
OUR BUSINESS

OVERVIEW

Our mission

Our mission is to create wonders through delivering premium content and excellent service to users. (以優質的內容和服務，為用戶創造驚喜).

This mission has guided us through the past 23 years in delivering premium content and services. We started as a Chinese internet portal in the late 1990s, and established our media and e-mail services that continue to thrive today; strategically expanded into online games in 2001, which now makes us the second largest mobile game company in the world in terms of combined iOS and Google Play user spending in 2019, according to App Annie; launched our Youdao business in 2006 that eventually became an NYSE-listed intelligent learning platform; introduced NetEase Cloud Music, a music streaming platform, in 2013; and opened our e-commerce platform Yanxuan in 2016, which quickly emerged as a destination for private label merchandise.

Our vision

Founded by William Lei Ding in 1997, our Company has a vision of fostering collaboration and realizing people's aspiration for a better life through technology and innovation (網聚人的力量，用科技創新締造美好生活).

Our core values

The following integrated concepts form the fundamentals of our corporate values.

Passion — From the grand pursuits of excellence in user experience, content creation and operation, to the everyday focus on taking care of our employees, our collective passion for being a good company is manifest in every aspect of our operations.

User-centricity — We follow the user-centric philosophy to run all of our businesses. While our core businesses have evolved throughout the decades, one thing that remains constant is our ability to predict and address the shifting trends in user behavior and preferences.

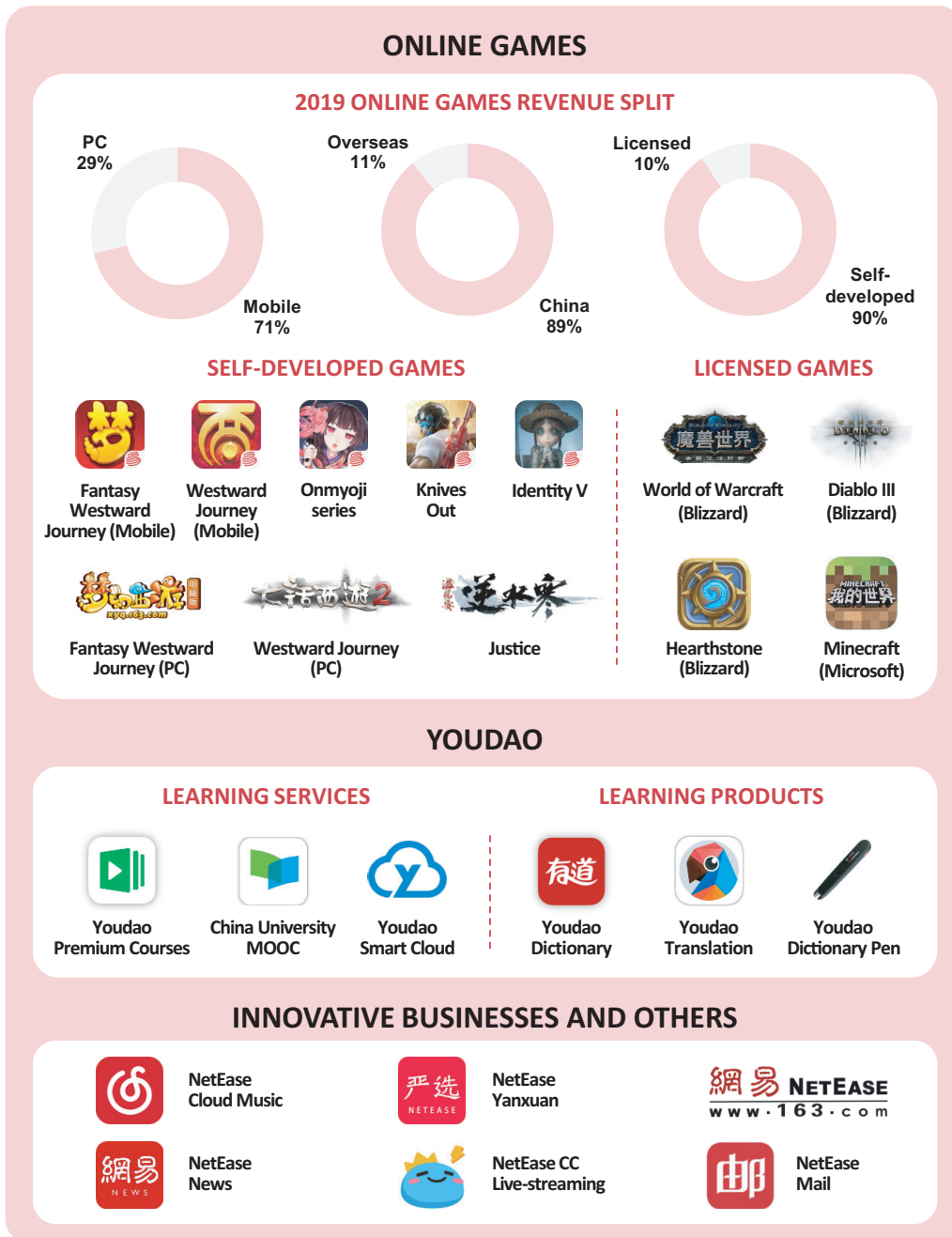
Innovation — At the core of our relentless innovation is our ability to effectively execute and deliver tangible results from these ideas and technologies.

Harmony — We empower all stakeholders of our communities, and draw creativity and inspiration from our users, employees and business partners around the world to achieve our mission.

Since Day 1, we have persistently focused on our core values, which solidify our services and products, motivate us to create and grow new ideas, and serve as the compass for our endless exploration of new initiatives and opportunities.

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Who we are today



We have a successful online game business, developing and operating a rich portfolio of highly popular titles. We currently offer over 140 mobile and PC games across a wide range of genres, satisfying the ever-growing and diversifying needs of the global gamer community. Leveraging our user insights and execution expertise, we also incubated and developed in-house a pipeline of innovative and successful businesses, including intelligent learning and other businesses, ranging from music streaming and private label e-commerce to internet media, e-mail services and others. As of December 31, 2019, we had over 1.0 billion registered e-mail users and over 800 million NetEase Cloud Music registered users. We also had over 100 million Youdao average MAUs in 2019.

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Online games

We are the second largest mobile game company in the world in terms of combined iOS and Google Play user spending in 2019, according to App Annie. Our expertise in developing and operating game content has laid the foundation for successful overseas expansion. In 2019, overseas games revenues accounted for 11% of our total games revenues.

Meticulously crafted and imbued with operational expertise distilled from decades of experience, many NetEase games have secured their places among the most successful IP franchises in the history of online games. Over the past two decades, we have consistently rolled out blockbuster game titles, and maintained their longevity and vitality through frequent content updates and other operational innovations. Our first major flagship game franchise *Westward Journey Online*, which debuted in 2001, remains popular with gamers today as a result of continued content and format updates, as well as innovation in play modes over the past 19 years. Just to name a couple more examples among our star-studded line-up of popular online games, *Onmyoji* topped the China iOS grossing chart multiple times in 2019, and *Knives Out* topped Japan's iOS grossing chart multiple times in 2019, testifying to the global appeal of our games.

As a true testament to our in-house game development and operational strengths, we have established a distinguished track record of long-term collaborations with revered global IP powerhouses and studios such as Blizzard, Marvel, Microsoft and Warner Brothers. With Blizzard, our collaboration initially started with PC game licensing for the China market in 2008 and has since been broadened to the co-development of *Diablo Immortal*TM, a milestone in Blizzard's foray into mobile games with its iconic *Diablo* franchise. *MARVEL Super War*, our collaboration with Marvel Entertainment, has gained widespread popularity since its official launch in December 2019 and topped many iOS download charts in Southeast Asia.

We generate our mobile game revenues primarily from the sale of in-game virtual items within the games. We distribute our mobile games through partnerships with major Android and iOS-based app stores as well as proprietary distribution channels, such as our mobile apps and websites. We generate revenue from our PC games mainly through sales of prepaid points.

Intelligent learning

Youdao is an intelligent learning company in China with over 100 million average MAUs in 2019, and has achieved early success in a number of overseas markets. Starting from online knowledge tools, Youdao currently offers a comprehensive suite of learning services and products that are accessible, reliable and trustworthy. For tens of millions of people, Youdao is the go-to destination for looking up a word, translating a foreign language, preparing for an exam, or learning a new skill.

In 2007, Youdao launched its flagship Youdao Dictionary, which had over 50 million average MAUs in 2019. The early success of Youdao Dictionary and other learning tools has enabled us to attract a massive user base, build a strong brand, and channel this organic user traffic into a broad range of services and products addressing lifelong learning needs of pre-school, K-12 and college students as well as adult learners, including online learning services and products and smart devices. Our smart devices seamlessly integrate advanced AI algorithms and data analytics, which serve to supplement our online courses and learning products and further enhance users' learning experience and efficiency.

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We currently generate the majority of the revenues for Youdao's learning services and products from its online courses in the form of the tuition fees received from students. We also generate revenues from Youdao's online marketing services through the provision of different formats of advertisements.

Innovative businesses and others

We have incubated and developed in-house a number of innovative and thriving businesses.

NetEase Cloud Music is a popular music streaming platform in China with over 800 million registered users as of December 31, 2019. It delivers a differentiated and premium user experience in terms of the music offered. Focused on discovering and promoting emerging musicians, NetEase Cloud Music has rapidly grown into the destination of choice for exploring new and independent music among music enthusiasts in China. Our vibrant community had attracted over 100,000 independent musicians as of December 31, 2019, generating over 270 billion playbacks of their songs in 2019.

Yanxuan is our e-commerce platform that primarily sells private label products with a strong emphasis on quality and value for money. Product categories include apparel, homeware, kitchenware and other general merchandise which we primarily source from original design manufacturers in China. Products and manufacturers are carefully selected with the goal of achieving high value for money. Yanxuan has established close partnerships with its selection of quality manufacturers. It utilizes data analytics to help these suppliers enhance their efficiency and product appeal, particularly in terms of merchandise design and production.

NetEase Media is a well-established internet media platform in China delivering professional news and other quality information to our users. Our media platform has three components, the NetEase News mobile application, www.163.com portal and a set of other vertical mobile products. Our media platform offers a wide range of features that promote user interactions and foster a vibrant online user community who actively contribute to the commentary sections. Our drive for journalistic integrity and high-quality content offerings has enabled us to attract a coveted demographic of engaged users.

Other innovative businesses include NetEase CC Live streaming, a platform offering various live streaming content with a primary focus on game broadcasting, and NetEase Mail, an email service provider in China with over one billion registered users as of December 31, 2019. We derive our innovative businesses and others revenues primarily from Yanxuan, NetEase Cloud Music, NetEase CC Live streaming, advertising services, premium e-mail and other value-added services.

Our persistent focus on core values, coupled with solid execution, has enabled us to weather the numerous seismic global challenges since the late 1990s and thrive in the complex and competitive Chinese internet ecosystem, consistently delivering top- and bottom-line growth and value to our shareholders. Net revenues for fiscal year 2019 were RMB59,241.1 million, growing by 15.8% year-over-year from RMB51,178.6 million for fiscal year 2018. Net income from continuing operations attributable to our shareholders for fiscal year 2019 totaled RMB13,275.0 million, increasing by 60.1% from RMB8,291.1 million for fiscal year 2018. We have instituted quarterly dividend payments since 2014 and have announced several share repurchase programs since 2011.

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What we have learned from the past 23 years

We feel fortunate to have chosen the path of pursuing original content creation and building our proprietary know-how and R&D capabilities since the beginning of our journey. Looking back at the past two decades, only through such pursuit can we truly sustain our leadership position amidst fierce competition in complex business environments, elevate the standards of the Chinese internet industry, and secure an enduring legacy for each of our people who devoted themselves to this worthy endeavor. As we navigated new market trends and tackled new challenges over the years, the following key insights secured our success. Here is what worked for us:

At the end of the day, it comes down to original content creation

The ultimate secret sauce for our user acquisition and retention is high-quality original content. This is true now more than ever, and will increasingly be the touchstone of success in the future. More specifically on content creation and innovation, we focus on developing IP franchises, as we quickly realized their tremendous potential for multi-platform development and application and multi-channel monetization, and we are proactive in distilling transferable know-how obtained from game development into actionable formulas that benefit the development of our other business ventures.

IP franchises have accelerated our evolution from PC to mobile. Our evergreen flagship title, *Fantasy Westward Journey*, initially launched in 2004, with its massive PC user base, provided fertile grounds for the successful debut of *Fantasy Westward Journey Mobile* in 2015, which later served as the catalyst for the development of *Fantasy Westward Journey 3D* in 2019.

Developing content franchises in-house also allows us to unleash the full monetization potential of our IP. For example, *Onmyoji*, our acclaimed original IP franchise, has already spun off three mobile games, including *Onmyoji Arena* (MOBA game), *Onmyoji: The Card Game* (CCG), and *Onmyoji: Yokai Koya* (simulation game), each a hit in its own right. As an initial step beyond games, *Onmyoji* has been adapted into a feature motion picture and a musical and inspired a themed coffee shop.

We attribute our repeated success in launching original IP franchises to the following: (i) accumulated native know-how that we leveraged to systematically create high-quality, interactive online content for live, dynamic, every-day enjoyment; (ii) continually optimizing content and driving user interactions through innovative mechanics, data analytics and technology; and (iii) the ability to attract and manage massive online user bases and stimulate user engagement, by creating fun, differentiated and compelling user experience.

By emulating the essence of our approach to game IP franchise creation, our subsequent ventures into other verticals have been remarkably successful. Youdao is now widely recognized for its proprietary learning services and products with an abundance of gamified features, as well as effective online course materials. NetEase Cloud Music introduced differentiated value propositions to users and has fostered a blossoming community featuring a coveted demographic of music lovers. For example, we had more than 100,000 independent musicians as of December 31, 2019, and their songs were played back more than 270 billion times in 2019.

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Sharpening operational know-how is time-consuming, but is of critical importance to sustained long-term growth on a global scale

Looking back at the past 23 years, it has become abundantly clear to us that, fortunately, there is no shortcut to sharpening operational know-how. Only through such painstaking efforts could we build formidable entry barriers that distinguish us from other players in the industry. We spent the past two decades tirelessly and diligently honing our operational expertise across various fields.

Our evergreen game IP franchises owe much of their longevity to the operational excellence that has kept users engaged throughout the years. For example, our *Fantasy Westward Journey* franchise has been in operation since 2004 and remains highly popular today, with its mobile version ranking second in China and seventh globally in terms of user spending in 2019, according to App Annie. Much of this achievement results from the almost 30 major expansion packs that we have released during its lifetime so far, as well as our excellence in operating in-game campaigns, carrying out user community maintenance and launching innovative marketing initiatives. These efforts represent the culmination of years of analysis in user behavior, constantly providing differentiated and compelling user experience that has allowed the franchise to thrive among multiple generations of players.

Our operational expertise, along with our content creation capabilities, uniquely positions us to form more in-depth, mutually beneficial relationships with many global leading IP powerhouses and revered game developers. For example, we are developing *Harry Potter: Magic Awakened*, which will be jointly published with Warner Brothers Studio.

Through successfully customizing international IP franchises for the Chinese market, we extrapolate the know-how to power the introduction of our domestic games to the world. The success of *Knives Out* as a shooting game in Japan and its seamless cross-over with Japanese anime IP manifests the powerful content localization capability that we have built throughout the decades. The chart-topping *Identity V* is a battle arena game that further secured our position as a leading player in Japan, one of the largest game markets in the world.

We strive for longevity and scalability in our games and beyond

In games and across other business sectors, we always emphasize on not only delivering that initial impression of excitement and freshness, but also ensuring that our products are developed for long-term lifecycle and scalability. As a result, we consistently introduce games and other products that exhibited remarkable longevity, and replicate proven business models into new business areas with success. Longevity and scalability of our businesses allows us to maintain a superior cash profile with enhanced revenue visibility.

NetEase has a unique and distinguished track record in building long-lasting games spanning decades. We are capable of creating long life-cycles amongst our gamers through immersive user experiences and innovative game features. Our flagship online game titles consistently provide solid support for our online game business with ever-increasing longevity. The *Westward Journey Online* mobile game, which traces its origin to the PC-client game under the same title launched in 2001, ranked sixth in terms of user spending among all mobile games in China in 2019, according to App Annie.

Our systematic approach to developing game content has led to our consistent track record in creating blockbuster titles. Sharing a powerful centralized reservoir of technology and operational know-how, our game development studios function as creative hubs, each focusing on its respective genres. The creative sparks are then rigorously evaluated and scrupulously

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refined for commercial viability. Together, this model of content development allows us to replicate the success at the product level at scale, with consistent high quality. Not only did we operate four out of the top ten grossing online games in China in 2019, but our prolific streak also saw consistent roll-out of native blockbuster titles each year, from *Onmyoji* in 2016, *Knives Out* in 2017, to *Identity V* in 2018 and *Fantasy Westward Journey 3D* in 2019. Consistent contributions from legacy products and a robust pipeline of new games will continue to drive our revenue visibility and diversification.

Scalability also goes to the ability of our other businesses to efficiently leverage the know-how from our game development and operational expertise. For example, Youdao leverages a “studio” model of educational content development, which traces our game development roots. This studio model combines the key aptitudes of our course designers, instructors and engineers into a standardized process on top of which our teachers overlay their pedagogic know-how and subject matter knowledge, creating units of course content that can be deployed and replicated at scale.

We take pride in our user-centric culture to build long-lasting brand recognition

What we mentioned above allowed us to quickly acquire a massive user base early on, but we did not stop there. Our relentless efforts in delivering amazing user experience shaped our brand image for quality content and services of the highest caliber. The trusted nature of our brand was in turn highly conducive to driving the willingness of users to contribute where they feel their views are appreciated, valued and impactful toward building a better community.

Looking back, we have come a long way in building our user community and expanding the scope of our service offerings. As mentioned in our U.S. IPO prospectus, at the time of our listing in the U.S., we primarily offered two types of services: our NetEase website had 4.9 million registered members and our NetEase Mail had 3 million accounts, as of May 31, 2000. Two decades later, we offered more than a dozen services for our users and had over 1.0 billion registered e-mail users and over 800 million NetEase Cloud Music registered users as of December 31, 2019, as well as over 100 million Youdao average MAUs in 2019. As of December 31, 2019, we offered over 140 online games across a wide range of genres through mobile devices and PCs, satisfying the ever-growing and diversifying needs of the global gamer community.

Our user-centric culture has paid off handsomely in terms of valuable know-how for product improvement, optimizing user acquisition cost, and unleashing monetization potential. Our close attention to shifts in user behavior allowed us to successfully anticipate and capture the rising trend of mobile games, with our first mobile game launched in 2013, the same year that saw the launch of the 4G network in China. In 2019, 71.4% of our net revenues from online game services were contributed by mobile games. In addition, we take pride in having built a vibrant online community of users actively contributing to the commentary sections of NetEase Media products. We also created the Cloud Village community for NetEase Cloud Music, which encourages music listeners to be more engaged with the visual content on our mobile app, thereby extending consumer touchpoints and interaction formats of the traditionally audio-centric content. Initiatives such as this changed the landscape of how people consume music and unlocked significant potential for continued innovations.

Being user-centric not only shaped our brand, but also defines who we are as a company. While the nature of our core business has evolved throughout the decades, one thing that remained constant is our acute sense of the shifting trends in user behavior and preferences. This user-centric approach, coupled with our NetEase brand, is the unifying theme of our various businesses and what propels us into the future.

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R&D investment in innovative technologies is essential, but must be purpose-driven

The importance of strengthening our technological prowess through investments in R&D efforts has always been well recognized and heeded. More broadly speaking, we always believe that proprietary technological advancement is the lever to uplift the Chinese internet industry onto the world stage. But it has also been our experience through the decades that at least for us, R&D must be purpose-driven, guided by the principles of commercial viability and applicability to meaningfully improve user experience and efficiency. As of December 31, 2019, we had more than 10,000 in-house programmers, network engineers and graphic designers dedicated to our R&D activities, accounting for approximately half of our total employee headcount.

Let's look at a few examples of our technological initiatives. Our world-class game R&D efforts focus on proprietary game engines that offer creative freedom to game developers, as well as cutting-edge AI know-how that can be adopted in real life, commercially viable use cases to improve the user experience. Like so many other strategic choices we took, we decided to develop proprietary game engines precisely because it is not an easy path, because it would provide our developers with greater flexibility and self-sufficiency, and because it would pave the way for us to smoothly expand from PC to mobile, as well as to capture the opportunities that future technological breakthroughs may bring. While we continue to leverage third-party engines to supplement our game development efforts, it is our proprietary game engines, NeoX and Messiah, that set us apart. In addition, our in-house NetEase *Fuxi Lab* is one of the leading research institutions in game AI technology globally, which focuses on researching big data, user persona, reinforcement learning, computer vision and graphics, natural language processing, speech synthesis and music generation. Aside from game R&D, we were unique in our ability to fully incorporate smart devices into an effective hybrid online and offline learning experience, under a variety of use cases such as translation, dictionary searches and online courses.

In addition to in-house R&D, we embrace collaboration with partners around the globe to advance the common cause of technological development. In 2018, Google announced an automated testing solution developed by us — Airtest Project, which provided much faster test-diagnose-fix cycles for developers than ever before. Over the years, we have also made strategic investments in multiple overseas game studios with advanced R&D capabilities. These strategic investments further supplement and improve our in-house knowledge and capability of developing high quality game content across a broad spectrum of genres.

Ultimately, it depends on the people

First and foremost, we owe our success to our founder, director and CEO, William Lei Ding, a well-regarded visionary and thought leader in China's internet industry. Mr. Ding has been instrumental in the strategic direction, branding, platform architecture, content, product design and development of NetEase since 1997.

Two other things about the management teams of our business units really stand out. First, the senior management teams of our business units have been remarkably stable, which has guaranteed the unity of our corporate culture through the decades. Second, by staying true to the philosophy of approaching new businesses cautiously and steadily pursuing sustainable and differentiated growth, our senior management teams have led our core businesses into established industry leaders with broad user recognition.

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We have a passionate workforce with an average age of 29 as of December 31, 2019, allowing us to stay abreast of the latest trends among the young generation of netizens making up the majority of our user base. We made it a priority to have our people be happy on and off our campuses and be proud to recommend what they have created at work to their families and friends. Our people reciprocated by putting their hearts and souls into advancing our common enterprise.

We stand out among our peers in our commitment to gender equality. In recognition of our dedication, the 2020 Bloomberg Gender-Equality Index included us in its global list of 325 public companies that are committed to gender equality in the workplace, an accolade that we are enormously proud of. We focus on systematic training in order to put our people on the path to long-term career success. In 2019, our training programs for games staff received the “2019 ATD Excellence in Practice Awards” from the Association for Talent Development, the world’s largest association dedicated to talent development within organizations.

What we plan to focus on in the future

We will continue to think long-term. All future strategies will be formulated, evaluated, adjusted, re-formulated, re-evaluated, and re-adjusted around a long-term vision of sustainable excellence and financial success. We will continue to be prudent regarding capital allocation, with value-creation for shareholders as a priority.

Strengthening our content creation capability. We will continue to maintain a competitive edge in content creation. Innovation and originality are critically important in content development. To enrich and expand our content offerings, we will also enhance our game pipeline across diversified genres to target different user profiles and capture the underserved segments of the market globally. We also plan to continually deliver premium and differentiated content through our *Youdao* and other innovative businesses.

Pursuing operational excellence. Once we create a great product, the best way to maintain product longevity and popularity is through continued innovation and updates. Building on a wealth of operational experience harvested from more than two decades of cultivation in the Chinese internet industry, we will accelerate the pace of innovation in our operational methods, which we believe will further strengthen our IP franchises and global collaborations.

Growing the community of happy users. We will continue to place users as our first priority and seek to consistently grow our loyal user base. The purpose of creating high-quality content and enhancing operational efficiency is to serve our users better: bring value to them, create an amazing user experience, and in return, users will be attached to our service and product offerings.

Investing in technology and innovation. Technology has been and will continue to serve as the foundation of our long-term success. We believe there is no shortcut to investing more capital and human resources into our own future. Our R&D approach will remain focused on bringing commercially viable technologies into specific applications that can further enhance user experience.

Expanding our global footprint. We will continue our global expansion, more actively than before. We execute our globalization strategy with a humble heart. We aim to pass the knowledge accumulated from our early success onto the development and operation of other NetEase games, and enhance our ability to deliver popular titles to gamers in Japan, the United

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States, Europe, Southeast Asia and other markets. We also see a significant opportunity for our intelligent learning and other innovative businesses to grow in overseas markets with large potential user bases and favorable demographic characteristics.

Cultivating a deeper bench of talents. Attracting and nurturing the right people passionate about our mission is vital to our future growth. We have done well in the past to promote home-grown talents across our organization. In the future, we will continue to attract more talents and take good care of our people.

We hope one day in the future, we will be widely recognized globally as a progressive company, a unique company, and a good company.

OUR SERVICES

We have a successful online game business, developing and operating a rich portfolio of highly popular titles. We currently offer over 140 mobile and PC games across a wide range of genres, satisfying the ever growing and diversifying needs of the global gamer community. Leveraging on our user insights and execution expertise, we have also incubated and developed in-house a pipeline of innovative and successful businesses, including intelligent learning and other businesses, ranging from music streaming and private label e-commerce to internet media, e-mail services and others. As of December 31, 2019, we had over 1.0 billion registered e-mail users and more than 800 million NetEase Cloud Music registered users. We also had over 100 million Youdao average MAUs in 2019.

Online game services

Our games

Our game products and services include in-house developed mobile and PC games as well as games licensed from renowned global developers. As a global early mover that anticipated and captured the trend toward mobile games, we have significantly expanded our portfolio of mobile game offerings in recent years. At the same time, our flagship titles continue to provide solid support for our online games business with persistent longevity and user loyalty. In addition, while solidifying our leadership position in the Chinese domestic market, we have also expanded globally with launches in Japan, Southeast Asia, the U.S. and other international markets.

Our game library

Mobile games

Mobile games have gained increasing popularity and an expanding user base as internet users in China and across the world rely more and more on mobile devices to access the internet. We are one of the largest mobile game providers globally in terms of game revenue, having commercially launched over 100 mobile games of various genres as of December 31, 2019, including in-house developed and licensed MMORPGs, CCGs, first-person shooter games, battle arena games, and SLGs. Revenues from mobile games accounted for 71.4% of our net revenues from online game services in 2019.

To date, the majority of our most popular mobile games are in-house developed games. We have launched the mobile versions of our in-house developed flagship MMORPGs, including the *Fantasy Westward Journey* and *Westward Journey Online* mobile games. We distribute our mobile games through partnerships with major Android-and iOS-based application stores in

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China, as well as our proprietary distribution channels. We offer a variety of in-game virtual items that players can purchase, including avatars, skills, privileges and other in-game consumables, features and functionalities.

The table below sets forth our major mobile games developed in-house:

Mobile Game	Genre	Date of Initial Launch
Mobile Version of Fantasy Westward Journey II (夢幻西遊2口袋版)	Turn-based MMORPG	July 2013
Mini Westward Journey (迷你西遊)	CCG	April 2014
Battle to the West (亂鬥西遊)	CCG & MOBA	October 2014
Fantasy Westward Journey mobile game (夢幻西遊手遊)	Turn-based MMORPG	March 2015
Westward Journey Online mobile game (大話西遊手遊)	Turn-based MMORPG	September 2015
Invincible (率土之濱)	SLG	October 2015
The mobile version of New Ghost (倩女幽魂手遊)	Real-time MMORPG	May 2016
Onmyoji (陰陽師)	CCG & RPG	September 2016
Knives Out (荒野行動)	Battle Arena	November 2017
Rules of Survival	Battle Arena	November 2017
All About Jianghu (一夢江湖)	Real-time MMORPG	January 2018
Identity V (第五人格)	Battle Arena	April 2018
Ancient Nocturne (神都夜行錄)	CCG & RPG	September 2018
Life-After (明日之後)	Cooperative Survival RPG	November 2018
Xuan Yuan Sword: Dragon Upon the Cloud (軒轅劍龍舞雲山)	MMORPG	October 2019
Fantasy Westward Journey 3D (夢幻西遊三維版)	3D MMORPG	December 2019

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PC games

We launched our first PC based MMORPG, *Westward Journey Online*, in December 2001. Subsequently, we launched *Westward Journey Online II* in August 2002 and our second original PC based MMORPG, *Fantasy Westward Journey*, in January 2004. *Westward Journey Online II* and *Fantasy Westward Journey* were upgraded to *New Westward Journey Online II* and *Fantasy Westward Journey Online* in 2013. Both game series remain popular with gamers today as a result of continued content updating and innovation in play modes over the past two decades.

PC game players can purchase prepaid points to pay for game playing time, virtual items and other fee-based services that enhance their playing experience such as special powers, costumes, weapons and other accessories. We regularly introduce new virtual items and other fee-based services, as well as change the features of virtual items based on player feedback, market trends and other factors.

The table below sets forth our major PC games developed in-house:

<u>PC Game</u>	<u>Genre</u>	<u>Date(s) of Launch and Major Upgrade</u>
New Westward Journey Online II (a comprehensive upgrade of Westward Journey Online II) (大話西遊2經典版)	2D MMORPG, classical Chinese setting	August 2002 September 2013
Fantasy Westward Journey Online (previously known as Fantasy Westward Journey II) (夢幻西遊電腦版)	2D MMORPG, classical Chinese setting	January 2004 July 2013
Tianxia III (天下3)	3D MMORPG, classical Chinese setting	October 2011
New Ghost (a new version of Ghost II) (新倩女幽魂)	2.5D MMORPG, classical Chinese setting	April 2012 September 2015
Justice (逆水寒)	3D MMORPG, classical Chinese setting	June 2018

Licensed games

In addition to our in-house developed mobile and PC games, we also offer games licensed from other international game developers, including Blizzard and Microsoft. See “— International partnership and investment.” Revenues from licensed games accounted for 10.8%, 9.5% and 9.6% of our total games revenues in 2017, 2018 and 2019, respectively.

Global presence

We continue to advance our games and make inroads that expand our reach in overseas markets. We have launched more than 50 mobile games in global markets since 2015. Our mobile game, *Knives Out*, has remained popular in Japan since its launch in 2017 and topped

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Japan's iOS grossing chart multiple times in 2019. *Identity V*, which we launched in Japan in 2018, also topped Japan's iOS grossing chart in September 2019, further evidencing our potential to operate a diverse range of games in overseas markets over the long term.

In addition to our success in Japan, we have expanded our footprint across more regions. In December 2019, we launched *MARVEL Super War* in several Southeast Asian markets where it topped many of the iOS download charts. We have also further enhanced our global R&D capabilities by launching a video game studio in Canada in 2019.

International partnership and investment

Building on our strong in-house content development capabilities, we have formed strategic partnerships and collaborations with world-famous game studios and content owners. As a leader in online games in China, we have successfully attracted leading international game studios and content owners with our development and operational capabilities, such as Blizzard, Marvel, Microsoft and Warner Brothers, to co-develop and/or operate games in China and abroad. We also invest in leading global studios across the world to strengthen our development capabilities and diversity.

For example, we have been partnering with Blizzard since 2008 to exclusively operate a number of its games in China, including *World of Warcraft*, the *StarCraft II* series, *Diablo III*, *Hearthstone*, *Heroes of the Storm* and *Overwatch*. Blizzard has also licensed on an exclusive basis in China its Battle.net[®] platform to us, which enables multi-player interaction within these games and other online services. In January 2019, we further extended our partnership for a four-year term. Furthermore, we are currently co-developing *Diablo Immortal*[™] with Blizzard, an MMO action-RPG. We have also entered into a partnership with Marvel in May 2019 to create original entertainment content based on internationally beloved Marvel characters and stories. We are jointly developing products including games, television series and comic books that feature Marvel characters for users in China and beyond.

In addition, in May 2016, we entered into a five-year exclusive agreement with Microsoft, pursuant to which Microsoft agreed to license both the mobile and PC versions of *Minecraft* to us for operation in China until 2022. In May 2019, we extended the term of the *Minecraft* license for an additional year to August 2023. We successfully introduced both versions of *Minecraft* in China across various platforms in 2017.

We continue to establish and deepen collaboration with other leading international game studios, including entering into a joint development agreement with Codemasters, a leading UK game studio focusing on racing games, as well as making minority investments in Bungie, an independent game studio in the United States, Quantic Dream, an independent game studio based in Paris, and Behaviour Interactive Inc., Canada's leading independent game studio.

Game design and development

Building upon the success of our classic titles, we have accumulated a better and deeper understanding of our users in terms of their interests and preferences in style, aesthetics and gameplay. We have integrated our experience and know-how into the design of our new games, enhancing our ability to deliver popular titles to users. We have established multiple studios of game developers to research and develop new games and expansion packs.

OUR BUSINESS

Our franchises

We continue to build upon existing successful games to offer multi-dimensional content by leveraging our in-house developed franchises and intellectual property. Our *Fantasy Westward Journey* and *Westward Journey Online* franchises remain popular and have been instilled in the collective memory of generation of Chinese players. We further expanded the reach of these franchises through the introduction of *Fantasy Westward Journey 3D* in December 2019, captivating both returning fans and new players.

In addition to growing and strengthening our existing franchise, we have continually incubated new ideas and delivered new and long-lasting game titles to our users. For example, *Onmyoji* is one of our younger franchises built in-house. As we introduced more innovative new storylines, characters and other content, the influence of *Onmyoji*'s IP continues to grow and resonate with more game players. *Onmyoji* topped the China iOS grossing chart multiple times during 2019 after more than three years of operation, and it has spun off three successful mobile games, been adapted into a feature motion picture and a musical and inspired a themed coffee shop. Another in-house developed young IP is *Identity V*, which we believe has the potential to become another successful NetEase franchise. We are continually enriching this IP through a variety of initiatives, including e-sports, IP collaborations and off-line activities. We have hosted a number of high-profile events featuring *Identity V*, including both international and regional series tournaments.

The prerequisite to building a successful franchise is the ability to create popular game IPs in-house, which is propelled by our strong R&D capabilities. Over the past two decades, we have built a large in-house R&D team with talented and passionate game creators. We empower each of our talent with our game-enthusiastic corporate culture and our carefully-designed training program. For more description on our R&D capabilities, see “— Game R&D and technologies.”

Content quality and user experience

We focus on providing an innovative and superior user experience in game design and development and strive to make games of the highest quality. From the initial proposal to final launch, our games will typically go through a number of carefully designed steps including market research, proposal, demo, repeated prototype review and beta testing to ensure that the best quality and user experience can be delivered to our players.

In addition to creating a highly realistic and immersive gaming experience through the use of advanced technologies, we also employ innovative gamification thinking that takes into consideration both the in-game and out-of-game user experience. We have also launched offline gaming experience stores to allow for dynamic and spontaneous offline interactions among game players, as well as create an offline user feedback channel.

Game R&D and technologies

Our consistent and significant investment in innovative game research and development is a key contributor to the success of our online game business and has been widely recognized in the games industry. In 2019, we were awarded the “Top Ten Game Research and Development Companies in China” award by the China Audio-video and Digital Publishing Association.

OUR BUSINESS

Our proprietary game R&D capabilities

Proprietary R&D is the key focus of our game business. We continually strengthen and upgrade our game R&D infrastructure through recruiting and cultivating top talent, optimizing our game production pipeline, and fostering a culture of creativity and innovation. We have founded a number of in-house research institutions to explore the application of various technologies in games.

We strive to recruit and grow the best talent in the industry. Our training programs at *NetEase Games Academy* are widely recognized in China as a premier online games training institution for creative minds. Two of our training programs were awarded the “2019 ATD Excellence in Practice Awards” by the Association for Talent Development, one of the most authoritative international awards in the global talent development industry. Having built a virtuous cycle among our talent, established development pipeline and dynamic culture of innovation and craftsmanship, our strong R&D capabilities continue to enable high-quality production and expansion of successful games.

Key game technologies

Our game R&D is centered around using technologies to deliver a superior and differentiated user experience. The key areas of our proprietary game technologies include:

Proprietary game engines: In addition to game development, we have continually invested in proprietary game engine R&D. Since the initial launch of our first game engine, NeoX, in 2005, we have continually expanded and optimized our proprietary engines to systematically support enhanced game features and aesthetics. As part of our early strategy to focus on mobile games, we successfully adapted NeoX to iOS and Android systems as well as developed Messiah, a 3D game engine specifically designed for mobile platforms. We believe that our R&D in game engines and games reinforces each other and promotes a virtuous cycle of innovation. NeoX and Messiah enable us to systematically develop mobile games with the highest quality in lighting, audio, special effects, physics and animation, and other key game features, while our drive for better games in turn motivates development of more powerful engines.

User profile analytics: We perform an in-depth analysis of our users profile by analyzing activities and performances in games, in-game purchasing preferences and other data and information with AI technologies. We leverage our user data on an aggregate basis to guide game development and upgrades, marketing and other activities.

Intelligent non-player characters (NPCs): Enabled by deep learning technology, we have created intelligent NPCs that can join players’ in-game activities, simulate real-life interactions, facial expressions and body language and enable a more engaging gaming experience. We also deploy multiple reinforcement learning technologies to produce NPCs with diverse styles and difficulty levels, catering to a wide range of player preferences.

Natural language processing (NLP): We apply NLP technology in our games to enable players to develop their own storyline by carrying out conversations with NPCs and explore hidden elements in the game, creating an immersive gaming experience for players.

Advanced game graphics: Our advanced game graphics enable game players to create unique characters with customized facial features. We also offer automatic character customization based on real-life photographs uploaded by players. In addition, we deploy high-quality 3D game graphics and automatic scene generation in our games.

OUR BUSINESS

Intelligent learning services — Youdao

Youdao's services and products

We founded Youdao in 2006 and launched the flagship Youdao Dictionary in 2007, which remains the top language app in China in terms of MAUs. Youdao experienced rapid growth since its founding and completed its public listing on the New York Stock Exchange in October 2019.

Building on the early success of Youdao Dictionary, we have attracted a massive user base, built a strong brand, and expanded into a broad range of services and products addressing lifelong learning needs of pre-school, K-12 and college students as well as adult learners.

Learning services

Online courses. We have developed a comprehensive offering of online courses catering to the diverse learning needs of different age groups. Our online course offerings currently consist of Youdao Premium Courses, NetEase Cloud Classroom and China University MOOC.

Interactive learning apps. We offer a wide range of interactive learning apps to nearly all age groups. We are committed to delivering a fun and effective learning experience across these apps through an abundance of gamified features, as well as social functions allowing users and students to share their learning progress with friends through social media. Our current key interactive learning apps include *Youdao Math*, *Youdao Fun Reading*, and *Youdao Vocabulary Builder*.

Enterprise services. We offer Youdao Smart Cloud, a cloud-based platform that allows third-party app developers, smart device brands and manufacturers to access our advanced Optical Character Recognition (OCR) capability and Neural Machine Translation (NMT) engine and incorporate them into their apps, devices, and services through application programming interfaces. We also license our OCR and NMT technologies and solutions to customers on a non-cloud basis. In addition, in collaboration with the Higher Education Press, we also provide colleges and universities with a cloud-based platform for them to build their online course offerings, as well as a range of ancillary technological support services.

Online knowledge products

Youdao Dictionary. Launched in 2007, Youdao Dictionary is our first major product and flagship online language tool. Today, it remains China's most popular and trusted online dictionary and translation tool with 51.9 million MAUs in 2019. As of December 31, 2019, Youdao Dictionary offered over 30 million entries across 108 languages.

Youdao Cloudnote. Youdao Cloudnote is an independent note-taking tool that offers a comprehensive suite of features for users to make a note of their ideas and inspirations anytime and anywhere. Users can also use the Youdao Cloud Pen with the Cloudnote, which digitizes their handwriting and saves it to the user's Youdao Cloudnote account.

Other online dictionary and translation tools. In addition to Youdao Dictionary, we also offer Youdao Translation, a tool specifically designed to support translation needs of business and leisure travelers across over 30 languages via camera and speech translation, U-Dictionary, an online dictionary and translation app we offer in India and Indonesia and other overseas markets, and Youdao Kids' Dictionary, a K-12 focused smart and fun tool that offers translation services in Chinese and English.

OUR BUSINESS

Smart devices

We develop and offer smart devices, including Youdao Smart Pen, Youdao Dictionary Pen and Youdao Pocket Translator to make learning more productive and efficient for our users. Our smart devices are developed and designed by us or in collaboration with third parties, while the manufacturing of such devices is outsourced to third-party manufacturers under original equipment manufacturer agreements. As of December 31, 2019, we have distributed 459,180 units of our smart devices.

Technology-driven learning experience

We integrate technologies into every major aspect of the learning and teaching process to ensure a superb learning experience across Youdao's services and products. Over the years, we have built proprietary OCR, NMT, language data mining and voice recognition technologies and data analytics that serve as the foundation to our services and products. Such technologies are iteratively refined based on the vast data generated by our users.

For example, we offer a set of advanced AI-based technologies to make learning more personalized and efficient while maintaining a high level of human touch. We have also built massive "knowledge graphs" depicting different knowledge points, concepts and learning objectives, supported by a large quiz bank curated by our course development professionals to help students understand the subject matter. In addition, we have adopted an adaptive learning approach which tracks each student's learning progress and dynamically adapts teaching to the student's unique learning needs. We collect student learning and behavior data throughout their learning cycles to help us understand their learning progress and predict through our adaptive learning model how they will perform to achieve future learning objectives.

We also offer a seamless online and offline hybrid learning experience through the use of our smart devices. We encourage students to use our Youdao Smart Pen, which automatically converts the student's handwriting into data that is synced up with our systems, allowing the student to view automatic grading results of exercises completed, correct answers and explanations, and suggested exercises to reinforce what is learnt, in almost real time. This has significantly improved our students' learning efficiency and allowed us to deepen our insights into our students' learning progress.

Other innovative businesses and services

NetEase Cloud Music

We launched the NetEase Cloud Music streaming platform in April 2013. Since then, NetEase Cloud Music has focused on delivering a differentiated and premium listening experience in terms of the quality and variety of music offered. Its pursuit of offering an excellent user experience has led to a highly loyal and active user base. As of December 31, 2019, NetEase Cloud Music had over 800 million registered users.

NetEase Cloud Music is home to a large number of independent musicians. We focus on discovering and promoting rising artists with big data analytics. More than 100,000 independent musicians were on our platform as of December 31, 2019, and their songs were played back more than 270 billion times in 2019. In addition, we offer musicians tools and solutions to promote and monetize their work.

OUR BUSINESS

We also diversify and further enrich our music offerings with sub-licensed content. NetEase Cloud Music operates under a freemium business model in which basic services are free while some enhanced features are available on a paid basis. In addition to providing the main music playback, download and search services, we also provide music social functions, such as song reviews, song list recommendations based on historical playback records and geographic location identification.

In August 2019, we also added a new community module, *Cloud Village*, to further develop a music community that fosters discussion, creation and sharing of personalized expression around music. We launched a live streaming app, *Look Live Streaming*, in 2018 to provide an additional platform for independent musicians to showcase their music talents and interact directly with their audience. Fans can leave comments and send virtual gifts to artists while they perform live. In early 2020, we hosted an online music festival where more than 50 artists live streamed their performances to a massive audience across China.

Yanxuan

Our e-commerce platform, Yanxuan, primarily sells our private label products, including consumer electronics, food, apparel, homeware, kitchenware and other general merchandise which we primarily source from original design manufacturers (ODM) in China. With its slogan *Quality Products, for Quality Life* (嚴選好物，用心生活), Yanxuan is dedicated to helping consumers build a quality yet affordable life by providing selected daily life products with outstanding quality and design.

Under Yanxuan's ODM model, it partners with selected manufacturers in China to design and manufacture products and sells them directly to customers. The ODM model enables Yanxuan to provide quality goods with lower cost by eliminating brand premium and channel intermediaries such as distributors and retailers. In addition to the online platform, we have also opened four offline stores in Hangzhou and Shanghai, inviting more consumers to discover the popular items on Yanxuan through experiential retail.

Other innovative services

We also offer a wide range of other innovative services, including NetEase Media, our internet media services, NetEase Mail, our email service, NetEase CC Live streaming, our live streaming platform with a primary focus on game broadcasting, and NetEase Pay, our payment platform.

Our internet media platform is a well-established brand with strong innovations in its content offerings and user experience. Our NetEase News App offers content channels covering news, information, popular sports events, industry forums, celebrity close-ups, technology and fashion trends, and online entertainment to the Chinese public via a variety of mobile devices. As one of the largest e-mail services providers in China in terms of registered email users, we offer both free and fee-based e-mail services to over one billion individual and corporate users as of December 31, 2019. In addition, the main homepage of the NetEase websites, "www.163.com," serves as a one-stop gateway for users to conveniently access our other online services, such as online games, e-mail, e-commerce, video and music streaming, e-reading and a set of other websites and mobile applications.

OUR BUSINESS

TECHNOLOGIES AND IT INFRASTRUCTURE

As one of the inaugural class of internet platforms and one of the first to provide e-mail services to the masses in China, we have consistently prioritized investing in technologies since our inception. With our strong R&D capabilities and advanced technologies, we successfully digitalized traditional offline services, such as music and learning, and significantly transformed entertainment, learning and other activities. We focus on exploring viable applications of cutting-edge technologies to meaningfully enhance our service offerings and deliver a superior experience for our users. Empowered by advanced AI, big data analytics and other core proprietary technologies, we deliver engaging content and services that are highly individualized and personalized across our businesses.

AI and machine learning

Our powerful AI and machine learning capabilities enable us to effectively process ultra-large-scale data generated from across our services and products, optimize recommendations, personalize offerings and predict user behavior. Our key AI and machine learning capabilities include:

- (a) *Industry-leading technologies focusing on user experience:* Based on the vast text, pictures, audio and video content generated by our users, we have developed advanced technologies such as natural language processing, automatic speech recognition (ASR) and text-to-speech (TTS) technologies that enable us to deliver an enjoyable and effective user experience.
- (b) *AI-powered applications, such as content recommendation and customization:* We are a leader in developing and adopting AI technologies in content recommendation and customization, which enables us to achieve greater user engagement and stickiness.

Big-data analytics

We take a holistic approach to big data innovation, with a focus on gaining deeper understanding of our users in order to provide better services, products and experience. Building on technologies that can process and analyze bulk data generated by millions of users instantaneously, our platform adopts a service-oriented architecture that allows easy up-scaling and frequent upgrading of the products. Our key data analytics capabilities include:

- (a) *Scale:* We have accumulated a massive user base and vast and complex user data across our online games, intelligent learning, music and media businesses. The data generated every day not only provides us with high-quality profile information, but also contains a large amount of user-generated content and interactions, including text, images, audio and video. We maintain a high standard of data protection and privacy while productively using our data to inform our business operations and development.
- (b) *High-value data:* Content, relationships and behavioral data based on user activities and interactions enable us to create more accurate user profiles. Based on this data, we can be more intuitive and comprehensive in reflecting user interests and preferences, and provide valuable user reference data for a wide spectrum of R&D, marketing, user engagement and other strategic initiatives.

OUR BUSINESS

- (c) *Leading data analytical technology*: Our big data analytical capability enables comprehensive analysis of services and products offered and timely adjustments.

Graphics and AR/VR

We have developed numerous technologies to create immersive and effective entertainment and learning experiences. In addition to creating quality 3D game graphics and automatic scene generations in games, we launched our VR game, *Nostos*, in 2019 to offer game players a lifelike, free and dynamic open world game experience. Outside of games, NetEase Cloud Music has also leveraged augmented reality in its marketing and user engagement activities.

IT infrastructure

Our infrastructure and technology have been designed for reliability, scalability and flexibility and are administered by our technical staff. Our NetEase websites and other online and mobile platforms are made available primarily through network servers co-located in the facilities of China Telecom's affiliates, China Unicom's affiliates and China Mobile's affiliates. As of December 31, 2019, there were approximately 106,000 of such co-located servers, including servers supporting the operation of the games licensed to Shanghai EaseNet by Blizzard, using leased dedicated lines mainly from various affiliates of China Telecom, China Unicom and China Mobile. We also utilize certain cloud-based servers maintained by third parties such as Amazon.

In addition, we have developed our own systems to facilitate sales planning, targeting, trafficking, inventory management and reporting tools, such as advertisement tracking systems for our advertising services. We have also established a comprehensive user profile system which we monitor and review on a regular basis. We also deploy a single sign-on system that allows users to easily access our services offered through the various NetEase products. We intend to continue to use a combination of internally developed software products as well as third-party products to enhance our products and services in the future.

SALES AND MARKETING

We employ a variety of online and traditional sales and marketing programs and promotional activities to build our brand as part of our overall marketing strategy. We focus on building brand awareness through online marketing campaigns, proactive public relations and other offline advertising. We invest in a series of marketing activities to further strengthen our brand image and continue to grow our user base, including collaborating with leading social media, video and live streaming platforms, TV, movie and stage production companies as well as book and comic publishers to extend our brand to a broader potential user group.

Online game services

Our mobile games are available on the Apple App Store for iOS and third-party Android app stores. In addition, to leverage our existing user bases, we also publish our mobile games through our own internet properties. We conduct in-game marketing campaigns in connection with special holiday editions or launches of new games or expansion packs throughout the year. We have also promoted our games in collaboration with online and offline third-party promoters.

OUR BUSINESS

Youdao

Youdao generates user traffic and leads primarily from online channels. As a key sales and marketing strategy, Youdao cross-sells its comprehensive portfolio of services and products, which allows it to effectively scale its business with modest traffic acquisition and marketing spending. In addition, Youdao also employs mobile marketing, such as brand advertisements and marketing campaigns on app stores, leading mobile news apps and social media platforms, as well as through optimization techniques designed to improve its ranking in popular search engines' results. Youdao also engages in offline marketing and branding to supplement its overall sales and marketing strategies.

Innovative businesses and others

For our innovative businesses and other online services, content and services are generally provided through mobile applications or their respective websites. Users purchase our services either at a pre-determined package rate or on an item-based basis, and payments are made using third-party online payment platforms or NetEase Pay. We attract users through a variety of channels, such as our sponsored searches, social and online advertising, internet video and television advertising and other advertising channels. We also offer our customers special pricing discounts in connection with promotion activities and strive to expand our products selection to attract more visitors. Advertising services are conducted through our dedicated advertising services sales force, or through online advertising sales networks and advertising agencies.

INTELLECTUAL PROPERTY

We rely on a combination of copyright, trademark, patent and trade secrecy laws and contractual restrictions on disclosure to protect our intellectual property rights. We require our employees to enter into agreements requiring them to keep confidential all information relating to our customers, methods, business and trade secrets during and after their employment with us. Our employees are required to acknowledge and recognize that all inventions, trade secrets, works of authorship, developments and other processes, whether or not patentable or copyrightable, made by them during their employment are our property. They also sign all necessary documents to substantiate our sole and exclusive rights to those works and to transfer any ownership that they may claim in those works to us.

We have registered a number of domain names. We have also successfully registered numerous trademarks with China's Trademark Office, including marks incorporating the words "NetEase" and "Yeah!" in English and for marks for "NetEase" as written in Chinese in traditional and simplified Chinese characters. In addition, we have registered trademarks involving Chinese characters and phrases that have meanings relating to our web pages, products and services, including our online games, intelligent learning services, online music services, chat services, e-commerce and certain other online services. In addition, we have registered a number of trademarks involving the "NetEase" name as well as the names and logos of our products and services in the United States, the European Union, the Republic of Korea, Japan, Hong Kong, Macau, Taiwan, Thailand, and other jurisdictions.

In addition, we have registered our various in-house developed games and other online products with the Copyright Protection Center of China. Moreover, we have filed certain patent applications with the National Intellectual Property Administration of China, U.S. Patent and Trademark Office, European Patent Office and Japan Patent Office, and have obtained Certificates of Design Patent, Utility Model Patent and/or Invention Patent for technologies related to our games, live video, news, educational products, e-commerce and finance, NetEase

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Cloud Music, hardware products, cloud technology, augmented reality technology, computer technology and e-mail from the National Intellectual Property Administration of China, as well as Certificates of Utility Patent for games in the United States and Certificates of Design Patent in Japan.

In addition, Youdao owns the intellectual property relating to in-house developed content used on its platform and the registrations of the core trademarks “Youdao.” We also own the intellectual property (other than the content) relating to the NetEase websites and other online and mobile platforms, and the technology that enables online community, personalization, online games, news sharing, instant messaging, video streaming, NetEase Cloud Music, Yanxuan and other services on those platforms. We license content from various freelance providers and other content providers.

While we actively take steps to protect our proprietary rights, such steps may not be adequate to prevent the infringement or misappropriation of our intellectual property. See “Risk Factors — Risks related to doing business in China — We may not be able to adequately protect our intellectual property, and we may be exposed to infringement claims by third parties.”

COMPETITION

Our competition primarily comes from global online game developers and operators, such as Tencent, established online and offline education service providers in China, as well as leading digital media and entertainment providers. Some of our current and potential competitors are larger than we are, and currently offer, and could further develop or acquire, content and services that compete with us. The areas in which we compete primarily include:

User traffic, time and spending. We compete to attract, engage and retain users based on the design, quality, popularity and efficacy of our content offerings, the overall user experience of our products and services, as well as the effectiveness of our marketing activities.

Talent. We compete for motivated and capable talent, including engineers, game designers, product developers and creative professionals to build compelling content, tools and functions.

Global collaboration opportunities. We compete to win collaboration relationships with well-known global IP and content owners based on our level of expertise in systematically developing in-house developed games, delivering a compelling user experience through operational know-how and customizing established game titles for rapid expansion into overseas markets.

There can be no assurance that we will be able to compete successfully against our current or future competitors or that competition will not have a material adverse effect on our business, results of operations and financial condition.

CORPORATE SOCIAL RESPONSIBILITY

Since our founding, we have been highly committed to environmental, social and corporate responsibility matters. Through our product and service offerings, we aim to improve people’s lives by leveraging technologies to offer innovative services such as online games, intelligent learning and music streaming. For example, aspiring to make high-quality education and learning services and products accessible to everyone, we have been making headway in improving and promoting online and live-streamed courses, which make it possible for users

OUR BUSINESS

in less-developed regions to access quality and diverse educational resources. We also promote the use of games as educational tools to make learning fun. In 2018, we localized *CodeCombat*, a well-known platform for students to learn software programming while playing games.

Furthermore, our Cloud Music platform has become an important avenue for raising awareness for social issues, such as animal protection and children's wellbeing, through its music and fund-raising campaigns. Yanxuan has also leveraged its business platform to help local artisans and merchants sell their products in a bid to contribute to China's poverty reduction efforts.

In addition, we stand out in our commitment to equality and diversity in our recruitment and promotion policies. We are included in the Bloomberg Gender-Equality Index's 2020 global list of 325 public companies that are committed to gender equality in the workplace, an accolade that we are enormously proud of. We also value diversity highly and currently have employees from more than 30 countries and regions, including the United States, Japan, South Korea and Canada. We empower each of our talent with our carefully-designed training program. Two of our training programs were awarded the "2019 ATD Excellence in Practice Awards" by the Association for Talent Development, one of the most authoritative international awards in the global talent development industry.

Given that the majority of our operations are conducted online, we leave limited impact on the environment with a small carbon footprint. We are committed to carbon mitigation measures and will continue to explore ways to further improve energy efficiency. All our servers are compliant with industry energy efficiency standards in China, and we intentionally choose partners with a strong commitment to carbon emission reduction in our collaboration with third-party cloud servers.

RISK MANAGEMENT AND INTERNAL CONTROL

We have devoted ourselves to establishing and maintaining risk management and internal control systems consisting of policies and procedures that we consider to be appropriate for our business operations, and we are dedicated to continuously improving these systems.

We have adopted and implemented comprehensive risk management policies in various aspects of our business operations, such as financial reporting, information system, internal control, human resources and investment management.

Financial reporting risk management

We have in place a set of accounting policies in connection with our financial reporting risk management, such as financial reporting management policies, budget management policies, treasury management policies, financial statements preparation policies and finance department and staff management policies. We have various procedures and IT systems in place to implement our accounting policies, and our finance department reviews our management accounts based on such procedures. We also provide regular training to our finance department employees to ensure that they understand our financial management and accounting policies and implement them in our daily operations.

Information system risk management

Sufficient maintenance, storage and protection of user data and other related information is critical to our business. We have implemented various internal procedures and controls to ensure that user data is protected and that leakage and loss of such data is avoided.

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We believe it is crucial that our users understand how we handle their information so that they can make informed choices in deciding how such information is used and shared. To this end, we collect personal information and data from users only with their prior consent, and we offer our users opt-out or opt-in options. We have established and implemented a strict company-wide policy on data collection, usage, disclosure, transfer and storage. In accordance with our policy, we are required to go through the following procedures: (i) providing notice to users as to why and how their data is being collected and used; (ii) providing users with the choice to opt-out or opt-in; (iii) making continuous efforts to prevent loss or leakage of user data; and (iv) providing users with access to their own personal information collected by us.

We have implemented a network of process and software controls to protect individual personal information and privacy. We encrypt user data in network transmission. For back-end storage, we also use various encryption technologies at software and hardware levels to protect sensitive user data. To minimize the risk of data loss or leakage, we conduct regular data backup and data recovery tests.

We prioritize user data security and privacy by strictly following our defined policy. We have obtained the certificates of ISO 27001 and filing certificates of Classified Protection of Information Security. We have established a coordination mechanism with third-party agencies to handle information security threats in a timely manner.

At the enterprise level, we established a systematic and universal user account authorization and management mechanism based on which we periodically review the status of user accounts and the related authorization information. We regularly perform security configuration assessment on our databases and servers and implement procedures for system log management.

We have put in place a series of back-up management procedures. We deploy different back-up mechanisms, including local back-ups and offsite back-ups, depending on the needs of our business, to minimize the risk of user data loss or leakage. We have also established protocols for the design, implementation and monitoring of offsite back-ups. We also require any access to or processing of user data to go through strict assessment and approval procedures in order to ensure that only valid and legitimate requests are executed.

We provide information security training to our employees and conduct ongoing trainings, and we discuss any issues or necessary updates from time to time. We also have an emergency response mechanism to evaluate critical risks, formulate disaster response plans and perform emergency drills on a regular basis. In addition, each of our business units is responsible for ensuring that the usage, maintenance and protection of user data are in compliance with our internal information security policy and the applicable laws and regulations.

Internal control risk management

We have designed and adopted strict internal procedures to ensure the compliance of our business operations with the relevant rules and regulations. Our internal control team works closely with our legal, compliance and finance departments as well as our business units to: (a) perform risk assessments and give advice on risk management strategies; (b) improve business process efficiency and monitor internal control effectiveness; and (c) promote risk awareness throughout our Company.

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In accordance with our internal procedures, our in-house legal department performs the basic function of reviewing and updating the form of contracts we enter into with our consumers, merchants and relevant third-parties. Our legal department examines the contract terms and reviews relevant documents for our business operations, and the necessary underlying due diligence materials, before we enter into any contract or business arrangements.

Our in-house legal department reviews our services for regulatory compliance before they are made available to the general public. Our in-house legal department works with relevant business units to obtain requisite governmental approvals or consents, including preparing and submitting all necessary documents for filing with relevant government authorities within the prescribed regulatory timelines.

We continually review the implementation of our risk management policies and measures to ensure our policies and implementation are effective and sufficient.

Human resources risk management

We provide regular and specialized training tailored to: (a) the needs of our employees in different departments, and (b) our anti-bribery & corruption policy. We regularly organize internal training sessions conducted by senior employees or outside consultants.

We have in place an employee handbook and a code of conduct approved by our management and have distributed them to all our employees. The handbook contains internal rules and guidelines regarding work ethics, fraud prevention mechanisms, negligence and corruption. We provide employees with regular training as well as resources to explain the guidelines contained in the employee handbook.

We have in place an anti-bribery and corruption policy to safeguard against any corruption within our Company. The policy explains potential bribery and corruption conduct and our anti-bribery and corruption measures. We make our internal reporting channel open and available for our staff to report any bribery and corruption acts, and our staff can also make anonymous reports to our ethics committee. Our ethics committee is responsible for investigating the reported incidents and taking appropriate measures.

Investment risk management

We invest in or acquire businesses that are complementary to our business, such as businesses that can expand the services we offer and strengthen our R&D capabilities.

In general, we intend to hold our investments for the long term. In order to protect our interests as shareholders and control the potential risks associated with our investments, we generally request our investee companies to grant us customary investor protective rights.

Our finance department monitors the deal performance on a regular basis. Our finance and legal departments cooperate with deal team on deal analysis, communication, execution, risk control and reporting. Any material factors will be timely reported to the senior management or board of director for further decision.

Audit committee experience and qualification and board oversight

We have established an audit committee to monitor the implementation of our risk management policies across our company on an ongoing basis to ensure that our internal control system is effective in identifying, managing and mitigating risks involved in our business operations.

OUR BUSINESS

The audit committee consists of three members, namely Michael Leung, Alice Cheng and Joseph Tong, all of whom are independent non-executive directors. Michael Leung is the chairperson of the audit committee. For the professional qualifications and experiences of the members of our audit committee, see “Directors and Senior Management.”

We also maintain an internal audit department which is responsible for reviewing the effectiveness of internal controls and reporting to the audit committee and senior management on any issues identified. Our internal audit department members hold regular meetings with management to discuss any internal control issues we face and the corresponding measures to implement toward resolving such issues. The internal audit department reports to the audit committee to ensure that any major issues identified are channeled to the committee on a timely basis. The audit committee then discusses the issues and reports to the board of directors, if necessary.

Ongoing measures to monitor the implementation of risk management policies

Our audit committee, internal audit department and senior management together monitor the implementation of our risk management policies on an ongoing basis to ensure our policies and implementation are effective and sufficient.

SEASONALITY

Historically, usage of our online games has generally increased around the Chinese holidays, particularly the winter and summer school holidays. Our Youdao platform tends to have larger student enrollments in the second and fourth quarters when it offers more courses including, for example, test preparation courses for school exams in the spring and fall semesters and China’s national college entrance exams, national postgraduate entrance exams and college English tests, compared to the rest of the year. Revenues from innovative businesses and others, including advertising services, have followed the same general seasonal trend throughout each year, with the first quarter of the year being the weakest quarter due to the Chinese New Year holiday and the traditional close of customers’ annual budgets, and the fourth quarter as the strongest. Our e-commerce business revenues are relatively lower during the Chinese New Year holiday season in the first quarter of each year, while sales in the fourth quarter are higher than each of the preceding three quarters due to a variety of promotional activities conducted by retail and e-commerce businesses in China.

CUSTOMERS AND SUPPLIERS

We have a broad base of customers, and our five largest customers accounted for less than 3% of our total revenues for each of the years over the Track Record Period.

Our five largest suppliers accounted for less than 41% of our purchases for each of the years over the Track Record Period; and none of them individually accounted for more than 30% of our annual purchases over this same period. As of the Latest Practicable Date, based on publicly available information, none of our directors or their close associates (as defined in the Hong Kong Listing Rules) or Shining Globe International Limited, our controlling shareholder, held a 5% or more shareholding interest in our top five suppliers.

OUR BUSINESS

EMPLOYEES

As of December 31, 2017, 2018 and 2019, we had 18,129, 22,726 and 20,797 full-time employees, respectively. A substantial majority of our employees are based in China. We believe that we have a good working relationship with our employees, and we have not experienced any significant labor disputes.

The following table sets forth information regarding our staff as of December 31, 2019. Our R&D staff consisted of 10,279 employees as of December 31, 2019.

<u>Segment</u>	<u>Number</u>
Online Game Services	11,592
Youdao	1,699
Innovative Businesses and Others	7,506
Total	<u>20,797</u>

All employees of our company and of our affiliated companies are employed under employment contracts which specify, among other things, the employee's responsibilities, remuneration and grounds for termination of employment. Each employee signs a confidentiality agreement in respect of our intellectual property rights.

INSURANCE

We consider our insurance coverage to be adequate as we have in place all the mandatory insurance policies required by Chinese laws and regulations and in accordance with the commercial practices in our industry. Our employee-related insurance consists of pension insurance, maternity insurance, unemployment insurance, work-related injury insurance, medical insurance and housing funds, as required by Chinese laws and regulations. We also purchase supplemental commercial medical insurance and accident insurance for our employees.

In line with general market practice, we do not maintain any business interruption insurance or product liability insurance, which are not mandatory under PRC laws. We do not maintain keyman life insurance, insurance policies covering damages to our network infrastructures or information technology systems. We carry property insurance with low coverage limits that may not be adequate to compensate us for all losses, particularly with respect to loss of business and reputation that may occur. We also do not maintain insurance policies against risks relating to the Contractual Arrangements. During the Track Record Period, we did not make any material insurance claims in relation to our business.

PROPERTIES

Our principal executive offices are currently located at NetEase Building, No. 599 Wangshang Road, Binjiang District, Hangzhou, People's Republic of China 310052. In addition, as of December 31, 2019, we leased office, warehouse and store facilities with an aggregate of approximately 332,000 square meters of space at properties mainly in Beijing, Shanghai, Guangzhou and Hangzhou.

OUR BUSINESS

We own and occupy several research and development centers in Hangzhou and Guangzhou, China with a total floor area of approximately 304,000 and 75,000 square meters, respectively, where our online game and innovative businesses and other services developers, as well as their related sales, marketing, technology, management and administrative functions are located. We also own and occupy an office building in Beijing with an aggregate total estimated floor area of 95,000 square meters, where our advertising services and Youdao are located.

We are in the process of constructing several new office buildings and warehouses, primarily located in Guangzhou, Hangzhou and Shanghai. As of December 31, 2019, we had incurred construction in progress costs of RMB466.0 million for these new office buildings and warehouses, which primarily comprise costs for building construction.

We continue to assess our needs with respect to office space and may, in the future, vacate or add additional facilities. We believe that our current facilities and those under construction will be adequate for our needs in the immediate and foreseeable future.

As of December 31, 2019, we owned approximately 106,000 network servers co-located mainly in the facilities of China Telecom's affiliates, China Unicom's affiliates and China Mobile's affiliates for which we paid server and bandwidth service fees, and we leased dedicated lines mainly from various affiliates of China Telecom, China Unicom and China Mobile pursuant to short term contracts. Our server and bandwidth service fees were RMB1,309.3 million for the year ended December 31, 2019.

LEGAL PROCEEDINGS AND COMPLIANCE

From time to time, we become subject to legal proceedings and claims in the ordinary course of our business, including claims of alleged infringement of trademarks, copyrights and other intellectual property rights, and a variety of claims arising in connection with our e-mail, message boards and other communications and community features, such as claims alleging defamation or invasion of privacy. However, such legal proceedings or claims, even if not meritorious, could result in the expenditure of significant financial and management resources.

In April 2018, PUBG Corporation and PUBG Santa Monica, Inc. (collectively "PUBG"), filed a lawsuit against defendants NetEase, Inc., NetEase Information Technology Corp. and NetEase (Hong Kong) Limited in the U.S. District Court for the Northern District of California. PUBG subsequently dropped all claims against NetEase (Hong Kong) Limited, and added Hong Kong NetEase Interactive Entertainment Limited to the lawsuit. PUBG's complaint generally alleged that two of NetEase's mobile games, *Rules of Survival* and *Knives Out*, infringed PUBG's copyrights and trade dress in their competing game, *Battlegrounds*. On March 11, 2019, NetEase entered into a settlement agreement with PUBG, and the lawsuit was dismissed. On October 15, 2019, PUBG filed a second lawsuit against the same NetEase defendants, also in the U.S. District Court for the Northern District of California, claiming NetEase had allegedly breached the settlement agreement. On March 3, 2020, the court dismissed PUBG's new lawsuit, without prejudice, for lack of subject matter jurisdiction. On March 4, 2020, NetEase initiated a declaratory judgment action against PUBG in the Superior Court of California for the County of San Mateo, requesting a declaration that NetEase had not breached the settlement agreement. NetEase's lawsuit against PUBG is on-going.

We are not currently a party to, nor are we aware of, any other legal proceeding, investigation or claim which, in the opinion of our management, is likely to have a material adverse effect on our business, financial condition or results of operations.

OUR BUSINESS

Our PRC Legal Adviser is of the opinion that, during the Track Record Period, the Significant Subsidiaries have complied with relevant PRC laws and regulations currently in effect in all material respects, and obtained all material requisite licenses and approvals from relevant governmental authorities for their operations in the PRC, and that as at the Latest Practicable Date, these licenses and approvals remained valid and in effect to the extent required for their operations and that no material legal impediment to their renewal existed. Additionally, our Company confirms the same with respect to our Group and, in particular, confirms that during the Track Record Period and as of the Latest Practicable Date, our Group has complied with all relevant Laws currently in effect in all material respects, including obtaining all material licenses and approvals.