



Stanford eCorner

Lessons From China: The Evolution of The Globe's Largest Search Engine (Entire Talk)

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Robin Li, CEO of Baidu, speaks in detail about the launch and growth of the company and the search engine. He discusses how its intimate understanding of Chinese language and culture - and a unique social approach to search - have allowed it to succeed where many North American search giants have faltered.



Transcript

How many of you have heard of Baidu before? OK, so I don't need to tell you that it is like the third most popular search engine in the whole world. It's got over 70% market share. It was started almost 10 years ago by Robin and his co-founder and it is extraordinary that we have a chance to have him here. Prior to that, he was a kind of a search engine guru in the '90s by working at Infoseek and others, and I don't know how we missed him, but he didn't go to Stanford. I wish he had. I wish he had, but he got his first degree at Peking University and then he got a Masters of Science in Computer Science at the State University of New York in Buffalo in 1994. He's Co-founder, as you know, the Chairman, the CEO, the grand, grand master of Baidu. So let's welcome him to Stanford. Thank you Professor Byers for your introduction. I'm really glad I finally made it here.

I have always wanted to teach a class here at Stanford because I always wanted to lure the top talents from the world's finest school. So finally I'm here. Thank you for your interest. Today I'm going to talk about opportunities in China at the age of innovation. I picked this topic because I think this is a very important topic for many of you to know. Right now, I think we are still in the recession period. Although I've heard word that the recession is officially finished, but I feel a little bit different. Last time I was in this country was May of 2008. I still feel that today the economic situation is not better, but worse than what was like in May of 2008. I can tell from the newspapers I read in my hotel room.

Now the newspapers are thinner than before, I think. Companies do have less money to advertise. Why do I bring up this topic, because I think everyone is probably thinking of what should we do, how do we deal with the recession, or how do we deal with the difficult times? I think I have something to offer to you. If you look at this chart, I guess many of you follow the NASDAQ. This is a chart from about '99 to 2003. You know, Baidu was founded at the beginning of 2000, and quickly NASDAQ reached its historical high of 5,000. I remember it was March of 2000. Then it dropped to about 1100 a little over a year later. That is a very difficult time for people in the internet industry. I think it's much severe than what you have experienced in the past year or two for the general economic situation.

During that time, it's just the very early days of Baidu's startup experience. That's why when we officially entered the recession or the challenging situation caused by the financial crisis, I keep asking myself, "What should we do?" What I learned during the last downturn, especially in the early 2000, that when the internet bubble burst, I guess, some of you still remember, it's quite an experience for many of the companies and many of the people who work for those internet companies. We were lucky to reach the first round of money before the internet bubble burst. But the challenge is that we really didn't have a business model at that time. We didn't have a feasible business model, let's put it this way, because when we started, the business model is to provide the backend search technology to the portal companies in China. We did that, we came up with

very good Chinese search engine technology, and we signed up a lot of the Chinese portals in a very short period of time. That includes SINA, Sohu, Netease, Yahoo! China, and any major portal company you can think of in China. But what we quickly found was that we were still losing money. Although we probably signed up the portal companies that represent more than 80% of the Chinese search traffic, Baidu still could not survive. That's the challenge we faced.

So quickly I realized that we were too optimistic about the future of internet in China. At that time, there were only about 10 million internet users. And the portal companies didn't want to buy the best search technology. They only want to buy the cheapest technology. That made our life very hard. So we realized that and I made the decision: we need to change. We need to change to a different business model so that we can come up with better technology, and the better search technology can be appreciated by the market. So in the summer of 2001, we decided to switch gear from a backend technology provider to a front-end consumer-oriented search service. And on September 20th, 2001, Baidu.com went live. So it's being more than eight years.

From that day on, I think we really found what was right for this company. Then we really focused on developing the best Chinese search technology and dominate the market. For the next eight years, this company have almost exclusively focused on Chinese search and came out with quite a number of innovative ideas related to search services such as Post Bar, such as related search, such as Box Computing, Aladdin Project, etcetera. In fact, in the year of 2002, shortly after we launched Baidu.com, although I have the title of President and CEO, I basically went back to the engineering group and functioned as the project manager for 10 months to make sure that we had the best technology in Chinese search. And after that, traffic took off. Our brand got very widely accepted in 2003. In 2004, we raised our last round of VC money led by Draper Fisher Jurvetson, the sponsor of this class, and Google, one of our great colleagues. Then a year later, in 2005, the company went public. The ideal price was 27 and it closed on the first day at 122. It was great with us for many of the Baidu employees and for all of the Baidu investors.

It was a very miserable thing for me because when I decided to take the company public, I was only prepared to deliver financial results that match the price of 27 or maybe a little higher, 30, 40. But I was really shocked to see that the price went to 122 on the first day. So that means I need to deliver real results that matches an expectation much, much higher than what I had prepared to do. But in any case, I thought I had no choice. So I put my head down and focused on operation, focused on technology, focused on the user's experience, and I delivered. At the time of the IPO, Baidu had about 40% of the traffic share in China for Chinese search. Four years later, as of today, I think we have about 76% of the Chinese search traffic. In fact, I think Baidu answers more queries in China today than Google does in the U.S. because China is the largest internet economy by population. At the end of last June, we had 336 million internet users.

That's larger than the total U.S. population. So U.S. will never be able to catch up. And you know we have a very dominant traffic share over there, so it's really a very good spot to be in. So in retrospect, I think the way to deal with crisis, deal with challenge, deal with difficult time, is like this: first, you need to be realistic. You need to take a pragmatic approach, because in the beginning, we saw the portal companies, well, feed us. They would pay us enough money, but that's not the reality. When the difficult time comes, they will try to survive by themselves. They will try to control cost.

You have to be on your own. And then we figured that what we're really good at was Chinese search. We decided to come up with better search service, better product, better user experience. We started to innovate, come up with all kinds of features that attract the Chinese internet users. So the second step is you really need to innovating and evolving. When I talk about I give up the CEO job and functioned as a project manager, we actually named that project as "Project Reason." We wanted to quickly catch up and surpass everyone in terms of search quality for Chinese users. Once you find out what you should do, then you need to stay focused. That's what we did during the difficult times back in year 2000, 2001, 2002. Many people think search was a done deal. It's boring.

Everyone has figured that out in terms of technology and product, but we thought we could do a better job. We resisted all kinds of temptations from being a portal: being an SMS player, do online game, developing all kinds of things that could make money in the short term. We really, really focused on Chinese search. That's why how we got here. So during this very recent financial crisis, I immediately recall that what we did during the internet bubble time and after bubble, how we solved the problem and how we survived and strived. So we actually used a similar approach during the last couple of years. We really focused on what we're good at. We tried to innovate, come up with better technology, better user experience, and better execution on things that we are good at. Therefore, a couple of quarters of bad time went by, and Baidu started to re-accelerate and we were able to deliver good financial results to our investors. So let me give you a little more color on the innovation we did in the Chinese search space.

This is a very popular product called Post Bar. If you're Chinese or if you read Chinese, you can try this. It's essentially a query-based community, or in today's term, it's social search. If you think about this, a good analogy is Twitter. On Twitter, you follow people. Right? And on Post Bar, you follow topics. Anyone who type in a query will be brought to a dedicated message board that you can publish any message, you can ask questions, you can answer other people's questions, and so on and so

forth. So it's been very popular. It was launched in December of 2003. It's been quite a long time.

And now it represents more than 10% of Baidu's total traffic. Here I show an example. When you type in 'Stanford', which is a rare query in China in its English form, but you will see that there's a dedicated community about this. People talk about Stanford there on Baidu. We have a similar product, this social flavor called Baidu Knows. It's a question-answering service. Any Baidu user can post a question on that platform, and because we reach more than 300 million users, someone knows the answer of your question, and the question can quickly be answered or your problem can quickly be solved. We also have a product called Baidu Encyclopedia. It's right now the largest online Chinese encyclopedia. About a year ago, we started a project called Aladdin.

It's really a technology initiative that's aimed to index the dark web or the hidden web, because according to computer scientists, right now the conditional search engines only index about 1% of the information on the internet. The rest 99 is the so-called the dark web. They are not easily accessible by following the links. We came up with this idea that we open up the interface so that people who owns the data, who owns the content, can submit it to us and we will integrate into our search results. For example, Facebook--but in China there are a number of Facebook-like services, some of them very popular. One of them is called Xiao Nei. It really started with the college students with real identity. We had a partnership with them. They submit their data about their people, their users to us, so Baidu users can easily find information related to that. Those kinds of information are not easily accessible by following links or using the traditional search engine technology.

There are lots of applications or data sources that's being integrated into this platform so Baidu will be able to find more and more information than anyone else. Going forward, we think the search box will become something different. We call it Box Computing. It's our vision for the future of computing. Why? This is a search box that every Chinese is familiar with, but when you look at people's needs, people are typing all kinds of queries in this box. For example... A great man said, "Where can I find a girlfriend in Beijing?" "How do I fix my hacked PC?" "What time is it?" "What kind of college is a good match for a frail, introverted guy like myself?" So you can tell that people have very high expectations about Baidu or about a search engine. They type in all kinds of things, all kinds of needs. Originally, we thought it's information needs only which need to find a web page that contains the query word, but it's actually not. Average consumers have very, very high expectations about search engines.

Then I look at all the other non-search applications on the internet. A Yahoo! Finance page, you see a search box or a box on the very prominent position. Facebook, there are boxes. Twitter, a search box is in the most prominent position. And Amazon. It's everything is about search, but every search box is kind of different. The function is different. For Amazon, you are in a shopping mall, and for Twitter there's a box that you can type up to 140 characters to publish your status. There are all kinds of different boxes or the purpose for those boxes are different. Then I started to think, 'Is there any way that we can save the consumers' effort and integrate everything, every function, every application, every information needs that a user wishes into one box?' This is also the classification of user's needs in our search box.

It could be information-oriented, it could be a dialogue, it could be some kind of tools, request function or dictionary or computing request. If we integrate all these kinds of request or this kind of consumer needs into one box, that should be a magic box. That is called Box Computing. So when a request is entered into this box, we do all kinds of semantic analysis, behavioral analysis, intelligent interaction with the user than massive computing and figure out what the user really wants. Once that's clear, we will send it to the necessary application, be it a search engine or anti-virus software or a stock search or shopping or friend finder, anything that can be plugged into this kind of platform. So now we have implemented a number of the applications. If you ask what is today's lunar date, we will come up with a calendar of lunar dates. If you're looking for a piece of software by Duhai --it's an instant messenger software we delivered-- we will show that to you. If you're looking for a beautiful girl, this is one that not only shows you the pictures but it's got a Flash application that you can browse through as well. It also automatically rotate.

Train schedule, you will be prompted by the newer boxes from where to where. We understand this kind of user intents. Then, there's a lot of computation going on to figure out what's the right answer. We had a lot of submissions from the third-party application. It's the movie showing schedule from a third party. This is the stock quotes. This is an anti-virus software. It doesn't need to show you the search result. It just asks you, "Do you want to run the anti-virus software?" So we group all kinds of information into one box. You can find that Box Computing efficiently connects enormous user request with the application providers.

So in the future, when you power up a terminal, a laptop, a PC, a netbook or a cellphone, immediately, instantly, you see a box. You don't wait two minutes for Windows to boot up. You don't need to launch a browser and type in a URL address. You will only see this and immediately see this. Whatever you want to do, check your email, publish tweets, go shopping or whatever, it can be solved by this one box. So everyone you know, it takes time to learn how to use Windows. It takes time to learn how to use Mac. But nobody needs to teach you how to use the search. It's so easy. It's so instant.

That's why I think the future should be like this. Now, finally a few words about China. I think there are currently lots of opportunities in China. It's a large, growing market. So I think the economics already predict that the Chinese economy will grow at 8% or better for this year, which is probably the most challenging year in the recent history for the world economy. And we have, like I mentioned, a lot of internet users. 338 million by last June. There are about double that amount of mobile phone users in China and still growing very, very quickly. Because of the growing demand and booming tech industry founded by Silicon Valley VCs, there are a lot of things that you can do in terms of technology. I know engineers in Silicon Valley, almost all have a dream to use the technology to change the world.

I think China will be a very good test bed for that. Another very unique thing for China is that, for this chart at the bottom, you can tell that there are more than 700,000 engineering graduates each year. Engineering meaning computer science-related engineering. So the talent pool there is huge. But many of them are not so experienced. When I started this company back almost nine, ten years ago, I started to recruit talents, recruit engineers, and I wrote in the job description that requires five-plus years of related experience. Then I found that I couldn't find anyone in China because nobody at that time really focused on technology. Multinational companies rarely hire engineering student to do pre-sells, to do technical support. There's little research, little development, little innovation at that time. So for us to train the students, to train the engineers to become more experienced in developing innovative products, but that's where the opportunities are.

If you are experienced, if you have seen better ways of managing engineering team, this is a very good space you can be in. You can really manage a lot of people. There are a lot of people that can do work, and if you have a more efficient way to manage a large crowd of engineers, you can be very competitive in the technology world. Well, this is the real purpose I'm here. Baidu welcomes talents like you! So what kind of people we like? We like people who fit in our culture. And we like people who is competent, who can do the job that we require them to do. And more importantly, we like people who have the desire and ability to learn quickly. Because this is a fast-changing market. It's a fast-changing industry. It's very exciting, but if you think you know everything you don't need to learn, you don't belong to us.

I always need to learn. Everyone from our company need to be ready to learn new things almost on a daily basis. So that's very important. What's our culture? It's simple and reliable. Simple means there's no politics. There's no ladder, no differences between CEO and an average engineer on the surface. And reliable means everyone is competent. They can deliver the job that's assigned to him or her. They are very smart. They are intelligent.

They can be counted on. So that's the culture of Baidu. This is one of the most frequently asked questions: What's your advice to entrepreneurs, to the young people? I'll say find what you like and find what you really good at. Once you find it, you do it and stick with it. You will be very likely to be successful. Thank you all. Thank you, Robin. I'm Steve Blank and I'm teaching MS&E278. How many 278 students are here? Raise your hand. For those who don't know, 278 is the class that surrounds 472 this year.

It's a three-credit course. We analyze each one of the company--the ETL speaker's companies, we look at their business model, which today can be summarized as world domination through Box Computing, I believe, and then try to understand through some questions both here and in the class, is how did they get here? And I think for an entrepreneur, that's some of the most interesting questions is you typically see the speakers as they are. But what's really interesting is the journey that got them here. So we've asked our class, and in fact, for those of you in the audience, you should know that the 278 students get the first three questions of every ETL lecture, and I'm going to ask Robin the first three, which is the best of my students' questions. So, Robin, Question 1 is, think back to the first few years of Baidu. What were the three strategy decisions--or pick any number--that you now recognize in hindsight were both pivot points of inflection points that really changed the trajectory of the company? Sure. That's a very good question. It's very critical for any startup, I think. When I reflect on the first couple of years of Baidu operation, I think there are three things that's very critical. First is, as you know, we started at the height of internet bubble.

When we brought US\$1.2 million back to China, it was like peanuts comparing to a lot of other internet startups in China. And our engineers constantly hear from other friends working for other internet companies in Beijing--they live in the most flashiest office spaces in Beijing and their salary is raised three times a year. But our engineers work in a three-star hotel, not very flashy, not on the spotlight, and I only promised them to raise their salaries twice a year. So they thought, 'All right, if the company is so great, if we have such a bright future, why you don't do a better job for your employees than the other internet companies?' It was a tough call for me. I really thought as an entrepreneur, as a startup, you really cannot spend money like hell without thinking about tomorrow. So the first critical decision I made is that when I raised the money, 1.2 million, I told our investors, "That money would last for about six months." But when I actually start to spend the money, I told my people, "We need to spend this over the next 12 months. We cannot just run out of money six months later." What happened was, six months later, internet bubble burst. It was much, much harder to raise money. But I was not worried because I still have more than half of the cash in my bank account. So I started to talk to the VCs and asking for 10 million at a very, very difficult time here in internet history.

Many of the VCs passed on that opportunity. They thought we were too expensive. We only had about 20 people at that time. So if you divide by 10 million, that's a lot of money for each employee. Especially many of them haven't really graduated from college. It's quite really an achievement for them. So I think the first critical decision I made is don't spend money as you promised it to your investors. The second critical decision is during the summer of 2001. Internet industry was in a very difficult at that time, at that period, and we gradually realized that this company cannot really survive if we stick with the backend technology providers thing. So I made the decision to switch gear and become a consumer-oriented search site.

The risk for that is you basically start to compete with every single one of your customers. They pay you money, we had a lot of very famous, very prominent customers, but all of the sudden, we started to compete with every one of them. It's quite risky. We had a lot of arguments within the management, within the board and among the investors, and I finally decided that's the way to go. Because if we don't do that, a year from now I don't see the company doubles in revenue and I don't really see the future of this company. So we made that decision and moved on. This decision is also hard to make because when you are a backend technology provider, it's like selling a piece of commodity. You just need to be as good as everyone else on the market. When you decide to become a front-end consumer-oriented service, you really need to be better than your competition. Not just a little bit better, but significantly better than your competition, because you are a latecomer.

There are already a number of Chinese search services on the market. And in order to stand out, you really need to come up with a much better technology, a much better product, and much better user experiences. So that's the risk I took. But I'm really glad I took that risk. Now Baidu has become one of the best-known Chinese brands in the world because of that decision. The third decision I made, I actually also mentioned that, was Project Blessing. Shortly after we decide to become a consumer brand, I realized that our technology was not as good. So I went back to Engineering and told them, "OK, guys, we need to work harder. And I'm not under CEO. Don't consider me as CEO.

Consider me as your project manager. You guys are engineers. You are used to come to the office 10 am in the morning. No. Starting from today, you need to come 9 am in the morning and have a meeting with me." And I'm holding meetings twice a day with the engineers and pushing them to move faster and come up with better quality search services. I did that for about 10 months of period, and that without it being a better or the best Chinese search technology. So I think that's the three very critical decisions I made during the early days of Baidu. Thank you, Robin. Looking at the time, I'll just ask one more for the class and then we'll open it up to the rest of the audience. But, what it is about Baidu and the Chinese search market that's allowed Baidu to become much more successful than Google and Yahoo! in China? Specifically, what is it that American companies back, both then and now, still don't understand about China that you think you do and they don't? I think that there are a lot of misconceptions about this question.

There are very successful American companies in China: Intel, Cisco, Microsoft. They have been in China for a very long time. They figured out how to do business in China and they are being quite successful. But internet companies, a little bit different. There are three reasons for that. First is that, during the '90s, I think the Chinese IT market was very, very small. Nobody paid attention to that. But during the past decade, I think, with the internet coming to China, that the market gets larger and larger as Chinese economy gets larger and larger, the opportunity, the potential for that market has become very meaningful to a lot of people. Therefore, it's a fast-growing market. It's growing very, very quickly, much faster than the world average.

For example, when I returned to China, I remember we had less than 10 million internet users, and today we have more than 338 million internet users. So during the past 10 years, the market actually changed very quickly, very dramatically. American companies did not realize that in the early days. They thought, 'OK, the amount of online information grows about 50% per year. I'll grow my index by 50% per year.' But in fact, if you pay attention to China, the amount of Chinese information online triples every year. And we triple our index every year. So that gives the Chinese internet users impression that if you cannot find anything on the other search engines, you may be able to find it on Baidu. If you cannot find it on Baidu, you cannot find it anywhere else. So that's just one example of showing how quickly the market is. If you are not close to that market, you have missed a lot of opportunities.

The second reason is that, although Baidu is perceived as a Chinese company like many other NASDAQ-listed folks -- SINA, Sohu, Netease, Shenda-- but they are almost 100% funded by U.S. VCs, many of the Silicon Valley-based. This kind of money actually helped a lot in the development of the internet market in China. And as many of you know, Chinese people are very entrepreneurial. They really want to make a difference. They are hardworking. Once they are married with VC money, it's very competitive. So the internet space in China has become very, very competitive. This is different from many other sectors. In the traditional sectors, American companies are basically competing with state-owned enterprises.

They move very slowly. They don't have the right incentive structure. But in internet, it's very different. It's like everyone knows everyone and they all have the right incentive structure to become successful. The third reason is that internet companies, be it American or otherwise, are generally very young. Young companies really do not plan for the very long term. Sometimes, they are not patient enough. They try, they lost a lot of money. A couple of years later, five years later, they say,

"OK. I give up.

I have enough challenges in my domestic market. I don't want to deal with this thing." So that happened to a number of American internet companies. I think that's the three most important reasons for what happened in the internet space in China. Thank you, Robin. For those of you in the room, I could almost bet there's somebody here--who else would like to ask Robin a question? And if you would, there are two microphones here. So why don't we form lines. Just stand up. Why don't we start right over here and then we'll ping back and forth. So line up behind that mic and this mic. First come first served.

OK. Ready? Robin, given the rate of Chinese enterprises investments in the U.S., does Baidu have any plans to expand in the U.S. such as a research center in the Silicon Valley or even an M&A situation? All right? Sure. You know, for the past almost 10 years, we almost exclusively focused on Chinese search space. Only a couple of years ago we decided to expand outside of China and launch a Japanese search service in the early part of 2008. Our approach is to do each market one by one and design product according to the specific needs of that market. Right now, we are not ready to get into the U.S. or English search market, but we understand Silicon Valley is the center of innovation and we would be very open to look at the startup companies or new technologies. But I'm not a believer of having a separate research team at a remote location. I think that efficiency does not justify the cost.

Thank you. OK. Let's take this side and then that over there. Robin, thanks. Beyond the engineering and the products that you've described here, you've clearly captured the imagination of the Chinese market. And I think part of that story--my understanding is part of that story is that you very aggressively marketed yourself. And interestingly, a lot of that marketing has been Baidu versus some of these American companies. And it's very clever. It's very interesting. I'd like you to tell a little bit about how that strategy came about and how that came together for you? Yeah.

OK. It's yet another misconception. You know, for those of you who are familiar with internet search space, you understand that traffic is gold. It's very, very expensive to acquire. Companies like Google, Microsoft, they spend lots and lots of money to buy traffic from syndication partners and distribution partners. Therefore, it's no-brainer for them or for us to think about why don't we spend a hundred million to market us so that we can have more traffic? The correct answer is, it doesn't work. No matter how much money you spend, you just cannot really economically meaningfully add traffic to your site. But we are a consumer-oriented company and we need to establish our brand, establish perception about our brand. In the early days, I was very afraid of associating Baidu with Chinese-made product because, in most people's mind, made in China means low quality. Cheap in price.

And I didn't want to be associated with that. But right before the company went public, we faced a difficult question: How do we tell the American investors that Baidu does a better job? We thought and thought, then we came up with the idea, "OK, it's easy to convince them Baidu understand Chinese better." So we designed the strategy and came up with a number of marketing initiatives to tell the investors and maybe the general public, Baidu has a better understanding of the Chinese language and the Chinese culture, that's why we are doing a better job. So it's mostly for the IPO. It's not really designed to increase the traffic of Baidu. Thank you. Hi. My name is Stanley and I'm a graduate business school student. And I know Baidu started as a startup in China about 10 years ago. And to my very limited knowledge, I know it's really hard to attract top talent from top universities as a startup when competing with international company like IBM or things like that. How was Baidu able to attract top talent and has the situation in China changed today, like will the top student from top university go and join startup or not? Well, time has really changed.

Today, I think companies like Baidu really are capable of offering competitive compensation packages to top talents. Search is very hot area, lots of people want to get into this area. And I think no matter how much money you spend on talent, it's well worth it if you can increase your traffic share by 1%. That's a lot of money almost for a very long time, for forever. So, we are very willing to offer very competitive package and we are really targeting the top 5% students in the top 10 schools in China and talents around the world. Hi, Robin. So, given that obviously the American market and the Chinese market are very different, what do you think is one kind of key point or advice that a Chinese company like yourself could give an American rising company? And vice-versa, I guess--what could an American company give advice to China that they wouldn't be able to take from their experiences in their own market? I think my advice to the American companies is that you really need to be there. You really need to have the presence first in order to understand what's going on there. I hear this a lot. Many of the Chinese heirs of multinational companies, their main job is to communicate this or what happened, what should we do about this market.

There are a lot of differences, as you mentioned, so you really need to let them have what to understand what's going on there. I think that would be my advice to American companies with an interest in going to China or who are already in China. For American companies, I think it's about innovation. It's about systematic approach of doing business. These kinds of things, Chinese need to learn. Hello, my name is Rebecca, and I'm a first-year Applied Physics Masters student. And being originally from China, I have some questions about China I would like to ask you. So, as we may know, China has different policies on many things, especially the internet. So I wonder how does those policies help or have a hindrance on your companies, and

how would you suggest other companies to overcome them? You know, internet is new. It's not only new to China, it's also new to the world.

So everyday, you would encounter new problems, and the legal system really lacks. In a lot of cases, something happened and there's no law governing the behavior of those new things. Being in the internet long enough, I've seen many examples like that. But as an entrepreneur, I'm not really afraid of anything new, anything that's changing, anything uncertain. We are just used to that. So anything happens, we will just try to figure out what happened and figure out a solution to that. In this sense, I think China is not different from many other markets. You just need to be close to that market. You need to understand the marketing environment. You need to understand the regulatory environment.

You need to keep a good dialogue, good communication with your users, with your customers, with the government officials, with all the stakeholders. Thank you. OK. One more question? Hi. My question is--I think the million-dollar question here is, how to foster, how to build a Silicon Valley outside the United States in China, and how to foster an entrepreneurial culture in China. I think, as you said, Chinese people are all very entrepreneurial. But how do we have a more systematic way, education system built to encourage this culture? So, what has Baidu done to foster this culture? It's not a million-dollar question. It's a trillion-dollar question. I think many of the Chinese are very eager to find out what it takes to form a Silicon Valley in China, especially for the government officials. During the past 30 years, China maintained a very high growth rate in terms of GDP.

It has become a very large economy in the world. But the problem is that they primarily relied on cheap labor, cheap products, manufacturing to get here. I think a lot of people, especially the Chinese leaders, the decision-makers, realized that that's not going to last very long. We need to innovate. We need to have more value-added things in the Chinese economy or in the GDP composition. That's why many of them are thinking really very hard of how to foster entrepreneurship, how to encourage innovation. And if you talk to any of the local government officials in Beijing, Shanghai, Shengjian, they are all very eager to foster entrepreneurship to open up those experimental loans so that you can get cheap rent or free rent or even government startup funding so that entrepreneurs can start to realize those dreams. But it's not an easy task. Silicon Valley is very unique. I don't know what it takes to replicate that in China, but I certainly hope one day there will be a place in China that looks like Silicon Valley.

Given that we have the largest internet population, it's likely that we will be able to encounter new problems before American people encounter. Therefore, we have the chance to innovate and to solve those problems. So, I think there are hopes for that. Well, thank you so much. Thank you. Give him a round of applause.