

# Integrating Digital Games and Digital Tourism

## Exploring Consumers' Awareness of Chinese Heritage for Cultural Tourism

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**Abstract**—Digital games have emerged as a significant platform for digital communication, extending beyond entertainment to include in-game advertising, brand communication, and cultural promotion. In recent years, the integration of gaming and tourism has created new opportunities for cultural and heritage tourism marketing, enabling destinations to reach global audiences through immersive digital experiences. This study employs the Chinese action role-playing game *Black Myth: Wukong* as a case study to examine the potential of In-game Cultural Communication (ICC). Specifically, the research investigates three key dimensions: (1) the revitalization and reinterpretation of traditional mythological characters, (2) the use of digital games as a medium for cultural communication and tourism promotion, and (3) the enhancement of cultural awareness and understanding among non-Chinese gamers. An exploratory qualitative research design was adopted, with data collected through a focus group comprising non-Chinese players familiar with the game. The findings indicate that the incorporation of Chinese mythology and cultural narratives contributes significantly to ICC by increasing players' interest in Chinese culture and heritage. Furthermore, participants reported a greater awareness of cultural landmarks and traditions represented in the game, suggesting strong potential for promoting digital tourism experiences. The study highlights how games can serve as effective tools for cross-cultural communication, cultural preservation, and tourism marketing in an increasingly digital society.

**Keywords**—Digital Games, Consumer Awareness, Gamification, Cultural Communication, Digital Tourism

### I. INTRODUCTION

This paper argues that digital games have significant potential as a medium for In-game Cultural Communication (ICC). To illustrate how digital games could incorporate cultural elements may contribute to the development of cultural and heritage tourism, this study adopts the currently popular Chinese game *Black Myth: Wukong* as a case study.

In 2024, the Chinese digital game "Black Myth: Wukong" was launched globally, generating significant excitement and quickly becoming a bestseller on Steam and WeGame platforms. It gathered over 25 million concurrent players on Steam in a month. The game illustrates the ancient Chinese tale "Journey to the West," with the iconic figure The Monkey King - Sun Wukong. The "Black Myth: Wukong" effectively associates with the cultural heritage for digital gaming, showcasing the potential for Chinese myth to resonate within the global gaming market while appealing to a diverse audience of gamers. It has the potential to optimize the tourism industry, as immersive technologies provide tourists with a more immersive experience in local cultures and

customs, promoting a sense of responsibility for sustainability and the preservation of heritage [1].

The commercialization of the iconic figure "Wukong" can be traced back to 1906, with around 170 theatres, films, and television programmes produced in the Chinese-speaking world [2]. This extensive commercialization highlights the significance of the *Wukong* story across various media, illustrating its capacity to resonate with audiences over time and adapt to different cultural expressions. Wukong has been gradually established since 2015, particularly following the release of the groundbreaking Chinese animated film titled *Monkey King: Hero Is Back* [3] to a digital game (See Figure 1).



Sources: (1) <https://www.sucaisucui.com/sucui/00181144.html>  
(2) <https://www.ign.com/articles/black-myth-wukong-review-pc>

Fig 1. The development of the monkey king: from movie to digital game

Meanwhile, current studies [4] indicate that gaming industry have emerged as a significant force within the entertainment sector, with substantial economic and social implications, and the use of digital transformation and gaming for tourism [5] [6]. Researchers began exploring the growth of the Chinese online gaming industry and its associated culture. Notably in China's format, the collaboration between companies and the government to strengthen formal institutions that support online gaming [7]. The launch of "Wukong," with its technological innovations, challenges Kshetri's [7] argument that Chinese digital game industries have struggled to develop new technologies historically. While this game has significantly changes the Chinese gaming industry, government endorsement may shift focus from design to political influences [3]. This shift follows a key revision in regulatory policy, moving from rejection to strong support for the esports sector within the country [8]. Content creators in game industries are advised to avoid topics like fetishization and feminist propaganda to navigate cultural sensitivity and public perception [9]. The

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original Monkey King story has content related to sexism, but "Wukong" aims to mitigate these issues by ensuring female characters are not sexualized [10]. This approach reflects a commitment to positive character representation. Nonetheless, this paper hypothesizes that the in-game cultural communication (ICC) of "Wukong" effectively (1) revitalizes Chinese mythical characters, (2) promotes cultural communication and tourism, and (3) enhances non-Chinese gamers' awareness of Chinese culture.

## II. THE RAPID DEVELOPMENT OF THE GLOBAL AND CHINA'S DIGITAL GAME MARKETS

Significantly, the global game market is projected to grow at an annual rate of 2.1%, reaching an estimated value of \$187.7 billion by 2024 [11]. The broader media and entertainment sectors are expected to increase by 3.4 billion. Revenues from computer station and console games are anticipated to comprise 51%, while mobile games will account for 49%, reflecting a 3% year-on-year increase. Although console game revenues may decline by 1.0%, this could change with the cross-platform release of the AAA game "Wukong." The United States and China are expected to drive nearly half of all consumer spending in 2024.

As "Wukong" is one of the successful AAA games, the game refers to titles developed with substantial production and marketing budgets [12], in the market. In 2023, many AAA games were released, marking a substantial year for gamers which led to increased competition. Notable releases included *Hogwarts Legacy* and *Final Fantasy XVI*. In light of the Chinese market, Cheng and Zeng (2024) observe that while China's digital game industry has undergone rapid growth, high-budget, high-quality AAA games remain relatively rare compared to Western markets. Two major challenges for AAA game development in China are the tension between the free-to-play business model and the large upfront investment needed, alongside widespread negative public perceptions of gaming. Cao and Downing [13] emphasize the contrasting roles of globalization and cultural proximity in two distinct markets: single-player PC games and online games. Their paper highlights two major trends: first, China is poised to shift from being a market primarily for Western games to a regional hub for online game exports. Second, major Chinese online game companies are trying to expand into the country's traditional media industries, a move that may encounter challenges from the authorization. The official launch of Wukong game serves as a milestone for the progress and potential of domestic AAA gaming, while simultaneously showcasing Chinese culture on a global market [14].

In a nutshell, the digital game market is exhibiting slow but steady growth, and global estimates and forecasts offer optimism for this year and the years to come in the gaming industry. However, as highlighted by Heron [15], the gaming industry has developed a two-tier system that identifies between active gamers and passive gamers. Active gamers fully engage with the offerings of the digital game market, whereas passive gamers are merely served as an audience for

the gaming experience. Moreover, Mathews and Wearn [16] also found that friends and family (as passive gamers) are the most trusted sources of digital game marketing among gamers with peer-influence on purchases. This indicates that the opinions of friends and family are crucial in shaping the purchase decision of gamers. In this paper, both active and passive gamers are, to a certain extent, able to receive in-game cultural messages that promote vitalization and inheritance, as well as optimize cultural tourism.

## III. THE IMPORTANCE OF LOCALIZING THE WUKONG GAME

The localization of the *Wukong* game is also crucial for its success in global markets, ensuring that the narrative, cultural nuances, and gameplay mechanics resonate with diverse non-Chinese audiences. By adapting language, dialogues, and cultural references, localization enhances gamer engagement and immersion. For example, O'Hagan and Mangiron [17] highlight that indirect translation in the localization of Japanese games can reveal underexplored dimensions of this economic activity. *Wukong* increases accessibility by offering subtitles in 12 languages along with English and Simplified Chinese dialogue options. It is important to note that the grammatical discrepancies could hinder gamers' understanding of game content and negatively impact the gaming experience [18]. Ehsan and Khoshsaligheh [19] found that ineffective culture-specific language conveyance in Persian leads to localization inadequacies. Additionally, research by Jarrah, Al-Salman, and Haider [20] indicates that improvements in technical performance and language issues correlate with more positive attitudes toward game localization.

Game localization has faced significant challenges, encompassing not only language translation but also cultural adaptation. This complex process is influenced by factors such as technical compatibility, legal and regulatory frameworks, and time and budget constraints [21]. Helmke [22] explored cultural imperialism in the United States regarding the localization of Japanese games, noting that domestic "defense mechanisms" limit the successful cultural export of imported titles. Navigating cultural differences in localization is inherently challenging due to their incommensurable nature, requiring nuanced negotiations of various interests. Effective localization of *Wukong* not only broadens its appeal but also reinforces the cultural significance of its story and iconic figures, allowing gamers worldwide to connect with its themes. This enhances gamers' attachment and is significant for generating revenue and promoting cultural export through social media and interactions.

## IV. GAMER'S ATTACHMENT AND USES AND GRATIFICATIONS THEORY (UGT)

Digital games are a crucial component of popular culture, with researchers examining why gamers pursue specific experiences to study their engagement motivations [23]. Study the participants' motivations in digital games has encountered challenges due to the individuality of each

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gamer, whose reasons for playing can vary widely, from socializing to overcoming difficult challenges [24] [25]. Applying the Uses and Gratifications Theory (UGT), researchers such as Kasirye [26] and Katz, Blumler, and Gurevitch [27] highlight media's role in reinforcing traditional values and satisfying creative and recreational needs. Menon [28] notes that participants select media to fulfill specific social and psychological purposes, including the pursuit of knowledge, relaxation, and social relationship development.

It is important to note that gamers often develop digital relationships and experience emotional intimacy with in-game characters within the game. Current digital games, such as Wukong game, are adept at creating distinctive in-game characters, thanks to advancements in interactivity, audiovisual fidelity, and innovative narrative design. The research conducted by Possler and his colleagues [29] has shown that digital games not only offer eudaimonic entertainment experiences but also facilitate meaningful and insightful interactions for gamers. Further empirical studies have indicated that digital games can motivate gamers [30], particularly in relation to narrative themes [31]. In view of tourism, the digital sensory experience has a potentially positive impact on tourist loyalty, particularly in rural destinations [32]. Although gamers' attachment and UGT are not fully explored in this paper, the successful in-game cultural communication and enjoyment may indirectly suggest that Wukong gamers have a certain level of attachment to the game characters and environments.

#### V. SOCIAL-CULTURAL GAMEPLAY AND CULTURAL COMMUNICATION

Digital games, as a form of interactive media within visual culture, possess the ability to convey elements of mass media and mass culture [33]. Digital games can either reinforce or undermine national historical narratives by challenging how historical events are portrayed on screen [34]. As previously noted, the use of cultural-specific digital games for heritage communication presents considerable opportunities for engaging individuals in the preservation of cultural narratives and resources. As highlighted by several researchers in heritage studies [35] [36], the concept of gameplay conservation emphasizes the importance of heritage as a playable experience, deeply embedded in participants' foundational culture. However, this area of research within cultural and communication studies remains underexplored, both locally and internationally.

Gameplay activities are crucial elements of culture and heritage, with contemporary research increasingly focusing on folk games to trace their origins. Alvarez, Jessel, and Rampnoux [37] explore traditional digital games to highlight their historical significance. Traditional Chinese games, particularly examining cultural elements related to the theme of "flight." A notable case study is the research on *Ghost of Tsushima* in 2020, which investigates how Japanese folklore and legends are communicated through gameplay, especially via "Heikyoku," a traditional Japanese performance art.

Japanese culture is effectively conveyed to both domestic and international audiences through digital games, as designers articulate concepts of national identity, cultural values, and critical issues such as nuclear energy and warfare.

Chen and Woo [38] identified a significant relationship between information output, feedback, and control within the cross-cultural communication functions of digital games. Their findings suggest that digital games improve the efficiency of information communication when compared to traditional media. In addition, the use of digital games to communicate journalistic messages, commonly referred to as "Newsgames," exemplifies the intersection of digital journalism and game studies [39]. Back to the Wukong game, the incorporation of the concept of "Journey to the West", which features interwoven cultural relationships among Chinese mythology, Confucianism, Taoism, and Buddhist folklore, has not only inspired numerous international films, television series, and animations but has also established itself as a cultural touchstone. This has led to the integration of its journey and scenes into various tourist attractions [40].

#### VI. THE VITALIZATION AND INHERITANCE OF CHINESE MYTHICAL CHARACTERS FROM THE "CLASSIC OF MOUNTAINS AND SEAS"

The "Classic of Mountains and Seas", an ancient Chinese mythical manuscript, is a foundational source of mythic storytelling and cultural heritage. It presents a rich tapestry of gods, creatures, and landscapes, and, as a key text in Chinese mythology, it both reflects the beliefs and values of its era and continues to shape modern interpretations and adaptations of its legendary characters. The vitalization of these figures in Wukong game highlights their enduring relevance and the continuous process of cultural inheritance. This fosters a deeper appreciation for China's cultural legacy through digital gameplay.

The application of immersive 3D technologies, exemplified by hyperrealistic digital games such as Wukong game, has become increasingly prominent in various heritage studies. Significant initiatives include the Immersive Cultural Heritage Project, which aims to promote cultural tourism [41], the Cloth Simulation Project focused on traditional Chinese costumes [42], and the Virtual Reconstruction Project for a historical district in Shanghai [43]. Furthermore, a notable initiative by Lo and colleagues [44] use 3D interactive media technologies to visualize and revitalize traditional Chinese martial arts, thereby enhancing the overall experience for visitors at heritage exhibitions. These projects collectively demonstrate the potential of advanced digital technologies to enrich cultural engagement and understanding.

Back to the revitalization of traditional Chinese figures in the Wukong game, Marloes [45] has classified and identified a total of 145 yaoguai (妖怪), which includes 55 key yaoguai and 90 minor yaoguai. As illustrated in Figures 2 and 3, several key yaoguai, such as Guangzhi and Captain Kapla-Wave, alongside minor yaoguai like Lingzhiling, Yajsha

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Patroller, and Snake Patroller, are adaptations derived from the Chinese mythological text *Classic of Mountains and Seas*. This adaptation serves as a foundation for practices of heritage revitalization and inheritance.

In heritage research for tourism regarding the integration of historical resources and digital representations, Zhang and Gupta [46] state that this approach optimally supports the conservation and revitalization of cultural heritage. The *Wukong* game meticulously examines the cultural significance of traditional mythical characters, exemplifying how digital games can facilitate the preservation of Chinese myths. By engaging with these narratives, *Wukong* showcases the potential of interactive media to maintain cultural heritage while appealing to participants. Incorporating digital heritage elements in games is expected to enhance knowledge exploration in digital game studies and sociocultural studies, providing valuable insights into effective methodologies for digitizing cultural activities.

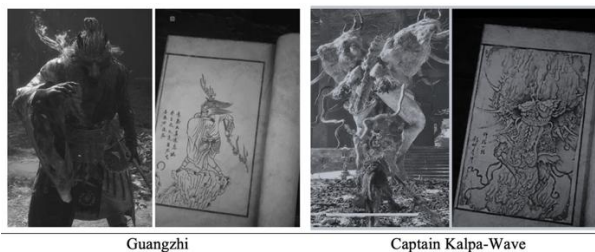


Fig. 2. The key yaoguai in the Wukong game

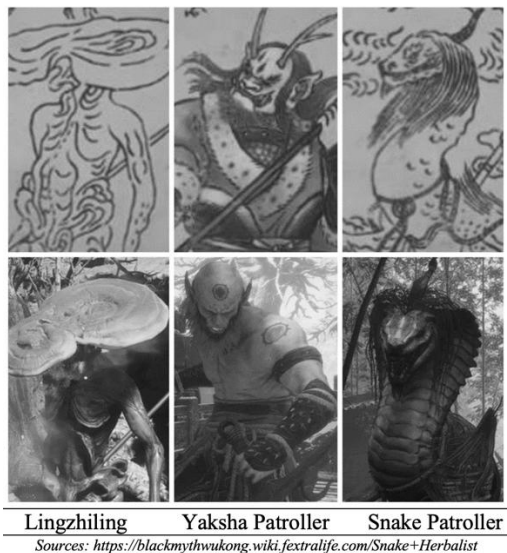


Fig. 3. The minor yaoguai in the Wukong game

## VII. THE USE OF "DIGITAL TWIN" IN DIGITAL GAMES FOR CULTURAL COMMUNICATION AND DIGITAL TOURISM

A "Digital Twin" is a virtual representation of a physical object, originally developed in engineering to enhance understanding of design and implementation through its virtual counterpart. This concept enables simulation, analysis, and optimization via data integration and modeling [47]. Recent studies [48] [49] demonstrate that hyperrealistic virtual displays, including digital twins, significantly enhance

cultural heritage preservation and museum practices. The *Wukong* game effectively transforms numerous historical locations in China into the virtual realm, creating high-fidelity visual representations that serve as "Digital Twins," enriching storytelling and communication within the game.

Numerous research projects [50] [51] [52] have been launched to digitally preserve tangible cultural architectures and artifacts. For example, Issini [53] implemented a proposed visualization method aimed at revitalizing the Yaquing section of the Great Wall of China. An online article titled "Explore Shanxi with Black Myth: Wukong" [54] highlights numerous actual locations in Shanxi, China, represented as digital twins within the *Wukong* game. For instance, as shown in Figure 4, the article features the Hanging Temple of Hengshan and the Yungang Grottoes. Additionally, several other attractions, such as the Fogong Temple Wood Pagoda, Qu Yuan Temple, Jingzhou Ancient City Wall, and Chongfu Temple, have also been digitized as forms of digital twins for gamers worldwide.

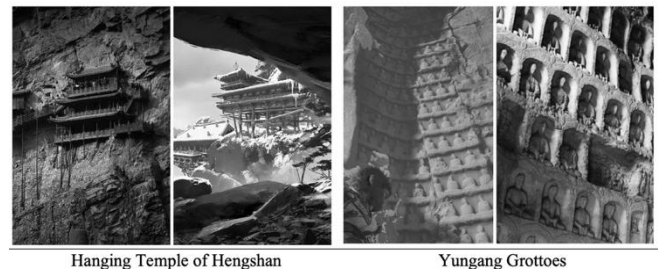


Fig. 4. Digital twins of actual tourist spots in the Wukong game

The development of a digital twin model has the potential to enhance tourism products, increasing competitiveness within the industry [55]. The immersive environment, defined by digital twin technology, is expected to significantly impact society, providing participants with immersive experiences that connect virtual and physical environments in tourism [56] [57]. The COVID-19 pandemic accelerated the emergence of digital twins in tourism, highlighting the need for innovation. This shift has fostered green and digital development within the European Union's economy, promoting resilience and sustainability in tourism practices [58]. These advancements are redefining how experiences are created and consumed in the industry [59].

Creating an effective immersive experience through digital twin in a tourism platform is crucial for the success of digital tourism [60]. This approach not only enhances participants' engagement but also facilitates a more immersive and interactive exploration of destinations, thereby enriching the overall tourist experience. It is important to note that several global travel websites, including Trip.com [61] and TripZilla.com [62], have also highlighted actual travel destinations featured in the *Wukong* game, encouraging visitors to explore these real locations. The digital twin representations of China's historical sites have garnered considerable international attention. It is expected that enable tourists to preview real-world experiences, enhance on-site engagement, relive past

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journeys, and, in some instances, serve as substitutes for actual travel [63]. In addition, digital twins are increasingly playing a significant role in promoting religious tourism [64]. Thus, this paper aims to explore how in-game cultural communication (ICC) can promote Chinese mythical culture and tourism to non-Chinese gamers.

#### VIII. NON-CHINESE GAMERS' AWARENESS OF IN-GAME CULTURAL COMMUNICATION (ICC) FOR DIGITAL TOURISM

Digital games and their environments can serve as effective media for conveying promotional messages for brands and products, a phenomenon known as in-game advertising. Given that game environments comprise scenes, images, videos, and text, they possess the potential to become a preferred medium for enhancing brand awareness. This research examines non-Chinese gamers' awareness of Chinese cultural communication through the "Wukong" game. Therefore, this paper borrows the foundational concepts of brand awareness, specifically focusing on the factors of brand recall and brand recognition, which are adapted to heritage recall and heritage recognition. As illustrated in Table 1, heritage recognition refers to gamers' ability to recognize and distinguish cultural elements during gameplay or after encountering game characters, while heritage recall pertains to gamers' ability to remember specific cultural messages or historical/mythical stories when prompted during the ICC process. Effective ICC depends on the cultural awareness of digital gamers during gameplay.

TABLE I. MODIFIED MODEL OF BRAND AWARENESS [69] FOR HERITAGE AWARENESS

| Heritage Awareness                               |                                                                     |
|--------------------------------------------------|---------------------------------------------------------------------|
| Heritage Recognition<br>(at-point-of-game scene) | Heritage Recall<br>(cultural message and historical/mythical story) |

Both heritage recognition and recall significantly influence gamers' perceptions of ICC and their cultural awareness. An earlier study by Smith and his colleagues [65] on in-game advertising demonstrated that gamers exhibit positive potential in terms of enhanced brand recognition and recall for commercial products. Although this research does not seek quantitative evidence of heritage awareness, the concepts of heritage recognition and recall will be incorporated into the focus group inquiry through open-ended questions.

In addition to researching gamers, Gangadharbatla [66] has defined active and passive gamers for various research purposes. Active gamers are those who are actively engaged in playing, while passive gamers are individuals who spend time watching others play digital games. Moreover, active gamers interact with media in a dynamic manner, interpreting their experiences through their own perspectives during gameplay. Although this research does not include passive gamers as participants, the indirect comments from family members and friends associated with the active gamers (the participants) will also be considered.

#### IX. RESEARCH METHODOLOGY

This paper employs an exploratory research methodology involving a focus group of 11 non-Chinese participants, including the facilitator. The aim of the exploratory research in this study is to provide insights into the use of ICC to enhance gamers' awareness of Chinese heritage. Qualitative inquiry is utilized to examine social-cultural relations and describe the realities in gamification experienced by the target group of respondents. The focus group interview was conducted on an online discussion platform (a WhatsApp group). Open-ended questions are employed to gather qualitative data, facilitating more in-depth findings from focus group interviews. Data analysis is conducted using conventional content analysis and grounded theory to generate new insights and develop a theoretical framework based on the collected data. However, it is important to acknowledge that qualitative research may not represent the general opinions of the population due to its limited sample size. Instead, this research aims to offer insights and a deeper understanding of the influential factors of ICC, which can inform future large-scale studies.

Non-Chinese gamers are the primary focus in participant recruitment, as they may not possess a comprehensive understanding of Chinese culture and its elements. In addition, these participants should also be frequent and sophisticated gamers who demonstrate a high level of participation in online forums. Their responses are inherently valuable for exploratory research, providing insights that are less influenced by preconceived notions of the cultural context. Snowball sampling was utilized to recruit participants for the focus group. A total of 6 male and 4 female non-Chinese gamers were invited from the target population associated with two international online forums dedicated to the game "Black Myth: Wukong", they are (1) Steam Community; and (2) TechPowerUp Forum. During the discussion, the facilitator refrained from influencing the participants by providing minimal personal input regarding the research topic and the dialogue. After collecting data from the focus group interview, discussion threads were compiled to generate a transcript. Through the derivation of codes and categories from the transcript, new insights emerged and were systematically categorized. This research employed grounded theory to analyze the data using systematic procedures, thereby developing a theoretical framework without preconceived notions or hypotheses.

#### X. DISCUSSION AND FINDINGS

The focus group interview was conducted on an online discussion platform (a WhatsApp group) on 10 October 2024, with 10 non-Chinese gamers and 1 facilitator. Three of the participants are British, four are American, and the remaining three are from Southeast Asia (Indonesia, Singapore, and Malaysia). The three areas of inquiry are significantly discussed and explored in the focus group: (1) Inquiry into non-Chinese gamers' awareness of ICC; (2) Inquiry into in-game mythical characters for cultural vitalization; and (3) Inquiry into the in-game digital twin for cultural communication and tourism. The discussion and findings of these three areas are as follows.

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### Inquiry on Non-Chinese gamers' awareness of ICC

Six participants, predominantly from British and American backgrounds, emphasized the significance of authenticity in Wukong game. They agreed that games characterized by high levels of authenticity are more conducive to ICC, as gamers are likely to perceive their gameplay experiences as genuine while playing.

American Gamer 07: *"The game feels incredibly real. Even though the control system is pretty standard, the scenes and details are so lifelike that I found myself thinking I was actually in China."*

All participants in this study have reached the stages of heritage recognition and heritage recall. Notably, non-Chinese gamers are able to remember specific cultural messages and even recall the historical and mythical meanings associated with them. The ICC process in the Wukong game is actively enhancing gamers' cultural awareness. Below is an example from a British gamer.

British gamer 02: *"I can recognise the keeper, Tudi, the old man of information. He appears repeatedly in the game scenes, and I know he is a traditional Chinese god associated with knowledge."*

Despite the enhancement of the cultural awareness of active gamers, the passive gamers could also be a part of this ICC process, an American gamer has indicated that her family members keep describing the cultural elements during her gameplay.

American Gamer 07: *"My dad really knows more about Chinese culture than I do. He visited China when he was younger, and he keeps bringing up the places and objects he saw back then. Some of them he can even name—it's pretty amazing!"*

The researcher found that the Wukong game effectively enhances non-Chinese gamers' cultural awareness by enabling them to recognize and recall cultural elements and their meanings. One contributing factor, as noted in the previous section, is that the Wukong story is a well-known Chinese mythical narrative within non-Chinese communities. The cultural elements associated with this story have been widely disseminated through films, animations, novels, and other media prior to this engagement.

### Inquiry on in-game mythical characters for cultural vitalization

In terms of engagement, all participants expressed that they have been introduced to Chinese mythical characters and culture through gameplay. Their understanding of Chinese cultural concepts has significantly improved, particularly through interactions with the "personalities" of different yaoguai, the environments in which these creatures are situated, the distinct weapons they wield, and the manner in

which they are portrayed during gameplay. This phenomenon is clearly indicated among British and American gamers, as they frequently expressed their views during the focus group discussion. The transcripts of both American and British gamers are as follows:

American Gamer 05: *"The yaoguai are super interesting! They have such unique personalities, totally different from what I've seen in Western games. These yaoguai are all tied to their environment and weapons, which feels like a really Chinese way of blending everything together."*

British Gamer 02: *"It took me a bit to grasp it, but those creatures (yaoguai) are all connected to their surroundings, innit? I've got to suss out the environment, get the lowdown on their nature, and then I can reckon how they'll strike."*

The underlying reasons may be that participants from Southeast Asia share certain cultural similarities. In addition, as active gamers of the Wukong game, participants indicated that, to enhance their control over the game, they actively seek out cultural and historical backgrounds related to the Wukong myth from external resources. The cultural awareness of gamers has been significantly enhanced among the participants in this research. This suggests that the incorporation of in-game mythical characters for ICC is effective in promoting the revitalization of Chinese culture and mythology. However, participants also expressed concerns regarding the lack of detailed and accurate explanations of Chinese philosophy and mythology within the Wukong game, which hinders their ability to effectively predict the story flow. A South Asian gamer has expressed his view as follows:

Southeast Asian Gamer 08: *"It really need to know a bit background of the Chinese myths, after my search in other channel, the Wukong is not a single out myth, but interact with Chinese philosophy and history that the game has not provided."*

This is not simply a language issue in localization [17] [20], but rather a cross-cultural communication issue in digital gaming [38]. Lee and Sah's [67] research has indicated that, compared to European participants, Southeast Asian gamers are more concerned about background objects and information. In this regard, game developers should consider incorporating additional cross-cultural background information specifically for non-Chinese gamers.

### Inquiry on the in-game digital twin for cultural communication and tourism

Similarly, 8 out of 10 participants, particularly all Western gamers, agreed that in-game cultural communication effectively increases their interest in visiting the actual locations represented in the digital twin of the Wukong game. Based on their prior gameplay experiences with Asian small-scale games (e.g., Japanese games), gamers may not fully

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recognize the significance of ICC and digital twins as potential means of facilitating cultural tourism, as they perceive game scenes merely as elements of the game environment or narratives constructed by the game developers. The transcripts of the gamers are as follows:

British Gamer 01: *"Before that, I had no idea that those game scenes corresponded to real physical locations. I looked it up online, and the game scenes (digital twin) is indeed a replica of an actual sightseeing spot. I'm keen to visit and see it for myself!"*

Southeast Asian Gamer 010: *"I cannot believe the game scenes are so real like the physical places. I want to see it with my own eyes because I was defeated by yaoguai there!"*

Echoing Li and Kumar's study [48], the hyperrealistic virtual displays in the Wukong game scene potentially enhance awareness of actual cultural heritage. It is interesting to note that passive gamers, as explained by Gangadharbatla [69], are more effectively engaged in promoting cultural communication and tourism. This can be illustrated by the dialogue of an American gamer.

American Gamer 06: *"My family was watching me play the game, and they didn't really care about how I was winning. Instead, they kept talking about the incredible Chinese scenes and saying they wanted to go there on a trip."*

The findings of this research align with the perspectives of current researchers [55] [56] indicating that the development of digital twin models holds significant potential for enhancing the tourism industry.

## XI. CONCLUSION AND IMPLICATIONS

This paper explores the potential of revitalization of Chinese mythical characters and promotes cultural communication and tourism through digital twins. Findings indicate that *Wukong* significantly improves cultural awareness among non-Chinese gamers, who recognized and recalled cultural elements and their meanings, particularly regarding the diverse "personalities" of yaoguai, their environments, and unique weapons. This integration serves as an effective ICC mechanism, promoting the revitalization of Chinese culture and mythology. Additionally, the use of hyper-realistic virtual displays in *Wukong* may enhance awareness of actual cultural heritage, suggesting that digital twin models could significantly benefit the digital tourism industry.

One significant factor, as previously noted, is that the *Wukong* story is a well-established Chinese mythical narrative within non-Chinese communities. The cultural elements associated with this narrative have been widely shared through various media, including films, animations, and novels, prior to this engagement. Therefore, this study

suggests that a more comprehensive and detailed approach to ICC is necessary for cultural elements and narratives that have not yet achieved widespread dissemination. This includes considering the level of authenticity and incorporating additional cross-cultural background information specifically tailored for non-Chinese gamers. This form of communication has the potential to foster the integration of digital gaming and tourism practices. Moreover, game developers must take into account criteria such as game genres, graphic styles, content, and overall quality before implementing ICC, as these factors can profoundly influence gamers' perceptions. In addition, Seyitoğlu and colleagues [68] suggest that augmented reality and virtual reality could disrupt service quality and the tourist experience. While their research emphasizes promotion and consumer communication via digital games, it is vital for practitioners to address these potential negative impacts. Engaging with these insights can help ensure that integrating digital technologies enhances the overall visitor experience rather than detracting from it. To tackle with this issue, the use of the Community of Practice (CoP) in tourism, as articulated by Lee [69], practitioners can leverage their professional expertise in the creation, collection, and dissemination of both explicit and tacit knowledge to promote intangible cultural heritage.

Nonetheless, the use of digital game, as indicated by Araújo and Toubes [70], is one of the emerging trends that shapes the future of tourism practices. Game concepts, content, and commentary are increasingly shared across various digital entertainment platforms, such as TikTok, Instagram Reels, and YouTube Shorts. These platforms play a crucial role in promoting traditional Chinese myths and culture, effectively serving as a form of soft power on a global scale. The significance of various productive communities in the game heritage process can contribute to a more diverse discourse on heritage [36] for digital tourism practice. To successfully implement ICC, budget considerations and return on investment (ROI) are critical factors, as creating digital twin models within game environments for digital tourism can be quite costly [71].

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