EPISODE 875

[INTRODUCTION]

[00:00:00] JM: From Africa, to India, to Asia, to South America, computer science and programming are rising in popularity in every emerging market. Each of these markets has a regional needs for technology, just like every culture develops its own food and television. Every culture needs different types of applications to run their lives.

In Vietnam, the day-to-day life of the citizen is different than it is in the United States. Yes, everyone needs Google and YouTube, and Instagram, but the trends in messaging, and food delivery, and the gig economy, and other B2C technology sectors are considerably different than the West.

Charles Lee is the founder of Coder School, a coding school in Vietnam. Before moving to Vietnam to start CoderSchool, he worked as a software engineer in San Francisco for several years. In today's show, Charles describes the difference between the U.S. and Vietnamese technology sectors, from consumer applications, to business software, to coding education.

[SPONSOR MESSAGE]

[00:01:14] JM: DigitalOcean is a simple, developer friendly cloud platform. DigitalOcean is optimized to make managing and scaling applications easy with an intuitive API, multiple storage options, integrated firewalls, load balancers and more. With predictable pricing and flexible configurations and world-class customer support, you'll get access to all the infrastructure services you need to grow. DigitalOcean is simple. If you don't need the complexity of the complex cloud providers, try out DigitalOcean with their simple interface and their great customer support, plus they've got 2,000+ tutorials to help you stay up-to-date with the latest open source software and languages and frameworks. You can get started on DigitalOcean for free at do.co/sedaily.

One thing that makes DigitalOcean special is they're really interested in long-term developer productivity, and I remember one particular example of this when I found a tutorial in

DigitalOcean about how to get started on a different cloud provider. I thought that really stood for a sense of confidence, and an attention to just getting developers off the ground faster, and they've continued to do that with DigitalOcean today. All their services are easy to use and have simple interfaces.

Try it out at do.co/sedaily. That's the D-O.C-O/sedaily. You will get started for free with some free credits. Thanks to DigitalOcean for being a sponsor of Software Engineering Daily.

[INTERVIEW CONTINUED]

[00:03:15] JM: Charles Lee, welcome to Software Engineering Daily.

[00:03:17] CL: Hi. It's a pleasure to be here.

[00:03:20] JM: Today we're going to talk about the technology landscape in Vietnam, and particularly the world of coding education in Vietnam. Let's just start with the tech industry. Describe the technology industry in Vietnam.

[00:03:36] CL: Yeah. If I had to describe the tech industry in Vietnam, I'd use one word, which is growing. So it's going really fast. There're a lot of companies both within Vietnam and from outside Vietnam. They're coming here and setting up shop and having developers, building awesome products.

I've been here for about four years. In that time I've just seen the explosion of developers. But even when I came here four years ago, I remember the statistics being that Vietnam had the most apps on the Google Play Store by a large margin of any country in Southeast Asia.

[00:04:09] JM: That's a strange statistic.

[00:04:11] CL: Yeah. At the time, actually, four years ago, the talk of the town was Flappy Bird. So there's a lot of emphasis on mobile applications at that time.

[00:04:22] JM: How was it possible that the most smartphone apps from any country come out of Vietnam? What were the apps? What were they even doing? How are there so many of them?

[00:04:34] CL: Yeah. So, there's like kind of a dark side to that statistic, which also is part of the reason that we're here to try to fix a few of these things, which is like there are the most number of apps and most number of developers, but the overall quality, as Google defined it, was not very high. Meaning, there were a lot of kind of copies of other apps and people are just quick to kind of copy apps or make these kind of apps that didn't create a lot of value and push them to the Play Store.

[00:04:59] JM: Wow! So, it says there are lots of technologists even perhaps enterprising technologists in Vietnam, but they don't have an ethos or they don't have high enough standards, or they don't have guidance towards a higher ideal than just copy-pasting an app and then launching it in the App Store.

[00:05:26] CL: Yeah. I would say that there are a lot of eager people who are, yeah, smart enough to figure technology maybe even on their own, builds lots of great things. Yeah, but perhaps, not having like a longer term vision or knowing exactly what they want to build and add to the world.

[00:05:43] JM: What's the public perception of the tech industry in Vietnam? In America, it's become pretty aspirational to go into the technology world. Do people aspire to become software engineers in Vietnam?

[00:05:58] CL: This is a funny question. When I first came here four years ago, I came from San Francisco. So, it was already beat into me that technology is the cure to all the world's problems and it's the way to change the world.

When I first came, actually, I think Vietnam was transitioning a bit. Historically, the big multinational corporations that came here opened up marketing here first. So, you have your big global brands, your consumer product brands are hiring to sell products in Vietnam, and those people always notably start with marketing, sales, business type operations.

So, I think, historically all the best jobs kind of at international scale were on the business kind of marketing side, and coding was thought as more of the outsourcing kind of this factory worker-esque thing back in the day. Now, that's changed really rapidly. I think, today, you've had a lot of really successful Vietnamese software engineers that have built some amazing things and people are starting to see the true impact that technology can have on the world. It's become much more aspirational.

[00:07:05] JM: Yeah, there was this thing in – I think it was like the 90s and the early 2000s, and I guess it still exists some degree today, the word outsourcing, where you would send your – Kind of undifferentiated heavy lifting technology, like building your Java G2EE app to Vietnam or a place in India somewhere. This was never a very good strategy or it was a good strategy for getting stuff out there quickly, I guess, but it led to unmaintainable code. It led to a lack of creativity developing among those engineers whose stuff was outsourced to. So, you're saying that that was endemic in Vietnam.

[00:07:58] CL: Yeah. All the early industry software-wise was completely around that mystery. You talked about G2EE. That sounds terrible. One of my favorite stories is one of our students that we taught Ruby on Rails to. He came from programming FORTRAN for a bank. Sorry, it wasn't FORTRAN – And he messed up. He was doing COBOL . I can't even remember.

[00:08:18] JM: COBOL? Yeah, COBOL.

[00:08:20] CL: Yeah. He's doing COBOL for a bank in France and – Look. I think that one thing I've learned actually is how big that industry really is and how much software is being maintained by people all over the world and why it helps the world go round. So, I can't disparage the importance of that industry.

But at the same time, you're absolutely right. I don't think it instills good software engineering principles in people to be in the industry. I think there's an emphasis on maybe doing things as quickly as possible, as cheaply as possible without always weighing the long-term interests of the architecture or what the customer needs in that instance.

[00:09:01] JM: Someday I'm going to look up what COBOL code looks like. I have not seen it. I just talk about it like something that would be found in an archeological dig. But it's alive and well. I need to do some shows about it too perhaps, but that's not what this show is about.

There are many expats that go to Vietnam to have a cheap standard of living while they work remotely for a western company or they an entrepreneur. Why is Vietnam an appealing place as a digital nomad?

[00:09:37] CL: I really cringe at hearing that term, digital nomad.

[00:09:39] JM: Oh, really?

[00:09:41] CL: Well, also, it's because that's actually how I got started. So, I had been working on various startups in San Francisco and then I realized that they weren't working out. It was time for me to kind of go back to get a job.

Before I did that, I was like I should have one last hurrah. I remember Googling, typing like best places in the world to be a digital nomad, because that was kind of my plan for a while. I can't remember the site now, but there's a site that rings all the cities in the world by –

[00:10:07] JM: Nomad list.

[00:10:08] CL: Yeah. Probably nomad list. Okay, there you go. I need to look that up. At the time, Chiang Mai, Thailand, that was number one. There're all these reasons why. But Vietnam, Saigon, Vietnam, or Ho Chi Minh City, was number two. So this was kind of on the way to Thailand. So, I stopped here first.

But when I got here, yeah, I was surprised that there is definitely a thriving community of expats here for a lot of reasons. Low-cost living is one, possibly just kind of the atmosphere. There's really like excitement and buzz the country and the city is growing really fast, and especially in terms of how open they are to Americans, to people from other countries, to new technologies, new companies, new ideas. It's really very exciting being here.

[00:10:50] JM: When you say they're open to new ideas and new technologies, would you contrast that with how open people in San Francisco or Silicon Valley for example are to new technologies and new ideas?

[00:11:09] CL: Yeah, that's a good question. I want to be sure to choose my words carefully.

[00:11:14] JM: Yes. Yes, you should.

[00:11:16] CL: Yeah. The thing I've seen here – I say this story. When we first started Coder School – I mean, it actually just started as, "Hey, I'm going to teach this class about iOS development. I'm this guy from San Francisco, but I don't know anything about anyone here. I've only been here for about a month at the time." A few people [inaudible 00:11:32] try it. [inaudible 00:11:33] I put up this forum, and it's a Google forum. I posted on this Facebook group and I had 200 people sign up in the first about a week and a half and has interest in the class. When I say open, it's like people are here just so I think open – Maybe the better word is like hungry or eager for new opportunities, new knowledge, kind of new stuff to learn.

In San Francisco, I think, yes, people are extraordinarily open-minded, always very growth mindset. I think the growth mindset is by default. If you're not writing one blog post a week, you should feel bad about yourself type of culture, which is awesome. At the same time, I think people have so many options. There are so many things to do that are kind of hard. I think a lot of people get paralyzed by knowing what to do next, or also sometimes like the kind of dark side is you can be a little bit entitled to always having the best options around you at any given time.

[00:12:27] JM: Indeed. So, what about the usage of technology in Vietnam? I visited China a while ago and we all know about the mobile payments revolution in China. We all know about the lack of Google in China and the predominance of WeChat. I underestimated the downstream effects of how that would impact my day-to-day life. Just the differences in available technology and technological norms. Tell me about your experience using technology in Vietnam and how it compares to the Western world.

[00:13:16] CL: That's a really fascinating question. By the way, you should please visit Vietnam as well too if you've been to China. But two is like absolutely – We're talking about – I had the

same experience when I've been to other countries, particularly China. So I really encourage anyone who's listening that you should actually get out of the U.S. for a little bit [inaudible 00:13:32] other places.

[00:13:32] JM: It's jarring.

[00:13:33] CL: Yeah. I think in the — Being in the U.S., I had no idea about this whole world, yeah, this Googlist world in China, this WeChat dominated world. It's so different and same technology kind of applied in that way really gave me a different perspective on really what we do or like kind of – That was totally like mind-blowing experience for me as well.

Yeah. Here in Vietnam, I think that it's interesting, because I guess – How do I say this? Unlike the development scale, the country is still classified as an emerging market. So, there are some things that are here and some things aren't. I would say right now, it's a very fascinating place, because these questions you're asking are about to become determined. Will WeChat win or will it be some more traditional thinking type solution that wins?

Right now, it's like kind of the Wild Wild West in many ways. Particularly like you bring up this WeChat example. There are like – China is very close to Vietnam, but I think culturally Vietnam has gone more with like Western. Facebook is hugely popular here, for example.

[00:14:32] JM: The blue app.

[00:14:34] CL: The blue app.

[00:14:35] JM: As supposed to the rainbow Instagram app. Because here in America, now if you say Facebook is big. What people actually mean is Instagram is big, at least for among young people. But my understanding in that developing countries or some countries that are between developing and developed. Those are probably bad extremes to even use. But the big blue app is still quite predominant. People like going on Facebook.

[00:14:59] CL: Yeah, and people use Facebook in completely different ways. I think the first thing, which is very basic, is people use Facebook for everything, including professional

settings. So you meet someone at a networking event. They add you on Facebook, which I always thought was a bit weird, because I put personal stuff on Facebook. In the U.S., we'd used LinkedIn for something like this.

In terms of how people communicate, like Facebook Messenger for everything. These types of things are different here for sure. But also in terms of what you buy, like all the commerce. People buy stuff on Facebook all the time, which I've never done in the U.S.

[00:15:28] JM: Right. I need to try that marketplace. The WeChat thing – So, is there like an emergent WeChat versus western technology, like WeChat versus Facebook or WeChat versus WhatsApp battle taking place?

[00:15:45] CL: Yeah, actually there absolutely is and there's more than just two players here. There's also a local player called Zalo, which is –

[00:15:51] JM: Zalo.

[00:15:52] CL: Yeah, it's Vietnam's first Unicorn. It's a messenger. It's definitely – I think I can say this. Yeah, it's definitely inspired by WeChat if you look at it. But that's probably the most popular app. I don't know the statistics on this, but kind of anecdotally, that's the most popular app. But at the same time, yes, everyone has Facebook. Yes, most people have WeChat. I communicate a lot over WhatsApp as well.

The biggest minority group by just numbers of non-Vietnamese, the biggest foreign population is actually Korean. A lot of people, you'll see KakaoTalk here as well too. It's really just fascinating how there's all these players and it's kind of this like melting pot of technologies in Vietnam, which is maybe part of the reason why it's so fun to be here.

[00:16:33] JM: Although I'm sure it gets like annoying at times, where you have to swap between like 50 different messaging. There's also enough western messaging apps, and now

you've got like five other ones that are just probably you have different subsets of people that just have different norms, so like KakaoTalk because of the stickers or something.

[00:16:54] CL: Yeah. But it's also funny how like I think in America we tend to want one winner. I think as Americans we're like, "No. We should only one app. You don't have the app, I don't want to talk to you. Lots of countries are like that. Here, it's like you don't have that actually from the beginning. People are just like, "Oh, how do you want to be contacted?" It's not a big deal actually.

[00:17:13] JM: We don't have to talk about this, but given that you're somebody who's wordly, and I only mean that in the sense that you have been to places around the world. Do you have an opinion on the norms that are developing in China around how the government is using messaging apps to cordon the public behavior in certain ways? Is that a feature or a bug?

[00:17:42] CL: Yeah, that's a pretty spicy question. Hard to answer on my personal views on it. I will say though that I think regardless of that's a future bug. I think that's a question that's facing a lot of countries today, and Vietnam is no exception.

So one of the bigger thing that's happening in Vietnam is Vietnam passed this data privacy law recently, which is saying that kind of a more China-esque approach saying information about Vietnamese citizens needs to be kept in Vietnam. So, like Facebook would have to start keeping information about their users here in Vietnam, Google as well. Right now it's kind of – I'm trying to say it carefully because – But, yeah. Right now, I think that's kind of an open issue on what the path this country will go down. Whether it's going to be more like – Whether they're going to go with more of the Chinese viewpoint or perhaps more like the American viewpoint.

[00:18:35] JM: Indeed. What about consumer apps? So, I don't travel that much, but this is not like a travel drop here. But I went to Tel Aviv recently, and there was like so much scooter usage in Tel Aviv. Scooters were really practical for Tel Aviv, and scooters are pretty practical in San Francisco. Scooters are pretty practical in other areas of the United States, but they were extremely practical in Tel Aviv. It's the first time I realized, "Okay. All right. I'm officially a scooter believe. I officially believe that this is something that's going to be a big deal." I've had similar

experiences with things like food delivery. Tell me about things like food delivery and ridesharing and scooter-sharing. How have these technologies impacted Vietnam?

[00:19:23] CL: That's a good question. I think the first thing I thought about when you asked those questions is, I mean, what's different about Vietnam or perhaps other emerging markets. The biggest difference is the overall cost of labor is much lower in the U.S. So, the solutions here tend to be a bit more manual.

Also, I think they can scale much faster, because they don't have as many headaches on the labor side. So, in terms of food delivery, food delivery is everywhere. It's fantastic actually, and I think it's a lot easier and faster than perhaps in San Francisco.

In terms of technologies, I remember the biggest in the past four years, there used to be these guys that would – These motorbikes, these mopeds that would just be on the corner waiting to pick people up. So you'd actually have your friendly neighborhood motorbike guy who'd take you to work. Those guys have all been completely replaced by the apps.

The big one out here in Southeast Asia is called Grab, and they're the competitor Uber in this space, until Uber left a few years ago. But that's completely changed the landscape I think. You see that slowly happening in lots of different industries that are particularly inefficient. So that was one. Logistics is being changed a lot by these apps as well.

[00:20:39] JM: It's like ecommerce stuff.

[00:20:41] CL: Yeah, also ecommerce. I mean, I think one of the things that people always miss most, for America is Amazon, amazon same day delivery. That's pretty crazy. Actually, that exists here too. There are ecommerce solutions here that can ship you things so quickly. It's amazing, just because labor is kind of everywhere.

[00:20:59] JM: With regard to the drop in cost, I think I heard a podcast. I might have been an Andreessen Horowitz podcast where they were talking about how cheap food delivery is in China for similar reasons just because you can get employees for cheaper. I think they said they got the food delivery cost down to like 78 cents, or something. Very, very cheap like that and it

totally changes the economics. If it was 78 cents to order food in San Francisco, I would be ordering way more food, I'm pretty. I think there has a lot of downstream impacts, like just allowing for more restaurants to open up.

What about mobile payments? So the mobile payments thing in China where they leapfrog the credit card system and mobile payments become a mainstay. Are the mobile payments as prevalent in Vietnam?

[00:21:49] CL: Yeah, that's definitely one of the biggest areas of growth. So people are throwing a lot of money at that problem to kind of be the one true mobile payment system here in Vietnam. There are many people vying for that space.

An interesting, actually, like a nice link to what we just mentioned about cost of labor being cheap is I think one thing that's actually holding mobile payments back is that cash on delivery is super prevalent. I don't know the exact statistics, but most people in Vietnam actually are unbanked. They don't have bank accounts. So, COD is like the way to go. In a world where costly prohibitive, you wouldn't be able to have COD. But here, it's just some guy just comes out on a motorbike anyway and picks up the cash, hands you the thing you bought or the food you want and just kind of – They work that out through low labor cost.

[00:22:38] JM: Right. I mean, I know this is a big thing in India also, cash on delivery, or cash on demand or whatever. It's a nice like stepping stone towards more seamless solutions or maybe it'll all just be something inhibiting, just like the credit card is kind of an inhibition towards mobile payments in the United States.

Not to give you – To throw another kind of curved ball at you, but this unbanked population of people, given that you've been a software engineer for a pretty long time. You probably have some perspective on this. Do you think that cryptocurrencies are going to be the solution to the unbanked, or do you think we're going to just have like centralized technology solutions, like centralized new banking, like challenges banks, that will be able to move down market and offer bank accounts to these people before cryptocurrencies can offer something that actually looks like a consumer product?

[00:23:35] CL: First of all, thanks for asking me all these. As for my opinion on such big questions, trust me a lot with these answers here. At the same time, I don't know how to answer that question exactly. I've seen people here try. So, actually, cryptocurrency is a big thing here in Southeast Asia. I think a lot of people see a lot of potential, especially applied to emerging markets, like here.

I think Vietnam would be a natural choice. Smartphone penetration or technology penetration is super, super high I think. 3D penetration or smartphone penetration is something like 80% in this country. Can penetration is like 10% or something, very low. So more people have seen a smartphone that have seen a car.

At the same time, I don't know what are the factors that are going to make crypto succeed or not like those technologies. I'm not sure how man of the factors are actually regulatory versus technology. There is a very strong regulatory environments here. I think people do forget that there's a central government in Vietnam, which is for the most part very progressive and open, but I think hard to predict what the future holds there.

[SPONSOR MESSAGE]

[00:24:45] JM: Codacy helps development teams of all sizes to automate their code quality by identifying issues through static code analysis both in the cloud and on-premise. The Codacy product notifies users about security issues, code coverage, code duplication and code complexity in every commit and poll request directly from their current workflow.

Codacy has been designed by developers to be easy to set up and use and it's completely free for small teams up to four developers, and it's also completely free for open source projects. You can find out more and try out Codacy by going to softwareengineeringdaily.com/codacy. That's C-O-D-A-C-Y.

Codacy is a tool for static code analysis and issue identification. It will help you find security issues and code duplication, all these other issues that you can find through static code analysis. Check out softwareengineeringdaily.com/codacy, C-O-D-A-C-Y.

Thanks to Codacy for being a sponsor.

[INTERVIEW CONTINUED]

[00:26:04] JM: Let's get to things that are closer to the world of programing and coding education. The world of enterprise software in Vietnam, one phenomenon that we've seen is that a lot of the software that has been made in the west is the same software the people want to buy abroad. So, Slack, for example. I don't think there is a Slack for India, for example. I think it's just Slack.

I'm sure there are some variations on Slack, but I think Slack has gotten a really head start, a really good head start and they've just doubled down relentlessly. Is that also true for other categories, like Salesforce, or Zendesk, or do you even know about these other categories? I'm just curious about how Vietnamese enterprises buy their software, if they buy it the same way a software is purchased in the west?

[00:27:04] CL: That's a good question. My experience with that is they use the same software as the west. So when it comes to running a business – I've always thought this was interesting, because kind of like you kind of expect maybe if the GDP per capita income is lower here. Like you expect some sort of discount or some way to make things seem more accessible.

In my experience, like the big corporations, it's just a cost doing business. If you need SAP, you need SAP and you have to find ways to make that work. Generally speaking, I don't think SAP is going to give a discount or change their product significantly for this market.

[00:27:04] JM: Are there regional business software products that you've seen that cater to particular – For example, I get it that there are regional consumer products, particular regional ridesharing app, for example. But have you seen any regional enterprise software products or has it really just been predominantly the western companies, like the SAP or whatever.

[00:28:07] CL: Right. I think, yeah, for the most part it seems like this big businesses are all operating at the same kind of high levels. They're using the same SAPs or Oracles of the world. Maybe like one thing I have seen is I'm not sure if this counts as an enterprise, but there have

been homegrown solutions to maybe common business problems. For example, like POS software I find fascinating, because that's all done here. The leading ones are all built in Vietnam. You wouldn't use like a foreign country's POS software just because it's cost prohibitive.

[00:28:39] JM: Let's talk post-public education system. How often are people going to college or trade schools? When people leave high school? What are they doing?

[00:28:50] CL: I think that overall people are going to university. I don't know the numbers on it. I think there probably is a huge kind of split in terms of society between people in the cities versus people not in the cities. But my experience with people in the cities, yes, for the most part, will go to university. It's not usually super experience like the U.S.

[00:29:10] JM: How have people traditionally learned to code? So, if I decide I want to learn programming, does that mean I go to school and study computer science, or what are the traditional paths to learning to code in Vietnam?

[00:29:27] CL: Right. One thing I find really interesting is that coding is required curriculum in secondary school. So, in high schools, everyone has to learn Pascal.

[00:29:36] JM: Really?

[00:29:37] CL: Yeah. It's really fascinating. Actually, everyone I talk to has these horror stories of learning Pascal in high school, not remembering anything about it.

[00:29:45] JM: Better than nothing.

[00:29:46] CL: Better than nothing actually. I think it's interesting that they do that. So I want to have some experience with it. To become a software engineer, most people are, yes, majoring in a few different subjects, broadly speaking, they just kind of usually group it into IT. So if you're in the school of IT or you can major in IT, sometimes that's a little bit more electrical or something that's a little bit more computer science. But you major in that and go on to work as a software engineer.

[00:30:12] JM: Do most people, once they leave high school, do they know English?

[00:30:18] CL: I'm actually really surprised by how widespread English is I think particularly as younger generations are coming out. English is pretty good overall. I don't speak Vietnamese very well. Actually the joke I make is that I speak Vietnamese, but no one can understand me when I talk. But I think I can get by just fine with English most of the time.

Tons of foreign companies here employ English as a first requirement. Actually, at Coder School, we only lecture in English, and part of that was very deliberate in order to make sure that people who graduate from us have the chance to work at international companies.

[00:30:53] JM: But Coder School is this condensed curriculum, like most boot camps I assumed. We'll talk about the coding stuff in a sec. But over the course of that programming education, do you find people getting better at English? Because what I find interesting about these education programs is like the boot camps, they condense so much information into such a short amount of time. It really calls into question our assumptions about how rapidly people can learn things. I wonder if people are – If you see like dramatic improvements in English also.

[00:31:28] CL: I would say that what we do see dramatic improvements in are confidents. Such a big part of your English skills or speaking skills is to confidence. So, if you think you don't speak English well or you think if you're getting nervous, you'll be much worse at it than you actually are. People's true abilities are often clouded by their perception own stabilities.

Like you said, I think that's the key of connecting a lot of information in a short time. People start filling that growth. People start filling themselves learning things. Suddenly, everything improves all around them.

[00:31:59] JM: You left San Francisco. You moved to Vietnam, and you started Coder School. Explain what Coder School is.

[00:32:05] CL: Right. Coder School is a coding school here in Ho Chi Minh City, Vietnam. Currently we offer full-time and part-time courses in machine learning, web development and UIUX design.

[00:32:19] JM: Tell me about the story of starting Coder School. Why did you get an idea to start a coding school within Vietnam?

[00:32:28] CL: Right. It's a good question. So, when I first came here, I was actually not looking to start anything. I was kind of an a break from life, and people kept asking me what I was doing here or what I do for a living, and I kind of tried to respond, "I'm not doing anything." That wasn't an answer that people are satisfied with.

So, what I ended up saying was that the thing I had done most recently, which is I had been doing some teaching. So, I've been doing it in two ways. One, I'd been consulting for a company in San Francisco called CodePath that does some of the best technical training around to some of the top countries, top companies in the Bay Area.

[00:33:06] JM: Love CodePath.

[00:33:07] CL: Oh, you know CodePath?

[00:33:09] JM: Yeah. Yeah. I had them on the show.

[00:33:11] CL: What? On the show? I didn't know that.

[00:33:12] JM: Yeah. They were on the show. I have hired somebody out of CodePath before. They do a great job.

[00:33:19] CL: Okay. Yeah. So, this whole thing started a long time ago, because I took a CodePath course and was like so inspired by Tim and Nathan and I still talk to them all the time. They're the ones that got this whole thing off the ground. They gave me all the initial like curriculum, all the training.

[00:33:33] JM: Oh, no way!

[00:33:34] CL: Yeah. So, that's amazing. So, I mean, I still talk to Tim all the time.

[00:33:40] JM: So, did you start Coder School with the intention to make it a nice business or were you just hoping to break even and you just wanted to learn a little bit about teaching people? I think you had already done some teaching in the west. But tell me about what your goals were when you started the Coder School.

[00:34:01] CL: Yeah. My goals when I first started Coder School, it just started an experiment. So, enough people had asked me what I do. I mention that my experience at CodePath. I was also doing a little bit of online teaching. So, one of my best friends was the founder of a company called block.io. It's an online one-to-one video mentoring thing that help people program. I really enjoyed doing these things.

So, when I told people about that, I hear people like, "Oh! That's exactly what Vietnam needs. I think we need some high technical training," because there's nowhere to learn these things here. I was skeptical, but then after some time I was like, "All right. Let me just do the lean startup thing. Put together like Google form. See where it goes."

It wasn't until – It was like halfway through that class that I realized I was on to something, because the students I had were amazing and there was no like marketing. There's absolutely no production values on the first class, but people responding so well.

I always kind of make this joke about San Francisco. I've always felt a little bit uncomfortable, because people always say, "Oh! Such and such is the best engineer I've ever met," or "Our company only has A players. All these engineers are fantastic." I always thought that this – It's funny like how can there be like so many A players. How can every engineer like truly be that amazing?

But when I first came out here I realized that people here were just – I mean, just as good as the people I've been working with that were these so-called best back in San Francisco. So I thought, "Wow! There's so much potential here and there's such a disparity in kind of

opportunity for people here. So, the other reason why I was inspired to start this, it's really because I feel very fortunate.

Even though I went to like a well-respected computer science school, the first two or three years of my career actually feel really bad for all the companies that hired me, because I felt like I was so unprepared and not really that productive.

[00:35:53] JM: Join the club. The impostor syndrome, or you actually are just not good, which – I mean, I share that sentiment. Anyway, I'm sorry. Go ahead.

[00:36:04] CL: I'm sure all – It's a common thing. It was just like pure luck in many ways of being kind of in the right place. The Bay Area is a magical place. There are so many smart people. Just constantly being the dumbest guy in the room was really, really critical to myself growth. I particular, one person I talk about all the time is Ben, like the LightStep, Ben Sigelman, being my colleague.

Being around him, I just absorbed I feel like so much. I wish I absorbed more. Being around him, it was such an amazing experience to work with people of that talent level. Even though it's like just basic things, I still remember like one time him taking me aside and being like, "Hey, Charles. I need to talk to you about how when you committed all that code to master and then went on vacation for three weeks. That was not okay," these things.

Even these things, like even though it's so silly, those have such a big impact on I guess improving me. When I came out here, I saw this kind of raw talent that didn't have access to those types of opportunities. It's not only the people, but also the things that they're working on. So, if you are as noble as it is to maintain COBOL software for a bank. It's not necessarily inspiring or something that gets people to want to perfect their craft or to change the world and build great things. So, I thought that was a huge opportunity here to help people maximize that potential.

That was born Coder School's vision, which is opportunity for everyone everywhere. Coming from San Francisco, I thought I was just kind of constantly almost being beaten down by

opportunities everywhere I looked. My dream is to bring that everywhere, and I think that being the biggest thing unlocking that is access to education.

[00:37:47] JM: So, that's been a beautiful realization that I have come across when I've been – So, most of the shows I do on Software Engineering Daily are interviews with people who tend to be in the Bay Area, maybe New York, mostly the United States. But occasionally, I talk to somebody from a different place, and what I realize is there are cultural differences. There are differences in what problems they're interested in solving. But in terms of capability, in terms of what kind of software they can put together, can they write the necessary algorithms? Can they put together a beautiful UI?

There is no question. In many cases, you just see things from people in different places, places outside of the Bay Area. You just see the most innovative solutions, like just completely different flavors of thinking and it's like refreshing. As an engineer, as a software engineer, part of the reason you get into this, like the curiosities around programing, is the creative element of it.

When the creative engine of a programmer is very heavily shaped by where they're from and the creative norms of the society that they're in. So, I'm totally with you, that there's no lack of capability in these other places. So, it's pretty good vision.

[00:39:27] CL: When we talk about this, and I really totally agree with you. One is you have that viewpoint because you've been exposed to all these people. So, it's like you just need to understand. So hopefully I want to do a better job by helping everyone understand that in some way.

Two, also when you talk about this, how people are different, they have cultures. I think anytime you get a group of people and you make a cross-section of your people, you get some sort of culture. Our classes have cultures, like different classes will have slightly different cultures. Of course, every company, every city, every country, every region, will have different cultures.

But one thing that I feel strongly by education is at the end of the day, education is a really deeply personal thing. So, if you look at the top people in the world, I think if you listen to

speeches for example by people who've won Nobel prizes, often they'll start with like, "Thank you to my high school chemistry teacher for getting me interested in chemistry."

If I think about – Because I haven't won a Nobel prize. But if you think about my story of how I started programming, it's really just to spend time with my dad. I want to learn HTML to help my dad build a website for his little thing, like 20, or almost 30 years ago. So, all these things, usually like great learning happens when you form a personal connection with someone.

Specifically, like I have seen it too in our classes. Sometimes people just – When one person explains to someone and they understand each other. It's like, "Oh! I get it. I get what you're trying to say." It's not necessarily that he's used – I don't know what that is. It's not really the right words. It's just this kind of personal connection that really unlocks a lot of learning.

When I looked at how education works today, like particularly like perhaps with the MOOC model. I feel like it's trying to force everyone into a one size fits all learning. Some elements that are good, I think the base foundations of how ones and zeroes get processed. Those are facts that you need to know. But in terms of how to motivate people, how to get people to unlock exactly what you're talking about, those creative, amazing, brilliant moments. That has to happen in a personalized way. That has to be localized really to the – It's really hard to inspire someone if that person can't identify it with you.

So, I think that's why I like what I'm doing, because we're taking this kind of Silicon Valley, but we're bringing it to the world in a way that makes sense hopefully to people here, and people can kind of understand with and be inspired by.

[00:41:53] JM: Agree with you on the importance of the one-on-one mentorship or TA role or however you do that individual attention. What about the base curriculum? Are you still using the same base curriculum that the CodePath people helped you out with or have you modified it for the regional preferences of Vietnam?

[00:42:19] CL: Yeah, we haven't modified it heavily. I mean, we've been updating, and technology changes all the time. We've put our personal spin on a few things and we've of

course added new subjects to it. Actually, very similar to – The basic framework we use is still the same as CodePath's framework.

Yeah, in terms of personalization, I think – Yeah, the base, I guess that there's some sort of base foundation that does need to be kind of consistent. You can't get around some facts of how computers work or what a variable is, what scope is, these basic things.

But even though as like how you explain them, I guess we – I want to say localize, but like it's really hard to teach someone else's material if – It's a lot easier to teach – How can I explain this? It's a lot easier to teach something that you yourself believe and understand fully. So, anytime someone builds their own class, they can teach it better.

Our kind of challenge here is how are things built here that we understand that works well and is kind of built in conjunction with the students we teach. How they react to things. But then how we of course scale that, keep it consistent as we grow and think about other markets that we're going to grow to.

[00:43:33] JM: How long have you've been doing Coder School?

[00:43:36] CL: It's been almost four years. It'll be four years next month.

[00:43:40] JM: What has the growth trajectory looked like and how have you scaled the business?

[00:43:46] CL: It's a very touch and go. So, first, a few years, I think we're really kind of hunting for what we're trying to do. What we're trying to do is a bit new and the biggest change was how CodePath does things in the business side was definitely no – We didn't find a lot successful here.

[00:44:01] JM: By the way, that is they educate people and like with night classes, right? They educate people with night iOS classes and then what the big tech companies pay them to hire the engineers or like to retrain the engineers, something like that.

[00:44:20] CL: Right. Yeah, it's a mix of two things. Yeah, corporate – People paying for their own engineers to be trained. Also, they had a recruiting arm as well, where they would introduce the engineers to the companies.

[00:44:31] JM: Right. So, probably doesn't work so well in Vietnam when you don't have a huge population of tech companies that are willing to just pay infinite money to have better engineers.

[00:44:44] CL: Correctly. That's precisely it.

[00:44:46] JM: Right. So you had to find something else to do, which was just being kind of an introductory coding boot camp, right?

[00:44:56] CL: Yeah, and that was a big part of it. So, there're also a lot of experienced engineers in San Francisco. So, CodePath's main target was retraining experienced engineers into new technologies. So, when mobile became big, there's this big problem in that market where there are all these excellent engineers, but perhaps who are more backend or web that want to jump into mobile and they were able to get really good results because they're very good at training people in that segment.

When we came here, that segment definitely exists, but was a bit smaller. We had to move a little bit father down to take in a wider input, I guess. So, yeah, we have classes now for people with little to no coding experience and we bring them along the way.

The other thing that's changed too is how are the technologies that are big. So, four years ago, machine learning, versus today. It's changed so rapidly and it's getting to the point where it feels just like a long time ago how I felt about web development when I first started. I was, "How the CGI thing, what is this?" Then Rails come along and it's like, "Wow! It's so much more accessible. People can be so much productive so much more quickly. I think that's really what kind of fueled the first boom of Coding boot camps, because it became feasible to become productive in a short amount of time. I see the same thing happening with machine learning as well, like these libraries popping up. It's getting so easy to make amazing results so fast.

[00:46:22] JM: How long does it take to teach somebody machine learning, or do they need to know basic coding skills before they go through a machine learning boot camp? What do you need to know before you go through an aggressive machine learning program?

[00:46:38] CL: That's a good question. So, we're working on that program now. So we're about to launch that in July. I think the hardest question is how you define what a machine learning engineer is. So, is it a data scientist? Is it a data engineer? Is it a machine learning engineer? What does that mean? Deep learning engineer?

With web development, it was a little bit I think clear what that person will do day-to-day once you get a job at a company, "Oh! You're going to be making webpages. Do this." Machine learning is still kind of very broad, but we do focus on is teaching people the basics to kind of eventually specialize in one of these areas.

The core principles you need to know are, yes, you need to know the basics of Python. How to program. Luckily, Python I think is an extremely accessible language, the principles of dealing with data and databases. Then we go into each of the kind of category as well too, but on deep learning, do a bit on classical machine learning, like scikit learn type stuff. We'll do a bit about the data engineering cloud side as well.

With that, we found that people have kind of the base skills where they can kind of then zoom in on the thing that they want to specialize in. Most companies right now, because the market is a bit immature and there's so much demand everywhere, I'm more than happy taking these people and help them specialize once they've shown like a basic aptitude on what they need to be doing.

[SPONSOR MESSAGE]

[00:48:07] JM: As a software engineer, chances are you've crossed paths with MongoDB at some point. Whether you're building an app for millions of users or just figuring out a side business. As the most popular non-relational database, MongoDB is intuitive and incredibly easy for development teams to use.

Now, with MongoDB Atlas, you can take advantage of MongoDBs flexible document data model as a fully automated cloud service. MongoDB Atlas handles all of the costly database operations and administration tasks that you'd rather not spend time on, like security, and high-availability, and data recovery, and monitoring, and elastic scaling.

Try MongoDB Atlas today for free by going to mongodb.com/se to learn more. Go to mongodb.com/se and you can learn more about MongoDB Atlas as well as support Software Engineering Daily by checking out the new MongoDB Atlas serverless solution for MongoDB. That's mongodb.com/se.

Thank you to MongoDB for being a sponsor.

[INTERVIEW CONTINUED]

[00:49:29] JM: We've seen an increased attention to Lambda school, which is this online income sharing agreement model for coding education. Do you see that as a desirable model to move toward to scale to other markets perhaps?

[00:49:52] CL: I think it's an amazing model. I think tying an educational institution's incentives to like the students outcomes is absolutely what we should have doing from day one. So, I think there are a lot of questions on how – And I've heard them on your show as well too on how effective formal universities are at teaching coding, and I think your opinions are strong. I share some of them.

But I think that – I mean, I really enjoyed my college experience. But like I said, I think when I first left college, I was not very productive for a longtime and it took me a lot to become productive. To me, the thing that's crazy about university education is not whether it's good or bad, but it's just that we all have this kind of idea that's not quite right. There are a lot of good things about it, but somehow it doesn't seem the most effective way to get the outcomes that we want.

It's crazy to see that and how expensive it is and how long it is, but kind of like the whole world is going along with it. I think that's what disruption is. Disruption is basically saying to yourself,

"Hey, wait. This is not good. Everyone's doing this thing. That's not great. We should find a better way to do this."

I think Lambda School come out a huge pioneer in that space saying, "Hey, why don't we make it so the school incentive and the students incentives are aligned basically, because if we have students that want to get jobs, they should only pay if they get a job. I think that's fascinating, and I think more schools need to actually do that, and we try to do that as well too. So, we have a job here on our side. We say, "If you don't get a job, then you don't have to pay." I think that's more than fair. I'm curious how those things will evolve overtime. I don't know if that ISA is the exact right mechanism, but I think it's definitely a step in the right direction.

[00:51:34] JM: Yeah. I hope it really goes really, really well. I really hope that there is not a big ISA bubble of some kind. I'm sure we can figure out a way to mess this up with some kind of bubble. But I just hope the bubble is – I hope the bubble pales in comparison to the realities and just what the economics. What markets are you thinking about expanding into?

[00:51:58] CL: So, specific within Southeast Asia, there are so many people here in Southeast Asia, hundreds of millions of people. So, there's a lot of opportunity here. I think the like larger speaking, I like to position ourselves as kind of the go-to in emerging markets. So, I think the educational challenges that people in emerging markets face is something that maybe the world at large isn't looking at.

[00:52:22] JM: That's for sure.

[00:52:24] CL: But that's where all the growth is going to happen. That's where the next billion people are coming online. I think this is where people need to focusing. This is where you're going to get the biggest growth over the next 10, 20 years.

[00:52:36] JM: But these things don't scale. Do they? I thought this was what we learned with like the first fleet of – Or maybe it scales more slowly. Maybe it's just hard to scale. What's the biggest scalability bottleneck? It must be just hiring instructors, right? Hiring and retaining it, because the churn of the instructors is just super high at these places.

[00:52:55] CL: I mean, that's exactly it. I mean, I would say just maintain the quality of program is the hardest thing to scale. Anytime you make something bigger, it gets worst. Education is particularly sensitive to that. I mean, you're playing with people's futures. It needs to be high-quality. The second that your school, like people don't get a good result, I think that word gets out, which I think is exactly how it should be. I think we should hold ourselves to high standard.

I mean, if you think about – I'd take it very seriously in the way that imagine a hospital, if a doctor loses a patient. People wouldn't want to go to the hospital anymore. People are just kind of in the same way. We should take that seriously.

The biggest challenge in scaling is maintaining that quality. I would say the biggest thing that's changed for why I feel like we're closer to a solution overall and how to scale these types of business is because now we know that's hard. I think early on, there's a lot of jubilance, a lot of job, like, "Oh, man! This is growing so fast. It's going to be all easy. It's going to be just like Instagram." [inaudible 00:53:55] users. Now people are realizing, "Wait. No. This is hard."

So, I think we're going to see more thoughtful solutions. I think that's why you see Lambda kind of going with [inaudible 00:54:04]. That's their answer to how they might scale more effectively. But there are lots of interesting answers.

If you had to ask me what my solution is, I like looking at more – In terms of how the MOOCs have scaled or online education. First of all, I think that's a different business than what we're in, and I can get into that online versus offline education.

[00:54:25] JM: Well, it's a content business.

[00:54:26] CL: Yeah, it's a content business. But how that's been done, it's interesting. You have maybe the Courseras or Udacities of the world that have one very like famous instructor, like one really very polished thing and you already see like Udemy, which is more of a marketplace and many different people.

Actually, I find like maybe it's been here. The latter has been much more effective in having in the emerging markets. Perhaps because one it's more – It's just a lot cheaper. But, really, I think

it's because the people who are selected to the be teachers are like these kind of very polished people, tend to have this viewpoint that's very I think set in their particular understanding.

I can't see how people – I talked about this earlier, but how can you relate to. Is [inaudible 00:55:10] really the person that's going to relate the most to someone who is coming from a completely different background, completely different country, social economic status? Has different employment things, like it's maybe they they're and they're like, "Hey, how do I get a job in this."

[00:55:25] JM: Yeah. I mean, you want to see in your instructor a evolved version of the situation that you are in. As the Stanford instructor, they're just too far removed from I guess the – The model that many of these boot camp people are going through is they really are looking at this more of as a trade school. I think a lot of the MOOC or at least the traditional MOOCs. I'm sure there are MOOCs that have been updated since then. But a lot of the traditional MOOCs were I think couched in a more academic style of things where I think the Coder Schools of the world and the Lambda Schools of the world. They're more about like, "Hey, We're going to teach you to build something. We're going to teach you to hack it together and we want you to feel gratification when you're shipping your app, which is just a very different teaching style than like the traditional MOOC style.

[00:56:25] CL: Absolutely. I think like the MOOK style is like – I mean, the assumption of the MOOC is like, "Hey, wouldn't it be amazing if everyone could listen to this amazing person who's _"

[00:56:35] JM: Khan Academy.

[00:56:38] CL: Qualified. Yeah, Khan Academy type thing, and those – There definitely has that place. Yeah, but when it comes to how can we get the best outcomes. Where are the problems most present in people? One thing I really like about teaching here is that our students are really serious. When someone comes to Coder School to get a job, we don't get a lot of people who are like, "Oh! I want this coding thing. It might be cool. I'm kind of interested in this. I'm not sure what I'm going to do next."

It's like people are like, "All right. This is it. I'm putting my eggs in this basket. I'm in it to win it." So, we take that very seriously. It's like if we fail in that, we've really like made your life much more difficult. So, it's fun teaching these people who are motivated and know what they want.

[00:57:16] JM: Okay. Last question. Totally unrelated to education, but as we were talking before the show, you've been through three acquisitions as a software engineer in the Bay Area, and that was before you started teaching. So, you were an engineer, just these three different companies and then each of them was acquired just kind of random happenstance. Why did you stop working as an engineer and become a teacher? Clearly, you're capable as an engineer. You worked at these three different companies. You made progress there. But why did you end up just kind of being motivated by education?

[00:57:55] CL: It's because as much as I love those experiences, at the end of the day, what I found myself valuing. So, being a startup that's been acquired or made some success, is super gratifying. Knowing that you've made some sort of impact in the world. But I found as I went, the thing that really got me going was being connected to kind of the mission of a company.

So, for me, education, teaching in particular, is the first time where I felt like really that deep connection to the customer. Because he's sitting here, she's sitting right in front of you and smiling or presenting their project. One thing that I kind of – I think one thing that kind of drove me away, and I haven't found the right way to explain this without basically insulting a whole class of people, but just the kind of problems I – I wanted to find more of a calling for myself. So, I know there are a lot of really innovative cool startups, but sometimes I have a hard time reconciling the product I was building and the fun of building it versus the actual impact I think it would have on the world. For me, education was the first time where I could have both the things I wanted, an interesting, but also something that I found really important and deeply connected to.

[00:59:06] JM: Charles, thanks for coming on the show. It's been really fun talking to you.

[00:59:09] CL: Yeah, it's been great talking to you. Thanks.

[END OF INTERVIEW]

[00:59:15] JM: Commercial open source software businesses build their business model an open source software project. Software businesses built around open source software operate differently than those built around proprietary software.

The Open Core Summit is a conference before commercial open source software. If you are building a business around open source software, check out the Open Core Summit, September 19th and 20th at the Palace of Fine Arts in San Francisco. Go to opencoresummit.com to register.

At Open Core Summit, we'll discuss the engineering, business strategy and investment landscape of commercial open source software businesses. Speakers will include people from HashiCorp, GitLab, Confluent, MongoDB and Docker. I will be emceeing the event, and I'm hoping to do some on-stage podcast-style dialogues.

I am excited about the Open Core Summit, because open source software is the future. Most businesses don't gain that much by having their software be proprietary. As it becomes easier to build secure software, there will be even fewer reasons not to open source your code.

I love commercial open source businesses because there are so many interesting technical problems. You got governance issues. You got a strange business model. I am looking forward to exploring these curiosities at the Open Core Summit, and I hope to see you there. If you want to attend, check out opencoresummit.com. The conference is September 19th and 20th in San Francisco.

Open source is changing the world of software and it's changing the world that we live in. Check out the Open Core Summit by going to opencoresummit.com.

[END]