

Research on Telecommuting and Online Teaching under Epidemic Situation with Ding Talk as an Example

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Abstract. In recent years, the rise and development of "Internet+" have made people start to put the Internet and anything together. Under such a background, telecommuting emerges as the times require. Since 2020, the unexpected epidemic makes people hard to move and gather. Therefore, online teaching has become the first choice of universities. This essay mainly shows the telecommuting and online teaching functions provided by Ding Talk relying on the Internet. Especially its development during the epidemic situation. This essay will use knowledge from strategic management and business statistical analysis to show the competitiveness, internal and external environment, overall development, etc. Moreover, it will make a prospect for the future development of Ding Talk and put forward some recommendations.

Keywords: Internet+, telecommuting, online teaching, Ding Talk

1. Introduction

Telecommuting refers to the remote working model,[1] such as working at home, working in a different place, working on mobile devices, and so on, through modern Internet technology.[2] It originated in the 1970s, and with the decrease in the cost of network equipment and network service in recent years, the operating cost of telecommuting is more and more insignificant than the traditional office mode, which makes it be used more and more widely.[3]

The rise and development of the Internet have brought many opportunities to some traditional departments.[4] Telecommuting and online teaching have brand-new development in employment modes and teaching methods.[5] In early 2020, the sudden epidemic objectively boosted their rapid growth. Among all the platforms that offer telecommuting and online education services, Ding Talk is one of the most prominent.[6]

2. The development of online teaching under the epidemic

For a long time, the development of the Chinese telecommuting industry has lagged behind the world. To Figure 2, there were only about 1.8 million telecommuters in China in 2005, while the number increased to 3.6 million in 2014. In 2018, it rose to 4.9 million. Moreover, from 2012 to 2017, the market size of Chinese telecommuting platforms illustrated considerable growth. In 2017, the scale of telecommuting reached 6 billion yuan, with a year-on-year growth of 68.07%. From 2012 to 2017, the compound annual growth rate of the market reached 95.52%.

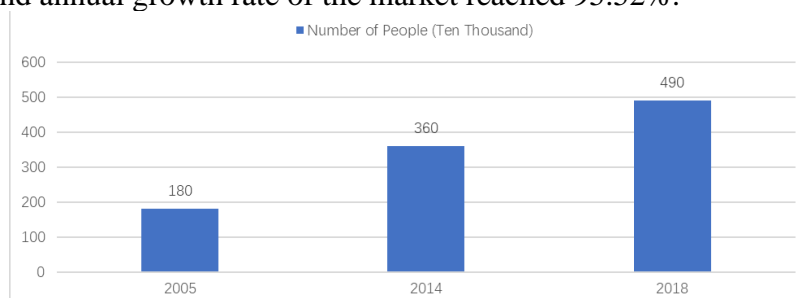


Figure 1 Number of Telecommuters in China (2005-2008)

On the other hand, as we can see from Figure 2, in terms of the demand subjects, the Internet/information technology industry accounts for the highest proportion of demand, more than

24%. With the improvement and popularization of Internet and information construction in China and the in-depth construction of intelligent cities, telecommuting applications and functions in China will improve. The demand of enterprises for mobile telecommuting will keep growing.

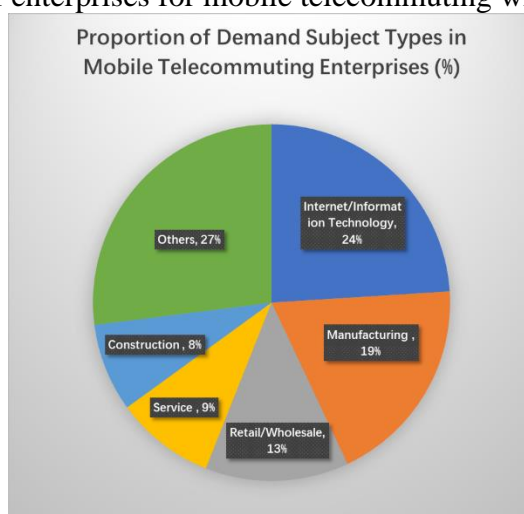


Figure 2 Proportion of Demand Subject Type in Mobile Telecommuting Enterprises

Online teaching refers to content dissemination and rapid learning through the application of information technology and Internet technology.[7] Its original intention is to make the school education become open education that can radiate beyond the campus to a wider area. Schools can give full play to their discipline advantages and educational resource advantages the spread the best teachers and teaching achievements in all directions through the network. While during the pandemic, it became a key solution to the education problems.[8] It is precise because of online teaching that the teaching of universities and colleges in China cannot be hindered by the epidemic and maintain normal development.[9]

Ding Talk is a multi-terminal platform for accessible communication and coordination created by Alibaba Group specially designed for Chinese enterprises, aiming to assist Chinese enterprises to improve the efficiency of communication and coordination in an all-around way through systematic solutions. In particular, during the epidemic period, many universities and colleges in China chose to use Ding Talk to complete the online teaching tasks, and Ding Talk launched the function of setting up online virtual classrooms to help teachers and students interact.[10]

In terms of telecommuting, the users of Ding Talk are mainly positioned at small and medium-sized enterprises because large enterprises generally have their systems, while small enterprises cannot develop enterprise systems. Moreover, the small and medium-sized enterprises occupy a high proportion, so the enterprise service becomes a hundred billion market.

In addition, online teaching can be a product of The Times. It is difficult to go back to school to study in the epidemic context, but teaching cannot be interrupted. Therefore, online teaching solves this problem precisely. Ding Talk seized this opportunity and developed much software for online teaching based on the original office system, such as online classrooms, Ding Talk conferences, live broadcasts, and other original forms that can be directly used for online teaching.

The current era is the Internet era. As an Internet platform, Ding Talk is not destined to be satisfied with its development in China. Therefore, it began its international layout.

On January 10, 2018, Ding Talk officially announced the launch of its internationalization strategy. The next target is 1 billion users, which will be jointly launched with the overseas strategy of Ali Cloud Computing and Alipay, and it mainly concentrates on Southeast Asia. Hong Zhu, the CTO and the head of the international business of Ding Talk, said that the number of Ding Talk users had exceeded 100 million, but its target is not limited to the domestic market. There are many reasons why no Chinese social product has achieved great success overseas, but the main one is a lack of originality. Ding Talk is a completely original social product in China, which will be the foundation of its success of Ding Talk.

As the epidemic broke out around the world, the United Nations Education Scientific and Cultural Organization released data on its official website on March 14, 2020, showing that 421 million students around the world were affected by the epidemic, and recommended Ding Talk and Lark to the world as video conferences, teaching live broadcasts and team communication platforms.

On April 8, 2020, Ding Talk officially released the overseas version of Ding Talk Lite, which is open for download in major overseas application markets and on Ding Talk's official website. Ding Talk Lite is more suitable for overseas users' needs and usage habits, supports email login, supports IOS, Mac, Windows, Android systems, supports traditional Chinese, English, Japanese, and other languages, mainly including video conferencing, group live broadcast, chat, schedule and other functions. Furthermore, it is accessible to users worldwide during the pandemic. Tens of thousands of users participated in the two-week open beta test in Japan, Indonesia, Malaysia, Singapore, the Philippines, Australia, Hong Kong, and Macao.

Ding Talk attaches great importance to social responsibility while developing internationally. On March 19, 2020, Ali Cloud and Ding Talk launched the "International Doctor Exchange Platform," inviting Chinese doctors involved in the fight against COVID-19 to share clinical experiences with overseas medical staff and provide real-time AI translation in 11 languages. Chinese hospitals entered the platform in the first batch. One day after its launch, the platform received applications from nearly 200 overseas medical institutions in 45 countries, including the United States, Spain, Switzerland, New Zealand, Finland, Canada, Australia, and South Korea.

Another outstanding advantage of Ding Talk is its high security, which is very important for a social platform. Ding Talk has obtained authoritative security qualifications, including SOC2Type1, ISO27001, ISO27018, and "information system security level protection" level 3 certification issued by the Ministry of Public Security of China, which indicates that Ding Talk's user data and privacy protection level has reached the first-class in international standards.

3. Product Analysis of Ding Talk

3.1. The External Environment

On the one hand, in terms of opportunities brought by the circumstances, the digital economy is becoming mainstream worldwide. Moreover, as a digital way of mobile office, Ding Talk is extremely lucky to catch up with the wave of digital reform in Chinese enterprises and has been widely used in various industries. Ding Talk is supposed to seize the opportunities of the times and continue to popularize the digital way of working. Due to the impact of COVID-19 in 2020, Ding Talk urgently developed the functions related to health and released a complete set of solutions to support "working and teaching from home" to more than 10 million enterprises, schools, and other organizations, which further penetrated more markets and improve its popularity.

On the other hand, when it comes to opportunities created by Ding Talk itself, although it currently offers the entire software to enterprises for free, it does not mean that there would not be enterprises willing to pay for it. Ding Talk could provide a business model for solutions where customers pay for customized functions and services. Seizing the industrial Internet through the private customization service makes Ding Talk further updated. Unlike other telecommuting platforms, Ding Talk does not concentrate only on telecommuting. For example, it has established the "Ding Talk Future Campus" platform to let teachers and students complete "online classes" in Ding Talk, realizing the possibility of long-distance teaching and further enhancing the popularity of Ding Talk.

From the perspective of circumstances, Ding Talk has many competitors, such as WeChat Work and QQ. Since WeChat Work can get assistance from WeChat, if some users want to break the enterprise's internal and external communication boundaries and be exposed to the same communication experience as WeChat, this would impose a threat to Ding Talk.

In 2020, driven by the epidemic, telecommuting and online teaching have become two important ways to control the epidemic and reduce the risk of infection, which have been called for and

recognized by experts and the public. Therefore, more and more companies and platforms have launched relevant functions.

Many Internet enterprises have seized the opportunity of the epidemic and set up unique telecommuting platforms. Many enterprises have used these platforms for online work and many schools for online teaching, which enable the work and teaching process to continue during the pandemic. Therefore, Ding Talk has many competitors from Internet enterprises in telecommuting and online teaching.

3.2. The Internal Environment

Ding Talk has realized five online patterns for the telecommunicating industry: online organization, online communication, online collaboration, online business, and online ecology. Regarding online organization as the core foundation, members of the organization can effectively communicate in a secure environment, coordinate business work online, and enhance the enterprise's ability to make big data decision analysis. The green office section of Ding Talk has made remarkable achievements in carbon saving, and intelligent telecommuting is promoting paperless and more green environmental protection. According to relevant data, the total carbon emissions saved by Ding Talk in 2018 were 105.9% higher than the previous year, equivalent to eleven times Switzerland's daily carbon dioxide emissions. The paperless intelligent telecommuting represented by Ding Talk leads the green office trend.

The users of Ding Talk can use Ding Talk for free, and the primary office and teaching function design has characteristics. The powerful function and high value have been brought to users, making enterprises and schools manage more efficiently, process more uniformly, and have more evident rights and responsibilities. Also, it can make enterprise staff, school teachers, and students work more efficiently.

The security function is one of the most focused significant features of enterprises. Ding Talk has attached great importance to the construction of user data security and privacy protection, and it has obtained SOC2 privacy principles audit, which is the first one in China, and there are no more than 5 in the world.

Furthermore, it is not only limited to basic telecommuting and online teaching, and Ding Talk has also cooperated with third-party developers and hardware manufacturers to provide taxi, meal ordering supply chain, and other enterprise-level services. Furthermore, it also develops intelligent office hardware, such as an intelligent printing room and intelligent conference order to build Ding Talk mobile Ecology, which provides a one-stop solution to almost all office problems of enterprises and teaching problems of schools.

Besides, Ding Talk can also offer private customization and put forward personalized solutions for the whole industry. Enterprises in diverse industries and schools can get different functions and services with Ding Talk so that all industries can meet the most personalized needs in Ding Talk, making Internet services change from standardization to personalization and solving practical problems for enterprises and schools.

For enterprises and schools, Ding Talk is an excellent platform. However, it lacks relevant design from the perspective of employees and students, which makes them feel dissatisfied. They considered that some functions are not humanized enough. Sometimes, they are forced to use them instead of their own accord, which even damages their interests. Therefore, Ding Talk needs to improve its functions so that users can feel the efficient telecommuting and the humanization of telecommuting and its happiness.

Moreover, when the number of users increases, the system will be unstable. Ding Talk needs to optimize its system further, fully consider the users' experience, and deeply cultivate the enterprise market's roots.

3.3. Enterprise-level Strategy

The telecommuting and online teaching functions of Ding Talk have experienced four iterations, just as Figure 3 shows.

Version 1.0	Version 2.0	Version 3.0	Version 4.0
<ul style="list-style-type: none"> • Main functions: free call, conference call, enterprise communication, etc • Needs addressed: Communication within enterprises 	<ul style="list-style-type: none"> • Main functions: IM communication, C-OA, C-Space, C-Mail • Needs addressed: Enterprise synergy 	<ul style="list-style-type: none"> • Main functions: External contact, intelligent office phone, business contacts, intelligent report, intelligent customer service, etc • Needs addressed: Personalized enterprise business 	<ul style="list-style-type: none"> • Main functions: Intelligent front desk, focus mode, DING calendar, enterprise plaza, etc • Needs addressed: Combination of mobility and intelligent hardware

Figure 3 The iterations of Ding Talk

Version 1.0 of Ding Talk mainly meets the needs of instant communication, and it develops different forms of communication according to the nature of enterprises, such as free calls and sending a message. Private chat, among which free call shows large temptation to small and medium-sized enterprises, and the early promotion has brought some seed users.

Version 2.0 of Ding Talk focuses on enterprise synergy, and its functions cover the collaboration between individuals and others, the management of the team by leaders, and the control of the staff's work process, including announcements, journals, C-Mail, etc.

Version 3.0 of Ding Talk targets the connection between enterprises, the link between the upstream and downstream of the supply chain, etc. Instead of focusing on the internal communication and synergy of the enterprises, it has become an enterprise-level social collaboration tool from within enterprises to among enterprises. From version 2.0 to version 3.0, Ding Talk adopts the strategy of gradually opening. First, it builds an open platform for enterprises' ecological services and then breaks through internal barriers of enterprises through version upgrading and independent applications, which achieves seamless communication and synergy between enterprises for users and builds an enterprise ecological circle.

Version 4.0 of Ding Talk concentrates on hardware facilities to realize its use-value. By combing intelligent applications with intelligent hardware, enterprises can complete more efficient and convenient management on Ding Talk.

According to Figure 4, the product mix of Ding Talk represents four aspects. First, from a function depth and breadth perspective, Ding Talk has an intense and wide overall structure, and many subdivision functions are mainly focused on the "work" page. People can apply to be available to use a variety of functions. The second is instant messaging. The message is on the first page. Phone calls, secret chat, and other shortcuts are in the top right of the home page, highlighting the importance of instant messaging. There are plenty of means of communication. IM chat, phone calls, videos, secret chat, etc., are all included. The third is enterprise collaboration. The related functions of enterprise collaboration are concentrated on the "work" page. General collaboration methods include the weekly report, approval, attendance, etc. Additional functions can be applied for availability by the administrator. Fourth is enterprise business. The functions relevant to enterprise business are relatively hidden and can only be used after the administrators allow it. These may be due to the personalized enterprise business. After all, different enterprises have diverse businesses and functions.



Figure 4 The product mix of Ding Talk

Ding Talk should fit the enterprise user's experience and constantly improve the product. For example, it can improve the lack of active use of Ding Talk by small companies and enable Ding Talk to gain the social market share of such companies. Then, it is supposed to enhance enterprise personalized customization services to meet the differentiated needs of various enterprises. Last but not least, Ding Talk needs to be alert to the threat from its competitors. Its biggest competitor is WeChat, which has highly substitutable functions. So, Ding Talk must find a differentiated way to compete with WeChat to be better in the competition.

4. Conclusion

Ding Talk has made remarkable achievements in telecommuting and online teaching in China, and it has been developing and expanding from various strategies. The sudden epidemic outbreak also objectively greatly increased the number of Ding Talk users, prompting it to constantly upgrade and improve the functions of telecommuting and online teaching to meet the needs. At the same time, Ding Talk also aims at the international market and strives to be the first social application in China to become world-famous. The development of Ding Talk benefited from the Internet era, and it has also been subject to much competition from Internet counterparts. However, the independent innovation and functional advantages of Ding Talk still make it the telecommuting and online teaching platform with the most users.

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