

MANUFACTURING INSIGHTS  
What Lean Means

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**NARRATION:**

PRODUCED IN COOPERATION WITH THE ASSOCIATION  
FOR MANUFACTURING EXCELLENCE.

**Narrator (VO):**

MANUFACTURING INSIGHTS, MANUFACTURING ENGINEERING MAGAZINE'S VIDEO SERIES FOR PROCESS IMPROVEMENT. THIS PROGRAM WILL EXPLORE "What Lean Means" and what people are doing to achieve the full potential of a lean enterprise.

**Narrator (VO):**

We will talk to ONE OF THE LEADERS IN THE LEAN MOVEMENT, GEORGE KOENIGSAECKER, and learn WHERE THE TRUE PROFITS OF LEAN ARE. GEORGE KOENIGSAECKER HAS BEEN BOTH A STUDENT AND SENSEI OF LEAN FOR NEARLY THREE DECADES.

**Narrator (VO):**

WE WILL ALSO VISIT THE WORLD'S LARGEST FIREPLACE MANUFACTURER, HEARTH AND HOME TECHNOLOGIES IN MOUNT PLEASANT, IOWA. THEIR SUCCESSFUL LEAN JOURNEY HAS EARNED THEM and their PARENT COMPANY HNI, A SHINGO AWARD.

FADE TO BLACK

**Narrator (VO):**

HEARTH AND HOME TECHNOLOGIES IS JUST BEGINNING TO SEE AND FEEL THE GAINS FROM THEIR LEAN JOURNEY.

Sot: (Koenigsaecker)

I think most senior executives would think that, say, a 40% enterprise-wide productivity gain would be huge. And in fact, it is huge. But that would be typically a first phase. True enterprise-wide transformation, where you restudy processes again and again, should lead to something more on the order of a four-fold magnitude of productivity gain.

**Narrator (VO):**

LEAN MANUFACTURING IS BASED ON THE principles of the TOYOTA PRODUCTION SYSTEM. To make sure they keep "Moving Forward", TOYOTA DEVELOPED simple measurements they call TRUE NORTH METRICS. These metrics focus on:

- HUMAN DEVELOPMENT
- QUALITY
- LEAD TIME
- AND COST AND PRODUCTIVITY.

Sot: (Koenigsaecker)

If you look at all those four true north factors together, Toyota believes that these, quality and productivity/cost-drive every line item of an income statement or balance sheet in a positive direction. So they believe that if you improve those three, simultaneously each year in what they would call double digit numbers, 10 to 20 percent on an annual basis, then pretty much everything good will happen. And the other thing they say is that the first metric in what they their true north metrics is what they call human development. The reason for that is that the other three only happen because of people studying the way they do their work, and improving their work. So they would say that's the foundation for getting improvement in the other three metrics that drive, as they believe, each line item in an income statement or balance sheet in a positive direction.

**Narrator (VO):**

WHEN THE METRICS ARE WORKING TOGETHER, THE POSITIVE RESULTS begin to

MULTIPLY.

Sot: (Koenigsaecker)

For instance, when you shorten lead-time, you find that your customer base grows. When you shorten throughput time, you find that your inventory investment goes down. When you improve quality, you find that your revenue grows.

**Narrator (VO) :**

DURING THE 90'S, KOENIGHSAECKER LED THE HON COMPANY THROUGH A LEAN CONVERSION THAT RESULTED IN TRIPLING THE VOLUME OF THE 1-POINT-5-BILLION DOLLAR OFFICE FURNITURE MANUFACTURER.

**Narrator (VO) :**

NOW ON THE BOARD OF THE SHINGO PRIZE COMMITTEE AND PRESIDENT OF LEAN INVESTMENTS, KOENIGHSAECKER HAS GUIDED MANY MANUFACTURERS THROUGH Their own LEAN JOURNEY.

Sot: (Koenigsaecker)

Toyota would tell you they don't think you can learn Lean from a book, they don't think you can learn it from a classroom experience, that you really learn it from hands-on application. Part of the reason for that is that the basic principles you're trying to implement are normally opposite from the way we've organized our work. So those turn out to be easy to understand, which makes it deceptive, but they're very hard to do, because they are the opposite of the way we've always done things. So what you find with the whole Lean experience is that the learning really comes from hands-on application, and it comes from repetitive hands-on application.

**Narrator (VO) :**

IN ADDITION, THE BEST SCENARIO for applying lean IS TO WORK WITH SOMEONE MORE FAMILIAR WITH LEAN WHO CAN ACT AS a GUIDE DURING THE JOURNEY. This is necessary because SEEING WHERE CHANGE IS NEEDED IS SOMETIMES DIFFICULT. MANY EARLY ADOPTERS OF LEAN LEARNED FROM A

TOYOTA EXECUTIVE, TAIICHI OHNO.

Sot: (Koenigsaecker)

But Ohno said that this business of seeing waste, you can't see it all the first time you look at it. He said it's like an onion. If you look at an onion you see this outside layer, that's the first layer of waste you can see. If you peel away that layer of waste, then you can see the next layer of the onion underneath. And you can work on that layer, peel it away, and that allows you to see the layer underneath that. He said learning to see waste is the same way, you just can't see it all, it's hidden by the other waste that is scattered all around. You actually have to remove waste to give you access to each level of waste.

Sot: (Askren)

I compare it to learning how to fly an airplane. You can read a book on piloting an airplane, but you don't read the book, go hop in the airplane, and fly it successfully. You have to learn, do, learn, do, and it takes hours and hours and hours to become proficient at piloting that aircraft. Even then, you have to be able to adjust, because you'll run into different conditions, you'll run into different situations. So A, go do it. Get involved, and not just go do it once, but force yourself, force your organization, force your leaders, to do it on a consistent basis.

**Narrator (VO):**

HEARTH AND HOME TECHNOLOGIES BEGAN IN THE EARLY NINETIES CREATING A RAPID CONTINUOUS IMPROVEMENT ENVIRONMENT. Everyone in the company uses LEAN AND WORLD-CLASS MANUFACTURING PRACTICES TO IMPROVE BUSINESS PERFORMANCE ON A DAILY BASIS.

Sot: (Askren)

It's a very dynamic process. It's not one you can simply read a book and go do, and it all falls in place. It's an art as much as anything, because it's about people and it's about process, it's about structure, it's about product. It's a very complex type of dynamic, and you're just going to have to go stand in the middle of it and Plan, Do, Check, Adjust, Plan, Do, Check, Adjust, and you're going to have to do that year in, year out. The world changes, the market changes, your customers change, your products change, your people change, it never ends.

**Narrator (VO):**

WHILE IT MAY APPEAR THAT LEAN IS A PHENOMENON TAKING OVER THE  
MANUFACTURING COMMUNITY, IN FACT, VERY FEW BUSINESSES HAVE BEEN ABLE  
TO UNDERSTAND AND APPLY THE TECHNIQUES.

Sot: (Koenigsaecker)

What you'll find—and AME has found this in multiple senior leadership  
surveys, US and Canada ended up having very similar results although  
there were totally different surveys done at different times.  
Fundamentally, what you'll find is that about 50 percent of the  
people are not really doing anything with it yet.

NARRATION:

ABOUT 30 PERCENT OF COMPANIES ARE JUST STARTING TO LOOK AT LEAN AND  
20 PERCENT ARE EXPERIMENTING WITH IT. AND THIS 20% IS THE GROUP OF  
COMPANIES WHERE YOU'LL READ ABOUT LEAN IN THEIR ANNUAL REPORT.

**CUT TO:**

Sot: (Koenigsaecker)

(And)The number that are considered advanced, where they understand  
the process, get results from the process, that's in the range of 2  
to 3 percent of manufacturing organizations. There are some cautions  
that come out of that. One is you have to be a little careful about  
who you listen to for Lean advice, because 98 percent of the people  
may tell you something but not know much, whereas 2 percent of the  
people probably do have a really good understanding of what Lean is  
and can do for an organization. It's one of the other things that  
makes it difficult. There's a lot of disinformation.

**Narrator (VO) :**

LEAN OFFERS MANY TOOLS TO MAKE PRODUCTION MORE EFFECTIVE, SUCH AS  
SETUP REDUCTION AND STANDARD WORK APPLICATION. COMPANIES ATTEMPTING  
TO BECOME LEAN BEGIN APPLYING THESE TOOLS, LIKE VALUE STREAM MAPPING,  
ONE PIECE FLOW AND POKA YOKE OR MISTAKE-PROOFING. HOWEVER, THESE ARE  
ONE-TIME EVENTS AND A TRUE LEAN MIND-SET REQUIRES A DAILY COMMITMENT  
BY EVERYONE.

Sot: (Cox)

I would say the first step is to get your members involved. Get  
educated about the process and what it really takes to transform a  
company into a lean environment. We completely underestimated that  
portion of it. The larger the facility, the harder it is to do. You  
have to somehow, in our case, get 700 people to understand where  
you're going and why you're going there. I know in our case, we  
weren't prepared to do that. We didn't fully understand lean. It

forces you to think differently.

**Narrator (VO) :**

BEFORE INTRODUCING LEAN AT HEARTH AND HOME, THE PLANT HAD A THREE-WEEK LEAD TIME AND all THE INVENTORY NEEDED TO SUPPORT IT.

Sot: (Hunt)

It was a little rough at the beginning. I think it was all new to everyone, and on a lot of the lines everyone gets a little set in to doing things a certain way. There's a little resistance to change, or probably just not used to change. And I think part of this, and you still see this in other companies, the membership really didn't feel empowered to feel their area. They feel that I come to work, do what the boss says, and leave. And that's the way it was back then. Now it is more "I come to work and I'm expected to do something beyond my normal standard work, I'm expected to at least come up with ideas to make my job better and implement change." So it's a definite cultural change in that aspect. People throw out ideas all the time and implement ideas constantly.

**Narrator (VO) :**

BUT ONE OF THE KEYS TO UNDERSTANDING LEAN IS TO FOCUS ON HUMAN DEVELOPMENT.

Sot: (Koenigsaecker)

You start with the tools, and then you begin to believe some of the principles over time. You learn some of the practices. And then underneath it is a series of leadership behavior and values that are sometimes different. One of those that is probably worth thinking about is the idea of humility. To U.S. managers, the being humble sounds like a bad thing to do. We want to be positive and show that we know what we're doing. Toyota looks on humility as the foundation stone. You have to be humble in order to be able to see waste, to allow yourself to see that you've got waste and to be able to figure out what improvement could be. So humility about how good you are, how good your organization is, is the first thing that helps open your eyes to the potential for improvement in your organization.

Sot: (Walker)

You know you can be involved in the change as much or as little as you want to be, but be certain that there will be change. I remember when we first got into lean or the RCI way of always trying to improve, we thought there was an end someplace. We'll improve

everything and then we won't have to be on the RCI teams and we won't have to work concentrated hours during the week to try to make things better. We quickly figured out you never get there. It's something you'll always be doing if you want to stay ahead of the competition and give your customers what they need constantly. You just have to keep changing and improving.

**Narrator (VO) :**

ALONG WITH INTERNAL CHANGES, HEARTH AND HOME WORKED WITH ITS SUPPLIERS TO GET INVENTORY IN SYNC WITH DEMAND. THE USE OF A REPLENISHMENT SYSTEM AND RETURNABLE CONTAINERS HAS MINIMIZED THE USE OF M-R-P AS AN ORDERING system. THIS APPROACH REQUIRES A STRONG PARTNERSHIP WITH SUPPLIERS.

**Narrator (VO) :**

IN ADDITION, HEARTH AND HOME USES JUST-IN-TIME methods FOR MATERIAL HANDLING, PRODUCTION AND THE DISTRIBUTION PROCESSES. With this example, THE book printer Plays A KEY ROLE BY PROVIDING THE INSTALLATION MANUALS THROUGH A PULL SYSTEM. ONCE THE CONTAINERS ARE EMPTY, THEY are RETURNED TO THE SUPPLIER TO BE REFILLED.

Sot: (Wilson)

Another one, we get some of our handles in from a company called Marlboro Wire. The handles, if you can imagine, they're in Quincy, which is probably about an hour and a half to get here from there. As it rides in the truck it's bouncing up and down, and those wire pieces are getting entangled. We would open up the box and we'd be fishing wire out. So we got a returnable container with just some pieces of metal in the bottom that we designed to hold the metal in place. Not only is it a returnable container, we eliminate the scrap in the dunnage, and we also get the parts exactly how we want them so they're organized.

Sot: (Walker)

For me it was really hard to grasp the concept until you started performing on RCI teams. That's when you really figured out all the things that we thought were the greatest in the world, like with manufacturing processes... we would have racks and racks of parts, and we thought that was great because it was a good insurance policy, but we never looked at the waste. We never looked at that as being waste, it was actually a good thing for us. Then once we started lowering those inventory levels and we saw that we're not damaging as

many parts, and when we obsolete or change something we don't have to throw a lot of stuff away, and we found out we can produce something today and give it to our customer in three days or four days rather than two weeks or three weeks.

**Narrator (VO) :**

EQUALLY IMPORTANT FOR A BUSINESS IS THE ROLE IT PLAYS WITHIN A COMMUNITY. AS PART OF HEARTH AND HOME'S STRATEGIC VISION, THE MEMBERS ARE WORKING TO BECOME A RESPONSIBLE CORPORATE CITIZEN THROUGH FINANCIAL SUPPORT AND VOLUNTEERISM.

**Narrator (VO) :**

BECAUSE THE MAIN COMPONENT OF THE TRUE NORTH METRICS IS PEOPLE DEVELOPMENT, IT'S IMPORTANT HOW each MEMBER IS VIEWED BY MANAGEMENT AS AN ORGANIZATION BECOMES LEANER.

Sot: (Koenigsaecker)

If you do redeployment of people, if you get productivity of people you free up people, who do you free up? Our rule of thumb is we're going to optimize our team. What that means in practice is we're going to take our lowest performer and try to get rid of him. What Toyota would say is that the right lean practice is the exact opposite. When you improve an area, and now it runs better because you've improved setup, quality and all these other things, you shouldn't even need the same skill level that you had before you made the improvements. Consequently, what you ought to do is take the very best person from that team and redeploy them to the rest of the company.

**Cut to**

Sot: (Koenigsaecker)

They're probably someone who is flexible to begin with, that's why they're considered the best in that group. People in the other part of the organization are going to want to draw them in, to hire them and bring them into their areas. If you do the opposite, it's a horrible, traumatic experience for that low performer, because they usually knew they were a low performer.

**Narrator (VO) :**

A LONG STANDING GOAL OF LEAN IS TO REDUCE THE AMOUNT OF WORK-IN-PROCESS, OR WIP, INVENTORY.

A USEFUL WAY TO LOWER INVENTORY IS ONE PIECE FLOW WHERE ACTUAL CUSTOMER ORDERS ARE THE ONLY THING THAT TRIGGERS PRODUCTION.

With lean companies, each ORDER IS MADE TO customers SPECIFICATION USING SEVERAL LEAN principles:

- >MAKING SURE MACHINES ARE PLACED WHERE THEY WILL be able to add the most value,
- >USING small quantities OF PART storage ON THE ASSEMBLY LINE,
- >AND POSTING DETAILED STANDARD WORK to make sure each job is done the same way each time.

By using a SINGLE PIECE FLOW SYSTEM you will IDENTIFY PROBLEMS quickly AND ELIMINATE OVERPRODUCTION.

Sot: (Wilson)

There's always challenges, and there's always opportunity to improve. But we have dramatically cut inventory. We used to have that day window and we'd actually fill everybody's stuff up a day ahead and deliver it that night. So if we were going to run out of something, we'd know a day ahead. Now we're running much tighter, so inventory has to be accurate 100% of the time. Often we don't know we're out of something until the line is not going to have product in 30 minutes. So we have gone through some things to help with inventory accuracy, but I think we still have room to grow there to try to get our inventory even more accurate.

**Narrator (VO) :**

GETTING THE RIGHT LOG set TO THE LINE IS ANOTHER EXAMPLE OF JUST-IN-TIME MATERIAL HANDLING. AT ONE TIME, MEMBERS HAD TO RUMMAGE THROUGH A SERIES OF BINS FOR THE required LOGS. TODAY, A FIBER LOG KIT, CONTAINING ALL THE NECESSARY LOGS IS DELIVERED TO THE LINE. THE LOG KIT STANDARDIZES THE FIREPLACE CONSTRUCTION Minimizing MOTION, WASTE AND OVER-PROCESSING. Each log kit is delivered to the assembly line

in the same build sequence as the final assembly line.

**Narrator (VO) :**

HOW PEOPLE AND PRODUCT MOVE THROUGH A PLANT IS AN ESSENTIAL ELEMENT TO a LEAN Journey. A FEW YEARS AFTER INTRODUCING LEAN, HEARTH AND HOME TECHNOLOGIES CHANGED THE ENTIRE PLANT LAYOUT.

MATERIAL NOW FLOWS FROM THE RECEIVING DOCKS ON THE NORTH END OF THE PLANT THROUGH TO THE SHIPPING DOCKS ON THE SOUTH END OF THE PLANT.

PERIODICALLY, THE FLOOR PLAN WITHIN INDIVIDUAL AREAS IS IMPROVED TO MINIMIZE TRANSPORTATION.

Sot: (Walker)

We decided that based on where the most material flowed, they would get priority as to where the main aisles went. Then we just kind of went through like that and created a good flow from raw material to finished goods. We had nice straight aisles. You can see out here from one end of the plant to the other, both east and west and north and south. You can see from one end to the other on the main aisles, where before you could never do that

**Narrator (VO) :**

RAPID CONTINUOUS IMPROVEMENT DEPENDS ON THE SUCCESSFUL USE OF VALUE STREAM MAPPING. The Map will SHOW WHICH PROCESS STEPS ADD VALUE AND THOSE THAT DO NOT. TO CREATE A VISION FOR THE IMPROVEMENT PROCESS, HEARTH AND HOME USES VALUE STREAM MAPPING TO IDENTIFY WASTE, LINK MATERIAL AND INFORMATION FLOW, AND ESTABLISH A TIMELINE FOR the necessary KAIZEN Activities needed to achieve the improved future state map.

**Narrator (VO) :**

A STANDARDIZED APPROACH TO THE WORK ENVIRONMENT CREATES A CLEAN, ORGANIZED AND SAFE PLACE FOR MEMBERS. TO THAT END, HOME AND HEARTH

FOLLOWS THE 5-S PRACTICES, WHICH ARE:

SORT, WHICH MEANS REMOVE UNNECESSARY ITEMS FORM THE WORK AREA.

SET IN ORDER, WHICH MEANS EVERYTHING SHOULD HAVE ITS OWN STORAGE LOCATION WHEN NOT BEING USED.

SHINE, MEANING EACH MEMBER NEEDS TO KEEP THEIR AREA clean.

STANDARDIZE, WHERE EACH AREA HAS SET A standard FOR cleanliness.

SUSTAINING, TWICE A MONTH HEARTH AND HOME MEMBERS GO THROUGH AN AUDIT TO SEE HOW WELL THEY ARE MAINTAINING 5S STANDARDS.

THESE TYPES OF TANGIBLE TOOLS FOR MEMBERS PROVIDE AN Easy WAY TO reward lean behavior.

Sot: (Koenigsaecker)

When people are frustrated is when they're given something that's presented as a challenge, but there's no way to get there. They don't have any tools to help them get there, there's no organization, there's not time, it's just "we want you to double profitability, go figure it out." That's not a useful sort of challenge.

**Narrator (VO) :**

TO OBTAIN A CONSISTENT QUALITY TO ALL WORKPLACE OPERATIONS, HOME AND HEARTH HAS A STANDARD WORK DOCUMENT POSTED AT EACH CELL.

THIS STANDARD WORK APPROACH HELPS TO TRAIN NEW OPERATORS AND IDENTIFIES NON-VALUE ACTIVITIES.

IN ADDITION TO THE STANDARD WORK FORM IS THE TAKT TIME OR CYCLE TIME CHART. BY SHOWING THE MAXIMUM TIME NEEDED TO PRODUCE A PRODUCT, IT IS AN INVALUABLE TECHNIQUE TO BALANCE THE WORK LOAD AND CORRECTLY

STAFF THE AREA.

**Narrator (VO) :**

THE GOAL OF THE R-C-I EVENT TEAM IS TO KEEP ALL CHANGEOVERS UNDER ONE MINUTE. AS A RESULT, A MAJORITY OF CHANGEOVERS OCCUR WITHOUT STOPPING PRODUCTION.

Sot: (Cox)

In the early days, basically our engineers and production, we thought in terms of economic lot sizes. We ignored the fact that we had all kinds of barriers that prevented us from producing one piece at a time. So we tried to run long batches to justify that 3-hour setup on a stamping press. What we finally realized that it was the setup causing the issue, not the economic lot size, it forced us to get creative on how we could take waste out of that setup and eliminate a lot of manual steps and make things that used to not be repeatable, repeatable.

**Narrator (VO) :**

To Move AWAY FROM BATCH PRODUCTION, HEARTH AND HOME STARTED to create various work cells. ACTIVATED BY a CUSTOMER REQUEST, the single piece flow in each cell is controlled by the number of customer orders. As more orders are received, additional team members are added to the work cell to keep up with demand.

**Narrator (VO) :**

ANOTHER EFFECTIVE TOOL for quality improvement IS POKA-YOKE OR MISTAKE- PROOFING EQUIPMENT. THE POKA-YOKE MINDSET IS best USED WHEN PLANNING NEW EQUIPMENT OR PRODUCTS. IF POSSIBLE, PARTS ARE DESIGNED TO BE SYMMETRICAL and only FIT the right way.

ON THE FABRICATION PRESS DIES, ANOTHER EXAMPLE OF POKA YOKE IS A SENSOR that DETECTS IF A COIL IS TOO NARROW and IF IT IS, THEN THE

PRESS WILL NOT CYCLE.

ON THE GLASS FRAMER, A DETECTION SYSTEM CAN TELL IF THE FRONT SIDE OF THE COATED GLASS IS FACING OUTWARD. THE FRAMER press WILL NOT ENGAGE IF THE GLASS COATING IS NOT IN THE CORRECT POSITION.

**Narrator (VO) :**

LOCATED ON EACH LINE IS A PRODUCTION CONTROL CHART WITH KEY MANUFACTURING INFORMATION. TYPICALLY, BOARDS WILL LIST PERFORMANCE INFORMATION, REASONS FOR ANY DOWNTOWN, AND THE NECESSARY STEPS TO SOLVE PROBLEMS. CREATING A VISUAL WORKPLACE HELPS PROMOTE COMMUNICATION THROUGHOUT A PRODUCTION FACILITY so problems can be seen quickly, and not hidden behind stacks of inventory.

**Narrator (VO) :**

ONE OF THE KEYS TO SUCCESSFUL production IS CONTINUOUS FLOW. THE FLOW HELPS TO CREATE AN ATMOSPHERE AND MIND SET OF FOCUSING ON MAKING THE MANUFACTURING ENVIRONMENT BETTER.

AT HEARTH AND HOME, A several TOOLS ARE USED TO SUPPORT CONTINUOUS FLOW, INCLUDING:

- USING RETURNABLE AND REUSABLE CONTAINERS
- AND, HAVING ONLY A ONE HOUR BUCKET OF PARTS AVAILABLE in THE assembly area THAT ARE DELIVERED BY MATERIAL HANDLERS.

**Narrator (VO) :**

Hearth and Home also has developed LINE-SIDE FABRICATION OF MATERIALS AND COMPONENTS THROUGH RIGHT SIZE DEDICATED MACHINES. These right sized machines are developed in-house, in a dedicated shop for building and testing new machines.

**Narrator (VO) :**

TO MAINTAIN THE FLOW IN A WORK CELL, HEARTH AND HOME TECHNOLOGIES USES the CHAKU CHAKU technique THAT PLACES ALL THE NEEDED PRODUCTION PARTS IN THE CORRECT SEQUENCE. THE concept is that the OPERATOR LOADS A PART AND MOVES TO THE NEXT OPERATION, advancing through the cell as the same pace as the work piece.

**Narrator (VO) :**

TO DELIVER most PARTS TO THE LINE, HEARTH AND HOME TECHNOLOGIES USES A KANBAN system. AS components ARRIVE AT THE PLANT, THEY ARE STORED IN A CENTRAL LOCATION WITHIN THE RECEIVING DEPARTMENT. Each part is STORED ON A RACK THAT DOES NOT REQUIRE A FORK LIFT. A small cart is pulled THROUGH THE PLANT and PARTS ARE DELIVERED TO THE LINE IN PLASTIC TOTES LABELED WITH THE PART'S NUMBER AND NAME. ONCE THE TOTE IS EMPTY this is the SIGNAL FOR THE material handler TO REFILL the tote.

**NARRATOR (VO) :**

A change in the assembly of the firebox GAVE HEARTH AND HOME TECHNOLOGIES AN OPPORTUNITY TO have A THREE-P EVENT. THREE-P STANDS FOR PRODUCTION, PREPARATION AND PROCESS. This event was needed to HANDLE CHANGES IN DEMAND, MANUFACTURING PROCESS IMPROVEMENTS, NEW PRODUCT INTRODUCTIONS, AND PRODUCT DESIGN CHANGES.

**NARRATOR (VO) :**

with THE OLD SYSTEM, THE EXTERIOR OF THE FIREBOX WAS BUILT FIRST, FOLLOWED BY THE INTERIOR CONSTRUCTION. INSTALLATION WAS CLUMSY AND AWKWARD. AS PART OF THE 3-P PLAN, MEMBERS DEVELOPED A NEW SYSTEM THAT

POSTPONES PUTTING ON THE TOP OF THE FIREBOX UNTIL THE INSIDE IS COMPLETE. THE NEW SYSTEM IMPROVED THE ERGONOMICS, SPEED AND QUALITY OF MANUFACTURING.

**NARRATOR (VO) :**

AFTER A DECADE AND A HALF OF LEARNING ABOUT LEAN, HEARTH AND HOME TECHNOLOGIES WOULD READILY ADMIT THEY HAVE COME A LONG WAY AND YET CAN STILL GO FURTHER.

Sot: (Hunt)

The biggest piece of that is, it takes a lot of upper management commitment. There is a point where you invest some time and resources and training, and you hit some home runs with your events or your lean initiatives, and sometimes you hit some foul balls. You can't let a couple foul balls cause you to say this is crazy, it won't work, and you give it up. You have to stay the course and believe in it a little bit. You have to stick with it. Definitely upper management commitment is part of the key to that. If they fold under as soon as a bill comes in that's a little higher than they wanted, that's no good.

**NARRATOR (VO) :**

A GREAT COMPANY CULTURE CONSTANTLY ADDS ENERGY TO KEEP the lean journey MOVING AHEAD, and without this energy THE improvement WILL SLOW DOWN. WHEN EVERYONE WITHIN A COMPANY FEELS THEY ARE ON THE SAME TEAM, A SYNERGY IS GENERATED THAT WILL SUSTAIN A LEAN CULTURE.

Sot: (Koenigsaecker)

For the typical CEO, the idea of being on a team of half a dozen factory people looking at a process doesn't sound like fun, and it doesn't seem like something they want to spend their time on. But they will fail without it. They need to have that personal picture of what waste looks like, how these tools and processes work, how much waste they have in their own organization to provide them the motivation to move ahead. So when you circle around to it, the core issue is always leadership. It's a question of are you willing to back up and learn some new stuff, and admit you don't know everything, and stuff you may have to learn with some hands-on experience and application.

Sot: (Koenigsaecker)

Actually for lean what you need to understand is leadership. We're not taught that in business school. When it comes to those personality characteristics that it takes to move an organization in another direction, to take it to another level, you would be much better off going to one of the U.S. military academies to get a shot of what leadership practices and principles would look like.

Leaders are woefully unprepared because although we carry that title, we haven't been trained to be leaders.

**NARRATOR (VO) :**

WITHIN A LEAN ENVIRONMENT, A GREAT LEADER IS BOTH A TEACHER AND STUDENT.

Sot: (Koenigsaecker)

One other aspect of it that is very different, and if you think about it, very powerful, is the idea of mentorship. They talk about sensei and student a lot. They expect every leader to be a sensei, a teacher, but also to be a student. That's sort of the humility, that even if you're a master sensei, you're still a student. You're learning at the same time you're teaching.

**Cut to:**

Sot: (Koenigsaecker)

You look at the people that work in your organization, and the idea is that you're to mentor them. But what Toyota does that's interesting is the only way you can show that you're a good mentor, a good sensei, is by the success of your students. So the way you are deemed as being eligible for the next level of promotion is when your team, your students, have demonstrated that they can solve problems and improve and are growing as individuals and growing in their ability to help the organization.

Sot: (Koenigsaecker)

When you hang around Toyota folks for a while, you realize they're different. They're different to a great extent because of that practice and others like it.

**Narrator (VO) :**

TO REALIZE WHAT LEAN MEANS, IS TO MAKE CHANGES NOT ONLY IN PLANT FLOOR ACTIVITIES BUT ALSO IN HOW EVERYONE FROM THE TOP DOWN APPROACHES THEIR JOB. IT MEANS MAKING A SUBSTANTIAL TIME INVESTMENT,

LEARNING THE TOOLS, ELIMINATING BATCH PRODUCTION AND REPLACING IT  
WITH CONTINUOUS-FLOW SYSTEMS. REAL LEAN CHANGES NEED TO BE MADE NOT  
ONLY ON THE PRODUCTION LINE BUT ALSO IN HOW PEOPLE VIEW THEIR WORK.

Sot: (Koenigsaecker)

They talk about that next step in management development as challenge, and what they say is the single most motivating thing to any human being is successfully meeting a challenge. They believe you provide people with tools, you help them get into an environment, then you can present them with an aggressive challenge, and it needs to be one that could be achieved, but it needs to stretch them. Their view is that challenges should always stretch the organization. From that the organization grows and they believe it's also the most motivating thing to individuals within that organization. That leads to a culture of continuous improvement. So there's that sequence from humility, to that helping you see waste, to that providing motivation to improve, to that motivation being set in terms of aggressive challenge, and then that being the fundamental cycle that leads to continuous improvement as an organizational culture.

Produced by:

The Society of Manufacturing Engineers  
in cooperation with  
The Association for Manufacturing Excellence

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