TJ: Hi, I'm TJ and on this episode, we will be discussing social distancing and contact tracing solutions for the enterprise. If you are one of the decision-makers entrusted with the responsibility of ensuring the health and safety of the workforce returning to offices, listen on. We have an expert on enterprise social distancing solutions in the house today – Bart Vansevenant.

Bart is a General Manager for RightCrowd's Presence Control and Cyber Security division. After spending 15 years in cybersecurity, he co-founded a security wearable startup called Ticto five years ago in January, 2019. Ticto became a part of RightCrowd. Over the last nine months, Bart has been working closely with several large RightCrowd customers in the development and deployment of its social distancing and contact tracing solution. Hi Bart.

Bart: Hi Tajeshwar.

TJ: Thank you for joining us on this episode.

Bart: My absolute pleasure.

TJ: So from RightCrowd's point of view, how would you define a social distancing and contact tracing solution? And why are enterprises investing heavily in this technology?

Bart: If we start with the definition of what is social distancing and contact tracing solution really is to us, there are three components to it.

The first one, and that is the absolute minimum that any solution should contain - it is a component that helps to make sure that people keep a safe distance. So think of a continuous reminder, if two people come too close to each other, there should be something like an alert, visual, or audible to remind them. So that's the absolute minimum of any solution.

For us, preferably, social distancing and contact tracing solution also has two other components. The first one is a component that is focused on gathering the right information, gathering that data then, and then provide statistics to understand how well social distancing is being respected. So think of it as getting the insight, what is going on from a social distancing perspective and then the third component, and that is what most customers eventually want when they invest in a solution, is the contact tracing capability. And that is very simple – the ability to know if at some point someone gets infected with COVID-19, then you know who have been the people that have been close to this, that particular person.

So if I recap ideally, three components to a social distancing, a contact tracing solution: First, the social distancing, continuous reminder, visual or audible. Secondly, the ability to gather information, have statistical data to know what is going on, and then thirdly, the contact tracing information. So that's how we define it. If you then look at why are enterprises heavily investing in technology in that particular space, I think that simply comes down to the fact that without technology, it is just very hard to do that.

And just two examples. If we look at social distancing monitoring, we have seen over and over again, that technology really changes the behavior of people. It is not natural for people to keep a six-feet distance. We have, throughout our lifetime, come much closer to people normally. So for changing that behavior, that continuous reminder is what you need to change behavior. If you don't use technology,

you can have as many stickers on the work floor that says, keep a distance. People forget that, and they go back to their old habits. So the fact of using technology is to almost continuously remind them – Hey, be careful, Hey, be careful over and over again, throughout the day is just much more effective, and the same is true for contact tracing. Technology just makes it much more effective. And one thing I would like to call out as one of our clients, as part of a pilot, did something, which I believe was a very interesting exercise.

They piloted our technology for two weeks and what they did is, each evening, they asked people that were participating in the pilot to literally write down in an Excel file, 'Tell me, who are the people you believe you came close to today?' And then each night they compared that data, get it from the employee. So they're sort of manual input what they could recall with the information gathered by the technology. And it was interesting to see after the pilot. So after two weeks with a quite representative set of 50 people that participated to see that. on average, people remembered almost 30%, just under 30% of their interactions. So that's another proof point that technology is really needed if you want to do that properly, because if you would just depend on manual ways to do that, you will just miss a lot of information and your contact tracing and social distancing will be ineffective.

TJ: Okay. So are all solutions on the market using the same type of technology?

Bart: Well, what we've seen in the market is that there's really two technologies that stand out. And if you look at all of the solutions that we see on the market—and our estimate is that there are somewhere between 100 and 150 solutions from a global perspective at this point in time—99% of them uses one of those two technologies. And the first one is Bluetooth Low Energy and the second one is ultra-wideband. And it's interesting to compare and look at like, why do certain vendors choose BLE (Bluetooth Low Energy) over ultra-wideband all the way around? If I may briefly explain the difference between both because both have pros and cons for us.

Starting with ultra-wideband, ultra-wideband without any dispute is the more precise technology out there in the field. So ultra-wideband, when it comes down to social distancing monitoring is going to be very precise up to about an inch. So that's an important pro of ultra-wideband. But on the flip side, the sort of negative part of ultra-wideband is that it is very battery intensive and we see that ultra-wideband devices used for social distancing monitoring typically last for one working day. So you will have to recharge them every single day. If you compare it to Bluetooth Low Energy, I think two very important pros of Bluetooth Low Energy are, first of all, it's a very widespread technology, a lot of knowledge and expertise – experience in that technology more so than ultra-wideband. And then secondly, it is way more efficient from a battery perspective. Of course, the flip side is that Bluetooth Low Energy is less precise. If you talk about measuring a distance of six feet, for example, Bluetooth Low Energy will have an error rate of 15, 20% on a distance like that.

From a RightCrowd perspective, we have experience with both. So we have worked with wearable technology for about five years now. We have experimented when we started with these different technologies with both BLE and ultra-wideband. For social distancing and contact tracing, we have chosen BLE. We have chosen BLE for two main reasons. One is the one I already called out – the battery reason. With a BLE-based device in our example, we could create a wearable that lasts for more than a working week, which is very handy on the work floor, which we believe is a realistic sort of timeframe to bridge before you have to recharge a device. But then the second reason is much less known in the market—but for us very important—is that BLE is very effective and remains very effective. Once you start using a lot of wearables in a same area, and that is something where in our testing, we saw quite a

few issues with ultra-wideband. As soon as you have, let's say, 30, 40 devices within a same physical area using ultra-wide bands, you start seeing a lot of what is at a technical level called collisions, which result in a long time to measure the distance between people. And of course, that is something that you don't want. If you roll out technology like this in, as an example, in office environments, where you can have up to a few hundred people in sort of on one floor, you want technology to still remain performant and measure distance effectively. So that's why we've chosen for BLE. But overall from a market perspective, you'll find both BLE-based and ultra-wideband-based technologies.

TJ: And what differentiates social distancing and contact tracing solutions from each other? And what are the pros and cons for each of those?

Bart: There are definitely a lot of different type of offerings and products on the market. And whereas at first sight, all of them seem to do the same thing. It's like social distancing monitoring and contact tracing. In reality, we see quite a lot of differences. And if I just call out a couple of things that are different between the solutions that we see in the market, first of all, may sound basic, but it is true. It is the quality of the solution. If you just take Bluetooth Low Energy as an example, a lot, you may think BLE is just a protocol. So every device will be as effective or will measure the distance in the same way, but that is not correct. We have spent a lot of time in researching BLE testing. And in our wearable, as an example, we use a directional antenna to bring down the sort of error rate of BLE or to make it as precise as possible.

We have put in place or developed a quite sophisticated algorithm to measure the distance. Because if you just measure a distance, one that is not reliable, you need to have multiple measurements and then use algorithms to assess what is the actual distance. So quality definitely is an important differentiator. So if you select the technology, do some research – Has the vendor experience with the technology? Have they done something else prior to COVID with that technology? Because that's going to be important. Second one is the reporting that comes with those services. If you, of course, just wanted technology that only beeps, as an example, when people come too close to each other, that's something else. Then you can go with something relatively cheap and still have value. But if you're looking for that full sort of spectrum that we started with, when we define social distancing contact, tracing solutions are also getting data, also do contact tracing, then having good reporting capabilities is very important.

And then you need to understand is data being gathered automatically, or is the user asked to upload information? What level of analysis is possible that the example of contact tracing? Is it just telling me here's the five people that came close to the infected person, or is the reporting giving you actual details? How long did people come too close to you together and potentially even go as far as saying, well, these two people came too close, but after they came too close, who did that person in turn come too close too. In case of a super spreader, you might want to understand what is sort of the different levels of social distancing that came into play. Few others – Is the solution just a single purpose device? Was it developed specifically just for COVID-19 and will it basically be thrown away after COVID-19 has gone away or is it a multipurpose wearable solution that can also be used for other safety, security compliance-type use cases.

Then another one that I would like to call out in terms of differentiation is the ease of deployment. And one very specific thing that people will very often underestimate when they select the technology like that is how easy is it going to be to roll it out in terms of the enrollment? If you have, as an example, 2000 employees, and you start handing out those wearables that are going to be used for social distancing contact tracing, how are you going to keep track of who has, which wearable? How can we

make it as easy as possible to sort of store that information and make that dynamic? If the person forgets their wearable and needs to get another one, how can you put in place a system that makes it very easy and straightforward? And the last one, for some clients, even the most important one from a differentiation perspective is the notion of privacy. If you do social distancing, contact tracing, you will come across a lot of potential objections in terms of why are we doing this? What data is being captured? What data is being stored? How does that potentially conflict with privacy regulations and the like. So looking at what does the vendor offer in terms of privacy options is another very important one.

TJ: Now, we understand RightCrowd has been deploying this type of solution for the last nine months. Can you tell us a bit more about what a typical deployment looks like and any lessons learned during these deployments?

Bart: Yeah. So over the last nine months, we deployed this technology at a little over 70 organizations now. Just as background, most of those are in the manufacturing vertical, but we also have companies in financial services and technology in mining and entertainment and the like. And if I look at what a typical deployment looks like, most customers will first want to test out the solution before they make a larger investment decision. And one thing from a lessons learned perspective, I would like to add in that regards is that when you do a pilot, really do a pilot. And what I mean by that is a lot of companies, especially earlier on when COVID-19 solutions started to enter the market, what they did is they both like a test kit or a starter kits from multiple vendors. And then you get two or three advices from vendor A, same from vendor B, same from vendor C.

And what they did is they tried to compare two technologies in sort of that isolated, almost a lab type situation. We have learned that that is not a very good way of starting a project. We believe that it's much better to first do a selection, almost on paper, select for example, two solutions, and then actually pile it with them. And what we mean by that is really test it out in an operational context. So as an example, take a department with 50 people, give all of them a wearable and let them use it for two weeks or four weeks. And if you want to do that with two technologies, take two groups so that you can compare the data, doing a real pilot is just much better in terms of a understanding, what is the value that we're getting? What data are we capturing? You can simulate a contact tracing situation. So that's the first, I would say, lesson learned that is important. If you are going down a path of a pointed technology like that, pilot it. Don't just do like a test kit or a starter kits type implementation.

A second thing that we've seen quite a few times is the importance clearly defining your goals. When we started the podcast with the definition, we spoke about the different sort of components of the social distancing and contact tracing solution. And I think it needs to be very clear from day one – what do we expect from the solution? If that is clear, your technology selection will become easier. Your deployment plan is going to become easier. So that's very important to really write that down at the very beginning of the project.

Another I believe important component and something that we've considered as an important lesson learned is the communication related to a project like this. We've seen that the most successful deployments have been the ones where it came from sort of top-down. So there was a clear commitment by the executive team of the customer organization that said, this is why we're doing this. We do this for the safety of our employees. We do this because we want to bring people back to the working place, but we want to do this in a safe and sort of a good sort of diligent way.

Secondly, how does the solution work? And that is very important to communicate that. And I'm not talking about the technology side of it, not technically how it works, but end users, the people that will be wearing these devices need to know what it does from a privacy perspective. They want to know is this recording where I go, as an example. The answer is no, but you need to explain to them like, no, this is not a geo tracking solution. When does it do social distancing, monitoring, and users really need to understand that because that's going to help build a trust with the organization as you roll this out. And then of course, clearly explaining to end users what is expected from them. Think of recharging the devices. How frequently do I need to do that? How do I do that? And things like that.

And then one important thing I want to add also from a lessons learned perspective is make sure that from day one, you bring in all of the right people when you start this project, cause we've seen over and over again, that while it typically starts from one angle in the organization, for example, HR or physical security or health and safety, we see that every project, it becomes a multidisciplinary sort of project. So we, in every organization, we see HR being involved, data privacy, or data protection being involved, IT and network teams being involved, cybersecurity, HSE, physical security, safety, people being involved. So it's better. And it's going to be more productive if you bring those people in from day one, clearly together to define the goal of the project and then do the selection process as a team.

And maybe a last point I want to call out on this particular question is just to give people an idea of the timeline. Like how long does it take to roll out a project like this for a pilot. As I briefly explained, you should count two to four weeks to get a good sort of representative data set and see how it sort of changes the behavior of the end users. And then from a rollout perspective, if you did start with a pilot, then a rollout is almost instant. So you can almost smoothly move from pilot into production. If you would not do a pilot first, then starting from the first conversations to the rollout, you should count about one month between those two. If the organization is ready for it, then you have everything sort of in place to move the decision forward.

TJ: Now, the COVID-19 vaccines are in the process of being approved and will soon be rolled out in many countries. How will that impact this space?

Bart: Yeah, first of all, it's of course, great news that vaccines are about to be rolled out. I think I speak for all of us that we long to go back to somewhat of a normal life. That being said, I want to call out two important topics in this context. First of all, we should realize that it's still going to take multiple months. And most of our clients assume at least another year before we will reach the percentage of people being vaccinated that will allow us to drop a number of the COVID related measures that we've put in place, social distancing being one of them. So we're not out of the woods yet. There's still a long time to bridge and in a number of verticals, as an example, manufacturing, you simply cannot afford to sort of pause the business for that long. So these technologies will still be needed just for social distancing and contact tracing purposes.

And then secondly, and that's a more fundamental sort of observation from our perspective, we believe that the benefits of the technologies that have been put in place as part of COVID-19 response plans will have long lasting effects. And what I mean by that is if you look at what security wearables offer, what they can do from safety, from a security conformer compliance perspective, it offers so much value that we believe that those devices will become part of the new normal. If you compare, if you take a step back and look what organizations have put in place in their sort of facilities, almost everything in a facility is full of sensors. People know in their buildings, pretty much everything that is going on. They

have, they know from a lighting perspective, they know from an HVAC perspective, they know everything about their buildings and our facilities.

The only, almost unknown in the building has been the human beings, because human beings are not a digital sort of devices. So you don't know who's in, when did they come in, how many people do we have in different parts of the organizations and the like. And if you see by introducing security wearables in the context of COVID-19, you now introduced almost like human sensor and not just a human sensor, it's a privacy friendly human sensor. So it's, it's a piece of sensor that represents a person sort of entering the building. And just by digitizing that person, you can do so much more. And I'll just give a few examples to illustrate that.

If you have people walking around with a security wearable and you have something like an evacuation, there's, whether it's a test or an actual evacuation that takes place, knowing how many people actually are in the building, automatically knowing when people arrive at a mustering point, who's arrived, who's still in the building, where were they last seen in the building - that is so powerful. And in some verticals, safety is not an option. It's a must. It makes it so much easier. If you look at physical access control, the ability to know who's in a certain area of the building, who's entering a zone - that's potentially by being me a more secure one, structurally solving things like tailgating, which hasn't been a problem for like decades in our organizations. Those problems can be fixed very easily. If people start using security wearables, and that's just two examples, there's so many more, but we believe that COVID-19 has, and it's true for many other aspects of COVID-19, it has introduced a couple of new technologies, new ways of doing things, that we believe will be lasting. So we don't look at COVID-19 as like a one-time sort of peak that created a need for a technology that will then disappear again. But we see these types of security, wearable technologies to become a default standard in large organizations and be used for many other use cases in the next couple of years.

TJ: Thank you very much for being with us, Bart. I'm sure this information will be very helpful for enterprises who want to ensure a safe return of their workforce to the offices. We hope to talk to you again soon.

Bart: Thank you Tajeshwar.

TJ: I thank all our listeners for joining in. We want to hear from you. We need your feedback. The contact information is available in the description. Comment, share, recommend, and subscribe. See you all in the next one.