



AlphaChatterbox - Xiaomi and technology in China

[Cardiff Garcia] Here's where I want to start; a couple of weeks ago we got a new report from the China Internet Network Information Centre. It said that more than half of China's 1.37 billion people are now online, 90% of them use smartphones; that's a total of 620 million in China using a smartphone.

For context, there are about 320 million in the US; that's the entire population, not the population of people who use smartphones in the US, that's the entire population. So it's almost double that. That's hard to get my mind around.

So here's where I want to begin: about halfway through Clay's book, Clay writes that owning a smartphone in China is a more personal experience than it is in the US. Clay, why don't you tell us what you meant by that, and then maybe give us some examples of just how important it is to have a smartphone in China and what kinds of changes it's bringing about?

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[Clay Shirky] The smartphone here is a technological development that happened the way technology usually happens in China, which is late and then all of a sudden. Whereas in the US, adoption of the iPhone begins in 2007; in China, as late as 2010, it was still mostly those old Nokia phones, and then in the space of two years, suddenly it reverses and three out of every four phones being sold is a smartphone.

So China's mobile phone adoption curve and its internet adoption curve actually overlapped, and so China is not only a mobile-first country for internet use, it is a mobile-only country in many places.

So you just do more business, you do more of your research, you do more of your communicating on the phone than on the laptop, and for many there's no laptop involved at all.

And then there's the fact that China, because it has a bunch of systems that intentionally don't interoperate with the rest of the world, including both its social and its financial system, you get these things like Alipay, which is essentially the local PayPal, which has been built for the mobile experience from the beginning.

So there's much more commerce on the phone, there are these applications like WeChat, which is essentially WhatsApp plus Facebook Messenger, plus Instagram, plus, plus, plus...

That has become a platform for ecommerce, so all of these things feed on each. Each of them has some counterpart in the United States, but taken together, they mean that the mobile phone ecosystem here is really the backbone of ecommerce, it's the backbone of social media and it is the device on which business is done.

That means that anyone who can start a business here, you don't just try to figure how to include mobile phones, as often happens in the States, you really ask yourself: once I've got the mobile phone piece of this done, do I need to bother with anything else? Often, the answer is no.

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[Cardiff Garcia] Yes, it's intriguing that they essentially skip the widespread adoption of the PC and went straight to mobile.

[Clay Shirky] That's absolutely right.

[Cardiff Garcia] Emily, in your reporting in China, when you were talking to all these activists and dissidents, did you get a sense for how important the mobile phone would be in the work that they do in getting their ideas to proliferate throughout China?

[Emily Parker] That's a good question. I started writing about China and the internet in 2004, so at that time there probably was more laptop use, I was seeing less mobile phone use. So I have a slightly different perspective on this, but I can say that over the past few years the explosion of mobile in China has been just amazing.

[Cardiff Garcia] Before we get to the story of Xiaomi, I want to talk about something else in Clay's book, which is a conceptual point that he made at the very beginning. Clay, you talk about the old Westphalian system of geopolitics, that countries are supposed to respect each other's sovereignty.

And you talk about how essentially it has made a resurgence, but in the information realm, that essentially China now treats information the way a lot of countries used to treat people, that there are border controls, that there are checks on the flows and movements and things like that.

Can you just talk about what you meant and why it matters now in the story of China's technological acceleration?

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[Clay Shirky] Sure. The point I made was that the Westphalian system, which is what people call the idea of strongly patrolled borders of nation states – it was hashed out in Europe in the 1650s; it's become obviously the normal system worldwide – the Westphalian system typically let money move internationally and people were highly restricted.

You had to have passports and visas and so forth. And people who thought about the internet in the 90s, myself and my colleagues, all assumed that information would move like money did, that it would be relatively borderless and would move from country to country.

For a while, that was true, but to my astonishment, and a bunch of people who have been watching the internet in China, China has actually created a system in which information flow is surprisingly controlled.

They control it in two different ways; at the border they famously have this great firewall policy, which is a set of policies that are enacted by all Chinese commercial internet firms for censorship and filtering and monitoring, but they also have a policy that says, we need to be able to attach a name and an identity to all information that gets produced.

So China has slowly moved into this real name for all posting on all bulletin board systems and blogs and social media as well. That degree of control gets at a lot of what Emily is writing about in her book, which is the ability to figure out who your comrades are, as she put it so beautifully in writing about the dissidents, relies on your being able to discover and speak with people elsewhere on the network.

China has just made it much easier to surveil and watch those people. In fact, we're in the middle of a fairly massive change just in the last six months, in terms of the amount of freedom in Chinese civil society, in general, and freedom of speech and freedom of assembly.

A lot of that has to do with reining in the internet's ability to just let people spontaneously associate.

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[Cardiff Garcia] To somebody who's never been to China, what's interesting about this is that obviously I've heard of the Chinese firewall, and both of you write at length about it, the idea being to keep information that might be controversial inside of China from getting inside.

But when we look at the numbers, just the sheer numbers, some of which we referred to earlier – 620 million people now using a smartphone, all connected to the internet – it sounds like it would be such a massive challenge for the Chinese Government to actually be able to control the information flowing just among that group of people.

Emily, do you want to give us a sense of exactly how they do it? What does this apparatus actually look like? How does it work?

[Emily Parker] Sure. As Clay mentioned, there are so many different levels of censorship in China; there's the Great Firewall of China, or as some people call it, the GFW, is just, most simply, a means of blocking certain kinds of information from entering China.

There are countless human censors, so it's not only technological. I write about that a little bit in my book. Some of these censors work at the web companies; they're actually working for companies; they're not part of State security. They're just people who are monitoring and changing the information as it comes in.

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[Cardiff Garcia] They do that to make sure that those companies don't get in trouble with the Government?

[Emily Parker] Pretty much, yes. So there are people who work at these companies who are, basically, in charge of making sure that content is acceptable on these platforms. There are keyword filters, so certain words that actually can't appear online, so there are all different levels of Chinese censorship.

But one thing that I'd like to point out, something that's changed a lot since I've been writing about China, I think when I started writing about China and the internet, there was a lot of emphasis on this Great Firewall of China and all these people inside China who were trying to jump over the firewall.

You can jump over the firewall, for example, by using Virtual Private Networks or proxy servers. I think now, actually, the firewall is not the most important part of the story. The most important part of the story is that China has formidable domestic competitors to Facebook and Twitter.

Yes, Facebook and Twitter are not allowed in China, so that's maybe what started this, but as a result, you have WeChat and you have Weibo, and those...

[Cardiff Garcia] Wait, what are those?

[Emily Parker] Sorry – as you know, WeChat is a little bit harder to describe. Clay described it as being Whatsapp plus Facebook Messenger plus Instagram. I think it's a...

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[Cardiff Garcia] A combination of the things that we use as social networks, that it is a bunch of...?

[Emily Parker] Yes, I don't know exactly how to describe WeChat, but the key fact about WeChat is that there are hundreds of millions of Chinese people on WeChat. One thing I noticed about WeChat that is quite remarkable is that if you go to China and you are not on WeChat, you are almost a social pariah. It just doesn't work.

Here in the US, you often meet people who say, oh, I don't like Facebook, or I don't like Twitter, or I don't use social media, and that's okay; they can still exist in society.

But in China, if you're even visiting China and you're not on WeChat for a week – even Clay gave me a hard time once; he said, why are you not using WeChat? – because everything, everything is tied into WeChat. That's the only way most people communicate. If you email them, they might not write back. Gmail has had all sorts of problems in China.

But it's not just communication, and it's also for hailing a taxi or making a doctor's appointment, or paying back your friend, so it's this unbelievable – I don't even know how to explain it – it's this unbelievable, pervasive network.

The feeling that I get when I go to China is that there are two different information universes; there's WeChat in China, and there's Twitter and Facebook in the US, and the truth is that for most people in China, they're pretty happy with WeChat right now.

It has the features they want, all their friends are on it, they think it's cool. They're not actually trying to jump over the Great Firewall; they're actually quite happy with the service that they have. Would you agree with that, Clay?

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[Clay Shirky] Yes, absolutely. Only about 3% of the country uses VPNs and so the sense, I think, many people in the West have that the Great Firewall of China is somehow preventing the Chinese from getting out to the information they want ignores the Chinese experience, which is, as you say, there's a billion-and-a-third people here, the markets and the social context that people deal with are inside China.

So the much bigger threat that China faces from the internet is not people getting access to Chinese language Wikipedia or New York Times articles; it's that people will use social media to coordinate with one another. There's an episode that Emily writes about in her book, which is the Wenzhou train crash.

There was this horrific, high-speed train crash, the citizens documented it by taking photos of the train crash on their phones and circulating it before the Government knew it happened. It turned out that the train had crashed because corrupt officials had taken money intended for the signalling system and – stop me if you've heard this before – diverted some of this, so they ended up with substandard signalling: one train didn't know the other train had stopped, and you get this horrific accident.

The Government lost control of the narrative, they lost control of their reputation for competence, and it really freaked them out. This is back in, I think, 2011, about five or six years ago.

So to your question of how do they control information flow, they mostly don't control information flow in the way we associate with Romania or the GDR during the Cold War. They're perfectly happy to let people talk to each other about almost anything.

What they do is they create a huge incentive for the internet businesses, which are quite profitable, from not allowing a fairly narrow range of topics to get in circulation.

Because of this pressure, the internet industry has moved in the last five years from having a large number of small businesses to a small number of large businesses. There's now really only three very large internet companies standing: Baidu, Alibaba and Tencent. Baidu is, roughly,

Google, the search giant, plus a handful of social features. Alibaba is the ecommerce giant. And Tencent is the social media giant.

The Government prefers it that way because now they can make three phone calls and say, here are the things we don't want your users talking about. The Government actually, as Emily said, much of the censorship is done inside these commercial firms as a response to the incentives produced by the Government. It's not Government censors sitting around watching this stuff.

So they have very savvily outsourced the censorship to the people who have the largest commercial incentive not to piss off Beijing. And because there is this very small number of large companies, they can actually affect the way most of the country is able to communicate without having to have a completely draconian information control regime.

They just keep certain topics out of the conversation, off the table, some things are censored in advance, some things are censored by humans. But all they have to do is desynchronise most of the conversation from most people most of the time and they get what they want.

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[Cardiff Garcia] Yes, the point about economic incentives is interesting. We're going to get back to that, by the way, but Emily, in your book you talk about isolation, fear and apathy as essentially the three tools that governments can use to keep their populations from, I guess, rising up. I don't want to talk about revolution here or anything quite so drastic, although sometimes that's the case, but in order to maintain some level of control, those are the three tools that they use.

You use China as your example of isolation, and it seems like that's the trigger-point, that's the thing that the censors are looking for. They're not so much concerned with conventional complaints about the way the Government works, they're not so much concerned with complaints about injustices and things like that; those are permitted.

What they're really worried about is people starting to collaborate, to coordinate and to get everybody to go to one place and protest. Can you talk about that a little bit?

[Emily Parker] Sure. That's absolutely right. I think one of the biggest misunderstandings that the Western media or people in the West tend to have about the Chinese internet is that they think that the most

sensitive items on the Chinese internet are complaints or pieces of information.

The truth is, what Chinese censors are most concerned about is collective action. That is the red line. And so you would be surprised by the kinds of information that you will find in China, but what you can't do in China is use the internet as a means to organise. And there have been studies on this; even people who use the internet to organise in favour of the Government could fall on the wrong side of authority, because this is a really potentially destabilising tool.

Governments like the Chinese Government, much of their power lies in being able to isolate individuals from one another and isolate groups from one another. And so the greatest threat to their control is when individuals on their own volition are able to organise. That is why social media and the internet in China has the potential to be so transformative, because it allows people a platform or a townhall or a public space to actually gather.

In my book, the title of my book is Now I Know Who My Comrades are, and I try to focus a little bit on the psychological impact of the internet, in the sense that not only is a virtual gathering-space in that you could say, all right, I'd like for all of us to meet on this internet platform to talk about this topic; it's also a psychological gathering-place in the sense that if you disagree with the Chinese Government, if you have controversial views, for a lot of people in China, the internet was the first place where they discovered other people like them, because you can't find them in public, so you're going to find them online.

[Cardiff Garcia] Was it you that described the Chinese censorship system as the anaconda in the chandelier? In other words, that even a lot of dissidents use a certain amount of self-censorship and they know what they can get away with and what they can't, so they get away with as much as they can and then they stop just short of going over the edge.

Can you talk about that a little bit, because I found so many of the characters in your book to be fascinatingly self-contradictory, in a way? In other words, they understood what they were doing, but they weren't quite the firebrands that we might think of when we think of somebody who leads the charge into the middle of the town square and that kind of thing.

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[Emily Parker] Sure. The anaconda in the chandelier, I do reference that in my book, so the person who originally used that term was Perry

Link, but it refers to this idea, it's a strange metaphor, but this idea of a snake coiled in a chandelier, that won't necessarily strike or won't necessarily hurt you, but you're always aware that it's there.

He uses that as a metaphor for Chinese censorship in the sense that: no, a lot of times, it is not an authority knocking on your door or somebody giving you a phone call; it's this vague sense that somewhere out there there are lines that you shouldn't cross.

I would say that that probably is the most effective mechanism of censorship in China, because what it means is that you are constantly judging on your own what you can or you cannot say.

This is the hardest part of Chinese censorship because it refers to all the information that never makes it onto the internet in the first place; it's all the things that you stop. Sometimes people actually self-censor themselves more than is necessary.

So, yes, I think people are making all sorts of little calculations all the time, but Chinese internet users have been very savvy about this. They misspell words, they write about things obliquely... they have ways of communicating even within the parameters.

For example, they almost write in code. One of the most common examples is if you look at something like June 4th, which is the anniversary of the Tiananmen uprising, or the Tiananmen crackdown, rather...

[Clay Shirky] The massacre, actually.

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[Emily Parker] ...what Chinese web-users will do is they'll say May 35th instead of June 4th. There all sorts of things like that where they've found ways to write around the censors and [overtalking].

[Cardiff Garcia] Writing in code.

[Clay Shirky] The thing Emily was talking about actually, where you can actually get in trouble for agitating in favour of policies of the Chinese State, is going on right now.

We recently had an event where a group of users going by the label Diba organised themselves on a bulletin board here to go flood the Facebook wall of the recently-elected President of Taiwan, who is much more pro-Taiwanese independence and who does not toe the line on the

inevitability of reunification between the People's Republic of China, mainland China, and the Republic of China aka Taiwan.

They wanted to go flood this Facebook wall with these comments from mainland China, saying, basically, don't you dare imagine that China could be an independent state.

But to do that, of course, they had to evade Chinese censors, use VPNs, do what's called jumping the Great Firewall, in order to get to Facebook in the first place. So there they come in their thousands and they flood the Facebook page with something like 70,000 comments, and Beijing was flummoxed, because these were radically pro-nationalist youth.

And so that seems like good news and yet the directive came down from the Ministry that watches over media, saying, don't report this event too strongly – in part, because they were training people to jump firewall; in part, because once they engage in conversation directly with the Taiwanese, they will discover that the Taiwanese are not persuaded by Chinese arguments, believe different things than they do, want to have a conversation about it.

And Beijing has been so relentless about the obviousness of reunification that, in a way, the risk of the shock when they get outside of the Chinese internet sphere and start having these potential conversations makes even radically pro-China activities on the internet worrying to Beijing.

And so they've now instructed all the mainstream media outlets to not report too much about the Diba event because they're just not sure about spontaneous nationalism. Because, as Emily says, the threat there is that an organised group can change its mind.

[Emily Parker] I think that's another really important point about a misunderstanding that a lot of people have about the Chinese internet, which is that the Government uses the internet to stoke nationalism.

Maybe that can happen sometimes, but group nationalism on the Chinese internet is not always in the interests of the Government, because as Clay said, any group that uses technology as a means to organise could potentially be a threat. Even if initially it seems like they are pro-Government, it's hard to know where that energy will turn. And so that is always something that will attract attention of the authorities.

[Cardiff Garcia] I think this all serves as excellent context against which we can better understand the significance of the rise of Xiaomi, which we're going to talk about now. This is the company that Clay writes about in his book.

Clay, I have to confess, I had never heard of Xiaomi before I came your book, and yet, as you write early on, by some metrics, it is maybe the single most successful start-up we've ever known, that's ever existed. It's worth about \$45 billion now; that's happened in about five years.

I was curious to understand more about how a Chinese company could itself capture so much of the Chinese market share, which sounds like a horrible thing to say in some ways, if that makes sense, and yet when we think of China we think of industrial production; we don't think of a leader in industrial design. We think of it as the world's factory.

Things seem to be changing. Why don't you give us a little bit of background for why the conditions were in place for Xiaomi to become so successful, and then take us through the early years of Xiaomi itself?

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[Clay Shirky] First of all, the thing you said about them becoming the company that captured the Chinese market, that was surprising, because, in fact, that had never happened before; the number one and number two here were Apple and Samsung, a Korean company and an American company. So Xiaomi really does represent a switch from the world's workshop to the world's designers.

I'll tell the story as it happened to me, because this is the thing that originally got me interested in Xiaomi. I was here in 2013, doing some work for NYU; we've opened a campus here where I now teach, but I was doing some advance work. I needed a mobile phone, I had gotten lost in a mall. There was a place that had this nice-looking black phone. I was like, okay, I'll take that one, whatever, put a SIM card in it, go back to campus.

Every time I took that phone out of my pocket to do something, one of the Chinese kids would say to me, where did you get that? They didn't ask, what kind of phone is that? They all recognised it. They said, where did you get it?

And I said, well, I bought it at a store. And they said, that phone is sold out in all of China. Xiaomi, with the Mi 3, the phone I had gotten, had gotten the industrial design, operating system/quality/cost triangle so right that it had become the common desiderata of teenagers across China, and they had sold out. They couldn't keep up with the demand from China. I thought, this is new.

This is a phone where the industrial design comes from China, it speaks to the Chinese – they would speak of Lei Jun, the founder, in the same way that kids in the States speak of Steve Jobs. So I just started following the company.

The surprise turns out to be that although Xiaomi is quite a capable industrial design firm, their real innovations are in the marketing and design and supply chain, not in the manufacturing and industrial design. So when I looked into the company and discovered they'd only been founded in 2010, when I came across they were just in their fourth year of existence.

They bet the farm on that company three different ways right at their founding; they bet on open source, which is to say it's an android phone, but they bet that they could invest in making the operating system better and make an android experience that was really worth comparing to the iPhone; they bet on ecommerce: they only sell the phone online.

If you buy it in stores, it's because someone's bought it off them and is reselling it. They don't take the inventory risk, they don't take inventory back.

When a phone leaves the warehouse from Xiaomi, it has been sold, so they have this incredible visibility and containment across their entire delivery cycle. And then they bet on social media; all of their marketing is social media. They use social media to market their operating system upgrades, they use social media to market their new hardware.

They get users to talk to each other on social media. They don't buy bus-wraps, they don't buy billboards, they don't buy TV ads. Their marketing department has a software budget for writing software to help them manage their fans on social media.

So you see these three big bets: open source, ecommerce and social media. Had any one of those failed, Xiaomi would be a middling success story; they would have made a phone and some people would have bought it and they'd have made some money. But all three of those things played out well, they played out as they had imagined.

I think some things Americans often miss because of the Apple-centricity of our current ideal of innovation is that innovation can happen anywhere in a business; it doesn't just have to happen in the way the handset looks and works.

Xiaomi has actually innovated around the business process, how they make the phones, how they fund the phones, how they sell the phones,

how they improve the phones, and that matters so much more than the look and feel of the phone itself. They've got that right, but what they've really changed is how you are a manufacturing company in the 21st century.

In a way, I allude to this in the book: 2014 was the best year Xiaomi will ever have, because it was the last year anybody underestimated them. Consistently, through their first five years, people were saying, oh, they're doing a new operating system, but they're just going to have to sell it to Motorola; or they've launched a phone, but only people in big, rich coastal cities will buy it; that'll never play in the Chinese heartland.

And just over and over again, people assumed that they were going to fail while they were on their way to becoming the most valuable start-up in the world.

By the end of 2014, they had so terrified everybody else, including unseating Samsung in the world's largest mobile phone market, that you've now got all these companies copying not Apple but Xiaomi. Huawei, who's the big electronics manufacturer, has a new line of phones where they've copied Xiaomi.

There are new companies that have started up – OnePlus and Meizu – that are basically Xiaomi clones, ironically. There are companies like Vivo and OPPO that have changed their line.

These are all Chinese phone companies; they were all in that kind of middle market of their phones were fine, they were much cheaper than Samsung, but they weren't particularly well-designed or sexy or jazzy or anything like that, and now that's all changed.

So Xiaomi is, unfortunately for them, competing in the world that they've made, because they've become the company to learn from and the company to beat.

In fact, they just released their end-of-year results, and they missed their target - in part, because the Chinese economy is soft, but also in part because they've shown everyone else how it's done. I think that, in a way, that's going to be Xiaomi's legacy as much as their phones, which is they've just changed the dynamics of the mobile phone market, especially in China.

[Cardiff Garcia] Something else they did differently from Apple was that Xiaomi started as a software company. It got into hardware later. That has, I think, profound implications for the company, but it also might signal something about the way that business is going to be done,

especially for manufacturers, in the future. Can you talk about that for a little while?

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[Clay Shirky] Yes, it's exactly as you say. What they figured out was that for mobile phones, once Apple had set the model of: it's a slab of black glass, you drag your phone over it to get stuff done, there's been very little innovation. Cases get thinner, screens get bigger, but, really, a rectangle of touch-sensitive glass has been the phone since 2007. So what Xiaomi realised was for sufficiently complicated hardware, the interface is the user experience.

They spent their first year and a half not even building and selling a phone, but just making an operating system that ran well on other people's phones.

So their earliest users would download the Xiaomi operating system – it's called MIUI – they would download MIUI and they would install it on their Samsung phones. Xiaomi optimised their operating system to make Samsungs run better than when they were running Samsung software. In particular, battery life improved.

All phone manufacturers, when it comes time to designing the operating system, always assume users want more features and snappier performance and are perfectly willing to have to recharge every four hours, which, of course, for the actual owners of phones is just a horrific user experience.

Xiaomi, because they're so attuned to the customer, said, if we can make an operating system that makes battery life better, people will throw away the operating system that came with their phone and install this. They did that for a year before they shipped any hardware.

And so by the time the Mi 1 came along, their first actual phone, which is fall of 2011, they'd already had a year of understanding what the users wanted.

I think that software-first-hardware-later design model for a manufacturer that's coming to appliances, that's coming to dashboard parts of vehicles, once you separate the software and hardware layers, which is what computers do, the amount of innovation, the clock-speed for innovation on the software side is much faster than the clock-speed on the hardware side.

As you said, this is a model for manufacturing that I think recognises that these devices are not only digital, but in many ways, they are digital-first; the customers' experience of them is around the software piece more than the hardware piece.

The amount of innovation that's going on right now in car dashboards is similar to this. Once you've got the amount of screen real estate these cars have, you've got companies that are setting up, saying, we're an automotive company that doesn't produce anything physical. And I think Xiaomi's the company that's shown how you get into the manufacturing chain with that emphasis on the user experience at the interface level rather than at the hardware level.

[Cardiff Garcia] One other thing that struck me in the book about the phones themselves was that the phone you bought, known as the Mi 3, was an original design. You describe it as a very beautiful phone; it's an original phone.

But the next iteration, the Mi 4, is essentially an Apple knock-off, and essentially the company was trying to not have to choose between being an originator and being essentially a copycat.

It's fascinating to me that that kind of approach works in China, it doesn't harm them, probably because of looser IP laws, for which China's known, but it has harmed them in their efforts to expand abroad.

This is something that's fascinating too: this is a company that wants to compete abroad; it's not satisfied with just being successful inside of China. Can you talk about the particular challenges it's facing in expanding and also how it's going to have to adapt its business model if it wants to do that?

[Clay Shirky] Yes. Xiaomi has been global in its ambitions from the beginning. In the book I talk to an investor who said, somewhat ruefully, one of their big mistakes in going global was naming the company Xiaomi, which begins with an X, because that's not a familiar spelling pattern outside of China.

So they had to register Mi.com to be a more global-friendly URL, at considerable expense to the firm after the fact.

But what they found when they move outside of China is that for all of the appreciation of a well-designed, well-functioning, cheap phone, there are two kinds of issues they've hit; one is concern about China itself. When they began to sell the phone in Singapore or in Hong Kong, people

studied it and realised it was making calls back to a server back in Beijing, and there was a minor freak-out in the press.

Xiaomi came out and said, look, look, look, this is just performance information; every phone reports back how is it doing, are there hardware crashes, are there software crashes... we'll move that data outside the country.

Because as China flexes its muscles regionally, people are really concerned about that kind of reporting. So Xiaomi inherits a little bit of the concern about China as a political entity as it moves out.

Then the other issue is IP. The way the big phone companies work is they all cross-license their patent pools and each company essentially ponies up the money to do local research, but then licenses it to the others. So there is this sense of big companies peering with each other in these patent pools. Xiaomi got into that patent pool by buying Qualcomm chips, and that was thought to be unfair, that Xiaomi itself was ponying up the R&D money.

So when they moved into India, they were sued instantly by Ericsson, which is a large holder of mobile phone patents, and they had to back off and negotiate something. So they are wrestling with moving outwards into countries where it is much easier to enforce IP lawsuits against them and negotiating as they go.

One of the frustrations I have in talking to Americans about Xiaomi is they all want to know when will Xiaomi come to America. The answer I have is always about the same, which is: it kind of doesn't matter, because the American market isn't very big. As you pointed out, there are many fewer people in the United States than there are mobile phone owners in China.

But also, the countries for which Xiaomi is best suited are highly-populated but developing economies. They have a better shot at getting into Nigeria and Mexico and Indonesia than they do into France and Germany and the United States.

There are really three obstacles. One is: how much are people concerned about this being a Chinese phone. There's the IP obstacle; and then there's the fact that the markets that Xiaomi is going to pick are not going to be the things that Americans think of as the traditional mobile phone markets, Northern America and Western Europe.

Those markets are saturated. Apple has a much bigger market share. People are not as price-sensitive, so Xiaomi's advantages aren't as big.

So you can expect Xiaomi essentially to be moving in a equatorial band around the world rather than targeting the US and Europe.

[Cardiff Garcia] I want to shift gears a little bit for a second and talk about the maker movement in China, which both of you have written about. You've also both written about how the maker movement, the so-called do-it-yourself movement, in China differs from what it is here in the US.

In the US, being somebody who's in the maker movement is like a hipsterish, signalling mechanism so you can show people your counter-culture credibility and integrity. In China, it exists or it is developing now for much more pragmatic reasons. Emily, you're actually involved in a project of US-China collaboration. It has to do with the maker movement. Tell us about it and tell us about what being in the maker movement in China actually entails.

00:39:53

[Emily Parker] Sure. The maker movement in China, I would say, right now is completely exploding. It's almost at the level of a national policy. In that sense, it's quite different from the US. As you said, in the US, at least formally, when you think of makers or the maker movement, you think of guys tinkering in a garage or a basement...

[Cardiff Garcia] Like building a drone or something that delivers ice-cream or whatever.

[Emily Parker] Yes, just playing around. And it has a certain connotation here, and, yes, in the US as well; the US Government is clearly sponsoring the maker movement or aspects of the maker movement, because I think on a national level both the US and Chinese Governments see this as a way forward. They see this as, okay, we want our countries to be the centres of innovation and design, and they see the maker movement as a grassroots movement that could help create the new innovators.

I think in China... I visited a bunch of hackerspaces in China. What is a hackerspace? A hackerspace is a physical space where makers come together and they make things, and there are hackerspaces all over China. The government in Shanghai has sponsored what are called Innovation Houses in Shanghai, these physical spaces. And there are these maker fairs or maker festivals all over the world. In China, some of these will have tens of thousands of people.

I think, yes, in China, I would say, and maybe Clay would disagree with me, there's probably more of an entrepreneurial streak in the maker movement in China, in the sense that makers, of course, can be entrepreneurs or they can be just tinkerers.

In China, I would say there are a lot of people who are in the maker movement because they want to start a business or they want to start a company. And this is part of the reason why the Chinese Government is so interested in this movement.

One of the things that I've noticed about the maker movement in China that I think is interesting is that you think, okay, if the Chinese Government is really sponsoring this and really encouraging this, does this somehow violate the grassroots spirit of the maker movement? But my impression from talking to Chinese makers is that they're okay with this support, because in China, if you don't have Government support, something's not going to happen. So if you want to have 30,000 people gathering for a maker festival in China, the Chinese Government pretty much better be in sync with that.

[Cardiff Garcia] How involved would they be with the commercial aspects of any products that emerge from this?

So if somebody comes up with a big hit, if they come up with a new idea or a new product that ends up being potentially really successful throughout China and maybe elsewhere, does the Government have some kind of a stake in that? Are they essentially partners with the State, or do they still get to reap the rewards of their work?

00:42:36

[Emily Parker] I don't know. Clay, you might have a better...

[Clay Shirky] They are partners of the State in that the State has an incentive for economic growth and employment. It is not as direct, I think, as: we kicked in for the company and we've got 5%.

The Chinese Government is, for example, the sole landowner in all of China. You can only lease land from the Government. There's no private property in the way that we think of private property for real estate and so forth.

So when Emily says, this is Government policy, it's Government policy. Like Li Keqiang, the Premier, has said, this is the year of the makerspace.

There was a big maker fair in Shenzhen, in the centrepiece of electronics manufacturing in China, and what they're really excited about is moving from low-value manufacturing, which is now moving to Vietnam, it's moving to Mexico, it's moving to Bangladesh... as the wages for their workers increase and the low-skilled work goes elsewhere, China is looking to climb up the value chain.

The separation that we're used to between Government support and market rewards doesn't exist here. It's all much more comingled. So China benefits if people gets jobs, and very often the maker movement is looked to as a source of the next large-scale companies that will invent things that people will want and will be able to be manufactured here.

00:44:16

[Emily Parker] I agree with that characterisation, and I think the way to look at the maker movement in China is it's part of a big push to move from Made in China to Designed in China. The maker movement is a way... the Chinese Government... you hear this in China; they say, where is the Chinese Steve Jobs? Who is going to create the Chinese Steve Jobs?

That's how the authorities see it; they're like: let's have some world-class companies come out of China, let's have some world-class design come out of China.

So that's why authorities and universities are really promoting this movement. It raises a lot of really interesting questions about where does innovation come from? Can a Government really promote innovation, or does it need to come more organically from the bottom-up?

I think one of the tensions that you still have in China are in the education system. There have been a lot of questions about: does the Chinese education system really foster the innovation that the authorities want?

China has a very rigid testing system, you have people studying for entrance examinations for universities; it's very rote; and so I think there's a lot of things that will have to happen in China in order to create this innovative environment that authorities are really hoping to achieve.

[Clay Shirky] You alluded earlier to the clash of the maker movement as counter-culture in the United States versus the maker movement as culture here, and we see that really strongly. There is none of that kind of nostalgia or the recapturing the lost past. In China, the moment when this country knew how to make things is just a synonym

for this morning. There's no disconnect between small batch and large batch.

This is a country that makes most of everything. So you get these interesting culture clashes.

A friend of mine here who started XinCheJian, one of the first makerspaces in China, has seen this happen in Shenzhen, again in the electronics workshop of China, where kids who've gotten \$1 million on Kickstarter, which they think of as the most money anyone has ever seen, roll into town like they're about to make somebody's day, and they're looking for a factory to make their Kickstarter thing because they need 10,000 units.

They end up talking to people who are like, well, maybe we could tool down to just product 10,000 of something. Because at the scale that Shenzhen operates, 10,000 is the trial run to see if a product will sell.

The impedance gap, where the most successful Kickstarters are generating a volume of material that just barely meets the bottom end of what a factory would consider economically viable, is one of the places where you can see this gap. In some cases, the factories just take on Kickstarter projects just as free R&D. They're basically saying, you don't even have enough money for us to make a profit, but you've made this little thing with the gooseneck and the clamp – well, we'll just see how that works. We'll basically produce it for you at cost, because the retooling is going to eat up the money you're going to give us.

So the sense that is often true in the US, that the really successful Kickstarters have hit this enormous peak of scale and volume, when it runs into the actual conditions of making things for the whole world, turns out to be a tiny drop in the bucket.

One of the things I'm curious about - because I also look at Kickstarter dynamics, I study, in particular, social media – is those Kickstarters continue to grow until you have \$20 million Kickstarter projects that are going to end up needing 100,000 of something first crack out of the box. At that point, the kind of Kickstarter-to-Shenzhen route really becomes important.

One of my former students helps essentially manage hardware projects moving to China, but right now you still see the biggest successes in the maker movement in the States are dwarfed by what the Chinese are capable of on the average Thursday.

00:48:52

[Emily Parker] You also asked about this maker competition. We organised a competition for the US and China to innovate – it was called Green Electronics and it was a maker competition, and the idea was to use old electronics and create something new out of them. And...

[Cardiff Garcia] Sorry- who's We?

[Emily Parker] Sorry – it was New America, it was Tsinghua University, it was Arizona State University, it was a bunch of hackerspaces in the US and China, it was Slate... it was a big group of people who organised to do this, and the contest was held on Instructables.com.

This is actually, in some ways, the most salient feature of this contest in that today's maker movement is largely an internet phenomenon. That's a really important facet of the maker movement.

I think when we talked about this idea of tinkerers in garages making things, this idea of what the maker movement had been in the past, now it's very much, okay, I make something, maybe I get ideas for making that thing from the internet because I'm seeing videos of other people's projects and then I'm posting my project online and it becomes a sharing movement.

I think that's a really, really important part about today's maker movement, and it's really important for the US and China, because people do ask, okay, what are the unique characteristics of the Chinese maker movement?

And there are some that we mentioned, but at the same time it's part of a much larger global pattern where Chinese makers are looking at videos from the US, and US makers are looking at videos from other parts of the world, and it really is a really interesting phenomenon of sharing of ideas and processes and even designs.

00:50:28

[Cardiff Garcia] One of the reasons that I was fascinated both by the story of Xiaomi and by the maker movement is that they are real world examples of the direction that China seems to want to steer its economy towards. So those of us who follow macroeconomic trends know that China's in the middle of this really wrenching rebalancing. We've seen that in the last couple of years; it is likely to last for some time.

All of the countries that have followed a similar industrialisation-led development model that's a combination of State-directed investment and credit, the export-led model, eventually has to rebalance towards something that resembles a modern services-based economy that also puts an emphasis on consumption in addition to investment and in addition to exports.

That is a really difficult process, and usually it entails a period of slower economic growth than what got it there. So if China's been growing at 7% to 10% - in some cases, even faster than that – for three decades, probably now it's going to be in the low to mid single digits for a little while. In the near-term, that sounds like a pessimistic story. In the long-term, it's probably a healthy and a necessary thing.

But at the same time, something to keep in mind, and I'm getting this from a video about China that the economist, Tyler Cowen, posted not long ago, China has throughout this time made fairly substantial investments in human capital, in education.

You mentioned a second ago, Emily, that a lot of these collaborative processes involve the universities there. Clay, you're teaching university students in China. I guess I want to ask the two of you if you think that this kind of near-term pessimism, longer-term optimism is warranted, if that's an appropriate way to interpret the Chinese economic story, or if maybe we're all just over our skis here because this is such a big, complex issue about a big, complex country, that maybe it's impossible to understand.

Clay, do you want to take first crack at this one?

00:52:37

[Clay Shirky] Sure. First of all, my students are amazing. At NYU, we have half international students, half students of the PRC, and I hear about a dearth of creativity in the PRC kids. I don't see it in the classroom. They are certainly more attentive, they are more polite, they wait to be called on more rather than raising their hand and then thinking of the answers, as the Americans do, but what I see in my classroom makes me optimistic for China's human capital.

Obviously, NYU, our language of instruction is English; we recruit from a fairly specific population, but it's not just all the fuerdai, the children of the rich; it's not just children of Government ministers. We've got a pretty wide range, not just of students from places all over China, but also in terms of income and class and so forth.

So I am sure that the school system could change to be more encouraging of more different thinking styles, less rigid, less reliant on this one massive super-SAT test that they have at the end of high school, but in terms of energy, intellect, drive and creativity, I think China will be well-served.

But, to your second point about is this all such a massive hairball of a system that it's hard to just isolate it, I think that's also true. Again, one of the gearshifts I've had to go through as an American is, economics and politics do not exist at the remove in this country that they do in the United States.

And you alluded to 10% growth – what 10% growth has done for China is it has meant in any year in which the economy has grown by 10%, it does not have to choose between cracking down on corruption and benefiting from economic growth.

Because even if you take 5% off the top for corruption, you still have 5% growth, which is an absolutely torrid rate of growth, more than double what the US is currently going through.

One of the things we're in the middle of here, the current Government, the Xi Jinping administration, is in this big crackdown on corruption, because the period of slowing economic growth is forcing a choice between tolerating corruption and emphasising growth. How China changes under those political pressures is, I think, at least as important as how well-served they are by intellectual capital.

The other dilemma that they have, again tied to this hairball of Government and the economy, is, particularly in my area, in internet services and social media, the Government talks about innovation and entrepreneurship all the time, but their extraordinarily strong preference for there being a small number of large companies has in a way already dampened internet innovation because the typical exit now is to be bought by one of the big three companies.

So the economic goals of entrepreneurship and growth around a services economy are plainly there, but the political imperative to keep the number of powerful internet businesses down to a manageable number is cross-cutting against that move towards entrepreneurship.

Those two things are intersecting badly right now. There are no Chinese internet giants that have been able to offer their services outside of China to any large audience.

Emily was talking about WeChat earlier – we've all been thinking for the last couple of years it's an amazing product, and yet when they tried to move outside the US, it turned out to be so optimised for the oddities of the Chinese market, Chinese payment systems, collaborating well with Beijing's expectations of censorship, and those aren't assets in any other country in the world.

So if China's only problem was human capital, you would be so bullish on this country, because the young people are so interested and engaged even if they're underserved by their education system. But there are so many other complexities at the same time that it really...

Again, today, someone will have written the China, the 21st Century Hegemon, and China's Inevitable Collapse blog posts, and each of those two posts will be convincing on its own terms. It's just it's all of both all the time, which is one of the things that makes the country interesting to watch.

00:57:34

[Cardiff Garcia] Emily, Clay refers to the difficulty of providing social and economic freedom without the same kind of political freedom that the developed world enjoys. Is that an approach that you think is sustainable, or does the kind of social and economic freedom that we all hope eventually comes to China and everywhere else eventually make it really difficult to maintain the kind of political control that the Chinese Government still enjoys now?

[Emily Parker] That is the key question for today, and I think that China has really surprised a lot of people, because when you look at the internet, for example, early on people said there is no way China is going to be able to have its cake and eat it too.

If you bring the internet to China, all of a sudden it's going to be an explosion of information, and you can't have really vibrant internet culture without having subsequent political openness. That has not happened.

China has hundreds of millions of people online and they have very systematic control, so they have managed to have their cake and eat it too.

But I think the real question now, it is very clear that innovation is key for the Chinese Government, that they want China to be an innovation economy, they want to change the idea of Made in China, they don't want to be seen as a copycat, they want a Chinese Steve Jobs.

Can you do that in China's current political environment? This is going to be a real question.

You look at censorship, for example; I think some people will say, well, of course it's fine, because business is here and politics are there, and so, yes, they're censoring political keywords, but that's not going to affect start-ups.

But that's not entirely true, because there is so much information that you can't get in China, so if you're a researcher, even if you're an astronomer, you're going to somewhere come up against the Great Firewall, even accidentally.

There are all sorts of stories about this. For example, if there are sensitive numbers that have to do with a date when something happened in China that is sensitive, those numbers could actually be blocked in an online transaction. This has actually happened. Or if you're a company and your product name sounds like something else in Chinese, you're going to also have trouble on the internet.

So I think because there is such a pervasive censorship system and at the same time there is so much interesting business activity, I don't think we can say that politics and economics in China are going to stay completely separate. So this tension already exists and it's going to keep existing going forward.

[Cardiff Garcia] There was something similar about the way that I read both of your books, which is that when I started, the phrase that kept coming to mind was: the dictator's dilemma.

It's a phrase from political science; it's often applied to Cuba and some other post-Soviet communist economies and the decisions that they had to make and, specifically, as the phrase implies, it was a dilemma.

What's interesting about it in the case of China was that by the time I'd finished reading the China chapter in Emily's book, or by the time I'd finished reading Little Rice, as in the case of Clay's book, I wasn't thinking about it so much because I had to remind myself that China's a completely different beast. That these other economies would vacillate between opening up a little bit because by keeping everything so closed, their economies really suffered, especially as the rest of the world would accelerate and then they'd have to open up a little bit just to attract, in many cases, foreign currency, hard currency.

But as soon as they started opening up their economies, they'd constrict it again because they were starting to lose control, and eventually they were

faced with a stark choice, a stark realisation that, actually, we can either be open and we can prosper, or we can be closed and it's not going to work.

I say this outside the context of the usual divides of left and right and what your political ideologies are. In the case of China, I'm reminded of the fact that we don't yet know whether or not some similar process is going to take shape in an era of slower economic growth, or if this is just going to have a different ending and we haven't seen this story play out yet.

That is a very esoteric and open-ended thing to say. Emily, you are now a two-time guest on our podcast, so I'm going to give the last word to Clay. Clay, what do you think about this trade-off, and about how much longer do you think it'll take before we know the answer, or is this just going to forever be a kind of indefinite open question in the case of China?

[Clay Shirky] To answer those questions back-to-front, and as Emily said, you are now touching on the really open-ended question, there is no one in the worlds of either political science or economics who offers a story so convincing, an answer so convincing, to that question that you can't read the opposite story and think that there's something to the disagreeing analysis.

The forces at play here are so fundamental.

But to answer your question back-to-front, we will know something really important by 2025, because whatever else we can say about the peculiarities of the current Chinese system, and they have adopted, for an authoritarian country, many surprising checks and balances, like regular changes of the Chief Executive every ten years, and voting within the Communist Party and so on, but what we absolutely know from world history is there is no industrialised state that has been run by a single party for 75 years in a row.

Many states have made it to middle age, Stroessner's Paraguay, the LDP in Japan, the PRI in Mexico, obviously the Soviet Union; many states have made it into middle age; none of them has made it to 75.

The Chinese Government is 65 years old, which means sometime in the next ten years one of two conditions gets violated; either the idea that there is some upper limit to single-party control of industrialised states turns out to have just been a historical anomaly, there's nothing fundamental about it, or the expectation that China will muddle along, opening up and then closing down, opening up and closing down, in the

manner you said, muddling through is really their core competence. Is there some upper limit to muddling through?

To the larger forces of the dictator's dilemma, China has the dictator's dilemma at a scale that no one else in the world does. This isn't just about the internet and it isn't just about now. From Mao's let 100 flowers bloom, let 100 schools of thought contend, through the Zhao [?] live funeral when people turned out in Tiananmen Square and it turned into demands for a different kind of government.

There was a Democracy Wall movement in Beijing a few years later. Famously, the Tiananmen uprising. China has consistently faced the following problem: whenever the Chinese citizens get together in large enough numbers and begin to compare notes, they start to make demands of Beijing that Beijing can't answer while staying as a single party in power.

Very often, what people want is an end to corruption, which requires some kind of systemic check and balance, a two-party system, an independent judiciary, a free press, something.

And, in fact, one of the reasons for the ferocity of the current crackdown on corruption is that the State wants to clean up corruption as a function of Communist Party power rather than admitting into its idea of governance a civil society that essentially reduces corruption as a side effect of having an independent judiciary. We have this paradoxical condition here now where there's a crackdown on corruption and there is also a crackdown on human rights lawyers, and there is a crackdown on NGOs, and there is a crackdown on internet speech.

So the dictator's dilemma is alive and well in this country. You can see it big and small every day. What we don't know is whether or not the kind of technocratic checks and balances that China has put in place after Mr Deng, after the famous opening-up of China in the 1970s, that system has remained adaptive from then to now, but the pressures it's under as its economy downshifts look quite severe.

So that is a long-winded way of saying all of these forces are in play, no one knows what will happen, but the basic scenario you laid out of the dictator's dilemma is the daily life of this country right now. And if you are betting on the lessons of history, you are betting that China is a multi-party state of some sort or other by 2025.

[Cardiff Garcia] I think that's a good place to conclude. Emily Parker; the book is: Now I Know Who My Comrades Are. Clay Shirky; the book

is: Little Rice: Smartphones, Xiaomi and the Chinese Dream. This has been a great chat, guys. Thanks so much for being on Alphachatterbox.

[Clay Shirky] Great! Thanks for having us.

[Emily Parker] Thank you so much.