[music]

Sarah: When you're looking at artificial intelligence and machine learning, those are both technologies that are going to cause a big influx of data. That's where we see a kind of a growing demand for technical expertise: around data scientists.

[music]

Mike: From the Center for Occupational Research and Development, welcome to Preparing Technicians for the Future of Work. I'm your host Mike Lesiecki. In each podcast we'll reach out to people who are actually on the frontline of the future of work and hear what they have to say. That means interviews with industry, interviews with working technicians, and forward thinkers in the field. We'll do some background research and we'll curate that research to make sure you have the most up-to-date and relevant information. And in every episode will suggest action that you can take. We want to inspire you to take that action.

This podcast is brought to you by the Center for Occupational Research and Development, known as CORD, with financial support by grant from the National Science Foundation's Advanced Technological Education program. Opinions expressed in the podcast do not necessarily represent those of the National Science Foundation. You can find out more about our project and our approach at preparing technicians—all one word—dot org.

In today's show we're profiling the position of Field Service Technician. If you had to think of a job, a career, that has changed dramatically in the last few years through digital transformation and other factors, you might choose to profile a Field Service Technician. To help us understand these changes we've invited Sarah Nicastro from the *Future of Field Service* to join us. Welcome, Sarah.

Sarah: Thank you, Mike.

Mike: You know, Sarah, you've worked with field service organizations for more than ten years. And you're a self-

described "Field Service Evangelist." What do you actually do?

Sarah: [laughing] It's a great question. The Field Service Evangelist title definitely elicits that question a lot. So, my history in this space is in the media. I was the Editor-in-Chief of a publication called *Field Technologies* for about eleven years. And about a year ago I was approached by a software company that has a field service management software solution (that company is called IFS) to come on board and launch an independently branded educational resource. And that is what *Future of Field Service* is. I didn't want to use an Editor title, since it technically isn't an independent publication. So, we went with Field Service Evangelist. Field Service is something I'm very passionate about. I really enjoy giving service leaders a platform to share their stories with one another, share lessons learned, come up with ideas of how to innovate within their companies. And we do that at *Future of Field Service* through a number of articles each week as well as a weekly podcast.

Mike: Well thanks, Sarah. It's interesting! It sounds like your experience in what you're doing now spans a very wide industry segment.

Sarah: Yes, that is correct. So "field service" gets sort of thrown about as a term. And it's really "services" or "service industries." The audience that I serve includes companies from all different types of service-oriented industries. So, my experience historically would be interviewing folks within service organizations, director level and above, typically, that are responsible for the management of the mobile workforce, responsible for digital transformation efforts, etc. And those companies are not only all different sizes, but in a wide variety of different industries. So, everything from commercial services, residential services, manufacturing, telecommunications, utilities, etc.

Mike: That's really good, because in our project we also span a very broad industry segment as we prepare technicians for

this future of work. I think, Field Service Technicians—it seems they're really out there on the frontier of what's happening, in terms of those things that you mentioned: digital transformation, and the way they interact with customers. As I mentioned, we focus on preparing technicians for that future. What are you seeing out there, Sarah? What are the trends? What are service techs have to know and to be able to do? And how is that changing?

Sarah: It's a great question. And I think people tend to focus on the technology aspect: technology as the disrupter in this industry. And I think that what is even more interesting is, not to look at HOW digital technology is impacting the field technician's role, but WHY it is impacting the field technician's role. Part of that obviously is because the technology continues to advance. And so, the companies continue to derive value from that technology. But more importantly, I think, the key driver behind "why companies are digitally transforming" and "how companies are innovating" has changed.

So, when I first started interviewing service leaders in this space 12 or 13 years ago, the driver for the changes and investments they were making in their businesses was always around reducing costs and increasing productivity. Those things are obviously still very, very important to these companies. But what has surfaced is a real true focus on the customer. And that is a big shift in this space! And I think that service companies have realized that customer centricity is critical to their success. And field service plays a pivotal role in the customer experience.

If you think about how people buy today: a lot of purchases are made online. And there's certain industries in which a field technician can often be one of the only real faces of the brand that the customer sees. And so, this means that, not only has the world of field technicians changed in terms of the tools they're using, but, I think, even more importantly, in terms of the expectations of them, and what it takes for them to deliver on the desired customer experience.

So, not only knowing how to use the tools that exist today, but also being able to grasp aspects beyond technical aptitude: things like soft skills, and empathy, and personality, and the ability to provide a consultative experience. Things like that are becoming more and more important. It's a really interesting time to be in this space.

Mike: Sarah, I like that term: ability to provide a "consultative experience." You know, I'm thinking about our educational programs. And yes, we stress the technical skills. And yes, we talked a lot about soft skills. But I'm not sure there's yet a focus on (as you mentioned this) customer experience, or what it means to be "consultative." I think maybe our education programs could really take note here. And think about always thinking about technicians as ultimately working with customers— whether it's internal customers or external ones. I think we could gain from doing that. So, thank you for that comment.

Let me ask you another question: how do a generational factors come into play? For example, how do things differ between let's say the older and the younger generations? The people that are existing in the workforce now? The new entrants? What are you seeing now?

Sarah: Yeah, there are some significant differences. When you look at the use of technology and all of the new tools and technologies that are available to companies right now. Older technicians, generally speaking, have a greater resistance to adopting those tools. It's just a factor of, "This is the way I've always done it." "This is how I'm comfortable doing it." And "change" to some degree is uncomfortable for anyone. So, these companies really have to focus on how to introduce these tools to the older generation and how to manage that change in a way that, not only will force them to use the tools, but really to foster a better adoption. To not just get them to check a box, but get them to really buy into the value of those tools.

Younger technicians, on the other side, tend to be far more receptive to the technology. And, in some cases, even seek

it out in their job search. They want companies that are using advanced tools and things like that. But, with the younger generation, sometimes the use of technology is almost to the detriment of that really personalized face-to-face experience. And so, this is just a balance that companies really have to strike.

I think the other aspect that I mentioned earlier around soft skills and the ability to provide high touch when you're also going high-tech. That issue, I think, tends to be more related to personality than age. I don't think it's necessarily one group or the other inclines to be better-equipped for what we're demanding of field technicians today. But I think that's more related to personality. So, I know of some organizations that are really taking some time and focusing efforts on adjusting their recruiting and hiring processes to find candidate of any age that are more inclined to deliver the type of customer experience that they want to deliver.

Mike: Sure. That makes sense. You know, you mentioned these field technicians needing technical skills in addition to the customer related skills as well. What about technologies like AI? Or machine learning? Or augmented reality? I mean, how much does an incoming worker, let's say a graduate from an Associate's Degree program at a technical college. How much about those things do they have to know right then—at the entry point? Or is that something that they'll get "ramped up on" on the job?

Sarah: That's a good question. Keep in mind my experience is in talking to different service organizations. I'm not actually personally involved in hiring. So, I may be speaking out-of-turn a bit. But my inclination is that it's certainly helpful for incoming technicians to be prepared to use those sorts of tools. But in my opinion, I certainly don't think that they need to be technical experts or have a lot of hands-on experience with them.

And the reason I say that is: the way these tools show up for field technicians, they have to be incredibly simple. Otherwise they're not going to be adopted. So, I think that

in in most instances the companies that are deploying those technologies (AI, machine learning, augmented reality), they're doing so in a way that fits well into the workflow, that is intuitive, and easy to use. I think that a familiarity is certainly beneficial, but I don't think that having a deep technical knowledge is necessary. I think that they'll be able to come on board and pick those things up pretty easily because, again going back to the age question, the tools that an incoming technician is going to have to ramp up on are the same tools that these companies are deploying to technicians that have maybe been in the workforce for 20, 25, 30 years. So, they have to meet the level of anyone's technical ability.

The only thing I will say, and I'm not sure how related it is to today's conversation, but I think that where we do see a really increased need for technical expertise is more around data scientists and folks that will help architect these tools in that usable fashion, as well as make use of the data that they provide.

So, when you're looking at artificial intelligence and machine learning, those are both technologies that are going to cause a big influx of data. And there has to be talent within these organizations accompanied by technologies and software solutions that help you make sense of the data. But that's where we see a kind of a growing demand for technical expertise: is around data scientists and things like that.

Mike: That's an interesting comment, Sarah. You know, I was recently talking with a gentleman working at one of the big elevator companies. And he said that, right now, 70,000 of their elevators are now sending back sensor data to their headquarters. And he says they're struggling with that data load, but are learning a tremendous amount, in the AI/machine-learning sense about it. So, I think you're absolutely right about these: need an understanding for the data sciences, those data analytics. That's a good point.

So, here's one last question for you. I want you to take out your crystal ball. What are you seeing as the main

drivers or challenges in the upcoming years? Think "three to five years out." I mean, are Field Service Technicians going away and being replaced by apps? Or what do you see out there? Say three to five years. What do you think?

Sarah: Yeah, a few things come to mind. The first is, I think we will continue to see a real emphasis on the customer experience, customer centricity, and really expanding on that. And I say that because I think that we're at a point in this industry where companies have recognized—and even embraced—the fact that they HAVE to become truly customer-centric to succeed. But I think we're still at a point where some companies kind of know the steps they want to take to do that, and others are still wondering exactly what that looks like for them. So, I think that's going to be a continued focus.

We talk a lot about servitization or the outcomes-based economy. And that ties back to looking at the customer journey and really understanding, from a field technician perspective: when you send someone in with some sort of technical skill to fix a point-specific problem, that used to be acceptable. But the reality is that needs to be tied in with the whole customer journey. And there are other aspects of that journey that that technician can address. And so, shifting from delivering a service, a break-fix type service, to delivering more of an experience and more outcomes is something that I think companies will continue to embrace.

Along with that, we see companies, service organizations, really looking at how to take that customer journey and find ways to leverage it to create additional revenue streams. So that maybe—I could use for example Dish Network. Dish Network historically has been a company that provides, and installs, and services satellite TV equipment. And they've branched out now to where their technicians are also installing equipment from Samsung and different companies. So, they're really taking their traditional service model and sort of "turning it on its head." And with that comes the need for a significant

amount of flexibility among the workforce. Because that workforce is going to be asked to do different tasks than they have before. And wear more hats than they had before. And so that's something that I think will continue.

Another is, I think we will certainly see increased use of AI and augmented reality. Augmented reality, I think, has some significant value propositions for service organizations in a couple areas. One, related specifically to the aging workforce. So, as you have workers that are nearing retirement age, that maybe don't want to be out in the field day to day to day servicing equipment, or what have you. Using augmented reality you can have an incredibly knowledgeable worker sitting in the back office that may use AR to interact with three, four, five newer technicians in the field, and really provide that hands-on training and support without actually being with them. And I think that that's hugely valuable for companies. Particularly when you can capture those interactions in most augmented reality solutions and sort of build a knowledge library from them. So, at the same time as you're training newer technicians, you're also capturing the tribal knowledge of some of those older workers.

I certainly don't see technicians being replaced by AI, or robots, or an app, or anything else. But I do think, as I alluded to earlier, we will continue to see the automation of non-value-added tasks. So, some of the things that can be automated, will. And that will free up bandwidth from those technicians to focus more on some of the aspects of the job that are going to become more important.

So, as I said, the higher technology used, the higher touch things need to be with the customer to sort of balance that out. And so, I see AI as a way to give the technicians time back to do more value-added service tasks.

And finally, also related to those tasks becoming automated, I think as that happens, we will also see some re-skilling and up-skilling of the technician workforce. And that could be in a lot of different ways. It could be in more consultative positions, as I mentioned earlier. It

could be training. It could be related to making use of that data. It could be related to product development. Or really just back to how the role will evolve, and just focusing more on the human experience, and being more people centric. But I think that there is no denying the fact that the role is going to evolve as we head into the next three to five years. And I think it'll be very, very interesting to see exactly what that looks like.

Mike: That was a pretty good read of that crystal ball of yours there, Sarah!

Sarah: [laughing] Yes, thanks. It's not my area of expertise. But you asked. And so, I gave you my thoughts.

Mike: As we wrap up for today, here's my takeaways. I've always admired Field Techs because they're out there on the front line. Often, they really have to make things work. The customer only wants that thing to be working again. But now I see from talking to you that, in addition to that challenge, I like your terms: the "customer experience" and "customer centricity." I think our education programs can start taking knowledge of this and really start folding that in to their learning activities, right? They can learn in a simulated experience: how to deal with customers and the type of things that they might be able to do. I think it's a challenging career. I think it's growing.

I was on a webcast the other day from Bell & Howell. And they're enhancing their service organization. They're looking to hire nationwide 200 technicians. This is a growing dynamic business that provides value to them and value to the customer. So, it's pretty cool.

Sarah: It is. And I think you're absolutely right. The opportunity for field technicians is going to increase. But the skills and aptitudes required of them is also going to continue to change. So, I certainly think your point is very important for educators that are listening. Technical aptitude and mechanical aptitude in those situations is very important. But I think that more and more of these companies are really, really focused on: they feel they can

teach that part, even if they brought someone in without that experience. They can teach that part. Where they struggle is teaching a lot of the soft skills, and the communication skills, and the consultative skills, and things like that. So, I think incorporating that more into the curriculum will really help technicians get good jobs when they enter the workforce.

Mike: That's a great concluding comment, Sarah. We're going to take that to heart. Thank you, again, for joining us today. In the Show Notes we'll put a link to your podcast. What is the URL for your podcast?

Sarah: So, the podcast is on www.FutureOfFieldService.com. You can find it there and it's also available on all of the major podcast platforms.

Mike: Well, thanks very much, Sarah. I appreciate your joining us today and looking forward to talking to you again in the future.

Sarah: Thank you for having me.

[music]

Mike: That's it for today, listeners. The Customer, one of the key drivers for the development of the future technician workforce. We saw today how the focus on customers is dramatically changing what a skilled technician has to do, and what they can do.

So, here's your actions from today. This is for both educators and industry. You have strong partnerships. Use that partnership. Educators: invite one of your industry members who has a strong field service organization as part of their business. Invite them into the classroom to talk to your students about these careers: what it means, what they're looking for. And believe me, they'll WANT to come into your classroom because they're struggling to fill that increasing demand for skilled field technicians across industry sectors.

Number two. In the Show Notes I have an article by Deloitte. It's a white paper. And it talks about field

service and customer centricity. Take a look at that article. That'll help bring you totally up to speed on the concepts that were introduced in today's broadcast. And finally, there's a learning activity and a link to the *Necessary Skills Now* project. Those two resources can help you develop your own education and training activities that can help reinforce this idea of "customer centricity." Your students will be interested. They're inherently a mobile-oriented group of people, right? And field technicians are now strongly becoming mobile-oriented, as well. There's some real opportunities here.

As always, find our podcasts on PreparingTechnicians.org, or subscribe on Apple Podcast or Google Play. A rating and review is always appreciated. Our series is produced by John Chamberlain at CORD. Thank you, John. Our project is led by the Principal Investigator Ann-Claire Anderson. Thank you, Ann-Claire. And thank you, our listeners, for *Preparing Technicians for the Future of Work!*

[music]

Please include the following citation when citing or using content from this podcast:
Lesiecki, Michael (Host). Preparing Technicians for the Future of Work Podcast: Episode 11, *The Customer: Driver of Future Change* (audio podcast, transcript). Center for Occupational Research and Development, Waco, TX. November 2019. Retrieved from http://www.preparingtechnicians.org/