Zebra Your Edge Podcast

Host:

- **Matt Van Bogart, Strategic Global Business Development, Machine Vision and Fixed Industrial Scanning, Zebra**

Guests:

- **Joel Nemberger, Application Engineer, Tri-Phase Automation**
- **Nick Munger, Application Engineer, Tri-Phase Automation**

Transcript

00:00:00:00 - 00:00:40:11
Matt
Hello and welcome back to the Industrial Automation Insider podcast. My name is Matt Van Bogart with Zebra Technologies and joining me today are Nick Munger and Joel Nemberger, who are both applications engineers from our partner Tri-Phase Automation. Both Nick and Joel spend their days primarily supporting every aspect of machine vision and automation projects for their customers. So Nick and Joel, thank you for joining me today.

00:00:40:12 - 00:01:06:11
Matt
I really appreciate your time. I want to get into not only some of your guys' individual backgrounds, but I want to talk about how a partner works with a customer to identify the right types of solutions to their automation projects as they may pertain to machine vision applications. So I just want to welcome you both here today.

00:01:06:13 - 00:01:10:06
Matt
Nick and Joel, if you just want to introduce yourselves real quick.

00:01:10:09 - 00:01:28:06
Nick
Yep. Absolutely. Thanks for having us on, Matt. Nick Munger, worked with Tri-Phase Automation for the past eight years and had the opportunity to be involved in a fair amount of vision applications. And, I'm here with Joel as well.

00:01:28:08 - 00:01:46:17
Joel
Yeah, my name is Joel, as Nick said. I've been with Tri-Phase for 13 years, and for a lot of that, I've taken on the role of doing a lot of the work with machine vision and from testing and specing and implementing and programming. So, I've got some experience to lean on here, and hopefully that can help out.

00:01:46:19 - 00:02:11:16
Matt
Awesome. Well, thank you for that guys. Really appreciate it. So tell me a little bit about, you know, what you guys do as a partner when you're starting to work with a customer that is asking about quality inspection, about automation and how do you approach machine vision projects with a customer for the first time?

00:02:11:18 - 00:02:39:18
Nick
Okay. I think I really, one of the first things we have to understand is, what is the customer's familiarity with machine vision? So, is this their first application where they don't have a camera anywhere in their factory and they're just starting to get into it? Or maybe they're more experienced, and maybe they have a better understanding of what the power of machine vision brings to their factory.

00:02:39:18 - 00:02:58:17
Nick
And so I think really, one of the first steps is kind of identifying: what does the customer want to do and what do they know about vision? And from there, we can kind of direct the conversation, to be the most beneficial we can be.

00:02:58:19 - 00:03:20:04
Matt
Got it. Do you guys have specific ways that you approach these types of applications? Do you bring demos? Do you try to showcase videos or some of the things that you've done with other customers to get, this new customer kind of thinking about how this technology can be used on the factory floor?

00:03:20:06 - 00:03:48:03
Joel
I think for the most part, the intro to machine vision and what they're doing is handled by the sales guys when they are looking at what applications are possible or teeing it up with the customer to figure out where machine vision could help them, especially from our perspective. Once it gets to us, a lot of times they already have an application in mind, and they're looking for more specifics on how to apply machine vision to solve their problem or do quality inspections.

00:03:48:05 - 00:03:55:01
Joel
And we're trying to answer the specific questions about what software, what programs, and what hardware will work best for their solution.

00:03:55:03 - 00:04:12:16
Matt
Got it, got it. And does that typically involve you guys being on site, working within their environment, or do you take parts and take pieces of their application back to a lab where you do a workup or some type of proof of concept?

00:04:12:18 - 00:04:29:09
Joel
Most of the time we prefer to have the sales guys out there getting the information and they'll come back with an application and we'll try to vet it out further, or get more questions answered. Or maybe it's to the point where they want some testing. So we'll get some sample parts. We have a vision lab here.

00:04:29:09 - 00:04:51:26
Joel
We'll take the parts in there and mock up as similar of a test set up as we'd expect to do on their shop floor. And if there's a lot of open ended questions or we're not sure about lighting or line speed and certain things they don't feel comfortable simulating or getting close enough to in the lab, then we'll schedule time to go on site and mock it up there as well, with more real world

00:04:51:29 - 00:05:03:12
Joel
lighting and, motion and potentially even getting customized demo hardware that we don't necessarily have in our lab to make sure we are as close to possible as what we'd actually end up selling.

00:05:03:15 - 00:05:31:16
Nick
Yeah, and getting the right products, for the right application, like Joel is alluding to, it's really important, right? Making sure that everything lines up so that we can see what we're trying to inspect. And so kind of leading up to that is when the sales guy goes into an application is a lot of times they'll bring the camera with them. They'll bring the camera, you know, and say, "What's the part that we're looking at today?"

00:05:31:18 - 00:05:58:16
Nick
You know, maybe show them some new features like the OCR AI. That seems to be a really good feature that a lot of customers are pretty wowed by. And it only takes, you know, 5 to 15 minutes to get it set up and shown to the customers. So getting them interested in the different technologies and, also, letting them know how we can help them down that path is crucial.

00:05:58:18 - 00:06:27:03
Matt
Got it. So like your sales team is out working with customers, identifying opportunities and then they bring you in to actually go through the process of identifying kind of what is the right technology, what is the right toolset, software...and then you guys will actually mock up a solution in your lab. And it sounds like sometimes you'll actually go on site to install the system in a machine or on a line.

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Matt
Is that right? I kind of understand that's some of what your process is?

00:06:31:26 - 00:07:04:10

Nick

Yeah. We're a value-add distributor. So we'll help you spec out the components. But we'll also do the vision programming for you. And we'll also go on site and help you install the camera as well. A lot of the times the camera is just one piece of the puzzle. So you know, there's a value in having expertise and making sure that things are wired correctly or communicating correctly to the PLC or the robot or whatever it is that this camera is working alongside of.

00:07:04:12 - 00:07:10:13
Nick

So, we will go into the customer, quite frequently, to do that.

00:07:10:16 - 00:07:34:00
Matt

Okay. So some of the things that I've seen, too, being in and, you know, going through these scenarios, some of the things that, you know, customers need to be thinking about - our users need to be thinking about in terms of their machine vision application - are things like field of view and working distance and lighting. You know, some of the things that you guys have already talked about it.

00:07:34:02 - 00:07:56:25
Matt

But if there are like a handful of very specific things that users should be thinking about in terms of their application, if they want to use machine vision, are there like three or 4 or 5 things that you tend to want to focus on to make sure that this application is going to be as successful as possible?

00:07:56:27 - 00:08:20:09
Joel

I'd say the number one thing that can cause headaches is lighting. If it's a moving application, you have to make sure you have enough lights at the right speed. If it's, a static application, is it going to be a bright light? Is it a specific color to bring out a color application? Do you need to have it invisible from the visual spectrum so that you don't have operators getting blasted with light all day?

00:08:20:12 - 00:08:45:26
Joel

And then just for the application itself, what angles of light you need? Is it low angle? Is it back light? Is it a combination? Those things are typically the most difficult and the stuff you want to spend the most time on, because the more you spend getting the lighting and the exposure and the brightness tuned in external to taking the picture, the easier it is on the machine vision side, keeping the images consistent from part to part, because there will be variation in the part finish.

00:08:46:14 - 00:08:54:12
Joel

And the more you can control that with the lighting and the angles, the better.

00:08:54:15 - 00:09:15:01
Nick

Kind of what Joel's touching on with lighting just in terms of operator, you know, interfacing where, you know, do you want to light that you can see it flashing all day long? And then someone standing right beside it, might not be a very good color to choose that if the operator can see it.

00:09:15:01 - 00:09:32:06
Nick

So having having someone like Joel who understands what the different lighting requirements are for an application and how it not only affects the part, but also affects the operator using the machine, it's all good information to have.

00:09:32:09 - 00:10:06:08
Matt

Got it, got it. And do you find, most of your users, you know, come to Tri-Phase with a very specific business problem that they're trying to solve within their manufacturing operations? Is there like a particular challenge that they're trying to overcome? And have they thought about what the implications could be of deploying machine vision inspection into their operation or into their factory floor?

00:10:06:11 - 00:10:29:11
Nick

I think both situations happen. Sometimes you have a customer come to us, and, you know, they're always interested in what's the latest technology? "Oh, hey, I heard I heard there's this new tool from Zebra, for example, and I was wondering how we could maybe use that in our in our machine."

00:10:29:13 - 00:10:54:09
Nick

They don't have a specific part that they're necessarily trying to inspect, but they're looking to see if there's ways, they're relying on us to see if there's ways, to improve their process. Then obviously on the flip side, we do probably get, I would say more frequently we get, applications where there is a specific part, and the customer is trying to figure out, you know, what can they expect?

00:10:54:09 - 00:11:13:22
Nick
How how can they inspect it? And then we can drill into the details from there. But, I would say more often than not, it's the specific, you know, part or specific thing that they're looking to examine when they approach us.

00:11:13:24 - 00:11:36:17
Matt
Got it. Okay, cool. And then, you know, tell me a little bit about kind of what a deployment looks like for your customers. So we've identified a problem. We've gone through some type of discovery. You're doing some some lab testing on site. You're possibly even running on a line for a while. What does a rollout look like and how involved are you?

00:11:36:20 - 00:11:50:01
Matt
And in that process, are you alongside the customer? Does a customer take ownership of the solution at some point? Just give me a little bit of background in terms of what that looks like when you're engaging with users.

00:11:50:03 - 00:12:07:23
Joel
It depends on the user's level of experience with machine vision. But more often than not, they're relying on us to be the machine vision experts where they want us to program it and help get it set up. especially if it's something more than a barcode scanner or a sensor. I'm looking at as if there is not.

00:12:07:25 - 00:12:35:00
Joel
So, with that, we'll get the test set up. We'll say, here's the lighting, here's where the camera needs to be mounted with distances and angles. And typically they'll get the hardware mounted up, and then they'll have us come in for initial programming and fine tuning of the aperture or the exposure and get the programming set up and, with that, we'll work through the mock set ups for test parts, and we'll stick with them through when they're going to do go live and initial production.

00:12:35:00 - 00:13:03:01
Joel
And then at some point, we'll typically have a handoff once the production is ramped up and they've gotten comfortable and the people on the line have gotten comfortable with the machine vision, and they're good with the program changes. And we'll teach them what controls they have and how to use them to make small adjustments, or maybe even to be able to make big adjustments in the program itself to keep it up to date as things change or as they come up with new variations of parts to inspect.

00:13:03:03 - 00:13:24:28
Nick
Yeah, we we want to put our customers in a good spot where, when we do the handoff, so to speak, everything's working really well. Ideally they have a basic understanding of, you know, if there's any, troubleshooting that needs to be done. They can navigate the software to hopefully pinpoint where the issue is.

00:13:25:00 - 00:13:42:16
Nick
We're always available for, youu know, after install, troubleshooting support, additional programing, addition, subtraction, all of that. But, it's also important that the customer feels comfortable with what they've got running in their shop, too.

00:13:42:19 - 00:14:12:21
Matt
Sure, sure. So tell me a little bit about you guys as a value added distributor and machine vision kind of specialization. within your business, you're also doing integration into like an, the PLCs you're integrating a vision into a machine or a process, right? So tell me a little bit about, you know, your guys' capabilities you know, because you're not just a machine vision company.

00:14:12:21 - 00:14:23:26
Matt
You're also integrating into, some cases, many of the other components that you offer as a as a distributor, correct?

00:14:23:29 - 00:14:48:26
Nick
Yeah, so we distribute for a lot of components. So, vision, sensors, robots, motion control, VFD, servers, PLC items. We have a control panel shop as well. So we have a very good understanding of all those different components and how they can all work together.

00:14:49:02 - 00:15:19:14
Nick
And I think that's a pretty big, I guess, value that we can bring to our customers, even if it's not necessarily integrating the camera with one of our PLCs. Maybe it's a PLC line that we don't carry. We still have the knowledge for how to set up that, whatever it is - ethernet IP communication or some other kind of, you know, industrial protocol, to get the two talking.

00:15:19:17 - 00:15:47:00
Matt
Yeah. Excellent. Cool. Thank you for that. so any any closing remarks, you guys would like to add about about your guys's kind of skill set and capability? Any any final thoughts? You want to leave users that are watching this, you know, that may be looking at, implementing machine vision inspections, some, you know, final thoughts of wisdom.

00:15:47:02 - 00:16:11:06
Joel
I guess regarding success with machine vision application...I guess I would suggest number one coming in with a realistic budget for what will work for you guys. We can come up with solutions, but if it's going to be outside your budget, then we'll have to look at what's feasible, what changes we can make down the road to maybe make the ROI acceptable, even if it's outside your initial expectation for budget.

00:16:11:08 - 00:16:37:12
Joel
As for operator, acceptance, that's huge. If you need to add an HMI in there, if you do, make sure the lighting is is not blasting them in the eyes. Making sure the operators are good with what the machine vision is doing, and they can get adequate feedback to understand what it's doing so it's not this black box that's telling them that their parts are bad, or they're doing it wrong. And not making a confrontation between the operators and what we're trying to do to increase productivity.

00:16:37:15 - 00:16:57:00
Joel
And as far as specifications and what you're asking the machine vision to do, there are a lot of capabilities with them, and there's a lot of flexibility. But even then there's limits. And I know there's a lot of excitement about AI in general, and it seems like it might be a catch all that can do everything, and it can see as much and interpret as much as humans can.

00:16:57:03 - 00:17:19:05
Joel
That's not always the case. And it's kind of a niche thing to be able to apply it correctly and find a good fit for it that will do more, better or faster than what traditional programming can do. So it's coming with the open mind for what you're hoping to achieve with the machine vision. And, you know, integrators like us, we'll do our best to get you exactly what you're looking for.

00:17:19:07 - 00:17:43:23
Nick
Yeah. Like Joel said, machine vision is a lot of what we do here. So work with, I guess my recommendation would be to work with, a distributor or a company that knows what they're doing - that's not afraid to get their hands dirty by doing a feasibility test to make sure that lighting is set up correctly to make sure that the AI can do all the things that the AI said it could do.

00:17:43:26 - 00:18:09:00
Nick
And so, you know, a company like us, if you work with us, it's a lot of the same things where we have vision, we have other components. and you just want to have a partner, ultimately, you want to work with a partner who can help you find what you're looking for and make sure that you're doing - you're getting the inspection done - the way you want it to be.

00:18:09:02 - 00:18:31:23
Matt
Excellent. Well, Nick and Joel from Tri-Phase, I really appreciate you both being here, sharing some of your experience, some of your wisdom, and walking through kind of the process that you do to engage with users. So I really want to thank you for not only your partnership, but also for your time today. Thank you. Yeah, you're welcome.

00:18:31:26 - 00:18:45:14
Matt
Again. This is Matt Van Bogart of Zebra Technologies with the Industrial Automation Insider podcast. Thank you for joining and look forward to seeing you next time.