2).
- Christensen, C. M. & Overdorf, M. (2000). Meeting the challenge of disruptive change. *Harvard Business Review*, 78 (2), 66-77.
- Christensen, C. M., Verlinden, M., & Westerman, G. (2002a). Disruption, disintegration and the dissipation of differentiability. *Industry and Corporate Change*, 11 (5), 955-993.
- Christensen, C. M., Johnson, M. W., & Rigby, D. K. (2002b). Foundations for growth: how to identify and build disruptive new businesses. *MIT Sloan Management Review*, 43 (3), 22-31.
- Coleman, S. & Dyer-Witheford, N. (2007). Playing on the digital commons: collectivities, capital, and contestation in videogame culture. *Media Culture Society*, 29 (6), 934-953.
- Dyer-Witheford, N. & de Peuter, G. S. (2006). "EA spouse" and the crisis of video game labour: enjoyment, exclusion, exploitation, and exodus. *Canadian Journal of Communication*, 31 (3).
- Egenfeldt-Nielsen, S., Smith, J. H., & Tosca, S. P. (2016). *Understanding video games: the essential introduction*. New York, NY, USA: Routledge.
- Elmer-Dewitt, P. (27 September 1993). The amazing video game boom. *Time*. Retrieved from <http://content.time.com/time/subscriber/article/0,33009,979289-2,00.html>
- Fahey, R. (14 July 2017). Tackling mobile's "game cloning" issue. *Games Industry Biz*. Retrieved from <http://www.gamesindustry.biz/articles/2017-07-14-tackling-mobiles-game-cloning-issue>
- Feijó, C. (2012). An exploration of the mobile gaming ecosystem. In P. Zackariasson & T. L. Wilson (Eds.), *The video game industry: formation, present state, and future* (pp. 76-95). New York, NY, USA: Routledge.
- Feijó, C., Gómez-Barroso, J. L., Aguado, J. M., & Ramos, S. (2012). Mobile gaming: industry challenges and policy implications. *Telecommunications Policy*, 36 (3), 212-221.
- Fortugno, N. (2008). The strange case of the casual gamer. In K. Isbister & N. Schaffer (Eds.), *Game usability: advice from the experts for advancing the player experience* (pp. 143-158). Burlington, MA, USA: Morgan Kaufmann Publishing.
- Frommer, D. (22 August 2014). Most smartphone users download zero apps per month. *QZ.com*. Retrieved from <https://qz.com/253618/most-smartphone-users-download-zero-apps-per-month/>
- Gaming in Turkey. (n.d.). Turkish game market 2019 report. *Gaming in Turkey*. Retrieved from <https://www.gaminginturkey.com/en/turkish-game-market-2019>
- Gilbert, C. (2003). The disruption opportunity. *MIT Sloan Management Review*, 44 (4), 27-33.
- Guevara-Villalobos, O. (2011). Cultures of independent game production: examining the relationship between community and labour. In *Proceedings of DiGRA 2011 conference*.
- Gunter, B., Nicholas, D., Huntington, P., & Williams, P. (2002). Online versus offline research: implications for evaluating digital media. *Aslib Proceedings*, 54 (4), 229-239.
- Ico Partners. (1 November 2013). New report: video games in Turkey market research. *ICO Partners*. Retrieved from <http://www.icopartners.com/blog/archives/3398>
- Ip, B. (2008). Technological, content, and market convergence in the games industry. *Games and Culture*, 3 (2).

- Izushi, H., & Aoyama, Y. (2006). Industry evolution and cross-sectoral skill transfers: a comparative analysis of the video game industry in Japan, the United States, and the United Kingdom. *Environment and Planning*, 38, 1843–1861.
- Juul, J. (2010). *A casual revolution: reinventing video games and their players*. Cambridge, MA, USA: MIT Press.
- Kafka, P. (8 June 2016). The app boom is over. *Recode*. Retrieved from <https://www.recode.net/2016/6/8/11883518/app-boom-over-snapchat-uber>
- Kahraman, E. (27 October 2015). Turkish gamers prefer competitive, free-to-play and local video games. *Daily Sabah*. Retrieved from <http://www.dailysabah.com/feature/2015/10/28/turkish-gamers-prefer-competitive-free-to-play-and-local-video-games>
- Kaya, Ç. (17 June 2013). Diren teyze. *Hurriyet*. Retrieved from <http://www.hurriyet.com.tr/diren-teyze-23522732>
- Keith, R. J. (1960). The marketing revolution. *Journal of Marketing*, 24 (1), 35–38.
- Kretschmer, P. (19 August 2016). Political checkmate for Turkey's game developers. *DW.com*. Retrieved from <http://www.dw.com/en/political-checkmate-for-turkeys-game-developers/a-19486670>
- Kuittinen, J., Kultima, A., Niemelä, J., & Paavilainen, J. (2007). Casual games discussion. In *Proceedings of the 2007 conference on future play* (pp.105-112). ACM.
- Kultima, J. (2009). Casual game design values. In *Proceedings of MindTrek 2009 conference*.
- Kurt, U. (7 February 2017). Türkiye 30 milyon oyuncu ile 600 milyon dolara koşuyor... *Oyunder.org*. Retrieved from <http://www.oyunder.org/turkiye-30-milyon-oyuncu-ile-600-milyon-dolara-kosuyor/>
- LaViola, Jr. J. J. (2008). Bringing VR and spatial 3D interaction to the masses through video games. *IEEE Computer Graphics and Applications*, 28 (5).
- Marchand, A. & Hennig-Thurau, T. (2013). Value creation in the video game industry: industry economics, consumer benefits, and research opportunities. *Journal of Interactive Marketing*, 27, 141–157.
- Mathews, C. C. & Wearn, N. (2016). How are modern video games marketed? *The Computer Games Journal*, 5 (1-2), 23-37.
- McCoyd, J. L. M. & Kerson, T. S. (2006). Conducting intensive interviews using email: a serendipitous comparative opportunity. *Qualitative Social Work*, 5 (3), 389–406.
- Miller, D. & Slater, D. (2000). *The internet: an ethnographic approach*. New York, NY, USA: Bloomsbury Academic.
- Newzoo. (15 September 2015). Newzoo market series #20: Turkish games market. *Newzoo*. Retrieved from <http://newzoo.com/insights/infographics/newzoo-summer-series-20-turkish-games-market/>
- Newzoo. (6 July 2017). The Turkish Gamer | 2017. *Newzoo*. Retrieved from <https://newzoo.com/insights/infographics/the-turkish-gamer-2017/>
- Nielsen. (28 August 2009). Insights on casual games: analysis of casual games for the PC. *Nielsen*. Retrieved from <http://www.nielsen.com/us/en/insights/reports/2009/Insights-on-Casual-Games-Analysis-of-Casual-Games-for-the-PC.html>
- Okazaki, S., Skapa, R., & Grande, I. (2008). Capturing global youth: mobile gaming in the US, Spain, and the Czech Republic. *Journal of Computer-Mediated Communication*, 13 (4), 827–855.
- Petitte, O. (21 June 2012). Turkish gaming climbs to \$450 million in 2012 (infographic). *Venture Beat*. Retrieved from <http://venturebeat.com/2012/06/21/turkish-gaming-infographic/>
- Petrillo, F., Pimenta, M., Trindade, F., & Dietrich, C. (2009). What went wrong? a survey of problems in game development. *Computers in Entertainment (CIE)*, 7 (1).
- Randall, D. M. & Gibson, A. M. (1990). Methodology in business ethics research: a review and critical assessment. *Journal of Business Ethics*, 9 (6), 457–471.
- Ruffino, P. (2012). Narratives of independent production in video game culture. *Loading...*, 7 (11).
- Schreier, J. (26 September 2016). The horrible world of video game crunch. *Kotaku.com*. Retrieved from <https://kotaku.com/crunch-time-why-game-developers-work-such-insane-hours-1704744577>
- Simms, C. (5 March 2012). The economy of piracy: how game publishers are killing the PC. *Cnet*. Retrieved from <https://www.cnet.com/news/the-economy-of-piracy-how-game-publishers-are-killing-the-pc/>
- Şisler, V. (2013). Video game development in the Middle East: Iran, the Arab world, and beyond. In N. B. Huntemann & B. Aslinger (Eds.), *Gaming globally: production, play, and place* (pp. 251–271). New York, NY, USA: Palgrave MacMillan.

- Superdata. (1 February 2017). Mobile games generated more than \$40 billion in 2016. *Superdata*. Retrieved from <https://www.superdataresearch.com/unity-and-superdata-launch-major-mobile-games-and-vr-report/>
- Şengün, S. (21 June 2014). "Türkler yaptıysa bir cacık olmaz..." vs "Türkler cin ali bile yapsa desteklerim". *Sercansengun.com*. Retrieved from <http://sercansengun.com/vot/turkler-yaptiysa-bi-cacik-olmaz-vs-turkler-cin-ali-bile-yapsa-desteklerim/>
- Şengün, S. (2018). A survey of marketing management for videogames industry in Turkey. In S. Ozturkcan & E. Y. Okan (Eds.), *Marketing management in Turkey* (accepted, in print). Somerville, MA, USA: Emerald Publishing.
- Tezateşer, B. (2016). Oyun sektörüne yönelik ekonomi bakanlığı destekleri hakkında faydalı bir özet. *Oyunder.org*. Retrieved from <http://www.oyunder.org/oyun-sektorune-yonelik-ekonomi-bakanligi-destekleri-hakkinda-faydali-bir-ozet/>
- Trefry, G. (2010). *Casual game design: designing play for the gamer in all of us*. Burlington, MA, USA: Morgan Kaufmann Publishers.
- Tschang, T. (2007). Balancing the tensions between rationalization and creativity in the video games industry. *Organizations Science*, 18 (6), 989-1005.
- Tschang, T. (2009). Creative industries across cultural borders: the case of video games in Asia. In L. Kong & J. O'Conner (Eds.), *Creative economies, creative cities* (pp. 25-42). Netherlands: Springer.
- Tuker, C., Yilmaz, E., & Cagiltay, K. (2015). Video games around the world (Turkey). In M. J. P. Wolf (Ed.), *Video games around the world* (pp. 565-578). Cambridge, MA, USA: MIT Press.
- Tüdoğ. (27 December 2012). Türkiye'de ve dünyada dijital oyunlar sektörü hakkında genel rapor. *Bilgi Toplumu Stratejisi*. Retrieved from <http://www.bilgitoplumustratejisi.org/tr/doc/8a3247663bb37964013bb38795300000>
- Wessel, M. and Christensen, C. M. (2012). Surviving disruption. *Harvard Business Review*, 90 (12), 56-64.
- Yang, Z., Wang, X., & Su, C. (2006). A review of research methodologies in international business. *International Business Review*, 15 (6), 601-617.
- Yilmaz, E. & Cagiltay, K. (2005). History of digital games in Turkey. In *Proceedings of DiGRA 2005 conference: changing views - worlds in play*.
- Yuen, S. C., Yaoyuneyong, G., & Johnson, E. (2011). Augmented reality: an overview and five directions for AR in education. *Journal of Educational Technology Development and Exchange*, 4 (1).
- Zackariasson, G. & Wilson, T. L. (2010). Paradigm shifts in the video game industry. *Competitiveness Review*, 20 (2), 139-151.

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#### Appendix A - Interview Structure

1. Please compare the Turkish videogame industry before and after the development of mobile technologies using the following themes:

(a) Resources: Human, technology, equipment, funding, etc.;

(b) Processes: Business, planning, communication, coordination, etc.;

(c) Values: Opportunities, limitations, etc.

2. Please compare your production cycles in mobile and non-mobile platforms using the following themes:

(a) Industry maturity;

(b) Competitive advantage;

(c) Funding requirements

3. Please provide your customer definitions for mobile and non-mobile platforms

4. Please comment on the future of mobile gaming using the following themes:

- (a) Technology;
- (b) Content;
- (c) General market

## Endnotes

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- <sup>i</sup> Game Developers @Turkey Facebook Group <http://www.facebook.com/groups/gamedevturkey/>
- <sup>ii</sup> (a) Bahçeşehir University Game Design bachelor and master's degrees at <http://buglab.bau.edu.tr/>; (b) Middle East Technical University Game Technologies master's degree at <http://gate.ii.metu.edu.tr/>; (c) Hacettepe University Computer Animation and Game Technologies master's degree at <http://www.bil-grafik.hacettepe.edu.tr/animasyon.html>; (d) Izmir Ekonomi University Computer Games and Technology master's degree at <http://fbe.ieu.edu.tr/game/en>; (e) Isik University Computer Graphics and Animation master's degree; (f) Istanbul Bilgi University game design bachelor degree at <http://www.bilgi.edu.tr/en/education/faculty-and-schools/faculty-communication/digital-game-design/>; and (g) Marmara University Computer Education and Instructional Technology master's degree; (h) Istanbul Aydin University Digital Game Design bachelor degree <https://www.aydin.edu.tr/tr-tr/akademik/fakulteler/guzelsanatlar/dijital-oyun-tasarimi/>; (i) Istinye University Digital Game Design bachelor degree <https://gstm.istinye.edu.tr/en/bolumler/digital-game-design>; and (j) Beykoz University Digital Game

Design bachelor degree <https://www.beykoz.edu.tr/icerik/567-dijital-oyun-tasarimi>.

- <sup>iii</sup> Playstore is a Turkish digital videogame distribution platform, accessible at <https://www.playstore.com/>
- <sup>iv</sup> Below are the 5 discussion threads we have analyzed:
- (a) Thread #1: Discussions about Turkish resources for game development <https://www.facebook.com/groups/gamedevturkey/permalink/1397653556983310/>
- (b) Thread #2: Discussions about how Turkish industry is seen and stigma regarding it [/1305610419520958/](https://www.facebook.com/groups/gamedevturkey/permalink/1305610419520958/)
- (c) Thread #3: Discussions about local production and themes [/1296746737073993/](https://www.facebook.com/groups/gamedevturkey/permalink/1296746737073993/)
- (d) Thread #4: Discussions about the trends in the industry [/1235950933153574/](https://www.facebook.com/groups/gamedevturkey/permalink/1235950933153574/)
- (e) Thread #5: Another discussion thread about local production and themes [/751362144945791/](https://www.facebook.com/groups/gamedevturkey/permalink/751362144945791/)
- <sup>v</sup> Unity updated its subscription model in 17 June 2016 (<http://www.cgchannel.com/2016/06/unity-to-get-new-subscription-pricing-model/>) and Unreal Engine in 2 March 2015 (<https://www.unrealengine.com/en-US/blog/ue4-is-free>)
- <sup>vi</sup> 1010! <http://gram.gs/game-detail-1010.html>