The 3 Most Important Practices for Achieving Process Excellence – With Lee Pollock

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Michael Cyger: Hey everyone. My name is Michael Cyger, and I'm the founder and publisher of iSixSigma.com – the largest community of Lean and Six Sigma professionals in the world, and the resource for learning to drive breakthrough improvement.

If you are leading a process improvement program, whether it is a Lean program or a Lean Six Sigma program, whether you are a Deployment Leader, a VP of Six Sigma, or a Master Black Belt, I will bet that there are times where your efforts yield less than expected results.

I have had the fortune to interact with many Lean Six Sigma leaders over the years and I hear, firsthand, how difficult it is to improve the operations of an organization. You wrestle with the organizational culture, the organizational structure, the politics and the power trips. The list of hurdles to overcome goes on and on.

Today, I have an exciting interview for you. There is a new book out, entitled, Reversing The Culture of Waste: 50 Best Practices to Achieve Process Excellence. It is based on real data and provides specific solutions to more effectively implement process excellence at your organization. It is written by doctors Lee Pollock and Mark Kiemele. And today we are joined by Lee Pollock. Lee, welcome to the show.

Lee Pollock: Mike, thanks for having me.

Michael: Lee, let's start with a basic question. How have you amassed and selected the most important fifty best practices for implement process improvement?

Lee: Mike, we have supported customers worldwide for about 22 years. We have coached a lot. We have learned a lot. We have amassed quite a bit of

data on what works and what does not work, what works the best, and what seems to work most universally in organizations be they government or industry. We have supported organizations that have been multi-national with different cultures, different languages, and different traditions. And these practices that we define as best practices that work for process excellent in the most universal case are the ones that we began to affinitize and work into a more manageable number – 50. And the companies and organizations and governments that we have supported throughout the world and government agencies primarily in the US and Canada are available on the website. But basically it is from learning a lot, amassing what works and does not work, and affinitizing them and making them available for others to benefit from.

Michael: Great. What does a company look like that uses, whether they consciously know, all fifty or not? What is a company that uses most or all these fifty best practices for achieving process excellence?

Lee: There is something indescribable qualitatively that when you go into a company and not only speak with president and CEO, and the officers and the mid-level managers that separate the officers from individual employees, but when you speak with the employees, there is something direct and tangible about what they say about how they feel about the processes they feel ownership and control over, and the customers that they support in those process, and their ability to influence the customer through the processes that they work on. Their joy of coming to work. Their willingness to talk about it. That shows that process excellence has some ownership at a very tactical and very personal level. Two companies that come to mind that really epitomize the majority of the 50 best practices contained in the text. No organization does all of them nor do all the best practices necessarily apply to all companies or government organizations, but two companies that seem to do most of them, and do them right, and do them consistently, and still do them year in and year out are Agape Enterprises in Minneapolis, Minnesota as well as John Deere Power Systems, to name a few.

Michael: Great. And so, you have worked with a lot of companies over your forty years in the industry and helping companies out. What does a company look like that does not use most of the 50 best practices for achieving process excellence?

Lee: Well, the title of the book was something that was quite controversial with me and my wife. I wanted a short title and so did she, but the first part of the title really epitomizes what we see in organizations that lack process excellence or process improvement. And that is you see waste that has been legitimized and is rampant virtually everywhere. Internal before service delivery or after, or before product delivery or service delivery. You see external waste after service or product delivery. You see prevention cost that is inspection. All kinds of waste that is rampant. As much as forty percent of an organization's revenue spent in legitimized waste is often seen. You also see wavering customer loyalty. Of course, sometimes, the customers have to be loyal, especially if the supplier or the customer service is requirement. Especially the government as a required customer of so many prime contractors, but if you ask them the question: "Do you really want that supplier, or that service or that product?" the loyalty is variable or is wavering. And lastly, you see, I think a fair degree . Of course, the economy is quite soft; continues to be soft not only here, but overseas. But you see high turnover and high loss of intellectual capital out of the organization. So, those are three attributes that we can engine some numbers, if we wanted to, to gauge a lack of process excellent.

Michael: Yeah. All right. So, we talked about what it feels like to work at a great company that is implementing a fantastic process excellence program and also the flipside – what it feels like to work at a company that might be trudging through their process excellence program and does not necessarily have all their ducks in a row. I am going to ask you about a few of the best practices. Actually, what you think are the most critical best practices. Of course, they are all critical depending on the business situation. But I want to take a step back firstly and ask you what was the impotence for writing this book?

Lee: Yeah. Mike, the official impotence or unofficial impotence – I will start with the latter. The unofficial impotence was that my wife, Lydia, and I were attending a one-week yoga course. Lydia is an advanced yoga practitioner; I am a basic yoga practitioner, and I was promptly invited to leave the yoga training course and Lydia excelled as usual. So, I was doing more or less R&R at the Kripalu Yoga Center in Lenox, Massachusetts, and I just thought

about writing a book on best practices. And that was really a couple years ago. Better part of a year. Year and a half ago. That resulted in the textbook that has just been released.

Michael: So we all have yoga to thank for this new book?

Lee: We all have yoga to thank for the new book, yes. And my wife, certainly, because she has been encouragement. But really the real official impotence for writing the book was: "Why resurrect or why recreate the wheel?" We see so many organizations, as you kindly said in your introduction, that invest lots of money and lots of intellectual capital in all kinds of initiatives, and process excellence may be viewed also a business improvement initiative along with many others in an organization embarks on; and if we can diminish the gap between expected benefits and actual benefits and not have them redesign the wheel, so to speak, why not? Why do they have to go down false alleys and make errors in their decision when others have and that knowledge can be put to good use? So that is the impotence. We have seen companies do it right. We have seen companies do it wrong. We think we have affinitized the best practices that are universal in most cases. And we do not expect companies to do all fifty, but we encourage them to consider that as they roll out their process excellence efforts and not always start from the beginning.

Michael: Exactly. And so, like any good process excellence program, you need to get voice of the customer. You need to understand if you are meeting the needs of customers. And so, you wrote the draft of this book and you provided it to one of your customers for feedback – for voice of your customer – to see how else you can improve the book before you published it. Was that the case?

Lee: Yes. We had about 20 to 25 critical reviewers gladly volunteer and thankfully volunteer to act as reviewers of the draft. In general, they provided a very positive direction for us, but in some cases they provided a change in direction for us, which made, I think, the product more usual. For instance, Russell Ford, the CEO of ClearEdge Power in Portland, Oregon, I believe, said, "Okay. Here are the 50 best practices. I have read the book. I have graded my organization according to the 50 best practices; I now have a

score. How does that score relate to other companies that have been about one to two years in their process excellence journey?" By the way, process excellence, as defined in the text, is not Lean or Six Sigma, or Design for Six Sigma [DFSS]. It is any process excellence enterprise-wide process improvement effort. Whatever you call it, whether it is competitive excellence process improvement, process excellence, CPI, Lean, Six Sigma, DFFS, or whatever. When we want to attack the process and learn from it in the betterment of the customers we support, that is was the impotence of the book is. That is what the book is focused on. Russell said, "Your book is great at identifying the best practices. It says what best practices we are strong in, what best practices we were not strong in, and what best practices did not apply, but how do we stand? Are we in fiftieth percentile? What is the z-score, so to speak?" So, the good folks at iSixSigma were very kind and very generous in identifying 545 people –545 individuals – representing many different companies of all different sectors, and the good folks at Air Academy – Kathi Swagerty and George Maszle – did a survey with the iSixSigma population. The day it came back, Mark Kiemele, my dear friend, mentor, and co-author of the book and co-founder of Air Academy, developed the model; and that model is now available online for readers of the book to enter their data and see how they compare against all others, and go back and use the model in six months or twelve months to see what they did right and what they could do better. So that is an example of the feedback that caused us to think for a moment instead of just writing a book; making the book better for our customers. And so, it has been a wonderfully positive experience with some good critical feedback.

Michael: That is great. You make it actually a tool; not just a book that people read and put on the shelves. It becomes a part of the overall process by which an organization – a process improvement organization – within any business can look at themselves critically, measure themselves, and then look at their measurement over time and see where they might need to adjust every single year. And they can benchmark themselves against other people, so it sounds like a fantastic toolset to use. So what we will do underneath this interview is we will provide a link to that tool that they can go to on your website if they want to fill out their information electronically. Of course you have the measurement scale in the book, but you cannot compare yourself to

the others that were gathered through the iSixSigma research until you go to your website and compare.

Lee: That is right. And there is no cost in doing that. And another benefit is that it allows the model to stay current over time with more and more users of it. So we are excited. Like you said, it is not just a text, but an ability to benchmark and learn.

Michael: Excellent. So let's get into the best practices, Lee.

Lee: Sure.

Michael: We have selected a few of them. The first one we are going to talk about is actually best practice number one from the text. It is entitled "Establish Ownership At the Executive Level." So, in your own words, what is the main takeaway of this best practice?

Lee: The main takeaway from this best practice, Mike – and by the way, this best practice, if we look at all 50, is in the parade of the top 5 of the 50. And the key takeaway, I think, is that somebody has to own the process. Preferably, the more senior the better in terms of its position. They cannot rent the process. If you look at Florida or Arizona, as we have up here in Toronto, many people have homes in rental communities. The rental communities show a high level of renters that do not really care for where they are renting. And likewise, we cannot rent process excellence. So we need somebody to gain ownership of it and, preferably, the more senior the better. The second key takeaway, if you would allow me to offer two in this particular best practice, is whoever owns it should have a statement of need. Why is it important to make this investment? Clearly, and succinctly, and articulately conveyed throughout the employee workforce. Secondly, they have to have a vision for employees to kind of rally against – process excellence. Third, they have to have a plan to measure against over time. And fourth, they have to have a set of expectations articulate by the person who owns it. And the expectations often cannot be: "Well, if we do not do process excellence, we will go out of business." That does not provide tactical guidance to a rank and file employee and how they have to behave differently. We hear it all too often. Throughout many companies we support,

we have to change or we will have to close it down; and that is only an unsettling remark to make. Not a settling way of saying you have to chance your behaviors. So, somebody senior has to own it, and that person has to have a need, a vision, a plan, and an articulate set of expectations that all people can associate with.

Michael: Okay. So let me make sure I understand this and try and put it in a little bit more contextual terms. Establish ownership at the executive level. Let's say I am a VP of process improvement. I am not at the C-Level. So I am not a part of the CEO, CFO, and COO Level, but I am the next level down. Does that mean I need to get one of the C-level employees – the CEO, the COO or the CFO – to actually become the champion of this?

Lee: It is a good question. Of course it would be better to have C be an owner, but we have had many instances where a senior vice president or vice president said, within his or her realm of responsibility, "I want to invest in process ownership. I will own it. Here is my vision. Here is my plan. Here is my set of expectations. Here is my need statement." Data General in Southborough, Massachusetts was a great example. Al Lanzetta saw the very compelling need because the customers had experienced great variation in the products and services Data General provided. Al was not a C-type CEO, or CIO, or CFO or COO; he was the vice president. And that effort was more than sufficiently successful to bubble its way up to earn the attention of the CEO and president of Data General who then carried it over to the rest of the organization over time. So, it is desirable, but it is not necessary.

Michael: Okay. But if it is not the case, the person that is in the process improvement role needs to somehow escalate it to the level of the chief executive officers and chief operating officer in order to have them communicate it out on a regular basis to the organization. Do I hear that correctly?

Lee: Absolutely. But the genesis of process improvement does not necessarily have to start at the top; but if it starts, it has to start senior and eventually bubble up to the top for the rest of the organization to learn from and implement.

Michael: Okay. So that makes sense. So, what tactics do you recommend for a Deployment Leader who is not at the C-level to establish ownership at the executive level?

Lee: I would say, overwhelmingly, the most critical thing is to communicate, communicate, and communicate both formally and informally why we are doing this and how people must – not optionally, but must – get involved. First and foremost, that is a very tactical suggestion. Another suggestion is that the Deployment Leader has to be entrusted to provide information to the Senior decision makers – the vice presidents or above – on what is working and what is not working; and he has to do that frequently and in a very unbiased manner. Third, I believe, he or she has to be very vigilant to the occurrence of any critical events. When I was in the Air Force and Electronic Systems Center in Boston, Massachusetts decided to invest in process excellence, there occurred some events that we called critical events that, if the executive was not made aware of the events and did not pushingly intercede in resolving those events, the whole credibility of the effort of the investment in process excellence would be in jeopardy. So, I think it is important, just to summarize, you have to communicate a need, a vision, and a plan downward. You have to provide feedback to the executive on what is working and what is not in a very unbiased manner. You have to intercede on events; particularly critical events that, if the executive is not aware of and is not involved with, will come back and hurt the effort undoubtedly. And also, I think that the Deployment Leader and executive really has to show up at events that are crucial. We all too often know of stories where the decision maker wanted to invest in process excellence, but was too busy to stop in on a trending event, or decisions on what projects would be first and what projects would be delayed, or project report-out. And these kinds of efforts are very important for the Executive and for the Senior Deployment Leader to be involved in. You cannot, just as I said, rent process excellence by writing out a check. You have to get out of your office and listen and hear what is working. And, Mike, if I may just also say that we have seen many Deployment Leaders that are reluctant to tell their boss what is not working relative to process excellence because they have viewed that as being a failure either of themselves and/or the organization; and that is a wrong thing to do. The leader has to know what is working and act accordingly, especially what is not working and also act accordingly. And not be hesitant to tell bad

news when, in an unbiased and respectful way, that information has to be reported on.

Michael: Yeah, great tactical advice. Showing up is half the battle it seems. I was recently at a quality forum of deployment leaders, and a major airline in the United States who is implement a structured process improvement program said that the CFO wants to come to every training session they hold to make sure that all of the attendees realize that this is a major initiative of the organization; and you cannot put a price on having chief executives show up and drive home the point of why what they are doing ties directly to the business and to the financial side of it. And I remember from my time at GE. When we would have the business leader of Commercial Equipment Finance show up to the tollgate reviews, it completed changed the dynamics in the organization. It is amazing how people will put in an amazing amount of effort to prepare for a tollgate presentation – even not the final one, but a definer or measure one – when they know that a business leader is going to show up. So, great points, Lee. So, my next question then of course comes from let's say that you have a CEO that talks the talk. They know that process excellence is the right thing to do. They know that putting a structured program in place is important to the business, but they do not necessarily walk the walk. They do not show up to the meetings. They do not make it a portion of their annual notes to the organization, maybe, if they have a town hall or something. So, they talk the talk when they are with you, but they do not talk the talk publicly and they are not walking the walk when it comes to showing up to the events and driving home the point. What do you do in those cases? Do you go back to one of the few tactics that you had that you just need to keep communicating over and over again and hope that the CEO will take it to heart?

Lee: And just to embellish, or build, on that point, they can initially talk the talk, but then, due to other pressures on the business, they lose their focus and they do not walk the walk. So, we see that variation too. That they are good for a finite period of time, but they throttle back a bit. That is a very good point and a very serious problem and, unfortunately, not an uncommon problem. And I offer two things that the text talks about as well to address that serious situation. The first is it is very important to be very selective in who that corporate deployment champion is going to be. That person has to

be very well respected. That person has to have a deep sense of the business acument of the organization. That person has to be technically competence and has to be motivational and a good leader. So, if you have a good deployment champion that is willing to and is able to respectfully engage the person who claims initial ownership, that will help that person continue to walk the talk. Secondly, if you engage in a consulting organization for some help in training and coaching, that organization can also help. Again, you have to have a trusted deployment champion and, if necessary, a trusted external consultant if you need one to begin the effort in getting it going. Those two factors can make sure the CEO, or whoever owns it – the vice president who owns it -and everybody in between stays on track and says, with consistency, "Here are the need, the vision, the plan, and the expectation." And does that frequently, and coherently, and unwaveringly. So those are two ways to address that, Mike.

Michael: Great. All right. So we talked about executive ownership, what happens to do it right, and what happens if you do not have the CEO or C-level walking the walk. Now, we have got something in the middle. I always harken back to a conference I attended. I think it was in 2006. Jack Welch was the guest; and Jack Welch, of course, the past CEO and Chairman of GE. The company who made Six Sigma so well known. The executive, I believe, was ranked by BusinessWeek as the business manager of the century. I asked him in front 500 people in attendance what he would do if the executive team would not buy into Six Sigma. And his response was: "Run away from the company as fast as you can." His point was that you cannot change people, so why waste your time? Instead, you should go find a great company to work with. Do you agree with that advice from Jack back in 2005/2006, Lee?

Lee: You remember that question; and we remember the conference and we remember the question that you asked, and you are right, that was his answer that he very straightforward, and concise, and in a semi-emotional way responded to your good question. We understand his point and I would agree with it, but we do not agree with it entirely. If a company has enough of a critical mass of core management that is committed to process excellence, and wants that journey to succeed, and is committed to that journey succeeding not overnight, but over time, we think that that bears merit as well as the company that is deemed as being the best. We listen to the news every

day, and every week, and every month, and we find that companies are the best, as Jack has mentioned, are the best today, but they are not the best necessarily tomorrow. Things change. The cellphone maker. The smartphone maker that, as the leader of past, is working very hard to regain that leadership; and probably will not gain the leadership. So, joining the company that is the best as being the mandate versus joining a company that you can feel a part of and be a member of the team, either as a manager or as an individual contributor, and work over time things like process excellence, it demands a certain different kind of intrinsic motivation than joining the best company. And you cannot help but think of NBA players, or NHL players, or Major League Baseball players, or other professional players that did not necessarily join the best teams, but they wanted to join a team that was trying to become the best; and join that team and be part of the team in that journey. So, we feel if there is a strong and core-committed staff of management, especially in today's economy where you just cannot say I will join this organization and not these three – it is tough to do that – the destination is less important than the journey we take. And that is how we view process excellence. So, that is how we temper Jack's answer to your great question several years later.

Michael: Yeah, and I think that is a great way to put it, Lee. All right. We are going to jump to another best practice. It is one of my personal favorites. Best practice number 27 from the text. It is called "Provide Expert Coaching on Projects and Studies." So, what is your takeaway, Lee? What do you tell people when you say: "We need to provide expert coaching on projects and studies"?

Lee: Yeah, it is a good question. And that is one of your favorites. It is interesting. Well, that is one of our favorites; and I think it is important to say right up front that regarding project or study coaching, it is unfortunate that most organizations who have constrained budgets – who does not these days? – chip away at coaching because it is often times the most expensive activity they have to purchase early on in process excellence. And the damage that kind of shortsighted attitude is significant and far-reaching. We will talk more about that probably as we get into this more, but I think that the key takeaway is best articulated by, again, my friend, and mentor, and co-author, Dr. Mark Kiemele, as being that everyone needs a lifeline. The best people

that undergo anything new seek out help; seek out the best coaches. The best coaches in terms of technical expertise, in terms of business knowledge, and in terms of motivation and leadership in helping them do their jobs. And that is the key takeaway. Everyone needs a lifeline, so everyone needs coaching, especially in the first few projects and studies that they are assigned to do.

Michael: Yeah. So is that the takeaway that you would recommend for project coaching? That every single person that is going through training has a mentor assigned to them that is at a Master Black Belt level and has completed multiple projects successfully to whatever standard the company is using for process improvement?

Lee: Yes, there should be project coaching, project mentoring, or whatever it is called, or study coaching and mentoring, or both. It should be interwoven with the training and the project or study execution. The rule of thumb is that one to two hours per month for the first six months minimally would be a requirement for coaching, and it is very, very important to select the very best coaches. If the process of selecting coaches is an easy process for an organization – government or private industry – then you probably selected the wrong coaches. So you have to be very judicious in who select as coaching providers. Often, all the coaching should be prescheduled. And it is essential that, if you trim anything, you are not trimming the coaching budget.

Michael: Yeah. I cannot imagine myself going through training and not having a coach back in ’95/’96 when I was at GE. And I will give a shout out to my MBB Coach at the time. I think he might have even been a Black Belt Coach. Kaveh Taghavi. If he is watching this, I want him to post a comment down below. And I am thanking him on the show because he was critical to my learning. You can only learn so much in the four-week training course that we went through at GE, and he helped me figure out what data I needed to collect – you are never going to be able to talk about every situation in class – how I was going to analyze it in Minitab, and what kind of simulations I was going to run with Crystal Ball at the time we were using. So, yeah, I cannot imagine. And maybe it is only because I went through that process that I cannot imagine something different, but I cannot imagine learning something so complex as the DMAIC methodology and all the tools

involved, and being able to tie a real world problem to a statistical problem to a statistical solution and back to a real world solution without having a mentor to guide me through my first two projects. So my question then, Lee, is: with so many companies moving toward different learning than I went through – they are moving towards blended or online training – so that they can save money, so that they can improve the consistency of delivery to their staff, and so that they can provide more flexibility when the training is completed, is it possible to do effective project coaching via telephone, or via video conferencing, or via some other manner where a Master Black Belt is not physically available?

Lee: We certainly applaud the notion of online learning, or blended learning, or physical, formal, in-class learning, but not coaching. We find that the synergy, the interaction, the motivation, the leadership, the emotion, the passion, and the ability to use a flip chart or a grease board – a whiteboard – informally face-to-face with the people undergoing training and the coach is just sacrifice. It is just not there. Yes, you can raise your hands. Yes, you can do a Q&A and engage your coach. But at the end of the day, there is no substitute for face-to-face coaching with your knowledgeable, accountable, and skilled project coach or study coach. The cards are stacked against an organization when you want to embark on enterprise-wide process excellence efforts. And you get these young people or not young people, as the case may be, going through the training and they are so pumped up with all of the tools that have been presented to them by the instructors that involved in the training process. They are handed a mandate to prove to a management-blessed project or study and it is hope for the best. You hope for the best and what you get is, as you said during your early days at GE, you wind up providing all these tools and using too many tools. You wind up being in multiple phases, be it DMAIC or IDOV at the same time. You wind up having difficulty, as you clearly articulated, in understanding what exactly it is you are chartered to do. Once you mandate and you find that the mandate over time expands – so you have an expanding scope – you use too many tools and you are so excited that you are employing the tools using multiple phases all at the same time yielding disillusionment and frustration not only by yourself, but also by your champion. And the net result is a return on investment which is a lot less than expected and you amass a number of projects that took too long and delivered too little of benefit where the

process excellence effort begins to be questionable. So, that is why coaching defines what is the scope of the project. What few tools are necessary to get the project done? What phase – DMAIC or IDOV,or whatever phaseology or methodology you use – are we in? And to get it done in a reasonable period of time. Maybe two months or less. For a study, it could be a lot less than two months; and a reasonable ROI for the effort, and move on to the next project. So it is important and, back to your question on blending learning or in-class learning, you just lose that synergy if you cannot have the coaching – at least the coaching – done face-to-face.

Michael: Yeah. I totally agree. And you could look at a number of different industries, whether it is the medical industry where people have to actually practice being a doctor before they are given their full credentials, or the carpentry industry where you become an apprentice to a carpenter to learn the trade over time. It is not different in Six Sigma. You need to learn it over time. And I do not consider myself the sharpest tool in the shed, but I am also not the dullest. I have been through engineering courses at some decent universities; and having been exposed to DMAIC and understanding the tools was really only half of the learning process in applying it. And learning how to apply it and seeing how the tools fit together was the other half. And it took me going through with a guide to make me really understand it. So my next question, Lee, comes as a result of many people – I might even say most people – who would be in a Black Belt role. Somebody who is leading process improvement projects at an organization does not have the support that I had at GE when Jack Welsch was the CEO. They do not have the structured courses. They do not have the mentors who are assigned to them. The expectation that they are going to meet with their mentor for an hour a week to make sure that the projects progress on time. What options does a Black Belt have? What options does a project improvement professional have who is leading a project at their organization? What options do they have to get coaching from outside their organization if there is nobody inside their organization that can coach them?

Lee: Now, that is another good point. And it is a very common point, especially early on in deployments in process excellence. Well, the answer, straight and simple, is they have to find one. One, it has to provided to them whether they find one or, hopefully, if someone would be willing to provide

that kind of service. So, in the early days of EMC in Boston, Massachusetts, we rolled out process excellence. That is a multi-billion dollar company with many thousands of employees. We did not have adequate coaching. Data General absorbed by EMC also rolled out process excellence; not adequate coaching. In the early days, a partnership was granted to consulting companies that did have good coaches because of the industries that they worked on. We are doing some work in China right now with the development of automobiles in China. And they want coaches for DFSS that have specific skills in not only applying the tools, but deploying the tools in an automotive environment. And they are willing to buy that service for a finite period until they have such Black Belts or Master Black Belts that can do it on their own with the same level of competency. In the absence of partnering with a skilled consultant, you can go to local quality organizations. Some organizations at EMC actually have friends and colleagues that work at suppliers or at customer's companies, or just colleagues or friends that have gone through the training, worked on projects, and provided informal support early on in their career. So, number one, if you can hire a good and reputable consultant that has people that have proven experience, great. If not, find one yourself that can be done informally through colleagues, neighbors, even approaching a local ASQ Chapter, and the like. But, like you said, you have to have a coach. You have to have a lifeline to get through the project or the study in a reasonable amount of time with a reasonable benefit and do it again. And if you do not, you will be highly hesitant in wanting to do it again.

Michael: Yeah, you are not going to be as effective in doing the job. So, great advice. Find somebody in the organization. If there is nobody in the organization, if you have a budget, hire somebody reputable from outside. We have a whole list of Six Sigma consultants on iSixSigma that you can look to. Of course you need to do your due diligence. You need to find the people you work with that have the experience that you are looking for that are easy to interact with, that match your style, whatever that is. In lieu of that, join up ASQ. Go to a local chapter. You might find some people there. Clearly you need to do some networking. There are many different ways to network, as you mentioned. And the one thing that I will point out that came into my mind when you were talking, Lee, is that there are plenty for-profit organizations in every city that are doing some sort of structured process excellence program. Many of which are Lean Six Sigma; they just call it

something else. It is the whatever delivery system, or production system, or what have you. And if you are a not-for-profit – you work for a local food bank or a local charity of some sort – and you want to implement Six Sigma in your organization, or you want to deliver projects and you are looking for a mentor, I would recommend calling up any of the Six Sigma consulting companies that in or around your city because there are some of the most generous people I know in Lean Six Sigma and they will volunteer their time to coach you if it helps a not-for-profit execute at a higher efficiency.

Lee: And they have been there. And they have had, in their lives, a lack of coaching when they could have benefited from it, so they are generous often times.

Michael: Definitely.

Lee: Mike, I also wanted to say, again, picking up on this last remark you have made; and this goes back to private equity – the coal driven company. Private equity companies that we have worked with and we have had the privilege of supporting. There are many people in these companies that have had past experience in process excellence, but for whatever reason have been reassigned long since other positions. So, if a company asks the question: "What is the experience capability of some of our people? Have they had process excellence training? Have they done projects? Have they been certified?" they often find that they have those kinds of skills and talent in-house that the skills can be dusted off. Often times, in the case of Air Academy Associates, we give the people a skills test or a competency test to assess whether or not the knowledge is still relevant and their knowledge is still sufficient before we turn them loose as coaches. But to look inside as well as external, as you had said.

Michael: Yeah, definitely. Great. Well, I know we already forty plus minutes into this interview, Lee, but this is a fantastic tactic, strategy-packed, useful session that I know people are going to really appreciate. I want to go over one more best practice. It is best practice number 38 from your book. It is called "Develop Transfer Functions to Predict, Optimize, and Assess Risk." And so, I know a lot of people who have been classically trained in Six Sigma understand that any process can be modeled with a transfer function.

But let's say that a person watching this show right now, Lee, does not know what transfer function is. Can you explain that? And what is the main takeaway from why developing transfer functions are necessary?

Lee: Well, I am guessing, in Lean Six Sigma, is not allowed. You have to be able to use data to predict an outcome; and the prediction of the outcome must be able to be done in a reliable, predictable, and accurate kind of a way. And the best way to do that is by doing experimental design or design of experiments, which features a transfer function. A transfer function is formulated when you take data and you form the data in such a way as you then take the data and find out what the output of that process will be. So you might have two different kinds of data combined in a process that produces a single output, or maybe two outputs. And you measure those outputs; and you do the test where, using certain rules, you vary inputs, measure the corresponding changes of the outputs and, from that, you develop a transfer function. It is like going back to geometry back when we were young and developing y = mx + b. That, for a different slope of m and a different y-intercept of b for various axes, you will reliably, and accurately, and repeatedly get a certain y. And that y = mx + b represents, in a simplest of sense, a transfer function. So, the key takeaway is it is important to gather data, and not guess, and use that data to predict an outcome, if you really are fortunate enough, preferably critical to quality or, as often times, people say critical to quality or critical to customer. CTCs or CTQs; transfer functions. So, we often times assess the merit or the maturity of an organization's process excellence efforts in how many customer touch processes there are transfer functions associated with and how many customer touch processes there are no transfer functions that you cannot predict the outcome on. So we hope that those numbers increase over time.

Michael: Yeah. So, let's look at one. You say, in your book: "Transfer functions apply across all areas, including Marketing, Human Resources, Healthcare, Financial Institutions, etc." Can you give me an example of a transfer function that you helped create at an organization that related to, say, human resources?

Lee: If you would allow me, I will give you two. Even though we are probably running out of time, but I will be very, very brief.

Michael: Please.

Lee: See, because the mindset of many is that manufacturing is where DOE is applied and transfer functions live and prosper. That is not true. Processes exist not for manufacturing, but they are all around us whether you are applying for vacation, or hiring somebody, or you are having a kidney transplant, as I had 17 years ago. One of our companies was trying to understand why so many people were leaving their organization. People that were actually involved in processes that were directly influencing their customer's experience with the service they were providing. So these were very, very important processes that had direct and immediate consequences in regards to their paying customers. Why was the turnover rate so high? So, they began to develop a set of questions that they could ask these people that were going through the process of departing the organization, and they developed a transfer function between the factors that created the lack of incentive to stay with the organization and their decision to leave. And the results of this transfer function were such that they found that the official reason for leaving was very different than the unofficial reasons for leaving. And it really presented an opportunity for making some management changes to the hiring process in the future, particularly for employees that were dealing with those customer touch processes. And they implemented this DOE over time and their turnover went down and continued to go down as they refined the questions and refined the model over time. Unfortunately, I cannot divulge what the company was, but if anybody attends the training courses that are sponsored by Air Academy – the company – as part of the offering of the training, it is divulged and more detail is provided.

Michael: So, just so I understand that example, Lee. So, you were looking at your output variable as the turnover. People were leaving and you could measure it as a percentage of the entire employee population or some other metric. And then you executed a survey that gathered factors that could be influencers to that output variable. And then, every time somebody left, you got another piece of data and over time that allowed you to model the transfer function for that output variable?

Lee: Yes. You could predict whether the person would stay or not stay based on the factors that were uncovered as a result of the survey. That is right. And again, to emphasize the point, when management said, "Why are you leaving, Joe?" or "Why are you leaving, Sarah?", the official answer was very different than the real answer. And the model really showed that it is not a matter of guessing; it is a matter of facts. And there are actions that could be specifically undertaken to address those facts and reduce the amount of turnover, especially in those hard-to-fill positions.

Michael: Right. Okay. So I completely understand that. There could be things in the organization that you may want to change in order to get the output at the level you expect, or you could hire different employees into the organization that like that sort of culture, or whatever the factors were that you measure. So I completely understand that one. Was there another example that you were going to provide, Lee?

Lee: Yes. With some reluctance because it is very personal in nature, maybe the benefactors, or the listeners of this video can have some appreciation, but on January 26, 1997, I had a kidney transplant at the University of Miami. At Jackson Memorial, a 16-year-old boy lost his life and he provided the life to almost twenty other people as a result of, unfortunately, his loss. Ninety-one days after my transplant, the doctors finally were able to figure out why my kidney was rejecting. And the doctor at the University of Miami said, "It is that darn medication." Without revealing the medication, there is an elixir of three medications patients are always given for any transplant. And one of those, in my particular system, was to toxic to the kidney, and it was immediately stopped and the rejection episode ended. After ten days of the transplant, not that the guy was an experienced practitioner of transfer functions back in 1997 it became clear that this medication was causing problems. At least that was what the data showed; was predictably causing problems. And I asked the doctor, "Why not eliminate it? Why not turn it off? Why not make the dosage levels zero and see what happens?" And the immediate response was: "Well, if we discontinue that particular medication, you will reject." Well, eighty days later, he came to the same conclusion. So, physicians have made a great progress in making transplants last, and last longer. But ironically, the medications that one takes is toxic to those very organs that they're designed to protect. And if you do one factor at a time

change, as doctors frequently do, it is a very unproductive way of, number one, being toxic to the kidney, in my case, that was given to me as a wonderful gift. Two: keeping me in the hospital and costing so much money to stay in the hospital. And three, not being a productive member of society and being able to return back to work. So, today, we are trying to do historical data analysis reflecting the fact that everyone's body is inherently different, but still do a transfer function. Regardless of whether you have a kidney transplant, or a liver transplant, or a heart transplant, or a cornea transplant, to try and get people better with less toxicity to the organ and back being a member of society earning a living. So, that is another non-Manufacturing example.

Michael: Excellent. So, you mentioned Google briefly in the book, Lee. Are you aware of Google using transfer functions at their company?

Lee: Yes. Google is a very interesting company that is very adept at applying DOE. And by the way, again, I am sorry for going backward again. DOE is not a tool that demands a degree. Even a high school degree, it is a tool that, once you are exposed to and you are given software that does all the heavy lifting, you say: "Wow, that tool taught me a lot more about the process than all these other tools that I have learned before." And Google understood, very clearly, that when you search on Google and you click, you are basically doing an experiment and you are wanting to get an answer back quickly and you are wanting the answers to be as relevant as is the input that you have given to Google to conduct the search. So, if you provided good keywords and click, the experiment is run and you are given predictable answers that address whatever you wanted to investigate on. Now, unfortunately, for others – not for Google – transfer functions that are used in CTCs or CTQs tend to be very proprietary and divulging them to us is a competitive differentiator that they you do not want to let out to other competitors or to other people just in general. So, we are not able to say exactly what the specifics are, but every time you click, you run an experiment and you are exercising a transfer function that Google monitors the results for and that they use repeatedly to get better information back to us. And because that is a critical to customer/critical to quality output, that transfer function is proprietary and we cannot say anything further about it. But yes, they use it, and they are very adapt at it, and we need to do the same.

Michael: Now, are you saying that Air Academy – the company that you retired from, Lee, as a senior VP? Did you actually work with Google to help develop those transfer functions?

Lee: Air Academy was invited to participate in that. I, myself, have had many, many customers standing in range of seven million dollars a year to $25 billion a year. Google was one that I did not have, but others at Air Academy did support. Yes, but not me is a long answer.

Michael: Excellent. All right. So, let me ask you about one more type of transfer function. Should Deployment Leaders – people that are running process improvement programs – at a company have a transfer function in place from their perspective – from the leadership perspective?

Lee: The answer is yes. Champions should not be reluctant to use experimental design to predict the outcome of any process. Whether you are maximizing your viewership of videotapes like we are conducting today, how you maximize the viewership. How you maximize process excellence efforts from the vantage of a point of a Deployment Leaders or the person who owns the effort. In fact, that is the model with the help of iSixSigma and the people like Kathi Swagerty, like George Maszle, like Mark Kiemele developed with iSixSigma, that is a model for building predictable outcomes for doing process excellence. And we encourage its use. People just have a tendency of shying away from it. More often than not, not the people undergoing training, but their management view that DOE is an advanced tool; that DOE is a manufacturing tool; that they do not have to have that kind of capability. Yet, the people want to use it, and the software makes it easy and makes it foolproof. So, we encourage its use, at the very least, because it is an organized and efficient way of gathering data, if nothing else, within a process. And to do for a Deployment Leader, as a deployment Champion overseeing multiple Black Belt Projects to encourage its use, to be personally involved in it, and realize it is not complicated; it does not mandate a degree. We have software to use it. We encourage its use a lot more than it is used. And again, DOEs are something that have been developed many, many, many tens of years ago. They are nothing new. So, it should be used and it does not require sophistication as we think it requires. It requires just a need

to gather knowledge efficiently and be able to predict reliably, repeatedly, and accurately.

Michael: Yeah, I, personally, need to be doing more DOEs. I can say that for sure. So here is the final question, Lee. I have been spending a lot of time recently in the startup space. Working with entrepreneurs. Trying some new ventures myself. You and I discussed in our pre-interview conversation another book that is out, I think, a year or two ago by Eric Reis, called Lean Startup. Startups are big into AB Testing, which you and I know is testing one factor at a time. It is easy for people to understand AB. For example, if I have a buy now button and I change it from black to green, did that statistically change the outcome of the people that are showing up on my website? Will more people buy as a result of that change? But design of experiment (DOE) or multivariate testing can accomplish optimization much faster. If somebody wants to learn more about DOE, wants to start doing DOEs in their process, what do you recommend for them to get going, understand transfer functions, and implement their first DOE? What tools or resources do you recommend, Lee?

Lee: Well, first of all, I like Lean Startup book, authored by Eric Reis. We both are in agreement of that. It is a great book and a necessary book. AB Testing, as you correctly referred to it, does not result in a transfer function. It just says is A better than B; is B better than A? It does not result in a transfer function, so that linkable between inputs and outputs – between the input variables and output variables – or CTCs or CTQs is absent as is the interoperability effects – the interoperability between, in my case, these three medications that prevented transplant, or the factors that promoted employee discontent in departing a company. All the interoperability effects, not to mention the transfer function itself, are absent. It is not in anyway to diminish AB Testing, but it does have inherent limitations. So, a DOE is a more advanced way to gain knowledge of inputs and outputs, and to predict the outputs given the inputs. Always to think simple. When you start doing a DOE, do a two-factor a three-factor experimental design, and create a transfer function using very, very simple-to-use software. And we encourage people to do create simple transfer functions. Not necessarily on CTCs or CTQs because those could be more complicated, but a more simpler process. Again, using the software, and see what you learn and see what the limitations are

because there are advantages and there are also some disadvantages. It takes time. Sometimes you have to interrupt the process to be able to do the testing and develop the transfer function. And of course you have to validate the transfer function to see if it really works. So there are some disadvantages, if you want to call them that, that you have to be aware of, but the advantages far outweigh the disadvantages. So always think the KISS approach. Keep it simple. Statistically, use simple inputs. Measure simple outputs. Gain some experience. And then go from there.

Michael: Now, is there a textbook that you would recommend, either from Air Academy or somebody else, Lee, that you have used over the years to help understand it better and actually implement it?

Lee: I think the Basic Stats book has information about DOE. The Basic Stats book has been around for a number of years. It is published by Air Academy Associates. It is available at Six Sigma Products Group. I like the way DOEs are explained. There is also a DFSS Tools Guide published by Air Academy and distributed by Six Sigma Products Group that has a section on a DOE, which a more hands-on, implementer's approach. I would emphasize, or recommend, that document probably over the Basic Stats text. And it is very inexpensive and very helpful. And again, do not hire a coach unless they are knowledgeable about DOEs. You should hire people that are knowledgeable about all of the tools, be them basic through advanced, that have lived them, learned from them, had some failures, hopefully had more successes, and are knowledgeable about the business, have knowledge on the functions and the tools, and also are good leaders. In all of the tools, we have had many companies. Again, Mike, the people that are amidst the training, or are experiencing this wonderful training, are inhibited by management not championing the tool because they are afraid of the tool. And when they are convinced of the power of the tool and the ease in which it is used, and they become a sponsor of the tool, it is a wonderful transformation.

Michael: Definitely. So you mentioned a couple of great texts that I will link to if people want to learn more about those. And you mentioned software a couple of times, Lee. Not that you are still actively employed by Air Academy, but you have spent the last ten years of your career at Air

Academy. Air Academy, I believe, has their own software for conducing design of experiments. Is that correct?

Lee: Yes, they have a software package that is Excel-based software. It is called DOE KISS. The more advanced version is DOE Pro. It is very simple to use. The software tells you what kind of a DOE is appropriate given your situation and walks you through all the rules of thumb. As I said, does the heavy lifting. So, DOE KISS and DOE Pro through Six Sigma Products Group – the distribution arm of Air Academy – has that software. It is quite expensive and it does all the heavy lifting. And all it requires is a desire to learn and requires knowledge of Excel.

Michael: Yeah. Excellent. And everybody seems to know Excel, so that is a great one. And there are other DOE software packages, just to be comprehensive in the resources that we are offering here. And if you type in Six Sigma software on iSixSigma, we have a whole list of software packages that are on the market; and you can take a look at those and compare feature sets. If people want to learn more about this book, Lee, where do they go to purchase it? What are their options?

Lee: Again, Mike, thanks for asking. Six Sigma Products Group. Both, the digital copy and the hard cover edition are available at Six Sigma Products Group as well as Amazon, Barnes & Noble, the Apple Book Store, and other retailers in the future. But right now, Six Sigma Products Group (SSPG), Amazon, and Apple are the three retailers.

Michael: Excellent. So we will put links to all of those so that, depending on who you are familiar with and what you prefer, you can go that route. I know that a lot of people who are not in the US would prefer to buy the ebook because they can have it immediately. They do not have to worry about shipping and the delay that comes with long distance carriers. So, we will provide links to all those. If you have a follow-up question for Lee, please post it in the comments below and we will ask him to come back and answer as many as he can. I am going to urge the audience right now, as I like to do on these interviews where I spend an hour plus with the expert interviewee. If you received value you out of this interview – and I know I did because Lee has done a fantastic job at explaining just three of the Best Practices – please

take a moment to say thank you. It is as easy to do as scrolling down and posting a comment below for this show. What you liked. What you could use more information on. Just simply thanking Lee for his time. I know I am very thankful. We have spent time in the pre-interview. We spent time just before this interview preparing and, of course, about an hour here on this recorded interview. I am going to say thank you again to Lee by mentioning his prior company, Air Academy Associates, website at AirAcad.com. Of course, Lee is a retired Senior VP. His co-author, Dr. Mark Kiemele is currently employed at Air Academy. And on that site, you will also find some terrific case studies. Manufacturing, government, financial services; you name it; they have a bunch of great resources that you can read about and find applicability in your own area.

Lee Pollock, co-author of Reversing the Culture of Waste: 50 Best Practices For Achieving Process Excellence. Thank you for coming on the iSixSigma show, sharing your knowledge so openly, and helping others become more successful change agents and business leaders.

Lee: Yes, Michael. And thank you and thank iSixSigma as well.

Michael: Thank you all for watching. We'll see you next time.

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