This paper provides a micro-perspective on the business activity of VR content production in China’s digital creative industries. It is based on two case studies in the form of semi-structured interviews with the founders of Pinta studios and Sandman studios. Questions concerning the development of sustainable VR content production in China are raised. This article employs the framework of business model canvas (BMC) to describe and analyse business models by exploring the dynamics and initiatives of VR content enterprises from 2016 to 2019. Research with Chinese VR content enterprises provides an opportunity to rethink many of the opportunities and challenges confronting Chinese VR content creators as they seek to implement this disruptive technology to engage consumers and adapt to the huge market in the future. Based on fieldwork research for these two case studies, exploring the dynamics and initiatives in the process of VR content production in China, the article finds that the need for specific and sustainable business models for VR enterprises represents a significant challenge. The paper concludes with some comments on the acquisition of ‘open literacy’, this time at enterprise level.

Keywords: Virtual Reality; Business Models; Business Model Canvas; Content Production; China

On October 19th, 2018, China’s President Xi Jinping sent a congratulatory letter to the 2018 World Conference on VR Industry (WCVRI 2018) in Nanchang by acknowledging the pivotal role of VR technology for China in the future. The president said:

At present, a new wave of science & technology innovation and industrial revolution is booming, the gradual evolution of virtual reality (VR) technology has augmented human’s perception and changed the forms of the products and service models. China is committed to promoting high-quality development, and widely providing applications of new technologies, new products, new formats, and new models in various fields. China is willing to strengthen international cooperation in the field of virtual reality, with a view to share development opportunities, innovation outcomes for an intelligent and beautiful future. ¹

This was not the first time President Xi Jinping publicly engaged with VR. At the opening ceremony of the 2016 Business 20 (B20) summit in Hangzhou (Fetham, 2016; Xi, 2016), he noted that China needs to establish an innovative world economy by developing new technologies. Xi’s speech was viewed as a positive indicator for the VR industry. His statement also resonates with the Five-Year Plan (2015–2020). In this document the state identified strengthening VR together with establishing an ecosystem of modern information technology and industry.² Echoing the kind of disruptive rhetoric found from various government

¹ The full letter from President Xi Jinping to WCVRI 2018 in Chinese can be found at http://www.caict.ac.cn/xwdt/hyxw/201810/t20181022_187337.htm.
² The 13th Five-year plan blueprint was announced by the State Council of China; more details can be found from the official website: http://www.gov.cn/zhengce/content/2016-12/27/content_5153411.htm#.
policies and speeches, and stimulated by massive injections of capital from both government and venture, VR became a hot concept, pursued by different stakeholders and participants ranging from grass roots to the tech giants such as Baidu, Alibaba, and Tencent (Hanson, 2016; Park, 2017; Steiber, 2017).

Compared with developed nations such as the United States, the development of VR in China is relatively nascent. Although the year of 2016 was called ‘Year one’ of VR in China, VR is not a new term as its history can be traced back to the birth of the Sensorama in 1962, an arcade-style theatre cabinet invented by an American, Morton Heilig (Gigante, 1993; Hanson, 2016, p. 19; Kalawsky, 1993). In the following decades, this immersive technology was developed unevenly by scientists including the American computer scientist Ivan Sutherland and Myron Krueger (Kalawsky, 1993, p. 21). It wasn’t until 1988 that the term ‘Virtual Reality’ was coined by the US computer scientist and the founder of Visual Programming Language (VPL), Jaron Lanier.

In China, the first recorded mention of virtual reality in academic publishing occurred in 1992 within the field of computer science, virtual environments, and VR technologies. In 2000, it began to appear more regularly. According to the analysis provided by CNKI database, a limited number of articles discussed VR until 2014. By that year, when the social media platform Facebook invested US$2 billion into purchasing Oculus, virtual reality had appeared 848 times. By 2019, the number had skyrocketed to 2164 (see Figure 1). The interest of Chinese researchers and scholars in VR exponentially increased from 2014 to 2016. It is noteworthy that the growth curves of the Chinese VR market and Chinese articles on VR from 2015 to 2017 are similar (see Figure 2). The boom in VR from academia to the market in China suggests that its momentum is likely to persist in spite of China’s VR technology’s relatively late start.

VR has witnessed various challenges in the past several years when a large number of entrepreneurs have been attracted to invest in the area (Wang, 2016). The deficiency of VR content and professional distribution channels resulted in bankruptcies of a large number of domestic VR enterprises with broken capital chains (Steiber, 2017; Wang, 2016; Wu, 2016). A similar situation also happened with US tech giants Oculus and Google as they announced that they would shut down their VR story studios in 2017 and 2019 respectively (Roettgers, 2017, 2019). Instead of making original VR content, the VR giants Oculus and HTC Vive chose to support outside creators and start-ups to create immersive content by providing investment and establishing global networks for them to access (Jiang & Huang, 2018; Roettgers, 2017). This revised strategy points to the opportunities for VR content studios or VR content start-ups as these content creators may become the main force behind VR content in the future, rather than the tech giant enterprises. Meanwhile, the news from Oculus and Google also weakened the confidence of venture capitalists for VR content production and left a more difficult commercial situation for the struggling VR content creators. This outcome illustrates that global VR content enterprises have undergone structural changes involving a shifting of their power to encourage small and medium enterprises (SMEs) to create VR content instead of creating content

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Figure 1: The Metrological Visualization Analysis for the published articles with the key word of virtual reality in CNKI.

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1 CNKI (China National Knowledge Infrastructure, 中国知网) is a key national information construction project. See WIKIPEDIA: https://en.wikipedia.org/wiki/CNKI.

2 Search for the articles by using the key word “虚拟现实” in CNKI http://new.gb.oversea.cnki.net/index/.
themselves. The quality and quantity of VR content available to users remain a barrier to mass consumer adoption of VR (Cellan-Jones, 2016; Morris, 2015). Based on my fieldwork in China, this article identifies a need for specific business models for enterprises. As games, animation, and films are presently the dominant sectors of VR usage and production in the creative industries, can VR content creators adapt their business models for their own production? Do current business models promote or hinder Chinese VR content production? How might they earn enough profit to keep running and producing content?

This article analyses two VR content enterprises based in Beijing as case studies to examine the business models of Chinese VR content enterprises by interviewing the founders of Pinta studios and Sandman studios in July 2019. The VR enterprises Sandman studios and Pinta studios provide examples of the dynamic relationship between VR content production and business models. Both of these studios focus on developing immersive VR entertainment experiences with similar capacities, and both were established in 2016. VR works that they produced have been nominated for the 74th and 75th Venice Film Festivals. From 2016 to 2019, these two studios, together with their contributions with content production and public activities, disrupted the paradigm of traditional content production and business models by using VR technology. Compared with traditional digital content, such as animation, films, and videogames, VR content employs a different narrative strategy and represents a different experience for audiences (Milk, 2016). Therefore, VR content production also brings forward a new artistic medium and present emerging dynamics of original content production to other digital creative economies.

Motivation for creating VR content
Writing about China’s media revolution, Donald, Keane, and Hong (2002, p. 4) note three important aspects of media research: economic, social, and creative practices. As VR is a new immersive medium, it is interesting to examine the motivations for creating VR content from these perspectives.

China has been a popular target for cultural and media studies because of its huge market potential and rapidly developing technology (Keane, 2016; Peng & Keane, 2019; Su, 2019; Wen, 2017). In 2019, China had more than 800 million internet users. Apart from the large population, China also showed its market potential in the 2018 Global Online Shopping Festival. According to Alibaba’s December Quarter 2018 Results, the Gross Merchandise Volume of the 11.11 Global Shopping Festival held by Chinese e-commerce giant in 2018 set a new record of US$30.8 billion (RMB 213.5 billion) within 24 hours. This was double what American consumers spent on Cyber Monday.

5 See the report released by China Internet Network Information Centre http://www.cac.gov.cn/wxb_pdf/CNNIC42.pdf.
consumers spent on Cyber Monday and Black Friday combined in 2018 (see Figure 3) as Alibaba’s online monthly active users reached 666 million according to their 2019 report.

When discussing the future of VR in China, Eddie Lou, the founder of Sandman studios, emphasized the advantage of the domestic market and low labour costs (Justine, 2019; Lou, 2018; Niels, 2018). Given the demographic dividend and market potential, China is regarded as the most important country to drive VR adoption worldwide (Damiani, 2018; Farre, 2019; Hanson, 2016; Merel, 2018; Steiber, 2017). The market potential offers VR content creators an unprecedented opportunity to show their creativity or to start a business and engage in producing various VR content formats: animation, film, games, and VR theme parks (Farre, 2019). In the domain of economics, Chinese VR creators have high expectations for the VR markets in the future.

The central Chinese government supports the development of cultural creative industries, not only for economic reasons but also as a way of protecting domestic cultural development from the ‘invasion’ of Western culture products, including drama, films and advertising (Keane, 2009). Using the games industry as an example, Steam, the global video game distribution platform, has been blocked in China since 2017. This is possibly due to the restrictive censorship regulation and commercial protection to ensure the advantages for domestic businesses (Chalk, 2017; Messner, 2019). Steam China launched as a partnership between Valve and Perfect World in 2019, but it is independent of Steam, which means that the games on Steam will not initially be released on Steam China (Chalk, 2019). An identical situation also occurred in the VR market. The Play Station VR (PSVR) HMD, for example, is a significant base for VR game markets in western countries. However, it is banned in China along with other global entertainment platforms such as Google

![Figure 3: The total amount of online sales for Alibaba, Black Friday, Cyber Monday, 2012–2018. (Alibaba, 2019).](https://en.wikipedia.org/wiki/Steam_(software))

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6 Steam followed the Chinese government order to block many of Steam’s functions in December 2017. More details please see the introduction about Steam China in WIKIPEDIA: [https://en.wikipedia.org/wiki/Steam_(software)](https://en.wikipedia.org/wiki/Steam_(software)).
Shan: Virtual Reality in China

Play and Oculus (Zhang, 2017). The final impact of resistance to non-Chinese enterprises is uncertain. There is no doubt that protectionism will, to some degree, provide advantages for the domestic enterprises by reducing the competition (Keane, 2016), but at the same time it removes the innovative pressure of global competition.

In addition to the market potential and domestic protectionism of cultural production, the will for China to resume its historic status as a powerful nation calls for high-quality, original creative content. With growing economic, political, and military power, China is making great strides to establish the branding of 'created in China', to move from its image as a low-cost manufacturing nation towards that of 'a strong cultural nation' (Keane, 2006; Peng & Keane, 2019; Wen, 2017). The great leap of tech giants such as Baidu, Tencent, and Alibaba (BAT) clearly illustrates China's strong digital and technological power (Su, 2019). On the other hand, 'soft power', a term first coined by Nye (1990), also plays a decisive role for building the strong state image:

If a state can make its power seem legitimate in the eyes of others, it will encounter less resistance to its wishes. If its culture and ideology are attractive others will more willingly follow...soft power in contrast with the hard command power of ordering others to do what it wants (Nye, 1990).

Even though the Chinese government has realized the importance of Chinese soft power to improve their international image and reputation, the outcomes of their effort have not yet been realized (Keane, 2016; You, 2018). In the global context, numerous studies have attributed the reason for the low competitiveness of cultural products such as films, TV drama, and animation to strict censorship (Keane, 2006, 2007, p. 151; 2016; Peng & Keane, 2019). However, VR, as a potentially unparalleled tool to create digital content, is still in a grey area, unaffected by national censorship. This relative freedom from government constraints provides an entrepreneurial opportunity. At present there is no specific censorship for the distribution of VR content from any departments under the central government (according to an interview with Eddie Lou in Beijing). It follows that the creativity of VR content is not hindered because of such political factors, giving VR content creators an advantage. Various well-known international film festival such as Venice, Sundance, and Tribeca have launched a VR competition section, to encourage VR content creators and to explore the future of films (Bradley, 2017). The newly launched competition also offers global content creators an equal opportunity to compete.

Driven by the potential of consumer markets, protectionism, the urge to improve Chinese soft power, and zero censorship for VR content, VR content creators are committing themselves to content production with the aim of obtaining value; self-actualization. Notwithstanding the motivations illustrated above, what supports China's VR enterprises to produce VR content? Is there a business model or even multiple models that are sustainable or stable for them to pursue their values?

The dilemma of VR content: a tale of two VR studios

The passion for VR content production and potential growth of the VR market led to the birth of Sandman studios and Pinta studios. There are many similarities between them as they were both established in 2016 and the founders are both young entrepreneurs who have worked in China's two major e-commerce platforms: JD and Alibaba respectively. They have received a series of international film festival awards including from the Venice Film Festival. They even work in the same building, which is situated in the Chaoyang District, Beijing. In an interview with the founders Eddie Lou (Sandman's CEO) and Lemony Lei (Pinta's CEO), it was found that the relationship between the two studios is more like collaboration than competition. When they accepted the interview for this article, the two CEOs sat down together in a meeting room and talked like friends. Lei said:

We are perhaps the only independent VR studios who still insist on producing original VR narratives in China. We need to be together to keep warm.

On the other hand, the close relationship between Pinta studios and Sandman studios suits the current difficult stage for VR in entertainment applications.

Lei and Lou's close relationship provides an explanation for the open business model used by VR content enterprises in China. Osterwalder and Pigneur (2010, p. 14) and Chesbrough (2007b) have described a 'business model' as a rationale of how an organization creates and captures value. Based on this definition, the open business model, which was coined by Chesbrough (2003), emphasizes systematic collaboration
with outside partners. Although Sandman and Pinta have many similarities, they also have different resources, backgrounds, and business activities. Lou once studied in the UK and worked in APEC (Asia Pacific Economic Cooperation), supervising multilateral communication and partnership with global tech enterprises (Shen, 2017b). This background experience helped him to develop a professional, global network with key resources in the VR industry. Lei’s team is mostly from tech giants such as Tencent and Alibaba, together with the well-known Chinese animation enterprise LCA (Light Chases Animation). As such, Pinta is more professional in animation production and IP monetization. With their different backgrounds and resources, they can look for commercial opportunities with multiple perspectives for exploring business models.

Despite its popularity among consumers, content creators and government organisations, VR content has proven difficult to monetize. Reliable revenue models are still needed. Lu Yihe, a VR-focused analyst at the Chinese research company iResearch says: ‘Even the best Chinese VR content company is struggling to bring in profit and income to its team’ (Xiao, 2017). The value of VR content for achieving market substantially depends on the number of users who have VR equipment. The sales of VR headsets will rely on high-quality content which is available on VR streaming platforms (channels) to attract consumers. Yet, VR content can be sustainably produced only if VR content creators earn enough profit from their VR content. Therefore, the VR market is facing a ‘chicken and egg’ dilemma (Iram, 2016). The symbiotic relationship between content and technology is a necessary development to overcome these problems (Abbasi, Vassilopoulou, & Stergioulas, 2017).

Disruptive digital technology is stimulating the creative industries by generating various kinds of new creative platforms and sectors, including new forms of artistic and creative expression, new business models, and new tools for creative practices (Abbasi et al., 2017; Leovaridis & Bahna, 2017). At the same time, business strategies will depend partly on the nature of the creative entrepreneurs, who are highly self-motivated with a complex desire for ‘recognition, status, self-actualization, lifestyle, as well as material rewards’ (Carter, 2018; Cunningham, 2006; Hartley et al., 2012, p. 93). Hence, both disruptive technology and the particularities of creative entrepreneurship have generated a proliferation of business possibilities in response to the dilemma of VR content production in China.

Based on the framework of the ‘business model canvas’ (see Figure 4), together with interviews from the founders of two VR content enterprises Sandman studios and Pinta studios, an analysis of business models employed by Chinese VR content enterprises can be explored and examined from three broad directions: customer relationship, infrastructure management, and product innovation (Osterwalder & Pigneur, 2010, p. 61).

![Business Model Canvas](image-url)

**Figure 4:** Business Model Canvas (Osterwalder & Pigneur, 2010, p. 44).
The Creative Trident in VR: Customer Sector, Customer relationship, and Channel

Customers are at the centre of any business model because they have the power to deliver value to both enterprise and business model innovation (Osterwalder & Pigneur, 2010, p. 20; Teece, 2010). In the interview with Lei and Lou, they both said that instead of focusing on original content production, there are many VR content enterprises that have started to outsource assignments from government organisations and companies in order to resist a ‘cold winter’ of VR.

To understand this predicament, Higgs and Cunningham (2008) refer it as the ‘creative trident’ i.e. three distinct occupational groups among creative workers. These are:

- Workers with a creative occupation working in a cultural sector (e.g. an artist in an opera);
- Workers having a creative occupation but working outside the cultural sector (e.g. a designer in the car industry);
- Workers having a non-creative occupation and working in the cultural sector (e.g. a secretary in a film production company).

The purpose of the creative trident is to show the true economic extent of the creative economy, rather than confining it to content-creators in the arts sector. However, this article suggests that the model also provides a way to explain various customer segments that VR content enterprises serve, showing how they are working with different dynamics and purposes, especially by providing VR technology and content for industries outside the traditional creative industries sectors.

VR technology is a revolutionary medium which has been widely injected into a broad range of applications including entertainment, advertising, education, marketing, and museum displays (Braester, 2004; Champion, 2006; Leovaridis & Bahna, 2017; Psotka, 1995). The customer segment of VR content enterprises in China can therefore be divided into three groups: consumers, companies, and government. Encountering difficulties of capturing value from the consumer market, most of the VR content enterprises have adjusted their business strategy to solve problems for organizations in order to achieve a reliable revenue. The strategic evolution from Business to Consumers (B2C) to Business to Business (B2B) application and Business to Government (B2G) occurred in several VR enterprises such as Jaunt VR, Veer VR, and other small size VR enterprises, because of limitations to their growth caused by an immature VR market and unprofessional distribution platforms in China. However, this limitation is also a concern, because serving government organisations and other companies to solve specific problems results in VR content enterprises producing little of their own intellectual property. The main problem with the fewer opportunities of producing original VR content is a financial issue that pushes VR content creators to work outside of the cultural sector.

Different enterprises serve different customers (see Figure 5). For example, Sandman studios has started to accept B2B customers in order to manage its financial difficulties. According to Lou, Sandman studios started taking B2B business from the second half of 2018:

_We don’t reject to work with the business from other companies. However, it’s hard for us to select a suitable one. There are some principles and barriers for us to decide if we accept the business or not. The revenue will be considered firstly. Besides, we will also consider the long term development question such as will the output of the B2B project be reused for the original content production of Sandman studios in the future._

Sandman’s selection of customers reflects a tension between the business model and content production in the studio’s business logic. Due to financial pressure, Sandman has to broaden its customer segments to work outside of the creative sector. They also require high standards for choosing the organizations they serve, to ensure sustainable development.

In contrast to Sandman, Pinta studios refuses to undertake outsourcing assignments, focusing instead on producing original content. With the advantage of a reputation gained by being selected for a nomination from the Venice Film Festival and having experience with IP monetization, Pinta studios completed the Pre-A round led by the Houde Qianhai Fund in 2017 (Tian, 2017) with RMB10 million (US$1.4million). With this higher financial support, Pinta insists on producing original content for the general audience. Lei mentioned a situation he found with years of experience in VR content development:
The process of creating cultural content indeed satisfies the content creators including me. However, when the content has been produced, the mission for content creator is to find the best way to show and commercialize it to the public. It’s really challenging to us because of the unmatured market, the unprofessional publisher and the incomplete online and offline distribution channel in China. Therefore, we don’t stick to our original idea of focusing on producing VR content any more, now we are exploring the possibility of AR (Augmented Reality) technology as well.

Confronting the financial pressures resulting from the 'chicken/egg dilemma', different enterprises evolve different strategies to develop sustainable businesses for developing VR technology and content: B2C, B2B and B2G. However, excessive reliance on business associated with government and companies weakens content-creativity and gains limited value from the intellectual property generated (Keane, 2006). A flexible dynamic to balance the relationship between artistic value and revenue stream is formed in the evolving VR market by setting high standards for choosing the organizations to serve as well as broadening the business from VR to AR applications. In the process, the different choices of VR content enterprises are also shaping the landscape of the VR ecosystem in China.

**Open innovation: Partners, Activities, and Resources**

Chesbrough (2003, pp. 21–50) drew attention to the ‘open innovation’ approach to solving practical problems. His evolutionary perspective contrasts with the ‘closed innovation paradigm’ which refers to the situation where organizations keep R&D output or intellectual property in a frozen or closed condition within the firm, in case they leak advanced technology out of the company and into another competing organizations. However, closed innovation is gradually being replaced by the open innovation paradigm, thanks to a growing division of labour in an open, free environment with freedom (Chesbrough, 2007b). Observed from the aspect of a broader knowledge landscape, the value of the open innovation paradigm is to build an open global community and establish a more efficient process, harnessing ideas from a broader set of agents, to generate new knowledge and value in various areas.

Alongside the open innovation paradigm of ‘creative destruction’ in content production, co-production and co-creation are occurring across different creative industries (Banks & Potts, 2010; Keane, 2006; Peng & Keane, 2019; Zhao, 2011). For VR content production, the dynamics of co-creation and co-production between different countries and organizations are the key to unlock each enterprise’s potential by creating various forms of cultural products. Besides producing VR content, Eddie Lou also contributed to the VR industry by organising China’s first and largest immersive media festival, known as Sandbox Immersive Festival (SIF). With a background of working in APEC, Lou networked with partners from different industries who once worked with him, to organize the SIF together. The first SIF was held in the city of Qingdao, Lou’s...
hometown, in 2018. In the interview with Lou, it emerged that the original idea for establishing SIF came after he attended the Sundance Film Festival. He thought China should have its own VR festival for VR content creators. He defined SIF as a ‘resource docking platform’ for VR professionals, which could help Chinese original VR content to spread beyond China and guide global VR content creators to understand China. As the organizer of SIF, Lou made great effort to utilize his resources from different organizations, partners, and personal networks. SIF finally won financial support from Qingdao Municipal Government and invited guests from the global VR industry, such as HTC Vive, Oculus, BBC VR Hub, and Venice Film Festival. Nearly 50 immersive artworks from 13 countries were featured, produced by studios such as Baobab studios and Felix & Paul. All of these outcomes have made SIF become influential in China and beyond. When discussing the guests in SIF2019, Lou joked:

If the yacht for SIF2019 welcome party sank, the global VR content ecosystem will be over. Because the people who are top in the area of VR content from all over the world were almost all there that night.

SIF received strong support and endorsement from the government and international partners, many of whom have established a partnership with Chinese VR enterprises after SIF. The process of open innovation predominantly occurs in an interdisciplinary community, consisting of people from different backgrounds (Chesbrough, 2003, p. xi; Wen, 2017). Instead of competition, the strategy for China’s VR enterprises is to utilize the open innovation paradigm to share their knowledge, networks, and resources with the latent partners from different areas to co-create artistic, economic, cultural, and social values. Even though the history of VR in China is short, China has its own advantages for VR adoption in the future. Lou once expressed the necessity of global collaboration for the global VR content ecosystem in the international conference VR NOW Con & Awards. He said:

I do see a challenge or a problem that we have to tackle with a global view because right now most of the technology companies are based in Bay area. While we (China) also have a couple of technology companies which produce hardware, headsets, but a lot of patents actually belong to the US. While in Europe they have a whole bunch of creative people who always have different ideas or even crazy ideas which they want to bring into virtual reality to create very compelling content experience…… China has a very big market but it’s uneducated or very raw. What can China offer? It’s just like what I said is its huge potential. (Lou, 2018)

In short, Lou maintains that the global VR content ecosystem should work together between countries, each with their own advantages. As he explained, unlike the US and European countries, China’s competitive advantage is its massive potential consumer market and low-cost labour. However, will they become positive actors to improve the cultural and creative influence of VR content in the global context? The answer can be found from observing the film industry in China. In a recent study (Peng & Keane, 2019), the authors maintained that China’s domestic box-office success does little to promote China’s soft power outside the mainland. The same lesson may be learned from other sectors of creative industries, such as the games and animation industries. With the resources accumulated by SIF, and lessons learnt from China’s creative industries, Lou started to use the model of co-production with his international partners as a strategy to improve the cultural influence of the original VR content made by Sandman studios.

At SIF 2019, Lou and his content team released two VR artworks called Taiji, and Mandala. These stories are based on traditional Chinese culture. Mandala is co-produced between China and France, and was the first immersive VR drama in China. The co-production was based on co-creation with arts funding provided by France. Both the Chinese and French teams participated in the script writing process. Thomas Villepoux, from Paris, was the director of this drama. Sandman studios played a significant role with content production and business development. Similar to the process of movie co-production described by Peng and Keane (2019), collaboration and co-production between multiple countries have become a necessary condition for the transfer of creative idea, technology, knowledge, and professional skills.

Relying on the advantages of ‘huge market potential’ and ‘low-paid labour’ will not effectively help Chinese VR content enterprises to create cultural and creative values in the global context. However, they can become a key resource for local VR content enterprises to share with global partners, to exchange their knowledge based on the open innovation paradigm. Co-production is a good strategy for VR content enterprises to create value. However, the question is, what kind of role will Chinese VR content enterprises play in co-production? The assignment of Chinese VR content enterprises will decide if the local VR content creators have the ability to capture value and sustainably produce high-quality content.
Ideal and Reality: Value Proposition, Cost structure, and Revenue stream

*All over the place was six pence, but he looked up at the moon*.

*The Moon and Sixpence* recalls the writings of the English novelist Somerset Maugham. This book has influence among Chinese hipsters (wenyi qingnian) who are standing at the crossroads of ideal and reality. This novel tells the story of Charles Strickland, a conventional stockbroker who abandons a wealthy and privileged life to devote himself to create art. Coincidentally, this story echoes the dilemma facing young people who are working on VR content production in China, with their sense and identity of entrepreneurial and artistic adventure. Do they settle for sixpence, or yearn for the moon? The rise of China’s economy in the past decades has greatly impacted young people’s minds, occupied by the movement of ‘mass entrepreneurship and innovation’, ‘maker motivation’ and the urgent desire to ‘become rich overnight’. On the other hand, many voices argue that the cultural construction of soft power in China is far away from great success in economic, political, and military areas (Keane, 2006; Peng & Keane, 2019; Shambaugh, 2013). For this reason, President Xi Jinping in the 19th National Congress of the Communist Party of China stated:

> As socialism with Chinese characteristics has entered a new era, the principal contradiction facing Chinese society has evolved. What we now face is the contradiction between unbalanced and inadequate development and the people’s ever-growing needs for a better life.

This announcement is a clear shift, indicating that the promotion of Chinese soft power is no longer just a national strategy but also an intrinsic demand from Chinese society. Meanwhile, production incentives for VR content creators are gradually transferring from an economic to cultural-driven focus.

Value creation and value capture are two core pillars of a business model (Baden-Fuller & Haefliger, 2013; Chesbrough, 2007a; Chesbrough & Rosenbloom, 2002; Osterwalder & Pigneur, 2010, p. 14). The term ‘value’ has a number of existing meanings, including symbolic, cultural, social, and economic (Carter, 2018). In the business model canvas, value is conceptualized as the reason or incentive for why customers choose the product or service provided by enterprises (Osterwalder & Pigneur, 2010). However, such understandings contradict the ‘value’ that Chinese VR content enterprises aspire to achieve in this developing period. Pushed by their unparalleled experience of VR production, Lou and Lei left their previous privileged jobs to devote themselves to VR. Their career choices reflect the ideological transformation of China from ‘made in China’ to ‘created in China’ (Keane, 2006). They are well educated, experienced, and ambitious to produce original content, even though the actual business is struggling. They represent those young people in China who could have a stable work with a good salary, but they choose the ‘moon’ and give up the ‘sixpence’. However, who will pay for their decision?

When talking about the cost structure of VR content production, Lei said:

> The 12 minutes VR animation, The Dream Collector cost 2 million RMB. Most of the budget was spent on the labour costs and office rental.

In return, being nominated by the Venice Film Festival brought a great opportunity for the revenue streams of Pinta and Sandman. The revenue streams can be listed as:

1. Advertising: e.g. Placing an advertisement as part of a scene in the film.
2. IP monetisation: Cooperating with other platforms (e.g. Alibaba) to sell movie-related items.
3. Content merchandising such as:
   - Online distribution: Selling interactive VR content via online platforms (e.g. Oculus, HTC portal, and Veer).
   - Offline distribution: Selling interactive VR content via VR cinemas, VR LBE (location-based entertainment), and VR theme parks.

With his background of working for Alibaba, Lei tried to leverage the original IP with Taobao to launch a crowd-funding project with the aim of launching movie-related merchandise, such as bags, umbrellas and dolls (Shen, 2017a). However, there is a lack of professional domestic distribution and the audience size is

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7 For an extensive discussion of this see http://www.gov.cn/zhuanti/2017-11/14/content_5239477.htm.
still limited. Even then, fewer consumers would pay for movie-related merchandise. Therefore, most of the revenue is from advertising (Dai, 2017). In the interview, Lou conceded that it’s still very difficult to earn enough revenue with their current business model. As such, VR content enterprises in China still rely on money from venture-capital investment and art funding. However, the excessive dependence on venture capital and official funding contributes to the uncertain and precariously developed VR enterprises. They still need strategies to overcome their current financial crisis.

**Conclusion**

Do Chinese VR content enterprises as yet have a sustainable business model? The answer is almost certainly no. Based on the framework of BMC, the result of the business model analysis on both Sandman studios and Pinta studios is that they have not yet formed a complete business model. The consequence of having an incomplete business model pushes them to take outsourcing assignments and transforming the business aim. However, a flexible approach that seeks to balance the relationship between artistic value and revenue stream is emerging to maintain competitive content and avoid the problem of gaining little return from the intellectual property generated.

Currently, VR content enterprises in China tend to employ an open innovation paradigm instead of a competitive relationship to develop business models. The process of exploring various business activities has generated many business strategy possibilities for them to overcome their current difficulties. Even though many people use the terms business model and business strategy interchangeably, there are some differences between them. Compared to business models, business strategy focuses on solving problems that have already happened such as sustainability, financial, and goal setting issues. On the other hand, evolving business strategies reflect the strong will and rising influence of this new generation of content creators in China as they struggle to deploy and apply new technologies and related cultural content such as VR.

It seems from the experience of practical problem solving among young Chinese creative entrepreneurs like Eddie Lou of Sandman and Lemony Lei of Pinta that ‘open innovation’ needs to be accompanied by a concept of ‘open literacy’, applied not to individuals but to enterprises. Start-up companies seeking to develop creative content and new meanings for both Chinese and global audiences have to learn how to ‘read’ the opportunities, limitations and market-knowledge within the time and place in which they operate. They must learn to navigate uncertainty in an agile way, from their context and the experience of other creative professionals. Such ‘open literacy’ at enterprise level is not frequently studied in creative and cultural industry scholarship. This study suggests that although the business models adopted for VR in China are not yet sustainable and have not resulted in commercial success either for VR or for the company, they cannot be considered a failure, because the companies have improved their ‘enterprise literacy’. In an open, collaborative environment, they and their competitors can learn from their strategies for dealing with technical, market and creative challenges.

**Competing Interests**

The author has no competing interests to declare.

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