

Mark Agostinelli 00:00:20 Hey everybody. New podcast out with Don Adams. Don is a local Boston guy who went to UMass Lowell for industrial engineering and, chronicles his journey working through some of the printed circuit board. Boom, a little bit of time in the defense industry. And then he talks about his last almost 20 years of his career that he spent at Boz. Don's recently retired, and, he was an excellent source of information, especially for early engineers or, you know, early stage in their career engineers looking for what should I go after? How do I get the hands on experience? I need to parlay that into bigger organizations, talked about moving from individual contributor into more of a leadership role in the power of summarizing. but we also talked about some of the big headlines of the day, how AI and automation is impacting the manufacturing industry, as well as how he thinks it's going to continue to progress over the coming years. So check it out. Mr.. Don Adams, welcome to Beers and Careers.

Don Adams 00:01:17 Thank you.

Don Adams 00:01:18 Thanks for inviting me. Cheers.

Mark Agostinelli 00:01:23 We're drinking a, a nitro stout from Berkshire Brewing Company, which you like, right? Yep. You like, Berkshire Brewing? Yeah, I love that. well, thanks for coming on, Don. we. Well, we got to know each other, what, five years ago, we worked together. Maybe. I don't even remember.

Don Adams 00:01:42 Maybe even longer.

Mark Agostinelli 00:01:43 It might even been longer.

Don Adams 00:01:44 It was before Covid. Yeah.

Mark Agostinelli 00:01:46 Yeah, right. It was before Covid. And I saw you retired on LinkedIn. I was like, oh, man. The podcast, wanted to get Davis so focused on manufacturing customers and companies that, build complex products, basically. That when you retired, I was like, I want to talk to Don about his career and journey, throughout Bo's. But before we get into it, I got to ask you a couple of rapid fire questions so people can get to know you a little bit.

Don Adams 00:02:12 Okay.

Mark Agostinelli 00:02:14 do you have a favorite? Is Beers and Careers? Do you have a favorite cocktail drink?

Don Adams 00:02:19 I like these Berkshire brewing beers.

Don Adams 00:02:21 Those kind of my go to things, things like this. Ambers and okay, in brown beers that are.

Mark Agostinelli 00:02:27 Like an English brown ale kind.

Don Adams 00:02:29 Of thing. Yeah, yeah. Things with a lot of flavor. Not. Not as much into hops and,

Mark Agostinelli 00:02:34 Yep. The, the IPAs, if you.

Don Adams 00:02:37 Yeah.

Mark Agostinelli 00:02:39 do you have a favorite quote?

Don Adams 00:02:41 Oh, I have, I have a whole, a whole bunch of them. probably my one of my favorite work quotes is, you've got to know more than your suppliers. I got that one from a seminar I went to on circuit boards, and the guy was showing us defects, and he says, this is what they're going to tell you, and this is what's really going on.

Mark Agostinelli 00:03:04 Interesting.

Don Adams 00:03:04 And, so he and he finished it off. He says, see, you got to know more than your suppliers. And by the end of the seminar, he's, like, yelling at us, but, but but it's stuck to me as something that was, it had a lot of application to it.

Mark Agostinelli 00:03:23 Yeah, it sounds like it stuck with you. Yeah. To the point where you live by it to a degree.

Don Adams 00:03:27 Yeah. You, you know, you're not necessarily going to know more than your supplier about things, but you need to know enough. About what? Your, what your what you're buying to to make good decisions and to to know when you're there, trying to pull the wool over on you.

Mark Agostinelli 00:03:47 Yeah, that makes sense. You sounded like a guy who's got a lot of favorite quotes. Is there a second one in there? I can I can Coke's out of here.

Don Adams 00:03:53 Yeah. Power. This. This was from a time management guy. He said power comes to those who can summarize.

Mark Agostinelli 00:04:01 And power comes to those. Summarize. Wow, I like that.

Don Adams 00:04:05 And you see it in politicians. You know someone like James Talarico? He's he's not talking a lot, but he's. You get the point right away. Right. And I throughout my career, I've seen that too.

Don Adams 00:04:19 You know, we've been in quality meetings where the presenters dancing around the problem and it's like, get to the point. And I had to talk to the guys. Look, we we need the three top defects. This is what it is. This is what we think is causing it and this is what we're doing. And because, you know, when you start talking too much, all of a sudden everyone has questions. Right. You go down the rabbit hole and and the other meetings take an hour instead of 20 minutes.

Mark Agostinelli 00:04:50 So true, so true, which many people, business professionals are listening to and nodding their head to.

Don Adams 00:04:56 But yeah, you see guys like Steve Jobs, he wouldn't write. You know, he present complex topics very simply, you know, slides with no words on them, things like that.

Mark Agostinelli 00:05:08 Simple and plain. Yep. Yeah. No, I like that one. you don't know who the time management guy was to you who said it? No, that's all right.

Mark Agostinelli 00:05:20 I put you on the spot. what was your first job? And it doesn't have to be W2 like first job. I got paid to do.

Don Adams 00:05:30 My first job I got paid to do was, I was working at the Buick garage. My father worked there in the mornings.

Mark Agostinelli 00:05:36 Okay.

Don Adams 00:05:37 And, at 13 years old, he brought me in to sweep the floors and wash cars.

Mark Agostinelli 00:05:44 Awesome.

Don Adams 00:05:44 And, Yeah. So all summer, I'd be washing cars. You'd get through them all and then you'd start at the beginning again. There's just a lot of garden hose and a bucket of soap.

Mark Agostinelli 00:05:57 And keep going. Keep going. Do you. Are you, Do you curse? Do you have a favorite curse word?

Don Adams 00:06:04 you know, it probably used the F word as much as anyone. It's. Yeah, it's it's kind of almost become a pause, like, or and.

Mark Agostinelli 00:06:12 Right. It's a great adjective.

Don Adams 00:06:13 But, I, I, I do see it being used in, like, town hall meetings and things.

Don Adams 00:06:21 Yeah. And that kind of turns me off a little bit. Yes. You try and want to be a little more professional and save that for when you need impact.

Mark Agostinelli 00:06:31 Yes. Yes. Or with your buddies? Not. Not in the public eye.

Don Adams 00:06:35 They're not. Well, not when you're talking to a roomful of people.

Mark Agostinelli 00:06:37 Agreed? Agreed. So? So. But but I like. I want to ask you this question, but I first want to talk to you about your career. Honestly. You. So just give me like the first give us like the 50 zero zero zero foot Reader's Digest version. So you, when did you decide to get into engineering?

Don Adams 00:06:56 in high school.

Mark Agostinelli 00:06:57 Oh, okay.

Don Adams 00:06:58 That early I was looking at forestry because I like to work outdoors. Okay. And, And I always like to take things apart, so, and build things. So, I said, you know, I looked into it and I said this. You're not going to make any money in forestry.

Don Adams 00:07:17 So. So I went into, engineering.

Mark Agostinelli 00:07:19 Okay. So. But at high school. High school is when you, like, had that thought.

Don Adams 00:07:24 Well, you know, you're picking colleges, so. So, you know, you took the career tests and. Yeah.

Mark Agostinelli 00:07:29 And you grew up in the Boston area?

Don Adams 00:07:31 No, I grew up in the Berkshires. Okay. I grew up in a town called a little town called Richmond, outside of Pittsfield.

Mark Agostinelli 00:07:36 Full circle. Why? You love the beer?

Don Adams 00:07:38 Yeah. And,

Mark Agostinelli 00:07:41 So. And then you. Where did you end up? At college?

Don Adams 00:07:43 I went to the University of Lowell.

Mark Agostinelli 00:07:45 Yeah. Okay. Riverhawks.

Don Adams 00:07:48 they were the Chiefs at that time.

Mark Agostinelli 00:07:50 They were the Chiefs at that time.

Don Adams 00:07:51 All right. And, but, for for manufacturing. It was a really good fit. You had all working class people from the the the whole area. And, you know, a lot of commuter students. But but everyone was, pretty down to earth and a hands on, you know, going there for career training.

Don Adams 00:08:14 Not, Yeah, not not not not student protests and lofty ideals. It was, you were there to learn.

Mark Agostinelli 00:08:22 So that's that's really cool. And then you your first job out of college was Raytheon. Is that.

Don Adams 00:08:28 No, no, I my first I got graduated in 82 when it was, kind of a recession. Okay. So I ended up working in a machine shop for a year and a half. a place was pretty primitive, but the guy bought old machines and he worked on all big stuff. Okay, so you get these giant chunks of steel and you're drilling two inch holes in it and things. But, you know, I was running a grinder and but but.

Mark Agostinelli 00:08:59 Was it a job shop or were they making.

Don Adams 00:09:02 A job.

Mark Agostinelli 00:09:02 Shop.

Don Adams 00:09:02 Yeah. But and he got work because he had all the big equipment.

Mark Agostinelli 00:09:07 Okay.

Don Adams 00:09:08 So, you're running cranes and things to pick things up. It was. It was a lot of fun. I bet it was a filthy place to work, but it was a lot of fun.

Don Adams 00:09:18 And then I went to work for a plastics factory in Clinton. I worked for Dnipro. Oh, yeah. And, so I spent probably another year and a half there, but I really didn't have. I was doing assembly stuff, and I really didn't have the plastic materials background to really get opportunities there. Okay. and I had friends at Raytheon.

Mark Agostinelli 00:09:42 Okay. And that's how I ended up over there. Yep. And then how did you. I know you spent a number of years at Bows and boomerangs. I believe. Right? Yes. Yes. But, like, can you just walk me through, real quick? How you how you ended up from Raytheon to bows and then back to bows?

Don Adams 00:09:59 Well, Raytheon was a tough environment, so I then went to work for a smaller electronics company. Okay. A small OEM designing, data acquisition boards. Right up, right up the hill here. Right. Data translation.

Mark Agostinelli 00:10:13 Yeah. Okay.

Don Adams 00:10:13 All right. So. So I worked there, and that was that was a great experience because in a small company like that, you have you do everything.

Don Adams 00:10:20 You don't have your own programmers or mechanics and then you you you are responsible for the whole process.

Mark Agostinelli 00:10:27 Okay.

Don Adams 00:10:28 So I learned a bunch there. And then, I had a lot of friends from Raytheon at Bose, and they brought me in there, and and that was the the growth there was, you were moving into an environment where you made a lot of things. You, you know, volume manufacturing. So there was a lot of opportunity for, you know, buying big machinery, high speed stuff and designing a lot of tools and fixtures. You know, we, we, we did a lot of our own, automation type work there.

Mark Agostinelli 00:11:04 Okay.

Don Adams 00:11:05 And even just simple jigs to build things for, for the conveyor lines to so that that was really

good. And then they, they were closing that plant. So that's, that's when I left there and, followed an opportunity. I went to, I went to a network company briefly, and then, I started at electron, which was a contract manufacturer.

Mark Agostinelli 00:11:27 Boards. Right. Yeah. Yep.

Don Adams 00:11:29 And, yeah. That was a greenfield site.

Mark Agostinelli 00:11:32 Okay.

Don Adams 00:11:33 And so so that was, that was again exciting. You're starting from nothing, right? And you're one of the first guys there. You're reporting to the plant manager.

Mark Agostinelli 00:11:43 And do you feel like that like both at Elektron and I forget the name of it. Was it data translation. Do you feel like working at those smaller companies? Or not? I mean, I don't know how, Celestron is not small, so that's not a, that's not a fair characterization, but do you feel like working on that brand new facility and then working at smaller companies helped you in your career at both because you were at both for quite some time?

Don Adams 00:12:11 Yeah, yeah, it did a lot it. Yeah. You know, like I said, you work at the small company, you have to do everything.

Mark Agostinelli 00:12:19 Yes.

Don Adams 00:12:19 So you're, you're really hands on and, and then the bigger company, now you start to the job, stratify a little and you in some areas, you, you kind of direct the activities.

Don Adams 00:12:32 Yes, yes. And move into a more strategic thing buying equipment or introducing new products, understanding where you know what equipment's needed and planning for that. So electron was interesting because you had customers who are kind of like bows where they knew a lot, and you had other customers that knew nothing. We had we had guys come in, when can we go to China? Well, you don't have a product yet.

Mark Agostinelli 00:13:00 Yeah, right. So on a napkin.

Don Adams 00:13:03 You had to go to China. They want. They want hundreds of thousands, you know. You know, a month not not not the ten that you're going to order this month.

Mark Agostinelli 00:13:12 Right. It's it's. How did you like. I know when you were at Bo's too. You weren't. You weren't always in new product manufacturing. Engineering. Were you,

Don Adams 00:13:23 At bows, you were pretty much factory floor support.

Mark Agostinelli 00:13:26 Okay.

Don Adams 00:13:26 So? So you'd have the advanced manufacturing engineers and they would design some of the tools, and then you get it into the factory and start building it and actually and make a modifications or or actually redesigning the tools, you know, because yeah, this isn't this concept isn't working out right.

Mark Agostinelli 00:13:45 And and where were they all those facilities or did you. Yes. Okay, so you bozos.

Don Adams 00:13:51 Until probably 6 or 7 years ago, HBOs was very vertically integrated.

Mark Agostinelli 00:13:57 Yeah.

Don Adams 00:13:57 Okay. So they did their own design board designs, their groups, designing automated tooling.

Mark Agostinelli 00:14:03 Okay.

Don Adams 00:14:04 and we had our own own factories. Where?

Mark Agostinelli 00:14:09 And did you. So you were traveling a lot, too?

Don Adams 00:14:11 I'm guessing not till my second stint with Bose. Okay. Westborough was the flagship facility. When? That was when I worked there.

Mark Agostinelli 00:14:19 Okay.

Don Adams 00:14:20 So? So we built everything. 900 ones for the circuit boards and the. You know, at the beginning, circuit boards are pretty crude. They were single sided.

Mark Agostinelli 00:14:29 Right.

Don Adams 00:14:30 And they weren't even fibreglass. They were paper phenolic. Okay. And they were punched. Yeah. They, you know, they they have all these pins and they punched the holes because they don't only do on one side. Right. And, Yeah. But by the time I left, we were doing surface mount technology and, you know, a lot of mixed technology boards and starting to get into processors and, and things like that in the product.

Don Adams 00:14:55 So it went from like, you know, just power supplies for speakers to all the way up to, products that actually needed software and things like the wave radio.

Mark Agostinelli 00:15:06 Yeah. Because, I mean, even now when you buy a Bose Pro, I'm a, I'm a I travel enough to need a pair of Bose noise cancelling headphones on the flight and even that, like, now at all. You know, your phone is connecting through the Bose app too. So I can imagine from your experience the the technology and the manufacturing process got way more complex over year, 20 years.

Don Adams 00:15:33 Oh yeah, I've actually got some examples.

Mark Agostinelli 00:15:35 Yeah. Let's see them. Let's see. I was wondering what you brought over.

Don Adams 00:15:37 So this is what a head set board looked like originally. Wow.

Mark Agostinelli 00:15:42 Okay.

Don Adams 00:15:43 And this this is what's in your earbuds.

Mark Agostinelli 00:15:46 I was going to say this is pretty big.

Don Adams 00:15:47 Yeah.

Mark Agostinelli 00:15:49 That's what's in your earbuds.

Don Adams 00:15:50 That's what's in your earbud. No.

Mark Agostinelli 00:15:53 Very cool.

Don Adams 00:15:54 And and this is, this is what's going in them today.

Don Adams 00:16:00 Today. This is like that's a system on a chip. Basically a chip.

Mark Agostinelli 00:16:05 Yeah. It's about the size of my finger now.

Don Adams 00:16:07 Yeah. That that that.

Mark Agostinelli 00:16:09 this is a system on a chip. Yeah. Wow. Very cool. So this is like, this is 2026.

Don Adams 00:16:17 This is that's that's probably, 1996.

Mark Agostinelli 00:16:21 Okay. Wow.

Don Adams 00:16:22 So, so look at the size of the parts.

Mark Agostinelli 00:16:26 It's incredible. The difference is wild.

Don Adams 00:16:29 And then look at the parts on that.

Mark Agostinelli 00:16:32 Whoa.

Don Adams 00:16:33 That one has. Yeah, that this one is 1206 is an 0805, which is the dimension and thousandths of an inch.

Mark Agostinelli 00:16:41 Okay.

Don Adams 00:16:42 These are 01005. So that's 10,000 some an inch long and 5007 inch wide.

Mark Agostinelli 00:16:49 And how many are on this board?

Don Adams 00:16:51 I haven't counted them a lot.

Mark Agostinelli 00:16:55 But wow.

Don Adams 00:16:56 You know, when the the guy working on that passed it around, it was like where are the parts? Yeah. You get your you know, your first, first thing is you don't see the parts.

Mark Agostinelli 00:17:07 That's crazy. And what would this be integrated into.

Don Adams 00:17:11 Oh that's on things like your system on chip okay. Where space becomes a premium.

Mark Agostinelli 00:17:16 And explain to people who don't know manufacturing. Well what does that mean? Would you say system iron chip.

Don Adams 00:17:22 A system on a.

Mark Agostinelli 00:17:23 Chip. System on a chip. So.

Don Adams 00:17:25 Basically you're taking all, all the things on the circuit board like this. Yes. And you're putting them on what looks like in an icy.

Mark Agostinelli 00:17:34 An integrated circuit. Wow.

Don Adams 00:17:35 And you see the top is encapsulated for reliability. And if you look at the other side it's smooth. Yes. So so it's actually a chip. It's not one piece of silicon. It's several. And they're all integrated with the with the discrete parts that, you know, help it, operate.

Mark Agostinelli 00:17:58 So I mean, your, your line of work changed dramatically. And in those 25, 30 years. Yeah.

Did I always find it's interesting in, how do I guess I'm interested to know, how do you feel like you consciously stayed on top of emerging technology, or was it just part of the.

Mark Agostinelli 00:18:22 You were just already engrossed in it so you knew what was coming. Like from your perspective?

Don Adams 00:18:27 well, one of the things was was going to conferences, staying involved in things like the MTA, the Surface Model Technology Association. that that was a great resource to because you go to companies and you'd see things like this. Yes. And you'd and you go to the trade shows and the machine manufacturers would be telling you that, you know, one of their things is what size component they can go down to. so that was a yeah, these were areas and getting the magazines, you know, the trade magazines, they'd be talking about these things ahead of time. And then then your designers, of course, would always, all of a sudden they want to use this thing, right? So, so, so you'd be prepared and, and, you know, as a manufacturing engineer in the factory or an advanced manufacturing engineer. You. One of your responsibilities is to let these guys know what that's going to take.

Don Adams 00:19:29 when things are always fighting, particularly with contract manufacturers, they want to give you here. Yeah. And they're not thinking about the cost right. You know the investment. Yeah. We need to buy a whole new line.

Mark Agostinelli 00:19:42 That was that was what I was going to ask is.

Don Adams 00:19:44 Like expensive equipment in order to do this, as opposed to the first one I showed.

Mark Agostinelli 00:19:49 You, like, as a vertically integrated company. do you feel like. I guess I don't, I guess, I don't know, I'm kind of, you know, much of my life in manufacturing has been after 2010, so, I feel like there's less and less vertically integrated companies as time has gone on. Yeah. But do you feel like that's a really a product of my conclusion on that is it's got to be a product of its so hard as a vertically integrated company to keep up the investment dollars to constantly be changing lines, machines, etc.. Is that true? And like, how did you guys manage that? Because you were vertically integrated for a very long time.

Don Adams 00:20:31 Well, that was that was the model. When I started working, you know, if, you know, Fred Molinari started data translation or, you know, he wanted to build some circuit boards and they started building them by hand, and then they bought some equipment and they had.

Mark Agostinelli 00:20:45 Their building his own.

Don Adams 00:20:46 Thing. He had their own thing. Yeah. So you had a lot of companies with small shops and that. And that was that was a lot of fun. and you met a lot of guys because the guys you worked with are Raytheon. That was a place to stay for 4 or 5 years and leave. Okay. it was a difficult environment and,

Mark Agostinelli 00:21:04 Difficult in terms of, like, BAU.

Don Adams 00:21:07 Like it was like working in 1950.

Mark Agostinelli 00:21:09 Okay.

Don Adams 00:21:10 Okay. You were in meetings with guys smoking and swearing and pounding on the table, and it's, you know, a 22 year old kid, you are horrified. You know your father's yelling at you.

Mark Agostinelli 00:21:22 Yeah. Okay.

Don Adams 00:21:23 That's fair.

Don Adams 00:21:24 And and you'd run into a limited opportunity after a while.

Mark Agostinelli 00:21:29 Okay.

Don Adams 00:21:29 So, so. And these small companies were all looking for guys who knew how to build things, and, so, so opportunities to come up. So you get paid better, and you'd start to really grow your career. Whereas right down, it was kind of a place to go. at the beginning of your career, they wanted to hire a fresh out of college. Yes. And, teach you a few things and get some cheap years out of you, so.

Mark Agostinelli 00:21:55 It makes sense. Then you took your knowledge and brought it to market somewhere else. That makes.

Don Adams 00:21:59 Sense. But, Yeah. Doctor Bose very much like to build things. Yes. And he saw a lot of value and a lot of innovation opportunities in that. You know, in the loudspeakers. Yes. And and in electronics as that started to grow. He saw a lot of opportunity to integrate innovation in the product. And and we we did a lot of innovative things that, you know, you'd go to contract manufacturers and they're doing things a lot of by brute force.

Don Adams 00:22:36 You know, and refinements that we saw, you know, we have we had one of our first consoles and the VP was insistent that we not have a lot of screws. We ended up building this whole stereo console. It was six screws really. This thing snapping together, snapping in. And

Mark Agostinelli 00:22:55 Because of the design, design aesthetic. Right.

Don Adams 00:22:58 Yeah. You know, you put the design up front. Yeah. And, you were able to do a lot of design for manufacturing. Whereas if you send things to China now and let them do it. Yes. They're doing what's expedient. Yeah. More screw. Yeah. Put holes there to.

Mark Agostinelli 00:23:13 Track.

Don Adams 00:23:13 Everything together. Yeah, yeah. Nobody's got time to, you know, invest the thousands of dollars it takes in the time, you know, the lead time it takes to really come up with better solutions or simpler.

Mark Agostinelli 00:23:30 And you can do it, right? Yeah. The, I've always found, I've always found Boz in particular to be such a cool company because I grew up here in Boston.

Mark Agostinelli 00:23:41 And then you can't not drive by that facility in Framingham without noticing it. But but, always, always high end. And like I would say, always a premium on design aesthetic, like, kind of honestly like an apple where it's like we care about how this looks as well.

Don Adams 00:23:59 Yeah. I always, always, always that really stood out to me. When you go to the store displays. Yeah, you look at us, JBL and some US beats and some of the things, you know like who design that.

Mark Agostinelli 00:24:10 Yeah. Like who's going to put that in their kitchen?

Don Adams 00:24:12 There was more more of an elegance to the Beaux designs, and they still put a big part of what goes into the product is, is that design language? What, how is it going to look? It's got to look like a premium product. Not just, not just the materials, but the.

Mark Agostinelli 00:24:31 It's not just the function. Yeah. Yeah, it's it's interesting. I mean, I don't, you know, I grew up in the 90s and, and I don't know if I went into many kitchens that didn't have a Bose, under the cabinet, like.

Don Adams 00:24:45 Are the Bose Wave radio.

Mark Agostinelli 00:24:46 Bose wave.

Don Adams 00:24:46 I worked on the first ones and we're all shaking our heads. Who's going to buy a \$350 radio?

Mark Agostinelli 00:24:53 Yeah, they were expensive.

Don Adams 00:24:54 And and the thing just took off. It really built the company for a lot of years.

Mark Agostinelli 00:25:01 Incredible. But the thing that I learned when I got to meet people like you and, others at Bose, I also was struck by, it's got such a, it's got such an element of, like the research piece that from from Doctor Bose and the the MIT, influence that way. Can you talk about how that can you talk about what drew you to that culture for so long?

Don Adams 00:25:29 well, you know, being vertically integrated, you were actually talking to these guys. Yes. They come and ask you, what's it take to build this? What if we did that? Or and, you know, we'd have tours every year and they they'd show you the cool things they were working on. you know, Doctor Bose is very much he let guys go, okay? You know, guys have an idea.

Don Adams 00:25:51 He said he'd give him some funding for it. You know, the the, the suspension for automobiles.

Mark Agostinelli 00:25:58 Yeah.

Don Adams 00:25:59 And he'd keep it alive for years. He's. And the headphones. You know, for years it was just aviation headsets. in the middle and the, you know, the accounts that say, we're not making a ton of money on this. We want to kill it. And president Bob Maresca tells a story all the time. You know, he says, and Doctor Bose told me, oh, yeah, it should be fired for keeping that alive. But he says, but imagine the value if we can make this work. And here, you know, years later, yes. They wouldn't have a company if that was if you didn't get into that. Right. And, you know, I ended up being the pioneer in this technology.

Mark Agostinelli 00:26:41 Did you work at all on the car suspension.

Don Adams 00:26:44 yeah. I built some boards for the car suspension. That was, that was a pretty interesting thing.

Don Adams 00:26:49 It was then. yeah, I also I pretty much worked in every area of the company. Okay. And that was, that's one of the reasons I stayed was continued growth. You know, I worked in the automotive suspension building some things for them. The automotive area. The audio for the cars, the professional products, and the home audio. Yes. And it was going through a real evolution. So it created a lot of opportunities to to learn things and to grow. And then as you were there for a few years, you'd start to become a leader in the group and.

Mark Agostinelli 00:27:27 And keep going. How do you how would you like today? with a successful career in a in organizations like that building products, 18 year old, 22 year old kid engineering degree gets out of school. What advice would you have for them in terms of, you know, cutting their teeth and, to have a rewarding and long lasting career?

Don Adams 00:27:51 I, I would say the biggest thing is to get somewhere hands on small companies.

Don Adams 00:27:58 You learn a lot because you have to do everything. you have big, big companies like the way HBOs is now. Stuff's outsourced. Yes. And you're just talking to some guys in China. You may get a trip out there, but but you're you're not building the background to know more than your suppliers.

Mark Agostinelli 00:28:17 Yes. Okay.

Don Adams 00:28:18 Yeah. Bringing it back around full circle. So. So, you know, build that background, join professional organizations, go to trade shows, get involved in things. And and then with that knowledge, you can then bring value to larger companies and, you know, make yourself valuable to them.

Mark Agostinelli 00:28:39 At more of a strategic level. Yeah. Yeah. Do you. Are there, obvious jobs from your perspective that you, you see going away with automation, AI?

Don Adams 00:28:55 Oh, well, you know, I look at it, AI it's just automation. It is. and someone still needs to manage the automation. And also it's great. And as it's been sold and probably in the last 8 to 10 years, the equipment manufacturers have really been trying to integrate with the whole line.

Don Adams 00:29:18 Yes. So so you have that the machines all want to talk to each other. You want to keep track of inventory. And where I've seen people try and integrate that one thing they're horrified on is the, you know, the licensing costs. Yes. It's you know, if it's doing something valuable for you, it's not going to be cheap. Right. And the amount of resources you need to put into the integration, you know, it's you know, people are fooling around with AI. I wrote my review for me.

Mark Agostinelli 00:29:45 Well, right.

Don Adams 00:29:47 Try and do something complex. You know, you you got all this data and it has you any good integrity in that because, you know, run in a factory, you can't be caught short on parts because it was a hallucinating that, you know, the machines were using all this material. Or it didn't see the reels that are on the floor because someone didn't scan them.

Mark Agostinelli 00:30:06 Right. Right. So you don't see a massive disruption in in manufacturing with the.

Don Adams 00:30:12 It's they call it industry 4.0. Yes. So so it's it's going to be be less known about how the machines operate. When I started the machines were very mechanical. Yes. Yeah. You use mechanical fingers to, to center the parts before you place them. Now it's all vision and it's happening in the blink of an eye. Right. so, so you need to know some of that. But but you're going to need to know how to integrate those machines and what the machines, the placement machines tell on the screen printer that the the print is off. Things like that. So you, you need to be able to manage that integration, but you still need to the knowledge to go back and know where to look.

Mark Agostinelli 00:30:57 And yes, so I'm hearing from you. Workflows are going to get compressed, but you're still going to need the person to direct. Right. Is basically what.

Don Adams 00:31:07 You know AI will do the do the sorting for you. Yeah. But you're still going to have to do a lot of do the analysis and know what to do with it.

Mark Agostinelli 00:31:16 Right. Right. Do you do you feel the same about the assembler technician inspection style jobs in in in there. and how you know automation and I will affect those jobs. I mean those jobs obviously have changed. From my vantage point we haven't seen it necessarily. Like I guess if you thought when automation came around ten years ago, like industry 4.0 started getting talked about, we you know, there was the conversation like, is our assemblers going to go away? We haven't seen that at all.

Don Adams 00:31:49 Right. Right. I mean it's like our plumber is going to go away.

Mark Agostinelli 00:31:52 Yeah. That's kind.

Don Adams 00:31:53 Of yeah. You still need people who know how to solder write because and particularly now boards, you know, are more expensive than they have ever been. So you need someone who can fix minor defects. Yes, AI can help you with you know, inspection is very automated now. It is. Yeah. but yeah, there's there's also, you know, interferences and shaded areas. Things you can't see.

Don Adams 00:32:21 and, you know, AI will help generate the data, you know that. Oh, you've got a problem. This kind of problem, it may be your screen printer, but you still need people who are going to fix that and enter things, you know? This is what I when I looked at it, this is what I saw. Yes. Or, you know, when you took a visual, look at it. You know, it wasn't real. You know, it's you're doing these things with cameras, right? So, so it's all the gradient of a lighting

and shadows and and reflections. So, so there's there's still error in it.

Mark Agostinelli 00:32:56 Yeah. Still challenges to be worked through. Yeah. But like, I'm guessing you stay in touch with people, either former colleagues or your other industry counterparts at other companies. And it doesn't sound to me like you're hearing this massive disruption in their day to day. No. Okay. That's interesting.

Don Adams 00:33:13 That's interesting. Like I said, it's automation.

Don Adams 00:33:18 You know. Yeah. We used to wish to design a wave palettes. And someone would have to draw circles around all the parts and stuff. And we started dealing with this company. They automated that. Okay. And so. So they just sign this picture and send it to you, and you'd look for interferences or, you know, I need I want to touch the part here. but but it was doing 95% of the work. Okay. And, Yeah. So. So you were able to turn these things in 3 to 4 days, right? From designing it, and you get approval on it, and that was the machine. Time to make it and get it down to the factory. So, yeah. So you'd be ordering, you know, the boards that come out on a Friday and you'd, you'd be approving the tools on Tuesday and they'd be manufacturing them. And you fly down the following week and build them.

Mark Agostinelli 00:34:06 So productivity is going to go up continue to be increased.

Don Adams 00:34:09 Yeah.

Don Adams 00:34:09 It's going to increase productivity. But there's still a lot of moving parts. Yes. And you still look like your home. You still need plumbers and yes. And carpenters to hang doors and.

Mark Agostinelli 00:34:20 Well and to your and to your point earlier on your advice to younger people getting into this, probably the more importance of working out a small company to know what's going on. Like not only doing many jobs, but doing the steps in those jobs that maybe that company doesn't necessarily have all the resources. Whereas if you showed up at a big fortune 100, they might already have it a little bit more automated. And you don't understand how the sausage is made, right?

Don Adams 00:34:47 It really gives you, know, learning the basics. Yeah. it gives you the the knowledge you need to understand the larger concepts.

Mark Agostinelli 00:34:58 Yeah. It just reminds me of of Vince Lombardi when he comes out. This is a football.

Don Adams 00:35:02 Here's a story from an old guy at Raytheon. He told us about the Swiss machinist test. They give you a print of a cube and a piece of material on a file, and you'd have to file that thing to the precision that it needed.

Don Adams 00:35:17 you're making a cube with a file. Right. But anything after that was just an improvement on what you were doing. Learning how to hold the material, learn how to cut. You know, cut evenly and stuff. So you know that basis gave you the understanding. Well you know the a milling machine is just an automation of that. And I need to, I need to clamp it this way so the forces don't send the things shooting off. Right. The machine or So, so you know, that's that's kind of I guess the concept. Yes is.

Mark Agostinelli 00:35:52 Yes. It's still still rings.

Don Adams 00:35:54 True if you understand how solder works. Yes. Now you can understand how solder works in these advanced applications. Right. Yeah. We're one of the last things I worked on of those was the same laser ball soldering.

Mark Agostinelli 00:36:06 Okay.

Don Adams 00:36:07 So so you take this 30,000 ball of solder, you know, like on a ball grid array. And they think of it, you know, the concept is like a funnel.

Don Adams 00:36:19 So you're blowing hot nitrogen down this funnel and then there's a laser working in there. So you drop the ball in.

Mark Agostinelli 00:36:27 Okay.

Don Adams 00:36:28 The laser and melt the solder and the pressure of the nitrogen. You know everything getting hot. It would shoot it at the board.

Mark Agostinelli 00:36:35 Whoa.

Don Adams 00:36:36 And then the laser would keep going long enough for that solder to melt and form a solder joint. Wow. And the nitrogen would form the. It would do the flexing to prevent oxidation. Wow. So so we're soldering things, you know, tiny little things with a solder ball technology. But but you'd watch it and you could see the solder start to wet. And you know, it's like goes back to using a soldering iron where you see the solder start to go. And then it's like, oh okay, I know what's going on here.

Mark Agostinelli 00:37:05 That makes a lot of sense. Well it's interesting to hear your perspective on it because I'm not an engineer by background, but I was just touring a, a, it's not a job shop.

Mark Agostinelli 00:37:17 We've got a customer down in the Georgia area that, builds, boards for another customer. They're in the same they're in the same building, and they just spun up the line. It was a European company that came over, so everything was brand spanking new. Ton of automation. ton of. Yeah, I think they were brand new wave solder machines, etc. and so forth. But there were still engineers on the line. There were still a lot of technicians on the line, maybe less based on how much output they needed, but I would have expected. I wouldn't have been surprised as a better way of saying it in 2026 to see fresh, fresh lines being set up. I was surprised at how many people were still there. To your point originally. Like how much can you really compress the workflow?

Don Adams 00:38:02 Well, you know, like cars, I have an old car and you know, there's no electronics in it.

Mark Agostinelli 00:38:07 Right.

Don Adams 00:38:08 And but you know, you you know what? You're driving to work today.

Don Adams 00:38:12 You still need to know how to drive.

Mark Agostinelli 00:38:13 Yeah.

Don Adams 00:38:14 So true. And, you know, and even, you know, with autonomous driving, you're still going to need to know when to take control or how this thing is. Yes.

Mark Agostinelli 00:38:24 Operating to what is your pre electronics car you got.

Don Adams 00:38:27 I have a 1979 Corvette. Awesome awesome.

Mark Agostinelli 00:38:31 So that's very cool. And have you had it for a long time.

Don Adams 00:38:34 I've had it for 23 years.

Mark Agostinelli 00:38:37 Okay. Oh very cool. That's on the, It's on the bucket list is the wrong wish list is the right word. It's on the wish list just to have a pre computer car. Just I mean.

Don Adams 00:38:50 Well you know I got into that one because it was you know the later SC threes were less expensive. Yes. But but you know it's it's a car that you need to know how to work on that. Or you're going to spend a

lot of money paying someone to fix it.

Mark Agostinelli 00:39:05 Yes. So is that, is that what's keeping you busy these days? Messing with that or.

Don Adams 00:39:08 Yeah, I got that in pretty good shape. But I have motorcycles, I do model trains and I okay, I have all sorts of stuff.

Mark Agostinelli 00:39:16 You're a.

Don Adams 00:39:17 Tinkerer. Tinkerer at heart. And that's. Yeah, that's how I got into manufacturing. I was I said I was always tinkering with something.

Mark Agostinelli 00:39:24 yes.

Don Adams 00:39:24 My, my dad worked at two jobs, so he never had time to fix the cars. So he'd bring home a starter and tell me to put it in, you know, one of the cars, and.

Mark Agostinelli 00:39:34 You'd have to figure.

Don Adams 00:39:34 It out on hoses, you know? You know, change the hoses and belts in this one.

Mark Agostinelli 00:39:39 Was your dad also in, like, a manufacturing style?

Don Adams 00:39:42 He worked for General Electric, assemble and Power Transformers.

Mark Agostinelli 00:39:46 Okay. Very cool. I think, now that you say that, I think my wife's grandfather did the exact same thing at GE Power Transformers. so locally in Pittsfield? Yeah. Very cool. Yeah, right.

Don Adams 00:40:00 These these things are the size of this room.

Don Adams 00:40:02 They were huge.

Mark Agostinelli 00:40:03 Right. And that was at a time when, if I'm correct, manufacturing out in Western Mass was booming, right? Yeah. Was that IBM, too? Was. They were a more Poughkeepsie, I think, actually.

Don Adams 00:40:17 Yeah. They weren't Poughkeepsie. But yeah, Pittsfield was a General Electric town.

Mark Agostinelli 00:40:21 Yeah.

Don Adams 00:40:21 It was. And, you know, and you go into a field for jobs after college and they all made things for General Electric.

Mark Agostinelli 00:40:29 Okay.

Don Adams 00:40:29 So, so it really gave you an idea of how much a manufacturing facility in town Impacts the rest of the community?

Mark Agostinelli 00:40:38 Yes, drastically. I was, I will say, as a I grew up in Dedham, so a little closer to the city than I was. when we when I got this role here, my father was an engineer, but in construction, and, we always kind of we were his laborers, kind of. So it was like. And, and my brother and I were curious enough to try to figure stuff out, and my dad was kind of guy.

Mark Agostinelli 00:41:02 It fixed the car, that kind of stuff. But, I was shocked at how much manufacturing happens in Massachusetts. I think it's like not an industry that gets talked about a whole lot. but it employs a ton of people, a ton

of people. And it's changed. And it's and it's, it's been interesting to watch a change because I think, the costs here have been a challenge for manufacturers. Yes. Which I'm which I'm guessing is part and parcel to, some of the reason HBOs is outsourcing more and more now. Right?

Don Adams 00:41:33 Yes. You know.

Mark Agostinelli 00:41:34 You lived it, But.

Don Adams 00:41:35 And as we talked about earlier, the amount of capital tied up. yeah. It was. As the industry becomes commodified. Yeah. Now you now you're not making ten x margins on, on on your innovative products. so,

Mark Agostinelli 00:41:52 And the pace of innovation is happening faster, too.

Don Adams 00:41:55 Right, right. So, so so that chews up a lot of capital. So, so you're you're pushing that to a contract manufacturer or they, they own the capital and you're kind of renting it.

Don Adams 00:42:05 Yes.

Mark Agostinelli 00:42:06 it's it's a, it's a definitely a different dynamic. Do you what do you, if you had to lead a manufacturer, like, the size of a Bose, what would you be worried about or focused on over the next ten years to maintain market dominance?

Don Adams 00:42:26 I'm not sure they need to find the next big thing. Yeah. I mean, you know, That a lot of a lot of people are moving towards software now. Yes, but ideally you'd be working on products and you're like, the software is getting too big. And this is the thing with AI. You know they talk about the amount of energy it needs right. And and cooling and you're like you know what. That's you know your brain doesn't need that much. We eat a little food and we're able to run this right. Mega processor. True. And that's kind of where IT computing needs to go there to to where, you know, you're just right in these giant, complex things. And it's, you know, fraught with the, you know, start to get variability.

Don Adams 00:43:12 And in that so, so it's it's hard to say from a you know product standpoint how do you how do you.

Mark Agostinelli 00:43:18 Well, I think you.

Don Adams 00:43:19 Said what's the next growth area.

Mark Agostinelli 00:43:20 I think you said it. What's the next big thing. I think that's probably.

Don Adams 00:43:24 And that was that was something, you know, that was came back to where Doctor Bose was letting these guys go. You know, the automotive.

Mark Agostinelli 00:43:32 Yeah.

Don Adams 00:43:33 Thing that came out of it. The suspension. the, the, you know, the acoustic mass things. Oh, I.

Mark Agostinelli 00:43:43 Don't know.

Don Adams 00:43:43 What the. The satellite speakers.

Mark Agostinelli 00:43:45 Okay.

Don Adams 00:43:45 Yeah. There was a guy in Japan. He didn't have room for big speakers in his Japanese house. Okay, what if we do this? And then there was another guy playing with bass boxes, and, you know, he just had him in a

board, and then. Then he realized the unidirectional thing, you know, he had the thing covered up, and it was like there was no different, you know, the bass would fill the room.

Don Adams 00:44:07 It wasn't directional anymore. Yeah. So, so, so those kind of innovation, you know, allowing that kind of, you know, guys to think of these things, you don't know what the next thing is going to be.

Mark Agostinelli 00:44:19 Right.

Don Adams 00:44:20 Right.

Mark Agostinelli 00:44:21 You just have to constantly be playing.

Don Adams 00:44:23 Yeah I did this thing. Coffee talks. And one of the y'all with the engineers of my group, because they were tired of working on things by ourselves, and we wanted to share, you know, we had a group in Stowe and one in Framingham, and we were like, you know, those guys are working on cool things too. That's right. And if you get a problem, I said, bring it to the coffee talk. But and I'd have to keep it going. So I did this thing on innovation, which was a big idea I had at the time. And you know, we I one of the things I discovered all like the movie cars. Yeah, there are 500 that was picked out of 500 possibilities.

Mark Agostinelli 00:45:02 Really.

Don Adams 00:45:03 So and that was that's one of the things with innovation is, you know, you get an idea and you're working on it. That might go nowhere. Yes. Or it might be too far ahead of its time. You need to be working on ten things. One of the things we did once at Bose was this they let guys kind of go with a free time. They called it, they let them work on whatever they want. And one guy was putting batteries in a portable speaker instead of plugging it in. Okay. He, he said, you know, we got this spacer in here. He filled it with batteries, and now the thing was really portable. one guy made a portable home theater, and I just thought to myself, if this is where your next generation of products comes from is, you know, just guys thinking of things and trying crazy stuff.

Mark Agostinelli 00:45:56 It's the truth. Did you have a specific amount of, like, mandated time that was free time at post?

Don Adams 00:46:01 No, not in manufacturing.

Don Adams 00:46:03 Okay. The design engineers and some of these, the scientists kind of guys. Yeah.

Mark Agostinelli 00:46:08 They had playtime. Yeah. Yeah. I would imagine that's got to be a huge rub at a big company. It's like balancing innovation with the accountants.

Don Adams 00:46:19 Yeah. Yeah. And that's that's where the, You know, the visionary, in charge of the company really makes a difference. Yes. Yeah. Because it's it's his it's his company. And he's, I think are not a not a business guy.

Mark Agostinelli 00:46:35 Accounting the right not a number of dollars. Yeah. That's very cool. What, what, when you look back on your career pose, like what? What's the thing you're the most proud of working on?

Don Adams 00:46:48 I don't know, there's there's so many highlights. Okay.

Mark Agostinelli 00:46:52 you know, I don't have. I don't have to pin you down to one then.

Don Adams 00:46:54 Yeah, yeah, I worked on some great projects. Okay. Where we're doing new things and trying things. you know, this module, we're, we're building that, and that assembled into a whole series of products.

Don Adams 00:47:07 This was the wi fi, okay, portion of it, and but that was something new for us. So that was a whole bunch of great work. Yeah. one of things I really enjoyed was the coffee talk thing that I discussed. Yeah. yeah. I

never thought of myself as a teacher. I had a friend who was teaching at UMass Lowell, and he, you know, and I said, yeah, you know, I. A room full of young, young kids, but you, you get these guys out of college and working with us and, you know, eager to learn things, and you ended up being a teacher or are you working on the manufacturing floor? You've got to show people how to build things. Yes. And you need to explain to them why they're doing this. You know, not, you know, the old, top down. Just do.

Mark Agostinelli 00:47:54 It. Just do it.

Don Adams 00:47:55 Yeah, yeah. Explain to them why. And now they're they're not going to cheat you.

Mark Agostinelli 00:47:59 You're thinking about it.

Don Adams 00:48:00 That they're going to understand what they're doing. And the coffee talks really turned into that. We were all learning, I don't know what the other guys were doing. And the young guys were teaching us things. Yes. You know, it's,

Mark Agostinelli 00:48:14 It goes both.

Don Adams 00:48:14 Ways. Yeah, yeah. I wrote a short program that that does all this design work for us on the stencil. You know, it figures out all these apertures for us. or so. So so that was a lot of fun. And the guys really picked up on that. They liked. They liked. Yeah. Yes. Come in there. And you know.

Mark Agostinelli 00:48:36 Well, you probably reminded them of why they got into the business in the first place with those coffee talks, I would guess.

Don Adams 00:48:41 Yeah. Yeah. It was just to show off what you're working on or. Right, or to, you know, ask for help and, and,

Mark Agostinelli 00:48:49 And honestly, I the word that keeps coming back to my mind is like, from the innovation conversation we were having is play like, it's like kids at heart.

Mark Agostinelli 00:48:58 Yeah. Trying to make cool stuff. It's it's like that simple. And I think when you bring a bunch of people together working on different products and different problems and challenges, you get more of that.

Don Adams 00:49:08 Yeah. Yeah. When they talk about diversity, this is where different experiences yes. Guys came from different companies. Right? Different different things. And,

Mark Agostinelli 00:49:18 Just adds to the collective, right? Yeah, that's very cool. So what's next for Don? Are you going to get that job at UMass Lowell? You sound like the teaching bug gets close here.

Don Adams 00:49:27 I don't know about that. I'm. You know, I'm. I'm just three months into this, so.

Mark Agostinelli 00:49:32 Yeah. Yeah, I know, it's.

Don Adams 00:49:33 Really there's a lot of catching up on all the things you've put off over the years. And, Yes. And basically getting organized. You know, you make a list, you you want to do everything right?

Mark Agostinelli 00:49:44 Right.

Don Adams 00:49:45 Wait, wait a minute. This isn't all going to fit into one summer.

Mark Agostinelli 00:49:48 But I know. And finally, the weather's turning nice so you can tackle the outside projects, I'm sure.

Don Adams 00:49:53 Yeah, yeah, yeah, I'm an outdoor cat. My wife calls me, so.

Mark Agostinelli 00:49:57 Okay.

Don Adams 00:49:57 So,

Mark Agostinelli 00:49:58 So what do you like to do outdoors? I'd love to hear.

Don Adams 00:50:00 You know, I, you know, motorcycles, cars. I do gardening, okay? You know, flowers and vegetables. just digging in the yard, you know, build stone walls like a bunch of stone walls to fix.

Mark Agostinelli 00:50:14 Love that.

Don Adams 00:50:16 Painting. Oh, Yeah.

Mark Agostinelli 00:50:17 It's just it's it's it. I also feel like there's a just a certain class of us New Englanders that once that, once the thaw breaks and the. And we just can be outside, we're like, I'm not going back inside until November. Yeah. It's like I want to do anything to stay outside.

Don Adams 00:50:34 Opening up the garage. Oh, getting the sock, you know, put the cars out. Get the saw fired.

Mark Agostinelli 00:50:39 Yeah.

Mark Agostinelli 00:50:40 Get going. I, Don, I can't tell you how happy I was to spend my last Sunday. Just cleaning my garage out during that nice couple hours we had, it was like, okay, we're getting out. We're finally breaking free from winter. So,

Don Adams 00:50:53 Yeah, it's funny how it's just a change in the weather. In the light motivates you. You know, you kind of hunker down all winter, and then all of a sudden it's.

Mark Agostinelli 00:51:01 It's wild.

Don Adams 00:51:02 Yeah. You're breaking out the tools.

Mark Agostinelli 00:51:04 It's wild. Like I will say, this is like one of the first couple of years I've really realized that, like, I got to find a way to get out of here for, like, a week in January just to remind my skin what sun is like. And you know, it's dark at eight. It's dark at four. It's hard, it's hard, but, That's awesome. Well, I wish you, a tremendous amount of joy in your outdoor activities coming. And I really appreciate you coming on and sharing your background and your experience and some of your perspective, too, about, what made you guys successful, like your career and where you see things are going.

Mark Agostinelli 00:51:37 So I appreciate.

Don Adams 00:51:38 That. Well, thanks. Thanks for inviting me. It's it's been, been rewarding to look back, I bet, and realize all that you've done so well.

Mark Agostinelli 00:51:47 Now you got a little keepsake you can share, if anyone's like. What was your life, like, a career at Beau's or growing up in your world? You can be like, well, I talked about it here for for 50 minutes. Check it out. So thanks again for coming on, Don. And, enjoy the Berkshire brewing.

Don Adams 00:52:02 Okay.

Mark Agostinelli 00:52:03 Thanks. Take it easy.

Don Adams 00:52:03 My pleasure.