**RedZone Podcast Episode #101: Eliminate Death on the Job by 2050 with David DiLeo, CIO, Industrial Scientific**

Bill: 00:00 Are there any other questions for me, David, before we jump in?

David: 00:03 No, it sounds Great, appreciate the kind of setting the landscape for me.

Bill: 00:08 Absolutely. And I think we'll just have a really good conversation. My questions are going to be geared to figure out, as you mentioned, where your unique super powers can really, if you were going for a job interview somewhere else and they're looking through content about you and they can sit back for 30 minutes and be like holy macro, we didn't realize ... we didn't ask him that. That's pretty cool what he does and that's, well, those are really interesting challenges and that's really the goal.

David: 00:43 Sounds good. Excellent. Excuse me.

Bill: 00:47 All right, David [inaudible 00:00:48] I want to welcome you to the show today.

David: 00:50 Thanks bill. Really appreciate you taking the time to have me on.

Bill: 00:54 So let's start from the beginning. So well actually let's talk about right now, let's talk about what role you're in right now and your organization, and then I'm really curious about did you always know and maybe you can answer the question after you kind of give the overviews of who you are and where you're from. Did you always know you're going to be a CIO?

David: 01:22 Sure. I think it's a good question. It's interesting, in my current role as CIO of Industrial Scientific, certainly responsible for all of the typical aspects of enterprise IT. So when you think about ERP, IT infrastructure, security, custom app Dev, things of that nature, that squarely falls into my area of responsibility. I think the industrial scientific as a whole, IT and the importance of IT has changed quite a bit over the past, say five years. And maybe that's not unique to Industrial Scientific, but that is our journey. I joined the company five and a half years ago and IT really was truly a back office function. We had, the joke was we actually had some folks that were in a windowless back room tinkering away and making sure laptops and things were working correctly. We really looked at that model and said, this is not going to ... IT in this way is not going to support the company as we continue to grow. So we really put a focus on really changing the brand of IT, but also doing that through deliberate value and delivering value first.

 And part of that was switching from being a reactive help desk driven organization to one that was much more proactive with IT shoulder to shoulder at the table with the various leaders of different business functions and in being that true consultant and partner. And that journey has really allowed us to fast forward to 2018 going into 2019, be in a position to leverage IT and all of the wide breadth of technology that comes with it effectively to help drive our business forward both fundamentally as well as through unique offering, unique competitive advantage by leveraging technology, say maybe better than our competitors. So that's maybe a wide net as to my role and the journey that we've been on. For me personally, I recognized probably about 15 years ago that the CIO spot might be something that would be a good fit for me. I was working as an IT consultant, I should say I started out with computers in 1984 with my room filled with computer equipment and was running a Bolton Board system and had always been involved with IT. Certainly that was at the dawn of modems and things of that nature.

 So kind of got bit by the bug very, very early, went to college and actually did a business degree and I might've been a little brash and saying, "Well, Geez, I know computers, I know programming, so maybe I should go get a business degree," because I really found myself gravitating towards problem solving, using software, writing software, using IT to solve problems. And what we did was fortunate through high school and in college to be able to do some of that. So my journey started very, very early, I was fortunate to have landed at Pratt and Whitney jet engines in Hartford, Connecticut where I spent eight years, three years as a consultant and five years as an employee. And it was really there that I really worked with some really inspiring leaders within IT, but also within the business who respected IT and was relying on IT to again, solve really, really important problems for the company. And I kind of looked at who did i admire, who did I aspire to be early in my career, and I saw some really good role models and several CIO's and kind of said, "Okay, what's their path, what's their journey?" And at that time I was doing a lot of project management, so my trajectory or my path to the CIO seat really was initially hands on technical, moving into project management roles into formal management, and then into senior management.

 So maybe a typical journey, but I think project management for me is still something that when I talk with other colleagues and or new hires or here in the community, different aspiring technologists, I'm a big fan of project management as a way to get a broad understanding of IT because as we all know, IT is very broad. It's not just servers, it's not just security, right? It's everything in between, all that and everything in between. So project management is still something near and dear to my heart and as we continue to evolve at Industrial Scientific and even myself personally, I continued to reinvest in that. So I do maintain my PMP certification, it's not something that I want to give up, I see a lot of value in that. That was a bit of an answer, but-

Bill: 06:47 That's great. It's interesting, I haven't had a conversation about project management in a while, but clearly the world of project management is changing, and some things never change, like I think everybody and I run a CIO innovation forum in the Washington DC, in North Carolina, and I think everybody that attends is very, very good as a CIO at delivering or they couldn't be a CIO if they couldn't deliver on a project. But we're there to talk about innovation and I'm curious what you see as changing with project management as it relates to delivering on projects from maybe 15 years ago, 10 years ago, five years ago, and where you see it evolving now with some of the more quicker delivery time and squeeze timeframes. How does that change project management moving forward?

David: 07:38 That's a great question. And it's really funny, I actually just completed some agile scrum master training just to really bone up and start and to be able to walk the walk, talk the talk with some of our new developers on things that during their team here are certainly agile disciplines and whether it's pure agile or hybrid, certainly there is philosophical stances on a lot of this, but the desire of the business is to deliver as much value as we can quickly, right? Without sacrificing quality or introducing unnecessary risks. So I see the trend not uncommon, again, probably with a lot of companies where agile is being embraced, I think it's great. I think looking at, again, the task at hand, the type of project is it an incremental enhancement project versus a brand new implementation versus, a data center build out, right? Or a migration from traditional data center to a cloud provider like AWS or Azure. I think there's lots of tools now in the toolbox that people are skilled at whether ... some of it may be more suited to the Waterfall approach in some aspects of the project, because these projects often have many, many work streams. I think that's probably my biggest takeaway to listeners would be, I think projects today have many tentacles and many work streams and each may require maybe a different or modified approach to give you the desired result as quickly as you want it.

 I've seen like an agile work very, very well, the sprint methodology and applying the daily scrum to managing those sprints and all the other ceremonies that go along with that very, very effective on some of the work that we've been doing as of late, which has very crisp deliverables, the teams are able to quickly take those requirements, distill them into designs and into working functionality that can be prototyped or reviewed by our internal customers or sometimes our external customers. We have a project right now actually where waterfall is at least we're using it for the initial part of the projects. We really want to get good requirements and good design because there's a lot of integration with multiple enterprise systems that has to be pristine. Those integrations have to be working without error for the whole system to work. So I think that as a CIO, I think we have to be open to really, again, understanding what is the task at hand that's delivering as much value as we can, as quickly as we can, again, with quality, without introducing unnecessary risk. And if we can do that and then pull in a lot of these great disciplines or great methodologies, I think we will be more successful than ever. I think if we subscribe to certain philosophical stances or points of view without being flexible, I think we could run into some trouble.

Bill: 10:56 That's very interesting how you are tackling some projects with a waterfall approach and some with an agile approach. But I can see, and again, I'm just assuming this, but I'm assuming because you're in the gas and sort of high risk potentially from issues that can because you'd want to use more of a formal waterfall approach, but those where you're wanting some speed and some pace, maybe you're using something different. Is that essentially how you look at it?

David: 11:23 Yes. And again, inside of a single enterprise type project, for example, we're right now working on a digital transformation project around Configure Price Quotes, CPQ, and there's certain aspects of that project which really are pure agile. We're using a couple of different partners, third party partners as well as internal teams here and some of the teams are working pure agile, other aspects we are doing waterfall, the example would be on the waterfall side, it's really all about understanding the workflows and the requirements around how we want our quotes to be approved, for example. That's something we want to really understand, map out, do the swim lane diagrams, the cross functional swim lane diagrams, really understand all of the touch points and then go build it. Where there's others parts of the solution which may be is related to the layouts of the screens and the interface, the user interfaces where we're taking a much more pure agile approach in the development configuration of those screens and getting feedback immediately from the stakeholders and the users themselves. So, again it's recognized that we have multiple work streams under the umbrella of a large project and then trying to leverage the right methodology for the task at hand.

Bill: 12:58 So when you're tackling projects, we have known projects of different risks caliber that you're tackling now, how do you tackle the inevitable that would come up for a CIO of solving problems, solving business problems that don't necessarily have a beginning and an end because we're trying to identify what the problem is and then we're trying to identify which technology can be used to help the business, but it's a bit more green field. There's no defined beginning and no defined end, it's just they're saying David, come in this meeting, we've got a problem to solve. How do you-

David: 13:38 It just happened. Well I'll tell you it's a great question and in those situations, what we tend to fall back on, what I fall back on, but even our organization now is really embracing is we are part of a company called Fortive, we were purchased a year ago, Industrial Scientific had been private, we were purchased a year ago by Fortive Corporation, which is headquartered in Seattle. And they, Fortive was actually a spinout of Danaher, which is famous for its Danaher business systems. So Fortive has a business system called FBS, so Fortive business system and it's really a lean continuous improvement [inaudible 00:14:21] six sigma toolbox. So we leverage a lot of those types of problem solving tools to define the problem. So we would not be in that situation Bill, where it's nebulous or maybe green field or really trying to hone in where we're sensing there's an opportunity, we're sensing there's a problem, but we're not sure what.

 We will go into a very formal problem solving process where, we'll do value stream mapping, we will do the fishbone diagrams, the five whys, we will get to a problem statement that we all can understand and then start to say, "Okay, how can we now answer it?" And then that's where the fun begins, certainly from a technology side where our leads will go off and start to do the research and say, "Okay, what's the best way and what's the data that we need? When do we need this data? What's the best way to aggregate this data?" Etcetera, etcetera, just as an example. But it's really falling back on those fundamental, frankly non technology items and just saying, "How do we define this problem in a way that we all can feel that we are solving the right thing?" Because that's often step number one, right? Are we solving the right problem? We don't want to bring technology and looking for a problem to solve, but rather let's have a really good problem statement that we can then rally around and knit the right solution.

Bill: 15:48 I like that. So it is a formal process then it's ... and your following a six sigma type of a process.

David: 15:59 Yeah, that's really what we do. That's somewhat new to our organization, there's lots of other brainstorming and things, but I'd say over the past 12 months we've really started to evolve with that mindset first. And that really is really part of Fortive at its core, that's how they approach ... everything is a problem to be solved. And these tools really are universal and can help you solve problems in your ... at home, let alone at work.

Bill: 16:32 So from your role now and your team and the problems you're faced with, how do you envision the role, your role evolving over the ... you individually, and then also from a bigger lens, the role of the CIO, like if you're looking back three years from now, if we're having this conversation in 2021 or 22, what would it look like the role of the CIO, how is it going to be different for you and potentially your company and the role in three years in the future?

David: 17:09 No, that's a great question. Again, I think that, not to overuse that term, digital transformation, but I think where our company is right now and it's IT maturity, we have really good solid enterprise systems across ERP, CRM, PLM, these are systems that are stable, well understood and now it's really how do we tie them all together into an integrated ecosystem. So it is this combination of taking our core systems, integrating them with whether it be cloud services, cloud providers, pulling in third party supplier data, what have you. I think the role of the CIO is really going to be Chief Integration Officer maybe, right?

 I think there's a lot, it's all about the ecosystem and certainly with the ubiquity of mobile, cloud, data all the time, anytime, everywhere, IOT, all this is coming together and converging and I actually think it's probably the best time to be a CIO because it's really exciting, and the CIO's office as well as IT in general is in the best position typically in most companies to look across the whole organization is see the full opportunity maybe and the full picture. Someone in marketing may not understand how the data they're collecting can be leveraged within a service center. Likewise, a service center may not understand how the repair data that they're collecting can be leveraged by marketing. So I think as a CIO, I'm certainly being an evangelist around that and having a seat at the executive table to ensure that we're understanding what those opportunities are, where the business is going and growing to, and then leveraging, again, that wide toolbox to ensure that we can get there.

Bill: 19:20 It seems to, especially as people are still in this cloud/hybrid/cloud world and now we've got third party data, we've got IOT data. It seems and interesting that the business leaders are going to want to continue to bring in new revenue streams and support their existing revenue streams, and the role of the CIO is really how can we make this happen? Is that something that's super formal where you are, or do you actually build alliances with the value creators within the business and try to figure out how you can develop commonality across where you're going in the different business departments, or is it less structured than that?

David: 20:07 No, I'd say your first statement was correct. It's structured, it's ensuring that we have liaisons within the various areas of IT that are engaged at the right times, having the right conversations with the right people within the business areas, and really being that partner. I think we are very fortunate that I think our business stakeholders see the opportunity of leveraging IT to help them grow their business. So for us in 2019 and beyond, it's really about scale. So it's taking, again, all of these fundamental enterprise systems and tying them together, pushing data closer to our customers, closer to our suppliers, certainly we didn't really talk about IOT yet, that's really a huge part of our business, more than 50% of our revenue is derived off of the back of our IOT platform, which is called Inet. We are in the gas detection business, we primarily make handheld gas detectors that are worn by industrial workers across many, many sectors. And that data that those devices is encountering all the readings, the health of that device is all coming back to Pittsburgh and we offer that as a service. So we say don't buy our gas detectors from us, rather lease them over some time horizon, typically four years and we'll guarantee a working device in the hands of your workers at all times.

 That gas detection is a service solution totally driven and facilitated by our IOT solution, which is called Inet, and again, more than 50% of our revenue. So that data coming back in, marrying it with our ERP information, being able to forecast when instruments will be coming back in for repair, very critical to allowing us to scale that business. So again, getting data, timely data from the field, marrying it with our ERP data, looking at our, we use salesforce.com as our CRM, that has a lens on top of it all as well, so that's where all of our customer service is driven out of. So it's all converging, which is really, again, as a CIO, as a technologist, just super hyper exciting. And again, it is a mix, it's a mix of IOT data, cloud data via Salesforce, ERP data, some of our PLM data. So to me it's all about the data and let's not forget security.

Bill: 22:52 Yeah, I was going to ask you about in a moment, I'm just curious from marrying these data points together and being able to do this with the various end points that you have that these handhelds scanners and then your Salesforce is pretty clear. So do you care at this point whether you're on a certain type of cloud, like Azure or Google or Amazon, or are you trying to make it more portable as you build capabilities for the future? Are you thinking of it from that angle or it's more like, okay, it's more API based and you're just trying to get data from point A to point B? I'm curious what your thoughts are there.

David: 23:33 Yeah, it's really a mix. It really is. Interestingly enough, you mentioned cloud. So our IOT solution is a homegrown traditional software stack that we host in a third party data center today. This weekend, it's actually moving to AWS. So we've made an investment in that platform to get greater scale, both horizontally across all of the different tiers of the application as well as getting resiliency and disaster recovery and security all interwoven throughout the solution. So that's actually something that we're doing, like I said this weekend, so it'll be a busy weekend for the team. At the end of the day, again, my focus, I tend to look at it as business first. So whether we are using Azure, which we do use azure for some of our basic core office type operations, we're using one drive, we're big SharePoint users. So that's clearly an important cloud provider for us. Again, AWS now maybe on some of the application side. And then we have our traditional physical on-prem ERP and other systems as well. So today we're managing a lot of the integration through standard APIs, web service calls, things of that nature, so it's pretty nothing too ... not a lot of trickery there, it's pretty basic.

 The big thing is the mapping, can these systems talk to each other intelligently? So it's less about the technology and more about can we get the data points to not overuse the word marry up, but can we marry up that data correctly so that if I'm collecting IOT data off of a particular serial number on an instrument, do we know who the customer is for that, who has possession of that instrument? Is that customer readily ... can we marry it readily within Salesforce, which is our CRM and then our ERP system, which is Oracle EBS where all of our billing is occurring because obviously the billing is tied to the equipment that we have out in the field. So hypercritical that customer master ship tos, bill tos, all of this has to be mapped across all these systems. How we map it, maybe less challenging, frankly.

Bill: 26:08 Well, and what's amazing to me is that you've five and a half years ago, the situation, I don't think we'd be having the same conversation from-

David: 26:17 No, not at all, it's been a lot it's been a journey.

Bill: 26:21 Yeah. What I'm really interested though from thinking just five and a half years ago is you mentioned the role of mentors and a lot of the guys that I work with and bring on love big challenges because they get bored when things get super stable. And I'm curious to what you defaulted to as mission number one, when you got started and what role potentially mentors or other things that you started with kind of as a guiding light when you hopped into this firestorm to get to the point where now we're having really cool conversations about your capabilities.

David: 26:58 Yeah, I appreciate that. I think that if I rewind to five and a half years ago I'm going to have to really give credit to the senior management here in Industrial Scientific, big aspirations, right? The mission of our company is to end death on the job by the year 2050. It's a tall order and it's something we take really, really seriously. And it was fortunate that they had already recognized the opportunity of IOT with all the equipment in the field. Now, mind you, there was a lot less equipment in the field at that point in time, but they recognized the trajectory that this was really going to be the future of the company. So really my first challenge, mandate, if you will, was to create a scalable IT organization that can support the growth of the company. And that's really where I probably spent my first three months getting to know the business, again, the business first, looking at the structure of IT, how we were organized, looking at the roles of the individuals, do we have the right people? Do we have the right roles? And really just upending a lot of it over the course of about 12 months and coming up with a framework that we could then build upon as the company grew accordingly.

 I wouldn't say there was a massive investment in IT, it was somewhat incremental and we were fortunate that we have great people and I'm sure many people say that about their teams, but we have just amazing people within our IT group that we're able to pivot from maybe being 80% on the keys reacting to help desk tickets to getting them out of their chairs, getting them into collaborative meetings with business stakeholders and then coming back and then maybe pushing some of the keyboard work, if you will, off to some partners that we had brought in as part of our transformation at the time. So really it was getting a model for IT that would really work for the growth of the business as we see it going forward. That model has stayed intact, I mean, the way we're orged we're very deliberate in what our employees do and what we have our partners do, so we do use a couple different outsourced third party providers to take on various levels of either help desk, lower level commodity type work and requests, and also doing project work. Our folks tend to be the project managers, the business analysts, the architects, our partners tend to be more of the arms and legs for us to do a lot of the work, and that model's really worked well for us.

Bill: 29:59 It's interesting and I'd love you to talk about that because one of the interesting pieces I think moving forward is really looking at commoditized work versus like native, deep corporate expertise that you have and then where is more of a [inaudible 00:30:18] and what I love is you mentioned that people were able to pivot. So there was a leadership that you started to exert that I'd love to ask you about because your people pivoted. I mean, there's a lot of things you've accomplished in five and a half years.

David: 30:32 It's one of those things where I remember sitting down with a couple of the individuals who were a little nervous. They said, "I like doing a lot of these help desk tickets or I like diving in and tickling the keys." Right? And there was concern could they make that change to really be more of that thought leader. And I'll say it was easier for some than others, but at the same time, everybody was able to make that change and we've been able to build around them. And it was through small wins, I think that with any change, there has to be a roadmap, if you will, there has to be small wins that they can give people the confidence and some immediacy in seeing results to continue that effort, because it certainly wasn't easy.

 A lot of it also was driven by having to remind our business customers, right, our internal stakeholders that we're making this change and that please include us in your thoughts. Don't come to us three months after you've made a decision to have our ERP system do X,Y and Z, have that conversation with us early so we can help guide you because maybe you want it to do A,B,C instead of X,Y,Z. So part of it was also establishing relationships with our business stakeholders to look at us differently than they had been. So really it was two sides of that transformation where it was with our tech team, but it was also with our business folks.

Bill: 32:21 I love that. And to build upon that, what's your general philosophy about how ... so you have a lot of pace that you needed when you learnt to build and show that you were solving problems and you've been at pace so the business had strong comfort in your ability to lead. Then how did you layer in security as you were going so you weren't perceived as someone who was putting the brakes on things, but how did you marry both the pace of change and then the need for security at the same time?

David: 33:00 I think if I look back the first 18 months was really that first journey which I just described, which was reshaping IT to be aligned with the business, to get the partnership with the business stakeholders well oiled and get the mechanics of all that in place. Once that had happened, it's almost like Maslow's hierarchy, we were able to start to think about things we were aspirational about and security became very quickly public enemy number one for us, if you will. And again, part of it was driven due to our IOT solution and our customer base.

 I'd say about 2000, 2012 I'd say it's probably the right time frame, our customers really started to become inquisitive and sensitive to IT security, where we started to get a lot of phone calls from our sales team members, distributors, etcetera, asking us, can you complete these assessments, these surveys. We were starting to be looked at as a cloud provider to some of our customers, and security started to become top of mind. So it was interesting, we actually did a six month security assessment where I led this activity where I gathered senior members from every area of the business and we looked at security risks of our company, both from a ... through all lenses, not just through the technical lens, but through the business Lens as well. And at the end of that, we came up with a recommendation that I presented to the leadership team that's a, here's just not my opinion, but it's backed with some facts and here's some data, some think of a two by two we had here's your risks, here's your impact, probability impact.

 Here's how these risks are plotted on a two by two matrix so we can really understand where we have our greatest risks and best opportunities to address those. And it became very clear quickly that we needed to get serious about security and hire a senior IT security individual, not just an analyst to add to our infrastructure team, but somebody who could come in as a senior thought leader and educator frankly. Because one of the things that we really recognize was our biggest security risk was, and again, maybe not so uncommon, maybe it wasn't even so much on the technology side, it was on the people side. We looked at how many malware viruses we had that were coming in on a monthly basis, people clicking on links and doing different things. And we had an education void and we really ... while security was quote unquote everybody was responsible for in IT, we didn't have a person 40 I almost said 60 hours, 40 hours a week, probably is more like 60 or more, focusing on really evangelizing and getting the word out.

 So we were fortunate to have gotten the buy in from our senior team to go out and bring an individual in. And that individual came in, created a roadmap he and I and really was just really working through that to get us to a point where today we have very good scores on our phishing campaigns, the malware tickets have dropped to a extremely low levels, our rate of patching, all of our servers is much more consistent and we could see all the drop offs of some of the vulnerable ... and we do our vulnerability scans and at the same time, that's just our internal, we've been able to demonstrate that rigor and that consistency to our customer base. Because again, as an IOT provider to our customers where all of their gas data is coming back to Industrial Scientific, we have to demonstrate that security, we have to demonstrate that they're not one click away from an email of having all of their data compromised or-

Bill: 37:29 And that impact sales. I mean, that's a revenue impact, just from the way you're helping your salespeople, these strong communicators and it's almost like before well, we did push ups once in a while, and this is virtually with everybody, but now it's funny listening to you, you've got these almost like a verbal dashboard, I'm sure it's a visual one as well, where you can basically measure the pushups you're doing that you can ... how many thousands of users do you have?

David: 38:00 Oh Gosh. I mean, right, today, we have 300,000 instruments on our platform, which equates say several thousand safety managers logging in every day to dashboards and getting alerts when maybe there's emerging issues with gas, depending on what their situation is.

Bill: 38:21 But you basically got this very much, you're not taking ... you've changed security from I used to call it [inaudble 00:38:29] remember how the old fashion used to do a DR assessment and a DR through reminder, it's like, forget the security assessment it's like it's got to be always on and it's going to be always assessing and always monetary and always ... because you have so many thousand users, it's almost like it's fundamentally like hygiene, like we all know to wash our hands, but even then we walk into bathrooms and it says, please wash your hands if you're an employee and it's for keeping the rate of infection down and so it's like you have all your employees educated well, basically you don't have a department of five, six or seven security guys, you have infinite people taking care of themselves, which takes care of your system. So it's interesting how you looked at it.

David: 39:10 Now I appreciate that, that's a great characterization of our approach. And we continue to do that through newsletters, our Chief Information Security Officer, he is at every director level staff meeting at least once a month. People are always interested in security, it's interesting. Whenever he shows up they want to know what just happened with Marriott, right? Tell us about that. There's also a high level of interest insecurity, which we've been able to leverage to say, "Okay, we don't want that to be us." Right? And-

Bill: 39:44 I love it too because you are treating security into treating it like offense. And I think that's something that people think about security as defense, but you actually have to train ... you're taking some of the defense capabilities to help facilitate some of the offense from your salespeople.

David: 40:04 Absolutely, and today, as with every new customer that we sign up right now who is leveraging our Inet gas detection as a service offering, security is the last step in the sale where we have created customer facing security statement type documents that we provide as sales collateral, which can be given to the [inaudibe 00:40:30] of the potential customer. That actually has gone a long way towards having much smoother conversations as we work through some of those risk assessments that we have to fill out and things of that nature. And it's really helped demonstrate that we're proactive. I don't think anyone, obviously the security journey's never complete you're never at your destination, but being able to show that it's top of mind, that you're proactive, that you again, have a strong education piece of the equation I think goes a long way towards alleviating some of those concerns and demonstrating-

Bill: 41:13 You've almost stripped the friction out of the ... because sales guys hate friction and so it's in latency in the process and so you really become a partner with them, which is ... and not buy frivolous standards, but a serious security effort and programs. So that's really, really, really, really interesting. I have a question about your corporate vision, end death on the job by 2050. Are people dying? Do people die from ... obviously they must die if that's the corporate vision.

David: 41:48 Yeah, now that one I'd love to quote statistics, but I probably wouldn't do them justice, but there's enough fatalities every year, whether that's through, I still think through driving, I think here's a lot of automotive vehicle related, work related deaths that are occurring every year here, not only in the United States, but globally. Certainly you and I were chatting about oil and gas industry, explosions do happen, people get injured unfortunately often resulting in fatalities. So it's very real and it's a mission that we take seriously and I think it's one of those things that also, it's part of the DNA of the company here.

 When you join Industrial Scientific as an employee, you recognize that you are kind of signing up for a mission, for something really admirable. If you're going to spend eight hours plus a day, week in week out, our employees go home knowing that what they're doing, whether they are ... no matter what corner of the building you're working in, what you're doing matters and is ensuring that somebody goes home to their family that day. And that's a really, really ... it's a responsibility we feel, certainly it's a weight, it is a responsibility, but it's extremely rewarding certainly on a personal level as well as professional. And that's, I think also from an IT to bring it back to IT, IT plays a big role in it given the IOT solution that we've been talking about, and that also fuels our folks to really go that extra mile and to really think about how these technology solutions can help achieve that mission.

Bill: 43:40 Yeah, it's interesting, I have one of the ladies on my board, she was the ex CIO of Johnson and Johnson out of New Jersey, and early on, I've known her for 20 years, but this is like at the 20th, this is long time ago, she said, "I actually," ... at Johnson and Johnson they're making all sorts of industries there is a hundred billion dollar companies within Johnson and Johnson. And so I think she was talking about bandages that were made for, and I shared this story before, but always had ... kept the vision of the businesses in mind where the burn victims, so they made the bandages for burn victims. And so she really extrapolated the vision of what her role as an IT leader was and to the macro role, which is relieving the suffering through the products they made for burn victims in this one particular unit, and that's what drove not only the business but her and I think that's a really ... so listening to your ... I'm glad I asked that question about your ... the business vision because it must give a lot of meaning to where you work.

David: 44:48 Sure. Absolutely, and we also recognized that we can't do it just through gas detection. So I think it also sets the future sites for Industrial Scientific on doing more than just gas detection whether that's ... it's all about risk reduction, how can we remove risk so that people go home to their families every day? Gas Detection is one piece of it, is there opportunities in robotics where maybe you remove the human from the equation, right? Does someone have to go into that dangerous situation to clean something, right? Can we get someone out of that tank and get a robotic device in there. Things of that nature, there is lots of opportunities and these are the types of things that we certainly as the senior team think about when we think about the future and how do we make good on that promise because 2050, it's not so many years away. The mission used to be 2100 and death by 2100, but we've ratcheted things up to 2050, about a year and a half ago. So-

Bill: 45:57 I love that. I love that. Well, as we wrap up here, I want to talk about personal vision a bit and talk about where ... if you and I are having this conversation five years in the future, what has to happen from your perspective for it to be a massive home run for you? And you can answer that from any perspective you'd like, but what do you envision yourself, looking back, if we're talking five years ago about what's going to happen?

David: 46:31 Sure, I think what would success look like five years from now through my eyes, I guess would really be seeing all of these hopes and dreams that we have with IT being the backbone of a lot of our mission statement here, supporting our mission, being realized. So certainly seeing our IOT solution flourish, seeing it being leveraged not just for maybe gas detection instrumentation but for complimentary or ancillary type equipment, seeing our employees loving the systems that they're using, maybe that's a little too aspirational. But we know that scaling our business processes is a big focus for us in 2019.

 I mentioned we have a lot of systems that are in place that are solid, and as we continue to grow, it's how do we continue to allow business processes to scale around those systems? Do we again, have the right data? Do we have the right controls around data so that quotes can happen quickly? The sooner we can get equipment into someone's hands, we know they're safe. So it's not all about the financials of getting a sale, but it's making sure that when we do get a sale, we can close that sale as quickly as possible to ensure that we're providing safety solutions to our customers. And IT all of the systems, all of the people behind that makeup it, seeing all of that well oiled, growing and driving and being the engine for the business to me is success. IT as the engine would be a great thing to be able to say five years from now that it's really at the heart of what makes the company tick.

Bill: 48:32 IT as the engine. So as I ask you one final question, what personally do you think, what hobby, what new skill, what thing outside brings you ... outside of work kind of helps you achieve, I don't like to use the word balance I [crosstalk 00:49:00] that word. I think work life choices, I don't think there's necessarily work life balance, especially at your level, but what do you do personally that helps you strike, that invigorates you, that you think is something that you're going to continue to do or you'd like to explore more of from your own personal perspective?

David: 49:24 I think that for me to keep myself balanced or grounded or relaxed. I have a 10 year old daughter right now and certainly she is a ... as she blossoms as she is experiencing life a lot of inspiration there, she happens to really love technology. So that's something she and dad can have in common and we do and we have a great time with it. I also, I love music I'm a hobbyist guitar player, songwriter, singer.

Bill: 49:59 Oh, really?

David: 49:59 Yes. I have some fun with that, so that helps me unwind a bit and sometimes my family would like me to unplug a bit more, but my daughter still thinks I'm cool, so that's great. But also I enjoy, as I've continued to evolve here, certainly Pittsburgh has been wonderful to me personally, the tech community, lots of opportunities to get involved and I've taken advantage of some of that. So continuing to mentor, I see myself doing that, I see myself maybe getting involved potentially on the education side to continually hopefully motivate, inspire young minds that are considering technology and stem and things of that nature. So I definitely see that as giving back, if you will, but I think when you give back like that, you actually maybe even receive more. So at least that's been my experience. So there are a couple of things.

Bill: 51:01 Yeah, I know that's awesome. And I think you are ... I've been really encouraged by what you've accomplished in the past five and half years and this is going to be a great for the listeners to kind of see your trajectory and what your hopes are for the next couple of years moving forward. And if anybody wanted to reach out to you, is Linkedin a good way for people to touch base or do you have a website or any place else that you'd like to tell them to go to?

David: 51:30 I'd say Linkedin is probably the best spot, easiest to find me and definitely it's a direct line to me. So-

Bill: 51:37 Well we're going to put up all your articles you've been noted in, your links to your company and your Linkedin profile. It'll all be on the show notes on the blog when we publish this. But I really appreciate you for spending an hour with us today, David.

David: 51:53 Thanks Bill, I really appreciate the opportunity to share our story here. So many thanks.

Bill: 51:58 Excellent. Thank you. Have a good day.

David: 52:01 You too. Bye Bye.