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2022 WHITE PAPER ON GLOBAL BRANDING STRATEGY & FASHION INDUSTRY

THE COMMERCIAL VALUE OF CULTURE FROM A GLOBAL STRATEGY PERSPECTIVE

CEIBS-SHUI ON GLOBAL BRANDING STRATEGY AND FASHION INDUSTRY RESEARCH FUND

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Preface

With the world in the grip of COVID-19 over the past three years, VUCA (volatility, uncertainty, complexity, and ambiguity) has become a buzzword used to describe people's confusion, puzzlement, and mistrust in these turbulent times. There has been heated discussion among individuals and businesses on how to deal with or adapt to VUCA.

While it is true that individuals and businesses alike find "uncertainty" off-putting and shy away from it as much as possible, the reality is that with change comes opportunity. Looking beyond the near term, we will find certainty in uncertain times; by tracking trends and seizing opportunities, individuals or businesses become better positioned to succeed in a VUCA world. In this context, we delve into how cultural consumption thrives on new technologies and models, as well as how it permeates everyday life, soothes our souls, and creates value in an era of rising consumerism.

Over the past four decades, China's consumer market has been booming. Between 2014 and 2019, consumption was the main driver of China's economic growth each year. In 2019, China became the world's second-largest consumer market. Consumers are maturing quickly as the consumer market moves from scarcity to abundance. In recent years, after reflecting on excessive and conspicuous consumption, Chinese people have shifted focus from instant gratification to long-term happiness and fulfillment, and from material and functional needs to intellectual and cultural ones. Among them, Gen Z consumers constitute a force to be reckoned with. China's Gen Z has reached about 260 million in total. As they enter the workplace, their spending potential will be continuously and powerfully unleashed. Growing up in a highly diverse consumer environment, Gen Z individuals spend money on self-gratification and seek emotional solace through social activities, raising the bar for cultural content offerings.

In 2022, the consumer market was hit hard by the resurgence of the Omicron variant, more stringent industry regulation, growing pressure on economic growth, and international political conflicts. Since then, VUCA has quickly become a buzzword capturing the inescapable realities of life that everyone can experience. Prevented from moving freely by the COVID-19 policy, people gained a more profound longing for intellectual and cultural fulfillment. Their interest in cultural consumption, capable of enriching consumers' intellectual and cultural life, hit an all-time high. According to a 2022 nationwide survey by the CEIBS-Shui On Global Branding Strategy & Fashion Industry Research Fund, when choosing cultural products and services, respondents value the meaning of life, a sense of belonging, and happiness above all else.

Based on the above trends, cultural consumption will come in a dizzying variety of patterns. Nevertheless, there has been a consensus among government, industry, and people about effectively cushioning the epidemic's impact and continuously promoting high-quality economic development. It is essential to make every effort to stabilize and expand household consumption, drive the recovery of the consumer market, and unleash purchasing power. As a crucial indicator of consumption upgrading, cultural consumption, which falls into several categories, possesses great potential and sustainability. The concept can play a significant role in adjusting the consumer market, promoting industrial transformation, and upgrading the national economy.

Faced with new trends and opportunities, CEIBS is taking concrete steps toward "boosting China's economic development and building a platform for international exchange" by giving full play to its own strengths. In an ever-changing business landscape, Shui On Xintiandi adheres to its "cultural strategy" of improving its core competency in the long run. It has initiated the "Creative Campfire" project and collaborated with consumer groups keen on culture, art, fashion, and lifestyle to build a borderless OMO community while exploring new cultural consumption patterns. The CEIBS-Shui On Global Branding Strategy & Fashion Industry Research Fund was established to leverage the School's academic strength and Shui On's industrial resources. In 2022, the Research Fund focused on cultural consumption. It partnered with brands, companies, and platforms to develop cases on cultural brands popular with young consumers, host forums, and launch RSLM-based programs to unlock the potential of cultural consumption and share the business lessons learned. In doing so, the two parties hope to provide more inspiration for brands, companies, and platforms in China and abroad.

Prof. Yuan DING
Vice President and Dean, CEIBS

Allan ZHANG
Chief Executive Officer, Shui On Xintiandi

Introduction

This *White Paper* focuses on cultural consumption among young people for two reasons. For one thing, cultural consumption can satisfy both material and cultural needs in the post-COVID era. For another, young people, who have been more affected by COVID-19, see the pandemic as the first big hurdle in their lives. In terms of keeping track of cultural and consumption trends, they are the forerunners of cultural consumption in the post-COVID era.

The CEIBS-Shui On Global Branding Strategy & Fashion Industry Research Fund initiated a research project on cultural consumption among young people in collaboration with China Youthology, a consulting firm that digs deeper into Chinese youth and youth culture from a sociological and anthropological perspective. We have conducted research at both the societal and individual levels. At a societal level, changes in consumer perceptions and behaviors should be accounted for by values and self-identity in the context of social relations. At the individual level, we have tracked the evolution of individualization across generations to analyze how young people's values have changed in the post-COVID era.

To provide a wide range of perspectives in our qualitative research on youth anxieties and expectations, we have conducted in-depth interviews with five experts in urban culture, art curation, and brand culture, in addition to 16 consumers. To test the validity of our qualitative research hypothesis, we have conducted an online survey covering 1,000 people nationwide.

Our research sheds light on young people's three primary needs for cultural consumption: an "inspiring", "immersive", and "empathic" consumer experience:

The term "**inspiring**" means that young people marshal new resources to improve their ability to connect with the present and increase their confidence to withstand future risks. In their quest for self-improvement, they proactively seek in-depth and systematic knowledge through cultural consumption while gaining enlightenment and inspiration from leisure activities.

The term "**immersive**" means that the blending of art and technology in the consumer environment can create immersive and stimulating sensory experiences. In particular, cyberspace, including the metaverse, can transport consumers into a parallel universe starkly different from the real world. For brands, a digital experience can effectively compensate for the limitations of going offline. The products and marketing scenarios associated with a virtual experience can be designed to extend and complement an offline experience.

The term "**empathic**" means that young people seek to integrate offline cultural consumption scenarios with real-life experiences or make cultural consumption part of their everyday lives. People with different lifestyles and values can be brought together through smart venue design.

Aside from the "grand narratives" about consumer trends and the "petty narratives" about consumer values, much of this *White Paper* is devoted to corporate case studies. After all, it is companies that sell their products and services to consumers. Without corporate case studies, there would be a disconnect between the grand narratives and the petty narratives. We also hope that our consumer insights, based on market research, consumer data, and case studies on top brands, will provide a clear picture of industries, categories, consumers of all ages, and business trends.

This *White Paper* presents a number of case studies on how brands, companies, and platforms capitalize on the above-mentioned three needs from the perspectives of "Chinese Creativity", "Technological Empowerment", and "Local Culture", with a view to providing some lessons for more companies interested in cultural consumption.

"**Chinese creativity**" is the core competency of companies in setting Chinese fashion trends, branding, and venturing into overseas markets. Many prominent brands have used historical and cultural knowledge and oriental aesthetics not only to provide consumers with an enjoyable experience but also to convey the historical and cultural implications of their products. The second chapter presents two case studies on LABELHOOD and ERDOS. LABELHOOD is an incubator for China's avant-garde designer brands. Since its inception, LABELHOOD has been committed to incubating promising Chinese designer brands and bringing distinctive Chinese-style designs to more consumers. After over ten years in operation, LABELHOOD has evolved into an experiential community connecting avant-garde fashion designers with young consumers with its own retail outlets and content matrix. Eastern aesthetics is not only the underpinning for the design philosophy of LABELHOOD brands but is one of the defining themes of the events LABELHOOD hosts. ERDOS Cashmere Group is China's leading cashmere product company, operating for more than 40 years. In recent years, it has made multiple attempts at brand rejuvenation. In 2022, it collaborated with LABELHOOD to open an offline boutique. The partnership is a perfect example of enhancing a Chinese brand's image by giving it a futuristic twist. At the end of this chapter, Jiang Qionger, a designer, artist, founder of the "SHANGXIA" brand, and a member of the CEIBS-Shui On Global Branding Strategy & Fashion Industry Research Fund Advisory Committee, offers her insights into the modern twist on traditional Chinese aesthetics.

"**Technological empowerment**" is the foundation for providing consumers with "immersive experiences", such as sensory immersion and augmented reality. This chapter presents a research report on the metaverse (VR/AR) industry and a case study on Pimax Technology. The report provides a bird's eye view of the metaverse (VR/AR) industry, covering industry evolution, industry chains, and some key companies. The case study on Pimax Technology, a company led by a CEIBS alumnus, describes how it has grown from scratch to become a leader in VR hardware through crowdfunding and co-creation with the community while setting out the challenges and tough choices it faces. At the end of this chapter, Ding Lin, a CEIBS AMP alumnus as well as the founder and chairman of Shanghai MLS Culture Communications Co., Ltd., shares the story of how the mlsArt team has leveraged technology to curate an immersive art exhibition.

"**Local culture**" aims to evoke consumers' true feelings in consumption scenarios. In the eyes of young people, local-culture-based business innovations create a connection between individuals and culture, thus expanding the boundaries of the term "local". Such business innovations provide young people with new knowledge and in-depth experiences that bring out their true feelings. Local culture has become a new highlight of cultural consumption. In this chapter, the UCCA case study describes how it serves a new role of contemporary art in business and public life. UCCA has launched different commercial ventures, such as UCCA Lab, UCCA IP, XINTIANDI × UCCA: RanRan young artist incubation program, The Shanghai Municipal Commission of Commerce × UCCA: Night Dimension - Night as Prelude art exhibition, UCCA Store, and UCCA Kids. In an interview, Evan, the founder of Kaiji Teahouse, a young teahouse brand, explains how each of his stores is designed based on the characteristics of the block in which it is located. He also shares his views on attracting young consumers by balancing the youth culture and traditional culture in product development and visual design, as well as creating a cozy in-store atmosphere.

The introduction provides an overview of the 2022 *White Paper on Global Branding Strategy & Fashion Industry*. To get the most out of this *White Paper*, please review the case studies in the context of the changing consumer landscape to ensure your branding campaign keeps up with the times.

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A STUDY ON YOUNGER GENERATIONS' CULTURAL CONSUMPTION

Background

CEIBS-Shui On Global Branding Strategy & Fashion Industry Research Fund has collaborated with China Youthology to study the cultural consumption trend dominated by younger generations in the post-pandemic era.

WHY NOW

During the three years of the COVID-19 pandemic (2020-2022), we have lived in a new normal and risk society with uncertainties. This has reshaped young people's attitudes to life, their ways of expressing themselves, and their social skills.

WHY YOUTH

Young people want to be proactive and change-makers. Influenced by the COVID-19 pandemic, younger generations in today's society have also developed new opinions and values. Therefore, it is worth studying the post-pandemic evolution of cultural consumption opinions among younger generations who have grown up in a highly diversified cultural consumption environment.

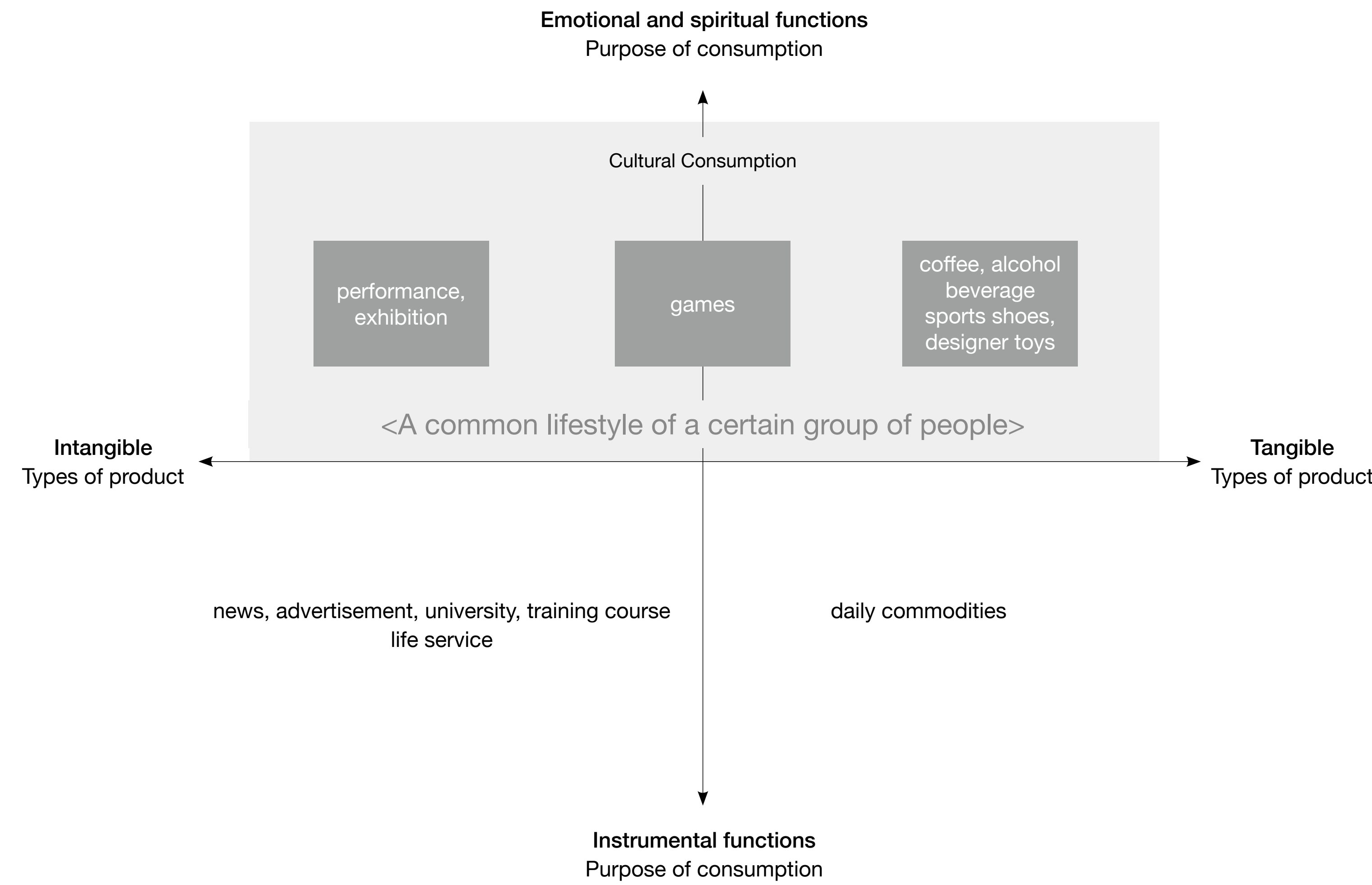
WHY US

Integrating CEIBS's academic resources and Shui On's industrial resources, the CEIBS-Shui On Global Branding Strategy & Fashion Industry Research Fund focuses on studying the Chinese market. The Fund engages in academic research and case development. It also organizes various activities to connect brands, companies, and platforms, such as forums and tailor-made courses. The Fund aims to study the success of international brands and support the growth of Chinese brands. By promoting cross-industry communication, the Fund wants to contribute to Shanghai's prosperous future as an international metropolis and to the growth of companies and brands around the world.

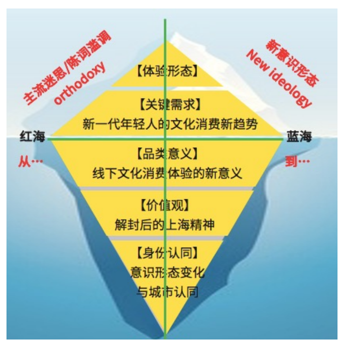
China Youthology, rooted in sociology and anthropology, is a leading research and innovation consultancy in China. It focuses on researching the younger generations (**15-35** years old) in China. With the vision of "Empowering Youth-Driven Change", China Youthology aims to align business innovation with youth-driven trends. It wants to build a bridge between brands and young people, develop business insights, promote strategic innovation, and walk hand in hand with young people into the future.

Cultural Consumption: Definition

Cultural consumption refers to the consumption of tangible or intangible goods and services with primarily emotional and spiritual functions. It conforms to a common lifestyle of a certain group of people.



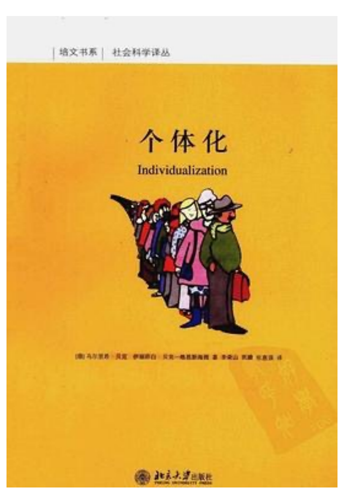
This study is built upon two theoretical frameworks: the Iceberg Model ensures the systematicity of the study, and the Individualization Theory ensures its modernity.



The Iceberg Model systematically explores consumer demand.

The Iceberg Model. Copyright © Beijing China Youthology

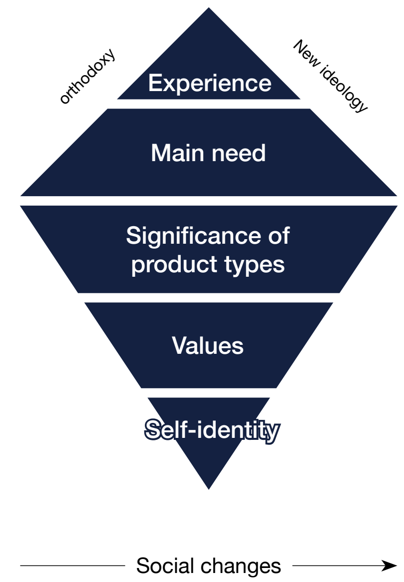
The Iceberg Model is a cultural illustration model that explores people and cultures from a holistic view. It aims to understand the cognition, behaviors, and changes among a group of people. Its underlying logic is that people's needs are determined by their values and self-identity, of which the changes can only be understood in a macro context of their social relations.



The characteristics of postmodern younger generations are accurately described based on the Individualization Theory.

Ulrich Beck (15 May 1944 – 1 January 2015) was a German sociologist, and one of the most cited social scientists in the world during his lifetime. His work focused on questions of risk society, individualization, and globalization. His main publications include Risk Society (1986), and Individualization (2002). His Individualization Theory is both a holistic view of modern society and an interpretive theory. It goes beyond the narrow questions that sociology (a single social science) traditionally addresses, explaining the concept of modernization. This theory raises three questions that individuals (independent from social systems) usually have to deal with. (However, if viewed in the conventional social system context, these three questions do not require answering by individuals.)

This study uses the Iceberg Model to systematically explore new possibilities for cultural consumption in the post-pandemic era.



The main content of the study
New trends in young people's cultural consumption
Growing significance of cultural consumption in the post-pandemic era
Young people's anxieties and desires in the post-pandemic era
Young people's new ideology in the post-pandemic era

The Iceberg Model. Copyright © Beijing China Youthology

Framework 2

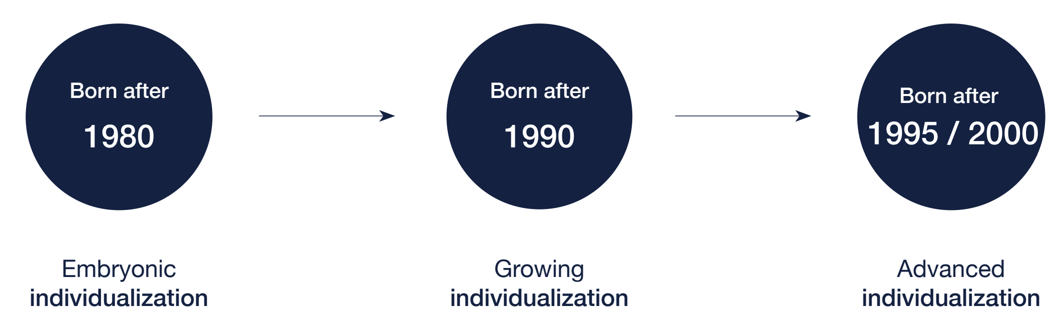
Combining the Individualization Theory with Youthology's study on the evolution of individualization through generations, this study explores young people's value changes in the post-pandemic era.

Three questions every individual needs to answer

Who am I?	What kind of life do I want?	What is my relationship with others?

China Youthology's study on the evolution of individualization through generations

Youthology is committed to studying the culture of Chinese young people from the perspective of "individualization".
Younger generations in China, from the 1980s to the 2000s, have gone through a complete evolution process of individualization.



Qualitative methods:

A. China Youthology database of basic research

Since 2008, China Youthology has been studying Chinese young people aged between 18 and 35. It continuously provides insights and observations on younger generations by publishing systematic studies on individual groups born after 1980, 1990, and 2000. The study results are updated each year in China Youthology's annual reports. This study uses the results from the latest 2022 Annual Report.

China Youthology's basic research cited in this study

B. Expert interview and fieldwork

To ensure that the study's findings are representative, qualitative research for this study was conducted from multiple perspectives and involved a wide range of respondents. The researchers interviewed five experts from city culture research, art exhibition planning, and brand culture construction. Our investigation also included in-depth interviews with 16 consumers and online questionnaire surveys.

Eight groups of two-people interviews with **over eight** online responses collected

In-depth interviews with **12** males and **12** females

Five in-depth expert interviews

C. Questionnaire-based survey with respondents across China

In addition to qualitative research methods, the researchers also distributed 1,000 questionnaires to respondents from nearly 30 provinces. The respondents came from 16 industries, and the male-to-female ratio was approximately 2:3.

A sample description of 16 interviewees during the field research

Demography
New Shanghai youth with good cultural tastes and broad perspectives

Young and curious
Young people born in the 1990s and the 2000s (aged 20-32)

Educated and international
Bachelor's degree or higher; with experience studying or living abroad

Pursues high quality in both material and spiritual life
Financially well-off: students with monthly disposable income above RMB 4,000 (on average); office workers with monthly disposable income above RMB 10,000 (on average)

Cultural preferences
Persistent explorers of cultural consumption

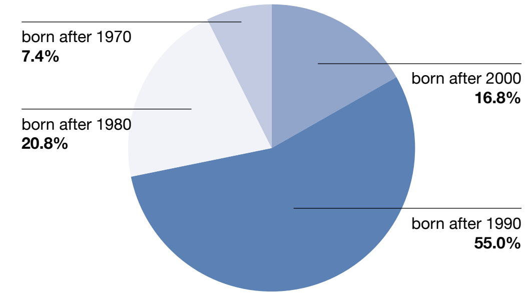
Curious about culture; adept in areas of interest
(the researchers selected four types of popular cultural consumption)

Live music: 2 groups	Theatrical performance: 2 groups
Art exhibition: 2 groups	Wine culture events: 2 groups

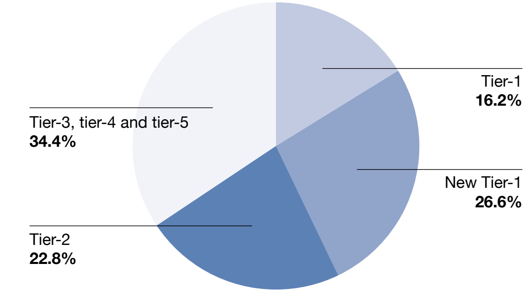
City explorers who pursue immersive cultural experiences
Continuously active participants in cultural events even in 2022 (a year packed with frequent COVID-19 lockdowns); pursued online alternatives to offline cultural experiences during lockdown periods

Sample description of 1,000 respondents to the online questionnaire survey

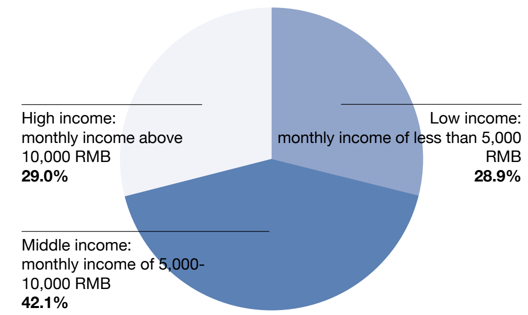
Ages



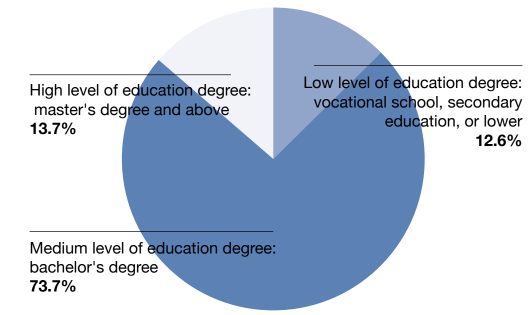
Residential cities



Income



Education level



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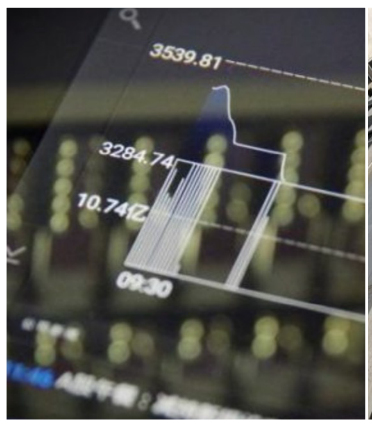
"Our Generation" Characteristics of Youth in the Modern World

Facing a tide of global modernization, China was late but fast. The "speed of China" drastically enlarged every person's possibilities in life, accelerating individualization among Chinese young people.

The COVID-19 Pandemic Macro-environment

The COVID-19 pandemic
made “uncertainty” a certainty in everyone’s life.

We face uncertainties in every part of life: career development, family decision-making, entertainment, consumption planning, and social events.



Economic turbulence: Sino-US trade war

Insecurity in housing and investment: real estate crisis

Women’s rights still need improving

The desire to return life to the right track during the pandemic

Young people have become increasingly aware of the limitations of superficial success. They are searching for the meaning of life by trying to understand holistic society and the world.

Working for internet giants provides new opportunities?

It gives you a 996 excessive work lifestyle!

“China Speed” & “China Creation”?

We say “NO” to exhausting competitions!

Livestreamer, the preferred job among young people born after 1995?

It enlarges the gap between the rich and the poor!

Refuse to work in the public sector and live a predictive life?

Let me be a civil servant!

The pictures are all from the Internet

A Study on Younger Generations’ Cultural Consumption

Qualitative methods: basic research and fieldwork

CEIBS / SHUI ON XINTIANDI / YOUTHOLOGY

Anxieties of today’s young people

Who am I?

Unable to see a meaning of life: find a direction and set a purpose

The old pattern of career development determined by social networks and efforts was left paralyzed by COVID-19. No one can show today’s young people how to develop their careers.

Systematic problems in work have emerged, with well-educated young people starting to think more about the meaning of life and work.

What kind of life do I want?

Feeling a lack of control in life: bring daily life back on track, and keep a keen eye on opportunities and risks

Inevitable lockdown as a pandemic prevention measure may occur at any time, making life more uncertain.

The road ahead is ambiguous, with unknown risks. Young people must be prepared for the future, both materially and emotionally.

What is my relationship with others?

Social withdrawal: Feeling not understood, lacking deep connections

Young people with different life experiences, educational backgrounds, and values may disagree with each other. Such disagreements may turn into conflicts in an unstable era.

Young people are struggling to build deep relationships with others or find soulmates, even with people who share common interests.

Young People’s New Vision

Young people are reallocating their resources and becoming more resilient. They expect to live in the present while preparing for future risks.

Building internal resilience

In today’s world, it is difficult to pursue something newer, better, or stronger.
Thus, young people are looking for the inner meaning in their lives, seeking things that **make them feel comforted and valuable** in the present.
To protect the things they love, young people are also developing a higher risk awareness.

Reallocating resources

People fell into the trap of consumerism in the days of consumption upgrading.
Today, they have started to **reflect on excessive consumption** and **reallocate their available resources**.
They are learning to focus their limited resources on where they will obtain the most substantial returns.

New action plans

Who am I?
Superficial success worship has been abandoned.

Now Explore diversified values
Acquire knowledge that can help with navigating changes and finding one's true self

A disabled man in rural China inspires disillusioned youth


Seeking inner peace through exercise

What kind of life do I want?
Social-class and identity-label worship has been abandoned.

Now Reflect on "unnecessary" consumptions
Return to the authenticity in life


A short return to the countryside: Tieniu Village

Duozhuayu: a second-hand goods market

What is my relationship with others?
Desire soul connections.
Prefer to get along with those with common interests.

Now Be open-minded
Build interesting, comfortable, and high-quality relationships


The emergence of easy sports with social functions:
the popularity of ultimate frisbee


Unleash creativity: improv theaters

In the "new normal" brought about by the COVID-19 pandemic, the world is full of uncertainties, and the future is ambiguous. Young people today are more willing to live in the moment and enjoy where they are.

Now Seek the inner self: strike a balance between "living in the moment" and "preparing for potential risks".
Focus on the authenticity of life and live every day to the fullest.

A Study on Younger Generations' Cultural Consumption

Quantitative methods:
questionnaire survey across China

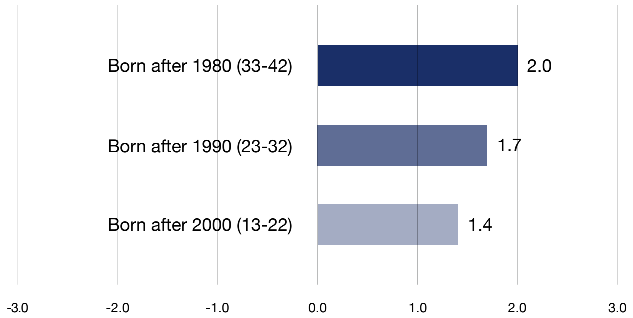
CEIBS

Questionnaire survey result:
A comparison of young people born after 1980, 1990, and 2000

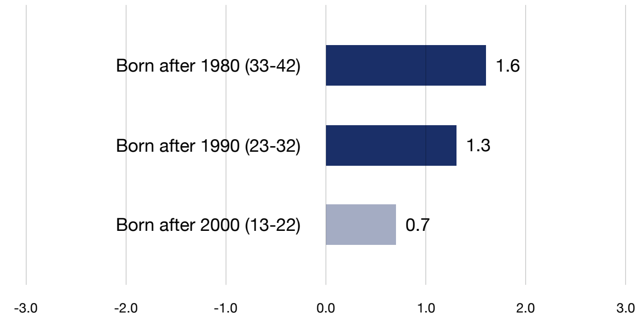
HAPPINESS
MEANING IN LIFE
SENSE OF CONTROL
BELONGINGNESS
SELF-ESTEEM

Happiness: Younger respondents report lower happiness levels

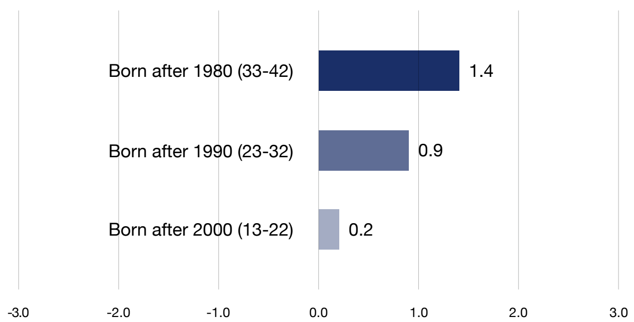
There are more possibilities of life in today's society.



Compared to the life of people around me, I'm content with my life.



I'm content with my family's financial condition.

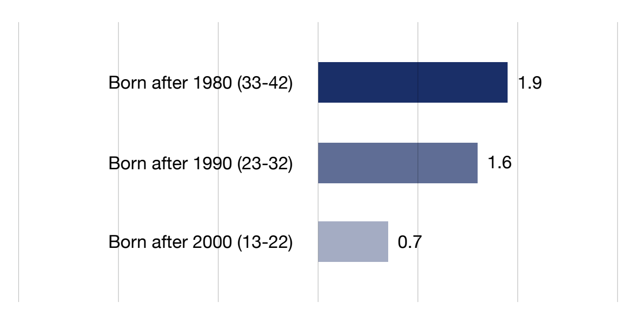


Note: The above question items are selected based on the Subjective Well-Being Scale (SWB) developed by Diener (1984). This scale measures people's cognitive and affective evaluations of their lives. The SWB scale, together with the Psychological Well-Being Scale (PWBS), is the most commonly used happiness measuring instrument in China.

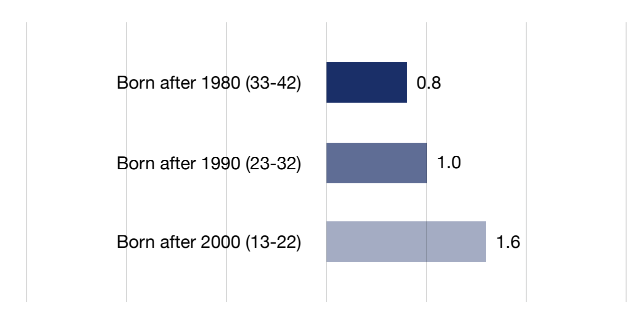
The figures on the horizontal axis represent a respondent's level of agreement: each number from -3 to 3 means strongly disagree, moderately disagree, slightly disagree, neither agree nor disagree, slightly agree, moderately agree, and strongly agree, respectively. The figure to the right of each rectangular bar represents the average value of all respondents' results. The higher the average value, the higher the respondents' level of agreement, and vice versa.

Meaning in life: Younger respondents report a lower sense of meaning in their lives.

My life has a clear sense of purpose.



I am searching for meaning in my life.

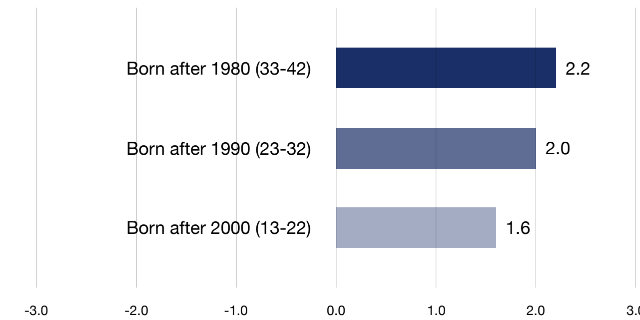


Note: The above question items are selected from the Meaning in Life Questionnaire (MLQ) developed by Steger et al. (2006). The MLQ is designed to measure two dimensions of meaning in life: (1) The Presence of Meaning (how much people feel their lives have meaning), and (2) Searching for Meaning (how much people strive to find meaning and understanding in their lives).

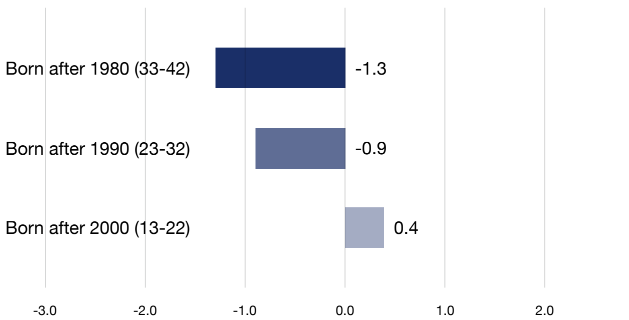
The figures on the horizontal axis represent the respondent's level of agreement: each number from -3 to 3 means strongly disagree, moderately disagree, slightly disagree, neither agree nor disagree, slightly agree, moderately agree, and strongly agree, respectively. The figure to the right of each rectangular bar represents the average value of all respondents' results. The higher the average value, the higher the respondents' level of agreement, and vice versa.

Sense of control: Younger respondents report a lower sense of control in life

I own my future.



I usually feel helpless in life.

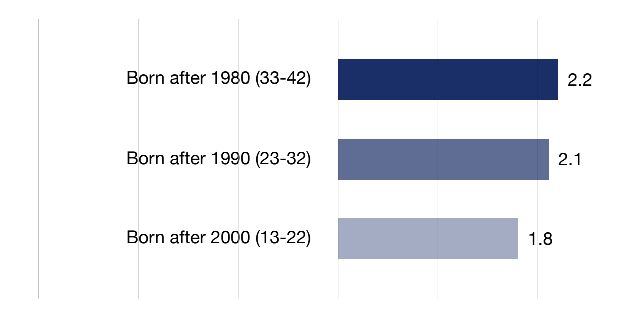


Note: The above question items are selected from the sense of control scale developed by Lachman and Weaver (1998). This 12-item scale was designed to measure people's sense of control of their lives.

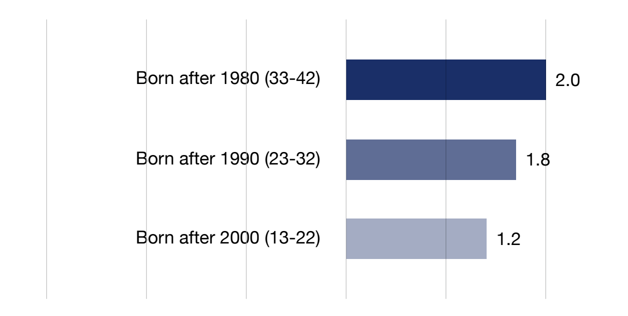
The figures on the horizontal axis represent the respondent's level of agreement: each number from -3 to 3 means strongly disagree, moderately disagree, slightly disagree, neither agree nor disagree, slightly agree, moderately agree, and strongly agree, respectively. The figure to the right of each rectangular bar represents the average value of all respondents' results. The higher the average value, the higher the respondents' level of agreement, and vice versa.

Belongingness: Younger respondents report a lower sense of belongingness in life.

I have close bonds with family and friends.



When I am with other people, I feel included.

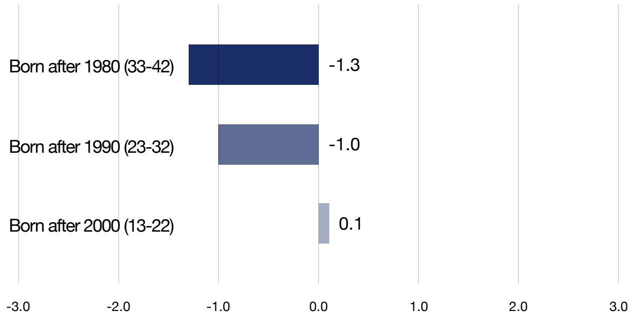


Note: The above question items are selected based on the General Belongingness Scale (GBS) developed by Malone et al. (2012). The GBS was designed to assess adult individuals' sense of general belongingness.

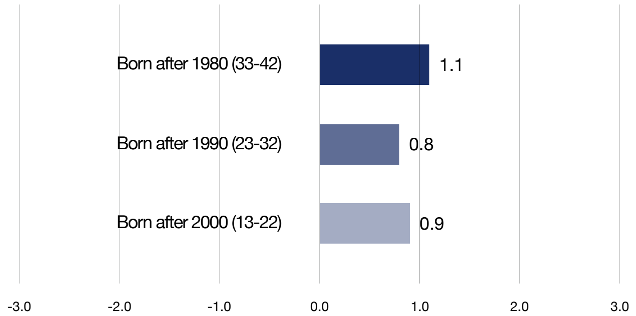
The figures on the horizontal axis represent the respondent's level of agreement: each number from -3 to 3 means strongly disagree, moderately disagree, slightly disagree, neither agree nor disagree, slightly agree, moderately agree, and strongly agree, respectively. The figure to the right of each rectangular bar represents the average value of all respondents' results. The higher the average value, the higher the respondents' level of agreement, and vice versa.

Self-esteem: Younger respondents report a lower sense of self-esteem.

I feel I do not have much to be proud of.



I strongly care about gaining others' approval.

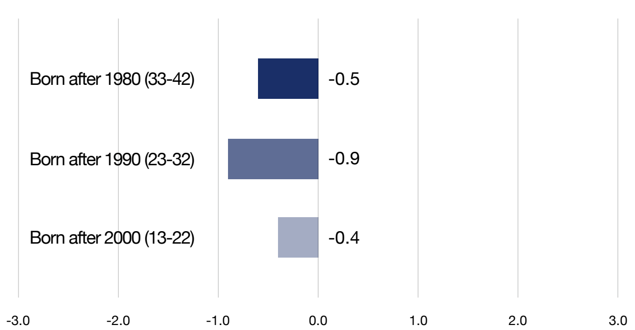


Note: The question item "I feel I do not have much to be proud of" is selected from the Self-esteem Scale (SES) developed by Rosenberg in 1965. Initially designed to measure self-esteem and self-approval among adolescents, the SES is the most widely used self-esteem measuring instrument by psychologists in China.

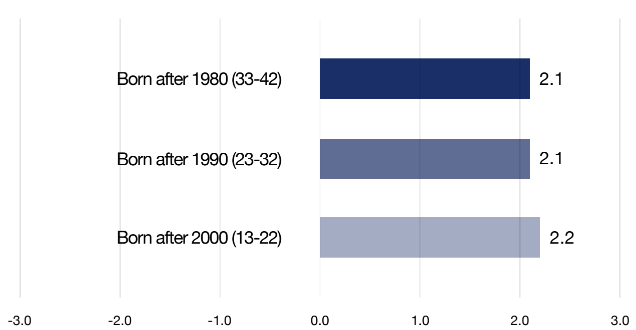
The figures on the horizontal axis represent the respondent's level of agreement: each number from -3 to 3 means strongly disagree, moderately disagree, slightly disagree, neither agree nor disagree, slightly agree, moderately agree, and strongly agree, respectively. The figure to the right of each rectangular bar represents the average value of all respondents' results. The higher the average value, the higher the respondents' level of agreement, and vice versa.

Younger generations have more diversified values.

I think the only purpose of learning knowledge is to live a more affluent and privileged life than others.



I think people can have diversified values about life.



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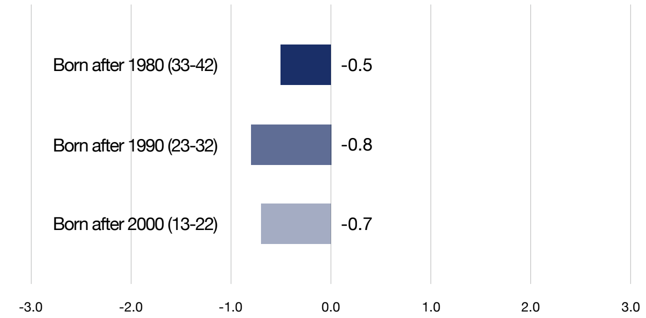
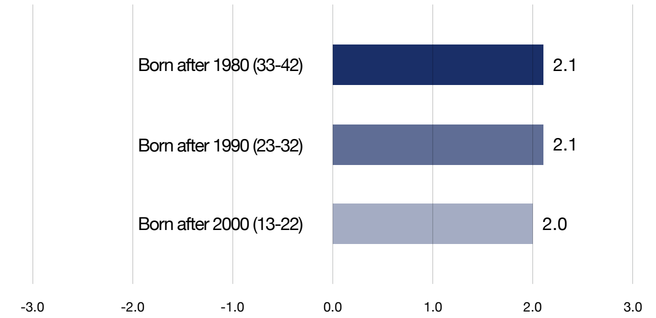
Most respondents in each age group approve of rational consumption behaviors.

Buying luxury products gives me symbols of wealth and makes me feel good



Rational consumption gives me a sense of control in my life.



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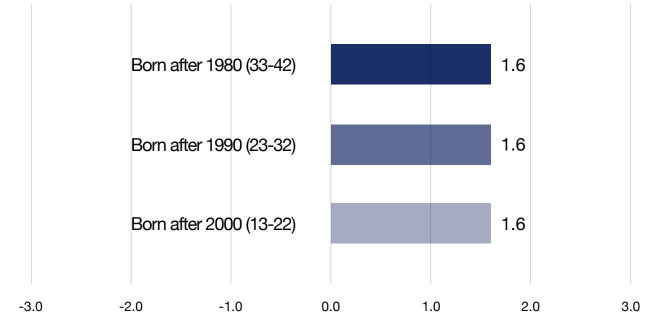
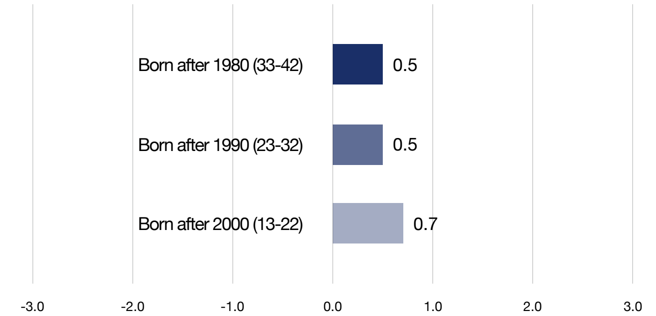
Younger respondents show a higher acceptance of easy and fun social activities.

I only socialize with friends who have similar personalities or common interests with me.



I'm willing to participate in any social activity as long as it is easy and fun.



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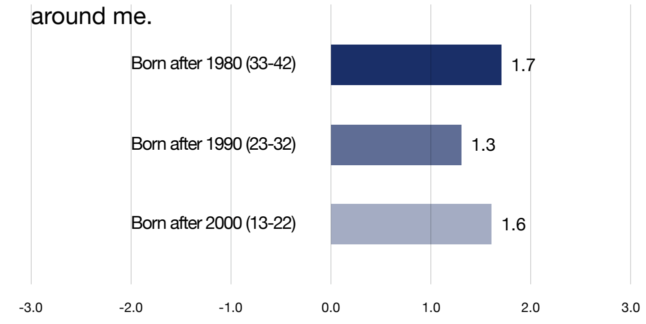
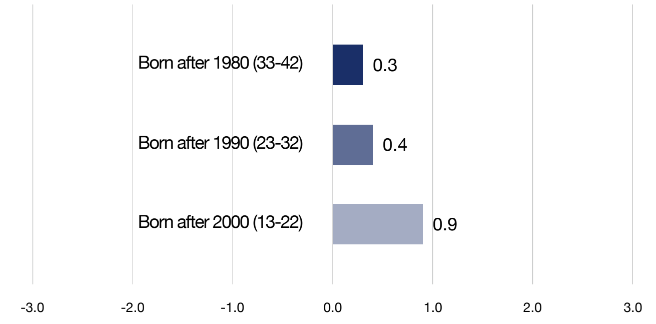
Younger respondents place a greater emphasis on "living in the moment".

Rather than worrying about the international affairs, I prefer to care about my everyday life and the people around me.



Living in the moment is more important than looking into the future.



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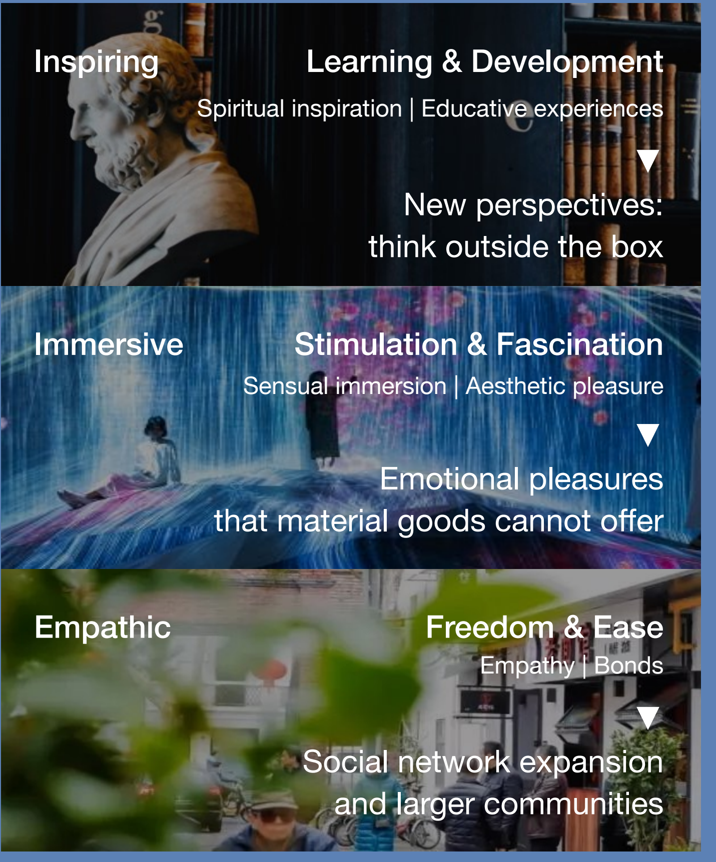
Living a Tasteful Life
Young People's Choices During Cultural Consumption

A Study on Younger Generations' Cultural Consumption

Qualitative methods: basic research and fieldwork

CEIBS / SHUI ON XINTIANDI / YOUTHOLOGY

Three needs are fast becoming trends of cultural consumption.
To gain new knowledge, seek emotional pleasures, and expand their social network, young people seek out the following three types of cultural consumption activities:



Learning & Development
#content #theme #creator #performer

Guided exploration of in-depth and systematic knowledge; enlightenment and inspiration obtained from entertainment.

1. Spiritual inspiration

Such activities provide guidance and inspiration to young people, encouraging them to explore new knowledge in areas unfamiliar to them. New knowledge does not unnecessarily mean something unknown to young people. It can also form part of a different perspective of thinking.

Related product types: theater, performance, exhibition, alcohol culture activity

#Learning through practicing

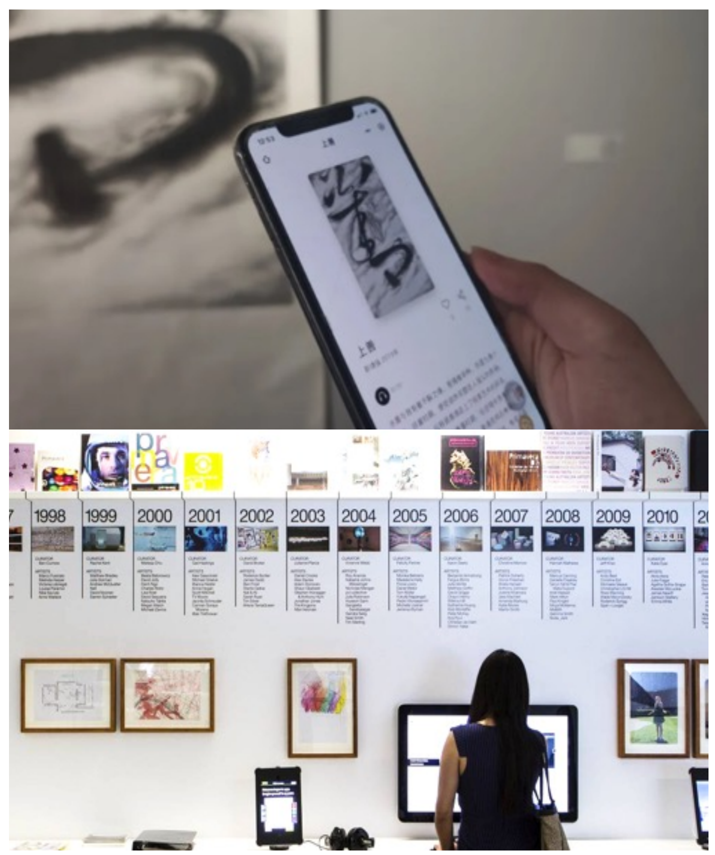
I once participated in a coffee-tasting activity. The host gave us a grading chart and asked us to figure out the meaning of each measuring indicator while tasting coffee. There were also some experts sharing their coffee knowledge, helping participants better understand the culture of coffee.

— Fu Jian, male, born in 1998, passionate about alcohol culture

2. Educative experiences

Such activities allow young people to foster a holistic cultural understanding of a single subject matter. Compared to "teaching-to-test" education, young people prefer learning things through exploration.

Related product types: theater, performance, exhibition, alcohol culture activity



#A single item inspires bigger discoveries

When seeing postmodern art, I always want to know the context of their creation and what inspired the artist to create this particular piece. This allows the audience to discover something more behind it and learn new things. But I'm not saying artists should explain every detail of their creation to the audience. Just a little hint or inspiration can lead the audience further into the world of art.

— Bobo, male, born in 2002, an art exhibition lover

Cases

Spiritual inspiration

Exhibition
Emerging Curators Project, PSA
Planning an exhibition with young curators

The Emerging Curator Project, hosted by the Power Station of Art (PSA), is an exhibition of work from selected young curators. Visitors to the exhibition will be able to discuss the pieces from the curators' perspective and rate each one using feedback forms.

Alcohol culture activity
Wine Universe: a blind wine-tasting game

A multi-round test in which tasters are asked to taste three wines without knowing their identity. The tasters are required to make judgments about each wine's country of production, exact region of production, and grape varieties. To advance to the next round of the test, a taster must make at least two correct judgments of the three elements. After the test, wine instructors describe in detail the color, acidity, body, and other characteristics of each wine. This activity allows tasters to explore the characteristics of a wine and learn how different factors influence its taste.

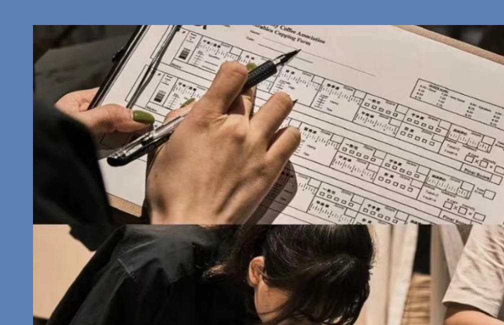
Educative experience

Theater
#Let'sPlayTheShow
A reading club of original contemporary plays

Through group readings, role-playing, and interactive discussions, club participants immerse themselves in a play. They comprehend and interpret contemporary plays in terms of narrative methods, structure, and themes.

Coffee culture activity
Ginger Coffee
Learn how to taste a cup of coffee

In this coffee-tasting activity, participants can taste coffee based on different dimensions, and rate it on evaluation sheets prepared in advance.



All the pictures are from the Internet

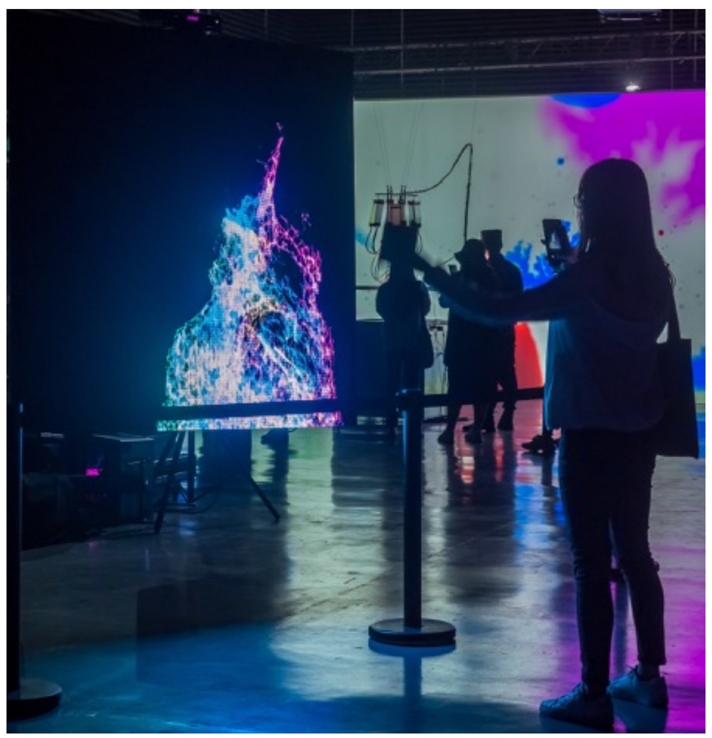
Stimulation & Fascination
#environment #vibe #experience #design

The intermingling of art and technology provides strong and immersive sensual stimulation.

1. Sensual immersion

Cutting edge audio, visual, and electrical devices help create an immersive and interactive environment.
In addition to impressive visual effects, young people look for engagement and interaction during cultural consumption activities.

Related product types: music, theater, performance, exhibition, alcohol culture activity



#Artists-audience interaction with audio, visual, and electrical effects

Last year, a multimedia studio co-hosted a "flare art festival." During breaks in the performances, the audience could interact with the VJs on their cell phones by scanning QR codes. For example, you can merge the music you are playing with that of others to create a new original piece of music. You can also create some textual content and send it to the VJs on stage. Then your content becomes part of the visual effect on the site. It's at that moment when you really feel like you are part of the festival.

— Kuangkuang, female, born in 1994, a live music lover

2. Aesthetic pleasure

Aesthetic enhancements and combinations with other elements make environment design more artistic.
Compared with activities that randomly throw different elements together, young people prefer those that have their own natural styles.

Related product types: music, theater, performance, exhibition, alcohol culture activity

#Theater in the round: an all-angle experience

LE STAGE is a theater-in-the-round. Because the stage is small and surrounded by the audience, we can see the actors' performance from all different angles. Those sitting near the stage can even see the actors' facial expressions. This multi-focus theater allows more than one scene to be staged at the same time and has seats in different areas. Which scene people see depends on in which area they sit. Even though you see the same play several times, you can feel impressed by something new each time.

— Yifan, female, born in 2000, a theatrical performance lover

Cases

Sensual immersion

Exhibition
Absence of God, ABI:
An interactive and narrative exhibition

In this game space created by digital art projectors, sculptures, and other devices, the audience plays the role of an actor interacting with non-player characters (NPCs) and interactive devices. Different interactions trigger different storylines, providing the audience with a unique artistic experience.

Alcohol culture activity
ABRI Bar & murder mystery game

ABRI is a bar that resembles a London air raid shelter, while Playwrite Club is a murder mystery game studio. The two organizations joined hands to provide a murder mystery gaming experience at ABRI, using alcoholic beverages as props.

Aesthetic pleasure

Music
Zhu Jingxi & Dabei Yuzhou:
Futurism presented by mixing music and art.

Zhu Jingxi, a cyber singer of digital music, joined hands with digital artists to build a transcendent cyberpunk music stage. The stage incorporates AI psychedelia, digitally generated multimedia art, and algorithm-based interactive devices.

Alcohol culture activity
LONG: Clubbing with a virtual skylight

The roof above the center bar is designed as a giant virtual skylight. The skylight blends the subtle lighting from lanterns, fluorescent wires, and tabletops. These effects transform an indoor bar into an outdoor cyberpunk street bar.

Freedom & Ease #environment #vibe #communities #social network

Young people emphasize their physical presence during cultural consumption activities. They want to live a real life and seek relaxing and healing experiences, both physically and spiritually.

1. Empathy

Young people seek to embed cultural consumption scenarios into their real lives while also participating in cultural consumption activities that connect with their everyday life.
Young people wish to participate in cultural consumption activities that can naturally stimulate their senses.

Related product types: music, exhibition, alcohol culture activity

#A comfortable distance and an authentic feeling

I don't really enjoy going to a concert where you can only sit in pre-assigned seats. In a livehouse, someone who wants to socialize can sit at the bar, and those who want to watch the performance can sit near the stage. It gives people more choices based on their own preferences. It is like a space where people can connect with others without talking to each other. We can have a drink together, or dance together. Everyone is their true self.

— Han Fei, female, born in 1993, a live music lover

2. Bonds

A clever venue arrangement can bring together people with different lifestyles and values.
Young people like to participate in activities where there is the presence of others and without a strong feeling of purpose.
Verbal communication is not necessary for building bonds.

Related product types: music, exhibition, alcohol culture activity

#Enjoy music with strangers with the instrument as a bridge

After the COVID lockdown, I went to a park and saw someone playing the hanghang. I had never heard of this instrument before, but I love music. So I joined the players and performed a rain dance with them that night. I think the musical instrument was like a bridge connecting us. It was like an icebreaker. Although we never knew each other before, we had music as a common topic, helping us become friends naturally and easily.

— Gege, female, born in 1993, a live music lover

Cases

Empathy

Theater
No.19 Wukang Road
Environmental theater, both online and offline

A play performed in a real outdoor scene on Wukang Road. The audience wears headphones to listen to the story while walking around the performance space with performers dressed in ancient-style costumes. The real street and buildings become part of the scene, making the audience feel immersed in the play as it unfolds.

Alcohol culture activity
@Home, a little eatery where you can find roasted sweet potatoes

In winter, customers can roast sweet potatoes on a stove outside the eatery. There is also a projector in the attic on the second floor where customers watch movies. The little eatery creates a warm and comfortable atmosphere, making its customers feel at home.

Bond

Music
Jingan Park
Outdoor music festival

An open-air music performance without specific seat assignments. Anyone walking in the park, having a picnic, or just walking their dog is welcome to sit on the grass and join the show. Although the audience may not know each other, they can freely enjoy the music together.

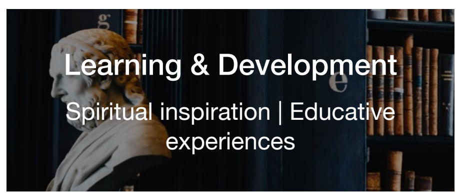
Alcohol culture activity
WAT, a bar where cocktails are delivered on a conveyor belt

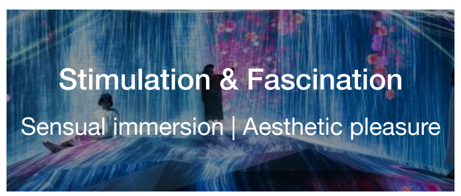
In this stand-up drinks bar, bottled drinks are delivered on a conveyor belt for customers to pick, mix, and create their own cocktails. If they remove the top layer labels of some small bottles, they find random dice dots and can use them to play dice games with others.

All the pictures are from the Internet

In conclusion, young people seek immersive and stimulating experiences, diversified information sources, and in-depth interactions from cultural consumption activities. To align with young people's cultural consumption preferences, companies should provide up-to-date and creative products or services based on topics trending among young people.

Diversified information sources	Immersive and stimulating experiences	In-depth interactions
Inspiring	Immersive	Empathic





Cultural consumption’s new application of “local culture”

In recent years, local cultures have become increasingly popular among young people, influencing material and cultural consumption patterns in many ways.

#material consumption: foods and beverages#
local beverages that promote the popularity of local foods

#cultural consumption: music#
Wutiaoren, a band rooted in the local culture of Guangzhou

#material consumption: fashion#
Li Ning, a Chinese fashion brand seeking design inspiration from local cultures in different places

#cultural consumption: games#
Shadong Dinner, a board game based on local drinking culture

All the pictures are from the Internet

In the eyes of young people, local culture-based business innovations create connections between individuals and culture, expanding the territory of the term "local". Such innovations bring young people new knowledge and in-depth experiences while evoking their true feelings. As local cultures become a new theme of cultural consumption, businesses should make explorations to provide young people with new choices in cultural consumption.

New theme: Local culture

Local story
New knowledge

New choices

Seeking inspiration for cultural experience from local history and stories

Local life
In-depth experiences: immersive and stimulating

New forms

Revitalizing lifestyle, buildings, and places from the old days using modern technological means

Local people
True feelings: details in real life

New vibe

Integrating interesting, response-evoking, and unique elements of local culture into cultural consumption experiences

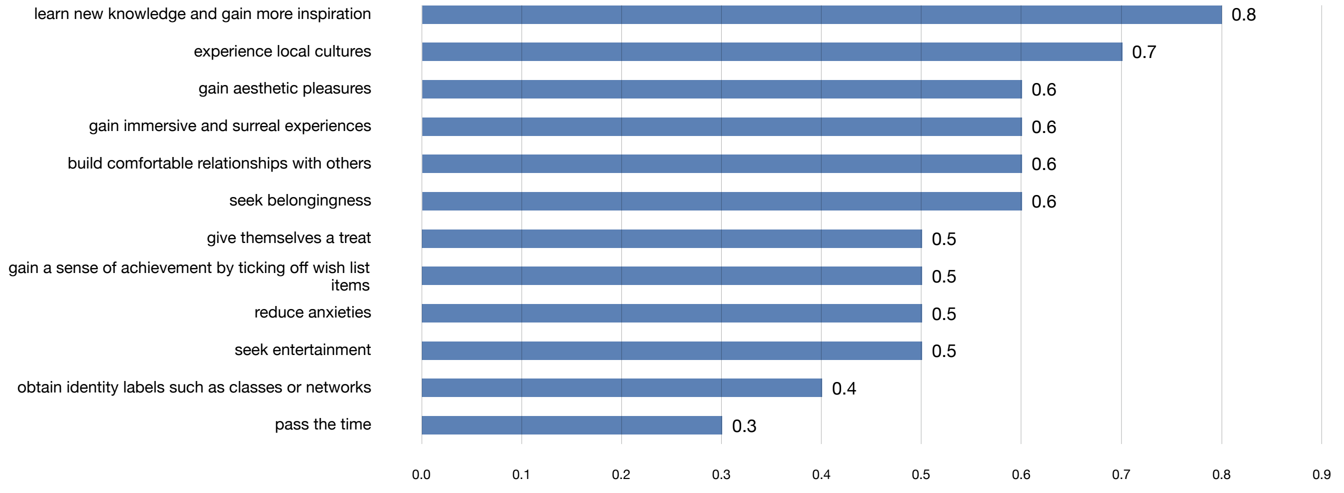
A Study on Younger Generations' Cultural Consumption

Quantitative methods: questionnaire survey across China

CEIBS

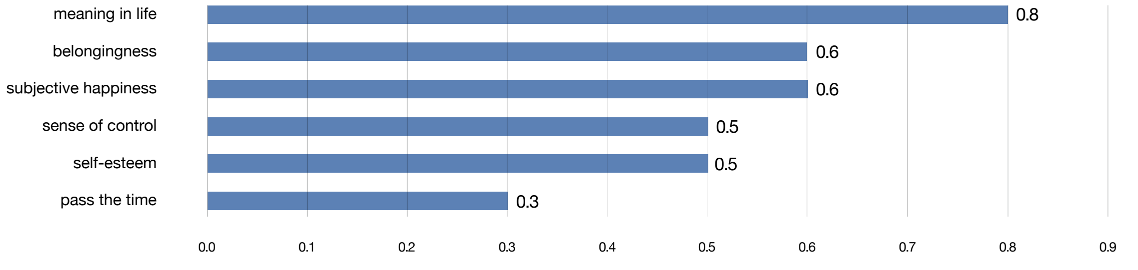
Before categorizing respondents' needs based on Maslow's Hierarchy of Needs, the top three outcomes that respondents wish to gain from cultural consumption are learning new knowledge, experiencing local culture, and obtaining aesthetic pleasure.

What do you most want to gain from cultural consumption?



According to the categorization based on Maslow's Hierarchy of Needs, respondents' top three needs from cultural consumption are a sense of meaning in life, belongingness, and subjective happiness.

What do you most want to gain from cultural consumption?

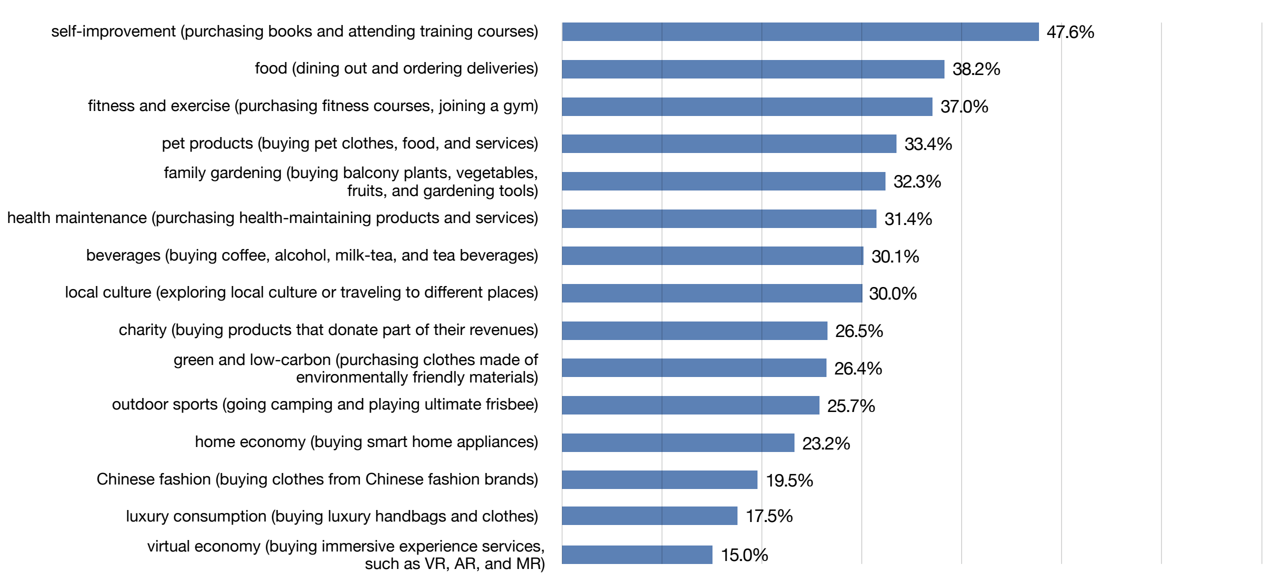


Questionnaire survey conducted across China
What types of consumption can be viewed as cultural consumption choices that satisfy consumers' spiritual needs?

HAPPINESS
MEANING IN LIFE
SENSE OF CONTROLLING
BELONGINGNESS
SELF-ESTEEM

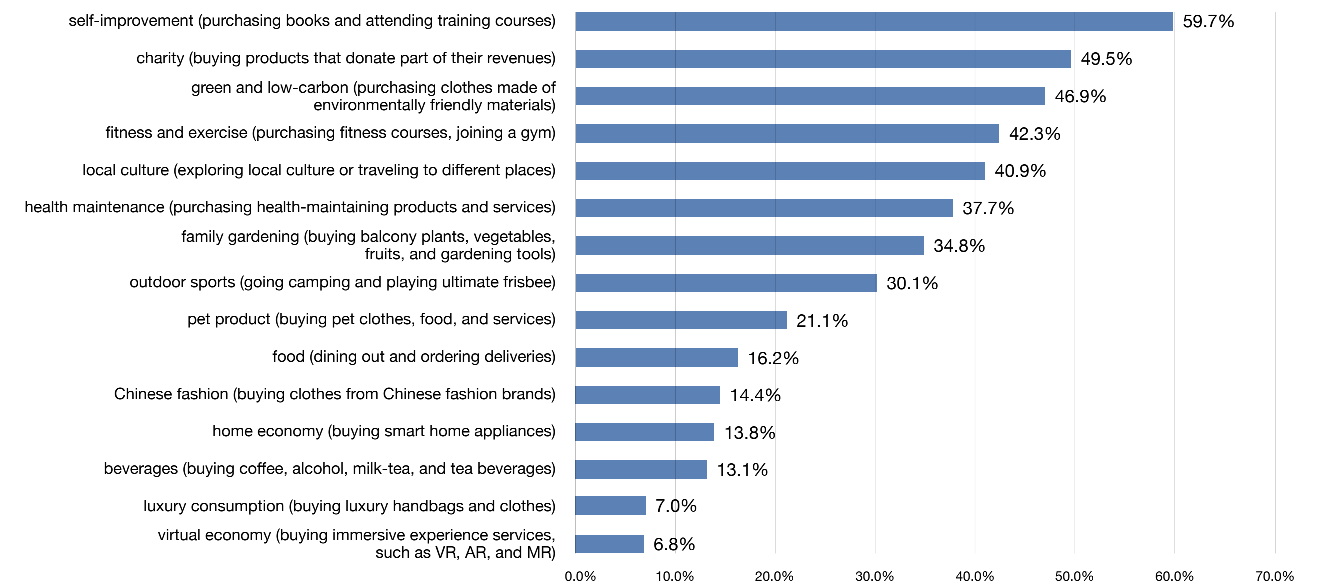
Most respondents report that they gain the most subjective happiness from three types of consumption: self-improvement (e.g., purchasing books and attending training courses); food (dining out and ordering deliveries); fitness and exercise (purchasing fitness courses, joining a gym).

Which of the following consumption choices gives you the most subjective happiness?



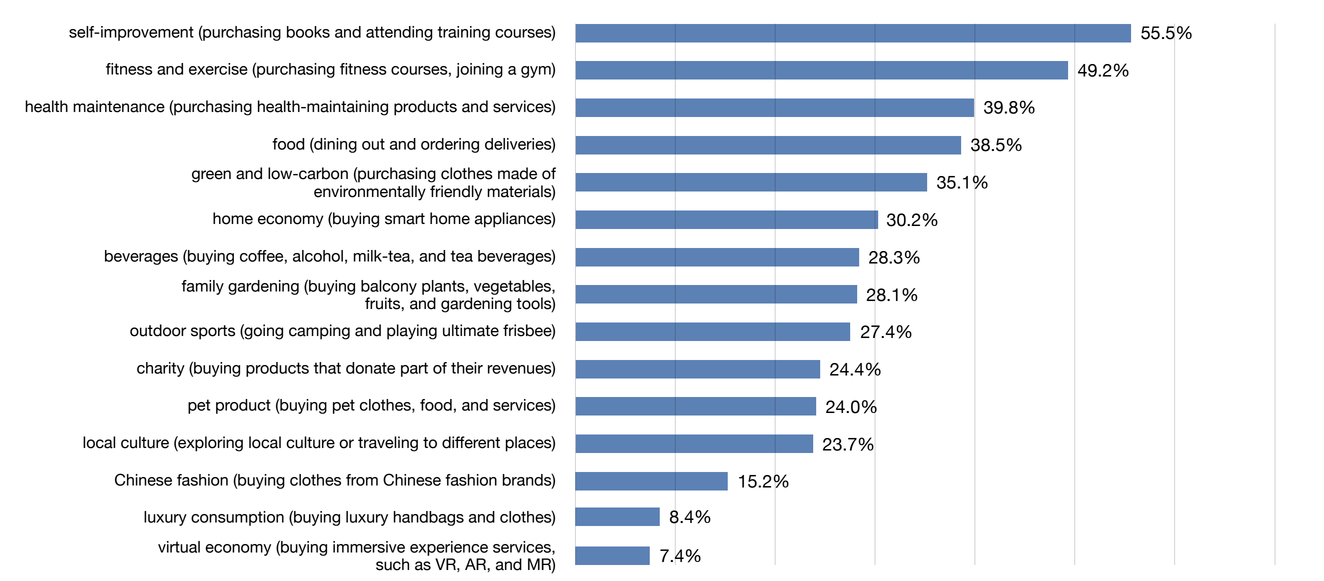
Most respondents report that they gain the most sense of meaning in life from three types of consumption: self-improvement (e.g., purchasing books and attending training courses); charity (buying products that donate part of their revenues); green and low-carbon (purchasing clothes made of environmentally friendly materials).

Which of the following consumption choices gives you the most sense of meaning in life?



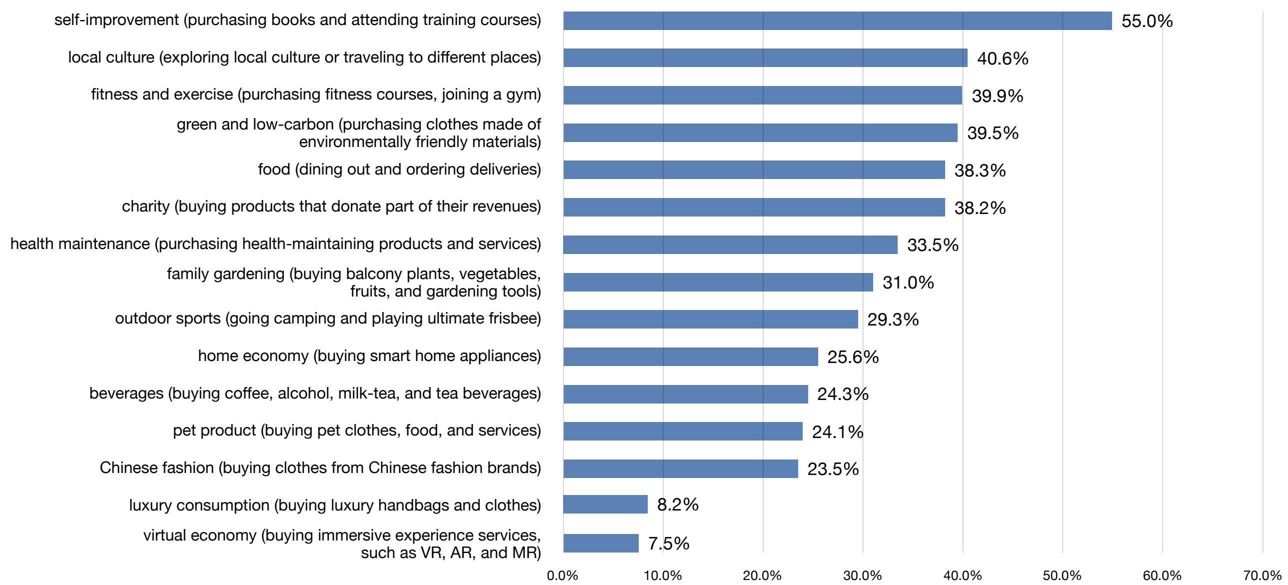
Most respondents report that they gain the most sense of control from three types of consumption: self-improvement (e.g., purchasing books and training courses); fitness and exercises (purchasing fitness courses, joining gym memberships); health maintenance (purchasing health-maintaining products and services).

Which of the following consumption choices gives you the most sense of control?



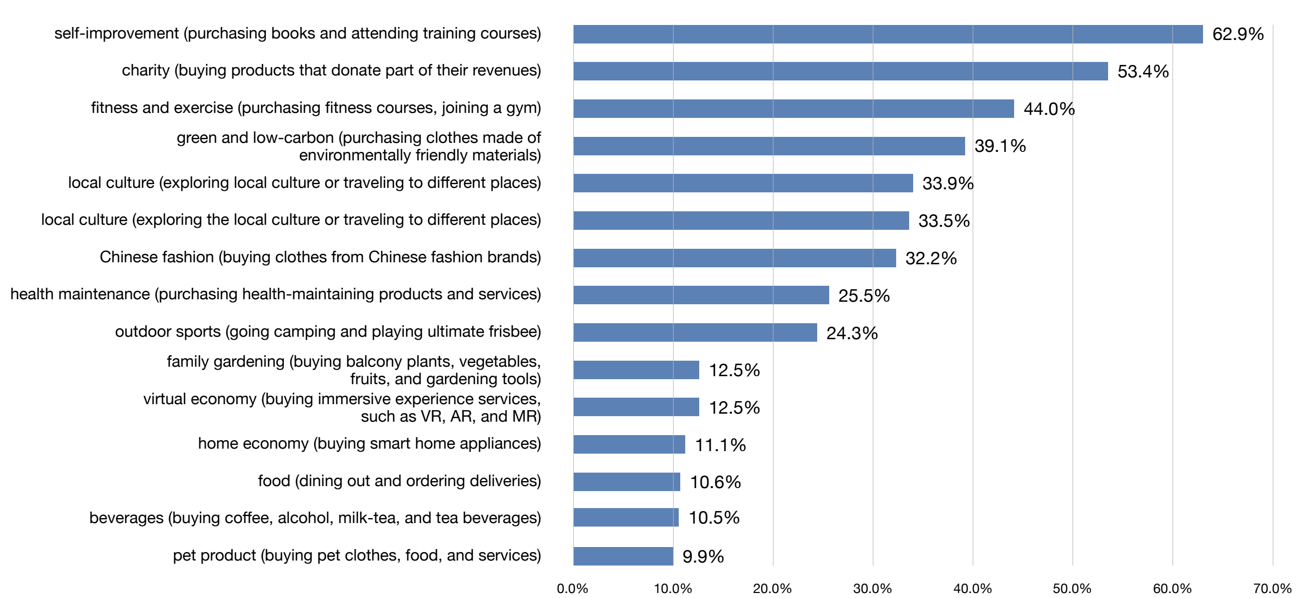
Most respondents report that they gain the most sense of belongingness from two types of consumption: self-improvement (e.g., purchasing books and attending training courses); local culture (exploring local culture or traveling to different places).

Which of the following consumption choices gives you the most sense of belongingness?



Most respondents report that they gain the most sense of self-esteem from three types of consumption: self-improvement (e.g., purchasing books and attending training courses); charity (buying products that donate part of their revenues); fitness and exercise (purchasing fitness courses, joining a gym).

Which of the following consumption choices gives you the most sense of self-esteem?



A Perfect Day
What Cultural Destinations do Young People Love?

Cultural destinations loved by young people

In conclusion, young people love going to cultural destinations where they can obtain multiple experiences and satisfy both material and spiritual needs.

First visit	Long stay	Multiple visits
Basic requirements	**Middle-level requirements**	**High-level requirements**
Frequent and high-quality cultural content and activities	Commercial facilities that make consumers eager to explore, and that perform well with accessibility to cultural experience	Diversified integration of commerce, culture, and people

Basic requirements: what make young people come here in the first instance
Frequent and high-quality cultural content and activities

Top-notch “authentic” international cultural content

Before COVID-19, classical and famous cultural works were very popular in Shanghai, and young people here are still looking forward to their return post-pandemic.

Immersive theater
Sleep No More (Shanghai)
An early immersive theater work that has achieved great success in London and New York; the original cast perform in Shanghai

French art in Shanghai
The Shape of Time
The West Bund Museum displays major works from the collection of the Musée National d'Art Moderne, Centre Pompidou.

Original cultural works in China that are finely produced and enjoy strong word-of-mouth

Due to the impact of COVID-19, it has been difficult for international cultural works to enter China, encouraging the creation of domestic cultural works. Although young people are happy to see the growth of local cultural works, they are only willing to pay for those with professional endorsements, as local works are sometimes inconsistent in quality.

A dance drama based on a real historical spy war story
The Eternal Wave
Presented by national-recognized performers from Shanghai Dance Theater; awarded by the Publicity Department of the Chinese Communist Party

Chamber pop choir
Shanghai Rainbow Chamber Singers
Core members of the group are graduates from the Shanghai Conservatory of Music; the choir group performed on stage at CCTV and other local TV stations.

All the pictures are from the Internet

Middle-level requirements·what makes young people to stay longer
Commercial facilities that integrate cultural experiences and inspire consumers to explore

Cultural exploration of broader spaces.

Young people like going to one-stop shops where they can have multiple needs met. Such places not only offer cultural experiences but also other possibilities to explore.

Anfu Dating
A music community in Shanghai neighbored by independent art galleries and innovative coffee houses

TX Huaihai
Curated shopping mall integrating trendy music festivals, fashion exhibitions, and pop-up shops from niche brands

Unique demonstrations of brand culture in offline spaces rather than one-size-fits-all commercial projects

Young people seek uniqueness. In their eyes, a one-size-fits-all demonstration of brand values is boring. They feel attracted to brands showcased in physical spaces that are properly designed based on a specific city, region, or theme.

Prada Rong Zhai
The restoration of a historic 1918 residence illustrates the modern splendor of the luxury brand.

Gentle Monster
An artistically curated store integrating mechanical installations and fashion product retail

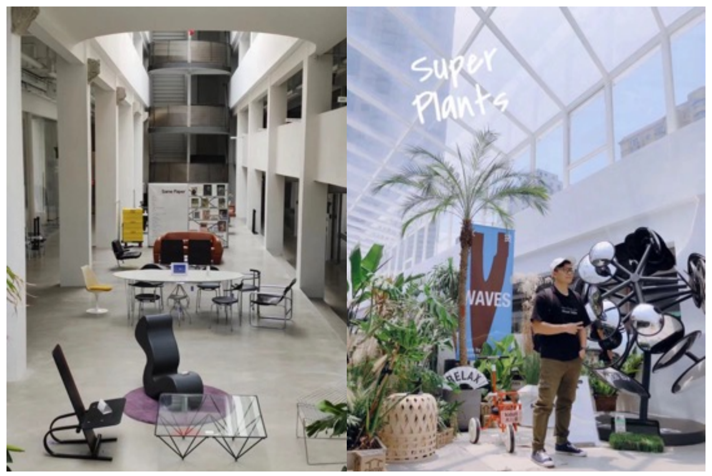
All the pictures are from the Internet

High-level requirements: what makes young people come back

Diversified integration of commerce, culture, and people

Arts in everyday life

A highly qualified cultural destination can be defined by its cultural and artistic vibe, which helps it evolve into a gathering place for consumers. Young people not only want to learn about and appreciate the arts, but they also want to live in a place where the arts form a part of everyday life.



Xian Suo
Home to a bunch of trendy brands' physical stores and art studios. The open space layout allows for freedom of store designs, enabling a futuristic curated retail model.

Community Creation Center at Xinhua Road
A co-creation center opened in local residential compounds. It provides a space for local residents to organize community concerts, artistic markets, and community artwork exhibitions.

Diversity and inclusivity

When people talk about the spirit of a city, they talk about diversity and inclusivity. This also applies to the creation of a cultural destination. To attract young people, a cultural destination should be vibrant, diverse, and inclusive.

Yuyuan Road
A street integrating luxury retail stores, bars, and residential spaces; a place inclusive to people of different ages and interests

Xuhui West Bund Riverside
A public open space popular for outdoor sports, dog walking, picnics, exhibitions, parties with friends, and family gatherings

All the pictures are from the Internet

Cultural destinations adored by young people

Whether in China or around the world, popular cultural destinations loved by young people share their commonalities. Their long-term orientation and sophisticated operation provide in-depth cultural experiences for young people. They understand and respond to young people's anxieties and desires, whether about self-development, ideal lifestyles, or connecting with the world. They inspire young people.

Who am I? | What kind of life do I want? | What is my relationship with others?

Dongshankou, Guangzhou

Local culture with energetic vibes; restoration of old streets and city buildings

Who am I?

●●●
An in-depth and focused exploration and restoration of local cultures in Guangdong City and the Dongshan area. The area encourages young people to find meaning in life through their appreciation of local culture.

What kind of life do I want?

●●●
Creatively combines local characteristics with popular cultural elements that young people love, including fashion and outdoor sports.

What is my relationship with others?

●●
A sophisticated cultural destination that is diverse and inclusive, providing a friendly environment for both trendy, young communities and local long-time residents.

Shoreditch, London

An energetic and inclusive community of all social classes gives birth to diversified contemporary arts and cultures.

Who am I?

●●
Over the past 20 years, Shoreditch has undergone significant redevelopment. The area has always been a hotspot and a birthplace of youth culture, from symbolic graffiti in the early days to today's film incubation.

What kind of life do I want?

●●●
With its sophisticated commercial facilities, iconic trendy arts, youth culture, and innovative industry clusters, Shoreditch caters to the cultural consumption needs of young people of all ages and interests.

What is my relationship with others?

●●●
Shoreditch is located in East London and was originally a major residential area for ethnic minorities and less-well-off people. As a result, its gentrification has evolved into a fundamental element of its local culture.

All the pictures are from the Internet

2

CHINESE CREATIVITY

LABELHOOD: An Incubator for Chinese Avant-Garde Designer Brands

Authors / **Michelle LU and Jackie CAO**

In 2009, LABELHOOD opened in Beijing as a fashion boutique called Changzuo Dongliang. From the outset, the founding team focused on incubating excellent Chinese designer brands and bringing remarkable Chinese designs to more consumers. In 2011, Changzuo Dongliang debuted in Shanghai and grew steadily in the following years. In 2018, it merged with another project initiated by the founding team, the LABELHOOD Pioneer Fashion & Art Festival, and was officially renamed LABELHOOD.

Over a decade later, LABELHOOD has evolved into an experiential community connecting avant-garde fashion designers with young consumers with its stores and content matrix. As of October 2022, LABELHOOD has incubated hundreds of Chinese designer brands covering womenswear, menswear, and accessories, spanning brands like SHUSHU/TONG, Uma Wang, and Angel Chen. In addition to physical stores in Shanghai and Shenzhen, LABELHOOD operates several stores on e-commerce platforms such as Tmall.com. “In our opinion, it makes sense for LABELHOOD to be a brand incubator. From the boutique in Shanghai to the Fashion & Art Festival to the current online stores that provide warehousing and logistics services, LABELHOOD has been committed to meeting the needs of designers,” said Justin, LABELHOOD’s chief operating officer.

Photo credit: LABELHOOD

Photo credit: LABELHOOD

Chinese designers' growing competency

Around 2009, a group of fashion designers returning from studying abroad wanted to launch their own brands in China but could not find a suitable sales channel. Back then, LABELHOOD's brick-and-mortar store helped them solve this problem. Nevertheless, Chinese designer brands lagged far behind their overseas counterparts in terms of product design and creativity.

In 2014, Changzuo Dongliang, initiated "Dongliang One Day", China's first design carnival, together with the Shanghai Fashion Week, to showcase Chinese designer brands. "The event left designers feeling fulfilled. We think it is crucial to give designers, especially excellent ones, the opportunity to bring their talent into full play," said Tasha, LABELHOOD's co-founder. In subsequent years, the team expanded this event by adding an exhibition, pop-up store, and showroom to the fashion show. In 2016, the LABELHOOD Pioneer Fashion & Art Festival was officially launched as China's first fashion and art festival open to the public to enhance consumers' understanding of Chinese designer styles. In 2018, LABELHOOD launched LABELHOOD Youtopia, the first fashion and art platform bringing together senior high school and college students with a passion for fashion.

Photo credit: LABELHOOD

Photo credit: LABELHOOD

Fashion Week also provides a snapshot of the evolution of the fashion design industry. According to Tasha, Chinese designers have demonstrated a higher level of professionalism in recent years. She said, "First, with a clear brand vision, many designers have better control over the product release cycle; second, since design has to be market-oriented, they have learned to keep up with the market to make their avant-garde designs more acceptable; third, as designer brands have grown in size, their supply chains have improved significantly."

According to a 2022 report from LUXE.CO, designer brands and boutiques are popping up as Chinese fashion consumers become more interested in niche brands. Chinese designer brands are also gaining a growing presence in upscale malls. Luxury brands like Moncler, Caruso, and Canada Goose maintain partnerships with Chinese designer brands. Domestic, independent designers account for more than 70% of labels at China's major fashion weeks.[1]

Tasha notes that in addition to a higher level of professionalism, Chinese designers have changed their perceptions of Chinese culture and brands. "Some post-80s designers tended to style themselves as international designers for fear that their designs would be associated with Chinse culture. Post-90s designers, mostly educated abroad, are often asked about the differences between Chinese and Western cultures. They are used to defining themselves from an outside perspective. Millennial designers know themselves well and are confident in the Chinese culture."

Gen Z consumers' fashion needs

Rising income and spending power have fueled Chinese consumer demand for personalized and diversified fashion products. Gen Z consumers pay particular attention to fashion and seek a sense of cultural belonging by embracing local brands. This shift has sparked a craze for traditional Han Chinese clothing and "Chinese fashion brands" in general. According to McKinsey, the proportion of Chinese consumers who prefer local brands surged from 15% in 2011 to 85% in 2020.[2]

Tasha is also aware of changing consumer demand for fashion. "Consumers are growing with the market, appreciating the value of creativity and branding. Gen Z consumers put a premium on authenticity. Young people take pride in original works from Chinese designers."

In 2016, LABELHOOD hosted the Fashion & Art Festival to reach out to the public with a more open attitude. The audience, aged between 18 and 35, were recruited and selected. Many of them even flew to Shanghai for the event. Tasha thinks this speaks volumes about the passion for fashion among young people. "Many younger brands are unknown to the public, but young people are willing to participate in this event not only as consumers but also as ambassadors of fashion and brand culture. They are really interested in fashion and design."

During the Chinese New Year 2021, when many people decided to stay home due to the epidemic rather than visit family, LABELHOOD continued its Family Portrait project, inviting consumers and their families to its store for a family photo. This cozy experience helped the brand forge deeper ties with consumers. Since the outbreak of the epidemic, China's economy, especially the offline retail sector, has been dealt a severe blow. Tasha believes that although the epidemic has put a lot of pressure on the apparel industry, designers should be prepared to meet consumer needs, given their keen interest in high-quality, well-designed products. Notable progress made in China's fashion industry in recent years, such as the e-commerce channel boom, has provided designer brands with diversified development paths and more opportunities to tap into the market.

Photo credit: LABELHOOD

Photo credit: LABELHOOD

Photo credit: LABELHOOD

The vitality of eastern aesthetics

Since its inception, LABELHOOD has focused on incubating Chinese designer brands. Eastern aesthetics is not only the underpinning for their design philosophy but also one of the defining themes for LABELHOOD events. The Fashion & Art Festival often takes Chinese culture and oriental elements as its theme. For example, the 10th season adopted a theme related to the Yellow River, the cradle of Chinese civilization. For this season, LABELHOOD collaborated with two designer brands, UMA WANG and MARCHEN, to stage a fashion show and present a video showing the surging vitality of the Yellow River as a metaphor for the infinite potential of young Chinese designers. In 2022, the 14th season showcased the vibrancy of oriental fashion with a fashion show, Lab Showroom, LABELHOOD Block, and Youth China Photo Studio under the theme of "Youth China".

Photo credit: LABELHOOD

Photo credit: LABELHOOD

During the Chinese New Year, apart from the family portrait project starting in 2020, LABELHOOD also collaborates with designer brands, including SAMUEL GUI YANG, M ESSENTIAL, NAN KNITS, and RUOHAN, to roll out new collections.

Photo credit: LABELHOOD

Commercialization: a perennial problem

Independent designer brands take on a distinctive, personal style. Designers typically oversee design, production, and even more processes. Striking a balance between creativity and profitability in the fiercely competitive, ever-changing fashion industry is a perennial problem.

As an incubator for designer brands, LABELHOOD believes designers must stay up-to-date with global fashion trends. "We want to incubate designer brands that will make a difference in the industry," said Tasha, "For example, two or three years ago, when streetwear dominated the fashion market, we launched some girly designs." A mature brand should learn to interact with consumers for feedback while sticking to its design philosophy. For example, after years of growth, SHUSHU/TONG has been able to offer fresh designs while maintaining its girly style. In 2022, SHUSHU/TONG opened its first flagship store. "The co-founders never thought this day would come when they created this designer brand." Their years of hard work have brought this brand to where it is today," said Tasha.

Photo credit: LABELHOOD

Photo credit: LABELHOOD

To help designer brands thrive, LABELHOOD provides them with a range of resources and services. For example, it helps them open their own physical stores, offers them e-commerce solutions, and invites them to the Fashion & Art Festival to raise their profile. The LABELHOOD team also works with designer brands in a way that dovetails with their brand character and can enhance the brand value. For example, CONVERSE collaborated with LABELHOOD for the first time in the first season of the Fashion & Art Festival in 2016. Since then, the two sides have launched co-branded products many times. In the 14th season in 2022, CONVERSE collaborated with five Chinese designer brands, namely, MTG, Linlin Chasse, Momonary, AO YES, and Fabric Qorn, to showcase their latest collections and CONVERSE's new creative designs. According to Tasha, the LABELHOOD team is cautious about indiscriminate co-branding for fear of compromising brand reputation. She said, "We hope partners will exchange customer groups to generate truly valuable fashion-related content."

In addition to incubating emerging designer brands from scratch, LABELHOOD helps mature designer brands reach out to young consumers. For example, since UMA WANG targets mainly mature customers, LABELHOOD has teamed up with the brand to design capsule collections that appeal to potential consumers between 18 and 25. These capsule collections take on a more youthful style while showcasing UMA WANG's elegance and sophistication. "We invited up-and-coming photographers and models to present the brand's design philosophy. We were also involved in designing the style and gave much advice on pricing and fabrics. We hope that like 'lipsticks', such limited edition collections will allow UMA WANG to make a good first impression on

young people," said Tasha. Aside from limited collaborations, some brands still use LABELHOOD's distribution channels despite having specialty stores in malls. "In this way, brands can help avant-garde, niche designers build their mindshare."

Although LABELHOOD has published a great deal of fashion-related content and organized events like the Fashion & Art Festival, the retail business is what matters most to the team. Without retail data, the team would be unable to determine market demand. LABELHOOD's physical stores fall into two types. One is concept stores, designed based on the characteristics of different cities. In 2021, LABELHOOD upgraded the LABELHOOD Block at the Fashion & Art Festival and invited the neighbors around the physical store to participate and interact with each other to create more synergies.

Another type is flagship stores, such as the one in the MIXC Mall in Qianhai, Shenzhen. As LABELHOOD's influence grows, many malls encourage LABELHOOD and its designer brands to break new ground in store operations. According to Tasha, working with malls allows the team to gain more experience. "Malls can give us support, and their business logic can provide us with much inspiration. In return, we are ready to share something new with them. It will be a win-win situation."

In August 2022, LABELHOOD opened its new store in the JC Plaza, Shanghai, in collaboration with ERDOS Group. The store offers high-quality cashmere products and knitwear under both the ERDOS and LABELHOOD's designer brands. The two sides will explore further opportunities for cooperation. "We hope this partnership will bring more attention to excellent Chinese designs not necessarily created by independent designers. The two sides can supplement each other's strengths, including our insights into the needs of young customers and ERDOS's capabilities in supply chain management and operations," said Justin.

Photo credit: LABELHOOD

[1] https://mp.weixin.qq.com/s/ESUToGfhjlXp3EtkeYuNgw
[2] https://mp.weixin.qq.com/s/7d3870F7bV-rn_O7TK0a5Q

ERDOS

Interview with Tana DAI, GM of the Brand Division and GM of Erdos Cashmere Group, China's leading cashmere product company

Authors / **Michelle LU and Yuwei ZOU**

Photo credit: ERDOS Cashmere Group

Foreword:

Through more than 40 years of continuous operations, Erdos Cashmere Group (hereinafter "Erdos Group") has evolved into China's leading cashmere product company, with its iconic brand becoming popular with Chinese consumers. In 2016, Erdos Group released a strategy to reshape and upgrade its brand to provide different customer groups with targeted and differentiated services. Erdos Group has laid out a new brand matrix featuring a brand family with five brands, each with a clear strategic focus: "1436" for rare baby cashmere products, ERDOS for modern cashmere fashion, ERDOS 1980 for classic style and quality, BLUE ERDOS for independent-minded young people, and erdos KIDS for children.

Tana DAI, GM of Erdos Group, conducted in-depth exchanges with an interviewer from CEIBS-Shui On Global Branding Strategy & Fashion Industry Research Fund, covering issues such as brand rejuvenation and its tie-up with LABELHOOD. She provided her unique perspective on rebranding and product remodeling while also answering questions and discussing potential cooperation between Erdos Group and the Fund.

Brand Rejuvenation

Q1
What was Erdos Group's motivation for rebranding at the very beginning?

A
"Erdos Group actually registered its trademark in 1985. Starting in 1989, we have run commercials on CCTV for 23 consecutive years. For more than 40 years, we have made many attempts at brand rejuvenation. In 2016, Erdos Group started rebranding itself. This is why you can see that our brand matrix has dramatically changed in recent years. In fact, our preparations for rebranding kicked off in 2009 when Mr. Gilles Dufour arrived as Creative Director. He adjusted the design processes and put forward novel ideas affecting our attitude toward branding. In this sense, our 2009 preparations paved the way for splitting our brand into a matrix of brands in 2016."

Q2
What impact did Jane Wang's return to the group as president have on Erdos Group's brand rejuvenation?

A
"After returning from overseas studies in 2006, President Wang joined a consulting company before creating the "1436" brand. After returning to the group, she presided over its routine operations. In 2015, she took over the brand business and has gone through the whole process of building a brand from scratch. In my view, her international vision and stint in a consulting company helped her develop an efficient approach to building Erdos Group into a prominent brand."

It was no accident that President Wang became an acquaintance of Mr. Dufour. "Back in 2008, while attending a brand forum in Shanghai, a vice president of our group met Mr. Gilles Dufour, who was seeking potential business opportunities in China. Later, when President Wang and her husband were on a business trip to France, they met with Mr. Dufour, who was also in France. The three of them chatted over coffee and soon hit it off. President Wang and her husband invited Mr. Dufour to come to China. During his visit to Erdos Group, Mr. Dufour got along so well with its executive team that he started working with them without even signing a contract."

Photo credit: Erdos Cashmere Group

New Consumer Needs for Cashmere Clothing

Q1
What has changed in terms of consumer needs for cashmere clothing in recent years?

A
"At the very beginning, Erdos Group had seen its robust sales in malls. As cashmere sales were highly seasonal, Erdos Group still appealed to a large number of consumers, even if it led the market. Since 2009, when Erdos Group started its preliminary transformation, we have focused on diversifying our product category, given our customers' needs for cashmere clothing in all seasons. During this process, we went through rounds of tough negotiations to break down stereotypes about our product range. As a result, Erdos Group has earned itself a stronger competitive position in malls."

"We are now developing cashmere clothing for spring and summer to break seasonal barriers for each clothing category. From an industry perspective, cashmere sweater brands follow in the footsteps of Erdos Group's transformation, as designing fashionable cashmere sweaters is the order of the day. On the demand side, some loyal consumers with a strong preference for cashmere appreciate our attempts to expand our product range."

Photo credit: Erdos Cashmere Group

Photo credit: Erdos Cashmere Group

Tie-up with LABELHOOD

Q1
How has ERDOS made its way into LABELHOOD's boutique through different forms of cooperation?

A
"When positioning Cashmere Space as a multi-brand integrated business channel, McKinsey suggested we partner with a boutique, a particularly important business format at that time. Our market survey of LABELHOOD revealed that its customers were starkly different from ours. I, myself, was also fond of visiting their store. We identify ourselves with LABELHOOD's operating philosophy, which has proven successful, so the two sides have worked together for years."

"Back then, Uma Wang was a major designer brand at the LABELHOOD store. Its style fits well with our '1436' brand, so the two brands have collaborated since then. The attributes of cashmere have provided Uma with much inspiration while co-branding with Uma Wang has allowed '1436' to reach out to different customer groups."

Q2
Why did the group choose ERDOS as a partner for LABELHOOD?

A
"We considered the positioning of both the store and LABELHOOD as we wanted to showcase brand diversity. Among our group's brands, ERDOS was more compatible with other brands in the LABELHOOD store. Positioned as a brand for fashionable cashmere clothing, ERDOS teamed up with designers several years ago, so I believe both our customers and those of LABELHOOD have similar preferences and aesthetic values. We hope our joint store will deliver the same experience to customers."

Q3
What role has LABELHOOD played in the strategic cooperation?

A
"First, LABELHOOD has projected a sound image of a Chinese brand in terms of both marketing and routine operations. This dovetails with Erdos Group's brand philosophy, and I think this is very important. Second, LABELHOOD is at the forefront of fashion. Since around 2015, Erdos Group and LABELHOOD have paid close attention to each other. The partnership is based on mutual understanding and trust. To sum up, the tie-up between Erdos Group and LABELHOOD can project the image of Chinese brands at the cutting edge of fashion."

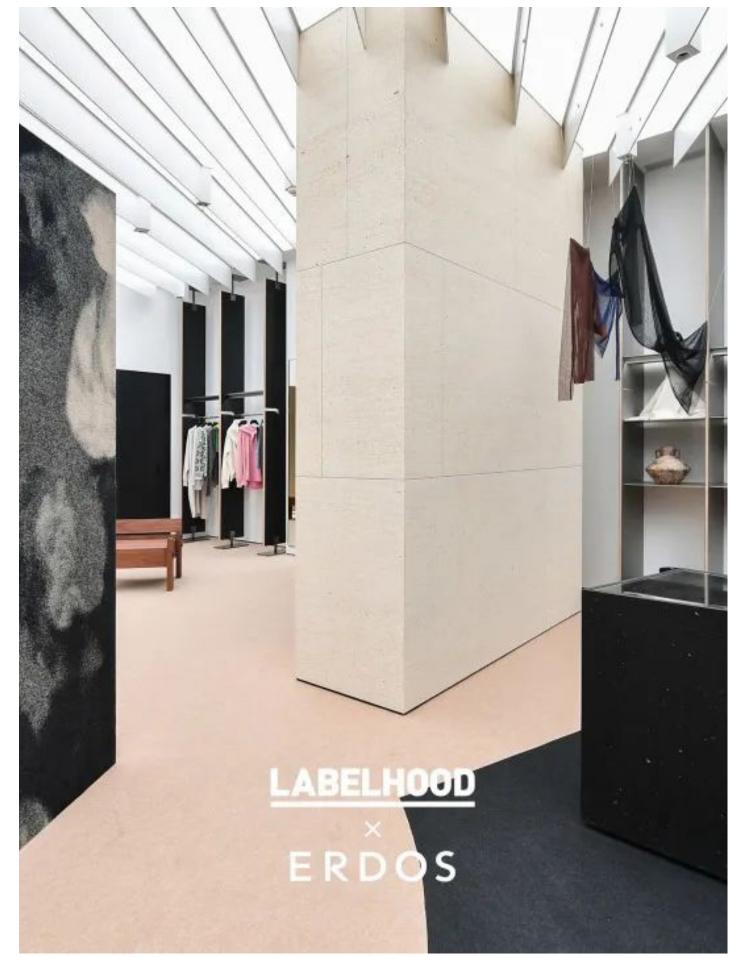


Photo credit: Erdos Cashmere Group

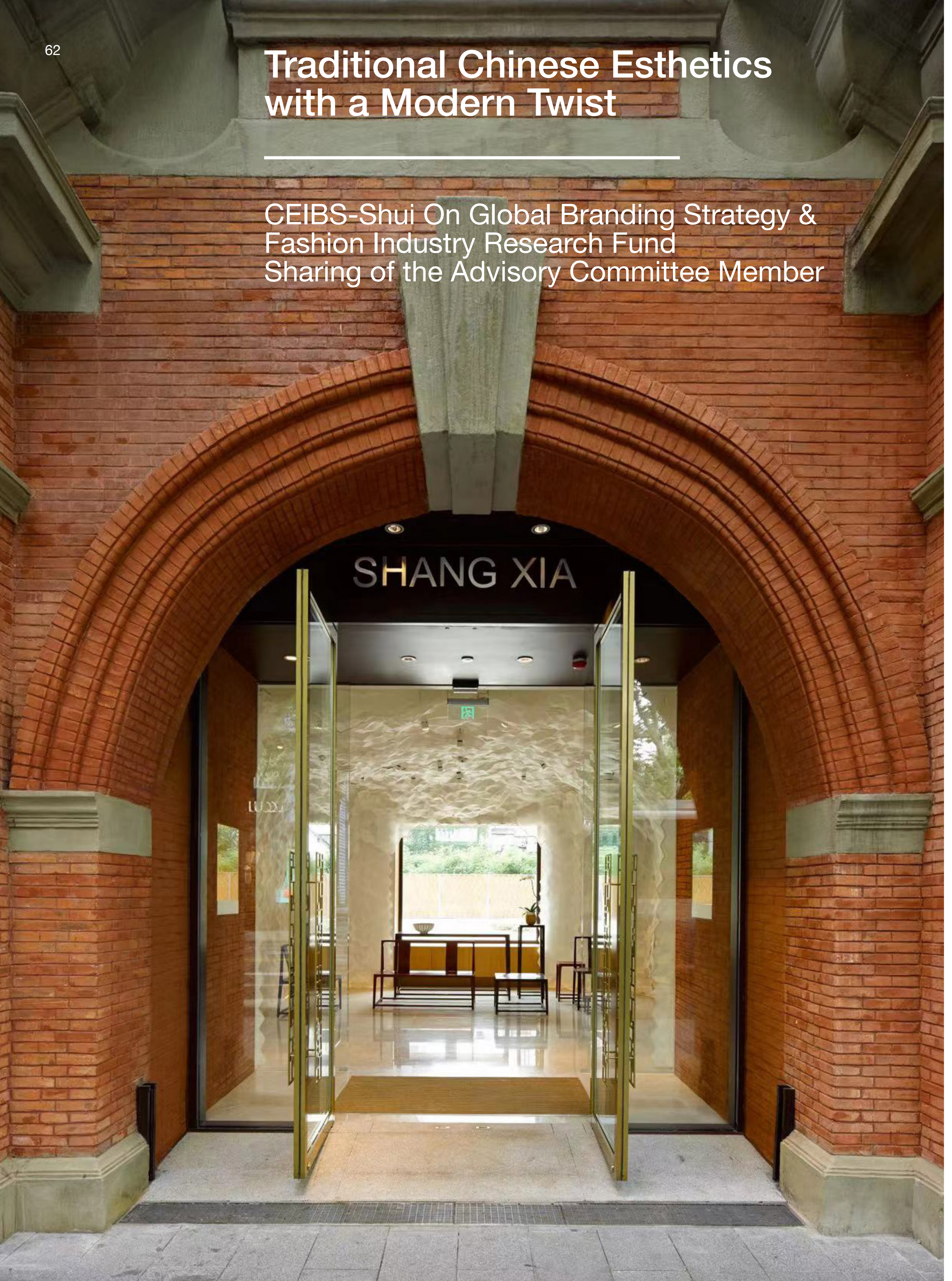

Photo credit: Erdos Cashmere Group

Concluding Remarks

Young Chinese consumers are moving more upmarket, fueling a growing demand for high-quality, fashionable cashmere products. It is crucial for us to work together to explore how brands can leverage emerging technologies and big data to cater to the varying preferences of young consumers. Is Erdos Group rejuvenating its brand and products to follow the trend of the current era or to better meet consumer needs? It remains to be seen whether Erdos Group's strategy for brand differentiation and tie-up with another brand will work effectively.

Traditional Chinese Esthetics with a Modern Twist

CEIBS-Shui On Global Branding Strategy & Fashion Industry Research Fund Sharing of the Advisory Committee Member



By 2022, it has been 13 years since I launched the "SHANGXIA" brand. I have been exploring how to put a modern twist on traditional Chinese aesthetics, pass on exquisite Chinese craftsmanship and give it a new lease of life to meet the cultural and emotional needs of the 21st century, and create works that balance opposing elements to add some spice to our lives.

It took us 12 years to define SHANGXIA's brand concept, embodied in a full circle comprising two semicircles. And this is only the first step in branding.

The first semicircle is about using modern design to bring the traditional Chinese craftsmanship found in museum collections closer to us. To create works that can impress consumers, we draw our inspiration from something traditional that has been ignored.

The second semicircle is about creating the best of the era. We are committed to pursuing excellence in terms of design, process, raw materials, technique, and artistic merit so that a small number of exquisite pieces can be housed in prestigious museums around the world as a testament to the era.

In my view, our design embodies the “Chinese” way of thinking rather than emphasizing a fixed “Chinese” element. As its name means “Up-Down” in Chinese, the brand represents a philosophy that harmonizes contrasting concepts, such as inside and outside, East and West, abstract and concrete, local and whole, traditional and modern, past and future, craftsmanship and technology, and simple and complex. We realize that the more our design oscillates between two opposites, the more dynamic it will be. I believe poetic imagination allows us to integrate traditional craftsmanship into our daily lives. To think outside the box, we should draw our inspiration from nature with curiosity and excitement.

China is moving closer to the center stage of the world. In this context, SHANGXIA strives to pass on and carry forward the refined traditional Chinese culture, which I believe reflects China's past, present, and future. SHANGXIA's vision is to bring China's glorious past to life by fusing classic Chinese art with modern design.

The past 13 years of exploration represent only one small step toward building a brand. With a mission to bring the heritage of the past into the future, SHANGXIA does not pass on anything tangible but instead fuses craftsmanship with modern design.

— **Jiang Qionger**
Designer, Artist, and Founder of SHANGXIA

TECHNOLOGY

3

Metaverse (VR/AR)

Industry Development, Industry Chain, and Key Industry Players

Authors / **Yu ZHANG and Jackie CAO**

Case introduction

This case (CI-022-072) was prepared by Yu ZHANG and Jackie CAO of China Europe International Business School (CEIBS).

Metaverse and VR/AR

The American writer Neal Stephenson first coined the term “metaverse” in his 1992 science-fiction novel *Snow Crash*, envisioning an online virtual world, a “place” parallel to and interconnected with the physical world. In 2021, Roblox went public as the first metaverse IPO. The company’s prospectus says the Roblox Platform has several key characteristics: identity, friends, immersive, low friction, variety of content, anywhere, economy, and safety.

Research houses and industry media view interaction-based technology as underpinning the metaverse. As communication technology, computational power, and display technology continue to improve, virtual reality (VR) and augmented reality (AR), two important vehicles for interactions, will create more realistic, immersive user experiences and revolutionize entertainment, consumption, and the industrial sector.

VR primarily uses digital visual elements and, secondarily, auditory, tactile, or other sensory stimuli to create an artificial virtual environment through 3D modeling, a vital part of the computer graphics process. In contrast, AR overlays computer-generated virtual objects, scenes, or information onto the existing real-world environment to enhance the user’s experience (see Exhibit 1). In addition, mixed reality (MR) is a visualized environment where the real and virtual worlds merge, while extended reality (XR) is an umbrella term covering the Virtual Continuum, meaning all real and virtual combined environments (e.g., AR, VR, and MR) are included.[1]

Exhibit 1: Characteristics of VR/AR

	VR (an advanced form of media)	AR (hopefully the next-generation mobile terminal)
Objectives	To create immersive virtual 3D environments	To add virtual objects to the real world users see, thus extending the real world
Experience characteristics	Closed immersive experiences; real-time interaction between the users and the virtual world	Augmented reality experiences; the fusion of the real and virtual worlds
Technical fundamentals	Computer-generated graphics; high-fidelity, high-resolution display	Computer graphics generated based on the understanding of the real world; interactive display
Technological pain points	The key is to create a deep level of immersion through localization and virtual scene rendering. But there are constraints on location accuracy and transmission speed.	The key is to achieve interaction between the real and virtual worlds. But there are constraints on optical solutions and computational power.
Applications	Mainly applied to mass-market segments, including gaming, video, live streaming, and social networking, serving recreational purposes.	Suitable for wide application; mainly industrial and military applications for now; poised to penetrate the consumer market.

Source: Shenwan Hongyuan Securities.

VR Developments

In 1968, the first head-mounted display (HMD) that could convert primitive wireframes into 3D effects was created. This device was considered a prototype VR glasses set. In the 1990s, gaming companies like Sega and Nintendo began offering VR glasses. However, limited computing power and immature display technology meant their VR glasses met a lukewarm response.

In 2012, VR startup Oculus launched the Rift VR headset prototype, bringing VR into the public eye. VR’s first big moment came in 2014 when Facebook dropped USD 2 billion to acquire Oculus. That same year, the inexpensive portable VR Box, which looked like a phone accessory and relied on the phone for computation, transmission, storage, and interaction, was well received by consumers. In 2015, the VR Box almost sold out completely.

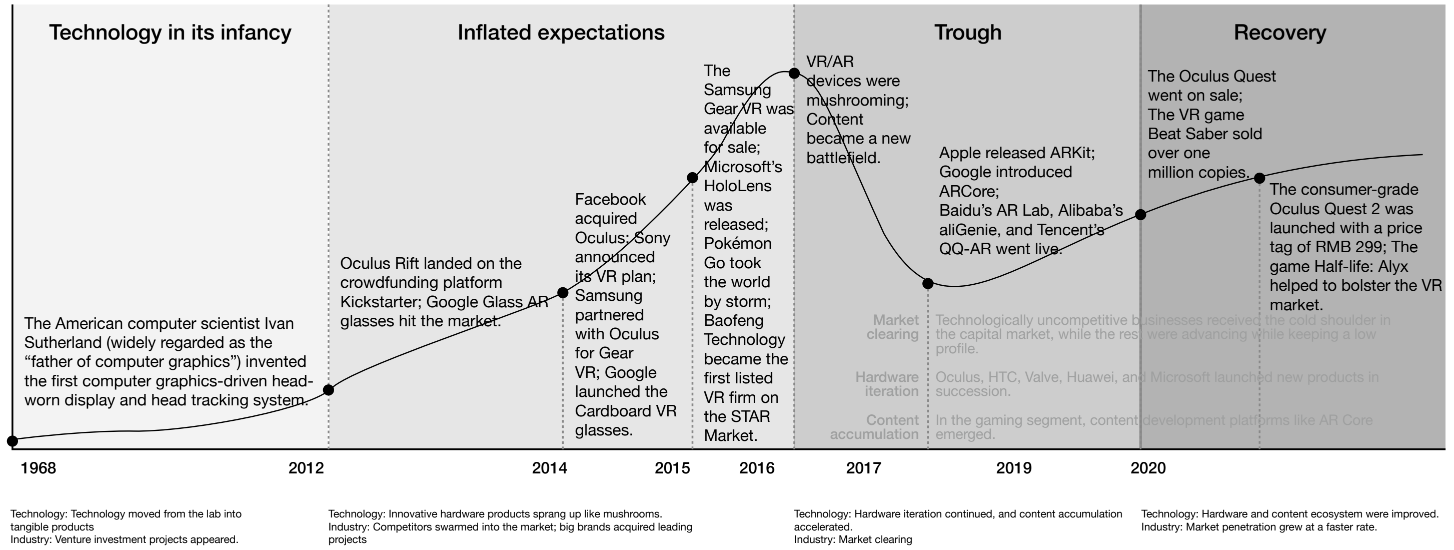
In 2016, Oculus, HTC, and Sony launched consumer-grade VR glasses. New products from

Chinese startups like 3Glasses and DPVR also appeared on the market. In 2017, Microsoft, Dell and Samsung began selling PC/host VR devices at high prices. The sales-to-inventory ratio ended the year 36% higher than the previous year. VR device shipments increased from 2.0 million units in 2015 to 7.8 million in 2017 before falling 27% to 5.6 million in 2018.[2] The decline could be attributed to technological limitations, high pricing, a lack of content, and fading market momentum.

In subsequent years, increasingly sophisticated chips, algorithms, and sensors allowed VR devices to build more immersive and interactive experiences. In March 2020, the release of the AAA game,[①] *Half-Life: Alyx*, helped bolster the VR market. In October of that year, the Oculus Quest 2 all-in-one VR headset debuted at USD 299 (the market price of similar hardware products typically exceeded USD 400) and quickly gained traction with consumers. Accordingly, the sales-to-inventory ratio for all-in-one devices climbed to 73%. Buoyed by Oculus' success, competitors lowered their products' prices to win over consumers. For example, the Pico Neo 3 launched in May 2021 at RMB 2,499, down nearly 45% from the Neo 2's starting price. Between 2016 and 2021, mainstream VR devices optimized parameters such as resolution, refresh rate, weight, and field of view (FOV), further boosting consumers' willingness to pay (see Exhibit 2).

③ AAA is a stamp of quality that is granted based on the resources that go into developing and marketing the game versus the success it ultimately achieves in the market.

Exhibit 2: VR/AR industry development



Source: Guosheng Securities, Metaverse (Topic I): VR Penetrates the Consumer Market Through the Iteration of Technology and Improvement in Ecosystem, 2022-02-15 [2022-07-03], https://pdf.dfcfw.com/pdf/H3_AP202202151547158638_1.pdf?1644935061000.pdf

With the onset of the Covid-19 pandemic in 2020, growing demand for remote work and home entertainment drove the development of the VR industry. In addition, China categorized VR/AR as a key industry for the digital economy under its 14th five-year plan. Needless to say, favorable government policies would push the industry to new heights.

Market Landscape

Worldwide VR device shipments exceeded 10 million units in 2021, data from IDC shows. Also that year, Chinese VR HMD vendors shipped 1.43 million units, representing 17.1% of the global total. In terms of China's 2020 VR spending by sector, consumer spending led the way at 52%, followed by distribution and services (17.6%), public sector (15.1%), and manufacturing and resources (11.5%).[3]

Surveys show that VR HMDs were still relatively niche in 2021, with only a 2.3% penetration of households globally.[4] In the US, 45% of Generation Z (born between 1997 and 2012), 43% of millennials (born between 1981 and 1996), 17% of Generation X (born between 1965 and 1980), and less than 10% of baby boomers (born before 1965) used VR, 2021 data shows. Particularly noteworthy was VR outside the gaming sector: 70% of consumers watched videos in VR every week, while 60% used VR for workouts.[5]

Major pain points in consumer-grade VR required addressing on four fronts: economy, comfort, immersion, and interaction.[6] Although China led the world in VR/AR patent applications, it was not among the global leaders in key VR/AR technologies, including perceptual interaction, rendering computation, content production, and distribution.

AR Developments

The AR industry boomed in 2012 thanks to the rapid development of big data technology and breakthroughs in visual recognition enabled by deep learning algorithms. Unveiled in April 2012, Google Glass was the most popular AR product. Microsoft's HoloLens, released in 2015, and Nintendo's *Pokémon GO*, which went live in 2016, thrust AR further into the spotlight.

In 2017, Google Glass and Magic Leap sales fell short of expectations due to the slow penetration of the consumer market. As a result, VR investment cooled. Given the high barrier to entry of finished hardware products, the difficulty in mass-producing such products, an imperfect content ecosystem, and the time needed to raise consumer awareness, the AR industry's growth naturally shifted down a gear. The focus shifted to enterprise applications. Meanwhile, tech giants like Microsoft, Apple, Meta, Baidu, and Alibaba stepped up R&D efforts in AR technology. They opted to file more AR-related patents or acquire multiple AR firms.

After 2019, improved underlying technology and hardware performance created new applications for AR. Moreover, operators and hardware manufacturers doubled down on AR. In 2020, the Covid-19 outbreak made contactless socializing and contactless economy mainstream. Riding this trend, AR, characterized by natural interaction and a combination of real and virtual worlds, rapidly penetrated the industrial sector, education, healthcare, social networking, and e-commerce.

Market Landscape

AR displays can go into three categories: head-mounted (exemplified by headsets and the lighter, easier-to-use glasses), hand-held (exemplified by tablets and mobile phones), and spatial (exemplified by exhibition halls and car head-up displays (HUDs)).

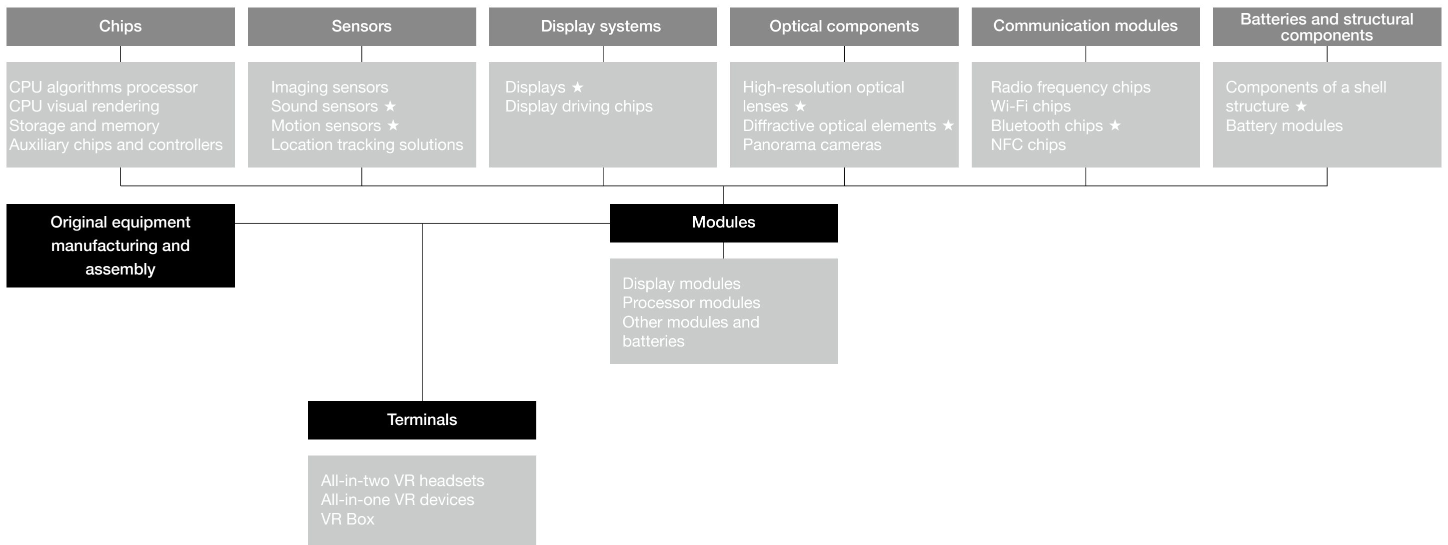
By 2020, the global AR market was worth around RMB 28 billion, with RMB 6 billion in China alone.[7] Some 400,000 pairs of AR glasses shipped worldwide in 2020, including 280,000 from China. This was forecast to surpass 10 million globally and 3.9 million from China by 2025,[8] driven by new technology and lower pricing.

Unlike VR glasses, today's AR glasses are not consumer-facing in product design and pricing, and therefore appeal mainly to business clients. In 2020, 81% of AR devices were sold to businesses. However, as tech behemoths like Apple and Meta channeled more resources into consumer-grade AR glasses, nearly two-thirds of the world's AR glasses will likely target individual consumers by 2025.[9] Given the high-quality near-eye displays (NEDs) and diverse use cases for AR applications, industry commentators and media believe that AR products could overtake smartphones in the human-machine interaction arena.

VR Industry Chain

The upstream VR/AR hardware industry chain is associated with components, software, and infrastructure; the midstream includes assemblers of HMDs and other hardware devices; and the downstream are brand owners and content or service providers (see Exhibit 3). It's worth noting that upstream, key components such as chips, optical modules, displays, and sensors profoundly impact HMD users' experience. Still, the technical barriers to producing them are hard to overcome.

Exhibit 3: The VR industry chain: HMD components and parts, assembly, and terminals



Source: CITIC Securities, A Peek Inside VR Equipment: A Key Vehicle for Primary Metaverse That Is in Constant Iteration, 2022-02-12 [2022-07-03], http://finance.sina.com.cn/stock/stockzmt/2022-02-12/doc-ikyakumy5551163.shtml

Typically, the cost structure of a VR HMD can be broken down into five elements: chips (45-50%), display modules (30-35%), optical modules (5-7%), device assembly (3-5%), and other components and parts (10-15%).[10]

Upstream

VR device components comprise five main modules: optics, display, computation, acoustics, and interaction. Since much of the component technology in VR devices is also used in smartphones, many mobile phone producers have ventured into the VR business. VR devices usually weigh more than 300 grams, with optical lenses, batteries, and structural components making up the most significant proportion of the total weight. If made lighter and thinner, these key components can take the VR experience to the next level.

Optical Modules

VR display solutions have gone through four stages of development. Initially, VR displays used a weighty single lens. Later, the lighter, cheaper, and more technologically sophisticated Fresnel lens went mainstream, though there was not much difference in thickness between the two lenses. (VR products using Fresnel lens technology often weigh over 300 grams, but only those at around 100 grams will be comfortable for long-term wearing) At the same time, Fresnel lenses have a narrow FOV (≤140 degrees per eye) and low resolution (≤4K per eye) and thus may distort the imagery captured.[②]

② With the average set of human eyes, each eye provides 130-150 degrees of overlapping FOV, totaling over 200 degrees. The closer the FOV in VR is to the human eye can track, the more likely it is that users will have an immersive feeling as they explore virtual worlds.

In comparison, the Pancake lens uses reflective polarizers to produce folded, compact, and lightweight optical systems with theoretically wider FOV and higher resolution. Conversely, Pancake lenses have relatively low optical efficiency and thus can be worked around with very bright displays (e.g., micro-OLED). Also, due to the high precision requirements, Pancake lenses are undergoing trials and have not yet reached widespread adoption. Nevertheless, with the increased yields and shipments of Pancake modules, Pancake optics will likely become popular within two to three years.

Leading international lens providers include Kopin and 3M. The former developed all-plastic Pancake optics to reduce the weight and thickness of displays, while the latter built folded optics using reflective polarizing films. Their Chinese competitors included GoerTek and Sunny Optical Technology. GoerTek is an exclusive supplier of Fresnel lenses for Oculus Rift. It also commenced mass-producing Pancake lenses. Sunny Optical Technology is engaged in the VR business, providing optical components, sensors, and system modules. The company supplies Meta, HTC, and Sony with camera modules and Fresnel lenses.

Display Modules

The high refresh rate, high resolution, and long duration are prerequisites for VR displays to offer more immersive visual experiences. A high refresh rate mitigates the persistence of vision, thus relieving the symptoms of dizziness. And a high pixel density reduces the screen door effect, enabling more realistic images. Currently, fast-LCD (liquid-crystal display), micro-OLED (organic light-emitting diode), and micro-LED (light-emitting diode) are three major display technologies. In 2021, 44% of the world's VR products used LCDs, while 36% used micro-OLED displays, statistics from BCDTEK (Xinshijia Semiconductor Technology) show.

Between 2016 and 2018, OLED displays were first used in VR solutions due to their quick response rates. For example, Sony's PlayStation VR (PSVR), the HTC Vive, and Oculus Rift CV1 used Pentile OLEDs. However, there were difficulties in increasing the pixel density of OLED displays, producing a severe screen door effect[③]. Consequently, Fast-LCDs offering greater mass production stability and better value for money gained market acceptance.[11] Major Fast-LCD suppliers include Japan Display Inc. (JDI), BOE Technology Group (BOE), and China Star Optoelectronics Technology (CSOT). Fast-LCDs are not without their drawbacks. On the one hand, they carry a refresh rate of only 90-120Hz and a pixel density of some 1,000 pixels per inch (PPI) compared to an ideal refresh rate of 120-240Hz and a desired pixel density of 2,000-4,000 PPI. On the other hand, they are backlit and, therefore, more power-consuming.

③ Screen door effect is when thin, dark lines or a mesh pattern appear on the VR image due to gaps between pixels on a screen or projected image. The effect—similar to looking through the mesh or flyscreen on a screen door—is common in older low-resolution displays and VR headsets.

Micro-OLED displays, with a monocrystalline silicon wafer as the drive backplane, excel in pixel density, contrast, refresh rate, luminance, and latency. Traditionally, micro-OLEDs were for the military and other high-end markets. In recent years, many companies have made inroads into VR. A handful of them, including Sony, Kopin Corporation (KOPN), BOE, and SeeYA Technology, even mass-produce micro-OLEDs for Varjo and Arpara VR headsets. Nowadays, micro-OLEDs are already a mature technology. However, mass production remains in its initial stage. Micro-OLEDs made using existing production techniques feature short lifespans, thick screens, and high costs.

Micro-LEDs have higher resolutions, higher latency, and higher power consumption than micro-OLEDs[④]. The technology for producing micro-LED displays is still in its infancy. There are two main technological challenges: mass transfer and full color. More specifically, precisely transferring a large number of miniaturized LED components to the substrate is challenging. Conversely, full-color micro-LEDs are beset by high processing costs, low material efficiency, and color conversion instability. Key micro-LED producers in China include BOE and TCL Technology.

④ Micro-LED is a new display technology based on arrayed inorganic light-emitting diodes that are miniaturized to less than 50 μm.

Computational Modules

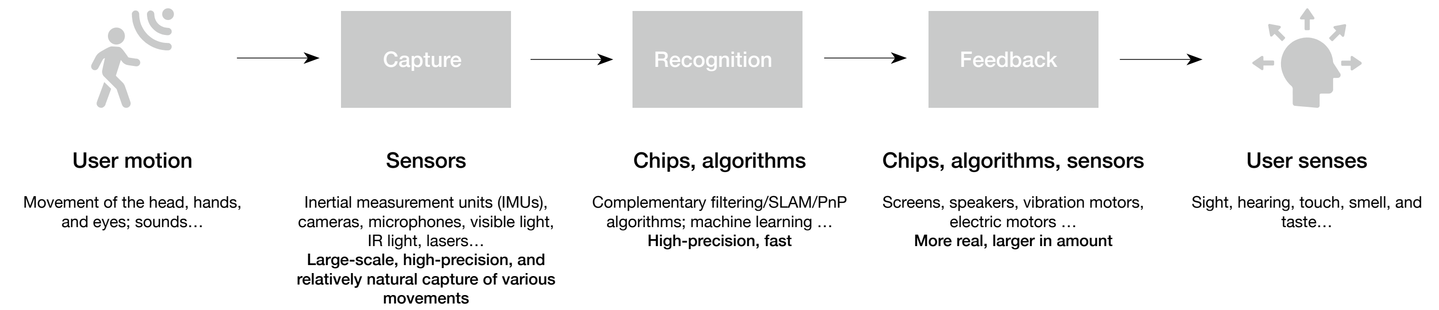
To create an immersive user experience, VR devices must meet various technical specifications. Chips are a key component in VR HMDs, responsible for computation, scene rendering, and interaction while also influencing the duration of continuous device usage. VR HMDs can use either mobile-phone chips or chips customized for VR applications and are noted for their striking improvements to AI processing power and video display quality.

Now, over 90% of VR devices are powered by Qualcomm chips.[12] Many consumer-grade all-in-one VR devices, including the Pico Neo 3, iQIYI Qiyu 3, and HTC Vive Focus 3, launched with the Qualcomm Snapdragon XR2, a 5G platform designed explicitly for VR/AR wearables. Powered by the Snapdragon 865, they support up to seven concurrent cameras and can capture video at 8K resolution and 60 frames per second (fps). Qualcomm chips can deliver top-of-the-line performance but at a high cost. In addition to Qualcomm, other major chipmakers include foreign companies like AMD, Samsung, and Apple, as well as Chinese companies like Huawei, Allwinner Technology, and Rockchip. Nevertheless, their VR chips are still overshadowed by Qualcomm chips in terms of performance and adoption.

Interaction Modules

To build interactions, VR products first use sensors to track body motion, then use chips programmed with algorithms to confirm the user's state before producing content to stimulate the senses (see Exhibit 4)

Exhibit 4: Schematic diagram of VR device interaction



Source: CITIC Securities, A Peek Inside VR Equipment: A Key Vehicle for Primary Metaverse That Is in Constant Iteration, 2022-02-12 [2022-07-03], http://finance.sina.com.cn/stock/stockzmt/2022-02-12/doc-ikyakumy5551163.shtml

1. HMD-based capture

Currently, 6DoF inside-out solutions are widely deployed. DoF is shorthand for "degrees of freedom". When discussing tracking systems, this means the degrees or types of movement that can be detected. 3DoF tracking allows users to look left or right, up or down, and tilt their head (roll) side to side. 6DoF builds on the rotations of 3DoF and adds to its translations, allowing users to walk forward and backward, strafe down left and right, and crouch and stand up. This creates a higher degree of immersion. Outside-in tracking is achieved with external positional trackers. In contrast, inside-out tracking is where the camera is placed on the HMD and looks out to determine how its position changes in relation to the virtual environment. Inside-out incurs lower hardware costs and enables easier installation and testing but sacrifices latency and accuracy. So, in AAA games, training simulations, and other activities that require greater accuracy, outside-in, which allows for more trackers in the play space, is still a better choice. However, inside-out tracking has crept in, arriving on headsets like the Oculus Quest 2 and Pico Neo 3.

2. Controller tracking

Controller tracking solutions are evaluated along the following four dimensions: (1) Angle: Electromagnetic induction makes possible 360-degree coverage. Ultrasound can skirt obstacles, so occlusion isn't an issue (but at the cost of accuracy). Tracking using infrared (IR) light, visible light, and image recognition should be within sight of the cameras; (2) Tracking range: Tracking errors are less of a problem for IR light than they are for alternative tracking methods where accuracy is negatively related to distance; (3) Interference immunity: IR light is affected by far-infrared rays. Ambient light strongly influences visible light and image recognition. Ultrasound is beset by echoes, so ultrasonic tracking is not that precise. Electromagnetic tracking is subject to magnetic field distortions caused by electronic products; (4) Cost: IR light, visible light, and image recognition technology can be used directly by HMDs for tracking. In contrast, ultrasonic and magnetic tracking rely on sensors built into the HMDs, driving up costs. As of 2021, Oculus Quest and Pico Neo headsets had adopted IR tracking.

3. Eye tracking

Eye tracking uses near-infrared (NIR) light to measure eye movements, making it possible to build faster and more flexible interactions and craft a better user experience. In 2019, HTC announced the Vive Pro Eye VR headset with foveated rendering and integrated eye-tracking supplied by Swedish firm Tobii. Starting in 2017, Meta acquired several eye-tracking technology developers. The company reportedly planned to include the eye-tracking feature in the next evolution of its VR headset line codenamed Project Cambria. In 2021, Apple won a patent for using NIR light, mirrors, and cameras to capture eye movements. This technology can provide better AR/VR views, improve input and interaction, and manage virtual avatars' expressions.

4. Environment and motion recognition

VR devices have integrated cameras placed on the HMDs, algorithmically combined to image the surrounding environment. These cameras can also track hand gestures by receiving and analyzing the IR light emitted from controllers. Mainstream VR products on the market use four-megapixel IR/grayscale cameras with a wide-angle lens, delivering low-resolution grayscale images. For comparison, RGB color cameras can create images that replicate human vision, capturing light in red, green, and blue wavelengths (RGB) for accurate color representation. Unfortunately, high power consumption and mediocre computing capabilities limit their applications. Alternative solutions in this market space include 3D cameras (with increased location accuracy and mixed-reality passthrough and gesture recognition features), millimeter-wave radar, and ultrasound.

5. Comprehensive linkage

VR accessories such as bands, watches, and gloves can enrich interaction in the VR context. In March 2021, Meta introduced electromyography (EMG) wristbands that capture neural signals through the wrist so clearly to understand a finger motion within one millimeter. According to Bloomberg, Meta had plans to unveil a smartwatch for use with VR HMDs in 2022. VR gloves can provide haptic feedback, allowing tactile interaction with the virtual world. For this reason, they are suitable for use in training programs (e.g., assembly testing). In November 2021, Meta showed off a VR haptic glove reproducing sensations like grasping an object or running your hand along a surface. The glove cost about USD 5,000, leaving much room for cost-cutting.

Major foreign suppliers of interaction-system components include Bosch, Sony, and Samsung. Their Chinese counterparts include GoerTek, Sunny Optical Technology, and Will Semiconductor.

Operating System (OS)

Most existing all-in-one VR devices have operating systems custom-developed on Android, while all-in-two VR devices rely on an OS host. At the same time, some VR devices are designed to work with Windows. Huawei's VR glasses employ its own Harmony OS. Meta's OS project launched in 2017, with more than 300 professionals working on it.[13]

Tools for VR/AR Development

Platform-driven development engines and software development kits (SDKs) can lower the barrier to entry for VR/AR content development. Algorithm engines determine basic rules and presentation modes in the virtual world, influencing light and shadow combinations, animation, and physical systems. The engines can perform physical model calculations, AI calculations, graphic rendering, sound production, animation, and system rendering, lowering the barrier to entry for developers and accelerating development. Larger companies mostly developed and used early algorithm engines behind closed doors. As the industry ecosystem evolves, there is a growing trend toward open platforms (exemplified by Unity and Unreal Engine) where small and medium-sized creators can create high-precision, high-fidelity content. Unity Mars offers a professional XR authoring environment, while Roblox Studio provides an easy way for non-professional creators to unleash their creativity.

An SDK is a set of software-building tools that allow developers to build applications for specific software frameworks, hardware platforms, and OSs. By virtue of modularized development tools, SDKs make VR/AR content development more accessible. Google, Apple, Huawei, and Adobe have released SDKs to attract developers.

Midstream

Original phone-powered VR viewers like Google's Cardboard and Samsung's Gear VR involved holding a phone up to a pair of lenses to act as a display. New technologies have led to the arrival of all-in-two and all-in-one VR devices. Connected to a PC via a cable, all-in-two devices are characterized by "no need for streaming", low latency, and better graphics capabilities. In contrast, all-in-one devices operate in standalone mode, offering more applications with more straightforward configurations. Post-2020, all-in-one HMDs dominated the market as users could connect them to a PC—wired or wirelessly—to create a VR experience comparable to all-in-two solutions.

The VR industry chain midstream is where original design manufacturers (ODMs) and original equipment manufacturers (OEMs) assemble modular components. VR devices are meant to create immersive sensory experiences, leading to higher demands on assembly accuracy compared to mobile phones. This industry requirement is reflected in optical design (optical level calibration during assembly), functional testing (virtually dust-free environments for assembling optical components), and deliverability.

Competitive Landscape

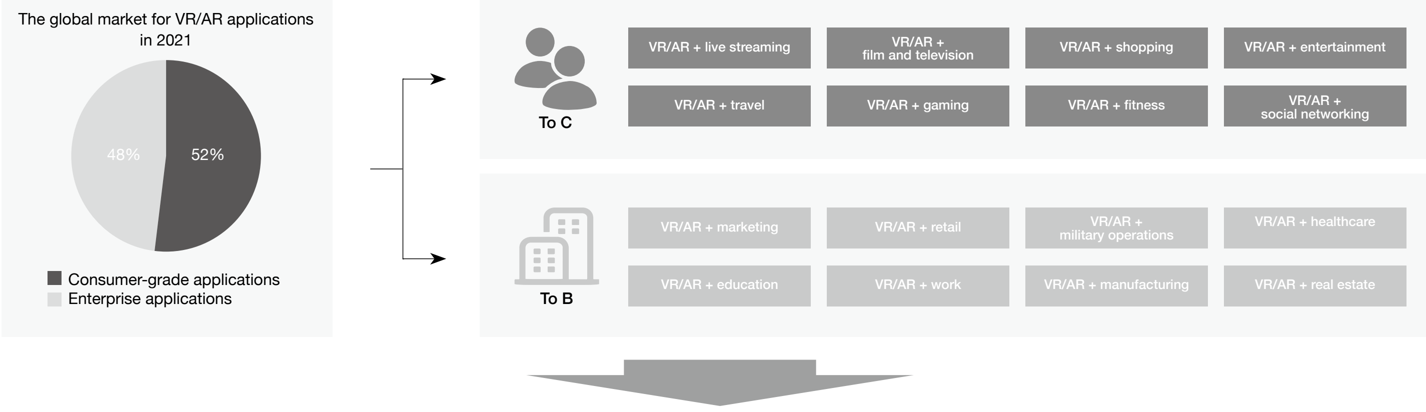
In the market for hardware assembly, OEMs and manufacturers, whose operations include parts and components processing, have the upper hand over competitors. Overseas companies like Flex and Jabil, as well as Chinese firms like GoerTek and Luxshare Precision, are key players in this market. GoerTek made a foray into VR in 2012, providing one-stop vertically-integrated system solutions with expertise in developing and manufacturing sensors and optical/acoustic instruments. The company forged exclusive supplier relationships with Sony and Meta's Oculus in 2016, becoming the exclusive foundry for the Quest 2 in July 2020. Founded in 2004, Luxshare Precision initially focused on developing connectors, motors, acoustic and electronic modules, and wireless charging technology. It broke into VR in October 2021 by setting up a new subsidiary to produce intelligent devices.

Downstream

Downstream players include brand owners and content/service providers. Existing VR products still have much room for improvement in terms of immersion and comfort. For example, the Quest 2 aims to penetrate the market with low pricing. Surveys show users are satisfied with the product's positioning system, motion interaction, and display. Still, they complain bitterly about the shift in its center of gravity and the complexity of wearing it.[14]

High-quality content has a key role to play in promoting hardware products. Consider, for example, Valve's flagship VR game *Half-Life: Alyx*, which translated into a significant increase in quarterly shipments of the Valve Index. Another case in point is *Resident Evil 4* and three other games bundled with new purchases of Quest headsets. The hardware generated over USD 10 million in sales revenue, according to 2021 data.

Exhibit 5: VR use cases



Use cases	Gaming and pan-entertainment	E-commerce and life services	Enterprise-scale services
Demand	Simulation, immersion, virtual world	Convenience, fast response	Productivity improvement, cost reduction
User attributes	Young users who value novelty	Families that value convenience	Profit-seeking business owners
Technical preparation	Tools available for virtual content creation	Low technology readiness levels (TRLs)	Main technology cannot address variegated needs
Adoption	Early	Neither too early nor too late	Late

Source: CICC Research Insights, Metaverse Series—VR: Breaking the VR Device Shipment Record via Content Ecosystem, 2022-05-25 [2022-07-25], https://mp.weixin.qq.com/s/OEuyhjL7vvP2tc_UtOQ0Gw

VR content distribution channels include online application/distribution platforms and offline VR experience centers. Online VR content distribution platforms are divided into two groups: one for general use (SteamVR, Viveport, and other open platforms for PC VR content) and one for special purposes (Oculus, PSVR, and other platforms designed for specific terminals). General-purpose platforms like Steam support all all-in-one devices, whereas company-operated application stores offer exclusive applications, therefore lacking cross-compatibility. In 2019, Khronos Group released the OpenXR 1.0 specification. OpenXR is a royalty-free, open standard that seeks to create cross-platform XR experiences by enabling applications to reach a wider array of VR HMDs without porting or rewriting their code. As of 2021, companies publicly supporting OpenXR included Google, Meta, and HTC.

As of January 2022, Steam was second to none in terms of the number of content apps. The platform had 6,284 VR applications, 5,209 of which were exclusive. At that time, Quest had 2,543 applications,[15] with the surge in content and applications driven by strong sales of the Quest 2. Most VR applications were associated with consumer-grade pan-entertainment (see Exhibit 5). According to Mordor Intelligence, worldwide users of VR games, livestreams, and videos reached 70 million (equivalent to 49.8% of the global VR user base), 28 million (19.9%), and 24 million (17.1%), respectively, in 2020. They were estimated to hit 216 million, 95 million, and 79 million by 2025.[16]

1. VR games

Gaming is a major consumer-facing use case for VR. Compared to mobile gaming, VR gaming offers a more interactive take on games. By displaying images on large screens placed close to the eyes, VR devices allow gamers to engage with in-game environments through all five senses, making gaming feel like real life. But because the technology is relatively new, gamers still suffer dizziness when interacting with virtual environments. Furthermore, existing VR devices are not light enough to shake up the gaming industry. By January 2022, VR games accounted for over 65% of applications available on Oculus and over 35% of Viveport's offerings.[17] Shooting games and casual games are the two most played VR games. *Half-Life: Alyx* is a typical shooting game. It uses vivid images and chiaroscuro lighting to immerse shooters in a gaming experience more interactive than ever. *Beat Saber* attracts casual gamers with rhythmic beats and futuristic visuals. It generated considerable buzz on YouTube, Douyin, and other social media platforms.

There are basically three types of content providers in VR gaming: First, those transformed from mobile/PC game developers (e.g., 37 Interactive Entertainment and Perfect World) with a large user base and considerable influence in their industry, a handsome R&D budget, as well as replicable artistic designs and engines. Second, those transformed from console game developers (e.g., Sony and Nintendo) with a clear product development roadmap and established development processes. Third, startups that are committed to developing their own lightweight VR games. In recent years, many large firms have doubled down on VR games. For example, Meta bought *Beat Saber* developer Beat Games, *Lone Echo* developer Ready At Dawn, and the *Asgard's Wrath* team, Sanzaru Games.

Foreign game developers outperform Chinese game makers in VR game distribution. In 2021, the ten most popular VR games on Steam were developed overseas, of which half were from the US. This meant Chinese game developers had to work harder on game content.[18]

2. VR videos and VR-based social networking

Thanks to NED technology, watching VR films and TV programs is no different than watching movies in giant screen theaters. VR videos are more costly to produce and not so out there when compared with VR games. To create a better VR content ecosystem, companies at home and abroad have initiated many video production plans and related support programs. For example, Meta acquired a stake in the 360° video/VR network Blend Media; Sony's PS Store teamed up with its subsidiary to make VR films; Baidu worked with its video streaming arm iQIYI for VR content creation; and CCTV set up a laboratory to explore the potential applications of 5G-powered VR.

Where will VR go in the future? Think of VR-based social networking, fitness, and office work. VR can make online social networking more interactive and immersive.[19] VR Chat and Rec Room, two social VR platforms released in 2016, enabled users to create digital avatars of themselves and interact with other people's avatars in VR. Horizon Worlds, Meta's social VR app that went live in 2021 supported up to eight concurrent users. By early 2022, it had over 300,000 monthly active users (MAUs).[20]

There is also growing demand for enterprise-scale VR solutions related to marketing, cultural tourism, medical training, and industrial manufacturing. Based on IDC's estimates, global VR revenues from B2B business would grow to 40% by 2025, from less than 20% in 2021.[21] In comparison to individual consumers, enterprise users are less price sensitive.

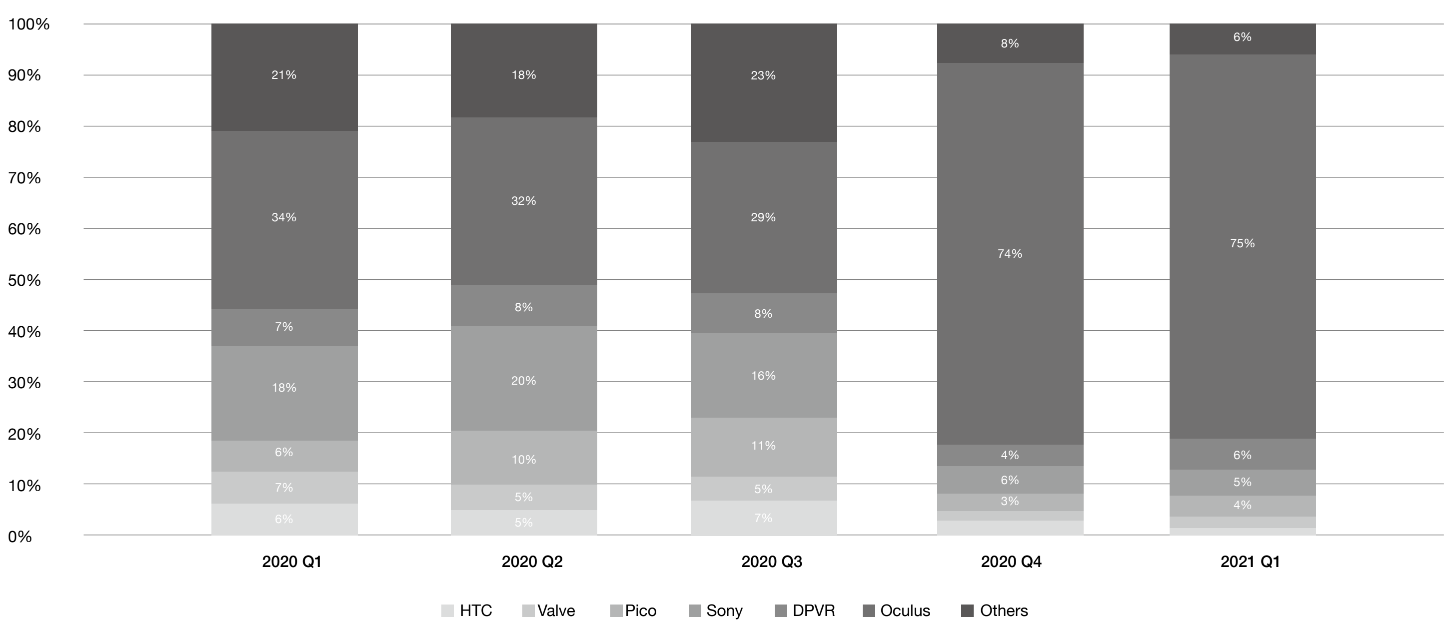
3. In-car VR

Developing automobile intelligence, automobile electronization, and vehicle-to-grid technology are expected to bring VR entertainment to any vehicle. In May 2020, Apple received a patent for a VR headset explicitly for use in autonomous vehicles. By mobilizing car seats and other sensors integrated with cars, the headset can activate in-car entertainment while allowing those traveling in the car to work. In December 2021, NIO joined forces with NOLO to design a VR headset for music, video, and other in-car entertainment.

Competitive Landscape

Downstream stakeholders include internet companies, hardware manufacturers, and professional VR solution providers. Internet companies (e.g., Meta, ByteDance's Pico, and Steam's owner Valve) usually boast a vast user base and break into VR hardware through M&As and partnerships. IDC data from 2021 shows Meta enjoyed a 78% share of the global VR market, leaving little space for smaller players (see Exhibit 6). Data from Q4 2020 shows that in China, Pico (34%), DPVR (31%), HTC (12%), and iQIYI (7%) completed the top four in terms of VR market share.[22] Performance-wise, the iQIYI Qiyu 3 and Pico Neo 3 have inched closer to the Quest 2.

Exhibit 6: VR device manufacturers' global market share



Source: Central China Securities, Hardware Iteration and Content Ecosystem Drive the Growth of the VR/AR Industry, 2022-04-18 [2022-07-25], https://pdf.dfcfw.com/pdf/H3_AP202204191560173534_1.pdf?1650360543000.pdf

Hardware manufacturers (including Huawei, Sony, HTC, and other consumer electronics manufacturers) often use their technological prowess and point-of-interaction terminals (e.g., mobile phones and mainframe computers) to capture a slice of the VR business. For instance, Sony developed PSVR based on PlayStation 4 (PS4) and adapted high-profile intellectual properties (IPs), including *Resident Evil 7*. But owing to slow product iteration, Sony's market share has shrunk in recent years. Professional VR solution providers include DPVR (engaged in both B2B and B2C business) and 3Glasses (the first Chinese company to explore the possibilities of VR and MR, best known for providing ultra-thin short-focus VR glasses) (see Exhibit 7).

Exhibit 7: Major Chinese and foreign VR hardware manufacturers and their offerings

Region	Company	Advantage	Hardware terminal	Software	Distribution platform/Content
Outside China	**Meta**	Oculus holds a market share of 75%	Qculus Quest	Presence Platform; its own OS under development	OculusStore *Beat Saber*
	Apple	The Apple ecosystem	Planned to launch in 2022	Mac OS	
	Valve	The Steam platform and the AAA game *Half-Life: Alyx*	Valve Index		Steam VR *Half-Life: Alyx*
	Sony	The PlayStation ecosystem and exclusive content	PSVR		PSVR *Resident Evil 7* *The Elder Scrolls V*
China	**HTC VIVE**	PC VR	HTC Vive		Viveport
	DPVR	The number of business clients across China	DPVR		
	ByteDance	Short videos; acquisition of top-notch VR hardware manufacturers	Pico Neo	PICO OS	PICO content platform
	Huawei	5G technology; lightweight all-in-two VR devices; mobile user base	Huawei VR Glass	Harmony OS; Huawei Phoenix Engine; VRAR SDK; development software	
	Tencent	The abundance of content and IP	No hardware for now (but has acquired Black Shark for VR hardware development)		Has bought a stake in the VR game developer Vanimals
	iQIYI	The abundance of films and television programs	iQIYI Qiyu	Qiyu OS 5.0	iQIYI VR (film and television)

Source: Guosheng Securities, Metaverse (Topic I): VR Penetrates the Consumer Market Through the Iteration of Technology and Improvement in Ecosystem, 2022-02-15 [2022-07-03], https://pdf.dfcfw.com/pdf/H3_AP202202151547158638_1.pdf?1644935061000.pdf

AR Industry Chain

AR is achieved through four steps: 1) obtaining information about real-world scenes; 2) analyzing this information; 3) generating virtual scenes; 4) exporting virtual information directly or adding to the existing world. Typically, the cost structure of AR glasses consists of electronic components (30-40%), optical displays (30-50%), as well as frames, workforce, and other miscellaneous costs (10-20%).[23] In the case of Microsoft HoloLens, optical display modules represent 43% of its hardware costs, while processors (31%) and sensors (9%) are two other critical parts of its cost structure.[24]

Upstream

The upstream includes optical display modules, computational modules, interaction modules, acoustic solutions, and batteries. VR immerses users in animated scenes, making it not very difficult to deploy appropriate VR display and imaging systems. In contrast, AR overlays virtual information onto the real world, requiring greater light transmission. Other requirements include brighter, higher pixel density displays offering high contrast ratios and lower power consumption. Imaging systems with lower levels of loss in image quality and higher calibration accuracy are also needed. All this makes it hard to mass-produce AR devices.

In AR imaging, optical solutions comprise off-axis optical systems, prisms, freeform surfaces, birdbaths, and waveguides. Off-axis optical systems and prisms have faded from the market. Freeform optics, embraced by Epson, involves changing the mean plane of a prism into a concave surface to improve light reflection efficiency. The birdbath optical design, used by ODG, Huynew, and Nreal, is comparatively inexpensive while having good overall image quality while expanding the FOV of the human eye. The big downsides to birdbath optics are light transmittance and brightness. Waveguide designs can deliver thicker pieces of glass as well as improvements in light transmittance and image quality. In this sense, waveguides seem best suited to glasses.

AR display technologies are mainly associated with Micro-LED, OLEDoS (organic light-emitting diode on silicon), laser plus micro-electromechanical system (MEMS) micromirrors, and reflective LCD LCOS (liquid crystal on silicon). In 2021, MEMS laser-scanning technology held a 38% market share due to its use in Microsoft's HoloLens 2.[25] In addition, MEMS posts high requirements for microscopic mirrors and lasers. Only a few players like TI, Infineon, and Colorchip have mastered this technology. Comparatively speaking, LCOS is a mature technology, with commercial applications in AR, car HUDs, optical communications, and other emerging technical fields. Sony is the dominant supplier of this technology. Micro-LEDs are universally praised for their high pixel density, high contrast ratio, and high brightness. However, mass production is not yet a reality.

At present, AR glasses largely rely on Qualcomm XR and Snapdragon 8 chips. With improvements in AI and AR, Qualcomm XR chips can enhance users' interactive experiences. Unlike mobile phone chips with similar functionality, XR chips support XR development and use less power. Developers have swarmed into the market to develop AR chips to address the need for interactive design.

Regarding spatial perception, visual SLAM (simultaneous localization and mapping) algorithms are an important part of AR applications. Visual SLAM has enormous potential in a wide range of settings as it can sense the surrounding environment without knowing any data points beforehand. It also saves on hardware costs. Some AR products use computer vision for motion capture and gesture recognition.

Midstream

AR devices come in different forms: the all-in-two (e.g., Magic Leap 2 and Rokid Air) and all-in-one (e.g., Google Glass, Microsoft HoloLens 2, and Cosmo Vision) AR glasses/headsets. All-in-two AR devices use a pair of glasses as a pure display and house other components (including chips and batteries) elsewhere. By contrast, all-in-one AR devices house all modules onboard. But such heavyweight products are uncomfortable when wearing them for long periods.

Luxshare Precision is an AR device assembler. Besides being a leader in China's consumer electronics market, it owns more than an 11% stake in Xloong, an AR startup specializing in diffractive waveguide display chips.

Downstream

AR can be categorized as consumer and enterprise AR. As of 2021, enterprise AR had been adopted for military operations, advertising & marketing, manufacturing, construction, healthcare, education, and transportation. In 2018, the US Army awarded Microsoft a USD 480 million contract to supply prototypes for the Army's AR systems helping soldiers during training and combat missions. In 2021, Microsoft won another Army contract worth up to USD 21.9 billion to provide AR devices.

AR also helps digitize factories and feed intelligence for the Industrial Internet. Visualizing production and logistics operations can help improve overall equipment effectiveness and operational accuracy. For AR in logistics, one frontrunner is DHL, which has used a Google Glass-based "vision picking" program to boost warehouse worker productivity by 15%. According to Greenlight, the global industrial AR market was worth USD 300 million in 2019 and is projected to grow at a compound annual rate of over 80% to reach USD 2.85 billion by 2023. In China, 80% of AR glasses were used in the industrial sector in 2021, while the remainder was split evenly between education, cultural tourism, logistics, and security.[26] VRTuoluo.cn statistics from 2021 show that China's industrial AR market was worth approximately RMB 500 million, with remote collaboration the biggest source of revenue.[27]

AR glasses can display real-time information, receive remote guidance, and film from a first-person perspective. Not surprisingly, on the consumer side, AR use cases are around gaming, travel, fitness, as well as film and television. To experience AR, users don't necessarily have to buy pro-level AR devices. Instead, they can simply install AR apps on their smartphone or tablet. In 2016, Niantic and Nintendo co-developed the location-based mobile AR game, *Pokémon Go*, which uses GPS to create a deeper level of immersion. In the following years, Tencent and NetEase entered AR gaming, but neither crafted smash hits in the genre.

Facebook, Instagram, and Snapchat have revolutionized the social media landscape with AR photo filters, enabling users to play with AR emojis and digitally try on makeup. Meanwhile, Alibaba, JD.com, and Amazon.com use AR technology to share and dynamically update product information to improve shoppers' experiences. A 2021 survey found that 35% of consumer AR applications were for gaming, compared with 33% for social shopping and travel and about 32% for live-streaming and film & television.[28]

Key VR Players

Over time, computing platforms, hardware suppliers, content providers, mobile operators, cloud service providers, and internet service providers have become key players in the VR/AR industry. These industry players are stepping up efforts to innovate and integrate, creating a virtuous ecosystem.

Meta

Through acquisitions, meta (formerly Facebook) invests in computer vision, gesture control, spatial sound, and other VR-related technologies (see Exhibit 8). In 2014, it acquired Oculus. In 2018, it wrote "The Metaverse", a document outlining a strategy for building a virtual world. In 2021, when Facebook was rebranded as Meta, it put nearly 10,000 employees (20% of its workforce) on VR/AR teams.

Meta has two product lines: one focuses on PC VR (the Oculus Rift) and the other on standalone VR (the Oculus Quest). The Oculus Quest 2 hit the market in 2020 with upgraded technology and competitive pricing, driving up global VR device shipments. Data from 7tin.cn shows that in April 2022, Oculus was an industry leader, with a 66.7% market share. Notably, the Quest 2 held the lion's share of the market at 47.97%.[29] It was believed that Oculus sales benefited from Meta's large social user base.

While taking a deep dive into hardware updates, Meta is working to improve its content ecosystem. It has built its own content platform, the Oculus Store, and created the Oculus Developer Hub (ODH) to financially support VR content creators in their R&D and marketing efforts. Following the 2021 name change, the company announced plans to spend at least USD 10 billion within the year on a VR and AR wing tasked with building the metaverse. At the end of 2021, Oculus was home to the largest community of VR game developers.[30] After 2020, Meta rolled out Horizon Worlds, Horizon Workrooms, and Horizon Home, making VR more social in gameplay, remote collaboration, and home life. Big-name firms like Walmart and Accenture have trained employees using Oculus devices.

From 2020 to 2021, Meta's VR/AR business grew by leaps and bounds: Despite losses of USD 6.6 billion in 2020 and USD 10.2 billion in 2021, the company's AR and VR division recorded year-on-year revenue growth rates of 127% and 100%.[31] By the end of 2021, the Quest 2 had sold 11.6 million units.[32] At Connect 2021, Meta provided a sneak peek of its next-generation VR headset, Project Cambria, featuring new optics, improved MR capabilities, and advanced controller tracking. The company also confirmed Project Cambria's launch in 2022. In May 2022, Meta Store, the company's first physical retail space, opened in California, selling Portal videophones, Ray-Ban Stories smart glasses, and Quest 2 VR headsets.

Exhibit 8: Meta's VR investment

Date of announcement	Company name	Funding round	Product	Date of announcement	Company name	Funding round	Product
2014.2	Vivarious	B round	AI	2017.5	Blend Media	M&A	Content production
2014.3	Oculus VR	M&A	VR technology	2017.8	Fayteq	M&A	Video filters
2014.6	Carbon Design	M&A	Xbox360 controllers	2019.2	Grostyle	M&A	Virtual shopping
2014.7	RakNet	M&A	Software development engine	2019.9	CTRL-Labs	M&A	Computer interface
2014.12	13th Lab	M&A	Computer vision technology	2019.11	Beat Games	M&A	Game development
2014.12	Nimble VR	M&A	Gesture tracking and visual technologies	2019.12	Play Giga	M&A	Cloud gaming
2015.5	Surreal Vision	M&A	Computer vision and 3D scene reconstruction	2020.2	Scaple Technology	M&A	Visual positioning
2015.7	Pebbles Interfaces	M&A	Sensing system	2020.2	Sanzanu Games	M&A	Game development
2016.3	Masquerade	M&A	AR face swap app	2020.6	Mapillary	M&A	Map database
2016.5	Two Big Ears	M&A	Immersive sound effects	2020.6	Ready At Down	M&A	Game development
2016.9	Nascent Objects	M&A	AI and 3D printing	2020.9	Lemnis	M&A	Zoom technology
2016.10	InfiniLED	M&A	Micro-LED	2021.5	Downpour	M&A	Game development
2016.11	Zurich Eye	M&A	Computer vision	2021.6	Unit 2 Games	M&A	Crayta
2016.11	FacioMetrics	M&A	Facial recognition	2021.6	BigBox VR	M&A	Game development
2016.12	The Eye Tribe	M&A	Eye tracking	2021.10	Within	M&A	Game development

Source: CICC Research Insights, Metaverse Series—VR: Breaking the VR Device Shipment Record via Content Ecosystem, 2022-05-25 [2022-07-25], https://mp.weixin.qq.com/s/OEuyhjL7vvP2tc_UtOQ0Gw

Sony

Sony originally made its name as a games console manufacturer, enjoying competitive advantages in user acquisition and content production. In 2016, it entered recreational VR through a product line extension or, more specifically, the launch of PSVR (a gateway into VR for PS4 owners). By Q1 2021, Sony's VR devices represented 5% of shipments worldwide. Popular PS console games like *Resident Evil*, *Batman*, and *Iron Man* gave Sony advantages in promoting PSVR and boosting user conversion rates.

In March 2020, Sony initiated Project Lindbergh to tap the potential of VR outside its gaming ecosystem, primarily VR shows. Sony would reportedly release the PSVR 2 headset in 2023, promising a huge leap forward over the original PSVR in FOV and resolution and featuring eye tracking and finger touch detection.

Pico

Pico was founded in 2015 by Goertek's former vice president Zhou Hongwei and acquired by ByteDance for RMB 9 billion in 2021. ByteDance had previously invested in underlying VR technology and content. Cases in point: It bought a stake in digital twin service provider SilVRcraft Technology. Its video-sharing app Douyin ventured into VR-based social networking. After the ByteDance acquisition, Pico could gain more exposure and financial support.

Pico's product lineup includes the value-for-money G series and the high-end Neo series. The Pico Neo 3 is close to the top end of its range in terms of parameters and VR experiences. In the Chinese market for VR hardware, Pico ranked first with a 37.8% market share in Q4 2020. Globally, the company ranked fifth with a 3% market share for the same period.[33] In 2021, Pico's device shipments amounted to some 500,000 units.[34] It also built the Pico Store content platform while failing to match the Oculus Store's app quantity and quality. As of February 2022, the Oculus Store had 1,729 apps, eclipsing the Pico Store's 425 apps.[35]

Key AR Players

Existing AR glasses target three different segments. First, entertainment (including movie-watching): Nreal, Rokid, or Leiniao AR glasses can be an extra display when used with a smartphone. Second, information presentation: OPPO, INMO, Xiaomi, and Huawei have invented AR glasses for navigation, translation, and notifications. Third, specific consumer segment: This requires AR players to create tailor-made solutions for consumers depending on usage scenarios. For example, LLVision VR glasses address the needs of the hard of hearing.

In China, consumer-grade AR glasses are in the RMB 2,000-3,000 price band. Leiniao, Rokid, Nreal, and INMO make up 80-90% of sales combined.[36]

Microsoft

In 2015, Microsoft unveiled HoloLens (first generation) MR smart glasses designed to improve company productivity. The original HoloLens was developed by the creators of Xbox's Kinect motion-sensing device. In 2019, Microsoft announced the RMB 25,000 HoloLens 2, providing 52 degrees of augmented viewing, a 2K resolution screen in each eye, and a display frame rate of 120 Hz. The HoloLens 2 can produce digital 4D models, train employees on operational procedures, facilitate remote collaboration, and capture real-world data based on measurements in office scenarios. It can also be used in arts and national defense. In early 2021, Microsoft reached a USD 21.9 billion deal with the US military to supply the HoloLens 2 for military applications. In 2021, Microsoft's AR products also generated over USD 300 million in sales revenue (up 31% year-on-year), representing a 54% market share.[37]

Microsoft Mesh is a collaboration and communications platform built on Microsoft Azure and Microsoft Account, making interactions easier. It offers the freedom to create solutions across various VR/AR/MR devices, smartphones, and PCs. The platform also enables users to appear at digital conferences via holoportation, using 3D capture technology to beam a lifelike image of a person into a virtual scene.

Apple

Apple has a large user community, great software and hardware systems, and a solid foundation in VR/AR. It has created smartphone-based AR experiences and services for users. Since 2010, Apple has acquired a string of companies with expertise in facial recognition, indoor positioning, motion capture, and display technology. From 2015 onward, Apple doubled down on AR/VR, evidenced by its acquisition of many AR and AI-related software and hardware companies. Apple introduced AR development tools called ARKit in 2017, providing annual iterations. Apple offers AR apps for consumers and businesses via its App Store. In recent years, the company has invested lavishly in AR/VR content, adding AR/VR content to its Apple TV+ streaming service and acquiring AR/VR live streaming company NextVR as well as 3D animation company Spaces.

Rokid

Rokid was established in 2014 as a human-computer interaction platform powered by new technology. The company gradually built up hardware and software capabilities in 2015 after beginning work on the research and development of AR glasses. The company's first commercial AR product, Rokid Class, launched in 2019 and was widely used in exhibitions, energy, auto, public security, and many other fields. Buyers include Alibaba, NetEase, and China Mobile, to name just a few. The company's first consumer-facing AR product, Rokid Air, launched in 2021 at RMB 2,999 and sold very well on multiple e-commerce platforms.

Snap

Founded in 2011, Snap is the company behind the social networking app Snapchat, which met instant success after launch and has maintained strong growth momentum ever since. Snap has assisted partners in developing AR content and services for videos and ads since 2019. In 2021, Snap announced its fourth-generation Spectacles glasses, the first to support AR.[38]

Snap has an AR ecosystem built on a range of hardware and software products serving different functions: 1) AR creation. Lens Studio is a powerful tool designed for creators to craft AR content; 2) AR distribution. Snapchat, Spectacles, and Camera Kit are platforms where creators can distribute content; 3) AR content. The Creator Marketplace allows creators to connect and partner with brands; 4) AR commercialization. AR filter ads are interactive marketing tools boosting brand sales and reputation. As of December 2021, Snap had an AR community of over 250,000 creators, generating over 2.5 million Lenses and racking up over 3.5 trillion views on Snapchat.[39]

Niantic

Set up in 2020, Niantic's first product was Field Trip, a location-based app providing information about nearby landmarks and restaurants. It paved the way for the company's AR games to follow: *Ingress* (built around Google's location services) and *Pokémon GO* (co-developed with Nintendo). By August 2016, just one month after its launch, *Pokémon GO* had hit 100 million downloads. By June 2022, Niantic had made an estimated revenue exceeding USD 6 billion from *Pokémon GO* players globally.[40]

Following the success of *Pokémon GO*, Niantic continues to invest in AR-related fields. It acquired companies in areas like AR, gaming, computer vision, machine learning, and 3D scanning. The company also forged partnerships with major IPs like Harry Potter and Transformers. In 2018, Niantic unveiled the Niantic Real World Platform, consisting of a suite of tools, including AR Cloud, anti-cheat security, POI data, social, analytics, and sponsorship. In 2021, Niantic gave the platform a new name—Niantic Lightship—and launched the Niantic Lightship Augmented Reality Developer Kit (ARDK), a cross-platform software development kit.

Endnotes:

1 LeadLeo Research Institute, AR Industry Series: 2021 AR Eyewear Industry Research Report, 2021-12 [2022-07-03], https://pdf.dfcfw.com/pdf/H3_AP202201141540315216_1.pdf?1642152718000.pdf

2 CITIC Securities, A Peek Inside VR Equipment: A Key Vehicle for Primary Metaverse That Is in Constant Iteration, 2022-02-12 [2022-07-03], http://finance.sina.com.cn/stock/stockzmt/2022-02-12/doc-ikyakumy5551163.shtml

3 Guosheng Securities, Metaverse (Topic I): VR Penetrates the Consumer Market Through the Iteration of Technology and Improvement in Ecosystem, 2022-02-15[2022-07-03], https://pdf.dfcfw.com/pdf/H3_AP202202151547158638_1.pdf?1644935061000.pdf

4 Guosheng Securities, Metaverse (Topic I): VR Penetrates the Consumer Market Through the Iteration of Technology and Improvement in Ecosystem, 2022-02-15 [2022-07-03], https://pdf.dfcfw.com/pdf/H3_AP202202151547158638_1.pdf?1644935061000.pdf

5 CITIC Securities, A Peek Inside VR Equipment: A Key Vehicle for Primary Metaverse That Is in Constant Iteration, 2022-02-12[2022-07-03]. http://finance.sina.com.cn/stock/stockzmt/2022-02-12/doc-ikyakumy5551163.shtml

6 Guosheng Securities, Metaverse (Topic I): VR Penetrates the Consumer Market Through the Iteration of Technology and Improvement in Ecosystem, 2022-02-15 [2022-07-03], https://pdf.dfcfw.com/pdf/H3_AP202202151547158638_1.pdf?1644935061000.pdf

7 Hua Chuang Securities, The Metaverse Is Already Here, AR Glasses Gain Traction, 2022-01-09 [2022-07-03]. https://www.ambchina.com/index.php?id=322470

8 LeadLeo Research Institute, AR Industry Series: 2021 AR Eyewear Industry Research Report, 2021-12 [2022-07-03]. https://pdf.dfcfw.com/pdf/H3_AP202201141540315216_1.pdf?1642152718000.pdf

9 LeadLeo Research Institute, AR Industry Series: 2021 AR Eyewear Industry Research Report, 2021-12 [2022-07-03]. https://pdf.dfcfw.com/pdf/H3_AP202201141540315216_1.pdf?1642152718000.pdf

10 CITIC Securities, A Peek Inside VR Equipment: A Key Vehicle for Primary Metaverse That Is in Constant Iteration, 2022-02-12 [2022-07-03], http://finance.sina.com.cn/stock/stockzmt/2022-02-12/doc-ikyakumy5551163.shtml

11 CITIC Securities, A Peek Inside VR Equipment: A Key Vehicle for Primary Metaverse That Is in Constant Iteration, 2022-02-12 [2022-07-03], http://finance.sina.com.cn/stock/stockzmt/2022-02-12/doc-ikyakumy5551163.shtml

12 CITIC Securities, A Peek Inside VR Equipment: A Key Vehicle for Primary Metaverse That Is in Constant Iteration, 2022-02-12 [2022-07-03], http://finance.sina.com.cn/stock/stockzmt/2022-02-12/doc-ikyakumy5551163.shtml

13 Soochow Securities, The XR (VR/AR/MR) Industry Chain: From Smartphones to XR, From Mobile Internet to Metaverse, 2022-03-25 [2022-07-25], https://pdf.dfcfw.com/pdf/H3_AP202203251554968798_1.pdf?1648461781000.pdf

14 CITIC Securities, A Peek Inside VR Equipment: A Key Vehicle for Primary Metaverse That Is in Constant Iteration, 2022-02-12 [2022-07-03], http://finance.sina.com.cn/stock/stockzmt/2022-02-12/doc-ikyakumy5551163.shtml

15 Metaverse Series (In-Depth Report II)—VR/AR Industry Report: Thanks to Mutually Reinforcing Software and Hardware Capabilities, The Metaverse Is Already Here.pdf

16 CITIC Securities, A Peek Inside VR Equipment: A Key Vehicle for Primary Metaverse That Is in Constant Iteration, 2022-02-12 [2022-07-03], http://finance.sina.com.cn/stock/stockzmt/2022-02-12/doc-ikyakumy5551163.shtml

17 Metaverse Series (In-Depth Report II)—VR/AR Industry Report: Thanks to Mutually Reinforcing Software and Hardware Capabilities, The Metaverse Is Already Here.pdf

18 https://mp.weixin.qq.com/s/G5i6K_Om9XHh_bZNpKPKyw

19 CITIC Securities, A Peek Inside VR Equipment: A Key Vehicle for Primary Metaverse That Is in Constant Iteration, 2022-02-12 [2022-07-03], http://finance.sina.com.cn/stock/stockzmt/2022-02-12/doc-ikyakumy5551163.shtml

20 Central China Securities, Hardware Iteration and Content Ecosystem Drive the Growth of the VR/AR Industry, 2022-04-18 [2022-07-25], https://pdf.dfcfw.com/pdf/H3_AP202204191560173534_1.pdf?1650360543000.pdf

21 Metaverse Series (In-Depth Report II)—VR/AR Industry Report: Thanks to Mutually Reinforcing Software and Hardware Capabilities, The Metaverse Is Already Here.pdf

22 Guosheng Securities, Metaverse (Topic I): VR Penetrates the Consumer Market Through the Iteration of Technology and Improvement in Ecosystem, 2022-02-15 [2022-07-03], https://pdf.dfcfw.com/pdf/H3_AP202202151547158638_1.pdf?1644935061000.pdf

23 Huaan Securities, Chinese Suppliers of Consumer-grade AR Products Are Positioned to Reap Considerable Value from Optics, 2022-06-07 [2022-07-25], https://pdf.dfcfw.com/pdf/H3_AP202206081570725592_1.pdf?1654676340000.pdf

24 LeadLeo Research Institute, AR Industry Series: 2021 AR Eyewear Industry Research Report, 2021-12 [2022-07-03], https://pdf.dfcfw.com/pdf/H3_AP202201141540315216_1.pdf?1642152718000.pdf

25 Huaan Securities, Chinese Suppliers of Consumer-grade AR Products Are Positioned to Reap Considerable Value from Optics, 2022-06-07 [2022-07-25], https://pdf.dfcfw.com/pdf/H3_AP202206081570725592_1.pdf?1654676340000.pdf

26 LeadLeo Research Institute, AR Industry Series: 2021 AR Eyewear Industry Research Report, 2021-12 [2022-07-03], https://pdf.dfcfw.com/pdf/H3_AP202201141540315216_1.pdf?1642152718000.pdf

27 Central China Securities, Hardware Iteration and Content Ecosystem Drive the Growth of the VR/AR Industry, 2022-04-18 [2022-07-25], https://pdf.dfcfw.com/pdf/H3_AP202204191560173534_1.pdf?1650360543000.pdf

28 LeadLeo Research Institute, AR Industry Series: 2021 AR Eyewear Industry Research Report, 2021-12 [2022-07-03], https://pdf.dfcfw.com/pdf/H3_AP202201141540315216_1.pdf?1642152718000.pdf

29 https://mp.weixin.qq.com/s/OEuyhjL7vvP2tc_UtOQ0Gw

30 Ping An Securities, Metaverse Series (Report I): The Next-generation Internet Is Where the Real and Virtual Worlds Merge, 2022-02-09, http://pdf.dfcfw.com/pdf/H3_AP202202091545905114_1.pdf

31 Guosheng Securities, Metaverse (Topic I): VR Penetrates the Consumer Market Through the Iteration of Technology and Improvement in Ecosystem, 2022-02-15 [2022-07-03], https://pdf.dfcfw.com/pdf/H3_AP202202151547158638_1.pdf?1644935061000.pdf

32 VRTuoluo.cn, 2021 Report on the Development of the Global VR/AR Industry, 2022-01-29 [2022-07-25], https://mp.weixin.qq.com/s/yXyUs73xvHMzoBwPNxbgTg

33 Guosheng Securities, Metaverse (Topic I): VR Penetrates the Consumer Market Through the Iteration of Technology and Improvement in Ecosystem, 2022-02-15 [2022-07-03], https://pdf.dfcfw.com/pdf/H3_AP202202151547158638_1.pdf?1644935061000.pdf

34 Soochow Securities, The XR (VR/AR/MR) Industry Chain: From Smartphones to XR, From Mobile Internet to Metaverse, 2022-03-25 [2022-07-25], https://pdf.dfcfw.com/pdf/H3_AP202203251554968798_1.pdf?1648461781000.pdf

35 CICC Research Insights, Metaverse Series—VR: Breaking the VR Device Shipment Record via Content Ecosystem, 2022-05-25 [2022-07-25], https://mp.weixin.qq.com/s/OEuyhjL7vvP2tc_UtOQ0Gw

36 VRTuoluo.cn, Four AR Players Take the Initiative to Compete in the Consumer Market, 2022-08-25 [2022-08-28], https://mp.weixin.qq.com/s/lDf-Jg9EKFl6oJIRi3-4Yw

37 Huaan Securities, Chinese Suppliers of Consumer-grade AR Products Are Positioned to Reap Considerable Value from Optics, 2022-06-07 [2022-07-25], https://pdf.dfcfw.com/pdf/H3_AP202206081570725592_1.pdf?1654676340000.pdf

38 VRPinea, Snap Stages a Comeback with Its AR Ecosystem, 2021-09-08 [2022-07-25], https://t.cj.sina.com.cn/articles/view/5995160818/16556e4f2019018gcv

39 Sina VR, Does the Social-networking Giant Snap Succeed in Turning Around Its Fortunes by Launching Spectacles AR Glasses, 2021-12-09 [2022-07-25], https://baijiahao.baidu.com/s?id=1718633846033088547&wfr=spider&for=pc

40 VRTuoluo.cn, Pokémon GO × Electronic Pets, Will Niantic Create Another AR Product That Can Generate USD 6 Billion in Revenue? 2022-06-20 [2022-07-25], https://mp.weixin.qq.com/s/cxs7r5H-HjrxMQlDL_8IWg

Pimax: March of the VR Geeks

Authors / **Qi WANG Zhuo CHEN Ling ZHAO**

In November 2022, in an office located in Pudong New District, Shanghai, an intensive debate took place: the executive team of Pimax Technology (Shanghai) Co., Ltd (hereinafter referred to as Pimax or the Company) was discussing the Company's next-stage strategies. Zhibin WENG, founder and CPO of Pimax, said, "*Pimax VR is positioned as high-end products in the overseas market, giving the products a high gross margin. We achieved great profitability. But the Chinese VR market is still dominated by low-end users and products. Does that mean we also have to compete on this low-end mass market if we want to sell our products domestically?*" Pan REN, CEO of Pimax, was concerned by this issue: *"Meta and Pico recently launched new products and cut prices. We must do the same if we wish to enter the mass market. This will put us into financial difficulties."* Another executive said, *"In addition to financial difficulties, we must build a content ecosystem if entering the mass market. How should we make our products engaging to mass consumers?"* With different opinions voiced, the discussion seemed deadlocked.

In 2015, Pimax was founded by a small group of technical engineers who were also VR geeks. Among them were Zhibin WENG and Pan REN. In June 2016, the Company released its first product, the Pimax 4K virtual reality headset, the world's first commercially available headset with 4K resolution. This first product was recognized as the best VR product[1] in Asia at CES① 2016. Pimax products once occupied a 20% market share in the Chinese PCVR market. However, due to cutthroat price competition among VR makers in China, Pimax started selling products to the Western market instead. In 2017, Pimax launched a Kickstarter (a crowdfunding platform) campaign for its world-first 8K VR headset. The campaign was hugely successful, with 5,946 backers pledging USD 4.23 million, breaking the Guinness World Record for the most successful VR crowdfund project.[2]

① The International Consumer Electronics Show (CES) is an annual trade show organized by the Consumer Technology Association (CTA) of the United States. It aims to bring the most advanced electronic technologies into people's everyday lives.

With a long-term focus on technology R&D and the principle of user co-creation, Pimax collected user feedback from multiple channels, including crowdfunding platforms and user communities. Iterating from 4K to 8K, the Company's products attracted many loyal and high-end geek users in the overseas market, earning high gross margins. However, geeks only represented a niche market. The Chinese market was vital if the Company wanted to grow its business. Pimax planned to launch new products in the Chinese market in 2023. However, this meant the company faced the dilemma of focusing on the overseas high-end or domestic mass market. Associated with this were many other questions: Should the Company develop content ecosystems while strengthening hardware R&D? What marketing strategy should it adopt to expand its domestic market share? How should it earn more money to fund a market expansion that was heavily investment-reliant? How could it attract more users to co-create with the Company?

The Global VR industry

The History of VR

Virtual reality (VR) technology originated in the United States②. In 1984, NASA's AMES research center developed a virtual environment visual display for Mars exploration. In the same year, VPL introduced the concept of "virtual reality" for the first time. VR technology offers viewers an immersive experience using equipment such as helmets or goggles, gloves, and rompers. In 2012, VR startup Oculus launched the Rift VR prototype, bringing VR into the public eye. In March 2014, Facebook acquired Oculus VR for USD 2 billion, marking a milestone that led to rapid industry growth. Since then, VR has no longer been a conceptual object but a popular product sought after by major tech companies worldwide.

② Virtual Reality (VR) refers to the simulation of the real world. It is a technology that creates a computer-generated environment, and gives the user an immersive feel of a virtual world. VR technology uses computer technologies to convert real-world data into electronic signals, and project them through output devices, creating scenes that can stimulate people's senses. These scenes can consist of objects in real life, as well as objects invisible to the naked eye and rendered by 3D models.

In 2016, VR boomed and hit the market. Many big tech firms, including Oculus, HTC, and Sony, released their consumer VR headsets this year. In 2017, Microsoft, Dell, and Samsung joined the VR parade, launching high-end PC-based VR devices. That same year, shipments of PC-based VR devices grew to 36% of the market. The total shipments of VR devices grew from 2 million units in 2015 to 7.8 million in 2017. But problems also began to surface: VR devices were pricey and uncomfortable to wear; consumers had not developed good knowledge about VR products; good VR content was yet to be created. The market subsequently started to cool. In 2018, VR product shipments fell 27% to 5.6 million units.[3] By 2018, many market players who once rushed into the industry had exited, leaving only a handful of product teams or firms remaining.[4]

In March 2020, the release of the AAA-title, *Half-Life: Alyx*, brought VR back into the public eye. VR device prices were also lower as production costs continued to drop. In October 2020, the Oculus Quest 2 debuted at USD 299, USD 100 cheaper than the Quest 1. As a result, shipments of the Quest 2 increased significantly, with 14.8 million units sold by June 2022.[5] Other VR device manufacturers also lowered prices. For example, Pico launched the Pico 4 in the Chinese market in September 2022, starting at RMB 2,499.

Technological improvement also boosted returns on VR: more sophisticated chips, algorithms, and sensors improved VR devices' immersive and interactive experience. The hardware was also optimized, with better display resolution, refresh rate, weight, and field of view (FOV). Further, the VR content ecosystem flourished, with platforms like Steam proliferating. Therefore, supported by preferential policies, the VR industry was in its heyday at the time of writing.[6]

The outbreak of COVID-19 in 2020 made people spend most of their time at home. The need for work-from-home and indoor entertainment surged, contributing to the growth of the VR industry. That same year, China listed the VR industry as a national key industry of the digital economy. In 2020, total global shipments of VR devices hit 5.67 million units and were expected to grow to 33.75 million units in 2024, with a CAGR of 56%. The global market size in 2020 was approximately RMB 62 billion, expected to grow to RMB 240 billion in 2024, with a CAGR of 45%.[7]

At the time of writing, the VR industry was on the rise, but consumers were still not well-versed in VR products. In 2021, the market penetration of family-use VR headsets was only 2.3%.[8] In the US, the usage of VR products was most prevalent among younger consumers aged between 9 and 24, with a penetration rate of 45%. In addition to playing games, consumers also used VR to watch videos and do exercise, etc.[9]

VR industrial chain

At the time of writing, the VR hardware industry comprised three parts: upstream, midstream, and downstream. The upstream segment included electronic component suppliers, software producers, and infrastructure manufacturers. Of all the upstream products, the core components (chips, optical parts, displays, and sensors) had the most significant impact on the products' end-user experience. The midstream was primarily composed of hardware manufacturers, and the downstream included content, application, and service providers. Chips accounted for 45%-50% of a VR headset's cost, display modules for 30%-35%, and optical parts for 5%-7%.[10] At the time of writing, over 90% of VR devices on the market used Qualcomm chips.[11]

The components of VR products include optical and display modules③, computing modules④, acoustic modules, and interactive modules⑤. Related manufacturing technology resembled that of smartphones. Therefore, only minor innovation based on smartphone manufacturing technology was enough to enable the mass production of VR device parts. At the time of writing, VR devices typically weighed over 300 grams, with most of the weight going on optical lenses, batteries, and structural channels.

③ To create a more immersive effect, the display of VR product must have high resolution, high refresh rate, and high battery endurance. High refresh rate helps reduce the persistence of vision and dizziness; high pixel density eliminates screen-door effect and makes the image sharper.

④ To create a more immersive effect, a VR device must he highly qualified in many technical parameters. The chip is the core component of a VR headset, enabling multiple functions of the device, including computing, scenario rendering, and interaction. The chip also has great impact on the device's battery endurance.

⑤ VR interaction is based on motion capture technology. Motion-capturing sensors record the users' movements and send the movement information to computer chips to identify the users' real-time state. The output content then generates sensory stimulation for users.

The main technical parameters of VR headsets included display resolution, FOV, weight, and size. However, these parameters conflicted with each other. For example, higher resolution and wider FOV might result in larger and heavier devices inconvenient for carrying or wearing.

Primary VR products included smartphone VR (Cardbox), PC/console-based VR, and all-in-one (AIO) VR (see Appendix 1). Smartphone VR was an early VR headset that transformed a smartphone into a simple and affordable VR viewer. However, it could not provide a highly immersive experience. PC-based VR emerged as a powerful computing and image-rendering solution, significantly improving the immersive experience. Nonetheless, PC-based VR was non-portable, inconvenient, and costly because it was built into PCs or mainframes. During 2018-2020, the popularity of AIO VR devices with independent processors grew rapidly. They were small, lightweight, and highly portable, making them easy to carry around. AIO VR devices also offered a wide range of applications; at the time of writing, they were the most commonly purchased VR products.

Appendix 1: Types of VR Devices

	Smartphone-based VR	PC/console-based VR	AIO VR
Base	Smartphone	PC/console/base station	VR device/base station
Computing power	Smartphone	PC/console	VR device
Battery endurance	Smartphone	PC/console	VR device
Screen	Smartphone	VR device	VR device
Lens	VR device	VR device	VR device
Comfortableness	Good	Poor	Fair
Immersiveness	Poor	Good	Good
Interactivity	Poor	Good	Good
Price	Hundreds of RMB	Thousands of RMB	Thousands of RMB
Example	 Google Cardboard	 Sony Play Station VR	 Oculus Quest 2
Main usage	Watch movies	Play games & watch movies	Play games, watch movies, social, fitness

Source:Companies' websites; CITIC Security Research Center

"Zero to One"

In 2015, Zhibin WENG[6] and Pan REN[7] joined hands and founded Pimax Technology. Their team was a duet of hard and soft skills. Weng was a tech geek with great passion and a firm belief in VR, coupled with years of R&D experience in smart hardware and VR headsets. Ren was also an expert in consumer software R&D. Other team members included engineers who worked for NASA for over ten years, product R&D and marketing experts, Chinese scholars recognized by the Changjiang Scholars Program, and renowned chief scientists in China.[12]

Commenting on his departure from the mobile phone industry, Weng said, *"We spent many years in mobile phone R&D. It was quite interesting in the beginning when there were huge opportunities for innovation. But then Apple's iPhone came out, and mobile phones in the market became more and more homogeneous. Hardware also became excessive. From our experience in the mobile phone industry, we knew that this market's growth was ending."*

In 2012, Weng started working at GoerTek as director of new technology and innovation and product director of wearable HMDs. During his time there, he worked on producing VR products for Sony. As a sci-fi fan of Star Wars and Star Trek, Weng was thrilled to see a sample VR device for the first time. Although there were still unresolved technical issues with VR products, such as dizziness, the immersive experience was fascinating enough to make Weng obsessed. Reflecting on this experience, he stated that VR was like *"nothing you could get from any other digital product."*

"Before seeing the VR device, I thought holography was unattainable until the next century, something I could never realize in my lifetime. But after experiencing virtual reality, I believe I can make this dream come true in the next 20 years," he added, his eyes shining.

In 2016, VR technology boomed and hit the market. Tech giants like Google, Microsoft, Qualcomm, and Samsung made forays into this new field. In China, VR startups also mushroomed, backed by aggressive investors. To build its competitive advantage in this hot market, Pimax focused on producing VR products with higher display resolutions than competitors. In June 2016, when most VR devices were equipped with 2K displays, Pimax released the world's first commercially available headset with 4K resolution. This 4K headset provided much sharper images than its competitors at the time, and its FOV reached 100°. Equipped with a 1000Hz dual gyroscope, its image processing latency was under 18ms, reducing users' dizziness during use. Shortly after its release, this product was recognized as Asia's best VR product at CES 2016.

Pimax 4K was priced at RMB 1,999 and sold on major e-commerce platforms, including JD.com and Tmall. In the 2016 Double Eleven Shopping Festival, Pimax 4K topped the list of best-selling PC-VR products on both JD.com and Tmall. This achievement signaled a promising future for the company, with the team left ecstatic about their success. However, things started to go wrong.

Trapped in price competition

As mentioned above, investments in the VR industry were aggressive in 2016, with over 120 rounds of investments totaling USD 800 million for 1,970 VR companies. In July 2016, Ivy Capital, a renowned investment institution, invested tens of millions of yuan in Pimax in pre-A round funding.

However, excessively hot investments fueled a price war. Some companies even sold their products at the cutthroat price of RMB 999.

The VR content ecosystem was not yet mature, and many end users were unsure how to use a VR headset beyond playing 3D games. Consequently, Pimax found it challenging to expand its market share in the consumer market. To address this issue, Pimax shifted its focus to target business customers in Fanyu, Guangdong Province. In Fanyu, many manufacturers produced VR installations for offline entertainment experience stores, which required several headsets for each installation. For instance, a virtual underwater submarine experience required 4-8 headsets. These manufacturers needed 3,000 headsets annually, and Pimax initially supplied 80% of these headsets. However, shortly after Pimax entered this market, a competitor appeared and quickly gained market share by offering headsets priced as low as RMB 1,499.

The competitor was strong in many ways. Firstly, its headset design was more user-friendly than Pimax's. For example, it used a soft belt as the head strap, which was comfortable to wear and had a low damage rate within six months. Secondly, it received hundreds of millions of USD in A-round financing. Thirdly, it provided sophisticated after-sale services, which were highly sought-after by business clients. However, Pimax could not assign dedicated customer service teams to each client. Despite Pimax's efforts to optimize products and lower prices, the Company struggled to survive in an unfavorable environment with expensive channel costs and fierce price competition. These factors significantly squeezed Pimax's profits, making it challenging for the startup to stay afloat.

"You cannot use a low-price strategy in cooperation with business clients. Such clients care about service rather than price. It is completely wrong to compete with low prices in this market," said Pan REN.

Entering the international market

How could Pimax achieve future growth without a low-price strategy? Weng and Ren discussed this question with the new joiner, Jiang Bo[8], a former partner at the abovementioned competitor. Jiang said, *"Since the competitor has completed its second financing round, investors think the VR market is mature enough. They want to grab large market shares by expanding the scale of sales. So, they launched a price war. But from my point of view, this market is far from scalable, and today's VR devices are like mobile phones in the 1980s."*

The Pimax team described the healthy VR ecosystem and virtual world as a collaboration of capital, content, and product shipments. However, such a description might have been too abstract

⑥ Zhibin WENG, founder and CPO of Pimax: 15 years of experience in smart hardware R&D; three years of experience cooperating with the former top VR brand in VR headset R&D; former New Technology and Innovation Director and Director of Wearable HMD Product of GoerTek; former Chief Engineer and Hardware R&D Director of BYD (Shanghai); former Manager of Smartphone R&D Department of TechFaith Wireless; developer of Pimax 4K Headset, a product recognized as the best VR product in Asia at CES 2016.

⑦ Pan REN, CEO of Pimax: CEO of Gebulin Network and Technology Company (a mobile game company), CEO of Yinyuegu Information Technology Company (a music service provider); 15 years of experience in consumer software R&D; former Software Director of BYD; and former Wireless Software R&D Manager of TechFaith Wireless.

⑧ *Not his real name.

for investors to understand.[13] One challenge Pimax faced in the competitive VR market was differentiating products from others. While VR products had similar parameters such as weight, size, image processing latency, display resolution, FOV, and 6DOF, Pimax's Chief Product Officer (CPO) Weng saw an opportunity to make their products stand out by enhancing display resolution. As such, the company decided to develop VR headsets with an 8K resolution. Some people were skeptical of this decision, questioning the need for an 8K headset when 4K resolution was still not widely available. However, Weng believed that prioritizing high display resolution would set Pimax apart and ultimately give the company a competitive edge in the market.

In January 2017, Pimax brought the prototype of the Pimax 8K to CES in the United States. The new product was well received at the show. Industry experts from Intel and Microsoft were very optimistic and suggested that Pimax sell it on crowdfunding platforms.

Launching crowdfunding campaigns

In 2016, Pimax 4K went into mass production, but the Company lacked a strong distribution network. They mainly relied on major e-commerce platforms like JD.com and Tmall to sell their products. A small percentage were also sold through niche channels like exhibitions, offline experience stores, and commercial activities. Due to this, Ren was enthusiastic about selling their products on crowdfunding platforms.

Crowdfunding platforms allowed companies to raise funds by pre-selling products to platform users, i.e., backers. Under this model, Pimax could introduce its planned product and attrac0t backers to fund development. In return, Pimax must deliver the finished products to the backers at a discounted price and by the promised deadline. This model worked for Pimax as many traditional venture capital institutions were unwilling to fund VR projects as they were skeptical about VR products' customer acceptance and market potential. Therefore, crowdfunding platforms were not only a financing channel but also a tester for the market acceptance of Pimax's VR products. It also provided an excellent opportunity for product promotion. With multiple purposes answered in one move, Pimax could not afford to waste this chance.

Launching crowdfunding campaigns on Kickstarter

After opting to launch a crowdfunding campaign to raise money, Pimax took various measures to promote its new product, the Pimax 8K, both online and offline. The Company increased the frequency of offline roadshows to help more customers learn about and experience the new product. They also utilized social media channels like Facebook and their official user community to promote the headset. Existing customers were encouraged to participate in online discussions and share their usage experiences, attracting many new customers to join the discussion. The media also picked up on Pimax's crowdfunding plan, helping to raise awareness and generate interest in the product.

The next thing was to choose a suitable crowdfunding platform. Kickstarter and Indiegogo were major US crowdfunding platforms but operated different models. According to Ren, Pimax chose the former because *"Kickstarter has more users than Indiegogo. Besides, Oculus also used this platform to raise money. Competing with a favorite product on the same platform will stimulate heated discussion among consumers."* On September 21st 2017, Pimax launched a crowdfunding campaign on Kickstarter for its Pimax 8K. The campaign aimed to raise USD 200,000 in 45 days, with the Company promising to deliver the products in January 2018.

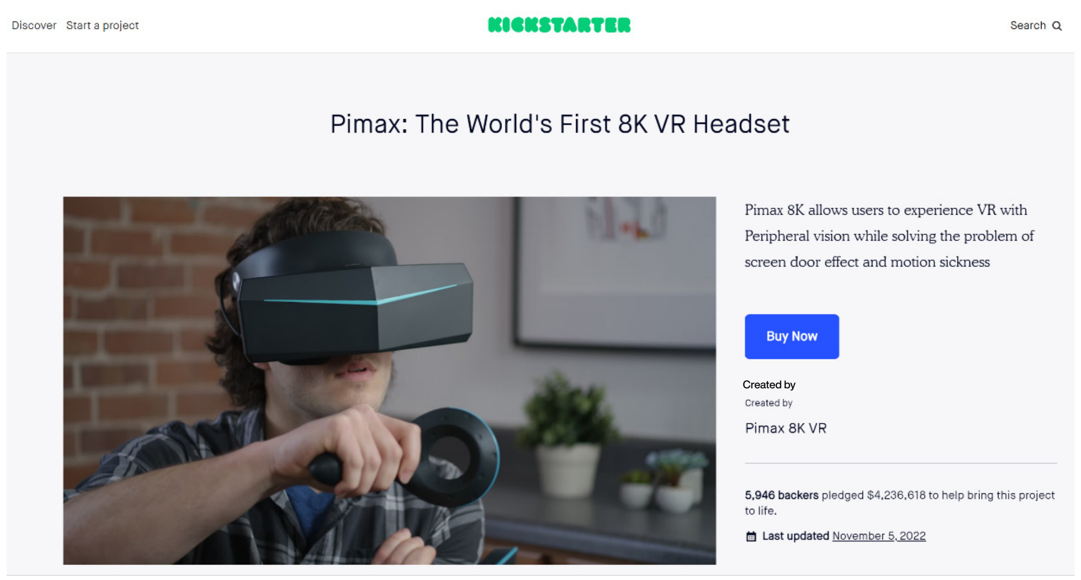
Two critical periods

Pimax made an introduction video for the Pimax 8K, describing the design and parameters of the product in detail: Priced between USD 499 and USD 799 (see Appendix 2), the Pimax 8K used two 4K displays with a total resolution of 2*3840*2160. This new product offered the highest resolution and the largest FOV (200°) among all VR headsets at that time. Many VR fans were excited about Pimax 8K because the VR market had been quiet for a long time. Global VR hardware giants such as HTC VIVE, Oculus, and PS VR did not release any new products in 2017, nor did they address the needs of VR users for higher resolution and larger FOV. Hence, the emergence of Pimax 8K thrilled VR fans.[14]

Surprisingly, the company hit its initial goal within an hour of the campaign's launch. On the sixth day, total funding surpassed USD 1 million. The platform users started heated discussions about the Pimax 8K, and the Company's R&D staff stayed in 24-hour interaction with the backers. Some backers even considered themselves product consultants, helping Pimax staff answer other backers' questions and sharing their opinions.

Rick King, the world's most influential KOL in VR, congratulated Pimax on Twitter for reaching

Appendix 2: Pimax Crowdfunding Campaign Page on Kickstarter



Source: https://www.kickstarter.com/projects/pimax8kvr/pimax-the-worlds-first-8k-vr-headset?ref=kicktraq

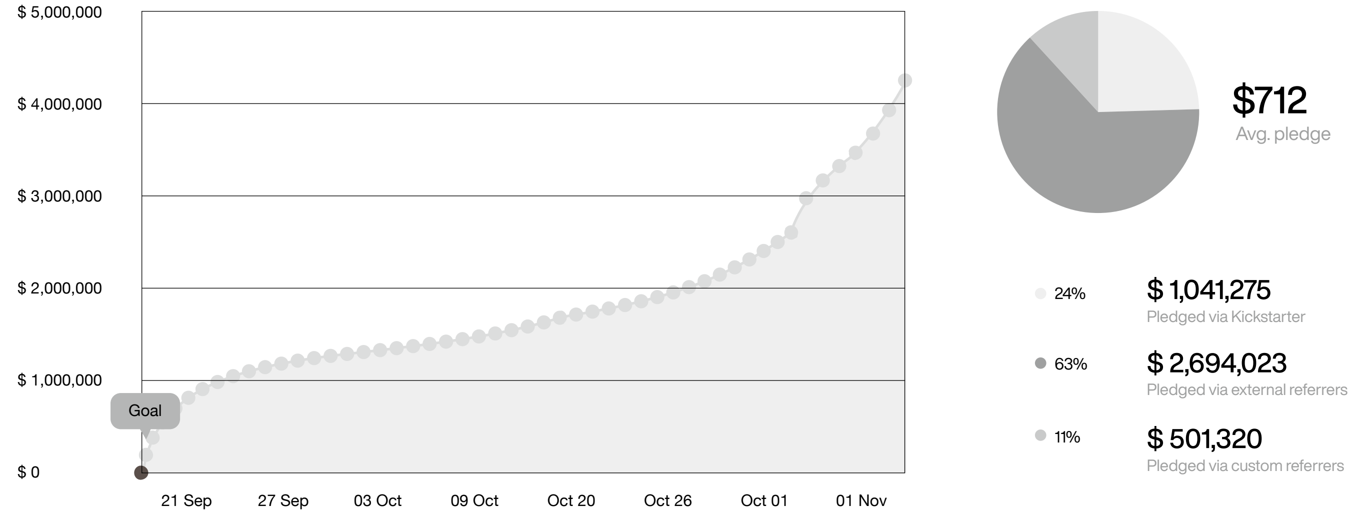
the funding goal in just one hour. In addition, Norman Chan, the top celebrity on Tested.com, rescheduled his video release and posted a review video of Pimax 8K in advance to support the crowdfunding campaign. After the campaign started, he tweeted several posts to cheer on the product. Over 200 international media outlets covered the campaign.[13]

In the middle of the campaign, some Kickstarter users reported problems with Pimax's existing products. When Pimax employees saw these discussions, they immediately contacted these users and asked for their suggestions for future product iterations. The Company promptly updated anything new about the product in the comments section.

In late October 2017, Pimax stepped up its promotion efforts for its new product. It cooperated with 65 gaming and hardware media outlets to launch massive online advertising and stimulate heated discussions. This boosted the funding from USD 2.8 million in late October to USD 4.23 million on November 4th. This amount broke Oculus's VR crowdfunding record of USD 2.5 million (see Appendix 3). This campaign was supported by 5,946 backers, among which the promotion activities attracted 2,679 backers, and the remaining 3,276 were loyal Kickstarter users[⑧].

⑧ Users who participated in multiple crowdfunding campaigns on Kickstarter.

Appendix 3: Statistics of Pimax Crowdfunding Campaign on Kickstarter



资料来源：小派科技提供

Initially, Ren had planned to launch multiple product models to cater to consumers' diversified needs. However, the crowdfunding results revealed that backers were primarily interested in only two models: The First 8K Ever and the 8K Full Package. This prompted the Company to adjust its marketing strategy accordingly and focus on promoting these two models.

Community co-creation

In the discussion section of the Pimax 8K crowdfunding campaign page, thousands of VR fans worldwide posted over 9,000 comments. They talked about the technical parameters of the Pimax products, including resolution, FOV, refresh rate, and brain-wrap, while offering suggestions on some technical issues.

A group of international followers created an OpenMR community for Pimax products and invited Pimax Official to join it. The community was open to the public, but only registered users could post comments. These registered users then became the core Pimax users, providing critical suggestions for product improvement, such as color and resolution. Domestically, Pimax also had similar user interaction communities on WeChat and QQ.

According to Ren, *"Communities and crowdfunding help build a close bond between our customers and us. Customers, especially young customers, can feel a sense of participation when they see their suggestions adopted in the product design. This creates a special sentiment between the customers and Pimax."*

At the time of writing, the Pimax MR community had attracted over 7,000 registered users, of which 200 were content developers. Most early community users were backers of the Pimax crowdfunding campaign, including hardware developers, VR experts, software developers, gaming experts, and VR KOLs and media. Although the community was small, it had a high level of user loyalty and activeness, with the percentage of daily and monthly active users both exceeding 30%.

Community members who were VR experts or developers acted as beta testers for Pimax. Hardware experts offered many suggestions for product improvement, including parameter adjustment, head strap design, and headphone optimization. They even disassembled Pimax headsets to analyze the product's materials and component suppliers. Those who were professional software developers helped Pimax correct software bugs and developed new software and content based on Pimax's SDK, such as VR game drives. The Company incorporated some user-developed software into its own content development. Therefore, such users, whether hardware enthusiasts or software masters, were not only customers but also Pimax's designers who had always inspired the Company.

Community operation and management

Pimax set up the positions of community managers and community operators to manage the user communities. They were responsible for 24-hour online interaction with community users and timely publication of the Company's activity plans. Specifically, a community manager had to keep a community active by stimulating discussions on some popular topics; a community operator had to make sure that the Company's activity plans were released to the community on time and also collect users' questions and questions about difficulties in using the product. These efforts helped the Company gain a better understanding of users' needs and then respond to them. Sophisticated community management fostered user activeness. In Pimax's open and active community, users could talk to the community manager about any question they encountered, and their questions would be answered and solved promptly. Some users created a comparison chart to compare the parameters of all headsets commercially available at that time. The comparison result showed that Pimax made the best VR headsets in the then market, and the link to Pimax's official purchase portal was also included in the table. According to a Pimax employee, *"In the community, we take care of users instead of managing them. When communicating with users, we focus not on advertising and promoting our products but on discussing interesting VR-related topics with them. Users need more dialogues, more communication."*

Pimax categorized its customers based on the potential value they could bring to the Company. Content creators were seen as valuable for building the content ecosystem, while influential users with a neutral attitude toward Pimax could become future brand ambassadors. Active community members were also highly valued for contributing to Pimax's word-of-mouth marketing, increasing community visibility, and providing a solid foundation for the Company's future marketing strategies.

Such customer categorization helped Pimax tailor customer relationship strategies for different customer groups. These strategies aimed to improve the brand building in various aspects. For example, some users in the overseas MR community were VR KOLs, so their views on VR products were mature and hard to be influenced by advertisements. They provided neutral comments and opinions on Pimax products. Although they had no interest-based relationships with the Company, they all recommended Pimax products during the crowdfunding campaign and participated in the Company's online promotions and offline roadshows. They served as a bridge between Pimax and mass users. Apart from these KOLs, some media users also recommended Pimax products in their videos or articles after attending the roadshows. Pimax also hired internet celebrities to market its products online, paying them commissions.

Pimax incentivized user participation in the community through the use of a chart that recorded the contributions made by each user. Those who contributed to the Company were acknowledged on Pimax's official website, receiving contribution certificates and gifts during festivals. Special gifts or discounts were offered to users who made significant contributions and were invited to participate in exclusive activities. At new product launches, Pimax also recognized the contributions made by these users. Pimax community operators frequently interacted with these contributors and provided real-time support as needed. In addition, the Company regularly conducted user surveys to collect community feedback regarding hardware and software.

According to Ren, *"We do not give extensive economic rewards to contributors. We give them spiritual recognition. Based on our observation, such core users value spiritual recognition more than economic rewards. The greatest significance of the community is establishing a user value system that continuously creates product value, marketing value, and brand value."*

Application scenarios

Advancing VR technologies expanded the application of VR products. According to a Mordor Intelligence analysis of the VR market, in 2020, gaming, live broadcasting, and video were the top three sectors with the most application of VR technologies. The number of VR users in these sectors was 70 million, 28 million, and 24 million, respectively, representing 49.8%, 19.9%, and 17.1% of total VR users. The analysis predicted that by 2025, the number of VR users in these three sectors would grow to 216 million, 95 million, and 79 million, respectively.[15]

Games

Gaming was a vital end-user industry for VR applications. The main types of games included consoles (such as Microsoft Xbox, Sony PlayStation, and Nintendo Switch), PC, and smartphone games. At the time of writing, VR games were more popular overseas than in China. In 2021, the ten most popular VR games on the Steam platform were all created by overseas developers, of which more than half were from the US.[16]

In mainland China, customers preferred mobile games, but in the Western market, PC games were more popular. Therefore, the overseas market was more favorable for Pimax 8K because its high resolution and large FOV were well suited for PC VR games.

"Overseas customers have higher capacities to consume, and they prefer buying PC-based VR games", said Ren. Based on Pimax's user community survey, 77% of consumers used Pimax to play blockbuster-style VR games, and 62% to play flight and driving games. Pimax 8K had natural advantages in playing such games with its large FOV.

Pimax B2B applications

Business applications of VR technologies accounted for 53% of the global VR market in 2020 and were expected to maintain a significant share in the following seven years. The application of VR headsets showed a continuous increase in business scenarios, including retail stores, car showrooms, real estate, and healthcare. Some companies used VR tools for activity design and planning. For example, Eurosat Coastiality offered its riders the cinematic VR experience based on *Valerian and the City of a Thousand Planets*. In 2018, China built a huge VR theme park with more than 40 VR installations, while Ossi VR and ImmersiveTouch provided VR solutions for training medical students and surgeons.

At the time of writing, Meta's Quest 2 had the largest market share in the global VR market, with 47.97%, thanks to its advantages in price and technology. On October 12th, 2022, Meta Oculus launched a new VR headset —the Quest Pro —priced at USD 1,500 and positioned as a productivity tool. Quest's content creation also became more mature, with one-third of the apps in the Quest Store breaking USD 1 million in revenue. Competition in the Chinese VR market was also fierce. ByteDance's Pico unveiled its new VR headset, Pico 4, on September 22nd 2022, and five days later, this new product launched in the Chinese market, priced at RMB 2,499 and RMB 2,799. Pico also built its content ecosystem, creating gaming, social media, fitness, and video content. Despite the intense market competition, Ren remained calm, saying, *"We are delighted with the launch of Pico 4, as it helps us to cultivate the market."*

In its seven-year history, Pimax had always positioned its products as high-end. The Pimax 4K and 8K had gained many loyal high-end customers in the overseas market, and the Pimax 12K (yet to be released at the time of writing) was also expected to be well received by existing customers.

However, the high-end market was a niche market. Its size was incomparable to the mass VR market in China, which was estimated to exceed tens of millions of yuan. Therefore, Pimax planned to launch new products in 2023 in the Chinese VR market. However, this posed several questions.

First, should it continue to focus on the high-end market? Or should it enter the mass market? If Pimax continued to focus on the high-end market, it would inevitably be limited by its small size. However, entering the mass market would not be easy either. Entering the mass market meant entering a highly competitive environment. Costs would also increase significantly. Although Pimax had raised funds through crowdfunding campaigns and was expecting further funding activities at the time of writing, it was still modestly funded compared to its strong competitors.

Second, should Pimax continue to focus on hardware development? Or should it start building its content ecosystem? Pimax's main business was still hardware development at the time of writing. Without engaging content, could its business be sustainable by relying solely on hardware? Besides, Oculus and Pico both started building their content ecosystems. Would that be a threat to Pimax? If content development was a must, how could Pimax do it?

Third, how could it create higher and more sustainable value through community co-creation? Although the community mechanism had generated significant value for Pimax, the Company's community management and operation failed to form a mature system. Therefore, how could Pimax enhance its community operations?

Endnotes

1 The team behind Pimax: a duet of both hard and soft skills. Accessed on November 21st 2022, at https://zhuanlan.zhihu.com/p/443516817

2 Most crowdfunded virtual reality (VR) project. Accessed on December 3rd 2022, at https://www.guinnessworldrecords.com/world-records/507495-most-crowdfunded-virtual-reality-vr-project

3 CITIC Securities. An In-depth Insight on VR Devices: The Initial Representation of Metaverse and Its Continuous Iteration. February 12th 2022, accessed on July 3rd 2022, at http://finance.sina.com.cn/stock/stockzmt/2022-02-12/doc-ikyakumy5551163.shtml

4 How did 2016 became a declining point from a boom year of VR? December 16th 2016, accessed on November 22nd 2022, at https://www.iyiou.com/news/2016121636229#:~:text=

5 IDC: Meta Quest 2 Has Sold 14.8 Million Units. June 8th 2022, accessed on November 23rd, 2022 at http://vr.sina.com.cn/news/hot/2022-06-08/doc-imizmscu5732187.shtml

6 A Study of the Maturity and Best Practices of Virtual Reality Innovation Applications. The China Academy of Information and Communication Technology. 2020.

7 An Analysis of the State of the Market and Growth Prospects of the Global VR Industry. August 10th 2021. Accessed on November 22nd 2022, at https://www.qianzhan.com/analyst/detail/220/210810-e956cb9f.html

8 Guosheng Securities. Metaverse: Technology Iteration and Ecosystem Enhancement Boost Consumer VR Growth. February 15th 2022, accessed on July 3rd 2022, at https://pdf.dfcfw.com/pdf/H3_AP202202151547158638_1.pdf?1644935061000.pdf

9 CITIC Securities. An In-depth Insight on VR Devices: The Initial Representation of Metaverse and Its Continuous Iteration. February 12th 2022, accessed on July 3rd 2022, at http://finance.sina.com.cn/stock/stockzmt/2022-02-12/doc-ikyakumy5551163.shtml

10 CITIC Securities. An In-depth Insight on VR Devices: The Initial Representation of Metaverse and Its Continuous Iteration. February 12th 2022, accessed on July 3rd 2022, at http://finance.sina.com.cn/stock/stockzmt/2022-02-12/doc-ikyakumy5551163.shtml

11 CITIC Securities. An In-depth Insight on VR Devices: The Initial Representation of Metaverse and Its Continuous Iteration. February 12th 2022, accessed on July 3rd 2022, at http://finance.sina.com.cn/stock/stockzmt/2022-02-12/doc-ikyakumy5551163.shtml

12 The team behind Pimax: a duet of both hard and soft skills. December 10th 2021, accessed on November 24th 2022, at https://zhuanlan.zhihu.com/p/443516817

13 VR Company Pimax Financed Tens of Millions of RMB in B+ Round Financing with Union Optech as a Main Investor. Accessed on November 26th 2022, at https://new.qq.com/rain/a/20210917A0453O00

14 Pimax 8K crowdfunding raised USD 1 million by the time, backed by 1,600 geeks around the world. September 25th 2017. Accessed on November 26th 2022, at http://vr.sina.com.cn/news/yj/2017-09-25/doc-ifymesii5503610.shtml

15 CITIC Securities. An In-depth Insight on VR Devices: The Initial Representation of Metaverse and Its Continuous Iteration. February 12th 2022, accessed on July 3rd 2022, at http://finance.sina.com.cn/stock/stockzmt/2022-02-12/doc-ikyakumy5551163.shtml

16 https://mp.weixin.qq.com/s/G5i6K_Om9XHh_bZNpKPKyw

Using Innovative Technologies to Create Immersive Art Exhibitions

Insights of CEIBS Alumni

mlsArt is a professional art service provider under MLS Advertising. It engages in venue planning for galleries and art centers, as well as the operation of exhibition projects, from curation, installation and promotion to the running of exhibitions. The team is made up of experienced art and design professionals, led by art industry veterans.

The advancement of information and digital technologies has reshaped the exhibition market, giving rise to innovative forms of art exhibition, such as immersive art exhibitions with distinctive space design, digital technologies or viewer interaction. The immersive experience has everything to do with the use of acoustic, optic and electric technologies and 3D space design, which is unrivalled by traditional 2D exhibitions of paintings, calligraphy, sculptures, etc.

mlsArt has been involved in widely acclaimed immersive exhibitions, for example, *teamLab Borderless Shanghai*, *Temple of Light* and *Journey to the Unexplored*. These exhibitions feature unique forms of presentation through the combined use of acoustic, optic, and electric technologies and digital tools, allowing different works of art to resonate with each other in a borderless way. The immersive experience created meets the aesthetic expectations of the general public, who are looking for a feast for the eyes and ears in exhibitions that are in tune with the trend towards exploring the richness of art through innovative technologies. As more and more people embrace immersive art exhibitions, they are developing a taste for art beyond traditional categories, leading to a consumption upgrade in the art market.

— **Lin DING**
Founder and Chairman of Shanghai MLS Advertising Co., Ltd.

LOCAL CULTURE

4

UCCA

Serving the New Role of Contemporary Art in Business and Public Life

Authors / **Michelle LU, Yuwei ZOU**

UCCA Beijing Photographer: Shi SUN
Photo credit: UCCA Group

History of UCCA Group

UCCA Center for Contemporary Art is China's leading contemporary art institution. Committed to the belief that art can deepen lives and transcend boundaries, UCCA presents a wide range of exhibitions, public programs, and research initiatives to a public of more than one million visitors each year.

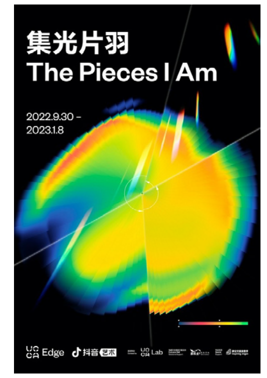
The UCCA Center for Contemporary Art was constructed and inaugurated in Beijing in November 2007, becoming a non-profit international art institution at the heart of Beijing's 798 Art District. In October of 2017, it transformed into the UCCA Group, which is owned and managed by a new group of patrons and shareholders. The Beijing Cultural Bureau officially recognized UCCA as a museum in 2018, and the Beijing Bureau of Civil Affairs and the Hong Kong government have licensed UCCA to operate as a non-profit foundation in both regions. The UCCA Art Education Foundation is a recognized leader in community development and academic research promotion. In addition to adhering to art, UCCA has progressively begun to penetrate academic value into the commercial sector. The various divisions of the group continue to broaden their scope and diversify their business growth. UCCA Store, UCCA Kids, UCCA IP, and UCCA Lab constitute the commercial segment. The UCCA Store sells derivatives of artists and exhibitions so that everyone can become an art collector in their daily lives. The museum's exhibition programs serve as a resource for UCCA Kids' exclusive art sense development classes for children ages 2 to 12. UCCA IP is committed to integrating international, high-quality art IP resources and establishing an ecological chain of art IP. UCCA Lab concentrates on examining numerous cross-border collaborations between art and brands and is a contemporary cultural platform that helps connect art, business, and innovative, diverse projects.

In the five years since the transformation, UCCA Group has been firmly rooted in China, establishing itself as a leader in local contemporary art, connecting with international culture, discovering outstanding local contemporary artists and works, and providing ongoing assistance and support for the development of Chinese contemporary art. Additionally, the reformed UCCA has begun to deploy in other Chinese cities to expand its influence there. Currently, UCCA has three venues. UCCA Beijing sits at the heart of the 798 Art District, occupying 10,000 square meters of factory chambers built in 1957 and regenerated in 2019 by OMA. The UCCA Dune Art Museum was designed by OPEN Architects. It is located in Aranya Community on the Bohai Sea Coast of Beidaihe, hidden under the sand dunes of the Gold Coast in Aranya Community, and won the "Best of the Leading Culture Destination Awards" in the 2020 Cultural Destination Award "Asia-Pacific New Cultural Destination" award. Since the inaugural exhibition "Post-Nature," UCCA Dune has also launched an exhibition project investigating the intertextual relationship between art, humanity, and nature in relation to the local environment. In May of 2021, the SO-IL Architects-designed UCCA Edge opened to the public in the Jing'an District of Shanghai. It soon garnered the "New Museum of the Year Award" award at the 8th The Best BANG Awards in 2021, same year after its inauguration. UCCA Edge will continue to bring exhibitions of renowned domestic and international artists to the public and shortly thereafter establish a brand-new art monument in Shanghai, infusing new vitality into this culturally thriving metropolis.

UCCA Dune
Photo credit: UCCA Group

UCCA Edge
Photo credit: UCCA Group

The Pieces I Am, exhibition venue
Photo credit: UCCA Group



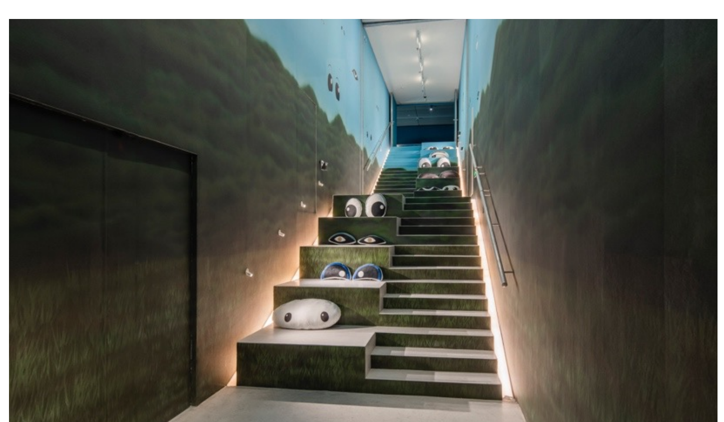
The Pieces I Am, exhibition poster
Photo credit: UCCA Group

UCCA Lab: The Pieces I Am presented by UCCA and Douyin Art, focusing on humanity's existence in the digital age

UCCA Lab is committed to presenting a variety of art projects as a contemporary cultural platform within the UCCA Group that explores the possibility of diverse artistic collaboration. It is an innovative laboratory bridging the gap between commerce and creativity. Cross-cultural creators collaborate to play an active role in local government-sponsored cultural initiatives. UCCA Lab is also an innovative approach for UCCA Group to integrate contemporary art and business operations. Through the partners' platform, it will speak out in various communities, cities, and nations. While disseminating the allure of contemporary culture and art to a broader audience, it will continue to investigate the city's local practices and push the limits of art projects.

UCCA Lab and Douyin Art present the group exhibition "The Pieces I Am" at Shanghai UCCA Edge from September 30, 2022 to January 8, 2023. The exhibition focuses on the existence of humanity in the digital age. Simultaneously conducted online and offsite, approximately 1,300,000 people viewed this online art festival. The audience can use Douyin's scanning function to enter the online exhibition hall of "The Pieces I Am", perceive the theme of the chapters through augmented reality technology, and invite friends to visit the exhibition online with a single click. Since 2021, Douyin has persevered in its pursuit of traditional culture. With its massive volume of 600 million daily users, it will progressively alter public perception, enhance brand voice, and expand the art industry.

The exhibition features 27 artists and groups from China and abroad, covering digital images, video games, interactive installations, and other forms of audio-visual art works, with a focus on slices of contemporary life in multi-interface status, thus revealing a holographic perspective of the human digital living landscape. Today, digitalization has entered the 3.0 era, and our planet is saturated in digital technologies that have become extensions of human civilization. As an exponent of contemporary art, UCCA encourages the audience to perceive the art world in the new digital era from an alternative angle and fortifies the unseen connection between art and technology.



The Pieces I Am Photographer: Sun Yidian
Photo credit: UCCA Group

UCCA IP: COSTA × UCCA Modern Osmanthus series

UCCA IP seeks to integrate global, high-quality art IP resources with domestic art content output capabilities to form an art IP and UCCA IP ecological chain. Empower cooperative brands domestically and internationally with high-quality art IP in various forms of authorization, including product, space, and marketing. Stimulate public interest in contemporary art through high-quality products and content, enhance the art experience, and promote the art's sustainable growth.

In September, when the golden osmanthus is fragrant, COSTA collaborated with UCCA IP to conduct a new cross-border exploration of modern art and coffee life, launching the "Golden Pop Osmanthus" series, conveying the concept through taste, sight, and smell, allowing art to emerge into coffee, awakening the inspiration particles within coffee lovers, and creating a unique and unforgettable "Golden Pop Osmanthus" coffee journey for consumers. The co-branding of COSTA is an essential step toward the brand's revitalization. This collaboration demonstrates an attitude of affection, self-assurance, and fortitude to challenge the conventions of society. It introduces brand-new product imagery to the public and becomes a popular coffee beverage among younger generations.

As the coffee industry chain in China evolves, the demand for coffee beverages among young people grows steadily. As a necessity for sophisticated white-collar employees, coffee has served as a symbol of professionals, and collaboration with artists will significantly increase the brand's spiritual value. Through this collaborative venture, COSTA aims to reinforce the brand's vibrant image so that consumers will think of COSTA whenever osmanthus-flavored latte coffee is mentioned. Pop art is renowned for its clever reuse of a large number of recognizable image symbols and screen printing techniques. Therefore, the custom-designed pop osmanthus pattern by COSTA and UCCA has vivid colors and a high degree of saturation. The technique of overlapping layers produces imperfections, and the sweet-scented osmanthus is set repeatedly in the image's center, as if it were a portrait of the flower. In addition to paying homage to Pop Art and redefining how people interpret art, the image conveys that contemporary youth can live to their full potential and blossom to their hearts' content.

The cross-border combined presentation of UCCA and COSTA focuses primarily on four aspects: brand image, product packaging, joint pop-up stores, and peripheral products. Regardless of product packaging or joint pop-up stores, the pop art series designed by UCCA lends COSTA products a juvenile, fashionable, and artistically contemporary atmosphere. In addition to tasting the new coffee series, consumers can also visit the store, take photographs, and acquire art-related merchandise. Additionally, the pop-up store provides an aesthetic backdrop for youth groups, combines with art, and offers customers a more immersive experience. After the Internet has matured, it will also entice new consumers to visit. Simultaneously, UCCA recommended Li Sidani, a prominent and powerful artist who aspires for perfection, as the new spokesperson for COSTA. Together, they conveyed the "Golden Pop Osmanthus" attitude of "love, self-confidence, and breaking the tradition" and opened a beautiful narrative. Concurrently, COSTA introduced co-branded pop-up stores in Beijing's Huaxi LIVE and Shanghai's Wujiang Road, where consumers can experience contemporary art in an immersive manner.

Photo credit: UCCA Group

XINTIANDI × UCCA: “RanRan” Young Artist Incubation Program

On August 8, 2022, the "Ranran" Young Artist Incubation Program (hereinafter referred to as the "RanRan" program), jointly created by XINTIANDI, a commercial brand under Shui'an Xintiandi, and UCCA, was officially released. The "RanRan" program employs a prominent co-construction model with the goals of establishing a three-year strategic partnership, fostering exploration and innovation among young artists, and providing opportunities for creative support and professional development. Greater Xintiandi is an art experiment field for the stage of works, and it continues to provide Chinese young artists with a broad creative display platform, open experimental space, and free space. The creative environment, which offers numerous opportunities for cross-border exploration. In addition, the "RanRan" program has received support from renowned practitioners from a variety of fields, such as art, commerce, architecture, and academia. It will establish a strong cultural advisory committee that will implement the incubation plan's vision and concept and facilitates the discovery and support of young artists.

Photo credit: UCCA Group

XINTIANDI has been at the forefront of cultivating new forces in the field of pan-cultural art by applying the concept "Created in China" for many years. This time, we have collaborated with UCCA to create the "RanRan" program, adhering to the consistent original intention and taking the meaning of the bonfire as our inspiration. We hope to use the power of youth art to ignite the "creative bonfire" of Shanghai and collect more light-oriented trends in the brightness and hope of the rising fire. Encourage the artistic creativity of young people, co-create the rising vitality of Chinese artistic creativity, and foster a virtuous cycle of cultural creation and national participation. The "RanRan" program, guided by the three keywords "Chinese Style", "Integration and Co-Creation", and "Cultural Curiosity", concentrates on the creative practice of youthful artists who

RanRan artist-in-residence program: Daytime Megaphone project initiated by artist Lei Lei and Youthology
Photo credit: UCCA Group

RanRan program presented at WDCC
Photo credit: UCCA Group

have lived and worked in China for an extended period and contributed to the development of Chinese local culture. Memory excavation exposes insights and expressions based on contemporary society, thereby delineating the collective appearance of the creative ecology of the new generation of young Chinese artists. This program seeks to introduce art to the Great Xintiandi neighborhood, investigate the practice of inter-disciplinary disciplines such as culture, art, and technology, and cultivate forward-looking new kinetic energy for artistic innovation.

Public art installation at the RanRan art season: 1-4-5-1, by Shen Ruofan×Liu Heng×Yang Fan, 2022, galvanized iron, stainless steel, 10mΦ × 4.2m
Photo credit: UCCA Group

Group exhibition of young artists at the RanRan art season: a corner of the exhibition venue
Photo credit: UCCA Group

The inaugural “RanRan” program comprised four parts: Young Artist Prize, Artist-in-Residence Program, Art Season, and Cross-over Collaborations.

Young Artist Prize: this competition invited submissions of thematic works and proposals from eligible young artists. The cultural advisory committee, composed of opinion leaders from diverse backgrounds, reviewed entries, invited shortlisted artists to a group exhibition, and selected the winners, who received generous prize money and support for their artistic endeavors. The 2022 theme of “Songs of the Return” suggested a review of the year, the return to everyday life, and the positive response to uncertainty.

Artist-in-Residence program: focused on local memories during the urban renewal process, people’s lives after neighborhood transformation, and innovative commercial practices. The program recruited artists with research capabilities to embark on a journey of reflection and creation in downtown Shanghai. It funded their residency and research to help artists study the local culture and public spaces before presenting their findings and works to the public in a dynamic manner.

Art Season: a two-month event presenting all the fruits of the RanRan program from throughout the year. The whole Xintiandi area showcased works from shortlisted artists, public art installations from invited artists, and works from artists in residence. The art season aims to become a year-end cultural event engaging urban residents in art projects, lectures, performances, and workshops. It will be capable of capturing the highlights of the RanRan program and building momentum for its robust development, cementing the partnership between Xintiandi and UCCA.

Cross-over Collaborations: The “RanRan” program hopes to serve as a platform where young artists can find support, show their works, and gain more collaboration opportunities. It helps participating artists find resources for creation, provides technical support in areas like new media and materials, and offers them opportunities for commercial cooperation, such as co-creation of IP, licensed product development, and commissions.

From the perspective of commercial real estate, the promotion of new art can use interactive installations and large-scale sculptures to present colorful effects of introverted or unrestrained emotions with art installations, so that visitors can take pictures and record them, and then from various new media dissemination and publicity, attract more young people to visit. Commercial real estate can also co-brand with art intellectual property. Through eye-catching space design, combined with digital illumination to create a realistic but illusory scene, and the link between human-computer interaction, it is certain to pique visitors' interest. Draw in more modern consumers.

Regarding Xintiandi, the artistic fusion neutralizes the commercial atmosphere. The "RanRan" program makes the general public experience the proximity of art and thoroughly integrates art into the purchasing and investigating processes of stores. Modern retail complexes play a new role by incorporating the arts, humanities, and social interaction. This new purchasing model is more effective at attracting consumer groups in the modern era. The influx of a large number of individuals not only increases the merchants' customer flow, but also provides exposure.

SMCC × UCCA: Night Dimension - Night as Prelude art exhibition

Photo credit: UCCA Group

Photo credit: UCCA Group

Night Dimension - Night as Prelude was unveiled in August 2022 at UCCA Sky Space, a new art space operated by the UCCA Group. The exhibition was presented by the Shanghai Municipal Commission of Commerce (SMCC) and UCCA, with assistance from the Shanghai Jing'an District Commission of Commerce and UCCA Edge as co-organizers. This exhibition, a highlight of the Shanghai Nightlife Festival, signaled the commencement of a three-year strategic partnership between the Administrative Service Center of SMCC and UCCA. Together, the two parties would develop "Night Dimension" into a signature art event that caters to the requirements of young people and infuses artistic vitality into Shanghai's nightlife. On three levels, "Dimension" can be interpreted: time (night), space (city), and youth (metaverse/digital world). Art combines them to create the distinctive "night dimension" of urban life.

"Night Dimension" is devoted to investigating Shanghai's nightlife through a variety of platforms and scenarios, bringing contemporary art closer to young people in creative ways while also diversifying collaborations between art and other disciplines. It intends to transform the urban way of life and contribute to the emergence of new cultural phenomena. In today's complex environment, where the new and the ancient coexist, museums should embrace the trend of cultural diversity by displaying various types of art. This event provides an artistic flourish to commerce and demonstrates how art can be commercialized for social life by combining art with the nighttime economy.

UCCA Store and UCCA Kids

The UCCA Store strives to bring distinctive, cutting-edge objects into your life. It features a mix of exhibition merchandise, limited-edition artworks, apparel, design, and books, promoting the idea of art as a unique yet accessible experience that enriches our homes and daily routines with imagination and inspiration. In addition to in-house merchandise, UCCA Store also collaborates with respected artists and design brands to create exclusive products, such as Becoming Andy Warhol and Picasso – Birth of a Genius. Its merchandise collection for the Maurizio Cattelan exhibition, including apparel and decorations inspired by the artist's well-known works, was a big hit with consumers.

UCCA Kids targets children ages 2 to 12. Through art, children are able to think in multiple directions, and they are provided with distinct art development courses, exhibition seminars, domestic and international art study excursions, and summer and winter programs. art education experience. Thanks to UCCA's cutting-edge art resources, children can have direct contact and interaction with artists and their works from around the globe, participate in art seminars related to UCCA exhibitions, and create original works of art inspired by masterworks. UCCA presents Maurizio Cattelan: The Last Judgment, the first solo exhibition in China of the Italian national treasure artist Maurizio Cattelan, from 20 November 2021 to 20 February 2022. Based on the exhibition, UCCA Kids devised a series of art workshops for children, guiding them on a voyage to discover the intellect and creativity of the artist Cattelan. By observing Cattelan's works, children can observe how the artist delves deeply into everyday experience, creates new narratives based on familiar objects, and challenges truth and originality with hyper realistic sculptures and installations.

Photo credit: UCCA Group

Photo credit: UCCA Group

Kaiji Teahouse: Blending Traditional Culture and Youth Culture

Interview with the founder of Kaiji Teahouse, Evan

Authors / **Qi WANG and Elaine LI**

Photo credit: Kaiji Teahouse

A glance at the most popular drinking venues on a local review and rating app may surprise you. The top-ranking place is not a milk tea store or a café but a teahouse. To find out why, we paid a visit to the unexpected champion, Kaiji Teahouse on Nanchang Road in downtown Shanghai, and conducted the following interview with founder Evan.

What's Kaiji Teahouse like?

图片来源：开吉茶馆提供

By blending modern and traditional elements in its space design, Kaiji is a vibrant teahouse that captures the energy of urban life. The Kaiji team has crafted a buzzing atmosphere inside through elaborating design and steaming offerings without appearing haphazard.

Evan introduced Kaiji as a teahouse brand that integrates youth culture with China's traditional teahouse culture. After three years of preparation, its first store opened on Nanchang Road in downtown Shanghai in July 2022. The site of the teahouse, Xiangshan Apartment, is a historical building built in 1933. The Kaiji team combined three separate stores on the ground floor to create a space spanning 12 meters along the street. They removed previous decorations, including a suspended ceiling and some partition walls, to reveal the original structure, which is nearly 90 years old. We also learned from other publicly available interviews that Kaiji's design preserved the material, texture, and even defects from the original site, making little intervention to the few irreparable flaws left by previous renovations. Most of the wall and ceiling finishings were simply cleansed. By keeping its original, rough appearance, the store captures both the vibe of traditional teahouses and the spirit of staying true to oneself in youth culture.

Kaiji Teahouse consists of two core areas. The lobby is a leisure space with low round tables common in traditional China. People can sit around the round table to sip hot tea and shoot the breeze, creating a relaxing and intimate atmosphere. Further into the store is the reading room, a quiet place for customers to unwind or work on their laptops. Kaiji has also introduced terraced seating with a street view, a welcome feature for young patrons. Evan explained that Kaiji endeavors to become a place that appeals to young people and makes customers feel at ease. In good weather, Kaiji opens all movable partitions in its façade to blend into the street.

The brand name "Kaiji" is made of two Chinese characters: "kai" means openness and reflects the trait of youth culture, while "ji" means luck and represents the wish for good fortune in traditional culture. Put together, they also form part of the Chinese phrases that express best wishes for a new business. The founding team decided on this auspicious name long ago. The logo is shaped like an ancient seal and stamped on store menus, posters, and tea labels. From visual and spatial design to its name and logo, Kaiji has made every effort to show its aspirations to connect traditional and modern cultures.

Kaiji also pays attention to every detail, from the color tones of tea labels it has repeatedly refined to the classic Chinese font Kaiti uses for its characters, creating a strong impression that it is a modern brand telling traditional Chinese stories. In Evan's words, Kaiji takes its roots in traditions while seeking innovation and integration with youth culture. That's why it sells traditional products in new ways. Unlike typical tea cakes with dragon and phoenix patterns, Kaiji's tea cakes are shaped like records and pressed into waffle checks for the convenience of customers. Lidded tea bowls often used in old teahouses are also served in Kaiji, but with modern tweaks.

Kaiji is honoring traditions in a youthful way by applying modern aesthetics, hoping to foster close bonds between modern customers and local traditions.

Photo credit: Kaiji Teahouse

Photo credit: Kaiji Teahouse

What's new with Kaiji's products?

Photo credit: Kaiji Teahouse

Kaiji has developed a product portfolio of drinks and snacks that appeals to the palates of young consumers. Café-goers often order a cup of coffee with a croissant or canelé. But customers seldom get the same satisfying experience in traditional teahouses, where the quality of tea is uncertain, and snacks are bland. While people have grown used to such perfunctory offerings, Kaiji decided to make a change.

It introduced new tea snacks different from melon seeds and peanuts offered in average teahouses. Kaiji provides local delicacies in sweet and salty flavors from different regions. For example, its sweet snacks include “Rolling Donkey” (rice rolls with yellow bean paste) from northern China, “Ciba” (glutinous rice cakes) from southwest Sichuan and Chongqing, and pickled fruits from the south, which are very popular with customers. Salty snacks include cuttlefish balls from Taiwan, pickled edamame and peanuts from Shanghai, and duck tongues from Wenzhou. More varieties may be offered in the future. Many Malaysians often come to the store for pickled fruits, which remind them of the taste of their hometown.

Photo credit: Kaiji Teahouse

Photo credit: Kaiji Teahouse

Kaiji classifies its tea offerings into three fragrance notes: floral, woody, and sweet. They have high sourcing standards and look for fine-quality tea leaves and distinct flavors. By classifying tea based on fragrance notes instead of the conventional categories of black tea and green tea, Kaiji aims to lower the barrier to entry for customers unfamiliar with tea leaves and make it easier for them to choose. This design also aligns with Kaiji Teahouse’s positioning as a place where even tea rookies can grasp the delicate flavor of the tea.

Kaiji offers both hot and cold-brewed tea. For steaming hot brews, customers can order a cup or a serving of tea. A cup of tea is freshly brewed by the assistant at the counter, ready for customers to enjoy in-store or take away. A serving includes hot water, a teacup, a lidded tea bowl filled with tea leaves, and a label detailing brewing instructions. In doing so, Kaiji preserves China’s classical kung fu tea ceremony in the store, offering customers the authentic experience of drinking tea. By ordering a serving of tea, the top grade of hot offerings, customers can take the time to make tea on their own, savoring the subtlety in each brewing and enjoying the art of tea making.

Kaiji has come up with a new technique to make cold brews. As young customers often ask for cold drinks in teahouses, many stores simply add ice cubes to make iced tea, which unfortunately dilutes the tea’s flavor. The best way to preserve the original taste is to turn hot tea into cold brew immediately after it’s brewed in the kung fu style. Therefore, Kaiji introduced equipment that could cool freshly brewed tea to about 4°c in 10 seconds before bottling it for sale. This new type of cold brew has been a hit among young customers.

Kaiji hopes to introduce the charm of tea to young people in ways they are familiar with, so they can embrace it as a healthy beverage. Evan believes that a brand should preserve its values through some mainstay products while connecting with customers through others. For example, customers unaccustomed to drinking pure tea can try a tea latte. Unlike the regular milk and tea combination, Kaiji’s tea latte blends tea with rich foams made from several types of milk and coconut water. Kaiji also offers persimmon cream latte and kumbu tea for those seeking more flavors.

Kumbu tea, a fermented tea tasting like beer, is provided for consumers coming over after dinner. If you are looking for a place to chat over non-alcoholic drinks at night, Kaiji Teahouse is the perfect place with its cozy atmosphere, healthy drinks, and tasty snacks. Since tea can be served in various forms, it can be a refreshing drink during the day and a low-caffeine option for the night, a decisive advantage that coffee cannot match.

Photo credit: Kaiji Teahouse

Photo credit: Kaiji Teahouse

What prompted a coffee industry professional to build a teahouse brand and target young people who are not so keen on tea?

With 16 years of experience in the coffee industry, Evan is well-versed in technical training, management, and operations. He has witnessed the growth of the coffee business from luxury hotel offerings to specialty cafés well aware of the trajectory of the evolving coffee market. When Evan began drinking a lot of tea for work-related reasons, his business acumen made him realize that teahouses might follow a similar path as the coffee industry and become part of people's everyday lives after a business boom.

In Evan's view, given the growing cultural confidence in China and lessons from the robust development of the coffee industry, local teahouses will go beyond B2B operations and reach out to the wider public. This is why Kaiji stepped in, breaking away from traditional teahouses and operating as a relaxing place where customers can enjoy their favorite tea flavors and socialize with friends over tea and snacks.

Kaiji's core vision is to revive teahouse culture in urban life by reshaping old teahouses into stylish venues and offering young consumers diversified drinking options to raise their interest in tea.

Why is Kaiji positioned as "the teahouse of the youth"?

A mature business decision has to take everything into account, including business operations, product offerings, pricing, and target customers. Evan cited the development history of the coffee market to give us a better understanding. In the early days of independent cafés, he said people were intimidated by this unfamiliar drink, and few ventured inside. As the industry grows, even coffee novices are happy to have a cup because everyone else is drinking it. In addition, the catering industry offers young people few "third places" to hang out, which has become a customer pain point. Where to go after dinner? Where can you go for casual conversations with others if you don't drink coffee? Private clubs aside, coffee shops seem to be the only available option left for many people.

As for the product itself, there are inherent barriers between coffee and the Chinese people, which coffee professionals have chipped away over the years. Tea, in contrast, faces no such challenge. Since its opening, many senior citizens have visited Kaiji in the morning. They feel comfortable strolling into a teahouse to have a cup of tea while making a few relaxed remarks about the insides of the store.

Evan believed that consumer tastes are always moving toward something more sophisticated. As a familiar drink, tea is healthier and has more distinct flavors, such as the sticky rice taste of Pu'er tea, the fruity scents of Lapsang Souchong black tea, and the floral aroma of Single Clump tea. These flavors naturally appeal to Eastern palates and contribute to the unique advantage of tea.

As teahouses and cafés have similar growth trajectories, Evan drew inspiration from the development path of the coffee market, which can be divided into three stages. In the first stage, cafés catered to the upscale market. Freshly ground coffee was mainly served to the rich and privileged in five-star hotels, where delicate coffee sets and service made drinking coffee a premium experience. As a result, the general public saw cafés as high-end places full of ritual. The rise of coffee brands like Starbucks ushered the business into the second stage, with cafés springing up everywhere. However, they were still seen as classy places frequented by white-collar professionals.

The trend of specialty coffee has caught on recently, which Evan recognized as the third stage of the coffee industry. As coffee moves from a privileged beverage to a widely accessible drink, customers demand a younger style of café decor, friendlier service, and higher-quality ingredients.

Photo credit: Kaiji Teahouse

Discerning customers are even particular about the origin of coffee beans for the sake of authentic flavors. This third wave has raised the quality of coffee and generated more coffee lovers. The growing demand has motivated more people to jump on the coffee bandwagon, and the ensuing competition has brought more price benefits to customers. The business focus is shifting from the ritual to the coffee itself. Due to their similar business models, Kaiji, as a teahouse, has benchmarked itself against cafés.

People have grown used to getting a cup of coffee in third places as the coffee industry developed, and the same is expected to happen for teahouses, a process that Evan believed will be much faster than in the coffee market. He thought savvy customers would soon compare a cup of tea in Kaiji to a specialty coffee and a dish of tea snacks to a cheesecake in the coffee shop, which is within a similar price range. Kaiji's business model also mirrors that of coffee shops. Evan believed the overall teahouse market is moving from the first stage to the second. Kaiji, as a youthful brand, is more committed to breaking with tradition and aligning its space design with the third stage of the coffee industry.

Kaiji's ultimate vision is to make drinking tea at teahouses a daily routine for people, which may take two more years of market education. Some ceremonial elements are still necessary to help customers develop the habit of drinking tea, and the early adoption of simple packaging will only compromise the drinking experience. Kaiji offers no takeaways for the moment and focuses on delivering the intimate offline experience, hoping more young people can appreciate what Kaiji has to provide and develop a love for drinking tea.

Why is Kaiji competing against cafés rather than milk tea stores?

According to Evan, Kaiji's decision to compete with coffee rather than milk tea is rooted in its choice of target customers. There are two levels of demand for tea drinks among Chinese customers. At the lower end, teen consumers have a significant demand for milk tea, but they are not Kaiji's target customers. For one thing, these customers prefer the taste of milk tea and tend to follow the choices of their peers, making it challenging to introduce them to pure tea. On the other hand, the prices set by Kaiji may also deter these customers. Although Kaiji also sells blended tea drinks, they are made from premium tea leaves and cannot be matched by average milk tea with much lower costs. Should Kaiji compete with milk tea stores, customers would find its offerings different from what they expect and its prices too high.

Compared to coffee, tea can be consumed at any time of the day, especially low- or no-caffeine varieties. For instance, ten-year aged white tea is low in caffeine, rich in antioxidants, and has several health benefits, such as reducing inflammation. Tea as a healthy beverage tastes more familiar to Chinese or Asian people. That is why Kaiji has put so much emphasis on the flavors of its tea offerings.

What exactly does Kaiji want to change as a game changer?

Kaiji endeavors to change the conventional public perception of teahouses. Teahouses are often viewed as leisure and recreation venues that charge customers based on their time or space occupied (such as private rooms). But Kaiji positions itself as a catering service provider, profiting from the drinks and snacks offered in an inviting environment.

Evan observed that the often-intimidating pricing of tea leaves in traditional teahouses had kept many potential tea drinkers away. To address this pain point, Kaiji provides a welcoming social space as an alternative to cafés and strives to connect with young people through its relaxing vibe and accessible products. For that purpose, Kaiji's staff are trained to prioritize customer experience and put them at ease rather than overwhelming them with extensive knowledge of tea leaves.

Photo credit: Kaiji Teahouse

Photo credit: Kaiji Teahouse

What has been the toughest challenge for Kaiji since its inception?

In Kaiji's positioning as "the teahouse of the youth", "youth" represents modern culture and urban life, and "teahouse" is an emblem of tradition and folklife. Integrating young and traditional elements as Kaiji develops its products and creates a dynamic atmosphere through visual design is a considerable challenge. Kaiji's founding team has gone through a rigorous process of trial and error to find a delicate balance that appeals to both modern and traditional palates.

Kaiji's innovation lies in its alignment with youth culture. While Kaiji respects both China's traditional culture and youth culture, it takes a different approach to each. Kaiji Teahouse has its roots in traditional culture but adapts its style of expression and customer interaction to youth culture, which is not easy to pull off in practice.

The biggest business challenge for Kaiji is shaping public perception. With no precedents in the market, there are no brands for Kaiji to learn from. Since the Chinese people are familiar with tea drinking, Kaiji has attracted a lot of comments. A closer look at the current negative reviews shows different customer biases. Some complained that Kaiji was not quiet enough as a teahouse, while others thought its tea drinks were not as tasty as milk tea. The change in perception is always accompanied by bias, conflict, and even controversy, which the Kaiji team has been fully prepared for. In Evan's vision, Kaiji is venturing into a new niche market of pure Chinese tea, poised to become the first modern teahouse in the real sense.

Will Kaiji open many stores going forward?

According to the Kaiji team, they will take a measured approach to expansion in the early stage, with five stores in the pipeline. Each will adapt their style of expression to the surroundings yet remain committed to Kaiji's core pursuit of blending youth and traditional cultures.

Kaiji Teahouse values the importance of connecting with local culture, as evidenced by its adaptation of the store's architectural style. Specifically, the upcoming store in the Jing'an Temple area will feature the enclosed architecture typical of local buildings, giving it a stronger sense of order and modernity than the Nanchang Road store. To make an impressive debut, Kaiji opened its inaugural store on Nanchang Road store with an expansive layout and a bustling atmosphere reminiscent of traditional Chinese teahouses.

When the team traveled to Chongqing and Chengdu for inspiration, they were struck by the authenticity of local teahouses. They decided to recreate that experience in Shanghai through a unique visual and ambiance design, wrapping it in a layer of order and modernity made of steel and concrete. The new store at Jiuguang Department Store near Jing'an Temple will have a reduced area for round tables to create a more robust business style. Each store will tailor its style for the surrounding community while staying true to Kaiji's commitment to blending modern and traditional elements.

Kaiji will consider partnership or franchising in the future, as it needs to scale up to achieve its ultimate goal of making tea drinking a daily routine for young Chinese people. While Kaiji is not a standalone tea boutique, it will hold each store to the highest standards in its expansion. Judging by its business model and development path, Kaiji seemingly aspires to become the Starbucks of teashops.

About the Team

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Afterword

We hope that by the time you reach the last page of this *White Paper*, you won't feel like you have wasted your time.

In this era of uncertainty, it is tough to figure out what we are facing, let alone find a solution. The human world has seen black swans, gray rhinos, white elephants, and rogue waves appear out of nowhere. What type of risk does each of them fall into? Which risk should we tolerate? In 2022, a cascade of crises—the resurgent pandemic, the rising cost of living, the energy crisis, geopolitical turmoil, and climate change—hit consumers hard and overwhelmed them in an age of information overload, and will continue to leave them feeling fed up and helpless. An array of emerging technologies and models, such as Metaverse, Web 3.0, Artificial Intelligence, and NFT, also seem to promise a bright future with infinite possibilities while allowing innovation to flourish.

In this context, the "consumer industry" may present solid opportunities. Consumption not only relieves individuals of worries but also provides an impetus for overall economic recovery. Cultural consumption, on which we focus, is in keeping with the trend of consumption upgrading and industrial restructuring, and can help us break free from the grip of anxiety from the pandemic era.

The 2022 White Paper on Global Branding Strategy & Fashion Industry, which focuses on cultural consumption, provides consumer insights, pursues the root cause of a shift in consumer demand, and predicts consumer behavior and its impact on brands. Based on consumer data, predictive analytics, qualitative and quantitative insights, and expert advice, the *White Paper* examines consumer demand, market trends, product innovation, and competitive dynamics, providing a unique perspective on the global and domestic economy. We have placed our research on cultural consumption in the current business context to better understand its implications for decision-making across industries, categories, and consumer groups so that companies can make sound business decisions in an era of globalization and uncertainty.

Our research shows that young people are hungry for cultural consumption that gives them a new, immersive experience, access to information from multiple sources, and the opportunity for real interaction. To provide a better experience for young consumers, brands should leverage the trending topics they follow to break new ground in marketing content and styles.

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In this era of uncertainty, walking alone may make one feel powerless and perplexed, becoming a source of insecurity for others. In contrast, walking side by side can give one another confidence and courage, just as glimmers form a blazing light that illuminates the way forward for more companies. In the years to come, the Global Branding Strategy & Fashion Industry Research Fund will continue to fulfill its mission of joining hands with all its stakeholders. We believe a bright future for the global branding strategy and fashion industry will eventually emerge.

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