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Transnational development cultures

Navigating production, market, and cultural difference within European-Chinese game development teams

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Discourse on the global games industry draws attention to the growth of China, in terms of both its consumer market and the games publishing landscape. Trade associations and government agencies have sought routes for Western games studios, publishers, and rights holders to connect with similar organisations in China. However, there has been limited focus on how Western and Chinese game developers understand and navigate the challenges of transnational collaboration and creativity in games production. This article presents a case study of five transnational game development teams, all of which were composed predominantly of developers from the UK and China who were tasked with producing game prototypes for both markets. Data gathered during game production included development diaries, interview data, game prototypes, and production documentation. Three themes emerged from analysis of the data: production practices and transnational working, navigating regulations and restrictions, and market and cultural differences. Findings highlight that developers encounter challenges around political and cultural difference that could inhibit production or lead to uncertainties in design decision making, but also that developers can quickly establish routes to collaboration and knowledge sharing that can help to overcome these barriers.

CCS CONCEPTS •Applied computing~Arts and humanities~Media arts•Social and professional topics~User characteristics~Geographic characteristics•Social and professional topics~User characteristics~Cultural characteristics•Software and its engineering~Software creation and management~Software development techniques~Software prototyping

Additional Keywords and Phrases: Game production studies, Game making cultures, China, UK, Localisation, Culturalisation, Game regulation

1 Introduction

The rapid growth of the digital games sector in China has been a focus for both the Western games industry and researchers with interests in game production studies. In terms of the consumer market, the Asia-Pacific region accounted for 50% of the global games market in 2021, more than twice the market of North America and 2.8 times the European market [1]. This was in part driven by China's significant mobile games market. In 2021, China was ranked as the number one market in the world for smartphone use, with 953.5m users [2]. This growth in the Chinese market has been mirrored by the global ascendance of some of the game companies based there. The top 100 global games companies by revenue, once dominated by North American and Japanese companies, was topped by China's Tencent in 2020 with revenues of \$27.441bn (almost \$10bn more than 2nd placed Sony), while Netease placed 6th, one place above Nintendo [1].

Despite the ongoing market and sector growth in China, access to the Chinese market for overseas developers is challenging. As reported by National Base for International Cultural Trade & Entbrains [3], of the total China games market in 2021 only 5.13% of games were created by European developers, while of the top 100 mobile games in the first half of 2021 only three were of European origin accounting for approximately 1.2% of revenue share. At the same time, Chinese games and media companies are actively looking to collaborate and connect with developers and other companies outside China with a view to engaging global audiences, including Netease [4] and Tencent [5].

In an analysis of official media discourse, Wirman [6] discusses how Western news media has represented games and gaming in China since 1999, noting a focus on the growth and scale of the Chinese market in terms of companies, developers, players, and investment. This analysis points to a shift towards increasing similarities in terms of Western and Chinese industry and markets, but nonetheless highlights ongoing issues around Western representations of China. Regarding Western media coverage of the Chinese games industry and developers, Wirman concludes that designers and developers are often "characterized in terms of mischievous imitation and copycatting and simultaneously plagued by piracy and limitations such as console bans."

In the context of convergence of Chinese and Western game production practices, but persistence of political and cultural divides, there is a need for research into how the complexities of transnational development can be made more easily navigable for game creatives. While current knowledge points to the growing opportunities for collaboration fueled by the expansion of the industry and market in China, there are evidently barriers to how future co-operation between developers will take place.

The current study forms part of a wider programme of research that aims to develop a roadmap to creative collaboration between the UK and Chinese games industries. Given the complexities of market, regulatory, and technological difference between the UK and China, there are many obstacles to overcome if such a roadmap is to be developed. In this paper, the focus is on collaborative game production and the experiences of game developers working within cross-cultural teams. This paper seeks to address the following research questions:

1. How do culturally British and Chinese game developers collaborate on game production, and what obstacles do these developers face when working together on games projects?
2. What challenges do development teams face when accounting for social, political, cultural, or consumer differences in China compared with the UK market, and how do cross-cultural teams collaborate to tackle these challenges?

To address these questions, a case study involving two phases of data collection was developed. The case study draws upon data collected from postgraduate game developers who were tasked with collaborating on project briefs set by industry professionals from the UK and China. Most of the postgraduate developers were British or Chinese developers who were co-located in a simulated professional studio space in the UK for the first phase of the research and operating remotely online for the second phase of the research. The findings of this paper contribute not only to discourse on the growing Chinese game market and its associated regulatory challenges, but also to production studies research on transnational collaboration, localisation, and culturalisation that is of direct interest to the games industry.

2 Background

2.1 Game design and production within/between China and the West

Game production lifecycles discussed in the literature often draw upon insights from US, European or Japanese development, but increasingly we see inclusion of more diverse geographic, national, and regional examples. Johns [7], who describes the games industry as international rather than global, provides an overview of the traditional games production stages: finance, development, publishing, distribution, retail, and consumption. O'Donnell [8] structures the production lifecycle in three stages - pre-production, production, and publishing - which can serve as a generalised model for understanding how games are conceived, developed, and distributed. Kerr [9] discusses the production lifecycles of games in a global context and as part of the wider creative and cultural industries.

Simon [10] has documented the logic and structures of the Chinese games industry, highlighting a focus on technology innovation and alignment with technology companies, as well as numerous complexities and tensions between government, industry, and market stakeholders. Yang and Chan [11] argue that while major Chinese companies such as Tencent have made advancements as global companies, most of these companies' growth is within Asian markets, and most Chinese games companies are yet to develop the capabilities to operate within the globalised creative industries.

Nakamura and Wirman [12] present a brief history of the games industry in China, highlighting the progression in production practices from game copying, through rapid adaptation of existing games, to the design-centred game innovation practices that are exhibited by some China-based studios today. This trajectory indicates that Chinese game production methods have, over time, taken influence from and aligned with those of Western game studios. Fullerton [13], Schell [14] and Swink [15] provide examples of the creative design process of prototyping, playtesting, polish, and other player-centric concepts that are representative of the design innovation focus of Western game production. Research on game production in China is in turn placing more focus on creativity and innovation. Beyond the well-known examples of major Chinese publishers and games companies, Huang [16] presents analysis of games entrepreneurs in China that can be considered a parallel to the grassroots entrepreneurship of creative independent developers in the West. Of relevance to production in the globalised context, Gong and Xin [17] argue that physical collocation of designers as a necessity for creative ideation can be overstated, with games professionals from different disciplines in China noting that collaborative online channels can be "one of the most prominent resources for creativity". This has repercussions for global creativity and innovation not only with respect to transnational working, but also the potential wider shift to remote work as we move toward a post COVID-19 world.

2.2 Policy challenges for game publishing in China

Arguably the most significant barriers to transnational game production between China and the UK arise from Chinese policy. The role of the Chinese state with regards to local, regional, and global game production is examined by Jiang and Fung [18]. This research highlights the myriad political and economic issues that inform how online games are produced for and released in China. Kshetri [19] discusses early efforts by China to export games to other markets, while Fung [20] argues that exporting Chinese mobile games overseas is a key step in advancing the creativity of game design in China.

Both regulation of games as media and tight control of publishing and distribution of games present challenges for Western developers. Pilarowski, Yue and Ziwei [21] outline how overseas companies are restricted or prohibited from games publishing in China. These companies not only require Chinese publishing partners, but also must submit their games for evaluation in a strict approvals process. The authors summarise the content restrictions which apply to games published in the country, as shown in [Table 1](#).

Table 1: Game content restrictions in China, recreated from Pilarowski, Yue and Ziwei [21]

Number	Restriction
1	Opposes the fundamental principles determined in the constitution
2	Endangers the unity, sovereignty or territorial integrity of the nation
3	Divulges state secrets, endangers national security, or damages the dignity or interests of the nation
4	Incites ethnic hatred or racial discrimination or undermines national solidarity, or infringes upon national customs and habits
5	Propagates evil cults or superstition
6	Disseminates rumors, disrupts social order or undermines social stability
7	Propagates obscenity, pornography, gambling, violence or instigates crimes
8	Insults or slanders others, or otherwise infringes upon the legitimate rights of others
9	Endangers social morality or national splendid cultural traditions
10	Is otherwise prohibited by the laws, or administrative regulations of the People's Republic of China

The ambiguity of these restrictions often leads to confusion over what is and is not permissible. As Pilarowski, Yue and Ziwei [21] expand, the Chinese NPPA (National Press and Publication Association) occasionally publishes clarifications on specific content that will not be allowed, such as dress-up games or poker games. The press in China has also been known to release information about specific content which could raise red flags with respect to the restrictions outlined in Table 1. In 2021 this included the suggestion that same sex relationships, characters with indeterminate gender, or effeminate male characters could be prohibited [22]. These ambiguities have been reported as a stumbling block for overseas developers, who may encounter difficulties in understanding what is and is not permissible [23]. Research into the impact of censorship in China has shown few console games make it past the censors, and that this impacts on how overseas studios develop strategies for game publishing in China [24].

A major focus of policy in China has been on addiction in games [25] [26]. This includes an explicit focus on protection of minors, which has been a longstanding aspiration of Chinese policy in games. There has been a strengthened focus on anti-addiction measures, real-name verification, in-game play time monitoring and guidance that limited the hours per day under 12s and those aged 13-17 could play [27]. These game time restrictions in China have been regularly updated, most recently in 2021 to limit young people to just 3 hours per week [28].

Inclusion of gambling within games is another example of a current regulatory challenge facing nations around the world, particularly so with loot boxes [29]. Interestingly, where loot boxes have faced scrutiny and restrictions in some Western nations, in China loot boxes have been shown to be prevalent and deemed suitable for children provided that the probabilities of winning loot are prominently and accurately presented to players [30] [31].

2.3 Localisation and culturalisation

Where UK developer engagement with the Chinese games market is concerned, localisation is regarded as a significant issue. Localisation typically takes place during production and has traditionally been regarded as a process focused on text translation, albeit with some consideration of local naming conventions and slang phrases [32]. Despite this integration into production, it is not always a step that is prioritised in game development and/or is not integrated early enough. Financial and time resourcing for localisation has been discussed as a challenge for developers, particularly in indie games where unpaid fans have been known to contribute to localisation efforts [33]. Dong and Mangiron [34] reiterate the budgetary and time constraints related to localisation, including specific examples of how translating a game for China can be complex. Nevertheless, they point to the value of rigorous localisation as part of production, as this is linked to the appeal of the game to Chinese consumers. While translating language is undoubtedly the focus of localisation, growing scholarship in the field has drawn attention to the nuanced cultural differences and preferences that can impact on professional localisation [35]. Consalvo has argued that localisation “is about altering or modifying cultural expressions that might interfere with a game player’s understanding or enjoyment of a game” [36] (p126), and Isbister [37] has discussed how game assets such as character art can be modified to suit local tastes and expectations. As Carlson and Corliss [38] argue, the business of game localisation engages with a multifaceted concept of cultural

difference, where “media, information, and even people are filtered and channeled as they move across borders and between zones”. Conversely, Davies and Li [39] have shown that games can cross borders with no localisation and still achieve viral success, examining the case of a mobile game (Travel Frog) that was widely successful in China despite having no Chinese localisation applied.

A useful framework for understanding how various forms of localisation take place is offered by Kerr [9] who identifies specific forms of localisation activity. This includes ‘transcreation’ or ‘culturalisation’ - the removal of culturally specific terms or ideas and subsequent replacement with culturally appropriate alternatives for target markets. Expanding, Kerr identifies strands of ‘content culturalisation’ that may take place at different stages of production. Post-production ‘reactive culturalisation’ involves removal of content to accommodate cultural difference. Standard ‘localisation’ can take place during production and typically involves substitutions for culturally appropriate alternatives. Meanwhile ‘proactive culturalisation’ commences in pre-production and involves careful planning to include culturally-appropriate content for different markets early in the development lifecycle [9] (p127).

3 Research method

To address the research questions outlined in the introduction, a single case study design [40] was adopted involving two phases of data collection from postgraduate game development teams (see Figure 1). All development teams were predominantly composed of mixed British and Chinese postgraduate developers enrolled in a Professional Masters programme. Data collected for analysis included game prototypes, presentations and game documentation, developer diaries, and interview transcripts. Phase 1 and 2 of data collection took place sequentially between May 2021 and January 2022.

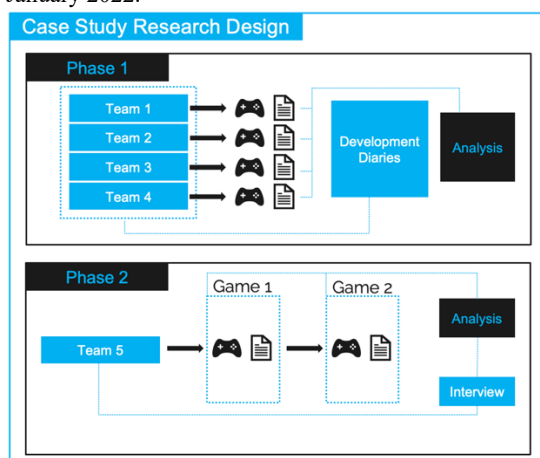


Figure 1: Case study research design involving phases of data collection on cross-cultural game production, where data collected included game prototypes, game documentation, development diaries, and interview.

Phase 1 involved four teams of developers (total 45, team size 10-14) working full time, on-site in a professional-grade game studio space. All developers were engaged in workplace simulation and were expected to collaborate with their teammates as if working in a professional context, including providing honest evaluation of the performance of team mates. For their core assignment, each team was assigned a project brief provided by a different UK-games studio, who then acted as a professional mentor. The brief assigned by the mentor challenged the team to develop a game concept with the UK market in mind. Once paired with a UK industry mentor, the authors then assigned all teams a supplementary brief that challenged them to consider how their game concept could be adapted and localised for the Chinese market. The latter brief therefore represented the experimental intervention on the part of the authors to set up the conditions for the current case study. At the point of submitting their final game, each of the four teams delivered a

presentation outlining the opportunities and challenges their game would face if it were brought to market in China. Additionally, seventeen of the developers across all four teams and all nationalities kept fortnightly development diaries documenting their engagement with the projects. Diaries tasked them with responding to prompts around their experience of teamwork, production, and challenges presented by the brief to tailor their game to the Chinese market. A grounded approach to case study analysis [40] was applied on team presentations and development diary data with the aim of revealing the perspectives of these transnational development teams.

Building from findings from phase 1, phase 2 tasked a single team of seven developers from the same Masters programme with developing two game prototypes. Drawing upon the emergent findings of phase 1, the emphasis of phase 2 was shifted to account for two areas of interest: targeting China as the primary market (rather than adapting to China as a secondary market), and the impact of remote working (rather than co-located production). For the former, this allowed for closer consideration of transnational production practices and direct integration of China into the creative game design process. For the latter, remote working – of increasing prevalence in the games industry due to the COVID-19 pandemic – allowed for observation of cross-cultural collaboration online rather than in studio-based settings. This team was predominantly based in China, with two out of seven developers based in Europe, while all developers met and collaborated remotely. The team was paired with a Chinese platform holder, Steam China (a subsidiary of Perfect World), as the industry contact. Data collected included two game prototypes, two sets of game project documentation and materials, and interview data.

Through both phases of the case study, the aim was to explore the challenges faced by transnational teams linked to the research questions, where the critical framing was to develop an understanding of the experience of transnational production through accounts and descriptions of those involved in this process [41].

4 Case study

4.1 Adapting Western game concepts for the China market

Successive rounds of thematic analysis on phase 1 data resulted in the emergence of three core themes. Developers discussed *production practices and transnational working*, which touched on issues such as communication, impacts of remote working versus studio working, and the value of working in transnational teams where developer cultural knowledge and understanding could have currency. Developers also commented on issues related to *navigating regulations and restrictions*, which tended to centre on compliance with regulations, and common understandings of problematic topics or design decisions for games in China. Lastly, developers discussed *Chinese market and cultural differences*, including understanding how to design or adapt their product for China, market trends, and issues around localisation and audience understanding.

The following analysis includes quotes from participant diaries (British, Chinese, and other international developers represented throughout) where the participants are referred to by number (e.g. P1), and draws upon team games and documentation (see [Figure 2](#)) to aid interpretation.

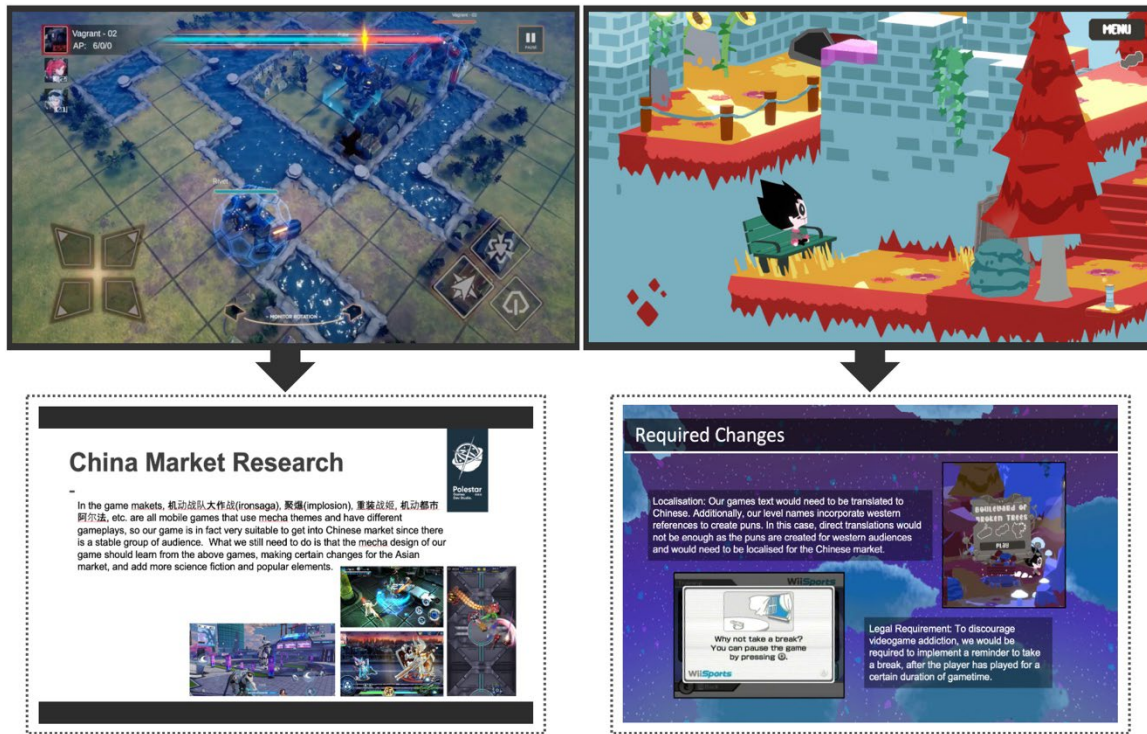


Figure 2: Examples of two of the phase 1 game projects and the accompanying documentation developed as part of team research into adaptation for the China market.

4.1.1 Production practices and transnational working.

Within each of the teams there was evidence of production and project management challenges that impacted on development, particularly in the earlier weeks of production. Some entries centred on either cross-disciplinary misunderstandings or lack of clarity on task assignments within disciplinary teams, which can be regarded as common challenge within games production [8]:

“We have also encountered slight issues where more quiet members of the team are having difficulties with certain tasks but are not very forward with asking for help.” (P6)

“...there are still some confusions caused by poor communication, for example, multiple designers may do different designs for the same content and end up giving the team different solutions, I think this is mainly because the division of work and responsibilities is not detailed enough...” (P10)

In diary entries where direct interaction between British and Chinese developers was part of the context, communication again was a common theme with respect to both general communication and when working on set tasks with others from different cultural backgrounds:

“The difficulty over the past two weeks has been the inability to accurately communicate needs or ideas, particularly in terms of expressing subjective emotions, which can sometimes be misunderstood due to cultural differences and vocabulary.” (P16)

“I had an argument with the programmer while confirming the current feature development, as the completed feature did not match the requirements. I respected the work he had already done and modified the original design based on the current implementation he described.” (P8)

Emerging from comments on communication, working together co-located in the studio appeared to be of importance to developers from China as well as other developers:

“I have found it easy to communicate with the team, we regularly use discord to keep in contact, but nothing is as easy as face to face conversation.” (P9)

“Team moral [sic] has been very high this week as we took a half day on the Thursday to grab a coffee during lunch time and get a chance to catch up outside of work.” (P11)

“I discovered with the group that one vital way to demonstrate the build process was for everyone to gather for a quick meeting and watch a playthrough of the build.” (P12)

By extension, developers inferred that those who were working remotely presented more challenges for effective working and communication:

“As the rate of covid increased, more members chose to work off-site. As such, our online communication needed to improve.” (P6)

“The main difficulty I have faced in communicating is that in voice conferencing, although I can understand what is being said, it is difficult to express my ideas in a fast-paced communication” (P16)

With respect to operating as a transnational team of developers, the preparedness to draw upon the cultural diversity of the team was of value to teams, particularly when endeavoring to understand the Chinese market. Comments included both British developers referring to conversations with their Chinese teammates, or Chinese developers drawing upon their own experience of the games market in China:

“When discussing this with some of the Chinese members of the team, we determined that provided we maintained the “cutesy” aesthetic and avoided some of the typical stereotypes such as drinking blood etc. then it was unlikely there would be any issues in relation to our game being suitable for the Chinese market.” (P1)

“Regarding the target market, we had already played a lot of Chinese mobile games and had developed something like a “gut feeling”, which made us think that some of the game guides were unnecessary or cumbersome and redundant.” (P8)

“We have set the game in a British city, which is acceptable for the Chinese market. In fact from my observations Chinese players have a not insignificant interest in scenarios that include other cultures. So playing as a cat in the alleyways of a British city is an interesting and original theme for the Chinese market, and this is the attraction of our project.” (P10)

4.1.2 Navigating regulations and restrictions.

When attempting to make sense of regulatory constraints in China, developers from both China and other nations cited examples of some of the most understood restrictions around age-appropriate design and game addiction:

“I found information regarding allotted play time per day with those under 18 only 90 minutes of gameplay a week with 180 on the weekend. Our game is a peak pick up and play game which they can start and stop whenever with no social, or story restrictors.” (P2)

“I think our game needs to have something to prevent addiction such as a reminder of long-time gaming or a play count or energy count which will be consumed when play.” (P3)

Likewise, violence, gore, blood, and depictions of symbols such as skeletons, all widely reported in resources available to developers [23] were picked up by participants:

“When publishing games in China, companies tend to avoid depicting horror and gore, e.g. not showing Human Remains, as seen in games such as World of Warcraft and Dota, where skeletons are replaced by tombstones or skeletons are covered with flesh” (P6)

“At the beginning of the project when fleshing out our idea, we did have to consider the implications of our main character being a vampire in relation to the Chinese market as we were aware that there may have been some cultural issues regarding the supernatural.” (P1)

Instances of doubt around what constitutes violence was evidenced, indicating that a degree of self-censorship may take place in development teams:

“since we added the cat scratching we wondered if that might be considered too violent or any use of pink/red during this scratch might represent gore which is strictly regulated in the Chinese market.” (P12)

“Constraints upon our game would definitely be the level of gore and faux-violence within the game which may push this towards an older demographic but additionally, restrict it being available in the market all together. This will need to be assessed in following weeks.” (P17)

From some comments it was clear that consideration of regulations in China caused degrees of confusion or concern to developers involved in design discussions. This ranged from statements declaring genuine struggles to identify precisely what restrictions were in place, to statements that dismissed that there might be issues beyond the most well-known prohibited content.

“If there is cause for concern in the game, it might be the addition of graffiti. While the graffiti is not offending in any way, some of these scribbles may be offensive to the Chinese market. Some amount of research will need to be done into graffiti seen in China, to keep away from the offensive signs and adjust the graffiti on this basis.” (P9)

“The biggest problem with releasing a game in the Chinese market has always been the lack of clearly defined censorship, and given that our project does not contain any violent, gory or sexual content, there is no fear of being stopped by censorship.” (P16)

Beyond this ambiguity, there were suggestions of wider moral and political concerns about what would and would not be allowed. At times these entries again suggested a degree of self-censorship may take place within development teams, in the absence of clearly defined restrictions:

“plastic chips packets with fat cats on it may be seen as being political and the garbage all around the main part of the game may be a concern for the market.” (P9)

“With the addition of the glass bottles this would most likely have to change to something that didn’t reference alcohol, something like a milk bottle, in order to fit it with the Chinese market.” (P11)

“we have discussed how the brief wanted to highlight the backstory of some disaster such as lockdown. The COVID-19 pandemic might be a topic that can’t be used in media such as games” (P12)

“Our team has discussed the moral implications of working with the Chinese market however, some of our LGBT members feel very uncomfortable with the idea especially considering the heavy levels of restrictions, oppression and taboo around many, many things we take for granted in the West. In fact the more I’ve learned the more uncomfortable I’ve felt myself about the idea of any kind of collaboration with Chinese censorship.” (p15)

4.1.3 Chinese market and cultural differences.

Related to consideration of regulation and restrictions, the last major theme to emerge from the analysis pointed to developer discussion around engagement with the market in China. Here it was evident that all teams understood the need to monitor trends and access data sets on audience consumption patterns, which are well reported by sector and market agencies. Often this was considered at the general level of gaming platforms and genres:

“Our key strength that I noticed was that mobile games are extremely popular in the Chinese market and provide more opportunities for exposure and player base, out of the games being created ours is by far the most mobile portable given its simple puzzle nature.” (P2)

“The game as a whole would have a place in amongst other mobile/PC titles in the region due to it being of the adventure genre, a highly popular type of game across both platforms.” (P13)

Entries suggested that such considerations did present design and production challenges, such as how different consumption patterns may require a need to think about porting to very different games platforms:

“From conception of our game, we knew that we would be developing for PC, as that was our required platform for our submission, as well as this aids in quicker development than Phone. However, we did recognise that the market in China mostly use Phones with 80.8% of gamers in China using Phone,

and 48.2% using Laptop/Desktop. As such, we are being very cautious with how we are developing our controls, gameplay and user interface, to potentially be easily ported to phone.” (P6)

Beyond the readily available statistics on the market, developers showed that they were undertaking more targeted examination of the market with respect to design and stylistic choices for their game, and how well this could suit the Chinese market:

“A number of games that have been successful in the Chinese market have used this art style, for example, Genshin Impact and Arknights. Therefore, the anime style of our in-game character avatars may effectively attract a large number of players in the Chinese market. In fact, last year a game from Japan, 13 Sentinels: Aegis Rim, received wide acclaim in China and, like our project, it has a realistic style for the mechas and an anime style for the characters (pilots).” (P7)

Localisation was a key sub-theme, frequently raised as part of the design process. This included both functional localisation around how to translate English text and how to minimise the need for text to ensure easier porting:

“Currently our game has no concerns for the Chinese market as it has already been decided that the game will feature no in game text that would have to be translated, simply just the UI and that there would be no UK based motifs that would require switching over.” (P11)

“As a potential countermeasure to other assets that require text, such as our lost poster for the cat character, this would utilise no text at all, however the player would still hopefully be able to identify that the asset is in fact a poster as was the intention.” (P13)

Localisation extended beyond language to consideration of cultural difference, as discussed by Kerr [9]:

“As early textures have started to go into the game for the buildings, it might be worth noting that the setting is in an urban, likely English city. Textures for the flats and some of the basic layout and items used to show garbage/cans may need to be changed to be more relatable for a Chinese audience. Some amount of time and research would need to go into this.” (P9)

Related to comments around localisation and cultural difference there was evidence of developers actively adapting their design decisions for potential Western and Chinese versions of their game, while teams also presented localisation and culturalisation concerns in their submissions.

“The graffiti within the game would also have to change to be more like the culture of China as the current art being used takes a lot of influence from the UK specifically which may not translate well to other audiences” (P11)

“If any changes were required to align with the Chinese market, it is likely that it would predominantly be on the art side of the project and would probably just require swapping out some of the assets to align with market trends.” (P1)

“It may be worth changing Heather to a more relatable plant like Lavender.” (P15)

Alternatively, developers indicated that consideration of both markets and potential cultural differences could inform compromised design decisions:

“During the investigation, it was found that the desired style of medium core games in the Chinese market tends to be more comic style, while European and American players prefer realistic style, so we made a balance in art style by adding stylized elements to the realistic style.” (P8)

4.2 Transnational production of games for the China market

Following phase 1 research, one transnational team comprising China and Europe-based developers working remotely was assigned two creative briefs with a focus on the China market as a primary target and challenged to consider how they would collaborate to develop original ideas for audiences in China. These briefs built in constraints around the legal, publishing, and market realities of game publishing in China in 2021. Working with Steam China as a partner ensured that professional expertise and knowledge of markets, publishing processes, licensing, and regulation in China was integrated into the case study. As shown in [Figure 3](#), this included high level steering within the creative brief, complemented by ongoing communication and feedback.

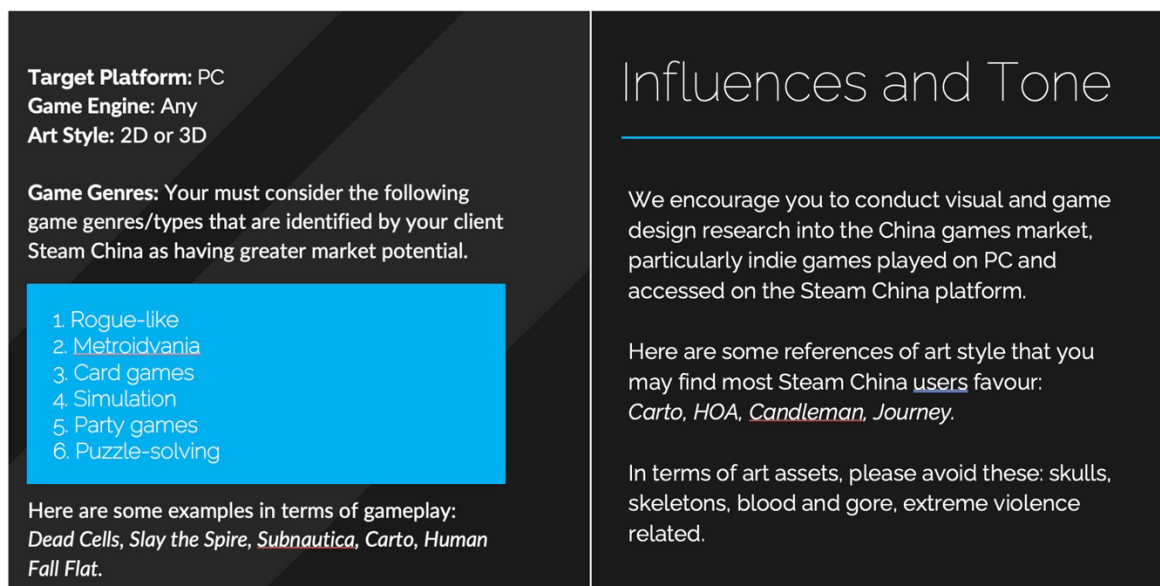


Figure 3: Excerpts from a creative brief issued by Steam China included steers on market, style, and potential regulatory challenges if particular content was included.

The team proceeded to develop two game prototypes: MIXT and CI-3nr (shown in [Figure 4](#)). MIXT was designed in response to the challenge to create a social play game that would connect UK and China players, with a focus on how players could collaborate cross culturally towards a common goal. CI-3nr took a stronger lead from market viability and publishing constraints, following the recommended game genres and limitations outlined by Steam China. Both projects led to the delivery of vertical slice playable prototypes for Windows.

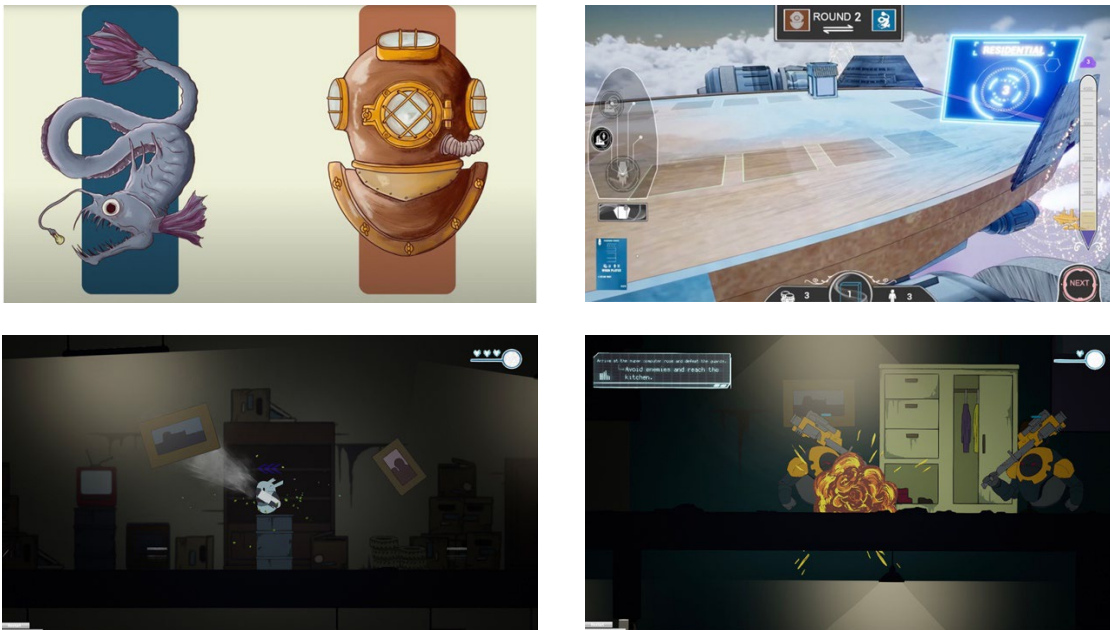


Figure 4: Screenshots from the two game prototypes developed in phase 2 of the case study. Above, screenshots from MIXT. Below, screenshots from CI-3nr.

The final games are products of transnational creative collaboration, co-production and development with the China market in mind. MIXT is a collaborative deck building game designed for two players who are tasked with exchanging and placing blueprints on their shared airship. The gameplay is turn-based with players taking alternate turns during which they buy, place, and exchange cards. One of the game’s ambitions was to directly reflect British and Chinese cultural collaboration within the game, embodied in the presentation of the two fictional nations that the players control. This evolved into a science fiction narrative inspired by the works of Hayao Miyazaki, where the theme of climate catastrophe was explored and players were charged with cross-cultural collaboration to meet the shared challenge. Where MIXT focused on themes of cultural connection and shared aesthetic preferences, CI-3nr took on a more market-focused solution in communication with Steam China. The team selected the Metroidvania genre from the direction given by Steam China and focused on the development of polished platforming and action mechanics. Playing as a cleaning robot called CI-3nr who works for an electronic butler, the game challenges the player to use a variety of vacuum mechanics to gather objects, solve puzzles, and defeat enemies. With CI-3nr the team strove to create a game that would not only address an identified market gap in China, but also minimize potential problems presented by the identified regulatory barriers.

4.2.1 UK-China collaboration on game production.

The shift to fully remote working represented the major difference from phase 1 production, while also aligning with the most likely industrial approach to transnational and post-COVID-19 game development. Given the findings from phase 1 that indicated strong social and communication benefits of co-located working to game creation, the experience of the phase 2 team became a pivotal part of our study with regards our first research question. In practice, we found that the team were able to develop effective working and communication practices, albeit with some recognition of the missed benefits of face-to-face, co-located work:

“We were working you know, with an eight-hour time zone difference between the UK and China. And just with the tools available for remote communication and organisation of projects like Jira, we were able to really keep in contact and check in on each other and get progress you know, uploaded

quickly and give feedback. So, I think we developed camaraderie, but it's different than it could have been if we were in person. When we could, we would try to play games together or just have small catch ups and hear about each other's you know, what's going on our lives?" (Developer Interview)

As identified here, Jira as a tool for project management became central to coordination of tasks across team members, disciplines, and time zones, but other decisions were made to maintain strong communication and a sense of shared purpose. Discord was selected as a tool for asynchronous communication, allowing China-based developers to communicate with each other but also for those based in Europe to catch up and respond to communications at different points in the day. Bi-weekly, time-zone aligned meetings were essential to build testing and sharing of feedback. In line with the literature [17], we therefore observed that creative collaboration could be established and sustained through careful management of communication and team responsibilities. Furthermore, while remote working was identified as being a difficulty, this was interpreted not as a byproduct of transnational UK-China working, but instead related to the wider shifts in the games industry because of the COVID-19 pandemic:

"the remote nature was definitely tough, but it always felt like you know, with the pandemic, the way it's been, and the way to continue to kind of be a part of our lives and, and how the workforce has changed. We're really kind of preparing for this new frontier." (Developer Interview)

4.2.2 Social, political, cultural and consumer considerations in game design.

As with the first phase of the case study, we observed that navigation of cultural and market differences relied as much on the knowledge of team members as it did scrutiny of provided market information or reports. The team reported that, for both games, their analysis of provided and available data served mostly as a starting point for subsequent communication and creative collaboration on ideas that could have potential in the Chinese market. To an extent this could be attributed to the lack of detail in market data, in addition to the sheer scale of the market in China and the diversity of gaming interests, preferences, and market opportunities. As one of the developers discussed with respect to market analysis for CI-3nr:

"I think it was most tough to do our own research other than asking the Chinese team members, like what's popular? What are you playing? What are your friends playing? The Steam China website, it started in May or June of this year. And so there wasn't a lot on the site. So it felt like conjecture about what was going to do well, then it was what has and will do well, so that that was definitely a struggle." (Developer Interview)

Despite working separately and having differing cultural backgrounds and points of reference, the team demonstrated a capacity to quickly identify their own aesthetic and stylistic interests and preferences, coupling this with their own assessment of what was doing well in the market within China. Here, the presence of developers within China, and with experience growing up and consuming media in China, served to bring clarity where other resources were limited. This included establishing an understanding of common ground and linking game concepts and visual styles popular to European audiences to those shared within China, supported by professional insight brought about through connection to a games industry collaborator in Steam China:

"we felt like it would work for both Steam China and Steam Global. Because, some of our main influences were Hollow Knight and Metroid games, and those are historically successful in the West. And with Steam China, they were really pushing to have had Metroidvanias in their market." (Developer Interview)

Across both games, regulation was once again a challenge that was difficult to resolve. While referring to the guidance discussed in the background literature, the team experienced similar doubt and self-censorship of potential ideas. The context of game settings and themes, for instance, was in part informed by team interests and preferences, but also the shift from historical setting to science fiction settings was underpinned by knowledge of the challenges of historical portrayals in games to be published in China:

"We definitely had to keep in mind the regulations in China. And make sure that, that our game wasn't going to, like raise any red flags or anything for the Chinese market... So we did a bit of research into both Chinese and UK markets, looked at documents provided to us. And then, as a group talked about what interests us. So, we wanted something that that felt more kind of sci fi than historical. So, that

that came about from like, just conversations like between the, the European and Chinese students.”
(Developer Interview)

5 Discussion and recommendations

In this study we set out to address questions of how British and Chinese game developers collaborate on original creative projects and by extension to examine the various social, political, cultural, and consumer differences that impact on collaboration, decision-making, and individual developer perspectives. Our case study led to the development of three themes pertinent to future work on cross-cultural game production studies centred on Western-Chinese collaboration: *production practices and transnational working*, *navigating regulations and restrictions*, and *Chinese market and cultural differences*.

From our study we can conclude that differences in production practices may offer only limited challenges for cross cultural working. We found that British and Chinese developers were able to resolve communication issues as part of a typical process of team formation [42]. While close working within a studio was seen as advantageous, the team tasked with international remote working in our study performed as effectively using online communication and project management tools as those teams that were co-located. Importantly, the impacts of COVID-19 on working practices across the games industry in general were referenced by teams working both together on-site and using remote tools. There remain technical barriers to online working with collaborators based in China, owing to state limitations on Internet access with overseas territories. Nevertheless, our study proved that the most commonly use remote working communication and project management tools (such as Microsoft Teams, Jira, and Discord) could be used effectively between teams inside and outside China. Although challenging, we would recommend that international game makers looking to collaborate with partners in China anticipate that remote working practices can be achieved, and also consider building in planned synchronous interactions and team socialization accommodating time zone differences.

We also found that cultural diversity became a clear asset to teams tasked with considering localization and cultural difference, with Chinese developers often volunteering their own experiences of tastes, audiences, and market appeal when discussing design decisions. Sector reports and other evidence of audience preferences and market opportunities provided good insight where preferred platforms, audience preferences, and popular game mechanics were concerned, but this had limitations. Here, true cross-cultural representation *within* teams was clearly of high value. To that end, we would recommend that game studios – and particularly larger, multinational companies – pursue team diversification policies that ensure cross cultural collaboration and communication within creative teams, which multinationals such as Ubisoft have alluded to in the past in the context of promoting cultural sensitivity in development [43].

The most significant challenges to emerge from our study centred on areas of legal and regulatory sensitivity, more so than cultural, market, and production differences. All teams at various stages expressed doubt about what is and is not permitted in terms of game content and expression within China. To a degree, we observed self-censorship and proposed adaptation of content within games where there was ambiguity about regulation for publishing. Some concerns directly stemmed from the explicit legal guidance [21] or knowledge of limitations around factors such as playtime or addiction [26], but often developers referenced media reports that provided less clarity on what was prohibited. More detailed analysis of regulatory difference, navigation of the ambiguities, and further applied test cases are required in order to develop a stronger evidence base for game development teams looking to bring products to market in China. Furthermore, it is clear that there is need for further study of the political and ethical issues that arise when developers engage with the reality of varying degrees of media regulation in targeting markets such as China.

Based on current trends, we can anticipate that the global games industry will continue to be impacted by shifts in game development, publishing, and distribution, as has been documented by Kerr [9]. In particular, the growth of China as both an economic power in the creative industries and as a market for game consumers will present new challenges to game makers and creatives in Europe and internationally. This study has contributed insight from the perspective of game production studies, considering the views and experiences of those involved in developing games both in and outside China, with implications for policy makers, national organisations responsible for supporting international collaboration with China and growth in the games industry, and for game studios with interests in collaborating with or exporting to China.

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