What's the Problem: Andrew Lingel Discusses Transforming a Family Business through Knowledge, Grit, and Outrage

February 10, 2020

Featuring: Matt Savas and Andrew Lingel

Matt:	So welcome Andrew to our podcast, What's The Problem? Really appreciate you joining me here.
Matt:	Okay. So I'm here with Andrew Lingle, President of United Plastic Fabricating. And I guess before we get started here, I'd like to just thank Andrew for joining me here on What's The Problem?
Matt:	And maybe just provide an opportunity to share a brief overview of the business so folks have an understanding of what we're going to be talking about. So Andrew, can you tell us a little bit about United Plastic Fabricating?
Andrew:	Sure, Matt, thank you. Thank you for having me. And I appreciate the opportunity.
Andrew:	So United Plastic Fabricating specializes in the manufacturing of polypropylene sheet into various products. Can be used as a material substitution for stainless steel, aluminum, fiberglass, wooden laminates, as well as sort of replacing molds. If you need something that's a little stronger, or that the cost of the mold is sort of prohibitive versus the run that you need.
Andrew:	So a lot of our products are more custom in nature and change. And really where our core business and how we got started is in building water tanks for fire trucks. And if people want to learn more, they can visit us at www.unitedplastic.com.

Matt: What I'd like to kind of get started with, is kind of going back in time, I guess about three, three and a half years, when you took over the company as president.

Matt: So UPF, as it's known is a family business. Your father founded the business about 30 or so years ago, and you took over second generation just a few years ago.

Matt: And that's not an easy thing. And you made it harder because you made a decision to not just take over as new leadership, but change the way the organization would be managed. Adopting a lean thinkers approach to management.

Matt: And we'll get to that in just a bit, but I'm curious, when you first started in that new role, tell us maybe a little bit about what you were facing that first week or so.

Andrew: Yeah, so kind of looking back, it's sort of a challenge because you're sort of faced with all these areas that have been successful in the past and for one reason or the other maybe aren't as successful now as they used to be.

Andrew: But, you're dealing with a lot of people that have been doing work the same way for a long time, and you're sort of alone in this sort of idea that I think work can be done in a different way, in a different manner, and requires sort of different thinking. And knowing that you're not going to get necessarily buy in right away, and where do you have to start. And also looking at the current challenges, how do you focus when you only have so much bandwidth?

Andrew: And I think that's sort of the challenge of sort of where you're at with that, which is what can I do right now to sort of start moving the needle forward, versus what opportunities there are because the opportunities are numerous.

Matt: Yeah, so you were kind of a man, a lone man on an island, lone man on a lean Island.

Andrew: Yes.

Matt: Trying to figure out how to bring people along. Maybe we can talk a little bit about how the nature of approaching problems in problem solving has evolved at UPF over the course of that three, three and a half years.

Andrew: Yeah, I think Matt, kind of looking back on how it started, you sort of knew the problems we wanted that we were facing, which was maybe the financial health of the organization is not where it needs to be.

Andrew: We also had issues around warranty costs and exposure. We offer a lifetime warranty on our products. So, that's a big area.

Matt: Yeah, and [inaudible] might get some customers out of that.

Andrew: Yeah.

Matt: That one right there. Lifetime warranty, yeah.

Andrew: Exactly. So, those are sort of the big areas. And I think as you sort of start and say, "Hey, there's a different way of thinking." And to your point, maybe my thinking not fully formalized as the training basically came from a reading a lot of materials about lean manufacturing, and trying to figure out how that applies to what we're doing.

Andrew: You may fall into that trap about, "Hey, here's the problems, but hey, here's all the things we can do. How do I sort of become lean? You know, maybe I need standard work or I need to put up these boards. Are we should create U shape cells, or we've got a 5S that's for sure what we have to do."

Andrew: And you start doing all these sort of works, but really unsure about what the purpose is and how it actually relates to actually moving those needles that we talked about. You're pretty sure it will be better, but you're really ... You're not sure why except somebody in a book said, "Hey, you should probably have really good standard work." And that, that sort of extent.

Andrew: And I think over time that is really evolved to kind of going through our first value stream mapping exercise with our coach Karl [Ohaus 00:06:39], and sort of looking at how are our current processes created a lot of challenges, not just on the shop floor where primarily or focus had been before, but how the upstream processes and customer service and engineering and purchasing were creating such variations in issues that if you're only focused on the shop floor, you would, you would really be able to make any impact at all.

Matt: So it sounds like maybe starting off with doing sort of lean, for lean's sake. Lean for the purpose of doing lean.

Matt: We've heard standardized work is a good thing. So let's do some standardized work. We've heard that 5S is good, so let's put up some shadow boards and clean up the tools.

Matt: But I'm not actually doing that stuff towards solving a real problem. And so you mentioned Karl Ohaus, who's been your coach helping the organization maybe

take a step back and first frame up, okay, what problem are we really trying to solve here?

Matt: And doing that at first, as you mentioned through a value stream map. In that case with the key functions of the organization, sales, engineering, production. And as a group making it clear, "Okay, here are the real challenges that present themselves to the organization. How do we go about solving them?"

Matt: So kind of transitioning for just doing stuff for the sake of lean, to doing stuff for the purpose of solving a problem.

Andrew: Yeah. You know, so from that exercise, you saw a lot of unsure people in terms of whose responsibility certain items were. I think there was a lot of surprise about how long using Little's Law inventory we had into the system. How long it would take us to empty it all out. As well as a complete and accurate, the fact that basically a single job could not actually make it through our process without having to be reworked at one of the steps through customer service design or manufacturing was pretty surprising, I think to the members of the group. And it helped I think realize the areas in which we needed to focus first and with the understanding of why to begin that work.

Matt: As a leader, what was your approach to helping people understand that it wasn't about ... We weren't trying to figure out whose responsible for the rework, we're trying to figure out what processes are responsible for that rework.

Matt: How did you create an environment where that sort of problem solving could even be introduced?

Andrew: Yeah, I think it's ... I think first thing is that, how do you, in that value stream, you've sort of brought different people together to kind of look at it. But, I think there's this sort of balance on can you try to get people to think their way to new way of working, or do you have to work your way into new way of thinking?

Andrew: And we've often discussed this about ... It's probably sort of a balance of both. Now, I probably shy more towards the work your way to new way of thinking. That at some point to get them unstuck, you actually just have to kind of do it for them and show and kind of fix some of the problems that maybe they don't agree with and demonstrate that it has the actual benefit.

Andrew: And then that starts to get them to see the new way of thinking. But, if you had them sort of locked in the room and said, "Hey, just really think about this a long time about how we're doing and if it makes sense." I don't think that they

could ever get themselves out of the trees to see the forest, right? At some point, you have to unstuck them.

Andrew: And then it sort of starts opening their minds a little bit more. So it's this sort of balance and then there's sort of this third caveat in that which is versus kind of going back to what we already know works or it doesn't work, but we're comfortable in that.

Andrew: And that's sort of this tension that exists in almost everywhere you go when you're trying to get them to start working in a new manner.

Matt: And in the right kind of action. So back to your earlier point about you could do 5S for 5S sake, but if 5S doesn't help anybody. Then they're just going to see it as another thing that they have to do because they were told to do it.

Matt: But taking action that feels like help because it's actually solving a problem to kind of demonstrate this is a worthwhile thing to do and engage yourselves in.

Matt: I mean, is there, is there an example that comes to mind about an early effort to, even a small one, to demonstrate help through action?

Andrew: So I think a good example of that would be sort of at our customer service to engineering handoff. In the current process, a customer would submit a drawing because they're usually custom that needs to be quoted by the customer service group. In some cases, not even quoted, just sort of processed for orders.

Andrew: They would enter it into the computer system and it would go up to the design group, in which case they would then kind of make the design for manufacturing. And then all that paperwork would come back to customer service to see what has changed or what might be different, and also correct any sort of mistakes maybe the customer service rep had made on the initial quote. And then they'd have to go back to either the customer and say, "Hey, this is what's changed. You owe us more money." Or maybe in some cases some money comes off.

Andrew: Inevitably, there would be sort of issues too that sometimes they would not agree with the, A. I owe you more money.

Matt: Sure.

Andrew: Give me a quote or problem. ... So one of the steps we did was to sort of change that check process to actually prior to it going to a design.

Andrew: So now the quote or order would come in, the sales rep would enter it into the computer system. Then it would go to the checker, who would review it for accuracy, make any corrections, in which case then they would update it and send the quote to a customer or update the actual order up to design.

Andrew: And around that. There was a lot of anxiety about that change. Although, the work theoretically didn't change that much from the checker's perspective. It was, "Well how will you know if engineering changes anything and capture it?"

Andrew: And you had to sort of have them start problem solving within that new work about, "Well how would you handle that workflow? How would you want customer service to know? What do you want designed to tell you guys so that it will trigger you to do another review and how not to review other things that haven't changed."

Andrew: And the fact was they'd want to go back and it was sort of encompassing that you wouldn't let them and you'd have to have them problem solve around what the issue was that they wanted to go back for it because we still want it to capture the benefits of why we moved it to the front of the process.

Matt: So that rework loop between sales and engineering and yeah, kind of a stubbornness on your part to say, "No, we're not going to go back to the old way."

Matt: And you can justify the stubbornness because there's a genuine problem that you can point to of this rework between sales and engineering. And there's a reality to ground everybody in, and while it may be hard to shift people to a new way of working, at least you can align people on the fact that a problem exists. So something needs to be done about it.

Andrew: Yup.

Matt: And you know one area where, so I get up to UPF, I don't know, probably up there about three times a year for the past couple of years, maybe a little bit more than that. And something that is always evolving ... So you just spoke to the upstream process of customer service moving into engineering. From engineering, once the design is complete it gets moved to production, where people are tasked to manufacture what the engineers have drawn up.

Matt: And, in one of the most lively places in the organization over the past couple of years has been that shop floor. Every time I go there's always change happening on the floor.

Matt: And actually, kind of a funny thing happened where you guys had some profitability targets, actually not profitability targets, you broke profitability records over the summer and you printed t-shirts sort of announcing, or not announcing but celebrating what you guys had done throughout the [Kaizen] only to break the target again the following month. Rendering those t-shirts pretty, pretty useless.

Matt: But you know, again, where do you think the ... where do you think the in mindset started on the shop floor? Can you point to, again similar to what you just described an action towards solving a problem that has now sort of snowballed into almost continuous change on the floor?

Andrew: Yeah. ... You know, I think around that issue Matt, shop floor, I think it's always a lot easier to see waste than the office.

Andrew: So I think it's easier to kind of get them to see it and maybe do some action around it versus office work I've found office work has been far more difficult to get people to understand and embrace.

Andrew: On the manufacturing floor, I think once again it's sort of evolved over time from sort of early on, this idea of just sort of, it's kind of going in a loop, watching the work and saying, "Hey, that's kind of crazy, what can we do to improve that?" We should move this, a hinge punch closer to the operators walking halfway across the shop. And kind of knowing that when you're doing this, there is no real return on investment. There's going to be no noticeable impact to profitability. It just makes the work less burdensome and it's things you got to do to start changing the mindset that improving stuff is okay.

Andrew: And I think from the larger change, I think what occurred was in July, our plant manager here had left and I was encouraged to take up that role of responsibility myself. As I was finding it difficult to get the plants to run the experiments that I felt needed to happen. In which case it was, how do we create a flow on the production floor within our work elements?

Andrew: And although we'd probably been experimenting for many years on different layouts, we were not having any luck. So taking that opportunity allowed me to get really, really close to the work and understand the challenges around that, and be able to be supportive as we implemented these things to help problem solve because they probably did not have the capabilities themselves at that time. And if I wasn't there it would have fallen apart.

Andrew: And you know, I think that goes back to at some level you have to do to get them into a new way of thinking. That the previous amounts of attempts was

trying to get them to think their way like I was on how you would go about it. And it really wasn't going to get there.

Andrew: So kind of going to the production floor and then saying, "Here's how we're going to create a production line process. And then as we have that, how that actually helps you identify problems and how we're setting it up is to actually see the problems easier to help us then problem solve in each station and each a work element. And bring that sort of to the conclusion, which then produces those sorts of results.

Andrew: And then kind of zoom back out again and re-look at, okay, what are those next challenges?

Matt: So kind of a couple things there. The idea of just go ahead and do it. You know, if you see a bit of waste or a lot of waste, that can be easily resolved through something as simple as moving the tool, than don't waste time in figuring out what will be the return on investment of moving or purchasing a tool, just go ahead and do it.

Matt: And the act of helping somebody. Sure, it may not deliver money back to the organization, but it may get that person to just appreciate the help and maybe begin thinking themselves about, "Oh, what else could be changed around here?"

Matt: But then also, yeah, you mentioned ... You're very humble guy, but when your plant manager departed you took on the responsibility of figuring out, like you said, how to create flow in the production facility by essentially becoming the plant manager as an opportunity to assign yourself responsibility for figuring that out. Learning by doing a series of experiments.

Matt: And the other day we were having a conversation where you mentioned you went off to a local company, not far away from UPF to just have an opportunity to go to a different gamba, observe perhaps learn some things.

Matt: And you mentioned that you were asking yourself during that visit, how would I, having spent the last few years figuring out things at UPF. If I were to begin here at this company, how would I go about a lean transformation? And can you tell us about that visit and your response to your own question?

Andrew: Sure. You know, so kind of going to visit and seeing and learning. And one of the things that is sort of interesting is to obviously go and visit other gambas and learn and what you can take away.

Andrew: And this was a case really where they'd sort of been at their lean transformation I think for 10 years, I believe. And, there wasn't a lot of indications, I guess, of the sort of success around that. There was sort of a lot of relics of I think failed or partly started, or ended programs and the like as you kind of walked through it. [crosstalk] And it was really good.

Matt: Things like this.

Andrew: Yeah, exactly. Yup. And, even though it allows you to give good reflection about, A. How easily that you could fall into that and maybe where are you already falling into that.

Andrew: One of the, if there's a sign that says, "Hey, if this door is open, make sure the screens down and there's no screen down and you really have two options. And why is there no screen down? Well we don't actually have a screen. Well, you either have to remove the signer by a screen, but you can't have both up.

Andrew: And, those are sort of some of those things that I think exist in everyone's shop floors that we sort of don't ever finish that loop. And sort of that reflection on where would I start. Kind of goes back to that simple point about watching the work being performed, and then improving it. So there was an operation where one of the workers has to sort of put, it was sort of a jug and put a lid back onto a jug of material.

Andrew: And I witnessed him take the palm of his hand and slam it four or five times to put the lid back on.

Andrew: And so I thought to myself, really where I would start my lean transformation is I'd buy that man a hammer. ... And it's so simple, yet I think people really miss that part that it doesn't need to be, there didn't need to be a three day Kaizen event around buying the man a hammer. You didn't need to do an ROI on buying the man a hammer, and you don't need to do a value stream map around it. It's just really watching the work and and saying, "How do you make better?"

Andrew: Now, once you buy the hammer, you might need to figure out how do you keep it so it stops wandering away and that's going to be a different problem to solve. But you know, I think those start the change in mindsets about how things can be different because maybe for the last 10 years you use the palm of your hand to pull the lid on.

Matt: Put the lid on.

Andrew:	Put the lid on, and in fact maybe if you don't, you're a really poor operator because good operators know how to hit it at the right angle with the right palm pressure. That makes them really good at their job.
Matt:	Just buy him a hammer. Yeah. ... Yeah, the idea of ... It's funny, the balance between how complex some of this can be and how simple some of this can be.
Andrew:	Yes.
Matt:	I think that idea of changing behaviors or getting people to understand, it's a series of simple actions like that. That will at least get people to think, "Well, this isn't a bad way of working. I'm no longer banging my hand against a hard piece of plastic. I have a tool to do that."
Matt:	So, so far we've been talking primarily about work level problems. How to change, how work is done to go about a lean transformation, but there's a different kind of problem that all organizations face that is higher than the work level and that's the strategic level. As an organization, how do you define your purpose? What value will you deliver to customers?
Matt:	And Andrew, you went about transformation not just at the work level, but also how to go about organizing that strategic purpose that, in this case, a Hoshin process to go about defining purpose and aligning the organization.
Matt:	Can you tell us how that has ... How would that has evolved and how it works, and what it has done to help UPF.
Andrew:	Sure. I think kind of going back to the first one we did and in 2017, we probably went about it by doing a SWOT analysis and, and kind of each department looking at different activities they wanted to achieve.
Andrew:	And, we really ended up with this ... We had sort of our five year and 10 year breakthroughs and these targets and goals, and all of these activities that I think sounded really cool and really good. And, probably by the end of it, we didn't really move the needle at all in terms of any of those sort of breakthroughs.
Andrew:	And all those activities, maybe some got done, some didn't. And our maybe attainment was in the 20%. And we took a different approach in 2018 to the potion in which we spent a lot of times defining organizational purpose. And then, around that purpose what sort of top line metric represents would help meet those purposes and how would we track that?

Andrew: And then, so for example, one of our purposes is to make sure that we stay in business. So profitability might be one of the key purposes. So we used a ship dollar per hour metric.

Andrew: The other one was to reduce warranty costs from provide defect-free to our customers. And, we came up with two metrics. We didn't want to go too much further than that. Once again, when you want to make sure that you don't overwhelm your outrun and your ability to solve problems and, and get things done.

Andrew: So we really kept it simple at those two. We wanted to figure out how to increase the ship dollar per hour and reduce our warranty costs. And through that, each department would align with other metrics, which metrics they would have to improve that would actually make an impact on that higher one.

Andrew: So what we found from the previous Hoshin in 2017 was, a lot of your activities actually fought against each other. So maybe you said something like, "Hey, it'd be really good if sales got to more sales."

Andrew: And so sales has a really great idea how to bring in more sales. They'll just sell it cheap and they'll get more sales.

Andrew: And then we task engineering with maybe, "Hey, how do you reduce some more [inaudible] costs engineering?" And they go, "I have a great plan, we'll just add a bunch of more parts to make it stronger."

Andrew: And then finally you tell a manufacturing, "Hey, I want you to increase your ship dollar per hour." So meanwhile, customer service is giving them cheaper products and engineering is adding more parts and you've told them to increase their ship dollar per hour and your net result is nothing actually occurs. Versus saying, "Nope, it's everyone's job to increase ship dollar per hour, which means engineering, I want you to figure out how to remove parts while still making sure it's functional. I want customer service to review accounts that are underneath the threshold and really look at why are we selling them at that rate. Manufacturing, you need to figure out how to improve your output. And maybe HR, we have to figure out turnover because that hurts manufacturing. And purchasing, we have to make sure we'd have no run outs and that will help our dollar per hour as well."

Andrew: And sort of through aligning everyone's activities to move that top level objective. The results have been really tremendous and just even when you don't even hit every target, the fact that we're all rowing sort of in that same direction we've achieved both years passing are what we thought were stretch goals, which means we didn't stretch them I guess far enough.

Andrew: And, I think it really helps sort of see that power before, how not having alignment around activities really keeps you stuck there. And sort of what we look back when you kind of do your [inaudible] reflection is that we achieved almost all of the things we set out for in our 10 year breakthrough from that first Hoshin, which we didn't make any movement on in probably the two years of actually trying to fulfill purpose. And it's been pretty neat to see that.

Matt: Yeah. So starting with purpose. As an organization, why are we all here? And then, defining that purpose in measurable terms.

Matt: So having two high level metrics ship dollar per hour and warranty claim costs. And then, challenging each department, sales, engineering, manufacturing, what will be your contribution to these two objectives? And getting everybody, like you said, to sort of row at the same pace in the same direction.

Matt: So I guess it is January 28th are you guys on a calendar fiscal year?

Andrew: Yes.

Matt: So does that mean you are in the midst or have just wrapped up your strategic planning for the year?

Andrew: Yes, we just ... We finished it, just sort of, we'll have our ... One of the things we did was we aligned it with our ISO 2008, so that's sort of a different story of how you operate different systems.

Andrew: So those are now aligned. So we'll be wrapping up our 2019 stuff and then laying out the plan for 2020 at our management review meeting.

Matt: And what is your sense of sort of big problems that UPF will challenge itself to tackle?

Andrew: Yeah. Yeah. So, around that we still have sort of the two goals have been carrying over, which is the ship dollar per hour. Which we have three different manufacturing facilities, so how to continue to deploy and get the other two to the same rate.

Andrew: And then we also have from the warranty costs, we had done a really good job at actually mitigating warranty costs, but we had missed a lot of the actual quality objectives. So we just got better at sort of planning and managing the repair work versus reducing defects. So, we were staying there because I think we can still do a better job.

Andrew:	And then sort of the third one we added this year is as our capabilities grow, we're going to run into a new challenge that we really have never really faced before, which is, how will you fill in work if you've now created more capacity in your plants?
Andrew:	So for basically our whole history, Matt, we've been really set up to sort of receive these orders for the fire industry and process the orders. And now that might not be enough work, right?
Andrew:	So although we've done some smaller stuff in the last four years at growing this sort of non-fire tank sales to about 10% of our business, how do we take that next leap? And, kind of now looking at, we may have to create a whole new value stream that has never existed in the organization around how do we find and develop markets to get into. And then how do we sell to those markets and make sure that it's the right side of stuff we want to do. We don't want to do a sort of one off $500 project for our size. It doesn't really make sense.
Andrew:	And, how do you create a process that identifies your future growth? Otherwise, you always run the risk that you don't want people have continuous improve themselves out of jobs.
Andrew:	As we build in capacity, we have to figure out how to bring in different type of work in sales. Which will lead to more challenges and problems because they might not always fit maybe the same as your other work, right?
Matt:	Well that's an exciting problem to have. So yeah, you and Karl are going to be at ... Well first, thanks again for joining us in California for the Summit Andrew, we're excited to have you guys, but yeah, you and Karl, Karl Ohaus, a gentleman who's been your coach for the past couple of years are going to be doing a session. Like you said on those ... You've tried to distill the key components of at least what's happened at UPF into three things: knowledge, grit and outrage.
Matt:	So yeah, can you talk us through each one of those, why those three, and what do they mean?
Andrew:	Yeah, I think, so what I've seen here is what really kind of gets really good fast transformation that kind of creates the bias reaction to need [inaudible] is those three elements.
Andrew:	And they all sort of have to exist. So the first is knowledge, does the person have knowledge and understanding of, can the problem be solved? And maybe an idea around how to solve the problem.

Andrew: Then they need to have sort of grit, which means that it's probably not going to go right the first, second or third time. And I got to keep working at it to make sure it's right.

Andrew: And then finally, is the outrage that they have to be very dissatisfied with the current state of, of the issue to want to actually flex it.

Andrew: So you can be dissatisfied, but if you lack the knowledge, you just assume it's the way it has to be. You could have the knowledge and be satisfied, but if you don't have the grit to persevere, you once again, you'll just sort of give up.

Andrew: And you can have the knowledge and grit. But if it doesn't bother you, it's not going to move the needle to make you do something about it. So if you sort of bring it back to that hammer example, if there's no outrage that a man is smashing his hand into the thing. You didn't need a lot of grit and you didn't need a lot of knowledge to solve that problem. But there really wasn't any outrage around how preposterous it was to have your employee smash his hand to put on a cover, right?

Andrew: And I think some of that is really imperative that when those things kind of exist, it gets people to start taking action.

Andrew: And if one of those elements is sort of lacking, it probably doesn't occur. And, it's tough of how you get management and leadership to start seeing these things and you know, A. Give them the knowledge. And then also, how to make them get a little bit outraged about the current state of what they've probably been managing over.

Matt: You have to see the world as a mess.

Andrew: Yes.

Matt: Everything's a mess. No matter how good it is, you have to view everything through the lens of a total disaster.

Andrew: Yeah, exactly. You know, and if it makes you outrage, it's still a disaster. Even though it's a hundred times better than it was, you'll still probably do something about it. But if you kind of view it as, "Hey, this is pretty good now." You're probably not going to work to improve it.

Matt: So those three things, knowledge, just understanding of how to actually go about solving a problem, the grit to see it through, and then the outrage to never stop. To see a never ending mess in front of you. So that there is always

opportunity to find problems and to go about solving them through taking action.

Andrew: Through taking action.

Matt: Yeah, it should be an awesome session. And yeah, I appreciate that that's a terrific sort of framework to not just view the UPF transformation, but really any lean transformation.

Matt: Well with that, I'd like to thank you again, Andrew for joining me here on the podcast and looking forward to seeing you in California. Actually in just about 10 weeks, April 6th to the 7th. So yeah, looking forward to seeing you in sunny California.

Andrew: All right, thank you Matt. I once again appreciate it, and I look forward to seeing in California. And definitely, when you have some time stop by again and sort of see what else has changed.

Matt: Yeah, look forward to that.

*Listen to new episodes of **WLEI** every Monday on your favorite podcast apps. We invite your feedback, stories, and questions; email us at pod@lean.org.*