

Ep.2 - Tom Kelly_mixdown

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SPEAKERS

Announcer, Ed Clemente, Tom Kelly

- A** Announcer 00:01
Welcome to the Michigan opportunity, an economic development podcast featuring candid conversations with business leaders across Michigan. You'll hear firsthand accounts from Michigan business leaders and innovators about how the state is driving job growth and business investment, supporting a thriving entrepreneurial ecosystem, building vibrant communities and helping to attract and retain one of the most diverse and significant workforces in the nation.
- E** Ed Clemente 00:28
Welcome to the Michigan opportunity brought to you by the Michigan Economic Development Corporation. We're fortunate to have the enthusiastic Tom Kelly, Executive Director and CEO for automation alley. Automation alley is a World Economic Forum advanced manufacturing hub, and the nonprofit industry 4.0 Knowledge Center with global outlook in regional focus. Tom, I should mention first of all that automation alley has been a big fan and supporter of the MDC. And I want to thank you very much for being here today. So first time, I think officially we've talked in a long time.
- T** Tom Kelly 01:08
Yeah - well thanks for having me, Ed - And, you know MEDC has been a big supporter of

Automation Alley. So we've been good partners for a long, long time.

E Ed Clemente 01:18

Yeah. And a probably, shade also mentioned that you've been there for almost the start, right?

T Tom Kelly 01:27

No, no, I came in actually in 2014, as the director of entrepreneurship. And shortly after coming in, became Ken Rogers, Chief Operating Officer. And then a year after that became the CEO. So it was a whirlwind indoctrination in the Automation Alley. And when we when I came in as the CEO in 2016, we kind of took a pretty dramatic shift. And we focused on what we saw is this globally emerging trend around industry 4.0. And Automation Alley was just so well positioned in the state to fill that role, that we changed everything and focused exclusively on becoming Michigan's industry 4.0. Knowledge Center. And so far, it's been working very well.

E Ed Clemente 02:13

Yeah, and I'm kind of so nerdy. I went when I went to your website, I actually watched six of the videos you guys have that you use for educational videos.

T Tom Kelly 02:23

Only six, Ed. (laughing)

E Ed Clemente 02:25

Well, that was pretty long. One was that professor from MIT

T Tom Kelly 02:28

Oh yeah, that's good one. Yeah, we had ever wasn't and dozens of good videos to watch. Yeah, hundreds now.

E Ed Clemente 02:35

Yeah. And so just in case, just to give everybody a bit of a background, a little bit industry, 4.0 might be normalized. But can you give sort of what is the elevator speech, you tell

people when you when they go, what's 4.0 Absolutely. So industry. 4.0 is a term that was coined out of Germany a long time ago, back in 2012. And it was really describing the fourth industrial revolution, which Klaus Schwab from the World Economic Forum, coined that term, and really was the first one to begin talking about this revolution we're going undergoing in the industrial space. And it just to take your listeners really quickly through the art industry. 101 was the steam engine changed how people moved around chains, how goods can be moved all around. The second was right here in Michigan, Henry Ford invented the assembly line, about the same time, Thomas Edison invented electricity, and it became mainstream. And those two technologies really transformed how manufacturing was done. The third Industrial Revolution was when computers and robotics kind of came on the scene at the same time, and again, caused a step change in how work was done. And now we're into this fourth industrial revolution, which is really the digitization of everything. And the reason why Automation Alley focuses so intently on this fourth industrial revolution, is because we were so successful, we invented the second industrial revolution, we dominated the third, we've created great wealth for ourselves because of that. But typically, the leaders in the previous revolution are not the leaders in the next revolution. So we have great risk, because we have all of our assets are tied to how you do things in the second industrial revolution. So we need to get our members, our manufacturers in Michigan, to pay attention and to understand that the way they do things is changing dramatically. And they need to come along with us as we evolve our business models to take advantage of what's available as we digitize. Yeah, it's funny, I think it was in that MIT professor person's presentation, that he sort of talked about digitization as basically creating like a universal language that everyone is understands instantaneously across the globe, which is hard to do when you do like handwritten notes of step by steps and lean manufacturing and All those other things we know about the past.

T

Tom Kelly 05:02

Yep. And that's right. And if you're a truly digital company, any digital improvement that occurs anywhere, is generally available to you immediately. Right? So in the physical world, it's, it's, it's great to have an improvement on a machine. But the only way you get that improvement is you have to discover it, and then have somebody come in and physically change that machine to take care of the improvement in the digital world. It's literally a software upgrade, boom, everybody gets it overnight, everybody improves. And if you're not positioned as a manufacturer, to be able to take software updates to your manufacturing process, you know, this is going to hurt you. And this is where the world is going. So it's, it's very difficult for our manufacturers to get their heads around just how dramatically things are going to change for the way we make things.

E

Ed Clemente 05:53

Well, and not only that, not only dramatically, but how fast that will happen. And I would imagine this is turning like intellectual property upside down, about what is intellectual property and where, you know, patent laws were, what, 1718 years, whatever. Yeah, what value is the patent laws anymore when stuff happens so fast?

T

Tom Kelly 06:12

Yeah and that's a particular risk in the manufacturing community, Ed, because if I grew up in this world, and it was always well, I can't share with you what I'm doing, because it's a secret, it's this, I got this thing that's really proprietary to me. And they would rather spend a long time secretly bleeding out what they had, as opposed to saying, here's what I got, I'm going to do it really fast with partners, and I'm going to be on to the next thing - the digital world doesn't respect your secretness, the digital world demands that you take advantage of what you have right now, make the best of it, and then innovate as you go. It's a more difficult world to bet to, to sort of navigate, but it is the world we're going to have. And so we have to teach people, how do you navigate where it's more about the digital IP is much more relevant than the physical IP, much more relevant.

E

Ed Clemente 07:06

It sounds a little bit sort of like when you talk about our phones, but sort of like open source phones, like, you know, when you look at Apple, say, versus, you know, what Android does, and the way they can do patches. It's like, it's a little riskier with Android. But on the other hand, it's much more ubiquitous, right? So everybody can get access to it in a move faster. And I think the changes happen faster, too. Sometimes.

T

Tom Kelly 07:31

Yeah. So take Android or Apple, what they built was an ecosystem where all of those apps live on their phones. And you can do just about anything with your phone these days. I mean, I have a watch that I can take my ECG heart rate on, I mean, it's nuts, right, that you can do this off your heart. Well imagine that in a manufacturing environment, where you have a system that is digitized, and it's able to use any software or applications that are appropriate for what you're trying to do. And once you were able to do that, you can take all those improvements consistently, people will continuously have new things to do. And 3d printing even changes the game even further, because you're not even worried about the subtractive manufacturing process anymore. Because in a 3d printing world, you can make anything at any time, anywhere. And that is also a game changer.

E

Ed Clemente 08:25

Yeah, we'll get to that, because there's probably a few words, I think we're going to need some glossary definitions about her. But one thing I think we should you alluded to this earlier about the relationship with the MDC. I know that you do a lot with the MDC, but why don't you just kind of break it down, like what you do to help small businesses or just helping what's the actual physical sort of certificate training or whatever you're doing to help them out?

T

Tom Kelly 08:53

Yeah, so Automation Alley is Michigan's industry 4.0 Knowledge Center. Our job is to make sure anybody who needs to be educated about Industry 4.0, to make good strategic decisions regarding how they're going to go to market as a manufacturer, we help them do that. And so we have lots of programs, we have lots of different ways that you can plug into this community. One of the things we do, Ed, is every year, we have a great big conference called Integrate, which is the industry for all conference. And we bring the last year we had our two years ago, 1100 people this year, of course, we had to do it digitally because of COVID. But next year, this coming October, it will be physical again, we'll get everybody under the tent to talk about all of the technologies that are disrupting manufacturing today. So artificial intelligence, 3d printing, modeling and simulation, digital twins, virtual reality, augmented reality, new materials, we talk about all of it. And the reason why you have to talk about all of it, is because all of them act on the same point in the center of the circle, which is manufacturing. So you're entitled Your process is being impacted by all of these technologies at once. So that's one way that we say, Hey, get under the tent with us. You we do these weekly videos that you've been watching around different aspects of technologies, you can plug in once a week. And you can see what's happening in any of these different technological paths. We have a tech and industry report, where we partner with our academic institutions from all over the state, and we say, help us understand. Let's take artificial intelligence as an example, where where's the world going, if you look over the hill and around the bend, so that we can help our community understand what they should pay attention to? What's noise? And what's really important. And that's the hardest thing. In the digitization world, there's so much noise out there, that it's hard to separate what I should pay attention to. So we try to be that organization that says, what should you pay attention to? Were like the New York Times front page for industry 4.0. What should you focus on? And what probably isn't something you should spend your time? You know, worrying about at this point?

A

Announcer 11:09

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E Ed Clemente 11:25
Is there one video you would recommend? So people hear this, you know, our show today, that you would say yeah, you should check this one out first, because I looked at this one on cultural, like how to change your mindset, like in the business?

T Tom Kelly 11:38
Oh, yeah.

E Ed Clemente 11:39
Is there one you think people should watch? Like, first or...

T Tom Kelly 11:44
So there are so many

E Ed Clemente 11:46
67 I think!

T Tom Kelly 11:48
Crazy, right? So, you know, I would say all of them are our children. Right. And it's hard to say my favorite child is this. Because what's difficult, Ed, is everybody comes to industry 4.0 from a different place, from a different knowledge level, or a different needs. Because Industry 4.0 - like I said is such a wide collection of technologies. So if you if you are curious about and and are fearful of 3d printing, and what it may do to your business, then come in and search for 3d printing videos, or additive manufacturing, as it might be called, right? If you're worried about AI, look for AI videos, if we're worried about culture, and how you change your culture to be a more resilient organization, we have videos on that the one you just alluded to. So you know, I don't mean to be quiet on the answer. But I think it's all of the above. And you have to find your way. And we're having a new website coming out in just a couple months, which is even going to make it easier to find all this content for you to digest.



Ed Clemente 12:52

And I would imagine you have staff if a person really wants to reach somebody, imagine you have good human interaction to heck yeah,



Tom Kelly 12:59

Heck yea - call me. You know, just we want you in under the tent. In fact, if you're a manufacturer in the state of Michigan, through the new partnership we have with the MEDC, you have a free membership in Automation Alley, there's no excuse not to get knowledgeable about what's happening in industry. 4.0. So we've taken that objection right off the table.



Ed Clemente 13:22

Well, let's talk a little bit about your organization. Who's that? What is Automation Alley, just like sort of a quick definition. I mean, I was in with it when it first started back when I was in some cogs board. And so what what is your makeup of your board so I don't think a lot of people know what automation alley is and the industry.



Tom Kelly 13:42

Yeah, so so automation alley, of course is Michigan's industry 4.0 Knowledge Center. We have a fantastic board of directors. So, Ed, we have General Dynamics is on our board. GM is on our board Solanas is on our board. Oakland and McComb counties are on our board DTE is on our board. Oakland Community College is on our board. Oakland University is on our board it we have a great board. It is a solid board made up of industry, academia, government, and we solve problems together. It's great to have your GM and Solanas bouncer helping me decide like what should we pay attention to? I mean, you know, these are these are world class organizations that are well aware of what's happening not only in Michigan, but on a global basis about who's competitive where for industry 4.0. So they have these resources available to us. They have General Dynamics and the whole defense community to be able to bounce ideas off of them of what's happening. Fantastic. We have Kelly Services, the largest staffing company in the world, talk about a look in as to what skills are required out there today. So I am blessed with an abundance of riches and when comes to the talent that serves on my board of directors. And for that I'm very, very appreciative.



Ed Clemente 15:06

Yeah, and I might try it if we get enough time to ask you a little bit more about workforce. But we'll get to that in a minute or two or talent. One of the thing that really was interesting to me is what is your relationship with the World Economic Forum. And I know you have a key individual that might be, you know, slated to do something with them.

T

Tom Kelly 15:24

Yeah, so we are a World Economic Forum, advanced manufacturing hub, there are only 12 in the world. And these advanced manufacturing hubs are designated by the World Economic Forum as Centers of Excellence around the fourth industrial revolution. So to have that blessing on the automation alley, community that says, look, you guys really do get it, when you when you get evaluated against all the cities of the world. And they say, you know, automation alley in Troy, Michigan, you guys get it. That is quite a feather in our cap. And to go one step further, they have invited one of our staff, Cynthia Hutchison, to join them in Geneva, and actually be one of the am hub leads around the world. So to coordinate all of the global effort for the World Economic Forum related to the fourth industrial revolution, I don't think people appreciate just what what a value that is for Michigan, because that exposes us to the to the the best thought in the world that is going on around industry 4.0. And we can bring those ideas and thoughts back to Michigan to be applied and executed on and it's really quite a quite an achievement for Michigan. And, you know, we put the wheels and make that in effect, but it was really because of our community. And then recognizing that we are an automation capital, as we should be, heck, we invented the second industrial revolution, right? You think it would buy us a seat at the table for the fourth? But but but not really, because things are changing so rapidly, but the fact that they recognize that, Ed, is we couldn't be more delighted.

E

Ed Clemente 17:17

Yeah, you know, and the other thing, too, is I always believe this, even when I was in the legislature that we have to realize that developing countries can leapfrog over a lot of the baggage we've had historically. And they could be almost at the table with us in a really short amount of time, especially with this digital revolution I would guess.

T

Tom Kelly 17:36

Yeah, we'll just look at China and Mexico's model. That's exactly what they did. And now Mexico hasn't a whole national strategy around industry 4.0, they're not content to just use labor to to be competitive, they understand that the next stage of being competitive is actually embracing industry 4.0 and digitizing their manufacturing. China and Mexico are digitizing faster than Michigan. That is an incredible risk. And we need to pay very

close attention to it. Now we have some other things that are going to make for very competitive reasons that people will want to reassure to America and to Michigan. But we can't take it lightly that they're not moving. At the same time we are.

E

Ed Clemente 18:20

Yeah, no, that was obviously an issue. I'm concerned about that. But I'm glad to see you're on top of it. We've actually are getting close, I think to time here. So I'm going to ask you just a couple more questions. Again, this is Tom Kelly, CEO of Automation Alley; one is like if you were to talk to and I used to be a high school teacher, but you were to talk to like a junior high kid or a high school kid. You know, I really think you know, what would you tell them? Like, what would you be telling them to go into now? You know, certificate training degree, whatever you think. But I think Junior High is almost the starting ground nowadays it seems like.

T

Tom Kelly 18:59

Yeah...you know, what I would tell him thme Ed; I mean, I could tell him the standard, which is "go be an engineer, because if he can be an engineer, you can go in any career path you ever want, and why not start making 70 grand a year, you know, bypass all that early stage stuff, just just get a good degree, make 7080 grand a year coming out of college and then go do whatever you want." However, that's not for everybody. Right? So what I would tell everybody is the secret to navigating industry. 4.0. So the secret to navigating the digitization of the globe, is to always be intellectually curious. Find your passion, and be intellectually curious. And don't be afraid to fail. But you got to put the work in, no one's gonna care whether you make it or not only you will care if you make it. And you have to have that curiosity that says, How does that work? And how do I make it better? Right, if you have that curiosity to make the world better Whatever portion of the world you're in, you're going to do great. But if you have that curiosity, coupled with a stem degree that allows you to understand math, and science, and technology, if you couple those two together, that's how you become a billionaire. There's no secret. You become a billionaire because you marry your technical skill with your ability to be curious and invent. And that's what you need to do if you're a junior today, and you're wondering what to do.

E

Ed Clemente 20:30

Yeah, well, thank you. And I'm hoping someone watch the show and get that idea. As we wind down, I had a ton more questions for you, but we're trying to make sure you know, we respect your time, as well as the listeners time. So one last thing is like, what is your

favorite thing about Michigan because quality of life I think is such an equal part of why people would want to live here and work in the state and, you know, raise a family or whatever. So what do you like best about Michigan?

T Tom Kelly 21:00

I love the four seasons. I love the fact.. I'm a skier. I love the outdoors in the winter. I grew up in Syracuse, New York, so I'm used to snow, it snowed every day there except for July 4. So we were good with that. In coming to Michigan. I love the four seasons. And I love Michigan is such an easy place to grow and raise a family. I think it's underrated. I don't I don't understand the the impediment to getting people to move into Michigan. It really is a lovely place. It's a beautiful summer, the best summer you could possibly have. The winters are delightful, raising a family the cost of living is fantastic. the communities that we have our first rate, so you know I'm all in.

E Ed Clemente 21:48

Yeah, we'll probably have to use that some of your lines for Pure Michigan. We appreciate that very much. And once again, Tom Kelly, CEO of automation alley, thanks again for taking time to be with us on the show today.

T Tom Kelly 22:00

Thanks. I appreciate it very much.

A Announcer 22:02

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