Business901 *Podcast Transcription*

Implementing Lean Marketing Systems

Lean 3P Design Process
Guest was Allan Colletta

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Lean 3P is PDCA on Steroids

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Allan R Coletta is a chemical engineer with an extensive background in manufacturing operations, supply chain and engineering, gained while working in the chemical process and healthcare diagnostics industries.   His Lean experience started while serving as Site Manager for ICI Uniqema's largest Specialty Chemicals plant in North America and continued to expand is his role as Senior Director of Engineering for Siemens Healthcare Diagnostics. His passion for manufacturing and engaging people in continuous improvement continues to grow through personal application of Lean principles.

Allan serves on the Delaware Manufacturing Extension Partnership's Fiduciary and Advisory Boards, and is a member of the Delaware Business Mentoring Alliance. He is also a member of the American Institute of Chemical Engineers and the Association for Manufacturing Excellence (AME). He recently authored a book "The Lean 3P Advantage."   (CRC Press, 2012)

Why should I apply 3P? Lean 3P (Production Preparation Process) is an event-driven process for developing a new product concurrently with the operation that will produce it, by the people who will interact with it. It is a game-changer that results in better products that require less initial capital investment and lower ongoing unit costs.

Previously Lean had been largely relegated to fixing existing problems in our manufacturing plants. 3P takes Lean upstream into the new product development arena, and applies them liberally at the point in the process where they can have the most influence on the new product and operation. Rather than
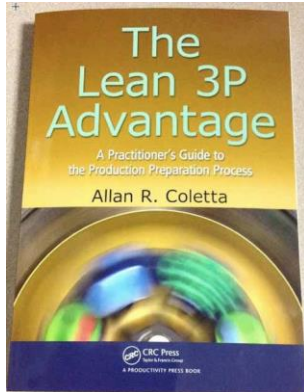
spending time later trying to fix "baked in" problems, enormous advantages are created by deeply understanding customer needs, and developing alternative designs that will create breakthrough benefits.

New products and new operations require many functional groups working together, but traditional development is typically a series of successive sub-optimizations and hand-offs. Time pressure and a passion to quickly reach a design decision squashes innovation.

Lean 3P brings stakeholders together and sequentially takes them through a process where products are developed alongside of the manufacturing operations. Design engineers interact with process engineers, marketing and R&D team members, each declaring their preferences and capabilities and developing alternative options against agreed criteria. The manufacturing and maintenance teams weigh in with preferences for operability and maintainability, standardization, ergonomics and flow.

The Lean 3P advantage is about rapid learning, collaboration and innovation and it works with new or established products and on any sized project. Companies in virtually every industry are applying Lean 3P to drive competitive advantage. It will work in our companies too.

Transcription of Podcast

Joe Dager: No, I'm very impressed. You wrote a good book.

Allan Coletta: Well, I appreciate your reading it. It was a labor of love on my part. I got the bug for Lean about a dozen years ago and started applying it. At the time, I was working at ICI, which, when I first joined them, they were one of the largest chemical companies in the world.

I was a chemical engineer by background and I worked for ICI through a variety of roles. I ended up being the site manager for their largest specialty chemical plant in North America. In that capacity, I was working with the unions and could see that on the landscape, if we didn't really turn things around and start applying some of these Lean principles and making some serious improvements, then we wouldn't be in business for very long.

I got the bug for Lean, thinking that was just a great toolkit initially that could be used to make some progress. Eventually, I think my thinking matured, and I recognized that it was much more than a toolkit, that's it really a true culture change that you're trying to implement in the way you work with people.

I ended up moving over to Siemens; I guess about eight years ago now, got involved with...Actually, a Senior Director of Engineering over there and in that capacity was now influencing the design of new product lines, particularly, so the new packaging and tip it near operations, so I had a chance to influence the design of things.

Previously, in my former life, I had always been the victim of designs and now I had the chance to do that to others, so I figured I might as well learn how to do it better. In that process, we learned about the 3P process. Unfortunately, there wasn't a whole lot written about it and so, as we started practicing and

engaging in the practice of 3P it became pretty clear that there was a bit of a vacuum, in terms of the knowledge base, in what had been actually created to help others.

Shingijutsu really developed the whole process for 3P coming out of the Toyota background. Now, it's being applied in a lot of different companies, so it's very exciting.

Joe: Well, I'm going to leave that to serve as an introduction. Welcome everyone. This is Joe Dager, the host of the Business901 podcast. With me today is Allan Coletta. He is a chemical engineer with an extensive background in manufacturing operations, supply chain, and engineering. He gained this while working in the chemical process, and healthcare diagnostic industries. He recently authored a book," The Lean 3P Advantage" that was published this year by Sierra Sea Press. Lean 3P stands for?

Allan: Yes, the commonly accepted terminology is production, preparation, process. I think a lot of people who are engaged in it think of it in terms of product, process, and people because it really is the embodiment of getting all three of those circles working together, and when you get that right, it brings just tremendous results to the part development and process development process.

Joe: I struggle with the preparation part of it because all of us do a little of preparation and then the production and process; it turns it into a 2P process. Do you do the preparation first, or how does that work?

Allan: I think what I find really interesting about 3P is that different people are applying it at very different parts of the new product development spectrum. When I first started getting involved with Siemens, we were looking to expand capacity of some of our operating lines. So these were filling packaging lines with some of our diagnostic reagents.

We didn't have the opportunity to make any changes to the product itself. We took it from pretty much a completed process that was being all over the world to different customers. We ended up creating a line that would do that more effectively. So that was our introduction how we got into the water with 3P initially.

In our world, it was more of a 2P approach than a 3P. But what I found since then is that there are just a whole lot of people that are bringing it very far upstream to the new product development area. So once you get past understanding customer needs and the voice of the customer, really right on the heels of that you start getting into heavy collaboration, then rapid prototyping, and all the things that 3P embodies.

Joe: Back to 3P, I think of rapid development. You're sitting there and taking the product, process and people, and you're developing around them concurrently. Is that the correct way to think about it?

Allan: No, I think that's very good. If I was to modify it a little, I'd say, "Ideally, you're trying to create both the product you're going to sell and the process that you're going to make it at the same time." That's the concurrent part of that. You're doing it with the very stakeholders that touch those products and processes.

The stakeholders with 3P, ideally, some people actually have customers involved, and many people have equipment vendors involved. I found that in ones that I get personally involved with it, we have operators, material handlers, design engineers, process engineers, and senior scientists. It's very tailorable to whatever the needs are for that particular event.

The whole concept is to get a wide variety of people who touch it to all collaborate and express what their views are and what their needs are during the time that you are developing that product

and process. That leverage then becomes just so significant because too often the way we normally progress ideas and projects like this, is we have one group that really tries to optimize their portion of it.

Then they get their part, as well as they can it. They hand it off to the next group and then they optimize their portion of it. What you get is a series of hand offs. Whether they're using a stage gate process for new product development or some of the other mechanism play against the people, you use. Typically, they're all done as a series of hand offs.

What I've seen personally, is that even that sub-core team tends to optimize, because there's always some dominant group that's running that portion of the stage gate, and everybody else just folds in along with it.

I think that's fundamentally different with 3P because, intentionally, you're trying to bring it all the ideas from all the different groups. You're doing a very fast, high-energy manner that gauges people. Typically, a lot of fun, but it gets an awful lot of learning out on the table that you normally wouldn't get to see.

Joe: You're explaining that 3P is really the iterative thinking of Lean, over let's say the linear thinking of Six Sigma or Design for Six Sigma.

Allan: I think that it differs a little from that, in a sense that Lean 3P is really about taking that plan-do-check-act continuous cycle, and very, very quickly, into an event doing process trying to roll through that PDCA, as many times as you can in whatever direction the teams end up, looking at what to pursue.

Lean 3P is very much Toyota Kata thinking. Or, in that same mode where you're trying to take very rapid learning steps. You're doing it with a large group, so you have a large group of

people. They're all doing their own PDCA's on the elements. They're trying to explore in developing this product or process.

The idea of making a physical prototype is a very key part of that with 3P, because rather than using CAD models and different types of computer generated techniques, the ability to create things out of very simple basic materials, to convey ideas, to understand, and touch, and see and move around.

If you don't like it, you throw it out and start again. If it's very, very fast, it makes that learning cycle that rapid learning, just takes it to a different level.

Joe: You made a statement in your notes to me that the 3P process applies Lean liberality at the point in the process where they can have the most influence.

Now, I'm an old manufacturing guy, and I know that most of the cost is designed into a product. Not the fault of purchasing or production, but the word literately stuck out to me. What did you mean by that?

Allan: When I used that statement, it really is a significant part of what you're trying to do when you think about it. Particularly, I was just involved in a week ago, in a week long 3P event, looking at the layout for a new production facility.

When you're looking at a new facility of any type, or even expansion of an existing facility, you're considering the maintenance of the equipment.

You're considering the location of people Kanban systems, and all these things, that typically when you think of normal Kaizen type of approaches that we use, in manufacturing, particularly. You'll select a tool; you'll say well, this week we're going to look at quick change over, and so you do quick change over.

Then you say, now we're going to apply standard work, so you look at applying standard work to your process, or then we're going to use some visual work and we're going to start applying that. So, we tend to take our tool off the shelf and apply it. With 3P, what you're really trying to do, in the course of this event structure, you're trying to get is all of those tools out onto the workbench.

You're trying to play with them, look where things are stored, look at how things are going to be maintained, look at the flow within the layout, look at the impact of the operators, on the operators, the material handlers, all of that gets dialed into your thinking. And so, when you're building something, it's a situation where you're actually getting all of those various inputs, brought to the table, checked around, tossed around, argued about, and finally, resolved in some way that satisfies the majority of the needs. It really is a neat process for bringing all the tools in.

Upfront on the 3P process, one of the things that you always do with almost any change event is you try to establish a charter, and you set the boundaries that you need and establish what criteria are the most important for you to try to evaluate your designs. When I say that, I found it's probably around 30 different criteria that you could select. Different people use different ones, but there are certain ones in any project that are going to bubble up to the top as more important than some of the others.

And so, in some cases, one of the criteria might be low capital costs. If you don't have a lot of budget then it's saying that, by virtue of that, you're going to have to find some ways of being very creative in coming up with low-cost solutions.

In other cases, you may say that, well, safety and environmental is a major concern because of the nature of the products we'll be dealing with or the materials, but upfront people select what the

major criteria is that they're looking at. And then, as they develop these various designs, it could people involvement; it could be capital. It could be any number of criteria.

Then you're evaluating your designs based upon the criteria that you know are important to your business, so it makes it a very flexible process. But it makes it one where upfront you understand what the key things are you're looking to accomplish, so it takes some of the arbitrary nature of the decision process out of the way and allows you to have a very data based decision process that you go through in evaluating these designs you come up with.

Joe: You talk about the events, and that seems to be the key part of 3P that you do the work; you do the development, everything, then you get together for this event, instead of stage-gate or control-point. Do you all get together, and you bring everyone together and you hash everything out, and then go back to work? Or, is that too simplified?

Allan: No, that a great question Joe. As I've been practicing this for a while now, one of the things that I've learned is that 3P really becomes a way of working. It is an event driven process, but we've had a number of events where we came up with some just tremendous breakthroughs and great ways of doing things.

After the fact, everybody goes back to their day job, and I think sub-optimizes some of the breakthroughs we've had because we weren't used to working in this new 3P way of working. So what I've seen most successful is when all the stakeholders who are part of the event then stay connected throughout the life of that project and that's when you really see the home runs.

You do an event; you get the big bangs, you get the big ideas out on the table; you decide on the best that you know of during the course of the event, select the best designs during the event; you build physical prototypes of it, whether it be scale, or full-size,

and then when the team wraps up the event; there should be an ongoing process that maintains that.

I've never had the privilege of working with Shingijitsu, but talking to people who have worked with Shingijitsu, one of the things they do; I think, very very well is they have a permanent team that works on a project from the beginning to the end, and that sense is always bringing them back to the 3P values, the 3P approach.

The process is always emphasized. Inevitably, with any design, you have the best intentions, and you go along for a certain distance after you've completed the event, and you bump into walls. Something didn't quite work out the way you expected. Vendor couldn't deliver on the promise that he speculated during the event, and you have to make adjustments.

The ideal 3P is you want to always be going back to those basics; you want to go back to the process, bring the team together, get the collaborative thinking going, get the rapid prototyping going, examining the natural principles and then coming back around again with a revised solution.

The team that can do that over the long haul as a project, in my experience has been the most effective team. But as a practitioner I can tell you that's probably the most difficult thing to do, because as companies get into 3P, and they start utilizing it. It's very hard to change from the old way of doing things, because frankly that's the way we were rewarded; that's the way we grew up, and so getting people to change their behaviors.

Some of the best engineers I know are very, very guarded about the way they do their work, so they're brilliant, they're intelligent; they've got good experience, and it's hard for them to let go of some of that control over their designs and open up to allow others to take peek inside, have a look at their designs, critique them, and prove them in many cases.

That's something where you've always got to be emphasizing that with the team. That it's good to have people look at what you're doing and offer opinions. That's where the great strength comes from, but I can say from experience, it's very hard to do.

Joe: Well, people sit there, and they think of a 3P event, and you're progressing down, let's call it the "Product Development Funnel" on your choices and getting things in. You may be working on separate groups and then you all get together to decide the best idea to continue with, but how do you stop from backtracking?

How do you stop someone from another group or someone whom you get together with that says, "Gee, what about this idea? This is a better idea than where you're going maybe it's even a senior manager that says, "What about this?" Is that a problem in these events?

Allan: Well, I think it's not particular to the event; there are a couple of things you said that are interesting. I think one of the things that are really possible about the 3P concept. It's very visual and so when you're done, you don't have a 3D CAD design off in some database somewhere. You have a physical model that people can look at, can touch, can walk around, and can look at it from different angles.

The things that are being developed are very visual, so people tend to have an ability to really understand what you're thinking about. That's very helpful, because too often we feel that people understand what we're talking about, but they really don't.

So, with 3P, the idea of developing all of these different ideas...I should probably backup just a bit here. What we initially try to do is we look at all the value-added steps in the process to make a product. I'll talk a little more about the process side of it for a minute.

We look at all the value-adding steps. Then for each of those value-adding steps, we try to get the group to look at seven different alternatives that can be created to create that process step. They come from nature. This tends to be a very interesting part of the event, where a lot of people really love it. Other people really hate it. Probably, the most contentious part that I've seen of 3P is this idea of looking to nature, to try to find solutions to the problems you're trying to solve.

But you work through that, and you have them develop these ideas and actually do this. You got people drawing little sketches on Post-it notes. They're coming up with ideas on how they would do things and how would they solve this problem in nature.

So you really seem to have somebody who creates a blog writing, rolling a ball of gum around to move something. You always have somebody who uses pressure from a guise or something like that.

Part of the process is really around trying to expand the thinking beyond the common approaches we use within the industry. So, at very minimum, I always say, "It's a great icebreaker to get the whole group just working well together and to get everything a little bit out of the box."

At its best, we've seen some really great examples, where this out of the box thinking from nature has pointed us in some alternative directions that we would never have considered otherwise. That's really the goal and that whole process doesn't take more than a couple of hours, normally.

From there, you go into taking those seven natural alternatives, and you bring it into the realm of sort of industry-proven approaches. So if you were rolling something along the thing, what mechanisms do we have for rolling things? Well, you could have a laboratory table. There are all kinds of ways from industry that people have used to do these different things.

You got all these different alternatives. Then once you get seven alternatives for every one of the process steps, then we start narrowing it down. And you're narrowing those down to three viable alternatives that you could actually do.

While this is going on, you've got your teams that are pursuing these, investing, and trying to understand how viable these options are. So a lot of research being done, a lot of learning taking place.

As you go through it, you converge on three that are very practical, and your divide your group up into, typically three groups, and they go off and they build. They're actually, physically, trying to build the prototypes of whatever it is that they've been assigned.

So with each of the process steps now, if you've got 10 steps in your process, you'll have three different alternatives that are being pursued for every one of those 10 steps. So you build three different production lines or three different operations. Then at every point you're evaluating your criteria.

Eventually, now we're down, and you take some of the best ideas from each of those three ideas and converge it. So that's how the process works. People can stand on the outside and look at that and say, "Well, I have a better idea."

More than likely, if you've gone through those steps, there isn't too much you can think of that hasn't already been talked about. And if you have, well, then it goes on the bucket list, and you take a look at it as perhaps an alternative.

The other part that you mentioned, which is interesting, what about the senior manager, who comes in at the last minute and he says, "Well, there's a better idea" or "I don't want to take a risk of that approach."

One of the rolls that we have in 3P is this idea of a judge. It's also one of probably the most misunderstood terms in the whole process, and I'd love to find a better terminology for it. This idea of a judge is someone who comes in. He's typically a very senior manager, and this person, he or she, will represent maybe the marketing group, maybe a very technical role, maybe just an overall business role.

So you might have a VP of Operations. You might have the VP of R&D. These are normally very seasoned people who've been there for a long time. They know the technology. They know the business. They know the customers.

What their view is, you try to bring them in at the beginning of the 3P event, and then during the course of the event for very routine updates. So they cannot only catch the excitement of what's going on and typically, these are very high-energy events, a lot of excitement, a lot of fun, and a lot of hard work.

But bringing them into that process, all of those ideas and all of their concerns can be addressed in the course of the event. So that by the time you're done, if you've worked through that whole process and made them part of it, it's almost a guaranty that you're going to have their buy in and their support for taking this risk. I want to emphasize how important that is.

For the majority of us, we all report to somebody. The greatest fear is we're going to come up with something, and they're going to say, "Well, I don't like it. I want to do it differently." What normally happens is people will tend to anticipate where the brick wall is going to be, where the blocks are going to be, and where the risk level is that their senior manager is willing to go to.

What we do is we self-limit. If it's a choice of taking something from a different industry, perhaps, or a riskier approach that could have tremendous benefits, the tendency is to self-limit and

go to the more conservative accepted approach, and you miss it. You miss the opportunity to really grab the brass ring.

By having these senior managers and these people in this judge capacity involving a 3P event, they're with you the whole way. So they're essentially giving you permission at every step of the process. Every design criteria you look at, every step you take. And by virtue of that, you can take a lot more risks with a lot more support than you ever thought you could.

I believe the real breakthroughs happens because you've got intelligent people who typically don't want to take the chance of either being criticized or being somehow punished for taking a risk that doesn't work out. I think we both know that, without some risk; you never change anything, and you never make the big improvements that we all want.

Joe: Is this why there is a criteria of having let's say, "Moving forward with three different products, so maybe you can have that conservative and that riskier position, and leave people start playing with it?"

Allan: In my experience, again, you'll have one example of some of the tried and true. Something you've done before that's been successful. Then you'll have one or two other ideas that, frankly, are a little wild, but the idea that you've got a couple of higher risk ideas being pursued.

Of course, when you finish the event, you've tried to do a lot of diligence. In many cases, we've brought in vendors; you've brought in people to try to assess how much risk you're taking.

I know you're familiar with Ron Mascitelli's work, as well. Ron teaches that the way of litigating risk is often to pursue very hard the option that you want to pursue and that you believe is going to be successful. But you don't burn down your whole timeline with that.

You keep the alternative approach available and on track as far as you have to, to ensure that if your main choice, your first choice, doesn't work out, you can fall back on your second choice without losing too much time in your project. So it's a way of balancing risk and reward with the tried and true and keeping things on track.

Joe: That's one of the thoughts that I always hear about in design thinking or from IDEO. Is that you move ahead with the project, but never let go of ideas. Keep them in your vault or whatever, because they may resurface at times.

Allan: You're absolutely right. What's neat about, again, this particular process is that you take a lot of pictures. You have physical models, and you're taking pictures, so you've got sort of a legacy there that you can hang onto and reutilize. We've done many different productions lines using this approach.

There are ideas that didn't work out for one project, but just seemed perfect for the next one. So it is a great way of, again, getting many ideas out and considered, and it builds off of itself.

Joe: What's the tough part of 3P? Are there preconditions that should be met before you try 3P or is it for everyone?

Allan: I do think it's for everyone. Probably, the biggest criteria I would suggest is that you'd have a decent Lean background. You've got to understand how these tools all work together. That's probably the only criteria that I can think of.

I've seen it work with very small projects. We've been using it for what I call Evergreen 3P, but it's just really taking 3P principles and applying them to the modest design changes, collaborating, developing prototypes. You only have a handful of people in a smaller company, or it's a smaller project that doesn't demand a larger group, then you just do things more.

So, instead of having three groups building your prototypes, you have one group, and it builds one, and then it goes onto the next and maybe do three and maybe two is enough. The idea is that you're trying to, again, get the collaboration, the different stakeholder involvement.

You're trying to prototype those ideas very rapidly, so you will learn as quickly as you can. You keep moving through the process. It works; I think, on most any scale, but the idea of having a Lean background is really beneficial. If you don't understand the concepts of flow, point of views, and things like that, then you may not get the benefits that you should if you can dial all those in.

Joe: Do you actually use the tools within the process or just design for them? I mean, are you using FMEAs and QFDs and those types of things?

Allan: A lot of that, I would say, is more design considerations than actual full-blown application of the tool within the event. So for instance, total productive maintenance as an example. When we're doing things, we might be doing things that will almost always have a mechanic involved in a 3P event.

And so, the role of that person is to make sure that whatever we're designing out of sticks and cardboard can be maintained once they get there. Again, I'm predominantly speaking about the process part of 3P. It applies to the product side as well, but the idea of using the tool and having the people there who are going to be involved with --material handlers, mechanics, operators so that --they have a voice in the details of the project.

One of the things I find very fun is, when you think, you've got the project all prototyped out, and all the details built into it; you'll find the craziest things happening. You'll see the operator going over and building a little place for him to put his work gloves. You'll find the mechanic going over and building a

manifold for all the grease fittings that he knows are going to be there to maintain all the motors and all the conveyors.

You see all these crazy little details that, frankly, the design engineers would never, in a million years, think about, because we don't use those kinds of things. But the mechanic sure knows about it, and material handler sure knows about it, and the operator knows what he's going to need and where his quick changeover tools are going to go and where all those things are going to happen.

You start taking a plain-vanilla design, and you start adding all this detail. All this visual work type stuff, all the standard working type stuff, starts getting incorporated in. Very often we'll actually have an operator walk through the process of actually, sort of faking it, but walking through how he would make a product on that line, the different steps he would take.

So we videotape that, we look at it; we watch how the guy is going to interact, or the woman, is going to interact with the process itself. You can see how many steps they have to take; you can see the different issues that they're getting into with the way they operate, and the things they've done to make their job easier and better.

It's just fascinating because at whatever level you start looking at this you're finding people, because they've got a vested interest in this, and because you've asked them their opinion, they're optimizing, and it's a great thing. It's hard to explain until you've been there and actually seen it work.

Joe: Where my thoughts drifted to when you were talking was when I would always hear someone say, we're 90 percent done; it'll be ready next week. What you just explained was why that last 10 percent takes four times longer than what everybody thinks.

Allan: That's right.

Joe: Because all the little things that may be included now within the process were always at the end because they weren't realized.

Allan: The problem in too many cases, I think, is that you get so far along that it becomes very, very hard to make those changes effectively. You get to the point where it's very easy to relocate something when it's on a cardboard prototype. But when you're actually bending metal, and you're putting things in place physically after the fact it's very hard.

That's, I think, what most of us are faced with, with the operating lines we've inherited and the product lines we've inherited, is that somebody had a bright idea for something, and it was probably a good idea at the time. But then when you actually put it into practice, there're so many limitations and so many problems that is caused downstream that would have been so easy to mitigate if the people who are involved in it had been asked upfront.

The number one comment from people who participate in 3P, the number one comment I get is that this is the first time that anybody ever asked me my opinion. You think about that, and it's tragic in a sense, because I know many good design engineers and many good process engineers who spend a lot of time in operations.

They think that they're going to the gambit. They're trying to understand and anticipate what the needs are of the operators, and of the mechanics, and of the material handlers, but the reality is until you've actually walked in those shoes, until you've actually touched and had to put up with all the crazy, bad designs that have been given to them, you really can't appreciate it.

Whether it be, I've had procurement people say to me, I've never been asked to give my opinion about what we should buy or how

we should buy it. I've had accounting people who participated and say, "Gosh, now I really why it costs so much to do this," or. "Why don't you try it this way and maybe we can save some money?" But all of those people have a vested interest in what gets built and how it gets operated. You just give them that little bit of a window to contribute, and it's magical. It's so simple, Joe, but it is just magical when you allow it to happen.

Joe: From a sales and marketing perspective, I see everybody always wanting to be collaborative, and I always laugh because I always ask them what type of collaborative structures they have built within a company, first. Internally, if you're not collaborative, it's tough for a company to be collaborative externally.

Allan: That's really true.

Joe: The 3P process seems to promote that.

Allan: I think so. It's sort of funny. I'm enamored with 3P because of just the way it works, but I don't think there's anything, in and of itself, that's so breath taking or different than what many companies are trying to do. What it does is give you a sequence of events. That if you follow its path, it's going to take you through enough collaborative experiences and enough rapid approach. I think; eventually that makes some pretty good decisions.

I was reading Steve Jobs biography recently, and I had a friend of mine who worked for Apple. One of the things that struck me when I talked to him is how secretive they are and even within department to department. They're very clandestine about what they're doing, all these internal secrecy agreements, non-disclosures. I said, how in the world are they building these great products that are so innovative cutting edge. They're developing almost in secrecy, from department to department.

Then I read Jobs' biography, and it's really interesting, because a couple of things struck me. Jobs was quoted at one point saying, "If you want to...I asked my customers what they wanted." He quoted the Henry Ford thing. If Henry Ford had asked what they wanted, they would have said faster horses."

In Steve Job's case, he was the ultimate customer. In a couple points in his book, he talks about how, basically, he said Microsoft's guys just didn't get music, because they didn't like music. I'm paraphrasing poorly, but he was a big fan of music. He wanted to have a thousand tunes in his pocket that he could play anywhere he wanted to, at any time. So, he was his own voice of the customer, very dominant obviously in the company.

The thing of the design that I was taken back by, is they were practicing 3P in Apple. They were using concurrent designs. They had this whole area that they were using for developing their rapid prototypes, talks about how they were developing a new iPhone, and they basically made different prototypes out of Styrofoam.

They're putting fishing weights in there to give it the right weight and feel. They did this for all their products, and they did this for all their packing materials.

Apple's doing it. They don't call it 3P, but the ideal of collaboration in prototyping is very extensive. Talks about how Steve Jobs would have these meetings where he would have all his Senior Managers from the various departments, routinely at meetings, where they were talking about software features, hardware features, packaging.

All of those key items to their designs were talked about fairly on a routine basis with their senior guys. They didn't go as deep as we would properly go with 3P in terms as bringing operative personnel and all those into play. They were clearly doing a lot of

collaboration at the right level, to be able to make impacts with produces.

Joe: Can 3P be applied outside of products? Can it be applied in services?

Allan: I don't see why not. If you look at some of the hospitals now, they're using a lot of 3P. Virginia Mason is leading the way. A lot of these guys are using 3P, and they are calling it that, to do central stimulations for layouts. The Virginia Mason Cancer Center, they basically use 3Pin doing lay out models, to develop the overall structure of the hospital unit.

Then they got into the detail of what each operating room would look like. What each center would look like, and build a scale model of some of the key areas, with the people who are going to be working there, involved in that. So, this idea of prototyping and rapid learning and collaboration applies to nearly anything.

Whether you're in the service business, or whether you're producing products that people can pick up at their Walmart.

Joe: Is there anything you would like to mention that maybe I didn't ask?

Allan: I think from my perspective; 3P is a really powerful mechanism for process for people to try some different things. I think right now when I look out the landscape of who's doing 3P, most of the bigger companies are starting to adopt the methodology because they see the benefits of it, and I think that for any size company out there they really need to consider the benefits of applying this methodology. It's almost guaranteed to give you a better product and certainly a better process to manufacture it.

Joe: Well, I would like to thank you very much. This podcast is available at Business901, iTunes Store, and also the Business901 web-store. So, thanks again, Allan.

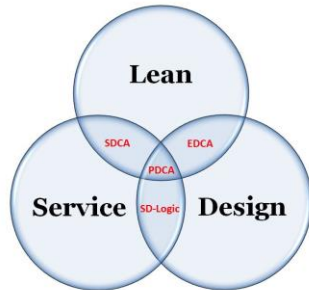**Allan**: Thank you, Joe. I appreciate it.

Business901 *Podcast Transcription*

Implementing Lean Marketing Systems

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