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A PARAGON OF LEAN SUCCESS:

Breaking The Mold At Wiremold

Wiremold is a rare company. It has achieved national and international prominence not so much for the products it makes, but for the manner in which it makes them. Under the 10-year stewardship of Art Byrne, the company was one of the first in the United States to embrace the production and management techniques espoused by the creators of the Toyota Production System. It is a system built upon the lean principles of continuous improvement and just-in-time production with little inventory and huge financial returns.

Byrne comes out of a small cadre of people trained in lean principles while at Danaher Corp. in the late 1980s. When he joined Wiremold in 1991, the company was a small, Hartford-based maker of wire and cable management systems for buildings. Byrne brought his team of consultants with him from Shingijutsu, men who perfected the Toyota Production System, and he

went to work at turning around a company that had no cash, low profits, declining market share and poor customer service.

Since then, the lean system he introduced has sparked a turnaround with results that most manufacturing firms would envy. The company's sales have

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Big Buyers Are Turning To Internet For Savings

Large manufacturers are increasingly using the Internet to buy products, services and supplies, and a growing number of them say they are saving money doing so. "The number of large-volume-buying organizations that reported cost savings from using the Internet grew from 28 percent last quarter to 45 percent for the quarter ending in December 2001," according to the "Report on eBusiness" generated by Forrester Research and the Institute for Supply Management.

During the last quarter of 2001, large buyers say they purchased

9.5 percent of their indirect materials and 6.2 percent of their direct materials over the Internet, up from 7.1 percent and 5.3 percent, respectively, in the third quarter.

"The trend is positive in all aspects of online sourcing," says Edith Kelly-Green, chief sourcing officer of Federal Express. "Companies are acknowledging that e-commerce buying is here to stay and that there are major benefits to be had even though realization of those benefits may take longer than initially anticipated."

Companies are no longer

debating if they should be using the Internet for purchases but where and how it can save them money, adds Bruce Temkin of Forrester.

Organizations are increasing their use of online marketplaces, from 23 percent in the third quarter of 2001 to 26 percent in the fourth quarter; and the use of online auctions is up from 17 percent to 23 percent. "The increase was most dramatic for manufacturers whose use of auctions increased from 21 percent to 29 percent," says Forrester.

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grown by more than a factor of four to \$460 million, or by more than 38 percent per year. Its operating margin exceeds 12 percent. It continues to double inventory turns every two years and has improved quality by at least a factor of 10. The company offers 35,000 products, each of which it is capable of producing every day.

Byrne is unique in the world of lean, in that he has stuck with it for so long. "He transformed Wiremold into a true lean business by deploying the two key principles of lean: continuous improvement and respect for people," says Bob Emiliani, director of Rensselaer's Center for Lean Business Management in Hartford. "Most people who do lean focus on the continuous

improvement aspect and as they improve productivity, they get rid of people," says Emiliani. "Art is unique because he understood the synergy between the lean tools and leadership. Most people don't understand that."

The leadership aspect of lean is a daunting challenge because so much of what is required in implementing the business system is counter intuitive. Adjusting an organizational structure to the concept is an exercise in politics, adds George Koenigsaecker, who introduced the concept to Byrne while working for him at Jake Brake, a division of Danaher, in the late 1980s.

If you're the CEO, there is not a lot of upside" to introducing a lean

system, says Koenigsaecker, who ran The HON Company in the 1990s and is now a principal with the Simpler Consulting firm. "If you've made it to the top of your own firm you may be on the last five years of your work career. It's almost a Catch 22: by the time you get to the top you're probably worn out from all the politics and battle to get there. Not many CEOs have the willingness to put that much energy into really shaking up their organization. Lean has to be led, not managed."

Manufacturing News editor Richard McCormack discussed the management challenges facing Wiremold with its CEO Art Byrne. Here is some of what he had to say:

Q: What advice do you have for companies that are considering adopting a lean manufacturing strategy?

Byrne: You can't look at it as a manufacturing thing. Companies that look at lean as a manufacturing exercise can't do it. Most companies say lean and then put the word manufacturing after it. They get the manufacturing guy to go to a workshop to see if there is anything there for them. When you approach it that way, you can get some benefit, but it's not what you're going to get when you adopt it as a business strategy.

People call us all the time wanting to come here to see what we're doing. Over the years we've seen a lot of different companies and people start this, and mostly they fail. The bigger companies fail at this quite badly because their emphasis and strategies are somewhere else. I've watched companies create a manager for lean and a separate guy for total quality, and all they do is get themselves and the whole organization very confused.

We've seen cases where a company says we want to do lean and we need someone to come help. Someone tells them what they need to do and they say, "Oh, we didn't think we needed to do all those things, so we'll pick one aspect from over here and one over there."

Q: Is the place to start a lean implementation in the production area of a company?

Byrne: You have to start it as a business philosophy. If you don't look at it as a business philosophy and as an approach for the way you're going to run your overall business and how you're going to beat your competition, then you're going to suboptimize anything you're going to do.

Q: How about companies that try to adopt lean by

implementing just-in-time production practices?

Byrne: There is always another word after just-in-time, which is usually just-in-time inventory. The concept is you take it to most of your suppliers and beat the heck out of them. The automotive companies are famous for this. It never became a business philosophy.

Lean is the same way. It has gotten the word manufacturing stuck in after it so people think, "Lean manufacturing, oh, that's something we can delegate down to the manufacturing guys."

Yet if you do that, what you find is that nobody told the sales and marketing guys what this was all about. They're off doing things that are anti-lean. They're doing things that make it eight or 10 times harder to do anything resembling lean. They're putting in massive sales promotions; they're doing end-of-the-month deals; they're trying to load up the distributor. All of these behaviors are anti what you're trying to do in the factory.

Q: What is the most common cause of failure among companies trying to implement lean?

Byrne: We've watched a lot of companies fail because lean doesn't seem to apply to accounting. Some of the toughest barriers are the accounting and the computer systems that are set up for batch or standard cost. We get a lot of people who come here and say, "Can you have your finance guy come and talk to our finance guys because we've been doing lean for quite a few months now but our finance guys are killing us. They still want the old measurements. They want to look at things the old way. They're not giving us the data that we need and we're all just confused."

You make it so much harder for yourself if you think

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of lean as a factory thing. Most company presidents and CEOs are not comfortable in their factories. They come out of finance or marketing and so manufacturing is just something that should happen. They often have a manufacturing guy who says, "Just leave it to me and I'll take care of it." This is the way most manufacturing guys behave, but trying to get the entire organization to change is difficult.

Q: How important is it to have the buy-in from the CEO?

Byrne: The advice we give to anyone who talks to us is if you can't get the CEO to lead this, then don't start because you're just wasting your time. You're going to get more confused. You're going to give the whole idea a bad name because you're not going to be successful and you're going to make it impossible for someone to come along later and do it because everyone in the organization will say, "Oh, we tried that and it failed." It failed because you set it up to fail.

This is a major, strategic, cultural change. If you go to Toyota you hardly ever find senior executives who haven't at some point during their career spent a couple of years on the shop floor doing kaizen. The culture in their company demands that. If you don't know how to do it and if you don't know what it's all about, you're not going to be successful in that company.

Q: More companies are outsourcing their production or moving it to Mexico or China. Is that a good way to reduce costs and stay competitive?

Byrne: You really confuse people when you have a major thrust in outsourcing and you've got another major thrust of doing lean. You can almost guarantee that when a company has that dual thrust, the real thrust is to move everything to Mexico because lean is a much harder thing to do than move everything to Mexico. The organization will take the easier route all the time.

On a piece of paper you can say, "Wow, if I move to Mexico, I'll have the same number of people and they cost 75 percent less. Man, look at how much money I can save. Let's go."

No one thinks about how long you're making the supply chain or how much inventory you're going to put in the system, or how difficult it is to get back into stock when you're out or any of the other potential problems and the costs associated with those problems. It's hard to quantify those costs. It's easy to say, "I have

100 people in Indiana who cost \$20 an hour and if I have the same 100 people in Juarez and they cost me \$3 an hour, shizam, let's go."

Q: Is there a temptation for Wiremold to move production, in that you can set up a lean operation in a place where you're paying people \$1.25 an hour, and potentially really whip your competition?

Byrne: We don't have that temptation at all, although we have a factory in China that is a very good lean factory and a lean factory in China is almost an oxymoron. People go there and they have three times the number of people they have somewhere else and think nothing of it because the labor costs are so cheap. We went there to sell product into China.

Q: Is there any way to make a lean implementation easier than it is?

Byrne: You have to think of companies as nothing

but a collection of people. My collection of people competes against your collection of people to service the same customer. If you want to go lean, how are you going to do that? What you need is knowledge.

We can tell you all the principles in about 20 minutes. They're all simple. They make perfect sense. If that's the case, why don't I just tell my guys, "Look here are the two pages of principles, go do this." Why can't they do that? What's so hard?

It's a people issue. That's why it's hard. Getting people to change to do things differently than they have done them is really, really hard.

You can give them the principles and say we're going to change, but what happens is you get down the path a little way and you have a bunch of guys in a meeting and they're all excited and then one guy says what happens when this occurs? Oops, we don't know how to solve that, so let's just go back to what we know and what we know is batch or some form of batch.

The key for a company that has no knowledge but has a CEO who wants to do it is obtaining the knowledge. That is the key. How do I obtain the knowledge of how to start this? Where do we start? How do we organize? You have to have the knowledge that pushes you through the barrier of being in that meeting when nine out of 10 guys say you can't do that, it will never work.

Q: Are the successes achieved by Wiremold or Toy-

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"You have to have the knowledge that pushes you through the barrier of being in that meeting when nine out of 10 guys say you can't do that, it will never work."

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ota enough to motivate more companies to adopt a lean system?

Byrne: As a general rule, no, not at all.

Q: Why?

Byrne: In lots of discussions with CEOs over the years you say, "Here is a list of what is possible." It's a list that should knock their socks off, and you say: "By the way, it's not capital intensive at all. There is no capital involved and you can get these gains."

People don't believe it. They say it's not possible — that those gains are too big. If they do believe that you did it, then they say, "I can understand how you did it, but you're different from us. We're bigger or we're smaller or we're in a different industry, or we have plants in other countries, or you can't transport this overseas, or what if it fails?"

I've heard all the excuses.

Companies don't do it in general because they say they're doing just fine. They don't see any pressure. They have good customer service. They say, "Well we only turn inventory three times, but everyone in my industry does the same thing and I need to do that to supply the customer and even with the three turns I have some customer service issues once in a while but I'm making good margin, I'm growing, I have a little market share, why should I want to go do this other thing?"

These are very traditional batch and queue operations that invest like crazy in automation. That's a very capital intensive go-gain-market-share kind of approach. They are very willing to invest in big automation on a forecast before they even know they're going to have a market or not. It's the opposite approach to the one we take.

Q: How important is it for you to have an outside consultant involved in the implementation?

Byrne: Let's go back to the example of the CEO who wants to do it but he has nobody in his company who knows how. How do you break that barrier? Well, you need outside consultants to show you how to organize the approach; how to go about it; how to set up a program and then come work with you on a regular basis. What they're doing is training your people how to think differently. Without the outside consultant it's just about impossible to do this.

You might be able to hire someone from outside your company who has done it someplace else. The problem is you have to be careful with that because there isn't a manufacturing guy out there who doesn't have a resume that says he is a lean expert — a Mr. Just-In-Time who has done it all. We see those resumes all the time and most of them are nonsense because there aren't many companies doing this. What you have are guys who know some buzzwords, but are basically batch guys.

There are very few guys in the United States who can really do this type of consulting work. The network of most of the people doing this has grown out of a very small group from Danaher. If you look at companies that are successfully doing this, you'll find a Danaher connection to it and some Shingijutsu connection to it.

Q: Are you still using Shingijutsu at Wiremold?

Byrne: Absolutely. And they're still teaching us stuff. I have people who say we can cut back now because we know how to do it. And I say no way. The day I let them out of here or let off the consulting pressure I'm putting on people is the day I start going backwards.

Q: There is no easy or fast way to implement a lean business system, is there?

Byrne: This is a physical thing. You can't just reprogram your computer system and, baboom, off you go. That was the promise of MRP. It never worked. It's a lazy man's way of doing it.

This is physical. You're going to have to move every machine in the factory maybe six or eight times. When you say that, you get the: "Oh, gee, we don't want to do that because we haven't moved any of these machines for 20 years. You want to move them six or eight times

"When they find out that you're really kind of serious, now you're going to get The List. This is the list of why it can't be done. And you know what? It will be a pretty good list."

over the next three years?"

"Yes."

"Well how do you know that?"

"Experience."

"Oh, that sounds like it's going to take a lot of effort and maybe we shouldn't start down that path. Couldn't we do something else?"

Let's talk about setup for a second because it helps to answer your question.

Say you ran a company and it takes three hours to changeover and you came and spent a day with us and you went home, got all of your setup guys in a room and told them: "I've seen it. This is it. It has taken us three hours to change over for the last 25 years and as of now, I need you all to change over in less than five minutes."

These guys have been running their machines for you for 20 years and you come in and tell them this revelation. What do you think they're going to say to you?

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First of all they'll think you're nuts. They'll say: "Haven't you learned anything in all these years you've been here? You know it takes this long."

When they find out that you're really kind of serious, now you're going to get The List. This is the list of why it can't be done. And you know what? It will be a pretty good list. It will make a lot of sense. Unless you're good at this, unless you know how specifically to do this and to show them how to do this, it's impossible for you to overcome the list because the list comes out of the guys who do this every day. They're going to tell you why you can't do it. So are you stumped?

This is why people fail. They're stumped.

What are you going to do when they give you The List? How are you going to show them? You can't just tell them, you just tried that and it didn't work. So now you're forced to show them that this can happen. You're forced to make them understand what is possible.

When I arrived at Wiremold, we had 1,600 different dies and we had to get them all to the same shut height. What do you think people said when I said let's do that? They said, "But there are 1,600 dies. Do you realize what a project that is going to be?" I said, "Yeah. If we don't get started now we probably won't ever get there. So let's start with the ones we use the most and go from there." We had people working full time doing nothing but converting dies to the same height for three or four years.

Q: Wiremold is now 10 years into the process. Have the barriers changed over time?

Byrne: The fundamental barriers are always the same but sometimes the next barrier is harder than the first barrier. Putting in a really well functioning kanban system was a harder barrier than getting from three-hour setups down to two-minute setups. Getting the kanban system to work smoothly was a harder barrier than moving into one-piece flow cells. That stuff is pret-

ty easy.

As you get to new levels, some of those barriers don't seem like they should be harder, but they are because you have to have a discipline across every aspect of the company. You have to switch from making things on an MRP system to making all of your products using kanban cards. To replenish something can create three or four or five — maybe even six — additional layers of kanban cards. To get people to understand that and try to implement that takes a lot of time.

The main barrier is always the same. It's always people. It's not a technology thing at all. This is technology simple. We don't make a lot of capital investments.

Q: How do you get people to take the next step? How do you get them to understand that there are another 20 steps after that?

Byrne: The difficulty might be Western economies in general and the difference between Christian and Eastern religions. We believe in an absolute — a beginning and end. You die, that's it. In Asia, you can come back as a cat, a dog or a prince. You can come back a lot of times. So there is never an absolute ending.

We translate that into, "I did a kaizen, this is the most perfect way to do it, period. Never go back and look at it again." That's a problem. The Japanese will go back and look at something 40 or 50 times. We've kaizened every part of our business — every cell, every process — multiple times. You just have to keep going back. We are never going to stop. The crazy thing is that maybe the first time through you get a 50 percent productivity gain, the next time through you're going to get 100 percent. That is a mindboggling thing for people to think about.

Q: Do you see the same results the eighth time through?

Byrne: Yes. With one of our initial cells, we went from eight people down to four, a 50 percent productivity gain. Then we went from four to two, same thing. Then we went from two to one. The percentage gain

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was much bigger.

Q: Can you go from one to none?

Byrne: You effectively do that by incorporating other things into their jobs. One person is now doing two or three other rows of tasks.

Q: Do they rebel against having to do so much more?

Byrne: The amazing thing here is that the main people barrier isn't the people on the shop floor doing the work, it's the middle management. The managers fight this more than your shop floor people because it's a bigger threat to them. If you spent the last 25 years putting in a manufacturing system for your company and I show up, take a plant tour and we come back into the office and I say, "Look, I've seen it and it's all no good." What's your reaction to that? "Hey, I've been doing this for 25 years, who are you to come in here and tell me that? You don't know my business; you don't know my industry; you don't know anything and I've been told for 25 years that I've been doing a great job. I've been promoted. I've gotten raises."

"If you want to compete with me and you are doing batch and I'm doing lean, then over time, I'm going to kill you. I'm going to take your market share. You just don't have a chance."

Your tendency is to fight me. The number of people who would take the approach of saying, "Oh, really, you think so, can you show me how to make it better?" — as opposed to, "Screw you." — is very, very small. Less than 5 percent of the people say, okay, show me. Most people are defensive, so you have to get over that.

I have seen so many organizations where the CEO gets enlightened. He wants to do it and someone tells him he has to have outside consultants. He brings them in and gets them started. The manufacturing guys work on it and after five or six months they've made progress. Then the manufacturing guys come back and say, "You know boss, we know how to do this now. It's great. These guys really taught us a lot but we don't need the expense of these consultants any more. So if you want we can dump them in next year's budget."

As soon as they dump them, they start running back-

wards because it takes three to five years to get a guy who never had exposure to this to a level of competency that would allow him to push the ball forward if you pull away the consultants.

Q: Do you think it is inevitable that lean will become the operational mode of production in the United States?

Byrne: Over time that is true. If you want to compete with me and you are doing batch and I'm doing lean, then over time, I'm going to kill you. I'm going to take your market share. You just don't have a chance.

But for some period of time you can have two-and-a-half or three inventory turns. If there is enough margin in the industry and there is growth for both of us, you can be a pain-in-the-neck competitor to me for quite some time. But as I go through cycles, you won't be able to compete with me because what will happen is that in order to have a short lead time, you'll have to keep adding inventory, which is more investment. You're going to need more space and more people. I don't need any of that stuff. My costs are much lower than yours. I'll be able to tell the customer that I can give them a two-day turnaround and the other guy is promising six weeks.

We're now trying to teach our distributor partners how to turn their inventory of our product over 10 times because most of them are running an MRP system. Most distributors are very traditional and tend to turn it only three times. A good guy might turn it five or six times. We're saying, "Hey, wait a minute. We can show you how to turn this stuff 10 to 15 times, Wouldn't you like to do that?"

An electrical distributor doesn't make a lot of margin. The whole industry makes 2 percent pretax. That is nothing. So how they manage their asset base, which is almost all inventory in a few warehouses, is really critical to them.

Yet most of the manufacturers in our industry are trying to load them up with product. They're saying, "If you buy a trailer load, I'll give you another five off." They're trying to sell them trailer loads because their manufacturing process makes 50 trailer loads at a crack.

But they don't need a trailer load. They don't even need a tenth of a trailer load. What they need is a small amount of stuff and spin it a lot. Why would you carry four months' worth if I can show you how to carry two weeks' worth?

Q: Is that a hard sell?

Byrne: Yes, it's always been a hard sell. If I go back to my Jake Brake days when George Koenigsaecker was working for me running Jake Brake, we were an awful supplier to engine companies like Cummins and Caterpillar. As we got better, the next logical step was to talk to the customer because we could make every product every day but he was ordering in big batches once a month. Why did he do that? Because we taught him to do it that way because our performance was so lousy.

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Now that our performance was better, we had to teach him to order in a different way.

We started with Caterpillar, and they were ordering big batches once a month. And we said, "How about if you order once a week?"

We would go and tell them why it was logical and they would understand it and say we'll try it. In about a month or two they would be back saying, "This doesn't work for our MRP and all of our computer systems. We're going to have to go back to once per month." They went back for a period but we kept selling them and they tried it again. You had to work with them in order to show them how to order once a week.

When we got them down to once a week, we said, "Let's do this a couple of times per week and then three times a week." Then we tried to get them to order every day. They understood fundamentally that it was good for them, but their systems and processes weren't set up for this.

It's the same for an electrical distributor. When we tell them that we want them to turn our inventory 10 or 15 times, they understand instantly that that is a good thing, particularly the owners. They ask, "How am I going to do it?" You have to teach them down to the right levels in their organization. You might get the owner to say fine, but if you don't train the guy who is ordering stuff every day off MRP to treat us differently, the computer spits it out and he orders it once per month.

Q: How able are electrical distribution customers at handling a lean replenishment system?

Byrne: The distributor with a low margin looks at a measurement that is called gross margin return on investment. They're really using the gross margin that they make on your product and the inventory that they carry in order to calculate a ratio. It's a complicated calculation, but a ratio of 1.2 times is pretty good. It says the gross margin they make on your product is about 1.2 times the amount of inventory they have to carry, as a rough calculation. Anyone in the 1.2 range is considered a pretty good supplier. Below that, there is a problem because they have to carry too much inventory or their margins are low.

If you take their inventory turns from three times to 10, all of a sudden, gross margin return on investment jumps up to two-and-a-half. Now you're almost off the charts of anybody that they would buy from. On their measurement criteria you have become probably the best vendor that they have not by a little bit, but by quite a lot.

What we've found is that as we teach these guys how to bring inventory down, they can also spread it out by carrying more odd fittings and a bigger array of stuff. As a result, they get to be known in their town as the guy who, when you need the odd Wiremold fitting, you can always call and he has it.

We've had guys come back to us and say, "We started doing this and my gross margin on investment went

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The Parts Hotel

By Art Byrne

Welcome to the Parts Hotel
It's really quite the place!
We love our parts so very much
We give them lots of space

They come on in to get a rest
We treat them all the best
They lay about for weeks or months
Just waiting to go out

We love for them to gather dust
In this we really trust
And sometimes if we're lucky
They stay long enough to rust!

They have a lot of fun here
They make a lot of buddies
We feel we can sell them for more money
If they get a little cruddy

The hotel is really spacious
The racks go to the sky
If we understand the waste here
We'd all break down and cry

The parts fly in but don't go out
They hope that they'll grow old
I'm sure you'll understand this
Their only other option is to finally get sold

They really like the staff here
They treat them with such care
Especially Dame Barbie
And the hat that hides her hair

The location is also special
It's dark and out of the way
It's really pretty famous
They call it the ICA

But now the massive Parts Hotel
With its racks up to the ceiling
Has been exposed as massive waste
And has that shrinking feeling

Dame Barbie has responded well
The racks are coming down
Soon there will be no Parts Hotel
And no extra parts doing nothing by lying around

Byrne penned this poem shortly after Wiremold acquired Walker Systems Inc, and he toured that company's large inventory control area (ICA). Barbara Looney was manager of the ICA department. Her response is on page 11. Both poems appeared in the Jan./Feb. 1995, "Target" magazine.

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way up but also my sales grew, my margins grew and everything got better because people started coming to me looking for these products. It's great for them and it's great for us."

Right now, they all order on MRP and so they order nothing, nothing, nothing, then order three months' worth. That's how MRP works. If a bunch of them happen to order their three months' worth on the same day, we get big spikes and that becomes a nightmare for us to make some of this stuff because we don't carry much inventory.

The more we can teach them to order every day, and turn their inventory 10 or 15 times or higher, the better for us, the smoother the incoming order patterns are for us and the easier it is for us to satisfy what they need on a daily basis.

Q: Is there a good MRP system that deals with the lean approach?

Byrne: Not that I know of.

Q: Are people better off junking their MRP systems?

Byrne: Yes. We got off of it pretty early and then went to a card system and that was a nightmare for

quite some time because it wasn't a real good one. It was spotty. We had lots of fits and starts over kanban, which was a big issue for us. That's working pretty well now.

Q: Does kanban migrate from being something other than cards?

Byrne: It will probably still be card based.

Q: Is there a good kanban software program?

Byrne: No. We started out going to Toyota's kanban [software] system. We were the only guy in the United States who was not a Toyota supplier or tied into Toyota that was using their system. But we couldn't get the software support out of Japan. So this past year we switched and created our own version of it that we can support and grow.

Q: Can the Internet provide leverage in the lean system?

Byrne: Most distributors bar code scan items as they go out the door. We would like for them to convert that into a memo to us and we'll consider that an order and we'll accumulate everything they're selling every week and ship it to them as replenishment. We used to ship our products on common carriers, but we implemented our own trucks and we supply 60 or 70 percent of our distributors every week at a certain time. We're very consistent on that schedule. They can count on the fact that the Wiremold truck will be there between 10:00 and noon every Thursday.

One of our early first-starting-out business philosophies was make every product every day. I don't have an order for every product every day, so I'm not literally going to make it. I just have to be prepared so that if I get an order I can make every product every day.

Q: Is the Internet a big deal in all of this? Is it an enabler?

Byrne: Not so far. We'd like to be able to get orders over the Internet and that will speed up the information flow, but you still physically have to make the stuff. You physically have to move it. You physically have to buy parts. Things are still done physically.

We buy parts from suppliers based on kanban. The cardboard vendor comes in the morning and he delivers what we ordered yesterday in the afternoon and we give him a physical fistful of kanban cards. We had gone to his location and done kaizens to show him how to deal with these kanban cards and put them on the next bundle of product. In the after-

(Continued on next page)

In Loving Remembrance ICA

Born: Three days before Dirt
 Departed: September 1994

We are here to pay tribute to the end of the good old ICA,* the last racks are down and all the parts have gone away.

We don't really need last rites for this wonderful open space, why cry, when we are learning to pick up the pace.

We now have many opportunities to expand and grow, if we don't trash this space who knows where we can go.

Miss ICA, but let it go, and get with our program "one-piece flow."

Good old ICA protected our parts and stored them for years, but the multi-million dollar burden put King Arthur in tears.

This huge monument to waste has become totally obsolete, you'll soon see Kanban and Visual Control is really hard to beat.

So as we lay this old inventory system finally to rest, like birds leaving the nest we must all join the quest.

To some losing ICA may seem like a great tragedy, but we all know Wiremold has a clear strategy.

— Dame Barbie (Barbara Looney)

(* ICA was the Inventory Control Area at Walker Systems Inc.)

Wiremold... (Continued from previous page)

noon, he'll come back and give us bundles of cardboard with the kanban cards on these bundles that we gave him in the morning.

So what do we need the Internet for? We want to physically give him these cards so he can physically put them on the product so we can keep track of them. In cases like that we don't really need it. But I can see some uses for the Internet with our communication with other suppliers, like our steel supplier, who is farther away and we have to communicate with him electronically.

At the end of the day, it's all physical.

Q: Is your inventory turn figure the key measure for your business?

Byrne: We use about five or six measures and if you want to say that's too many, I would tell you to use only two measures: inventory turns and customer service. If you could have customer service going up and inventory turns going up at the same time, I can just about guarantee you that you are doing a good job every place else.

That is the antithesis of how most people think about business. Most people accept low inventory turns as a necessary evil in order to have good customer service. They think about it in the exact opposite way.

We found that the more we can turn inventory, the faster we can turn it, the better our customer service gets. In order to turn it that well and have good customer service, you have to have good quality, good costs and good productivity because those things are all linked.

In our language internally, we see inventory as the root of all evil because it is. It's only there for bad reasons. If you were better you wouldn't need to have it. When you go to a huge Toyota factory — and huge is like a city — and you ask them how much inventory they have and they hang their head and say, "We are very baaad today, we have point eight days of inventory and we're supposed to have point five." You just want to go out into the parking lot and shoot yourself. Then you go onto the floor and see it.

People around here are running around with three or four months' worth. Look at a company like Boeing. When they finish their product it flies away. Not too long ago, they were turning inventory one time — one time. If they turned it 10 times, they would free up \$15 billion in cash. And you ask: What's wrong with man-

agement's thinking that they wouldn't be interested in turning it 10 times and generating \$15 billion? Why aren't shareholders screaming for that?

The reason for it is they don't believe it, and even if they believed it, they don't know how to do it. They've got a whole organization that is telling them it can't be done. How's one CEO going to go against this whole organization that is telling them that this can't be done because they are Boeing and they are different?

Q: Boeing is trying. Lean is a big deal at Boeing.

Byrne: Lean is a big deal at Boeing down below the top two guys unfortunately. Maybe they're coming around, but I don't think [Boeing vice chairman Harry] Stonecipher will ever get it and [CEO Philip] Condit never will either. We've had over 150 people from Boeing come through Wiremold. I know a bunch of the people out there and have had conversations with them. This is something that is going on down below. The senior guys haven't bought into it. Stonecipher doesn't care how you do it. All he cares about is that the cost be lower than it was last year.

Q: Did your life change after your story was told by James Womack in the book "Lean Thinking?"

Byrne: Not really. The kaizen world in the U.S. is a network. I know a lot of these guys because a lot of them used to work for me. We had a lot of requests for factory tours just off my personal network. The requests from people wanting to come through here jumped up after Womack's book, but we had a very simple solution to that. We said, "We know that unless the CEO leads this it won't be successful, so if you want to come here, you have to bring your CEO."

That cut out almost all the manufacturing tourists. We didn't even have to worry about it. We said that's our rule and if you don't want to abide by it, you can't come, period. Most people couldn't do that.

"If you could have customer service going up and inventory turns going up at the same time, I can just about guarantee you that you are doing a good job every place else."

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