

**MANUFACTURING INSIGHTS:
Building a Lean culture**

NARRATOR (VO):

MANUFACTURING INSIGHTS, MANUFACTURING ENGINEERING MAGAZINE'S VIDEO SERIES FOR PROCESS IMPROVEMENT. THIS PROGRAM WILL EXAMINE THE TURNAROUND EFFORTS AT THE H.I.D. COMPANY AND SHOW HOW THEY ARE BUILDING A LEAN CULTURE.

AS A 2006 RECIPIENT OF THE CONNECTICUT SILVER SHINGO PRIZE, H.I.D.-CONNECTICUT HAS STARTED TO TRANSFORM INTO A LEAN MANUFACTURING FACILITY.

THE SHINGO PRIZE FOR EXCELLENCE IN MANUFACTURING HAS HONORED BUSINESSES AND RESEARCHERS NATIONALLY. THE PRIZE RECOGNIZES THOSE WHO USE AND EXPAND ON THE IDEAS OF LEAN MANUFACTURING.

IN 1991, THE HUGHES IDENTIFICATION DEVICES COMPANY WAS FOUNDED AS A SUBSIDIARY OF HUGHES AIRCRAFT, LATER THE NAME WAS CHANGED TO H.I.D. GLOBAL.

TODAY, H.I.D. GLOBAL IS A LEADER IN THE MANUFACTURER OF CONTACTLESS ACCESS CONTROL CARDS AND READERS FOR THE SECURITY INDUSTRY. WITH 12 MANUFACTURING FACILITIES IN 8 DIFFERENT COUNTRIES, H.I.D. HAS TWO MANUFACTURING OPERATIONS THAT FOCUS ON CUSTOM

CARD MANUFACTURING, ONE IN ZURICH, SWITZERLAND, AND THE OTHER BASED IN NORTH HAVEN, CONNECTICUT.

NEARLY THREE YEARS AGO, HOWEVER, THE CONNECTICUT DIVISION WAS FLOUNDERING. WITH NINETY-SIX EMPLOYEES, THE MANUFACTURER WAS ON THE BRINK OF CLOSING IT DOORS FOREVER.

BRIAN MONTANARI, ON CAMERA:

There was definitely a period of time where since the operations were in such turmoil and the lead times were so high and the customers were getting their product at best 50-60 percent on time, customers were shying away from buying product from Connecticut, and our sales force was shying away from pushing product from Connecticut. Therefore, the long-term viability of keeping this facility going was in question.

NARRATOR (VO):

H.I.D. GLOBAL TOOK A PROACTIVE APPROACH. IT WAS DECIDED TO USE THE CONNECTICUT FACILITY AS A TEST PILOT FOR A CULTURE CHANGE CENTERED ON THE

CONCEPTS OF LEAN MANUFACTURING. IF THE PROGRAM PROVED SUCCESSFUL, IT WOULD BE ROLLED OUT TO H.I.D. FACILITIES WORLDWIDE.

BRIAN MONTANARI HAS A LONG HISTORY USING LEAN TECHNIQUES. HE WORKED AT THE WIREMOLD COMPANY BEFORE LEAVING TO DEVELOP LEAN CULTURES AT TWO OTHER COMPANIES. THE GOAL FOR H.I.D.-CONNECTICUT WAS NOT JUST TO CHANGE PRODUCTION TECHNIQUES, BUT ALSO TO CHANGE THE CULTURE.

BRIAN MONTANARI, ON CAMERA:

Before I came, we had a lot of scrap. Scrap from carelessness, employees making simple, silly mistakes, and things as simple as contamination on the cards, which is one of the reasons why everybody in the facility wears lab coats and special shoes and there is an environmentally controlled room and a full class ten thousand clean room.

Any different thing that can contribute to contamination was getting on the cards. So we had scrap for carelessness and for contamination. Lead times were tremendously high. Nobody had a clue where the orders were. The only people that knew what was going on was the supervisor. Nobody at the lower levels knew what to do until their supervisor came up and told them what to do.

That contributed to the long lead-time. Oftentimes orders would take an average of 25 days to get out of the facility. But really when you take a look at the touch time and the actual cycle times, you may only touch a card for 14 seconds or 22 seconds, yet it took 25 days for the card to get out the door.

NARRATOR (VO):

IN AN EFFORT TO KEEP CUSTOMERS HAPPY, THE SALES FORCE WAS ACTUALLY STEERING CLIENTS AWAY FROM SOME OF H.I.D.-CONNECTICUT'S SERVICES.

BRIAN MONTANARI, ON CAMERA:

We had an interesting situation. Since the rest of the world sells pure white cards, Connecticut was the first operation in the H.I.D. global family to start doing custom cards. But since the on-time delivery was at 55 percent and the lead-time was at 25 days, the sales force didn't want to push the custom cards. So they were telling the customers to buy plain white cards and customize them themselves with a desktop printer.

NARRATOR (VO):

TO START BUILDING A LEAN CULTURE, MONTANARI TOOK A HOLISTIC APPROACH. THE FIRST STEP WAS TO BREAK DOWN WALLS AND DEVELOP A TEAM SPIRIT BETWEEN

WORKERS. THIS WAS ACCOMPLISHED THROUGH TEAMWORK SIMULATIONS SUCH AS PAPER AIRPLANE BUILDING, AND UNITING WORKERS BEHIND A GOOD CAUSE.

BRIAN MONTANARI, ON CAMERA:

We spent a lot of time focusing on the soft stuff. It's typically the soft stuff that's the hard stuff. And not just the soft stuff inside the facility, we also do a lot of things for the community. We have partnered with Good Will Industries, and we have a group of physically and mentally challenged employees that come in and help us out. We've done breast cancer awareness walks, we've done walks for the food bank with our Defeat Hunger Team. We've done a 5S cookbook, where every employee gave their favorite recipes. We put a cookbook together and sold it to all H.I.D. facilities around the world. That money was donated to the food bank.

PAUL MURPHY, ON CAMERA:

The other one I would say is a good example is a food drive we had. It's a good example of the ripple effect. One of our employees came forth to the morale team which we had set up and said, there is a food bank near us that needs food, and started out with just the idea, a 30-second idea.

The concept yielded 2800 food items. From a company of 120 employees, that's not bad. The ripple effect beyond that was not just the good will we felt internally, but how we presented our selves to the community.

GAIL POLLICITA, ON CAMERA:

Recently we had a school supply drive, this was one of our more recent, and we collected 382 items of school supplies that we gave to the Hamden School System, a local school system.

DAVID CULLEN, ON CAMERA:

I've been here for nine years, and what I see as the biggest difference is the culture change, the attitude. The average person in the building, and the management side as well, there's much more of a team effort going on here than there ever was before, where people are really focused on doing what they can for the benefit of the entire company rather than as individuals. I think there's a big difference there, and the overall enthusiasm that we have for what we're doing is very obvious out there.

NARRATOR (VO):

WHILE SIMULTANEOUSLY WORKING ON THEIR TEAMWORK, H.I.D. EMPLOYEES BEGAN WORKING ON LEAN TRAINING.

BRIAN MONTANARI, ON CAMERA:

The major obstacles when we started implementing lean and doing the training was how to do the training so that every employee from all levels of the organization could relate the training back to their job, whether they were an executive of the company or an operator on the floor. So we had to pick training and come up with unique simulations and relate the stories and relate the opportunities a little differently for each group, so they knew how to bring it back to their area of influence and make a difference.

PAUL MURPHY, ON CAMERA:

In the past, mediocrity is a great way of describing how we were as a company. We had an okay on time delivery, but when that went up, other things suffered, our lead-time went out. So it was always seen as you could have one or the other, but you can't have quality and on time, or you can't have quality and cost. Once we started

to break those barriers down and people saw them as being the results of implementation of lean as opposed to the things you start with, it really was a watershed moment for our company in terms of people seeing the changes that could and the possibilities of what could happen.

NARRATOR (VO):

H.I.D. CONNECTICUT DEVELOPED THEIR OWN UNIQUE MISSION STATEMENT THAT CONTAINED THE NEW GOALS FOR THEIR FACILITY.

BRIAN MONTANARI, ON CAMERA:

"Our mission is to provide our customers with the highest quality product, on time, every time, through our pursuit of world class processes."

BRIAN MONTANARI, ON CAMERA:

Once we developed our mission statement, we needed to have something that set our direction so we could meet our mission. So we set ourselves a compass in 2005 that had four points. The four points on the compass were that by the end of 2005 we wanted to have all of our employees trained in the basic principles of lean; we wanted to have 100 percent employee participation on our continuous improvement teams; we wanted to have 95 percent on time delivery; with an average of ten day lead times. We started the year with nobody trained in lean; The same 10 people participated on every team.

We are 55 percent on time, and 25-day lead times. So for us to go from that beginning point and one year later to reach those objectives was a very lofty goal for us. But it set our direction so we could meet our mission statement.

Once we set the objective for the compass for 2005, we measured ourselves against it at our monthly all hands meetings. At every monthly meeting, we talked about where we were in meeting objectives, and we came up with different ways to insure we could get back on track if we fell off track. So by the end of 2005 we almost met the full compass. The goal was to have 100 percent of our employees trained in lean, we had 99 percent.

The goal was to have 100 percent of our employees participating on teams; we had 99 percent, the same one person. On lead times the goal was to be at 10 days from 25, and we got down to 8.9. In on time delivery we fell a little short of our goal of 95 percent and we got to 93 percent. So at the end of 2005 we needed to set our direction for 2006 through another compass.

NARRATOR (VO):

TO FOCUS THE STAFF ON SHIPPING THE OLDEST ORDERS FIRST, THE MISERY INDEX WAS ESTABLISHED. THIS INDEX SHOWS HOW LONG A CUSTOMER HAS WAITED. THE NUMBER IS DETERMINED BY MULTIPLYING EACH LATE LINE BY THE NUMBER OF DAYS LATE IN DELIVERING THE PRODUCT TO THE CUSTOMER AND THEN ADDING TOGETHER. WHEN H.I.D.-CONNECTICUT TOOK THE FIRST MEASUREMENT, IT WAS OVER TWO-THOUSAND POINTS. THE COMPASS IN 2006 REFLECTED THE IMPROVEMENTS MADE AND SET NEW CHALLENGES.

BRIAN MONTANARI, ON CAMERA:

The goal is to get from the 8.9 days lead time down to 5 days, to get our quality at 99.9 percent external and 99 percent internal; to have on time delivery of 95 percent with a misery index of 200 points, and to have 30 implemented innovative ideas that are generated from our employees.

Where we are to date, our lead times went from 8.9 days to 4.1 days. Our on time delivery is at 95.1 percent as we speak. We have 20 of our 30 innovative ideas implemented, and our quality is at 99.9 percent external and we're at 96.5 percent internal. So we still have some work to go but considering where we were two years ago, we've come a long way

NARRATOR (VO):

TO VISUALIZE THE CONCEPT OF BUILDING A LEAN CULTURE, BRIAN MONTANARI AND PAUL MURPHY USED A TOOL THAT THEY CREATED SEVERAL YEARS AGO WHILE WORKING WITH A PREVIOUS COMPANY CALLED THE "LEAN HOUSE WITHOUT WASTE" .

BRIAN MONTANARI, ON CAMERA:

So the difference between the traditional organization and our lean organization or the lean house is that we teach that you build the house from the foundation up and you get the roof, you get the results. Many traditional organizations look at it and say we have a safety problem, let's put a safety team together; we've got a scrap problem, let's put a scrap team together. So we look at it from the bottom up approach as opposed to from the top down.

NARRATOR (VO):

WITH THE SUPPORT SYSTEM IN PLACE AND THE MISSION CLEAR, THE LEAN TEAM HAD THE TOOLS NECESSARY TO EMPOWER THE WORKFORCE.

JOHN ULIANO, ON CAMERA:

We want to empower our workforce because our workforce is really the engine that makes lean happen, that makes the changes happen. You could have several managers that are initiating and driving lean, but without having all the associates on board with making that change happen, it would be nearly impossible to get where we've gotten in such a short period of time.

The lean team's role in improving culture at H.I.D. is to educate, to facilitate, to foster change, and to be able to support all the individuals within the organization with making the change happen. We're also there to challenge all the departments and all the individuals to take their changes to the next level and to not be content with the status that they are in.

PAUL MURPHY, ON CAMERA:

We look at it in a number of ways. One of the ways is looking at it through three steps of empowerment growth. One is, an employee will come to us in a traditional environment and look at it more as, here I have a problem, come help me fix it.

The second stage is, I have a problem but I think I have a solution. That's when you see that growth and employee development, as they see that they can actually affect their environment and their area. The third is when they come to you and say, we had a problem, come see what we did about it. And you had no idea what was going on up until that point in time, that there was an issue.

But they felt empowered enough and capable enough and confident enough to be able to do something about it. That's a really good measure of their level of sustainment and their level of involvement and seeing that their job is more than just punching a time clock and coming in, but actually integrally involved in the success of the company.

JULIE CORDERO, ON CAMERA:

You're free to express yourself, join a lot of teams, and you can help with decisions in the company. I'm proud to be on teams for world class.

LINDA COPPOLA, ON CAMERA:

I think the introduction of lean is a big improvement to us, because we had a 40 percent on time delivery, now we have 95 percent. Also the building looks phenomenal, it's very clean, it's organized, it's up to standard and I appreciate how good it is here. Also we have a thing called empowerment. Employees are more involved, the activities here are much better. I think we're doing a great job here and I really enjoy HID

JULIE CORDERO, ON CAMERA:

I like that as an individual I can express decision making. You feel good about what you do here. I like being part of groups.

DAVID CULLEN, ON CAMERA:

I think what sets us apart is that we are absolutely committed to being the best we can be. That sounds kind of campy, but I think that's absolutely true here. We truly do want to be the best card manufacturer on the planet, and I'm convinced that we will be if we're not already.

NARRATOR VO:

TO HELP WORKERS UNDERSTAND THE CONCEPT OF LEAN AS IT APPLIES TO THEIR JOBS, H.I.D. CONNECTICUT USED A COMBINATION OF TRAINING OPPORTUNITIES.

BRIAN MONTANARI, ON CAMERA:

Everybody went through a full day seminar with paper airplane simulations and learning to go from a batch production to a lean enterprise. We've done in-house training from basic introduction to lean to 5S. We have spent a lot of time with AME and sending a lot of folks to AME activities. We host a lot of workshops. We go into our many facilities for benchmarking. All our employees have the opportunity to go learn from other organizations. In fact our focus for the next six months is for every employee to go outside this facility into another facility.

JOHN WEBER, ON CAMERA:

But now we feel like we're in a competition and we're in the competition to win, and we're getting the training we need to win the game. It's a continuous training process that we have all garnered new skills, new

abilities, and a new outlook on a win-win situation for everybody involved, from product, customer, and service.

NARRATOR (VO):

WITH IMPROVEMENTS IN DELIVERY TIME AND LEAD-TIMES, THE CONNECTICUT FACILITY HAS CUT SCRAP BY TWO-THIRDS. IN ADDITION, YIELD IS UP OVER TEN PERCENT AND INVENTORY TURNS HAVE MORE THAN DOUBLED.

JOHN ULIANO, ON CAMERA:

You can also see that we are a lot quicker to introduce products to the marketplace. We are also a lot more flexible to the changing needs of our customers, and that gives us significant competitive advantage over our competitors.

GAIL POLLICITA, ON CAMERA:

We have improved our turnaround time for the customer. A customer used to have to wait anywhere from 48 to 72 hours for a proof, and the proof was the first interface basically that the customer had with the graphics department, so it was very important to make a first impression on the customer from a proof perspective.

If you look at cards in relation to the rest of the integration of a reader system, cards are always the last piece. The customer will say my building is ready, my readers are installed, my security is in place, how am I going to run it? I need cards. So the cards are always an afterthought.

BRIAN MONTANARI, ON CAMERA:

One of the pushes we have amongst the executive team and that we're driving, is that we don't want lean to be a mandate. So the phrase we talk about is we mandate without mandating. What that means is we make it part of life. We want to live, eat, breathe, and sleep lean. You have to walk the walk and talk the talk. That's why we don't talk about "we're going to be lean by 2006." There are no "go lean" posters and no flavor of the month programs going on. It's a way of life for us. So very few people downstairs on the floor will talk about "we've got a lean implementation going." This is just the way H.I.D. does business.

NARRATOR (VO):

HAND IN HAND WITH THE JUST DO IT NOW PHILOSOPHY IS AN INCENTIVE PROGRAM. A POINT BASED SYSTEM; IT IS DESIGNED TO ACKNOWLEDGE INDIVIDUAL AND GROUP ACHIEVEMENTS.

BRIAN MONTANARI, ON CAMERA:

We instituted an incentive program right when we started the lean implementation, because we knew not everybody was going to be involved from the beginning. Our incentive program has five ways to achieve points. A manager can give a subordinate a point on the spot for doing something. An employee can nominate another employee for some type of activity or for going above and beyond, and those points are given at the all hands meetings. Balanced scorecards—every group has metrics. If you meet your metrics for the week you get a point. If you meet your metrics three weeks in a row you get double points, but then the goal adjusts to continue to raise the bar. Another way you can get points is through volunteer team participation. If you volunteer to participate on a team and the team meets their objective, then you get points. And the last way is if you're nominated or you receive employee of the quarter. Among all the other prizes you get you get points.

BRIAN MONTANARI, ON CAMERA:

There are many different prizes you can redeem your points for, from things as small as H.I.D. hats, shirts and mugs, to things as big as airline tickets, cruises, and trips to Vegas.

NARRATOR (VO):

ANOTHER KEY INGREDIENT TO BUILDING A LEAN CULTURE IS CONTINUOUS IMPROVEMENT. AT H.I.D. CONNECTICUT THAT IS ACCOMPLISHED THROUGH PROCESS IMPROVEMENT, TRAINING AND A PROACTIVE APPROACH TO HIRING NEW EMPLOYEES.

PAUL MURPHY, ON CAMERA:

We do it through a number of things. Number one, we let our own people go out and talk to these folks on a regular basis. We tend to bring people in through our temp agency, and it gives our employees and our leads the opportunity to evaluate them. What we're looking for first of all is attitude. Does this person have the attitude to be a can-do type person. Do they have a CAVE mentality? CAVE is Citizen Against Virtually Everything. That's the last thing you want to bring it, it's the one apple that can spoil the barrel.

What we want to try to do is first of all make sure they have the right attitude. Then we invest in terms of we do an introduction to lean training, we try to get them on an event, we try to get them to see that they can be part of a solution. We acknowledge them. We acknowledge them through the all-hands meetings, so they see they are being welcomed into the team.

NARRATOR (VO):

WITH A LEAN CULTURE FIRMLY ESTABLISHED, AN EMPOWERED WORKFORCE AND IMPRESSIVE PRODUCTION NUMBERS, H.I.D.-CONNECTICUT SOUGHT TO BRING BACK THE RELUCTANT SALES FORCE.

BRIAN MONTANARI, ON CAMERA:

And one of the things we had to do to improve our production and improve our business, was reeducate our sales force. The same sales force that was telling customers not to buy parts from us, they were our customers. So we brought the managing directors and sales managers in for tours so they could see the drastic improvement. We look at what's happened over time. We were shipping about 400,000 cards a month, now we're shipping 1.4 to 1.5 million cards a month, and that would not have been possible without reeducating our sales force so they would sell our products.

NARRATOR (VO):

IN TRUE KAIZEN FASHION, THE GOALS FOR H.I.D.-CONNECTICUT ARE CONTINUOUS IMPROVEMENT AND TO ANTICIPATE THE CHANGING NEEDS OF CUSTOMERS.

DAVID CULLEN, ON CAMERA:

The next rung on the ladder is what's next for us. You build on what you have, you continue to improve. That's what it's all about, continuous improvement. Never be satisfied with what you've got. It seems every time we fix a problem or come up with a solution for something, it uncovers yet something else we can work on, and I don't see that that's ever going to end. It's just going to continue on forever.

PAUL MURPHY, ON CAMERA:

I think the next stage is further continuous improvement up and down the value stream, up the tributaries. It's not just a single value stream, there's always change going on. It's recognizing that the voice of the customer is going to continue to change tomorrow and the day after, and we have to be out there trying to understand the customer, moving into those uncomfortable positions of asking the customer truly what they want not just what we think they want and what's comfortable for us to ask. We have to get our people out there, we have to continue to extend their understanding, their knowledge, their depth of experience, and continue to use policy deployment and its many assets to leverage that as a company.

BRIAN MONTANARI, ON CAMERA:

The best advice that was given to me, and that I continue to talk to my work force and associates is just do it now, but never forget about the people, it's the people that make you successful.

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