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MANUFACTURING INSIGHTS

Supply Chain Collaboration: Engineering a Lean Supply Chain

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MUSIC UP AND UNDER

NARRATION (VO)

MANUFACTURING INSIGHTS, MANUFACTURING ENGINEERING MAGAZINE'S VIDEO SERIES FOR PROCESS IMPROVEMENT.

NARRATION (VO):

THIS PROGRAM EXPLORES THE BUSINESS PRACTICE OF SUPPLY CHAIN COLLABORATION AND EXPLAINS HOW COMPANIES ARE ENGINEERING A LEAN SUPPLY CHAIN.

WE WILL SHOW WHY COLLABORATION BETWEEN CUSTOMERS AND SUPPLIERS IS SO IMPORTANT AND WHERE YOU CAN LOOK FOR WASTE IN YOUR SUPPLY CHAIN.

NARRATION (VO):

YEARS AGO, MANUFACTURING COMPANIES WOULD MAKE MOST OF THE COMPONENTS THAT MADE UP THEIR PRODUCTS. BUT NEW COMPETITIVE PRESSURES HAVE MADE MANUFACTURING COMPANIES REALIZE THEY NEED TO BE PART OF A SUPPLY CHAIN AND FOCUS ON THE PART OF THE PROCESS THEY DO BEST.

NARRATION (VO):

MOST MANUFACTURING COMPANIES ARE PART OF A MULTI-LAYER SUPPLY CHAIN. MANY

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TIMES 4 OR 5 OR MORE DIFFERENT COMPANIES ARE RESPONSIBLE FOR THE DESIGNING AND MANUFACTURING BEFORE THE FINAL PRODUCT REACHES THE CUSTOMER.

THE CONSTANT FLOW OF MATERIALS AND INFORMATION WITHIN THESE SUPPLY CHAINS CAN CONTAIN A LARGE AMOUNT OF WASTE IF NOT MANAGED PROPERLY.

TO GET SOME EXPERT ADVICE ON THE ACTIONS MANUFACTURING COMPANIES CAN TAKE TO IMPROVE THEIR SUPPLY CHAINS, WE SPOKE WITH GREG HUTCHINS. GREG IS A PRINCIPAL WITH QUALITY PLUS ENGINEERING IN PORTLAND, OREGON, AND THE AUTHOR OF MANY SUPPLY CHAIN AND QUALITY-RELATED BOOKS.

WE WANTED TO KNOW WHAT HAPPENED TO MAKE SUPPLY CHAIN COLLABORATION SUDDENLY SO IMPORTANT TO MANUFACTURING COMPANIES?

Greg on camera 03.13.06 – 03.14.14 We've had a significant change in supply management over the last five years, probably much more so in the last two years, where it's gone from a technical activity to what's become a critical strategic activity. We've seen too many examples in the auto industry or even in aerospace, where little problems in the supply chain suddenly become critical issues to a company. Why? Because there's exposure, there's risk. One of the biggest areas is, in the auto industry, if there has to be a callback. A recall is very expensive. Ten thousand or 100,000 units having to be recalled and having somebody in the shop have to repair that at $60-80/hour runs to many millions. And of course we have Ford/Firestone which highlighted a lot of this. So management is focusing on risk as their number one decision.

NARRATION (VO):

BESIDES THE INCREASED AWARENESS AND COST OF RISK, OTHER CHALLENGES HAVE FORCED CHANGES IN THE SUPPLY CHAIN.

Greg on camera 01.04.45 to 01.05.55

The model for management used to be called vertical integration. Soup to nuts. You took everything (edit laugh) from the steel to all the parts in between, you machined them, and you came up with a final product. That normally could entail 20-30 separate discrete operations. Also 20 or 30 discrete operations in plants all over the world or all over the United States. The problem was managing and controlling them, and ensuring quality became a very difficult process. So the idea was, gee.. why don't we take a lot of these discrete processes, which frankly in many cases we weren't best in class in, and move those offshore or with other suppliers. The second thing is, quite frankly, the cost of doing business in the United States became very high. The third item is, our market largely became offshore, international, so we wanted to build production capability in those markets

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where our customers were.

NARRATION (VO):

WHILE INTERNATIONAL QUALITY STANDARDS HAVE BECOME ENTRENCHED IN SOME INDUSTRIES, MANY COMPANIES HAVE AVOIDED CERTIFICATION AND, AS A RESULT, LIMITED THEIR POTENTIAL CUSTOMER BASE.

Greg on camera 02.03.00 – 02.04.26 Of course we'd all love to deal with suppliers that are Six-Sigma or world class, but the reality is that most suppliers are not going to be world class. They stamp metal, they supply commodity products such as screws. They've been doing this for 40 years, they're very good at what they do. They might not have the formal systems, procedures, certifications like ISO 9000, but they've been doing something very well for 40 years, and they're going to ask what's in it for me to spend $50,000 to become QS or ISO9000 certified. And it's a fundamental question, a very good question. But the reality of the game is, a lot of companies, especially the larger customers, are going to look down the supply chain, first to fourth tier, and say this is the cost of doing business. The supplier should realize that times are changing.

NARRATION (VO):

BY FAR, ONE OF THE MOST IMPORTANT DECISIONS A COMPANY MAKES IS THE MAKE-OR-BUY DECISION.

Greg on camera 01.27.06 – 01.27.46 It's very simple, are we going to make the product and source it, or are we going to outsource it and buy the product. The reason that decision is so critical is that more companies are going to focus on their core competencies. So if 80% of that manufacturing dollar is outsourced, all of a sudden purchasing or materials management or whatever we call that function, is going to have a lot more power in the company.

NARRATION (VO):

BECAUSE OF THE MAJOR FOCUS ON YOUR SUPPLY CHAIN, COMPANIES NEED TO IMPROVE ON THE INTERNAL COMMUNICATION BETWEEN PURCHASING AND ENGINEERING.

Greg on camera 01.07.52 – 01.08.23 It's internal, all the internal communications. There's a huge amount of variability there. Managing that down into the supply base, the first tier, second tier, third tier supply base. Everything in terms of engineering prints, communicating what's critical on the print; communicating what are the special requirements, whether you have a specific quality attribute on the print that needs to be SPC, that type of information.

NARRATION (VO):

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SO WITH ALL THE EFFORT TO DEFINE YOUR CORE COMPETENCIES AND MAKE BETTER MAKE-OR-BUY DECISIONS, WHAT ELSE NEEDS TO HAPPEN TO IMPROVE SUPPLY CHAINS?

Greg on camera 03.21.54 - 03.22.18 A lot of purchasing people do not have, and when I say purchasing, the reality is a lot of manufacturing engineers, a lot of agents and buyers, a lot of quality engineers, don't have the maturity and the knowledge and the management wherewithal to deal with suppliers and integrate their capabilities with the core capabilities of the organization.

NARRATION (VO):

"CORE COMPETENCIES" IS A FRESH TERM TO SOME OLDER ORGANIZATIONS BECAUSE THEY HAVE ALWAYS VIEWED THEMSELVES AS HAVING THE CAPACITY TO "DO-IT-ALL."

Greg on camera 01.02.31 –01.03.01 I think the reason why supply chain management is becoming so critical is that most companies are focusing on their core competencies. It's that old expression "Stick to your knitting." So a lot of folks, meaning a lot of companies, are doing what they do well, focusing on what they do well, that basically satisfy specific customer requirements. The idea is that once you focus on what you do well, outsource everything else.

NARRATION (VO):

MANY PEOPLE WILL MISTAKENLY LOOK AT COST OR PRODUCTION NUMBERS TO FIND WHAT THEY DO WELL.

Greg on camera 03.18.47 – 03.18.59 The key issue for a supplier is <u>what</u> do I do well, it's *not* how many products can I punch out, what's my unit cost. It should be <u>what</u> do I have that a customer <u>wants</u> that can be integrated into their value process.

NARRATION (VO):

MOST LARGE COMPANIES ALREADY HAVE A BUSINESS MODEL THAT DICTATES WHAT ITEMS THEY WILL MAKE INTERNALLY. ON THE OTHER HAND, SMALLER COMPANIES WHO TEND TO BE MORE FLEXIBLE AND CAN BE QUICKER, NEED TO STAY IN CLOSE CONTACT WITH THEIR CUSTOMERS, SO THEY CAN BE READY IF THEY ARE ASKED TO TAKE ON NEW RESPONSIBILITIES.

Greg on camera 01.13.31 –01.14.01
The smaller company needs to know really two things. One, what does their prime customer want from them, what's their business model. And then from there, develop core competencies that are aligned with the larger customer. If they don't, they're going to be competing on price. They don't want to compete on price, they want to compete on their core competencies.

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NARRATION (VO):

AS COMPANIES BEGIN TO ORDER PRODUCTS THROUGH ON-LINE AUCTIONS TO GET THE LOWEST PRICE, THEY MUST ALWAYS MEASURE THE BOTTOM LINE COSTS ASSOCIATED WITH THIS NEW STYLE MARKETPLACE.

Greg on-camera 03.09.20 – 03.09.50 A partner relationship, by definition, is mutually beneficial. The problem with a lot of these on-line auctions is that the relationship is one point in time, it's low-price oriented, and basically I'm not going to be getting margin, or the margin that I would expect as a supplier, because all I'm doing is supplying a product, I'm not integrating my process with a customer.

NARRATION (VO):

SIMPLE COMMODITY PRICING WORKS WELL IN ON-LINE AUCTIONS, BECAUSE THESE TYPE OF TRANSACTIONS REQUIRE NO INTEGRATION, AND HAVE FIXED REQUIREMENTS. BUT THE MORE COMPLEX AND CUSTOMIZED YOUR PRODUCTS ARE, THE MORE THEY REQUIRE CONSISTENT COLLABORATION BETWEEN PARTNERS THROUGHOUT DESIGN AND MANUFACTURING.

NARRATION (VO):

AN ADVERSARIAL RELATIONSHIP BETWEEN GENERAL MOTORS AND THEIR SUPPLIERS INTENSIFIED SEVERAL YEARS AGO WHEN GM PURCHASING DEMANDED 5% COST REDUCTIONS. SOME COMPANIES ARE STILL FRIGHTENED WHEN A BIG CUSTOMER WANTS TO COME IN AND DO AN "AUDIT". BUT MANY COMPANIES ARE READY TO WORK AS PARTNERS WITH THE RIGHT COMPANY.

Greg on-camera 02.25.03 – 02.25.40 All suppliers are not created equal, by definition. Those suppliers that we're going to be partners with are going to be much higher on the maturity or robustness curve than other suppliers. What do I mean by a supply maturity curve? Think of it as a series of steps. Suppliers are going to be selected based upon candidacy. Then they're going to become approved, then they're going to be certified, then they're going to be supply partners. Those supply partners are going to be treated differently than those who are low on the maturity curve.

NARRATION (VO):

EVERY BUSINESS MUST DECIDE WHERE THEY ARE ON THIS COLLABORATION MATURITY CURVE AND MAKE A STRATEGIC CHOICE AS TO WHERE THEY WANT TO BE IN THE FUTURE.

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Greg on-camera 02.09.57 – 02.10.31 Somebody who is buying a high technology content item will be evaluating quality or technology much higher than price. On the other hand, if I'm purchasing a threaded fastener, to me, in my buy decision, the most critical item is obviously going to be cost as opposed to technology. So it's real critical for a supplier to understand where are they in the customer's evaluation chain.

NARRATION (VO):

SO NOW THAT YOU RECOGNIZE SOME OF THE REASONS SUPPLY CHAIN COLLABORATION HAS BECOME SO IMPORTANT, HERE ARE SOME STEPS YOU CAN TAKE TO DISCOVER THE WASTE IN YOUR SUPPLY CHAIN.

NARRATION (VO):

FOR MOST COMPANIES, THE FIRST PLACE THEY ARE GOING TO LOOK FOR WASTE IS WITHIN THEIR OWN FACILITY.

Greg on-camera 03.01.15 – 03.02.08 One of the biggest mistakes I've seen in supply chain management is to ask, or even require the supplier to do things that we're not doing internally. If anything, that creates more resentment. So the first thing any company that wants to do supply chain management should do is get their own house in order. What that basically involves is identify the key processes you have; flowchart those; as you flowchart those, not only are you going to be flowcharting production, but you're going to be flowcharting design, project management activities, anything that's core to your organization.

NARRATION (VO):

IF THERE IS WASTE IN YOUR SUPPLY CHAIN, WHERE WOULD YOU EXPECT TO FIND IT?

Greg on camera 01.07.19 – 01.07.42 Basically in most supply chains, repetition and redundancies, dealing with people, people communications, is where you have the most waste. Anything that can be done to streamline that is where we're going to get the most value added.

NARRATION (VO):

WITH ANY MANUFACTURING OPERATION SOME TYPES OF INVENTORIES ARE NECESSARY. AS YOU ARE MAPPING YOUR PRODUCT FLOW YOU SHOULD BREAK THE INVENTORY INTO 3 DIFFERENT TYPES.

Greg on camera 02.11.12 – 02.12.06 Basically there are three types of inventories. There is in process, there's final inventory, and there is inventory that is incoming. The idea behind lean is that you want to eliminate all types of inventories. Why? Inventory has a cost associated, we want to eliminate all cost factors. When you're dealing with a lean, just-in-time environment, orders are coming in based on actual customer

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demand or use. That means the supplier's system of production has to be tightly integrated with the customer's. In this case it's not the end user so much as, if you're providing a part that goes into an automobile, your system has to be integrated in terms of schedule and demand, very tightly with the customer's.

NARRATION (VO):

AS YOU WORK TOWARD CONTROLLING YOUR INCOMING INVENTORY YOU WILL SEE THE

ADVANTAGES OF MORE FREQUENT AND SCHEDULED COMMUNICATIONS WITH SUPPLIERS.

Greg on camera 02.12.06 – 02.12.31 If the end user is not buying any products, and you don't have any forewarning on that, your production system is going to go down. Information technology has to be aligned to your critical supplier's.

NARRATION (VO):

MANY TIMES WASTE IN THE SUPPLY CHAIN CAN BE AVOIDED BEFORE IT IS CREATED, BY

HEADING OFF POTENTIAL DESIGN DEFICIENCIES. THIS ADVANCED PLANNING MUST BE

COMMUNICATED TO SEVERAL DIFFERENT LAYERS WITHIN THE SUPPLY CHAIN.

Greg on camera 02.16.46 – 02.17.24 Normally the first issue that they want to deal with are what we call variation in design interpretation. Why? Because design is basically the first area where a customer can have some great impact. If a design is basically send out a first, second, third-tier supplier, and there are problems with that design, the problem is going to multiply much faster. If there's a problem out there in the field, the cost of fixing that problem is going to be a thousand times more than fixing it at the design phase.

NARRATION (VO):

BY FAR THE WORST PART OF DOING ANY SUPPLY CHAIN COLLABORATION IS TRYING TO DO

TOO MUCH.

Greg on camera 01.16.02 – 01.16.16 Probably the worst thing in a supply chain is to do everything at once. The best thing you can do is focus on very short-term projects with definable metrics, where you can basically communicate well with all the parties.

NARRATION (VO):

COLLABORATION BETWEEN CUSTOMERS AND SUPPLIERS IS A TREMENDOUS OPPORTUNITY FOR

ELIMINATION OF WASTE IN ANY MANUFACTURING OPERATION. AS COMPANIES GAIN

KNOWLEDGE ABOUT THIS NEW TYPE OF OPEN AND SHARED ENVIRONMENT, EACH COMPANY

NEEDS TO BE KEPT AWARE OF THE IMPROVEMENTS BEING MADE.

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BUT NO MATTER WHERE YOU DECIDE TO FOCUS YOUR EFFORTS, AT THE END OF THE DAY, REMEMBER BOTH OF THESE COMPANIES ARE IN BUSINESS TO MAKE A PROFIT.

Greg on camera 03.25.10 – 03.25.16 From an officer's point of view, an SVP or EVP for Ford, its do I get my margin? (tight edit)

03.25.20 – **03.25.25** and, am I going to have a safe product on the road and not have a massive recall?

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