Zebra Your Edge Podcast

Host:

- **Therese Van Ryne, Senior Director of External Communications at Zebra**

Guests:

- **Keren Ronen, Director of Industrial Ecosystem Partnerships and the partner manager for Zebra at Ericsson**
- **Jeff Stark, Director, Strategic Operational Partners Team, Zebra**

Transcript

Therese
Thank you all for tuning into the Your Edge podcast. I'm Therese Van Ryne, Senior Director of External Communications at Zebra Technologies, and we're continuing the discussion around 5G today with Jeff Stark, Director of Zebra's Strategic Operational Partner Team, and our special guest, Keren Ronen, Director of Industrial Ecosystem Partnerships and the partner manager for Zebra at Ericsson. As digital transformation has accelerated in the manufacturing, warehousing and even hospitality spaces, Zebra and Ericsson have come together more closely to collaborate around private networking solutions, leveraging both 4G and 5G technology. We want to ensure we are delivering the wireless communication capabilities you need to keep frontline workers, customers and automation solutions fully connected. So, I thought it would be good for Jeff and Keren to share some of the things we've been working on together and how these efforts may help you achieve your operational goals.

Jeff and Keren, thanks so much for being here.

Keren
Thank you very much, both of you, for having me.

Jeff
Thank you. Looking forward to it.

Therese
Absolutely. So, let's start by talking about how things are advancing in the wide world of wireless technology. Jeff, I know it's only been about a year since you and I discussed the state of 5G in the context of private 5G networks. And though technology is maturing quite quickly, I know that many people are still relying on 4G in many cases. Why is that?

Jeff
Therese, great question. It is, you know, clear that 4G is not going to be going away anytime soon. It is the foundation that will remain in place for for years to come. You know, we've seen rapid migration from 3G and into 4G, but 4G is going to stick around. There's been a lot of hype in the last five years, you know, from the carriers, from equipment manufacturers to, you know, to hype 5G.

It's dominant in terms of mindshare, with 5G being very prevalent in advertising, in ads you see on TV. What we're experiencing is, in the last I would say 18 to 24 months, more focus on the enterprise and how 5G actually applies to them. And certainly, you know, we're optimistic that private 5G provides that bridge to that realization of enterprises leaning into 5G opportunities.

You know, as a follow on to enterprise opportunities, we envision that private 5G will be where enterprises realize the value so that they're able to, you know, carve out a secure environment to be able to operate efficiently, effectively, with an overlay network, not handicapping or eliminating Wi-Fi, but as a means for them to roll out new solutions and new feature functions.

Keren
So, I totally agree with everything that Jeff said. It's exactly that. And I would also add maybe just an example for that. Do you remember a couple of years ago, and I think all of us here are of the age we can still remember that, we used to call a taxi by telephone and then they told us, "Yeah, we're going to be there in a few minutes."

And we were waiting. Not sure if the car that arrived is ours. And then 4G arrives and nobody knows what to do with 4G, but somebody introduced an application that you can call your taxi over the phone and you see when it arrives and you know which taxi to expect. And then you knew how much the fare will cost. And then Uber was there.

Now, imagine navigating someone without a map in your application because a couple of years ago we just used maps, right. And this is exactly the stage we are in now with 5G technologies. There are companies like Zebra that are already creating public applications and devices that know how to use 5G. Now, the world has just to get used to that, and more and more solutions that are utilizing the specific values of 5G will be added.

Therese
That's a great example. Do you feel that people are leaning more into private wireless than they were a year ago? Or is there still hesitation because they feel Wi-Fi can get the job done on its own or simply because they're having a hard time justifying spend for private wireless when they already have a ton invested in Wi-Fi?

Jeff, what are your thoughts there?

Jeff
That, you know, Wi-Fi will, is, and will continue to remain a dominant wireless technology solution. However, you know, it is restricted by its flexibility, agility and the cost to modify and change that Wi-Fi network. Whereas, with private 5G, you get a lot of flexibility in timing and tuning of those end points, managing and adding new points. So there are a lot of advantages to being able to have that that private 5G network infrastructure solution. So no, not replacing, I think augmenting.

Keren
Maybe adding to what Jeff just said. I will just add this one point that both Wi-Fi and 5G and other connectivity solutions, those are all infrastructures and enable solutions. Each one brings something else to the table, and eventually the digitalization will be the art of resource management. What connectivity resources do you have? What solutions do you have that provides the end customer solution, the business need? And how do you manage those resources in between? 5G is the best fit when you need highly reliable and low latency connectivity. It is also better in wide area deployments and the most secure option. Wi-Fi would be very good when best effort connectivity is enough, and Wi-Fi is at its best in indoor and local area deployments.

And then you, people, will have to choose which solution to use with what connectivity. If we want to look at the DC for the example of each to understand why would people still stick to Wi-Fi when needed but will go with 5G in indoor scenarios sometimes, Ericsson has published research that calculated that, for example, in an area of 250 square feet with 1000 devices - and we are talking about not a complicated area, just a room, a very, very, very, very big room with 1000 connected devices tied by regional latency. The TCO difference between lighting all of that with Wi-Fi is higher by 20 to 22% than using cellular.

Therese
That's helpful. Thanks, Keren. Are there certain environments in which private wireless is likely going to be more prevalent than Wi-Fi, perhaps due to the types of technology systems they're relying on or the volume of data they must transmit?

Keren
And that, again, is connecting to the previous feature thing. So, what would 5G be good for? It would be good for data-driven optimization of operations. So, when we need to collect a lot of data from multiple sources and, in real time, analyze the data and make decisions often operated autonomously. It is also good for machines automation, exchanging things with people with machines, capable of releasing people to do smarter things. Machines will usually do those activities faster and more accurate.

5G allows mobility not only in a small area, but between indoors and outdoors in a wide area. It's mobility for people as well as for machines, and it allows remote operations. We can have experts sitting in one country, in one continent, supporting people on the other continent in real time. We can have robots running around, right, indoor/outdoor, coming in from the floor, out from the port. And connected cars...we can have remote driving so people can sit in one place and drive a forklift at a totally different state. Those are the places where you will choose 5G versus the others. And where we make them would be by motivation of ROI or of the ecosystem readiness.

Jeff
So, we agree. We see opportunities in the short term in manufacturing, warehouses, ports, airports, yards...where there's an opportunity to kind of, again, overlay the cellular network on incumbent Wi-Fi infrastructure. The big advantage, again, is that flexibility at the end points without having to do all the major rewiring. It's also a huge advantage, as Keren pointed out, with the operational capabilities to go inside and outside seamlessly.

So, you know, think about your connectivity within the building and, as soon as you leave, you're in the yard, you're in the outside of an airport, you're in a rail yard. All of these are fantastic opportunities to maintain that connectivity, that security, to be able to do that real-time capture of the endpoints with a private 5G network. And, you know, one of the beauties of this is that, again, going back to why 4G isn't going to disappear and Wi-Fi networks are not: They're already the incumbent networks that are baked into many of these locations. And if you were to take a look at the types of devices that are already in those environments, they're going to be Zebra devices.

So, we believe that we have an inherent advantage in the fact that, you know, our devices already reside in those Wi-Fi, in those 4G, environments. And private 5G/5G only enhances those capabilities and future proofs them. So, you know, we're encouraged.

Therese

Excellent. Is there a formula, Jeff, that can be universally applied to define the ROI, or at least justify the cost, of private wireless to the decision makers and financial stakeholders?

Jeff
That's a terrific question. And if we had a crystal ball, we would be printing money. I would say that the real answer here is that, you know, ripping and replacing is the lowest priority. So you're not going to see a lot of, you know, just tearing away current infrastructure and putting in these private 5G. The most effective, cost effective budgetary acceptable path is what I would call greenfield opportunity.

So if you think about new builds, you think about people doing new manufacturing lines, new warehouses, and they want to bake in the best and future proof that, that's where you're going to see immediate opportunities for private 5G. I think the in-between space is where companies look at enterprises, look at proof of concepts.

You know, how do they begin to play with a small node network with devices, how that overlays and how do they build new solutions? And that's where we're seeing a lot of traction I would say last year and this year.

Keren
I totally agree. And if somebody finds the the formula I'm doing as I'll just add an example, that's a Ericsson and ABI Research published because, while each company is different and each use case within each company has a different ROI, I will just give some numbers for people to believe, just to know that there is an ROI that we found out about. So there is a research, recent research we've published by Ericsson and ABI Research in which we have calculated some ROI examples. Two companies that are already greenfield that have created smart factories or already been featured in that research. One is tier-one German automotive smart factory - automotive produced smart factory - and the other is a tier one Japanese electric smart factory.

So the automotive factory size of the plant was a if I'm translating to square foot, it's like 5.4 million square foot, and the Japanese electronic smart factory size is 2.2 million square foot, and the calculation of ROI shows that within five years the German automotive smart factory has a 9.2 times return on investment. In the electronics smart factory, it is 24 times within five years of the investment. But those are all just, as I just mentioned, greenfield installations, so a new factory which is being based on modern digital solutions.

Therese
Keren, is there a cost difference between private 4G and private 5G?

Keren
The cost difference will be mainly on the solution side. So, at least from Ericsson's point of view, the private network supports both 4G and 5G at the same time. Moreover, the ability to use 4G and 5G practically gives the customers more bandwidth. So, you can use both. Whenever you need 5G, you will prioritize 5G, and whenever 5G is not needed, you can use the 4G and not take resources from the 5G. So Ericsson will also have solutions, to Jeff's earlier point, with the acquiring of Cradlepoint, Ericsson also has gateways, which allows customers to use their existing solutions over 4G or 5G and add the new solutions like Zebra's on the 5G and, as such, start to modernize even when it's not in greenfield and build slowly on that. But the price of the infrastructure itself is different.

Jeff
And if I could just jump on that point and this is why Zebra's so excited, just one of the reasons why we're so excited to be working with Ericsson and Cradlepoint is the fact that Ericsson is known globally as a top notch, top tier infrastructure provider to telecoms, to networks globally. And the fact that they've acquired Cradlepoint, which is an enterprise-focused path to market with enterprises is great for us because we get the best of both worlds. We get this gold plated, bullet proof partner who operates with carriers now providing scalable solutions for the enterprise market. And we also have the advantage of having a long relationship with Cradlepoint with our Zebra Retail Solutions group. So, there's been, already in place for years, a strong relationship. We've only enhanced and leverage that to get to a bigger, stronger relationship with Ericsson.

Therese
That's great. Keren, another one for you. Do you think there will be a tipping point for private wireless in which we'll see implementations become as standard as Wi-FI implementations are today?

Keren
I definitely think so. And back to the 4G example, it is just a matter of time. It is just a matter of process. Jeff, in the other conversations that we have had, has always stressed that now we are at the stage of lots of trials. Now we are at the stage of creating trust from an IT point of view, it's a new IT solution, but also from a business point of view to let the business people imagine and understand what can they ask for, for them to imagine what can they do. And we need more or we need to encourage the ecosystem to create more and more solutions. Because unlike Zebra, not all the customers, not all the solution providers are so fast to adopt 5G. And that is what gives, from our point of view, a huge advantage to Zebra. We are presenting zebra to any customer that we see because it has adopted the future.

Therese
Jeff, anything you'd like to add on there?

Jeff
And I'm going to go back to the you know, I think the tipping point is now, you know, we're going to see a lot of activity only increasing in those proof of concepts. I think more and more of the the partners in ecosystem are starting to adopt I would say,

this trial mentality instead of, you know, having to build a large infrastructure project overnight, which is a challenge, especially given economic headwinds that are kind of globally prevalent. You're seeing a lot more trials taking place.

And I think those trials only turn into success stories that become repeatable and reasonable on a larger level. So that's beginning to happen. We're beginning to see that cycle only increasing. You'll see more press and things that we're doing in the marketplace that will only emphasize that.

Therese
Very good. So let's talk about what Zebra and Ericsson are doing to make private wireless a more accessible solution to companies across different industries. I understand that a few of Zebra's devices and solutions are on Ericsson's marketplace, and we are planning to interop test all 5G-enabled devices since those are newer on the market. I know we're also hosting joint events together showcasing Zebra's Industrial Automation, Robotics and Software Solutions that can work in manufacturing and warehousing environments using Ericsson's 5G technologies. Why does all this matter to customers and the industry as a whole?

Jeff
So I'll take a first stab at that. You know, this has not been an overnight success. This is a long-term project investment, collaboration. You know, we've been at this for over two years with Ericsson. So, think about – I'd like to make this reference analogy in terms of – it's like a highway project. You have to build a large interstate, you have to build the infrastructure.

That's where Ericsson and Cradlepoint are partners in putting in that infrastructure into enterprises. And then it's our devices like vehicles that will be used and operated within those environments. So, as you all know, none of these things happen overnight. They do take some time. We first started working with Ericsson when we had a CBRS-enabled tablet that we demonstrated at Mobile World Congress two years ago.

We worked again with new devices, 5G devices, in Barcelona in February of this year. We've been in Hannover Messe we've been at a bunch of customer sites. We're starting to map and align our sales teams. I've presented to the Cradlepoint and Ericsson internal sales teams and their partner ecosystem. They're doing the same now to our group as well. So, this is a project that is not overnight success. You know, we're both making significant investments that we believe that we'll see returns on in '24 and '25. If that answers the question.

Therese
Very much so. I know we spoke earlier about manufacturers and warehouse operators likely being the earliest adopters of private wireless, with many already using 5G where available. And the move toward greater automation is certainly a driver for that, at least within the four walls. But outside the four walls, what do you think will compel those in the oil and gas, mining, utility and transportation sectors to say, "We have to get a private wireless network online right now. What we're using right now isn't cutting it anymore."?

Keren, what do you think?

Keren
Well, while in the four walls, 5G is joining wired activity and Wi-Fi as another option that brings locally more capabilities. In outdoor locations, you'll have a really hard time to find trustworthy connectivity unless wired. There's not really good wireless connectivity for outdoors. So, there, 5G - private 5G, and especially private 5G because public 5G does not arrive to all the remote locations - is even more needed.

Let me give you one example. A console, which is another side of Ericsson, had done a poke with an international mining group. The use cases that they were looking at as the business critical ones were video calls between vehicles, people with vehicles, the connected worker, and communication with the supervisor at the central command. This is basic communication. This is basic this is like years ago in indoor. And they needed that to operate efficiently. Okay. The top criteria defined as exceeded expectations both on the latency quality and the service, but also maybe for me, most interesting, is in what they saw as a possible invention of the smartphones.

Now next step after basic connectivity and ability to connect between machines and people would be the heavy machinery solutions like drills and sensors on vehicles and stuff. There, the ROI is millions of dollars in the minutes for this function versus with sensors. We managed to prevent faults. So the industry's there. The need is there. It is just that their digitalization process is a bit delayed because of traceability of solutions.

Therese
Well, I know Zebra and Ericsson will be ready to jump in and help them get the right architecture in place when they're ready, right?

Keren
Definitely.

Jeff
Yeah, absolutely. I mean we're, as Keren's pointing out, flexibility, agility, the opportunity to connect those end points in secure environments are some of the key drivers and represent the tipping point for those outside outdoor environments that you were describing, Therese. And we're interested in ensuring that whenever this infrastructure is put in place and whenever the builds occur that augment the existing 4G or Wi-Fi infrastructure, that the Zebra-Ericsson-Cradlepoint collaboration provides the easy step, the de facto, they're already working together.This is already tested and approved. It's already in the environments to make it a very easy lift for our customers.

Therese
That's great to hear. Well, this has been a really good conversation and I appreciate you both taking the time to speak with me today. I'd love to reconnect with you in a few months to get an update on the projects you mentioned, as well as some of the other pilots and implementations in progress that we couldn't quite share yet today. I'd also love to hear about the interop testing and how that goes, and I'm sure our listeners will want to know more about the best practices you're developing around private wireless network design, implementation, refinement and scaling in different industrial field and enterprise environments. So thank you both again for being here.

Jeff
Thank you. And we want to thank our partner, Ericsson/Cradlepoint as well. Thank you.

Keren
Thank you for having me. And thank you for being a partner of ours. It's very important for us.

Therese
Absolutely. Thank you. That's perfect. In the meantime, if any of our listeners have questions about private wireless, we'll point them in the right direction. I know between our two companies, we have several engineers, sales team members and solution architects with industry domain expertise who are focused on private 4G and 5G network solutions for a number of different digital and automated workflows.

Of course, if anyone is interested in hearing our past conversation with Jeff, they can check out the Your Edge blog and podcast at www.zebra.com/blog. I'm Therese Van Ryne, signing off until next time.