MANUFACTURING EXECUTIVE INSTITUTE

In This Issue

About the Manufacturing Executive Institute

The Manufacturing Executive Institute (MEI) is a training and publishing organization dedicated to bringing relevant knowledge to individuals who are interested in making dramatic performance improvements in their manufacturing and distribution companies.

How MEI Delivers Knowledge

MEI Live Training

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Manufacturing Ideas

A Monthly Web-Magazine for Manufacturing & Distribution Industry Professionals

"If you have an apple and I have an apple and we exchange these apples, then you and I will each still have ONE apple. But if you have an idea and I have an idea and we exchange these ideas, then each of us will have TWO ideas."

... George Bernard Shaw

Our Most Precious Corporate Asset

By Alan G. Dunn, President of GDI Consulting & Training Company

I wish businesses could re-invent the format of the balance sheet and income statement. If this could be done, I would strongly recommend that we rethink the asset section of the balance sheet and the expense section of the income statement. By doing this, we could bring to life a whole new understanding of what "real" corporate assets are and what the real expenses of running our businesses can be.

The most precious corporate resource in most businesses is people. It is not machines. It is not technology. It is not robots. It is not the internet. It is not "corporate culture" or six-sigma thinking. It is people… people who execute plans, add value to raw material and provide a service that domestic and other countries' consumers need. It is people who exploit market niches, not machines.

If we are to succeed at building the productivity machine that America desperately requires to remain a world competitor, we must invest in the maintenance of this most precious asset. Leaders must begin investing in training as well as technology. No longer can we afford to think that buying a new system, buying a new robot or buying a new piece of machinery will solve problems. When we do try to buy our way out of a problem, all we ever succeed in doing is spending a lot of our stockholders' cash while never implementing the new tool effectively or as we promised the Board of Directors. This is usually because we “installed” the new device or system and failed to train, train and retrain our people. We apparently believe that people in our company learn

Programs

These include several regularly scheduled and focused training series, and custom designed and scheduled training programs delivered either at MEI's training center or at a client company's site.

MEI Web-Based Training Programs

These include numerous regularly scheduled webinar series and periodic special web-based training programs.

MEI Publications

These include books, white-papers, archived webinars, web-based newsletters & other information of interest to the manufacturing and distribution communities.

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MEI conducts and supports ongoing research to extend the body-of-knowledge in various manufacturing and distribution disciplines.

Career Opportunity Clearing House

MEI maintains a web-based clearing house for manufacturing and distribution industry professionals to post their resumes and position desires, and for employers to post their employment needs.

through osmosis. Nothing could be further from the truth!

Implementing a new information system in your company without implementing a recurring and formalized way of training is like installing a large and complex machine without any consideration for preventive maintenance. Eventually it is going to break and it is going to hurt. **Instead of waiting for the pain to stimulate a response, why don't we implement "preventive maintenance" for our people asset?** Why don't companies develop training departments that execute training for all levels, throughout the organization? Why can't training be considered part of the job?

During the next two decades, America will both prosper and maintain its position in the world marketplace or it will become a nation of hamburger flippers, day traders, law clerks and service clerks. Foreigners, who always seem to want to build things, will own the mortgages on our buildings, our factories and our homes.

There are many tasks that need to be performed to preclude productivity gains from eroding… probably none more important than the development of recurring training programs in our manufacturing companies. And I do not mean classes on how to weld, how to solder and how to assemble. I mean classes on how to plan, schedule, manage quality levels, measure performance and lead others.

Recurring, formalized training programs should be considered *part* of the cost of maintaining human assets, not an expense to be cut at the first hint of trouble. When you don't continually train your people, you are saving short-term cash while mortgaging your future.

As the wise man once said, *"pay me now or pay me later!"*

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Digging for Gold... In the Waste Heap

By Nick M. Testa Jr., CEO of Acuity Consulting Inc.

No, we're not advocating dumpster diving. Waste can be anywhere, and spotting the symptoms is the first step in recovering cash. ***A dollar spent on any activity or product that does not add value is a dollar missing from business profit.***

Think of *value* as something the customer is willing to pay for. Once you make that mental leap, some places will jump out as non-value adding. Others are more subtle because workers or managers think they add value, but customers' wallets don't agree.

Start Digging!

We're going to take a 7-step tour of your operations on our quest for waste. For each stop, we'll tell you what to look for and provide a quick metric†. Be sure to

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With a state-of-the-art training facility located in Corona, California; *(the geographic center of Southern California's manufacturing and distribution communities),* MEI is uniquely positioned to provide hands-on and electronically delivered training programs to all manufacturers and distributors. To learn more about the Manufacturing Executive Institute, its mission and additional programs, go to www.mfgexecutive.com or call (951) 736-2114.

look for both the obvious waste -- and for the waste that's been there for so long people think it adds value.

Dig Location #1: Inventory

Pools of inventory result from making more product than will flow naturally to fill customer demand. If you've got a growing requirement for warehousing, or batches waiting for a work station or tooling, start looking for waste. Your goal should be to make only what the customer wants for completion just when the customer wants it.

Quick Metric: Inventory should match the daily sales volume times the number of days in value added processing plus vendor reliability buffer days plus customer forecast error buffer days times the average product cost of goods sold.

Example: 1000 units/day (1 value adding day + 5 vendor buffer days + 2 forecast buffer days) $5 average unit COGS = $40,000.

Dig Location #2: Product Movement

Intra company product movement is a red flag that the processes are not linked as tightly as they might be. Transporting product is always costly and frequently a waste. In addition to consuming time, effort, and equipment, it exposes the product to damage, loss, contamination, and delays – all cost additions.

Quick Metric: Distance moved should be no greater than the longest dimension of the product times the number of steps in manufacture plus the minimum head to head distance between adjacent processes including process transit distance.

Example: (1 foot long product x 10 steps) + (break, press, dip tank, etc. distance of 25 feet) = 35 feet.

Dig Location #3: People Movement

Requiring people movement to various locations or just having them make extensive movements in their work station usually causes product to wait for the operator to complete these motions while no value is being added. In addition the staff member is being paid for this nonproductive time. One key source of delay here is the lack of organization at the work site or station or improper presentation of product or tools for the operation. "Presentation" includes how the product arrives or how product and tooling is stored in the station.

Quick Metric: Observe the task being done and measure the working time (i.e., screw being turned in) as compared to the non working time (i.e., reaching for and positioning product and grasping and returning the driver). This is real industrial engineering work. Perfection is close to 100% productive movement.

Example: (working time is 4 seconds)/(16 seconds spent in positioning and grasping) = 25% productive.

Dig Location #4: Rescheduling

Rescheduling and process interruption indicate poor planning or deficient execution. Look for places to install flow lanes and/or kanban signaling.

Planning and design areas may generate excessive changes in the design. A badly managed customer interface can increase this irritation. This can be the tip of an iceberg of underlying problems. Some of these problems may be in the supporting services and not in the operating unit.

Quick Metric: Count the number of Jobs that transit the process without interruption and divide by the number of total jobs in the same time period. This should be in the order of 90 to 95%.

Example: 50 jobs transit without interruption out of 100 = 50%.

Dig Location #5: Excessive Paperwork

Excessive paperwork results from over-control of the process, reporting design deficiencies, or lack of productivity enhancing technology like bar coding.

First, we have to ask why is anyone still using paper? All data reporting should be done electronically, but even electronic reporting can be excessive. Time spent reporting progress rather than making product is a waste.

FIFO flow lanes, Kanban systems, and “supermarkets” can provide visual, self-correcting signals. These are also tools to enhance pulling and flowing product rather than uncontrolled product push. ERP systems can replace paper documents when more complexity is required. Build reporting into the process like a switch, barcode reader, or EDI sensing as product moves past.

Quick Metric: 100% is a good target number for this but when you need to spend time on non productive reporting it should be less than 10% of the time spent on the productive activities.

Example: 3 seconds of reporting time during 43 seconds of production time = 40 seconds making product divided by the total time = 93%.

Dig Location #6: Disproportionate Time

When a disproportionate time is spent in production as compared to the direct labor and unmanned processes needed to make the product or create the service, the process has time traps in the value stream that are delaying the process and likely costing money spent on non-value adding operations. Value adding should not be less than 25% of the total time the product takes to move through the facility.

Quick Metric: Compare the standard time to make and actively process the product in non manned steps, i.e., drying, curing, burn in, etc., to the total time the materials are in the facility (from receipt of raw material to the shipment of finished product). In a bit more elaborate measurement the value stream map will provide this data from its timeline.

Example: 101 days of non value added time to 30 hours of value added time = 1.2%.

Dig Location #7: Defects

Defects occur as a result of variation, complexity, or mistakes. They undermine all system performance. Use statistics to uncover process control problems, foolproof process designs, or use design of experiments to find causal relationships. Simplify processes and train the operators. Delays and disruption introduced by defects not only cost money in direct product cost but in complexity and wasted effort in the supporting departments.

Quick Metric: "First Time Through" success is divided by the number processed. This should be better than 3.4 per million (6 Sigma).

Example: Count the defects in a production run.

Next Steps

Your tour of your operation has probably revealed many symptoms of waste. Now, it's time to remove them and recover the cash you're losing.

Start by finding out why the waste exists. Go beyond the obvious answers so that you identify and remove its root cause. If you don't get to the root cause, you'll just waste time and money chasing various symptoms.

One classic way to get to the root cause is to ask why five times ("The 5 Whys" technique). This will provide a start. Use caution with this subjective technique.

Be sure you don't stop too soon or miss the true cause by following a secondary chain. You may wish to use a more sophisticated technique to get to the root cause to make sure that you're making a permanent change that will prevent a recurrence.

† Note: the metric is basic and does not take into consideration special circumstances that are product unique as for example adding contractual finished goods holding requirements to inventory calculation.

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How To *Really* Solve Our Country's Economic Crisis

By Steven Kirkpatrick, Managing Director of Dunkirk Governance Specialists, LLC

What is the most effective way for our nation to respond to the economic crisis? What options do we have? While Americans are clamoring for a solution, the stimulus bill (the American Recovery and Reinvestment Act of 2009) just signed into law by President Obama will likely turn out to be an ineffective -- and expensive -- attempt to put us back on the road to prosperity. Alas, money does not grow on trees.

The fundamental problem with the economic stimulus bill is that it is heavily weighted toward government spending of dubious economic value (including hundred of little gems such as a grant to prevent "bullying" in Montana schools). To make matters worse, much of the spending will be spread out over several years, thereby diluting its economic benefits. With the federal government already so deeply in debt, massive spending programs are a poor choice for fostering economic growth. A far more effective approach to promoting economic stimulus would be to channel funds through the private sector.

The real economic powerhouses of this country, the true sources of our high standard of living, are the businesses and commercial enterprises that design, make, sell and distribute the products and services that are consumed in this country and around the world. Businesses, particularly small, entrepreneurial businesses (i.e., fewer than 500 employees), represent 99.7 percent of employers in the United States. In addition, these small businesses:

- - Employ about half of all private sector employees.

- - Pay nearly 45 percent of total U.S. private payroll.

- - Have generated 60 percent to 80 percent of net new jobs annually over the last decade.

- - Create more than half of nonfarm private gross domestic product (GDP).

- - Originate more than 75% of new innovations, patents and leading edge products.

Since small business is the source of so much of our nation's affluence, it stands to reason that any economic stimulus bill should be directed toward giving a boost to small businesses. The best way to achieve this is by lowering taxes and reducing government regulation, particularly those affecting small businesses.

The private sector is subject to rigorous competitive forces of the marketplace that do not exist in the public sector. Efficiency, hard work and creativity are rewarded, while businesses that fail to compete effectively, and to navigate through the forces of "creative destruction" embedded in our capitalist system, will eventually fail (notwithstanding government bailouts), only to be replaced by other, more nimble entrepreneurial firms. As such, investments made by the private sector generally produce far greater economic growth, produce more jobs and generate more tax revenue than might be obtained through comparable levels of government spending.

Our solution to economic revitalization is very simple and highly efficient: Allow our nation's business community to keep more of their own money instead of sending it to Washington. This can be done in three easy-to-understand steps:

1. A moratorium on payroll taxes through 2010. This benefits the business machine of our economy as well as increases disposable incomes that are so desperately needed if spending is to resume.

2. A permanent reduction of the top corporate income tax rate from 35 percent to 20 percent. This will increase capital equipment funding and allow for more rapid expansion of the work force.

3. Allow immediate, full deductibility of capital equipment purchases through

2010. This will encourage a more rapid expansion of capital equipment purchases and initiate the second tier of suppliers in our economy more rapidly.

Each of these steps will have an immediate and dramatic impact on job growth. The revenue lost through tax cuts will be at least partially offset by other sources of tax revenue, including income taxes (through payroll earnings) and sales taxes (through capital equipment purchases). Also, since two of the foregoing suggestions are temporary, they would have no long-term impact on tax rates. Our political leaders would be wise to eschew their socialist leanings of more government spending and increased legislation as a way to stimulate the economy.

The reins of economic growth should be put into the hands of those best equipped to restore our economy to its full potential. There is no force in America that is more effective at job creation than small business. Allowing business owners and entrepreneurs to keep more of their earnings will encourage greater investment and risk taking and unleash far greater economic growth than any government spending program ever will.

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