

## Lean Construction with Rubrich

Guest was Larry Rubrich

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Podcast Transcription

## Implementing Lean Marketing Systems



Larry has over 35 years of experience in engineering and manufacturing in the automotive, industrial, and consumer products areas. He has held the positions of product engineering, chief product engineer, product manager, customer service manager, area manufacturing manager, continuous improvement manager, and plant manager with fortune 100 corporations. Larry spent time in Japan studying Japanese management and manufacturing techniques working directly with top-level Japanese consulting group hired by a U.S. company to implement the Toyota Production System (TPS) in its plants. Larry is a registered Professional Engineer, and Adjunct Professor at the Milwaukee School of Engineering, and founder of WCM Associates.

WCM Associates LLC is dedicated to helping organizations become globally competitive through the implementation of Lean as a business system. WCM Associates' publishing arm supports this activity by publishing leading-edge books in the development of Lean. The principals of WCM Associates having been doing Lean since before it was called "Lean." Back in the late '80s, it was called "World Class Manufacturing", and it was entirely based on the Toyota Production System (TPS).

WCM Associates offers training not only in Manufacturing, but in diverse industries such as:

- Healthcare
- Education
- Construction
- Other Service Industries

## Transcription of Podcast

**Joe Dager:** Welcome, everyone. This is Joe Dager, the host of the Business901 podcast. With me today is Larry Rubrich of WCM Associates. He has over 35 years' experience in engineering, manufacturing, in a variety of positions and companies, ranging from small to Fortune 100. WCM Associates specializes in Lean consulting, training and publishing. He is the co-author of several books. The one that I am most familiar with is "Policy Deployment and Lean Implementation Planning." Recently, he published "An Introduction to Lean Construction," which is based on his work, dating back to 2003, in applying Lean to the construction industry.

Larry, I would like to welcome you, and you could clean up that intro if you need to and explain whom the "Lean Construction" book is intended for.

**Larry Rubrich:** Good morning, and thank you, Joe, for having me on this podcast. Let me start off first by saying that we teach Lean in construction and health care and manufacturing and service, and we always teach Lean as a business operating system. This is not just a set of tools. So we want organizations to use system thinking. And in construction, system thinking means that, from the RFP to the project delivery, all of these processes can be Leaned out and ultimately reduce the amount of waste in them and therefore, provide more value to the owner.

In preparation for the book, we were really looking at two types of construction companies. There are construction companies already using Lean, primarily Last Planner or what we call project scheduling. And we try to show those organizations the power of using Lean as a system throughout their organization. It's just not one tool applied just to the job site.

And then, for those organizations that are investigating, should they do Lean, what's Lean all about; the book provides a

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step-by-step process for those organizations, so they know, if they have an interest in Lean, how to get started to be successful.

**Joe:** Well, you're kind of a stickler about that Lean isn't a set of tools. You go into discussing, let's say, the four components that you need for Lean implementations right away. Even early in the book, you do that. Could you name them and describe them briefly?

**Larry:** Before we even get started with the four components, organizations need to understand, why are they doing Lean? They need to ask themselves that question: what do they hope to get out of Lean? And ultimately, the answer is: Lean can help create a safe organization that makes money. And generally, the making-money part and the safety are important aspects for organizations. But they need to understand where they're headed with Lean as a business operating system and applying system thinking to their organization.

So, having decided that, they want to make a safe organization and one that make money; we can go into the four components. And basically, the four components start with what we call Lean planning. Lean planning is about understanding that Lean is about helping the organization achieve its goals.

Lean planning focuses on what Lean activities are going to be done to help the organization achieve its goals. Lean planning prevents Lean from being used as an add-on or an appendage rather than the system that can help the organization achieve its goals.

So that's the first part. Lean planning is the responsibility of the organization's leadership team.

Then we go from Lean planning to what we call Lean concepts. Lean is about eliminating waste that reduces the flow of both the

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information product and the physical product. We like to get organizations to understand that when you're in production of a project and producing a project, that you're really in production in two areas. Both in the administrative area--and this is the drawings and the estimating and other activities that must be done to support the physical project--and then, ultimately, the job-site activities which produce the product.

So you're really producing things in both areas, both in the admin area and in the project area, on the job site. And it's important for organizations to understand that we're really producing things in both areas, and we need to focus on the waste that prevents the flow of both information and materials.

Lean concepts is about identifying wasteful activities that restrict the flow of both information and the physical product on the job site.

Next, we go to Lean tools. Once you've identified what the goals of the organization are and where the waste is, then you can apply Lean tools to eliminate the waste. And there's a dozen, 15 different Lean tools, including the construction Lean tools that will help you eliminate the waste. Each of the tools has a specialty area. For example, 5S is about creating a safe, clean, organized not only environment in the office, but on the job site also. So each tool has a specialty.

Then the fourth component of Lean is what we call Lean culture. To use Lean as your business operating system, to be successful with Lean, you have to build that on the foundation of a Lean culture. And that's about leadership, communication, empowerment, and teamwork within the organization.

**Joe:** In my previous talks with you, you struck me as a no-nonsense guy. You say that all these four components need to be implemented simultaneously. This seems like a big task to bite

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off, to me. Can you chunk it somehow, or do you really need to do all four at the same time?

**Larry:** You really do need to do four at the same time, although the starting points really are the Lean planning and Lean culture. But ultimately, it's a much smaller task per person when you understand Lean is about getting the entire organization involved in Lean activities. When we look at the four components, we have the Lean planning and the Lean culture part, which are the leadership team's responsibilities. If we look at Lean concept and Lean tools, you're relying on the rest of the organization to help you implement those activities so that you can get some support for achieving the organization's goal.

Lean is about getting everybody involved in training and getting everybody involved and participating in Lean activities. Once you do that, it's not just four or five people doing Lean. You've got an entire organization. You split up the four components, and now you have a much more manageable task.

**Joe:** You talk again about changing culture. In any organization, it's really tough. You just don't wave a wand and change culture or make an edict that we're changing culture today. Can you tell me how to do it, a short synopsis of it? Is there a way you do it?

**Larry:** This is really a great question. The difficulty for most organizations, whether you're talking about manufacturing, health care or construction and service, is nobody's focused on culture. They let the culture develop on its own, unguided, and then they wonder why they have people in their organization with bad attitudes that don't care about the organization. So ultimately, where you have to start with culture is you got to start with an understanding that organizational culture is a learned process and it's developed by the organization in response to the working environment established by the organization's leadership and management team. So what you



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have for culture is based on the reaction of everybody to the environment that's been created by the leadership team.

So if you're going to change that culture--and most organizations require culture change to support Lean--you have to do this in a couple steps. Ultimately, culture change takes a long time, but you can get it started by doing two things.

First, about the leadership team creating a values and behavioral expectation statement, a little pocket card that says, "This is how we will operate. These are our behavioral expectations, not only for the leadership team but for everybody in the organization."

So creating these value statements and then, essentially, instituting them and enforcing them within the organization becomes a powerful part of getting that culture change. Obviously and ultimately, the leadership team has to be willing to follow those 100 percent.

So creating the values and behavioral expectations are the start of it. Now, for construction organizations, this can be a difficult flip because many construction organizations already have value statements. But they're not being followed, and ultimately, they're meaningless. So we have to reinstitute them in some cases and give them some teeth.

When I say, "give them some teeth," ultimately, for organizations that really change --a reference: one organization, the leadership team agreed that you get two violations of the value statement, and you're out of a job; you're going to be terminated. So that can reinforce what needs to be done.

Once, you've created the values and behavioral expectations statements and we've got that within the organization, next you have to integrate the values and the Lean activities into associate performance evaluations, promotion opportunities, hiring, merit increases, bonus activity, and new-employee training. All have to

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be integrated with what you're looking for from a Lean standpoint and your goals with Lean and also the value statements.

The first time in the organization that somebody gets promoted or rewarded and they're not a 100-percent supporter of Lean activities, or they're a violator of the value statement; your culture change is done. So those are very important activities to get started, and then all of that has to be followed up with communication, empowerment, and the teamwork part of creating a Lean culture.

**Joe:** I'm going to plug some of your training materials here, because I thought, it was interesting, as I viewed them and looked through them, that most of these things you talk about, you don't give someone just a sticky note to follow. You have, already, a sticky note that's preprinted so that you're not starting with a blank piece of paper. Is that how your policy deployment training is? Do you have certain little exercises, certain little guidelines and material to assist, prompts, in doing certain things?

**Larry:** We have templates, and we have other activities and guidelines when we do policy deployment so that the organization can follow a nice, smooth flow while putting in their individual detail information into the template. So we give them the guidelines on the 10 steps, but within that template and within those guidelines, they can individualize it for a different organization.

**Joe:** Lean seems to be a Buzzword, for the moment. It seems like we're jumping into health care; we're jumping into services, construction and everything else. Is it just a buzzword and address it more specifically, why the construction industry?

**Larry:** That's another great question. There's a lot of dissatisfaction with how projects are handled in the environment. And the current environment, I would say, is a design-build



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environment. And so owners and the industry are tired of the adversarial relationship that this creates and this kind of "everybody's out to get everybody else." It's never win-win. It's always lose-lose or lose-win. And for the construction managers and the general contractors often winning a bid is viewed as a win-loss or a win-lose where yeah, they won the bid but now they've got to deal in this environment where they may end up losing money because of the adversarial relationship.

There's this undercurrent of owners and industry people who want to change that. Owners are beginning to understand that the current process is responsible for creating at least 30 percent waste. When you think about it, construction in the U.S. used to be a trillion dollar business. That's \$300 billion worth of waste that at least a lot of the owners recognize now as waste in the current processes.

The other thing is business is tight, and the owner's budgets are tight, so owners are looking for...How do we get more value for our construction dollar?

They're turning towards Lean because Lean has a reputation for eliminating waste, creating teamwork, improving communication. So they're looking at Lean as an opportunity to return or put the \$300 billion of wasteful activities currently in the industry and turn that into value and profits for the owner and the contractors.

**Joe:** Many think of Lean as a manufacturing methodology, and that manufacturing is predictable. Construction is really different than manufacturing, and it is very unpredictable. So, we're applying Lean to an unpredictable environment in construction. It's interesting that Lean has been introduced to construction through project planning more so than the typical value stream, getting rid of waste, the 5S side that happened in manufacturing. When we think of that shift from manufacturing to construction,

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how does Lean align itself with the uncertainty and unpredictability of construction?

**Larry:** Construction projects are one-offs. We're going to do one that's, in general, is not like any other thing. And so, in construction, we broadly say that nothing repeats and every job is different but when you look at the construction process and the project process lots of things repeats; how we do the RFP, how we do the estimating. When we get on the job site, generally how the contractors work and put up drywall. There are lots of things that repeat and are very similar or the same for every project. One of the things is, to be successful with Lean; you have to understand that you can't broad-brush everything with "every project is a one-off," because there are lots of things that repeat. And for those that repeat, in Lean we have what we call standard work, which is how people and machines and equipment work together to do a particular job while minimizing all forms of waste.

Whether you're doing estimating project or you're putting up drywall, you can have standard work. But again, we don't look at standard work on projects today because, again, we broad-brush them saying "every one's a one-off." And that may be true, but inside of each project, there are lots of things that repeat.

So, we have to view projects a little bit differently to integrate Lean. The other thing is, as we look at the value of Lean in a project environment, Lean eliminates or reduces the uncertainty related to people working on the project.

System thinking, communication, and project-wide teamwork keeps everybody on the same page. In the past, where this adversarial relationship came from, we didn't know what other people were doing and sometimes there were conflicts, and we didn't communicate, and we didn't create our plans together.

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Lean takes care of that because it's all about teamwork, communication, and ultimately empowerment.

Now, there're certain unpredictable things like weather and the permitting process that remain, that are outside the Lean scope, at least today. The people-related uncertainties and unpredictability are eliminated when we use teamwork, communication, and empowerment to get everybody on the same page.

**Joe:** For an analogy, could I use the artist? That he may paint a different picture every time, but realistically, the way he goes about mixing paints, the way he goes about holding the brush, the way he goes about setting up the canvas is all standard work and very similar.

**Larry:** That's absolutely correct. That's a wonderful analogy, because, again, every picture, every project's different, but inside of that, there are lots of things, we can standardize.

**Joe:** I'm going to stay away from the Lean tools a little bit, 5S and A3s and everything. What tools are different in construction? Are there tools that we could call Lean tools in construction?

**Larry:** We like to lump them together and call them all Lean tools, but there are certain ones that are primarily related to construction. The first one I'll talk to you about is called integrated project delivery or IPD. And IPD is a project delivery method with a contractual agreement in which the project risks and rewards are shared between the stakeholders, who are, at a minimum, the owner, the designer, the construction manager or general contractor and the principal trade partners. And ultimately, project success equals stakeholder success.

So the goal of this collaboration is to reduce the waste, time, and costs of a project so that the value supplied to the owner can be improved. It's this teamwork. It's this teamwork. It's this

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openness and the desire to create a win-win solution for both the project people and the owner.

**Joe:** So that's giving one example, but your book actually separates it between the core Lean tools and the Lean construction tools. They mention BIM, TVD, and CBA and Lean project scheduling. I'm not going to go into all of them, but it's there in your book. One of the areas that intrigued me about Lean Construction is the project-scheduling aspect of it. I have always thought that was a weak link in Lean implementation. Can you tell me your view of Lean project scheduling? Or was it ever a weak link?

**Larry:** It's been a weak link, and I think, really; this is where understanding, how it's done in construction, can help you do it in Lean. In construction, we use, often called Last Planner, what we call project scheduling. This can be applied to product development and project scheduling and manufacturing and other activities also. But basically, we get everybody that's involved in a project, in creating a particular milestone activity, and we do a reverse plan, which really starts at the end date or the milestone and works it backwards, with all the trades and all the people who have responsibility on that project essentially collaborating, working together, saying, "Hey; I'm going to need you to do this before I do this."

Thus, working together to come up with a schedule that is based on teamwork and communication. And, in general, shortens the length of time it takes to do a milestone because now everybody has worked together. They know what they can expect from other trades and other superintendents and foremen. And have communicated what they need to continue, and they have a series of commitments now that creates the schedule.

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That series of commitment in our ability to work in that environment and make those commitments and hold those commitments makes for a smoother, faster project.

**Joe:** So if not in an adversarial relationship there where, "You have to be here on Monday" or where we are all making up stories to each other. The typical construction project is, "Oh, the drywall guy was going to be here yesterday and he's not."

**Larry:** Planning that goes into it. Really, you look at this series of commitments and ultimately you take this milestone plan, which might be eight or 10 weeks long and then week-to-week, you do a weekly plan. One of the things you do at the end of the weekly plan is review what they call PPC, or Percent Plan Complete, so it's a review by the people who made the commitments as to what happened and did we get to 100 percent of what we said we were going to do versus what we actually did.

So it's a continuous feedback and follow-up on those commitments and that collaboration and communication.

**Joe:** If I'm a construction outfit, how big of a leap of faith do I need to take to start a Lean journey? Do I need to walk across the street, or am I traversing the Grand Canyon here? Is it really foreign to me? How big is it?

**Larry:** This is a really good question that people ask, and a lot of organizations get into Lean not thinking about this, but I think the basic answer is this. If you believe that everybody in your organization, if we communicate and we develop teamwork and we empower people in the organization, if that will make the organization more successful, if you believe that, then Lean will work for you, then you will be successful with Lean. It's that understanding that empowering people, communicating...everybody wants to pull in the same direction, and they want to work together as teams, but it's the organization's leadership that inhibit that, because we don't



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communicate, we don't have values; we don't set goals; we don't ask everybody to participate, and so we got six or seven managers trying to run the whole organization.

So if you believe that getting everybody involved and participating will make the organization better and produce more profitability and more satisfied owners if you believe that, that's the starting point.

**Joe:** Do I need a parachute? Can I go alone on my journey?

**Larry:** Yeah, how would you define "alone"?

**Joe:** Well, I mean, as an organization, and I say, "OK, we're going to become Lean now," and that's the directive and we start doing it. But do I need that consultant out there shining the light for me? What's the next step or how do I introduce it, outside of sending my guy to conferences or receiving training?

**Larry:** I think attending some conferences and receiving training, just to get this kind of global view, is a good place to start. But ultimately, once you decide to go on the Lean journey, you're going to need, for some length of time...and I'm going to say maybe six months-- a consultant to help you on that journey. The important thing to remember is that when you bring a consultant on, you need to immediately develop an exit strategy for that consultant, because ultimately, if you don't, as an organization, own Lean, you will fail at Lean. If you become dependent on a consultant, that is not the way to be successful with Lean. That's just going to cost you a lot of money, and you'll be sorry a year or two later.

So you've got to own Lean, but to get started, to get somebody with experience that can prevent you from making early-on mistakes, you need that Lean consultant. But ultimately, you bring the consultant on with an exit strategy that says, "It's going to take us six months, nine months, a year before we can develop



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facilitators and actually own this process. And once we own it, then we'll have the consultant come in once or twice a year, just to give us this outside-eyes view of how we're doing."

**Joe:** You just about have to be willing to take Lean upon and start calling it your own and stop calling it Lean in six months, right?

**Larry:** Give it their own kind of "Acme Construction Company system," or "Lean at Acme" or something. Yes, they create acronyms for owning it. Yes.

**Joe:** Is there anything you would like to add to this conversation that maybe I didn't ask?

**Larry:** Everybody needs to understand, particularly leadership teams, that Lean is successful or fails at the leadership-team level. This is not about trying to say, "The trades won't agree," or "We can't get our project managers to do it." Lean is successful or fails because of leadership-team involvement. If the leadership team successfully does the Lean planning and creates the foundation for a Lean culture, the rest of the organization will be glad to help.

**Joe:** You bring up another question there for me that I have to ask you. A construction outfit, you deal with so many subs. How do you get your subs to buy into Lean? Do they have to be Lean themselves to really participate?

**Larry:** Well, that's another excellent question, and it's no different than in manufacturing or in health care or services. You have to start by getting Lean under control in your own organization, right? So you have to be a year or two years into this before you're going to start, essentially, training your subs or requiring your subs to be Lean, because you want to be the leader. You want your subs to be able to support what you're doing. Once you go on this Lean journey, you have to have a plan

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for developing subs to get along on that journey. And ultimately, that may be the difference between whether a sub is considered for a future project or not, whether they're on this Lean journey. So that's very important.

In manufacturing, we say you can't become a world-class manufacturer without world-class suppliers. And ultimately, the same applies to construction. You can't become a world-class construction management firm or general contractor or architectural firm without having world-class suppliers and subs to support that.

**Joe:** So what do you have upcoming on your agenda? Are you speaking anywhere?

**Larry:** The Lean Construction Institute has chapters throughout the country. And we've been doing some presentations on Choosing by Advantages, which is a wonderful Lean tool that started out in construction, and it's about what we call Lean standard work for the decision-making process when there's more than one option. So CBA, as it's typically called. We're doing a bunch of CBA presentations around the country. And we're going to be, in February, doing a presentation for the Association for Building Contractors up in Wisconsin on Lean planning, policy deployment, and Lean construction.

**Joe:** Well, you're all over the place; I noticed. Well, all over the world, actually, right?

**Larry:** Yes, recently, down in Costa Rica.

**Joe:** How can someone contact you, and where do you buy the book?

**Larry:** The books are obviously on Amazon or off our website. Sometimes we have specials, so check our website, which is [www.wcmfg.com](http://www.wcmfg.com). Or you can call our office if you just have

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general questions about what we do or a question about Lean Construction: 260-637-8064. Or you can email those directly to me. My email address is my last name, Rubrich@wcmfg.com.

**Joe:** I would like to thank you very much. I think your website incorporates a lot of nice training, training schedules, and supplies on it. Like I said, it is very unique in the fact that you have prompts built into your training program, which I think is ideal. The way they should be. Again Larry, I'd like to thank you, and this podcast is available of course on the Business901 blog site and the Business901 iTunes store. Thanks again.

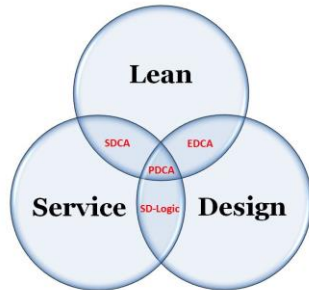
**Larry:** Thanks, Joe.

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Joseph T. Dager

Business901

Phone: 260-918-0438

Skype: Biz901

Fax: 260-818-2022

Email: [jtdager@business901.com](mailto:jtdager@business901.com)

Website: <http://www.business901.com>

Twitter: [@business901](https://twitter.com/business901)

Joe Dager is President of Business901, a firm specializing in bringing the continuous improvement process to the sales and marketing arena. He takes his process thinking of over thirty years in marketing within a wide variety of industries and applies it through Lean Marketing and Lean Service Design.

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