

Interview Transcript

Interview with Santo Purnama (Purdue University Alumni, Co-founder of Sensing Self) by
Pamela K. Sari, Ph.D. (Director, AAARCC, Purdue University)

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Edited for clarity

Pamela Sari (PS):

Hello everyone, This is Pam Sari and I direct the Asian American and Asian Cultural Center and Resources at Purdue University and this is 16th of April 2020 and we have our guest today *Bapak* Santo Purnama Cofounder, right? of Sensing Self.

Santo Purnama (SP):

Yes.

PS:

So thank you, *Pak*, for being willing to be interviewed.

SP:

My pleasure.

PS:

How are you? How are your loved ones, your family?

SP:

I am doing great. Yeah they are all fine and they are cooped up in the house just like everybody else.

PS:

Yes..yes..same here. Purdue has moved virtually. So..let's just start:

SP:

Ok. sounds good.

PS:

One thing that immediately catches my attention with.. in reading about you is the transnational nature of your professional and professional [personal] life and I wonder if you could tell us about your childhood and family background, K-12 education for us a little bit?

SP:

Sure sure..yes..I was born in Medan [Indonesia], a pretty big city in the island of Sumatra. I was there until I was 10 years old, then I moved to Jakarta and I spent most of my good time, of my youth there. I went to a high school called Bunda Hati Kudus there. I was there and right after high school I went to the US and pursued my bachelor degree. And I got my degree in Computer and Electrical Engineering from Purdue in 1995. And after that, I got the job offer and moved to the Bay area and that is where my career really get started.

PS:

I see. I just want to take you down to the memory lane to your time at Purdue. Would you willing to tell us more about your time at Purdue and Greater Lafayette. Obviously, you said about your major but I am wondering about, how did you get involved on campus? and perhaps a couple of your best memory about Purdue.

SP:

[Laugh].. there are awesome memories there. I can never, ever forget about how cold it was [laugh]. But it was 25 years ago so literally there was only campus and nothing else outside. So we were really focused. I spent a lot of time in the lab studying. And my favorite past-time was going to play basketball and, you know, occasionally we went to the 24-hour Wal-Mart just to blow some steam off. But yeah, most of the time we spend time on campus and stayed in the dorm. I did not even live off campus until my last semester there. So yes, a lot of good memories.

PS:

Yeah..wonderful. I think that night walk at Walmart is a continuing tradition for all of us here (Santo laughed). I really like that (PS laughed).

SP:

That was a favorite thing to do.

PS:

Right..right..okay..so What..How was your journey like after Purdue. You said you moved to the Bay area, you ..you studied right? You furthered your education.

SP:

Yes, I got a job at a company called Applied Materials and, you know, I spent several years there. And I continued to pursue my Master's degree at Stanford University. That was at the height of the .com era, so I am sure everybody was into, wanting to start something new you know, like the Internet company, and so and so forth. So I was one of them. So I started an E-commerce company called site4shop. We sold electronic stuff online. And you know, we were doing pretty well and then came this company called buy.com. And at that time, it wasn't even relevant in terms of selling other stuff and books. We were doing well in selling electronic stuff. We allowed users to configure computer[s]. Back then, when you want to buy a PC, you want to configure what is inside your PC. You want to configure what video card to use, the chip to use and so on and so forth, so we had a capability to do that and there were only a handful of companies that provide that type of feature. One of them was Dell.com and at that time they were pretty big. So we were doing very well and then came this company called buy.com and they [audio problem for a few seconds]. And they started to sell below their cost because... And the rationale behind that was that: sell below cost so that we can get as many users as possible and they use the users into currency. We were just not able to compete back then. Luckily we can offer, we sold the company and we exit that set of things. Then came the .com bubble.

After that I started a consulting firm that led me to another startup that is in the hard drive business and the company is called Fabrik and I was one of the founders. And what we did was kind of, I think is very... too early for its good sake. It was like having a Dropbox but you have it at your own home. So we sell this device, it's a hard drive, and you plug into the Internet at home, and you'll be able to share the content inside to anyone online. So the technology was pretty advanced and we had a pretty attractive user interface and so on and so forth. We did that and eventually the company was acquired by HGST, which is Hitachi Global Storage Technology, and that company eventually merged with Western Digital. But yeah, it is always a new thing that in the startup that I was involved in and I found it to be pretty interesting.

PS:

That was quite a journey for you. And so from those companies..how did you end up in the medical equipment after that..is that, did that come after?

SP:

Yeah they came after. I was a ..whatever I just mentioned to you..I was involved in e-commerce, I was involved in a consulting firm, you know, I was involved in the hard drive, storage technology type of a start up. And right after that I also started another consulting firm which was going into like 50 employees and we were doing very very well hmm..just a high techy consulting firm. And then I was involved in Vintech, a start up company called Cel.io, which is like the square of EMV chips, because the squares at that time only accept regular swipe credit cards, but the technology that we had were able to accept EMV chip credit cards Nowadays we see EMV chip credit cards.. back in 2012-2013 there was no EMV chip but now everybody uses EMV chips. So, you know, I was involved in fintech as well so this iteration. You've been to all these things and it seems none of them have so much impact on the humanity, to do something a bit different. I was fortunate enough to be surrounded by friends and partners that are also thinking about the same thing..meaning that how to enhance humanity..how to move this humanity forward.

I have a partner who is from India. And if you look at the demographic India and Indonesia they are pretty much the same population and some things are not accessible especially in health care, right? If you go to Indonesia..some part of Indonesia, if people want to take a urine test, for example, they have to drive 24 hours to get to the closest lab and then have a urine test, go home and come back the day after or two days after to get the results. So this is a very, very big issue. And nobody actually talks about it because it is a middle class and below right? Most of the decisions of these big companies are for the middle class and above, so anyone in the middle class and below is the government's problem. So we think of what can be done.

So one of the first things that we do, is let's try to attack this. We all..among the partners..we are all blessed with whatever we were involved with, that we received from our previous career, but this is the time when we need to put something together. So we started this Sensing Self and the idea was how to make a lab test a self test, you know. If you can do it at the lab, then you can do it at home by using your phone because phone nowadays is so advanced. The cameras that they have are way more advanced than the cameras that you find in the lab, which maybe three or five or ten years old. So we feel that there is a point that maybe we can replace..not replace but substitute certain elements of the labs by using the phone.

PS:

Uh-huh that was interesting..and what year was that?

SP:

We started in 2017. The idea came before then but we officially registered the company in 2017

PS:

I see..and you started tackling diabetes..was that correct?

SP:

Yes, that's correct. We started tackling diabetes. At the time nobody knew about the Coronavirus. Nobody expects that pandemic is going to hit us that soon. We always feel that they are 100 years away, but it just came so suddenly. Yeah at the time diabetes because we look at all the diseases and there are some diseases that are the results of our habits right, the food that we consume, and the lack of exercise basically our lifestyles and diabetes falls into that category. There are of course things that you got from your parents, but there are things that are introduced by your lifestyles. So if you look at, again I will go back to India and Indonesia because they have a mass of population and the demographics out there are very similar. The main food consumption in Indonesia is rice. Everybody eats rice, you know. The breakfast is rice and dinner, lunch, they eat rice and I am one of them, you know (laugh).

My favorite is egg with fried rice so the amount of sugar that we consume is amazing, you know, very...is a lot... And that is what happened. And we, somehow we don't even realize that we are prediabetic because why? because we don't even check it.

How do we check it nowadays? Now the only ways you can check it is you go to the doctor's or you put your finger and draw the blood and see what your glucose level is. And that is a big impediment especially for kids because..you know..I have three kids and none of my kids wants to do anything with drawing blood from a finger, right? So at the end of the day, nobody knows if they have this prediabetic issue that is boiling and they just didn't know that. So one of the first things that we want to try to tackle is that problem. So we look at this and think, what if we can use saliva to kinda monitor your sugar level in the body and we were able to come up with that. What else do we want to know? Now we know the sugar level and we also need to monitor and the best way to monitor our lifestyle, the best way right now is the phone. We carry phones everywhere we go. So the first product that we come up with is a smaller strip. You spit on it, and then you take a picture of that strip, and our app will analyze the strip, and it will tell you what your sugar level is. And from the same app, you can also take the picture of what you eat and take the picture of the dinner that you had, and so on and so forth. And over time you can kind of understand that, if I eat

a certain type of food at a certain time then it may impact my sugar level, and my body would not be able to process it properly, and so on and so forth. So this information you can track using your phone. That would give a great tool for parents who want to monitor their kid's habit and it can be useful for prediabetic or diabetic patients.

PS:

That is awesome..just the innovation that you put in this product I think is great. I forgot to mention that our center's staff members and students were contributing questions for you. So the questions that I have been reading come from them as well.

And this next question is also coming from them. They mention that they really like the name Sensing Self, right, the explanation that you just gave us. Let's hear more about the COVID-19 pre-screening kits that you are producing and how you decided to do that. Also, I think some of our students want to know how it works - this is the question that you already got from a lot of interviewers, but could you please be telling us?

SP:

Yeah yeah definitely..

I think there are articles that say "I am the creator of that" and in Indonesia it is called "menciptakan" [meaning creating out of nothing]. I just want to clarify that there is no one person creating that [audio problem] I just want to make that clear from the interview. There is this analogy with the software, for example. You have open source right, with all this information, so everybody can put their efforts in. There is no one guy who invents anything, so with this all sort of information..the same thing, you know, with COVID-19, there are a lot of efforts that have been done. We take that, we look at it and say: what can we contribute to improve the accuracy of the reading,right. So that is what we actually did. We collaborate with scientists from China, from Hongkong. China in particular because at that early stage back then, several months ago, that's where all the samples are. We could get the actual positive patients to contribute to our study. So... with them and, you know, we did 1300 samples. We run it through and we enhanced our enzyme and we were able to come up with 92% accuracy.

And then in early February, I believe, we started to ship our product. And we initially sold it to European countries. At that time, it was not declared as a pandemic yet, so we sold it up at a pretty good profit margin. But when it started to become a pandemic, we started to re-assess ourselves and see that maybe this is not a good opportunity to make money because of the situation. We understand that if we come up with a good product, then money is going to come and follow us. I think we will be in a good position after this pandemic pass[es] away and financially we can be very very strong. But not at the moment.

At the moment we do not want to even talk about profit or even margin. Right now we just want to be sure this tool can be accessible to everyone.

PS:

Right and that touches a little bit on the question I got from one of our students/staff. Why did you decided to price this product at a low rate in terms of socially and also financially, and if I read correctly, previously it was around \$21, you sold this product at, and now it's \$10 so I'm wondering how, you mentioned a little bit of the social aspect of it, but can you tell us more of that decision.

SP

Yes, like I said, you know. A company exists for a reason. I think most for-profit companies exist so that they can make money as much as possible in the capitalistic world. I understand that. That's why when it was not the pandemic, we needed to make sure that we get the returns on all the times and expenses on the research that took on the product. That's the reason for the big margin. As time goes on, this is not financially achievable by countries like Indonesia. Even at 10 dollars, it is about several days of someone's wages. So I tried to make it as affordable as possible so that it can get to as many people as possible. Now we're a small company, we can't just afford to give it away, but at the same time we try to do our parts to make it affordable. That's the reason why I wanted to announce, I kind of put the price tag out there so there's no individuals trying to manipulate the price.

PS:

I see. So who is going to be the primary audience for this product currently? Is it going to be a hospital and large institutions, or..?

SP:

It depends on the country where you're talking about. I think for the US, the FDA, we register for the FDA's so-called Emergency Use Approval. It's like a short-term, kind of like a shortcut of approval for certain medical products, but usually if you want to have something to be approved by the FDA it would take months if not years, but it comes with this program called EUA. So in the US, it is pretty much what we call it as part of care, so it would apply to hospitals or big corporations or such as a wellness center, but outside the US, the regulations are completely different. Take in Indonesia. We could sell it in Indonesia and people could use it at home. There are actually many brands out there at local retailers. Anybody could just buy it and use it.

How about in India? In India it's a little bit different. All of our businesses in India, we sold it maybe a good 95% of it, we sold it directly to the government, to the official government.

PS:

Oh, wow.

SP:

So it really depends on which area you are talking about. But the idea is that you should be able to do it yourself at home.

[audio issue for a few seconds]

So if the goal of having this test is that they can be quarantined and not allowed to come back to work- and if that's the goal, then just having this is not going to solve the problem. Because... let me explain this scenario. Let's say I'm working at Wal-Mart, ok and let's say Wal-Mart requires the employees to be tested before coming back to work. If I can just take this test and test it myself, and I'm tested positive, what will most likely I say? Because of financial implications, I will definitely want to say that I'm not tested positive because I want to go back to work, because of financial pressure. So this is the type of things that the US government is trying not to have this in the hands of consumers, but they need this to be administered by a licensed point of care so that they can do some type of surveillance. Not the same as in India and Indonesia.

PS:

That is very clear. How do you think your product will directly impact the growth and testing rates compared to other products in the market? And how will that impact our ability to deal with this pandemic?

SP:

I think one of the things that strikes me, talking to one of the lead doctors at Mayo Clinic. He was saying that right now we are all blind, we don't know what's going on, we don't know who's infected so... this allows us to see a little bit. I definitely want to be able to see a little bit versus be blind completely. This is what the tool is for. It is not enough to be used by itself, and cannot be the only thing that you use, but for the mass prescreening, it can be very effective.

You can have this deployed... Let's say I was referring to the go-back-to-work situation, it can be implemented easily and companies can say: make sure that everyone is tested and if you are positive, we give you help. We provide you with anything you can think of so you

don't spread the virus. If you are [tested] negative and you don't show any symptom, OK, come back to work.

The same thing, let's say, going back to Indonesia, big companies, take Gojek [on-demand service company for food delivery, payment, and transportation] for example, they should administer these type of tests to all of the drivers. If the driver is tested negative and does not show any symptom, put a mark on the driver's profile so is a rider wants to take a ride, [they will] see, Oh this driver does not show any symptom and has been last tested three hours ago and it shows negative, so I am going to use this as my driver. Things like this I think can help how this tool can be used effectively.

How fast can this tool detect the results?

SP:

10-15 minutes

PS:

Wow that is really fast. How many have you been testing currently and in terms of distributing this product to other companies and governments that you mentioned, what were some of the biggest challenges you faced?

SP:

We've been shipping about 9 million of these and it keeps growing and we don't have enough capacity to supply all this. The problem is not the demand; the problem is in the supply. I try my best to get a good chunk of it to Indonesia, but again we have been faced with the huge number of supplies, I mean demands that we have on our hands.

The moment we can account for Indonesia, that is definitely my goal, to push it as fast as possible.

PS:

Are you able to come up with plans to increase the supplies at this point?

SP:

The funny thing is about 2-3 weeks ago, there were plenty in the market, and then all of the sudden, people were complaining... countries complained about the accuracy of some of these tools. For example, Spain returns 10,000 of the testing kit to China because the accuracy is at a certain level. And then the same thing goes with Czechoslovakia and some other countries, so China stepped up and said, "Hey, if you just know how to deal with

plastic, if you know how to manufacture and put together a kit that's not a medical kit, you should not be designing these kinds of tools. So China tracks down a lot of these companies and now the market is pretty much bored of this type of product, good quality product. And because of that, our demand increased tremendously. And we're just trying to make sure we can improve our capacity but at the same time, we don't want to sacrifice the quality because these have to be taken care of very very well. It's not like producing iPhones, you know? The iPhone demands increase, which increases the capacity. If you have one bad iPhone, so what? It's not going to cost someone else's life. But the product we create is completely different. Sometimes it's about life and death, so we have to be very cautious about that.

PS:

Mhm. And how do you manage the production? So, you are here, but the company itself is based in Singapore, is that correct?

SP:

That is correct. So, we have people all over... Singapore. We have the Singapore facility, we have the China facility, as well as in India and we create our own enzyme, we ship it to China, and then China is the place where we do all of the plastic, packaging, boxing it, and shipping it out. There's no other country that can scale as fast and as quickly as companies in China can when it comes to production of plastic or packaging of boxes. So there's a place where we have it all produced, but then we continue to keep the quality of the enzyme, because at the end of the day, it is the brain that has to be taken care of and that's what we're doing.

We make sure that there's proper quality control, make sure that the enzyme is kept at a certain temperature, certain range of temperature, humidity, and so on and so forth, because without the good care of it... we might lose the enzyme and it will produce inaccurate results.

PS:

Right, right. Well, hopefully with the meticulous care that you've been putting into this effort, I really am hoping that, you know, this will help the pandemic, help medical professionals to be able to detect this, right, and eventually care for more people and more people will be recovering. I'm going to bring our conversation back to Purdue... What advice would you give to current Purdue students who are interested in entrepreneurship who are looking to establish a startup company similar to yours? If I am correct in this, some of the [then] startups that we know like Amazon and Google were founded around the same time as your effort. You were in the hub of it, in the heart of this creative effort.

SP:

Yeah, I mean look at Amazon, Google, Facebook... all those one in a billion, or one in three billions or something like that... It's hard to measure up against those, but I think I said entrepreneurs, it's good to set their eyes at that level, but at the same time, we have to be frank to ourselves and say "Hey, what is acceptable as success, right?" If success is measured by another Facebook, then most people consider them as a failure, which is not accurate at all.

There's a website called TechCrunch. Everyday, it talks about... this company's got 100 million worth of investments, that company is valued at X billion dollars, and so on and so forth. I think that really creates... fatigue... And as an entrepreneur, you want to close all these noises. I feel like it can draw so much attention away from what you're trying to focus on. I mean, I was one of them. I still remember vividly, I was driving down to my small office to continue with my work and I heard the news that YouTube got sold for 450 million dollars? And at the time it was a huge number, right? Now, 450 million dollars doesn't even crack the news. But back then, it was a big deal. And I was like, "Oh wow! This is great..." and this really completely consumed me because you always feel like, "OK, I want to be one of them", which is okay to be... like that, but not to the point where it's a lot... If I had to say some advice to entrepreneurs, I would say just to continue to focus on what you're trying to do. Success is not definitely measured by the likes of YouTube or Google.

PS:

Could that be appropriately called "Sensing Self" then.

SP:

I think it depends on how impactful the company is.

PS:

Right. What advice would you give to fellow entrepreneurs who are currently facing issues with getting their products approved and also with the whole economy that is influenced by COVID-19, what kind of message would you give them?

SP:

I think the toughest out of all the governments that we have worked with... Obviously each government has its own requirements, but most governments have a set of procedures, there are very specific institutes that you have to go through or work with to make sure they qualify your product... As long as you provide all the necessary documentation, facts, anything that they require of you, samples... they eventually will be able to provide a way to approve you. And we're in this situation where everything needs to move fast because of

COVID-19, so approval process is a bit faster. Now the tough challenge was when we work with countries that don't have a specific way of validating or approving things. That is the tough part because we have to keep trying and trying and talk to so many different institutions and one doesn't make any decisions and points fingers to another, and we went to another place, and there's a lot of going back and forth. I feel like there's no one formula for it but if there is, it's persistency. We just continue knocking on doors and we believe that eventually one of them is going to be open. For the case of, for example, Indonesia, I think we knock on so many doors and if it's not open to us, then we knock on the media's door. And I think the media has pretty good influence, very positive influence, and we got a lot of people to come up and support us.

PS:

That is wonderful because... the last time that I read, you were still trying to get the product to enter Indonesia. So this is a really tumultuous time, and this is affecting Purdue students as well. What kind of message would you like to give to our current students who are staying home, staying at the dorm, while trying to get work done? What kind of message would you give to them, to us?

SP:

I feel like these are maybe really good times to assess what your goal is and plan things out and start to pursue it. When the economy opens up, when our labs are back to normal, you can hit the ground running. These next few weeks are a very good time to do that.

PS:

Thank you. Last question, what kind of message would you like to give to future Purdue students? Incoming students, future students, who are watching this video?

SP:

I personally feel like Purdue gave me the best education money can buy. It was very tough living in that environment, but I think with the quality of knowledge that I obtained, I came out to be who I am right now. I think a lot goes to what Purdue has given us.

PS:

Wonderful. *Pak Santo*, thank you so much for your time! I'm going to stop the recording right now.