EPISODE 448

[INTRODUCTION]

[0:00:01.0] JM: In America, the tech companies that we focus on are commonly known as FAANG; Facebook, Amazon, Apple, Netflix and Google. We all know what these companies do, because they impact our daily lives as Americans. In Asia, there are three giant tech companies that have similar scale; Baidu, Alibaba and Tencent, otherwise known as BAT.

Technology within a location is shaped by the cultural pressures of that location. You might think that we live in a global society, but tech in Asia dramatically different than it is in America. Differences in culture lead to differences in product development.

In China, a different political system contributed to a more rapid development of online payments. Because of this, there is more payment data, and because there's more payment data, people can be given loans more efficiently. Fewer people in the population are unbanked. Online payments are mostly handled by WeChat, a social networking product from Tencent; and Alibaba, which is an eCommerce giant. If you live in the West, imagine that Facebook and Amazon handled most of your payments for everything. You would have a different relationship with these companies.

Bernard Leong is the host of Analyze Asia; a podcast about Asian developments in technology and business. After studying material science in Singapore and theoretical physics in Cambridge, he made his way into business and journalism and developed an interest in the singularity, a subject that few people took seriously until recently. In fact, one of the topics that we explored in this episode is Masayoshi Son, the Japanese tycoon who wants to invest nearly a trillion dollars into technology companies. Masayoshi believes firmly that the singularity is coming.

I great enjoyed talking to Bernard in this episode. I hope to have him on at some point in the future again, and you should check out his podcast; Analyze Asia.

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[0:02:14.4] JM: The octopus, a sea creature known for its intelligence and flexibility. Octopus Deploy, a friendly deployment automation tool for deploying applications like .NET apps, Java apps and more. Ask any developer and they'll tell you that it's never fun pushing code at 5 p.m. on a Friday and then crossing your fingers hoping for the best. We've all been there. We've all done that, and that's where Octopus Deploy comes into the picture.

Octopus Deploy is a friendly deployment automation tool taking over where your build or CI server ends. Use Octopus to promote releases on-prem or to the cloud. Octopus integrates with your existing build pipeline, TFS and VSTS, Bamboo, Team City and Jenkins. It integrates with AWS, Azure and on-prem environments. You can reliably and repeatedly deploy your .NET and Java apps and more. If you can package it, Octopus can deploy it.

It's quick and easy to install and you can just go to octopus.com to trial Octopus free for 45 days. That's octopus.com, O-C-T-O-P-U-S.com.

[INTERVIEW]

[0:03:44.2] JM: Bernard Leong is the host of Analyze Asia, a podcast that is among one of my favorites. Bernard, welcome to Software Engineering Daily.

[0:03:54.0] BL: Thank you, Jeff. Thank you for getting me on the show.

[0:03:57.9] JM: Yes. There's a lot to talk about. Everything in Asia, and Asian technology is in many ways quite different than that of Silicon Valley, which I'm most familiar with. When I first started getting into technology, the perception of Asian technology companies, and maybe I was reading from a biased set of sources, but the perception was that Asian companies were lagging behind the U.S., and in some sense they were copying the U.S. and they would just copy, but they would do it efficiently, and that's how they would become market competitors.

Whether or not that's true, today, Asian companies are leading innovation in several sectors. You look at social media, you look at Bitcoin, you look at other industries that we'll get into, and

Asian countries are leading. What are the technology sectors where Asian countries are advancing faster than the United States today?

[0:05:00.1] BL: The perception of Asia technology companies used to be lagging behind the U.S. and copying is not new. Actually, this happened about three years back when Japan is the rising economic power in the 1980s. That was where the time where there is the Sony Walkman and then there is Toyota in manufacturing, which essentially they leapfrogged and innovated. Then it happened again for China when China is on the rise in the early 2000s.

If you are a fan of history like myself, the same thing actually happened during the industrial revolution, when the U.S. also copied some of its innovation from Europe and subsequently leapfrogged Europe in the early 1900s. Of course, after World War II, they also became an innovation superpower. It is really important that this is part of most Asian countries evolution. Today we are actually — As you rightfully perceive, China is starting to flex their muscles in innovation with the companies such as Huawei, and the BAT, which we are going to go a little bit deeper later.

Broadly speaking, I'll brick it into a few key countries where they're leading in technology. If you look at Japan, there is Robotics, there is hardware design and interaction. For example, consult gaming by Sony. I don't know how many of your listeners actually played the Playstation, and you have lean manufacturing that's pioneered by Toyota in car manufacturing. This is going to become very important for self-driving cars, because the technology companies need to understand how to manufacture cars at scale.

Look at Courier, they are leading in solid state hard drives and screens, which is all the screen that now Apple is using for their iPhone X and also many, many Asian OEMs, for example, Huawei and Xiaomi are using these solid state hard drives and screens.

When you look at Taiwan, semiconductors. TSMC, who's produced the A10, A11 chip for Apple. Then you have a company like Foxconn, which I think a lot of people mistaken them just being a contract manufacturing company. Foxconn is actually a large scale contract manufacturing company, meaning that they cannot necessary take up an entire town in China or city in China

to produce like 10 million iPhones at scale. They have actually also started evolving using robotics to do some of their manufacturing as well.

Of course, in China, you look at AI that's pioneered by Baidu, Alibaba, Tencent. You have the blockchain, which is led by Bitmain, which is I think they have about 70% to 80% market share in Bitcoin mining equipment. You also could think of DJI, 80% market share in consumer drones. Fin-tech, renewabele energy and hardware.

Broadly, these are some of the technology sectors that Asia countries is leading. I think a lot is in hardware, but I think actually we're moving towards a software stack as well.

[0:07:45.9] JM: Since I'm an American and I have my Amero-centric view, I've got to ask; to what degree is the relationship between the United States and Asian countries. Specifically, I'm thinking of Xinjiang. To what degree is it codependent?

[0:08:04.8] BL: It is very dependent, because the largest export market for China's tech is the U.S., right? I think, bilaterally, between the U.S. and China trade relations are pretty important. Of course, China produces most of the hotware that the world uses. If you think about U.S. relationship with across Asia, I think it defers. If you were to look at Japan, South Korea, they're traditionally allies to the U.S. and, of course, Taiwan as well. They actually do a lot of the hardware manufacturing piece and also some of the trade as well.

If you look at China, I think the different dimensions of relationship, there is the part where economics-wise they're actually pretty dependent on each other, because they are both the number one and the number two economics of power in the world. If there is no bilateral trade, we're going to have a big issue to the world economy itself. That's how I would characterize the relationship, but if you look at most of the U.S. tech companies, particularly I the hardware space, they're either manufactured from China or from Taiwan.

[0:09:12.8] JM: There is a perception among some places in America that the outsourcing of technology production to China happens just because things are cheaper there or because they have loser regulations around pollution, but that's not necessarily true at this point. At this point, it's more of a specialized manufacturing discipline, and there are experts in technology

manufacturing in a place like Xinjiang, that you can't just stand up a copy of in America. Is that correct?

[0:09:51.5] BL: That's right. In fact, today, if you go to Shenzhen you should think of the Shenzhen hardware ecosystem being the AWS for hardware. Meaning, you can manufacture hardware at scale or at demand. At scale means if I have a minimum order quantity of at least 10 million units, you can do it at scale. That's your Apples, your Samsung.

Then there is also the contract at demand. Meaning that if you want to do a very small quantity, like most of your kick starter projects, you can also do it. You can pluck into their ecosystem, with their factories and get it done. What is amazing about the Xinjiang ecosystem is that you can actually — The factories there have actually also adapted the techniques.

Let me give you an example. There is a very well-known hardware hacker, Bunnie Huang, who goes to Xinjiang very often. He's actually based in Singapore, but he's from MIT in the U.S. and most well-known for his hardware hacking book of the X-Box console using Linux.

He basically manufactures — He started a company, which is actually dealing with electronics, but actually using plastic LED. He actually has to work with the Chinese factory in Xinjiang to produce — And he had to invent his own production technique to do it.

He has actually evolved more than just, "Hey, this is the design. This is the architecture. Go produce this for me." Actually, a lot of the factories in Asia, particularly if we talk about, say, whether it's Korea, Japan, Taiwan or China, they have evolved beyond that. They have actually evolved to take on that technology and actually become better at it.

[0:11:34.8] JM: Right. That guy you referred to, his name is — Is it Bonnie? Bunnie?

[0:11:39.7] BL: Yeah, Bunnie Huang.

[0:11:41.2] JM: Bunnie Huang. Was he in that video that wired produced? I don't know if you saw that.

[0:11:45.4] BL: Yes, that's right. That's the guy you are talking about.

[0:11:47.2] JM: Okay. I'm going to put that in the show notes. That video is awesome. It's basically a condensed tour through the manufacturing process and the — Oh! Just the market for components, like the hardware components where you could just walk through this shopping mall like area and grab smartphone screens and little chip components, GPS units like Legos. It's like a Lego shopping mall of little components that you can use to build hardware. It's kind of tremendous. I've never seen anything like it.

[0:12:23.5] BL: Yes, it's like a hardware supermarket basically, but at a billion scale basically.

[0:12:29.3] JM: Okay. Let's talk about BAT. In the U.S. we have the big tech companies known as FAANG; Facebook, Amazon, Apple, Netflix, Google. In Asia, there is BAT; Baidu, Alibab, Tencent. Let's get through these different comparisons, kind of the companies and their counterparts. You've got — I think even calling them counterparts, like saying Baidu is the Chinese Google. It's probably misleading, right? How should we even approach the comparison of these, or should we look at it as FAANGBAT? Should we just look at them as seven or eight giant companies and forget the mirror comparison.

[0:13:17.3] BL: If you ask me this question, I would possibly say that the BAT is really a phenomenon in China, and that's how you probably will compare between China versus U.S., because they are also other powerful tech companies in the region with SoftBank in Japan, Samsung in Korea.

When it comes to Baidu and Google, the — Let me just use a very simple metric looking at their market capitalization. Baidu today is at $94.4 billion, founded by Robin Li and Eric Xu; versus Google, Sergey and Larry, which is not at $694.6 billion, approximately based on the numbers that I got today.

They start out very similar to Google with a search engine. I think if you have read the book *In The Plex* by Steven Levy, which there were three groups of people that use the same search algorithm, and two of them became billionaires. One is Robin Li, which did Baidu; and one is,

again, Larry, which did Google, and then the other guy became a professor in one of the universities. Yeah.

The backstory is that after Baidu has evolved in search engine to become very similar to Google. Of course, with Google's exit from China, basically handling them the entire market. Today's Baidu's market share in China is only 70%. Not 90% as what everybody predicted. They evolved their business. They have actually added things like maps. They have focused a lot on AI. The AI that they're using is actually very pragmatic. They actually developed a lot of AI stuff in the Baidu research labs in Silicon Valley and they actually use on to the advertising products to actually help them to do retargeting as well. Of course, they have recently created Apollo, which is an open AI platform that is actually doing autonomous driving. They will allow partnerships as well.

If you look at Baidu as a company today, I will say that they are really a software AI company rather than just being a search engine.

[0:15:23.4] JM: Alibaba, I was — When I was at Amazon — I worked at Amazon briefly for only eight months, but when I was at Amazon, I kind of got the sense I would look out into the competitive landscape and I would look at Alibaba and be like, "That company looks like it could potentially compete with Amazon." These companies, it's such a blue ocean, that they don't really need to think of each other as competitors, but everybody thinks of each other as competitors. How does Alibaba compare to Amazon? By the way, I will say, Jack Ma, the CEO of Alibaba, is so charismatic. He is one of the few people who has charisma that rivals that of Amazon's Jeff Bezos.

[0:16:11.0] BL: This is where the market [inaudible 0:16:13.1] metric becomes very interesting, because just now when I told you about Baidu and Google, it's a difference of seven times, right? Alibaba's market cap today is actually about 449 billion; versus Amazon, which is at 484 billion. Both companies have evolved early through eCommerce. I think Alibaba takes a more eBay-like model, subsequently evolved to become similar to the Amazon model, and they have also focused a lot with logistics with a company called [inaudible 0:16:43.2], which they actually invest a lot.

A lot of people probably do not know. If you are a foreign company who wants to enter China and you want to run software services on China, you better be running on Alibaba cloud, which is their top computing platform that's equivalent to Amazon. I think in the last two years, one of the things that Alibaba has been focusing on in their cloud computing conference is talking about quantum computing. This is something that only — We haven't heard this in AWS at all.

Similarly, they also have been focused a lot on entertainment, like Amazon. They are funding a lot of Hollywood movies. I don't know whether recently if you have been watching some of these movies with China influenced involved. You also see the Alibaba entertainment as well. This is actually comparative. They are actually both very similar.

What is really interesting now is that both Alibaba and Amazon are actually having an open battle in two major Asian markets. One is India, where they're going to be — Amazon is going to be pumping 5 billion into their market to flip card, which is actually — And SnapView, which is backed by Alibaba and Tencent. There is a proximal going on in India. In Southeast Asia, Alibaba owns Lazada, which is formerly run by the Summer brothers from the Rock Internet. The company that will all — Of course, a disclosure, Singapore Post is invested by Alibaba as well. We actually run the logistics. I'm part of the executive team that actually got the Alibaba investment.

What was interesting about Alibaba in Southeast Asia and with Amazon is that, now, there is a second battleground opening, but for Indonesia, which is probably in Southeast Asia with the largest population of about 272million people. Almost these ecommerce platforms are actually going to be fighting for market share across these two regions within Asia, and they're actually adopting the same set of tools. You have ecommerce, you have clock computing, you have entertainment and you also have logistics as well.

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[0:19:07.0] JM: You are programming a new service for your users, or you are hacking on a side project. Whatever you're building, you need to send email, and for sending email developers use SendGrid. SendGrid is the API for email trusted by developers.

[INTERVIEW CONTINUED]

[0:20:21.3] JM: That brings us to WeChat. Tencent owns WeChat. WeChat could be described as the Chinese Facebook, I guess. How accurate is that comparison?

[0:20:34.0] BL: No. I think everybody gets Tencent wrong. I think Tencent — One should actually look at Tencent's history. Tencent started off as actually a messaging app on the desktop with an app called QQ. If you are in the early 2000s to 2010, QQ is probably the default messaging app in China using the desktop.

WeChat is the second incarnation of Tencent. There's very interesting ethos within Tencent. They like to incubate many ideas within the company even to the point it disrupts itself. The WeChat team is one of the few teams that actually manage to disrupt QQ. If you look at today, Tencent owns three killer apps. Of course everybody knows WeChat, but do you know that the QQ, that's used to be the messaging app on the desktop has also evolved to mobile and now it's only for — The equivalent of millenials for China. A lot of the younger generation of Chinese actually use the QQ app.

The other killer app is actually in gaming. It's Honor of Kings. I don't whether — Have you all played any game? They actually run by different names in different countries now, but Honor of Kings is one of the most addictive social game in China now. It's actually also going worldwide as well. If you think about market cap, going back to the market cap analogy, actually Tencent is pretty close to Facebook at 480 billion, and Facebook is at 511 billion.

Facebook's business model is very dependent on advertising despite how much they wanted to do a messaging app. They wanted to use Facebook Messenger to clone WeChat. They haven't been very successful. Tencent has been a really — If you look at average revenue per user — The average revenue per user in 2016 for WeChat is $7. That means for every user would pay $7 to Tencent every month, and Facebookis only less than — If you think the global average, it's only less than $1.50.

[0:22:49.9] JM: I'm sorry, maybe I misunderstood, but some of these is direct payments. It's not like advertising. It's not eyeballs; services, games, content.

[0:23:02.4] BL: Yes. Tencent has won the Cannes Award in France, which is most well-known for Hollywood celebrities as one of the biggest platforms, because they are actually the entry point for most content into China. They also have a strong — For example, WeChat has not turned on its advertising. That's very similar to the Facebook feat kind of advertising at full scale because they are really — What Tencent is really concerned about is user experience. They are focused a lot — Had been making a lot of money to their app ecosystem, because in China, you spend almost, I think on average, three hours on WeChat. You never get out the app. You can book a taxi. You could read news. You could even listen to court proceedings. You could book your hairstylist.

[0:23:58.1] JM: You're just paying for everything through WeChat, right? When you're walking around — If you're walking through a shopping mall and you purchase a t-shirt, you're paying with WeChat a lot of times, right?

[0:24:09.2] BL: You also could be paying with Alipay. The market share between Alipay and WeChat pay, which is actually under Tencent is actually — I think Alipays about 50%, and then WeChat is about 30%.

[0:24:23.4] JM: China leapfrogged the U.S. in terms of electronic payments. We still do not make most of our payments through our smartphone. I believe I don't know the numbers, but I don't feel like I can reliably walk anywhere and just pay with Apple pay on my smartphone, and I live in San Francisco. Why is that? Why did that leapfrog happened in China?

[0:24:46.9] BL: This is a very good question. The payment infrastructure in most developed countries in Asia are probably similar to the U.S. I will say, for example, Japan and Singapore. Except the backend infrastructure of these payments gateways from clearinghouse to routing typically is owned nationally by the country itself. You can have payments networks like Visa and MasterCard that actually enters into their country.

The official reason is that most monetary authorities of a particularly Asian country wants to ensure that it has visibility to all transactions routing to their market against terrorism financing, anti-money laundering. This is very typical.

When it comes to China and other developing nations, such as India, Indonesia, or even frontier economies, like Myanmar, which went from something like 100k mobile handsets to 30 million handsets from 2013 to 2016. That's probably about two to three billion people, which we called the unbanked.

Unbanked people typically don't have bank accounts. They don't have credit cards. Of course, they don't even have access to financial services. This is where China led the mobile payments pretty well, because the mobile payment feature, for example, we did all app. We did Alipay and Tencent, WeChat, a lot microtransactions at a very low rate.

At the same time, it also leverages the user's transaction data to determine their credit score. That's very similar to you in the U.S. with your FICO score. If you perform payments through Alipay, there's an app called Sesame Credit, which is also pretty well-known in China and financial, that is the holding company for Alipay and Alibaba, and there has no IPO yet.

That particular app actually tries to determine your credit score. In fact, one of the really interesting thing about Alibaba is that they help their merchants to get bank loans for ecommerce sellers. They actually help them to get by actually telling the bank how much transactions will they get from their ecommerce selling.

This is another way of determining their credit rating for the unbanked market. Then on top of that, I think both Alibaba and Tencent have also created small funds, which their Chinese customers can invest. For example, you and I probably we top-up our mobile credit and we

have some spare to the $3 within the phone, right? Alipay and Tencent actually have a fund structure where you could invest these and use money into the up funds and earn more credits.

You can see the way how they evolved payments. It's very, very different from how you and I would have done it in where we respectively are, in San Francisco or Singapore.

[0:27:42.7] JM: Right. There was so much there, so I want to try to unpack your answer and explain it in a little more detail. In the United States, when companies talk about fin-tech innovation, a lot of times they're talking about building on top of legacy banking infrastructure, which is really hard to do, because a lot of the fundamentals of the legacy payment infrastructure relies on long settlement times and doing all these stuff to ensure that transactions are not fraudulent, and that's great, but the way that they do it is not so efficient and a lot of that is because you have these different banks. Banks are built on old infrastructure, but also, they each have their own interests in mind. If you could just have some shared platform, that would be great.

If you have a shared platform, you can reduce the overall transaction cost, because you can do things like — Like I think of TransferWise is a great example. I don't know if you know the company TransferWise.

[0:28:42.9] BL: Yes, I do know.

[0:28:44.7] JM: Right. TransferWise I think is like the perfect example of this, because on TransferWise you can say, "I want to transfer $15 to Bernard in China." Normally, if I was just using different banks to do that, I would have to send $15 to my bank. I would pay a transaction cost and my bank would transfer $15 to your bank, maybe there's another transaction cost associated there, then they would transfer that to your bank account.

TransferWise, for example, might have a bank account in the United States and a bank account in China, so that when I transfer $15 to Bernard on TransferWise, they can just switch some numbers around, because they own both of those bank accounts and these are just bits flipping and they don't have to pay these high transaction costs.

In a sense, TransferWise is a layer on top of the original banking system, but it pulls them away. Their infrastructure pulls them away from having to deal with the extra costs of being on that banking infrastructure.

Now, the lower level version of that, the extremely low level version of that is Bitcoin, and I'm sure we'll get there eventually. Bitcoin just is a totally decentralized settlement protocol. What you were describing with China was basically a top-down effort to say, "We want to improve the financial efficiency of this county, because this will lift people out of poverty essentially." What they said was, "Okay. We're going to make a top-down effort. We're going to get everybody using electronic payments," partially because it will get people under a little more. You could call it surveillance. We would call it surveillance with a sense of judgment in the United States. I would say there is a lot of strengths to that "surveillance", because you get tons of data which gives you better lending rates which allows for more people to become banked. There is a tradeoff there. In America, we would love to just to be like, "Oh, China. It's a surveillance state." It's not exactly like that.

I might be mis-characterizing something, so I won't go much further. Basically, the idea is that in China, with Alipay and with WeChat — What's the WeChat payment system? Is it Wepay?

[0:31:05.0] BL: Tenpay.

[0:31:06.2] JM: Tenpay. With Tenpay, they've got a top-down effort to get payments going sort of transfer-wise style and they get to avoid the transaction costs. Am I portraying your financial portrait of the world correctly?

[0:31:20.9] BL: I think I would have to add on a little bit more to our conversation. When China started opening up the stores and actually started building its own economies, they've actually build the traditional banks. One of the things they actually didn't, is that when the technology company such as Baidu, Alibaba, Tencent came in, they allowed them to set up mobile wallets and allowed these mobile wallets to subsequently create financial services that become more and more like banking and financial services.

Try to imagine a same situation with Amazon trying to develop a payment and started to develop infrastructure decimals at the banks. Then what they did is, “Okay. We now see that you have a high adoption rate of these mobile payments and you can start giving banking service. We now have a bank’s license that you need to have.”

Now you see that Tencent and Alibaba has to get a banking license, but actually a much more evolved banking license that’s different from traditional banks. Actually, the trick of it is that the technology companies in China are allowed to work with the banks direct. The banks in China had no digital infrastructure, so they relied on the Alibabas and Tencent to actually give them that digital structure. That’s why you see this capability forming. It’s not that Chinese government had a very top-down.

They actually been very patient. They looked at where the traditional banking is going. They looked at where the digital tech companies are going. They let it evolved to the point where they think, “Okay. There are some issues. They come up from this digital banking, be it fraud, be it money laundering. So now we’re going to start putting some regulation and these guys have to give us things like, “Okay, where’s the transaction data to prevent money laundering or prevent counterterrorism financing?”

These are things that people do see — People think of Chinese government as being a monolithic authoritarian government. That’s not true. It’s actually a very interesting government that has a very different way of thinking about technology, because things are run by a group of technocrats; people who understand technology. They actually try to introduce technology into their financial system.

Whereas in the U.S., you are very burdened by most of your traditional systems, traditional banking legacy systems. Hence, their evolution has not take place.

[0:33:50.8] JM: This is why I need to visit China, because I did an interview — I don’t know if you know, a guy named Kaiser Kuo.

[0:33:58.2] BL: Yes, I know Kaiser very well.

[0:34:00.3] JM: You know Kaiser? Okay, great.

[0:34:01.0] BL: Yeah.

[0:34:01.9] JM: Podcasting friends, I guess.

[0:34:04.0] BL: Yeah.

[0:34:04.3] JM: He is at Baidu —

[0:34:07.9] BL: Formerly they head up international relations in Baidu. I interviewed him on my show as well.

[0:34:13.4] JM: Oh, okay. Anyway, I just remembered I talked to him and he — It was one of those interviews where there's like my perception of China is so messed up, it's so wrong. I don't know if — It kind of feels like I've been brainwashed, where you have the media just like feeding you these subtle signals that China is inferior or authoritarian. Am I alone here? Does that happen in China with the reverse where there's a subtle perception that there's something stupid about America?

[0:34:53.8] BL: No, I don't think so. I think the Chinese wants to think of themselves as trying to invent technology to solve its own problems.

[0:35:05.0] JM: Right.

[0:35:05.5] BL: The way I like to make this joke to a lot of people whenever you hear Singapore, Hong Kong or London claiming to be the fin-tech capital of the world, okay? I will always tell them you are either smoking crack, because I would call you a fin-tech capital of the world. This happens to me when I was visiting Hangzhou, Alibaba's headquarters. I went there with a lot of Renminbi, which is the Chinese Yuan cash, right? I literally walked in and walked out without spending a single cent.

It's funny, like a fruit store with two bamboo post with a small shelter. You can do a QRL code scanning and buy bananas.

[0:35:47.2] JM: Yeah. Okay, I'll just play the American devil's advocate style argument. Some people would say that the valuations of the Chinese companies are mistaken, because the financials are totally opaque, that kind of argument. How much substance do you think there is in the Chinese tech giants and their businesses?

[0:36:15.3] BL: I think that the valuations for Chinese tech companies today's rival very similar to the Silicon Valley equivalence. I think for every company, they are unique by itself. Depending on how their market share or their unique economics, the valuation is justified through there. Yes, there's overheated valuation crisis going on in China's venture capital as some of these startups area actually getting more crazier valuations. I think they are also sometimes within that actually justifies their valuation.

For example, if you look at a company like Toutiao. I don't know whether you have heard. This is a news reading app. In fact, Y Combinator has recently ran a very interesting analysis of it.

[0:36:54.6] JM: Yes, I read that.

[0:36:55.5] BL: What Toutiao, is totally would blow your mind. They're basically an AI company, all right? They basically get you to tell them what newsfeeds you read, because I can read Chinese. I go in and basically subscribe different newsfeeds and based on how I interact with the app, the app will try to modify the way how it present this information to me based on what I want. It's running on the same business model as Facebook as well.

[0:37:26.3] JM: When I was reading about that, I was like, "When is this going to be in America? I want to use this product right now."

[0:37:31.0] BL: Yeah. You have a poorer equivalent of it is called Apple News or Google News, right? That's true, right? You think about it —

[0:37:42.5] JM: It's not even close though —

[0:37:43.7] BL: Close? Yeah. It's not very close to what Toutiao is, right?

[0:37:46.1] JM: Toutiao — What is it?

[0:37:48.5] BL: Toutiao.

[0:37:50.7] JM: Yeah. Toutiao is like — It generates articles, right? It's like one of these automated article writers which we have these in America where they like digest sports scores and they spit out a poorly written article, but this is like really, really good writing. It's like good automated writing, right? It's readable content. Have you read it? Is it good? Is it bad?

[0:38:13.0] BL: No. It's good, except that I think a lot of these, actually they assemble the aggregate and then they curate and create the article.

[0:38:22.3] JM: They plagiarize.

[0:38:24.1] BL: Not really plagiarize. What they do is they take a few sources. They actually use the AI to aggregate the important summaries of the article itself.

[0:38:32.6] JM: Oh, that's awesome.

[0:38:34.2] BL: Then they actually curated it and then they basically present it in the format that is quick size bytes in the mobile phone. I think that's one of the innovations. I think people didn't underestimate their company for.

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[0:38:56.0] JM: Spring framework gives developers an environment for building cloud native projects. On December 4th through 7th, SpringOne Platform is coming to San Francisco. SpringOne Platform is a conference where developers congregate to explore the latest technologies in the Spring ecosystem and beyond.

Speakers at SpringOne Platform include Eric Brewer, who created the CAP Theorem; Vaughn Vernon, who writes extensively about domain-driven design, and many thought leaders in the Spring ecosystem. SpringOne Platform is the premier conference for those who build, deploy and run cloud native software.

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Thanks to Pivotal for organizing SpringOne Platform and for sponsoring Software Engineering Daily.

[INTERVIEW CONTINUED]

[0:40:27.5] JM: That's so interesting. Man, so many questions. What is the media landscape like in Asian countries? Because in the United States we kind of have this concern — Especially with the rise of Trump, people were starting to say, "Whoa! Thank goodness, we have New York Times and Washington Post and Wall Street Journal and these other hallowed institutions, and we're going to subscribe to them to continue giving them money." But if you had automated news, aggregators that are pulling the best pieces of information from these companies, then you wouldn't be able to perhaps maintain the subscription model, because people wouldn't be pay walled.

I don't know. Maybe you could tell me a little bit more about how the media landscape is working.

[0:41:11.5] BL: The media landscape in Asia is very varies. You could have very open ones, like India, Japan, Korea, where it's totally — The media is actually like the [inaudible 0:41:24.3] estate where they actually check you basically, right? The checks and balance similar to the U.S. model.

When it comes to China, Singapore and some other Asian countries, the government takes a very direct hand in regulating the kinds of media, as long as it's not sensitive to them. For example, political. For example, something to do with making allegations that someone is corrupt. These are the kind of things that gets them very sensitive, or trying to compare the Chinese leaders to Winnie the Pooh. Yeah, you heard about that, right?

[0:42:01.0] JM: No. I don't know what you're talking about.

[0:42:02.9] BL: China actually banned Winnie the Pooh, because there was this photo of Obama and Xi Jinping and you compare the same picture from Winnie the Pooh and Tigger. To be honest, they actually seem a little good, but unfortunately in China, when you are a Chinese leader, you have to be highly respected. You cannot be mocked. There's no room for satire. You can see the variations of how media regulation works within China, right?

These are things that actually makes these things differ. In fact, one of the things that Chinese tech giants have to deal with is actually with the regulators, because when something becomes very sensitive, they will put a heavy hand down. I think if I listen to Kaiser's, one of his podcasts, [inaudible 0:42:51.1], he talks about his experience with Baidu. It's not that Baidu don't push back. They do pushback, but they don't say it in front of everybody.

The tech giants in China do pushback. Of course, the Chinese government, being the Chinese government, they say, "No. I have to get you banned with these keywords, these terms." I think this is one of the struggles that they're going to have when these Chinese tech giants come off China.

[0:43:18.5] JM: Bitcoin. We got to talk about Bitcoin. I don't think URI is fully equipped to understand the political nuances within Bitcoin. The forks and whatever else is going on in Bitcoin right now, but I'm sure you can understand the politics outside of Bitcoin relative to Bitcoin.

What kind of crackdown is going on visavi Bitcoin and how effective has it been? Why is the government doing that?

[0:43:46.4] BL: Okay. I think there are three things. It's interesting because I've interviewed a few guests recently to talk about Bitcoin ICOs and blockchain in China. To Bitcoin, China's involvement with Bitcoin has a big impact to the world, because Bitmain produces 70% of all the Bitcion mining equipment in the world, or any other cryptocurrency money equipment. They're the most efficient. They're based in Beijing, pretty well-known.

Then you have three big Bitcoin exchanges, which is going to be shut down by the Chinese government, OKCoin, Huobi and BTC China. Then you also have new projects that I would say that evolve similarly to Ethereum. You probably heard of Ethereum, right? The smart contract token? They're responsible for all the ICOs, which is new in quantum. They're also coming out from China.

Now, what is actually happening in the cryptocurrency space in China? It's a little bit more nuanced than how the media portrays it. What the media gets right is, yes, China banned ICOs, okay? What's the rationale of banning ICOs?

They're banning ICOs, because the Chinese are looking for — the day-to-day Chinese are looking for things to invest in. These tokens are starting to become more and more prevalent in China, and what the governments worry about is scams, that it goes into a kind of bubble, crypto bubble and subsequently will lead to a loss of financial wealth. They took an open approach to ICOs, but they saw the growing scams coming up, so they went in and they blocked ICOs throughout.

Now, Bitcoin exchanges I think is a little bit more subtle, because a lot of — I think in the last one, two years, the Chinese government is actually trying to stop their local millionaires, billionaires to actually funnel their money out of China, their wealth out of China.

One way of doing that is actually buying cryptocurrencies. You'd be surprised. If you think about cryptocurrencies, I think I myself is a cryptocurrency investor, because I'm a fan of the technology itself. Usually, you look at most parts of Asia usually are the tech people doing the investment, or maybe some financial guides. I think in China, the average normal people actually coming and do the Bitcoin an cryptocurrency market.

I think that that nuance view of that is actually making the Chines government jitter. They didn't ban Bitcoin. You have to be very clever that if you read their signal clearly, they have not banned Bitcoin, because they themselves know that China, being such a big player to the Bitcoin industry, if they cost a ripple effect to them, they might also cost problems to their China innovation. They're actually doing it bits and pieces. I think you might see something different, because the best way I wanted to do is to give you an analogy. You probably heard Weibo, which is a Twitter clone in China, right?

[0:47:01.0] JM: Yup.

[0:47:01.4] BL: Better than Twitter, because they make more money than Twitter and their stock price is going up in NASDAQ. What is interesting was before —

[0:47:09.5] JM: And more dynamic company. You had an episode about that recently. They're a more dynamic company.

[0:47:12.1] BL: That's right. The story behind how Weibo started was that actually Weibo is a second generation Twitter clone. There was a previous generation. The first generation of Twitter clones, that was entirely wiped out by the Chinese government because a lot of people were voicing out the issues on the Xinjiang province, all these politically sensitive content, and so they were all shut down. Then when Sina said, "We are going to build this and we are going to be regulated by the government," then Weibo came up, and that also led to its rise as well.

I think the way this is going to go for Bitcoin or ICOs is going to be very similar. It means you have the first wave of ICOs and Bitcion exchanges. They will all be shut down. What is going to happen is the Chinese government will look for its own champions and say, "Maybe you guys should just go and be on Bitcoin exchange, and then we just want to have an oversight and then you can evolve."

[0:48:10.4] JM: This is another example of the misperception of China in America, because I get most of my news on Twitter, and this is like reading Twitter news from Silicon Valley investors and technologists and even people working in Bitcoin, and the perception that I got

was that China is shutting down ICOs. It's shutting Bitcoin exchanges because they want to have a totalitarian authority and prevent money from leaving the Chinese ecosystem. Maybe to some degree that's true, but the difference between China and America that you outlined there is that like in the 1920s in America when your average grandma was buying stocks that she had no business buying, because she was just pouring all her savings into individual stocks and then the market crash and people's savings got wiped out. When that happened, that was not good for the public, and you're describing a China where that is occurring with cryptocurrency, and that's not occurring in America. Is that correct?

[0:49:22.2] BL: That's right. This is where the thing about why China is banning ICOs is because your typical grandmas are beginning to get involved with these kind of investments. For example, remember I told you about Alipay and Tenpay having these funds that you can invest with your excess credit on your mobile phones, right? It started off being unregulated, but later the Chinese government come in and set limits to how much they can invest in, because they also will read that these funds might also end up in trouble later. They keep a very tight view of the economy, because they don't want to get into a bubble or to end up in some financial crisis. China is still growing at a 6% to 8% GDP year on year growth ever year.

[0:50:09.3] JM: What is it about China versus America where in China people understand that there is something going on with Bitcoin. They understand that something is going on with ICOs. Maybe they don't make the proper bets. In America, it seems like there is a very small subset of the United States that understands cryptocurrencies, that understands ICOs, that understands technology. This is maybe one of the reasons for the growing divide in America in our political system.

It seems like in Asian countries, technology is permeating the culture, the pop culture. Everybody understands technology. Everybody is excited about it. Whereas in America, we have this schizophrenia, where half of the country will talk about how much they love Facebook and Google on technology and Amazon and all that stuff, and maybe half or more than half will say, "Technology is bad. Stealing jobs," etc. Is there a difference in how unified these countries are in terms of their perceptions of technology?

[0:51:20.2] BL: I guess if you think about the Chinese government and most of the Asian governments, some of the politicians are actually democrats. They are actually technologically trained, they're engineering trained. There is a propensity to — the way that they think about governing the country. They think towards bringing in technology to solve some of their problems.

I think there's one of the prevalent difference I see between the whole of Asia versus the U.S. Of course, you also have the same kind of politicians similar to the U.S. in some countries, but if you look at China, Singapore, for example, it's wholly run by people who are very technology-centered. That explains how they regulate as well. They also allow the digital banking thing to work first before they start coming in and regulated, because they want to see how this technology would evolve to solve some of the common problems of [inaudible 0:52:10.0] in these markets.

I think India is taking a very similar approach. For example, Paytm, which is very similar to Alipay and it's also invested by Alipay and SoftBank. These things were actually — These pragmatism will come into how technology is being adopted. I think Asians sees technology as a tool to solve their problems. Yeah, I think that's one of the real fundamental cultural difference.

[0:52:39.8] JM: The synthesis of the technological virtual world and the real world seems a lot more seamless in Asia as we've already discussed with the seamless payment infrastructure and — I don't know.

In America, at least and — Again, I'm so isolated. I haven't spent enough time in other countries. I should visit a lot of other countries. There is a fear that social media and other addictive technologies lead to isolation. How isolated are people in Asia? Do they find ways to use technology to become closer together?

[0:53:19.7] BL: I think they use technology to connect to each other. Funny, I actually have used a lot of social media too. I use Facebook to connect with people all over the world, except China, and I use WeChat to connect people from China. It's the same. I think the same kind of issues we're going to have, like for example fake news. People become very polarized. I think the issues of —

[0:53:41.9] JM: That's happening in Asia.

[0:53:43.6] BL: That's happening in Asia, except that the government have a stronger hand in regulating these media. It used to be regulating media is a bad thing in the U.S. because of their first amendment rights. I think in Asia, this now becomes very useful, because it distinguishes fake news from real news as well. The Asian governments tend to be heavy handed when it comes to this kind of fake news, even suing the media outlet for deformation as well. You see that there is a difference in the way how we looked at media as compared to the U.S.

[0:54:21.9] JM: Yeah. Certainly a tradeoff that you want to make if you have an intelligent technocratic leader, which unfortunately we don't have right now. We've got somebody who retweets bots, unfortunately. Trump has retweeted a bot at least one time. Anyway, I don't think we have a great sense of what is fake news in our leadership unfortunately. If Obama was running things, I would be like, "Yes! Absolutely. Obama can be the arbiter between what is real and what is fake news." I'd feel comfortable with that.

[0:54:54.1] BL: That's right.

[0:54:55.7] JM: Interesting question. Let's go to ridesharing. Explain how ridesharing in Asian countries differs from America.

[0:55:05.4] BL: I think in today, there's not much difference, because I think all the ridesharing companies basically have two kinds of ridesharing. One is — The best is to use the Uber analogy. Uber started with UberBLACK, which is the luxury car service, and then you call, you get a black car and then you go on to it.

Where the Asia innovation came is actually where the ridesharing companies built on the supply of the taxi fleets, or in U.S. we call it the medallion, the yellow cabs, where they actually use their pricing and basically try to match between riders and also the drivers. That itself has become the business model for not just Uber, but Didi in China, Grab in Southeast Asia and Ola in India. They are all each regions of power all funded by the same company. Soon, Uber will be funded by the same company, which is SoftBank, which we didn't talk about yet.

What was interesting for ridesharing in China now, there's a new evolution. Between zero to three kilometers, the ridesharing market is wiped up by bicycle sharing. Actually, I don't want to call it bicycle sharing. It's bicycle rental actually, where you can actually rent a bicycle from the point that you walk out of a subway. You take about less than 500 meters right to their nearest location using a bicycle. This bike sharing company is like [inaudible 0:56:36.6] are now basically jumpstarted very quickly, and I think it's scaling across the world including into the U.S. universities as well.

That is why ridesharing has a different evolution now. There is now the zero to three kilometer space that's actually dominated by these e-bikes and bicycle sharing companies.

[0:56:57.1] JM: Okay. SoftBank, let's talk about that. That's a really interesting topic. People who don't know about SoftBank, this is a technology company. I believe it started as a telecom provider. Is that right?

[0:57:08.5] BL: No. Actually it started as a software distribution company. I'm a fan of Masayoshi Son.

[0:57:13.4] JM: Me too. I'll just give a quick preview. He's a technologist. He's got $100 billion fund that he is aggressively deploying. He's sort of like a technologist version maybe of Warren Buffett who aggressively invests.

Describe Masayoshi Son and what is going on with SoftBank and what the impact of that is on the technology world.

[0:57:38.6] BL: Okay. Masayoshi Son is Japanese. SoftBank started in Japan as a software distribution company. As they evolved, they did two things. One is they started venture capital and private equity arms that do technology investments. During the .com era, .com bubble and .com bus era, they were heavily invested into some of the biggest companies of that time. One of them probably you might now is Yahoo.

SoftBank actually evolved into a telco somewhere around the year of 2000 by creating a different business model to broadband. They started using a different business model today and then subsequently their broadband service became so big and then they built out on telecommunication, their own telco. Of course, they have invested in Sprint in the U.S.

Within the SoftBank, they owned Yahoo Japan. They also owned the telco and the mobile, but they also have started a new tech industry, which is robotics. You've heard of SoftBank's Pepper, right? It's a robot. If you go to Japan these days, you'd go to all the SoftBank stores, you'll see a Pepper robot that actually has software that actually responds to your emotions and tries to be your customer service representative. Of course, Pepper has been used as a barista in espresso, in one of the Tokyo cafes. It's also been used as a banking assistant. You should go and check it out, okay?

[0:59:01.5] JM: I need to check it. That's a human-like robot?

[0:59:03.4] BL: Yeah, it's a human — It's really a robot. That's not a human-like yet, basically. I guess this is where SoftBank recently has bought Boston Dynamics and Schaft, which I think they're trying to reclaim the leadership back in robotics from the U.S., because Google had bought up some of these top robotics companies.

[0:59:24.0] JM: Right! Robotics was originally led by Toyota, right? In Japan?

[0:59:27.7] BL: That's right. yeah. Toyota, Panasonic and Toshiba. What SoftBank is, the other side of it is their investment arm. After the .com crash, Masayoshi Son didn't give up. He went to invest Alibaba at 400 million, okay? He got a return back at 56 billion. Today, that particular assets that he invested in Alibaba is worth 90 billion.

You have to think about —

[0:59:56.1] JM: That's a lot of money.

[0:59:57.1] BL: You think about how farsighted he was at that point in time. He did a lot of interesting investments in technology companies, not just in Asia but also in the U.S. as well.

The vision funded, he did the $93 billion vision fund. He's basically — I think one thing that Masayoshi Son —

[1:00:15.9] JM: It's $93 billion.

[1:00:16.4] BL: Yes. That's the comfort [inaudible 1:00:16.4] $93 billion. I heard he's now raising the second fund to that, which is probably in a hundred billion. I think what he wants to do is to accelerate certain technology adoption and moves towards singularity. I think he likes the idea of Ray Kurzweil's *The Singularity is Near.*

[1:00:37.8] JM: Which you do too, right?

[1:00:39.0] BL: Yes, I'm part of the Singularity University Global Solutions Program. I'm the alumni of 2016. I think the thing that he is trying to do with this investment is he's trying to accelerate the technology investment and try to move them towards the next level.

[1:00:56.9] JM: Okay. Since we're up against time, people can go check out some shows about Masayoshi Son. There's a great Bloomberg show about him that aired recently.

Let's close on the singularity, because this is a big idea and there's not a lot of people who take it as seriously as somebody who puts up together a $93 billion fund to invest in ideas that might lead to the singularity or leverage at the singularity, and you yourself are a successful business person who openly talks about the singularity and believes in it.

Do you think of the singularity as a religion or a philosophy or a way of life? How do you think of it as important to you?

[1:01:35.9] BL: As a scientist, I don't believe in — I believe in hypothesis-driven experimental validation. I see more as a philosophy. I think one of the things about the technology reaching singularity is that it leads to abundance. What does that mean? Do you know how much aluminum fork today is priced? I think it's about $2 to $3. It's probably $2 to $3. If I were to tell you in 15th century, the aluminum fork is actually worth $150,000. What has happened?

In between that, people discovered aluminum oxide. People had discovered manufacturing method that manufactures aluminum forks at scale. Something that is used to be owned by kings and queens, today is owned by the common people like you and I.

What the singularity's ethos is that it leads to a world of abundance. We live in a world where the economy is driven by supply and demand and technology has the propensity to actually make resources — Can make infinite supply, and even infinite supply comes, then you can actually have abundance and people have to share off the resources. I think this is probably going to be an ongoing theme in the U.S. about income inequality and all the pushback against tech giants.

I think the ethos itself is correct. How we get there is a different question altogether. Does that mean —

[1:03:01.4] JM: Do you think there's a question of whether we do get there?

[1:03:05.0] BL: I think we will get there. If you are like me, a Star Trek fan, then you'd love to be there, right? Replicators?

[1:03:11.4] JM: For sure! Hey, listen. I'm right there with you. I'm a little bit — I'm scared. I'm a little bit scared that we won't get there, because I see the potential. I report on the potential for us to get there every day. It just scares me that we might destroy ourselves before we do.

[1:03:26.4] BL: That's right. I also have the same feel that you do. However, I still think that if you think the underlying concept of the singularity is technological singularity is to move towards a world of abundance. I think that one of the things that probably tech companies do to the world is that it lowers the cost of something very scarce to become something very affordable.

If you believe in that, then a lot of the technologies can be made good on that. Of course, they have its own abusers, but I think the overall end state is going to be better in the long run.

[1:04:01.5] JM: Yeah. That's a great place to close. Bernard, I love your podcast. I want to thank you for coming on the show, and I look forward to getting a cup of coffee with you either when I'm overseas or you're in San Francisco, or maybe in virtual reality someday.

[1:04:17.5] BL: Yes, Jeffrey. Thank you for inviting me. Of course, you can always — Let me know when you're in Singapore, because it's where most of the Bitcoin or cryptocurrency foundations are now the headquarters. Ethereum's headquarter is in Singapore now also. I heard Vitalik always hangs out in one of the Starbucks in Singapore, or if you want to go to China, we can probably — We may even end up meeting in China at some point.

[1:04:39.3] JM: That's sounds great.

[1:04:40.4] BL: Yeah.

[1:04:41.2] JM: Thanks, Bernard. I'll talk to you soon.

[1:04:42.8] BL: Talk to you soon. Take care.

[END OF INTERVIEW]

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