Podcast Episode #17 – How *not* to think about IoT, with Michael Vladimer of Orange IoT Studio, USA

RAW TRANSCRIPT OF INTERVIEW

Balint: We have on the show Mike Vladimer from Orange IoT Studio. So welcome Mike, to the episode.

Mike: Thanks.

Balint: Mike, Orange is well-known in Europe at least, it's a French telecom company operator, and as a side note, its a subsidiary, Orange subsidiary was also around in Switzerland where I am, it was called Orange Switzerland, which is here in Switzerland the third largest telecom operator, and it was bought in 2014 by a French billionaire Xavier Niel, maybe you heard about him, and then they renamed it. Now it's called Salt. I'm actually also one of their customers.

Mike: Small world.

Balint: Yeah. So you work for the French main company Orange. Can you tell us about Orange IoT Studio briefly and what it has to do with orange?

Mike: Sure. Happy to start there, it's a good place to start. So you are based in Europe, in Switzerland, and, like you said, Orange is a French company based in France but we operate in about 30 different countries around the world. And I work out of our San Francisco office called Orange Silicon Valley, and Orange Silicon Valley is an innovation strategy office. Our job is to understand what's happening at the cutting edge of innovation and, of course, Silicon Valley is the center of the world for innovation. And so within our Silicon Valley we have a bunch of different teams that all focus on different types of technology. There's a group here that works on Blockchain and Bitcoin. There's a group here that works on augmented reality and virtual reality, and the Orange IoT Studio is the program that I run that focuses on the Internet of Things.

Balint: Do you collaborate with the guys in the other groups Blockchain, AR/VR, or mostly you work inside the IoT unit that you have?

Mike: Great question. So, yeah, we're all about collaboration both internal and external in our office. So we're always looking externally to work with different companies, often start-up companies, to understand their cutting edge technologies. And then, within our office where we are also very frequently trying to figure out how we can

collaborate across teams. So I've looked at projects, for instance, with the Blockchain team to understand how blockchain is affecting IoT and IoT security. We have a team here working on connected car, we are exploring some projects with them, with sustainable foods team, I'm getting some projects with them to see how Internet of Things tools can be used in a setting to better help Agtech, agriculture technology. So there's definitely a lot of collaboration.

Balint: Before we go and discuss those topics, maybe even with some examples, let me ask you the question connected to the reason for setting up an office or in setting up an office in Silicon Valley, and also why you co-founded it? Why particularly you? And what was your motivation?

Mike: Sure. So, like I said, Orange is in Silicon Valley because the company from the top-down recognizes how important it is to understand the coming trends and not to be flatfooted. Orange fundamentally is a technology company and technology is always changing, and if you stay static in technology, your definition going to fall behind. So the goal here is very much to understand where the flow is going so that at least we can keep up and ideally we can even pioneer ahead. As for the Orange IoT Studio, my background is very much aligned with IoT and they brought me in here. I got recruited to leave an IoT startup to come here. And it was just a great opportunity for me to come and really explore IoT and what it could mean for Orange with all the resources of a big company, which obviously a start-up doesn't have.

So just a little bit about my background and why this is such a natural fit. I undergrad at my master's degree, I focused on MEMS, micro-electro mechanical systems, and MEMS are one of the core technologies that underpin the Internet of Things. So MEMS devices essentially are little microchips that have moving parts in them. So in our phones everybody has an accelerometer that can measure how fast we're moving. That's an example of a MEMS chip. And it's some pretty cool technology but in its essence you have these little vibrating parts on a microchip that were able to understand how they move and how that reflects, how fast someone's going. And when I was working on the stuff, when I started working on this stuff 15 years ago, so when I started working on MEMS 15 years ago it was pretty boring stuff. It was very expensive chips, or I shouldn't say boring. I thought it was very fascinating but there's no compelling applications. There was these microchips where the technology was cool but nobody could use them. They're really expensive. There is no clear use case why would I ever need a microchip with moving parts on it. And then the iPhone essentially changed all that. The iPhone was the first smartphone that we know today and it showed that every phone needs to have an accelerometer in it. Every phone needs a micro speaker in a tiny microphone and speaker, that speaker, that microphone, that accelerometer. Those are all different examples of MEMS.

Balint: Let's talk now about the topic of how not to think and in the end also how to think about IoT because you have some stronger thinking and framework, I know that around this topic, and it would be amazing to talk about that so that listeners can learn about it. So we discussed with Bay McLaughlin from Brinc in episode 11 of this podcast, just very short, that everything will be connected, even the seeds in the field, but still know we need to think about what is necessary, really necessary, to be connected and we also mentioned, at least Bay mentioned it that smart slippers and toasters might not be the most brilliant ideas. And what's your stance? What's your thinking about this topic?

Mike: Sure. I listened to the episode with Bay, it was a really good episode. If people are listening now and haven't had a chance, I'd suggest to go back and listen to it. But I'm happy to talk about how not to think about IoT, where my framework comes in and I do want to circle back to Bay's point about everything being connected.

So the first thing that I say with IoT is there's a lot of mixed reviews, there's people that say IoT, Internet of Things, is disappointing, it's not exciting, there's just different things that are different points of disappointment. And I think that the common theme is that IoT can be disappointing. It's fine to say that but what I find empowering is when I look at those IoT devices that are disappointing they're often disappointing in repeatable consistent ways which is great because that means that we can identify how it's disappointing and avoid those mistakes, and really focus on building delightful, engaging, compelling IoT devices. So I'm happy to kind of give you my recipe for how I think about IoT and it's kind of a three-layer recipe for the listener so I can jump in, if you want.

Balint: Yeah. Would be nice. Great.

Mike: So in the simplest sense an IoT device is a solution to a user's problem. It sounds obvious that more compelling problems have more compelling solutions. But coming back to that first statement, why does IoT disappoint sometimes, it's because people solve problems that aren't that important. We can get into the market forces that have created this world, that we're in a world today where it's really, really easy to build everything. It used to be, "Oh, I have this idea. I think it might be good. If only I could build it." And now we're in this paradigm shift where if you have an idea, it's pretty easy to build. The hardware is relatively cheap, and small, and easy to work with. The software is ready to go out of the box. And so, the consequences before people had a bunch of ideas some were good, a lot weren't very good, and they couldn't build most of their ideas.

Today, if you have an idea, it's pretty easy to bring it to market, and so we can have this effect where we flooded the market with lots of different products many of which are just not compelling, and they are not compelling because they don't solve an im-

portant problem. So the first thing I'll say with IoT is if you're going to build an IoT device, make sure that it's a solution to a compelling problem because if the problems aren't compelling, the solution can't be compelling.

Balint: So that's number one.

Mike: That's number one, for sure. And, yeah, I wish it were more obvious but that's not… So, then, the second thing is OK, so now we get to IoT as a solution to a problem. What is the bare bones MVP, minimum viable product, version of an IoT device? I would argue that it's four core things: it's sensors, connectivity, computation and user interface. And what that means is you have sensors that are in the device. They're gathering data about the real world whatever kind of data temperature, light, motion, whatever sound, we just used sensors to gather data about the real world. And then, we use some kind of cloud connectivity to get the data out of the device into the Internet. And that's where the computation comes in and now we can store that data set in the Internet, run some computation on it and extract something interesting, something insightful, something useful. And then, that insight gets exposed to the user interface back to the user. And so that four-part system – sensors, connectivity, computation, user interface - that's the core of what it takes to have an IoT device.

And you might say, "Oh, Mike, I've seen some of this before. You know, we have like a garage door with a remote control, or I've seen different types of sensors that have some type of connectivity, or some type of fancy user interface." But I think IoT is different from a conventional device because it's… When you deal with IoT, it's the difference between one and many. Yeah, there's different remotes out there. I grew up with a garage door opener with a remote control but there's only one remote that can control that garage door. Now when the Internet is that intermediary or is that step between the garage door and the user, now anybody can control that garage door. Anyone with access to the Internet can then control any IoT device. And that's the paradigm. That's one of the paradigm shifts with IoT between an IoT device and a conventional device. So, yeah, I think having sensors, connectivity, computation, user interface is really key.

Balint: And Mike, regarding this number two, what is often not considered or how people think wrongly about this topic?

Mike: So the thing where I think people will have a solution, like I said, where they just have those four components, they'll expect the user to put in as much effort with their IoT device as they would with a smartphone or with a laptop. But the world that we're in is the smartphone is essentially our default device, it's our core most personal, most important device. And the consequences that we have is built-in assumptions about how people interact with devices and we don't even recognize that a lot of

that we're making assumptions based on our use of a smartphone. But all of those assumptions break when you apply them to IoT.

And so what I mean by that is people love their smartphones but will we they be able to like our IoT devices? IoT is good. Don't get me wrong there's nothing… It's good but it's not the same level of passion and dedication as a smartphone, and you can measure this. If you look at how we interact with our smartphones, you could see we spend lots of time and we spend lots of money on our phones. So we pay for an expensive monthly data plan, we have the social convention that we walk into a room for the first time and the first thing we say is, "Can I get your Wi-Fi password?" We're always charging our phones.

Balint: Very true.

Mike: And I've seen a lot of disappointing IoT devices that expect the user to have a similar pattern of behavior that they have to pay for an expensive monthly data plan. But for most users it's not worth it with IoT. You have to get the IoT device on the Internet. Sure, a user might get their IoT device on the Wi-Fi once, maybe twice, but they're not going to do it all the time. It's just not worth it. And they definitely don't want to have to charge it all the time as well. So, again, back to this how not to think about IoT one thing, of course, is solve a compelling problem, two is recognize that a user is just not going to put in as much effort for an IoT device as they are for a smartphone, but they'll put in a little but not nearly as much. So that means that the IoT devices need to be, on one hand, much simpler to use, and two, they have to solve something really compelling for the user that makes the user want to put that effort in in the first place.

Balint: What are some other challenges? What are some organizational, technological challenges? You mentioned now a couple of things but are there some more business and such challenges for developing and adopting IoT by companies?

Mike: Sure. So the thing, when I started to think in terms of organizations, so I talked about the MVP version of IoT. But as with everything in this world there's more than a minimum viable product. I think there is… And I also talked about having three parts to my IoT recipe, so maybe I'll touch on the third part and get into where the organizational aspect comes in. So again, the most simple answer of what is IoT, it's a tool that's a solution to a user's problem. One step deeper, what's the MVP, minimum viable product, version of an Internet of Things device. It's sensors, connectivity, computation, user interface.

Now, we could say what's the third layer, where does IoT start to get fancy? I'd say that there's four things that often are involved in IoT and you'll often see in good IoT but they don't have to have to be there. So those four things are batteries, actuators,

a device ecosystem and an API ecosystem. Let me just touch on all of those and to your question of like where's the organizational aspects fit in, that that's really on the API side. So an actuator, for your listeners if they don't know an actuator is, they deal with them all the time, actuators is just the opposite of sensors. So if a sensor takes what's happening in the real world and converts it to digital data, like a camera and a microphone takes sound and light and converts it to digital data, actuators do the opposite. So they take digital data and they convert it into something in the real world. So like the display on your phone or the speaker on your phone that takes digital data and convert it into light and sound. Those speakers and displays are examples of actuators. So a lot of IoT devices won't just sense the world and take data, they also have actuators that react to the world and affect the world. Batteries, really batteries are great. They mean that we can take our IoT devices wherever we want, they don't have to be tethered to the wall.

Third thing I was talking about is the device ecosystem and this is another thing I think that makes IoT really special. And so, when you have a conventional device there is no specialness to it where the whole is greater than the sum of the parts. By contrast, with IoT it's all about the whole being greater than the sum of the parts. And so, what I mean with that is with an IoT device, because you're getting all this data from all these different devices, you can start to understand the world in ways that we never had possible. So the example I always like to get with this is the Kinsa Thermometer. It's a smart thermometer that lets the user… From a user perspective, it's a thermometer that you can control with your phone. And so, that means that you can take your temperature, you know exactly what your temperature was on which day, it's easy for you to track additional symptoms in the app so people can understand not only did I have a fever but I also had a cough. So that's the core offering of Kinsa. But where Kinsa really gets exciting is that device ecosystem, is that Kinsa as a company because they're seeing all this data, they can understand who is getting sick when and where, and they can understand the public health situation across regions that we never could understand with a conventional thermometer. And so, I think having that device ecosystem is something that's really special about IoT.

And then, similarly there's the API ecosystem. And so API is application program interface. It's the way software communicates through the Internet today. So if you've ever, for your listeners, if they've ever logged in with Facebook, the app that you're logging in with is using the Facebook API because that app is communicating with Facebook. And so, when you look at APIs today what that means is it's now really easy to stitch together different software, different apps but also different hardware. So you could, for instance, take a picture with a smart doorbell that shows that in an app who's at the front door, you could use some software in the cloud that recognizes if that face is the homeowner. And then, you could tell your smart door lock to unlock.

And so the way that that data gets moved around is through APIs. And that's why they call it the API ecosystem.

So back to your question though was where do these organizational challenges come in. And I think that that's a really interesting question. When we look at this third level definition of IoT with, like I said, actuators, and batteries, and device ecosystem, an API ecosystem. And I think where I see organizational challenges come in is in managing the complexity. So we've gone from this very simple answer of IoT is a tool, it's a solution, it has four core pieces and has four additional pieces. And the thing you have to remember is, from a user perspective, every additional feature is much as an enhancement. It's also just has this inherent burden of complexity. And so, if the IoT device can create enough benefit for the user that it outweighs that complexity, that's great. That's what our goal is.

But where I often see especially in these organizational challenges is that the complexity is just not worth it to the user. So the example that jumps out in my mind is works with Nest. Nest, it's a great product. Smart thermostat manages temperature in the home. But I've seen a lot of products, for instance, that integrate with Nest not because it makes the nest perform better, or not because like it's that much better for the user to manage the temperature but because it's a marketing ploy, because they just want to say, "Look at one extra thing we can do." And I would argue that that one extra thing, because there's not a lot of benefit but there is more complexity, it becomes this dysfunctional miserable experience disappointing experience for users very quickly where they get more and more complexity not much more benefit. And I think that's another example of how not to think about IoT.

So, say it concisely, can we connect everything in the world? Yes. Is it worthwhile to connect everything in the world? Definitely not. And how do we figure out what's worth connecting? It's all about the user. It's all about understanding what someone wants to do. And if we build this new system, if we build a new IoT device or we do an API integration, so two different types of devices can talk to each other, is that going to move the needle for the user or is it just a shiny gimmick that doesn't enhance user experience?

Balint: Yeah. So finding the right level of complexity and minimizing the feature set that is offered to satisfy the customer's wish, very short.

Mike: Yes. Yes.

Balint: You mentioned Kinsa as an example and there this issue, this question automatically arises that… What about security? This I see as one of the biggest roadblocks for adopting, for spreading IoT. How do you see the security issue that from the outside people can access your data? In the case of Kinsa, the temperature

measurement of the person and the sickness status can be accessed by unwanted parties. And, yeah, this is a major challenge. How would you solve this issue?

Mike: I think the thing with security in IoT is we need to understand that there are so many different types of the Internet of Things devices, there's industrial IoT versus consumer IoT, there is within consumer IoT there is devices that have sensitive information like the Kinsa, and I know some of the folks there and I think that they put a lot of the initial data secure. But there's also IoT devices that monitor the quality of my garden. So, for instance, in our office here we have the Edyn plant monitor and the Parrot Flower Power plant monitor.

So I think that we have to recognize that… I don't know much about the security. I haven't really talked to the companies from Edyn or Parrot but the security standards around the health data are pretty different from the security standards around like are my plant is wet? This fish, have I been watering them enough? And I think we talk about security we have to understand that there is a data sensitivity angle and for each device it depends on how sensitive is the data that we're dealing with. Like the June oven. The June IoT oven. Does it really matter if the world knows that I cooked my fish last night at 325 Fahrenheit? Maybe but its security isn't black and white, and the level of security on the June oven, it doesn't make sense for it to be as complex as it is for like my bank. So I'm very hesitant to paint with a broad brush on IoT security.

The other thing I'll say about IoT security is that I see a lot of people looping in, again just this very, very broad swath. So I saw some articles recently and I wish I could point out specific ones that basically were lumping in home security systems that had been hacked as an example of a broader IoT. And, again, I just don't think it's fair to paint everything with the same brush. Yes. People, hackers got into some people's homes and used their security cameras to spy on them essentially in that story that I read. Could that happen? Does that happen? Yes, I believe it's possible. But to lump that in with another story that I read recently, for instance, was a bunch of raspberry PIs got hacked and did a denial of service attack. Those two things are just so different and we use the word security for different devices and different use cases. And I think it's just we need to be really careful and deliberate with what we're talking about to make sure that the device and the use case, and the user experience it all makes sense for that moment.

Balint: So the users in the audience should be educated about or you could talk more about segmenting the security issue because in some cases it could be an issue, in some other cases it could not be an issue, and just to people, the audience, the users, the consumers, they don't see it like this. So in a way they should be made aware that for some topics security issues it's not so big of an issue.

Mike: I don't know. It's a good question. So everything I'm talking about is from the perspective of a company building an IoT product. I think for most users thinking about the security of their products… I'm very hesitant to say it we expect or we want our users to invest a lot of time and effort in understanding what's going on because the reality is that's not how it works. I live in an apartment, I have a car. I've never studied how secure my home is. Is my door lock really that secure? It's a regular conventional door lock. Is that really that secure? I haven't invested a lot of time in that… We have a Toyota. It has a physical key as well as a remote control. Have I invested the time to understand is that security system good or not? Not really. I feel like, on one hand, yes, IoT security matters. I would just, again, try to put it in context. And I think part of why IoT security is a topic is journalists... It's something to write about. Security is something that can never be perfect by definition. You could always get better. And there's always these tradeoffs between time, and money, and security. If everyone had to have a 50-character password that they had to memorize, the world would probably be a more secure place. But it would take us 10 minutes to get into any application. Is that really worth it? I think security, it does need to be thoughtful and contextual about it.

Balint: Mike, I feel we discussed many things but we haven't addressed though what Orange IoT studio does actually. So what's the business model and what services do you give? How do you operate?

Mike: I get that one pretty often. So I would start by saying business model… It's not an exact business model per se. We're not trying to make money or anything here. What we're trying to do here is innovation strategy which is a way to say kind of research and development that includes not just our ideas but the ideas of the wider Silicon Valley community. And so, if anyone is curious, they can go to orangeiotstudiostudio.com and see our work that I'm going to be talking about. So orangeiotstudiostudio.com, no dashes, no spaces.

But, basically, what innovation strategy means to us is working on projects together with other companies and enabling companies to try different technologies that we think are interesting. So we basically have three pillars: co-development, thought leadership and quick-start projects. So co-development is we find a company that's doing something that's interesting and we work with them to enhance it. So on our website, for instance, you can see that we've done a project with a company called Sutro, S-U-T-R-O. They're named after the Sutro baths here in San Francisco and they make an IoT pool monitor. And we did a co-development project where we funded them a small amount to cover their engineering costs so that they would replace their Wi-Fi in their device, the IoT device, with LoRa connectivity instead because here we're interested in LoRa. So that's one example of how a company works with us. So it wasn't around specifically growing a business but it was both the Orange IoT

Studio as well as Sutro were interested in seeing LoRa, in understanding what that use case might look like in a real environment, in solving a problem for a pool owner environment. So that's how the co-development works and so we're always looking for other companies. We always want to focus on local companies here because if somebody is listening to this right now in Paris, and they're like, "Oh, we want to work with you," I'd say, "Thank you for your interest but please talk to my colleagues in Europe. I'm here in Silicon Valley to focus on innovation coming out of Silicon Valley." But we're always looking for companies that have some kind of technology that at least relates an IoT ideally and relates to IoT in a way that we're focusing on, like LoRa, like this new type of connectivity, and that's what co-development's about.

Thought leadership, we've been writing a bunch of articles and I've given a number of presentations on how to think about IoT and that's kind of what we've been talking a lot about during the podcast. And the QuickStart project, because we're so interested in LoRa, one of the challenges that we found in talking with engineers is that they said, "Oh, LoRa sounds great but what is it going to take for me to try it?" So the team here we built a QuickStart project so in just three hours an engineer can go from zero to sending data using LoRa communications. And at least have some basic, basic, basic sense of what that takes. So what do we do in a nutshell - co-development, thought leadership, QuickStart projects.

Balint: Excellent. So these are the three pillars.

Mike: Yep.

Balint: Okay, great. So Mike, let's move on now to the last round of questions. So I'm going to be asking for questions and it'd be great if you could answer these relatively short. The first one is if you could time travel and go back in time, like in the movie *Back to the future*, to the time when you were younger, what notes would you give yourself?

Mike: So my mentality and my way of seeing the world has definitely evolved with time and at the core I've always been interested in solving compelling problems. And when I was younger I studied engineering, like I was saying earlier, and I thought if I get the solution that solves this problem, I would achieve my goal, I would fix what I want to fix. And I think what I've come to realize as an adult, the advice that I would give my younger self is it's great to build products that solve problems but that's not enough if you want to impact people. People think in terms of stories. Stories have a beginning, middle and an end, and the story that we tell about a product and how it solves a problem is just as important as the solution itself.

Balint: All right. I actually came across here, I met a guy, a gentleman at one of the meetups and he has here in Zurich a storytelling meetup group. I think it would be

interesting for the listeners to try to find similar groups so that you can learn more about storytelling in connection with your product because stories stick. The second question. If you had to name a book, which one had the biggest impact on your career, Mike?

Mike: Interesting, on my career. I'd say there's two books. On my career... I'm a huge believer in Guy Kawasaki's *The art of the start*. This is the hardware entrepreneur podcast that I can tell you had started a bunch of companies over the last 10 years and every time I got to start a company I use Guy Kawasaki's *The art of the start*. It's kind of my Bible. I'm a huge believer in what he says about make meaning and make mantra. And that's definitely guided a lot of the way I think about my creative projects, and that's internally for me. And then, as far as externally how I engage my customers, my audience that's all about Daniel Kahneman's book called *Thinking, fast and slow.* And the idea behind *Thinking, fast and slow* is it's all about how do we view the world and what makes us make the choices that we make. And that totally ties back into the importance of stories. I'll say actually one last thing about Kanheman's book. One of my absolute favorite things in Kahneman's book, he essentially has a formula that says success equals talent plus luck, and I believe that wholeheartedly that when you look at people that have succeeded part of it is talent, their effort and their ability, and part of it is luck, just being in the right place at the right time.

And I think when I've seen people tell stories, some of them tell stories like, "I am successful because of everything that I did," and they completely miss the luck side, and then other people tell stories and say, "Oh, that guy just got lucky," and I really think it is a combination of the two success equals talent plus luck, from Dan Kahneman.

Balint: Yeah, the first book that you mentioned Guy Kawasaki, I started reading it. I like his style, his raw style, being straight on to the point with his language. I do like the book, I have to keep on reading it. And the second book that you mentioned, Daniel Kahneman, this was also recommended by one of the guest that I had on the show, Federico Bürsgens I think it was episode 5. So this is another book on my list. The third question. I'm fascinated about habits and how these affect our life positively. Do you have some routine in your life?

Mike: I drink a cup of coffee every morning like a lot of people. The thing I would say with my habits, my habits I would say are more about my tools. And if you're into creating products and services, I think like the way I am. I'm obsessed with compelling tools and I often look for the simplest tool that will get the job done. And I love whiteboards. So my habit is anytime I meet with someone I almost always want to have a white board in the room because if you and I were talking you're saying words and saying words and we're both kind of hoping that the other person understands the

words that we're saying in the way we want them to be said. And what I love about a white board it's kind of this independent third party. If I draw on the board, you draw on the board and we paint the picture together, then we can both look at that third party, we can both look at that white board picture and agree, yep, that's the thing that we're talking about. And I just find it such a powerful tool in advancing communications and understanding, and problem solving.

Balint: So classical white board, no digital whiteboard, so to say.

Mike: Oh, yeah. I mean, digital in the sense that I'll take a photo with my iPhone at the end and I'd sent it out to everybody but that more than almost always does it. I mean I think with the white board 90 percent of the effort is, or 90 percent of the value, is just refining, and refining, and refining the picture that we're trying to create, the reality that we're trying to build. And in the end like half the time I don't even look at the picture after I take it because I know what our conclusion was and that was the point was get to the conclusion. The photo at the end is just to make sure we don't forget what we agreed on.

Balint: That's nice. I also like it using white boards. For example, in scrum you use a white board every day to plan in a Kanban style your work and when you discuss it with other people, you can iterate on the planning because you have a white board, you can even put up at either post-its or you can put up the text, and you can erase it. So this is very, very fluent. You can better iterate like this.

Mike: Yeah, yeah it just flows. And I also love post-its as well. I think to me it's a white board, white board markers and post-its. And post-its are great because you can take an idea just move it around the board doesn't have to redraw it every time. But yeah, that's it doesn't have to be fancy and complex, it gets the job done in a really, really good way. You can flow very little friction to accomplish your goal of figuring out what the hell you want to build.

Balint: The fourth question now. If you had to pick one or two critical cultural differences in your work that you experienced, which ones would you pick that kind of struck you and you managed to overcome?

Mike: Interesting. So cultural differences. The story I wanted to tell you about this was a little bit of cultural differences and it's more than anything just coming with humility and patience when dealing with a cultural difference. So my story is that I did a Masters of electrical engineering Carnegie Mellon in Pittsburgh and I really wanted to be bilingual. And so my first job was in Spain in the Basque country, in the north of Spain. And I had this experience that just really illuminated for me what it was like to be on the other side of the cultural divide.

So Balint, we're talking in English. That's my native language. I was born in New Jersey and I think you said you're Hungarian. And so, it's really common for an English speaker like me to just have a conversation with someone like you and almost take for granted that you understand me and that you can express yourself as easily as I can. So for me my first job out of a college, being in Spain, I didn't expect to have that reality challenged and I was very shocked when it was.

And so what happened was I was working, like I said my first focus was MEMS, micro electro mechanical systems, so I was working in research and development lab working on MEMS. I was the only English speaker on the team, everyone's worked and spoke in Spanish, and it's complex stuff. We're talking about how to make a microchip and like how does this thing operate, it's things you have to really think about. And my Spanish wasn't very good at the time. And I remember I was working with Jesus Rubano, my colleague, really, really nice guy, and he had actually done his Ph.D. in Scotland so he was totally fluent in English. But the working language of the lab was Spanish and so we are in this like argument essentially over how is this product going to work that we're trying to build in the lab, and he would say something and I would understand it, and I would think, "No, no, you're wrong," and my brain would go from Spanish, take what he said in Spanish, translate to English, think about it, be like, "Oh, no you're wrong." This is why I have that conclusion in English and have to translate back in Spanish. And by the time I went through that process it was like 20 seconds and he moves on to the next point. And it happened. This was like a 30-minute conversation. It happened over and over, and I literally I just hit this point of like frustration where I basically hit this emergency eject button and went "Aaaghh!" And stopped speaking Spanish and started speaking in English. And they said, "Jesus, get it. This is how this thing is supposed to work. This is why." And then, like I don't really remember what the conclusion was if I was right or he was right.

But the point, as far as cultural differences goes, was I had such a luxury. I had the ability to hit that emergency eject button, to go back to my native language and the thing that blew my mind I was like, "Oh, my god." I was working in, like I said, in a MEMS lab in Pittsburgh at Carnegie Mellon, side by side with Thai colleagues, classmates, who were Thai, who were Chinese, who were European, their English wasn't great. And how many times must have they thought the same thing. Like, "Mike, no you idiot, you don't get this at all." And they didn't have the emergency eject button, they didn't get to switch back into Thai and tell me what they really were trying say. And that experience with Jesus, I've tried to take it to such a core message for me of instilling humility, and even though it feels so easy to me to speak with you in English, to know that I should wait just one more beat, one more second before responding, before jumping in, so that you can catch up because I know when… My Spanish at this point is pretty much fluent but it always takes me a couple of extra

seconds. And just to, yeah, I think just having that level of humility and remembering, especially as an English native speaker, that not everybody has that luxury. That's huge for me.

Balint: And so, in the meantime, since your Spanish got much better and now you don't have this time lag of 20 seconds, as you said it's something like 1 second or rather short.

Mike: Yeah. Yeah, I mean exactly. I mean I lived in Spain over 10 years ago at this point. But I've worked really hard to keep up my Spanish since then so it's still pretty good. But I haven't worked in Spanish in any real capacity since living in Spain. I pitched a couple of projects in Mexico but that was about it. But it's a lesson I would say that… I've been living and working in America ever since that experience, and in Spain… And it's just actually we can bring this full circle when we started talking about Orange and how Orange is a French company. A good number of my colleagues here in San Francisco are French and many of my colleagues know about my experience in Spain because I refer to it all the time, and I say to them like, "I understand that you don't get to express yourself as clearly as you want and that it takes you a little bit longer to wait and you do express yourself to say what you're trying to say." And as a native speaker… I don't speak French. As a native English speaker, I need to just come with a little bit of humility, a little more patience and know that for us to have a productive conversation, and often in the end it is a great thing. I learn something new. I see the world from a different perspective. I have my assumptions challenged, all these good things that they all come by bringing that ounce of humility to the office here.

Balint: That's a good lesson. Thanks for sharing with us this story. The Spanish story.

Mike: Sure, sorry it was ultrafast.

Balint: As a closing question. How are you best reachable by e-mail or even by social media for the listeners?

Mike: So the best way to reach me by far away is on Twitter. I'm pretty active on Twitter. I tweet about IoT and other things. So my handle on Twitter is @MikeVladimer. My last name is kind of funny. They messed it up at Ellis Island so most people when they hear Vladimer they expect it to be spelled V-L-A-D-I-M-I-R. But for me it's E-R at the end. So my Twitter handle is @Mike, M-I-K-E, no space, no dash, no nothing, Vladimer. V-L-A-D-I-M-E-R. If someone's curious to talk more, tweet at me and we'll see where it goes.

Balint: Excellent. Thanks very much, Mike. I really enjoyed talking to you. Thanks a lot for listening.