

Welcome to the September edition of the AME-UK's Newsletter. This month we have some superb articles collected from our contacts in the lean world, from around the world. Several of these concentrate on the 'people' side of implementing lean. Gary Kerr's article 'Building an Ant Colony' has a brilliant message and is a must read! Mike Caldwell's *Implementing Lean with the Support of the Union* also gives a great message and Jim Womack's recent email refers to *Heroes and Farmers*. Other articles refer to lean and IT, comments on reading instructions first, and applying lean to inventory and materials flow.

If you have any experiences, news or information to share please let us have them!

## Our Next Event

Following the success of the conference and the new interest generated in the AME-UK, an AME-UK one-day visit and workshop is being hosted by Nigel Lack at Unipart in late September. The theme is: Cultural Change to Create the Lean Enterprise

The programme contains the following an overview of Unipart's business, a tour of their Distribution Centre and an overview of their lean supply chain for Jaguar.

The visit is well over subscribed, but look forwards to a report on it in our next edition.

## Future Events

We are currently working on our new programme of events. If there is anything specific that you would like, please let us know

## Building an Ant Colony

*The following article comes from the LLEAN Newsletter written and edited by Gary Kerr. Gary is a Lean Consultant in Australia and promotes Lean excellence among Australian manufacturers.*

How is it that ants are so successful? Is it their tremendous strength, natural instinct, superior survivability, or is there another answer? The reason is probably pretty obvious.

*The collaboration and cooperation of the many insignificant parts working as a single unity with every coordinated action of every individual working for the success and proliferation of the colony.*

What would your organization look like if it behaved like an ant colony? If you work for Toyota you probably already know the answer to this question. Many companies fail to gain any traction with change because they are unable to create an alignment of vision, strategy, belief, and activity at all levels within the organization. People throughout the organization unwittingly work against the interest of the colony because of a range of different pressures, systems and policies. Bad systems beat good people every day and the best companies have the best systems and this helps to grow the best people.

If we are to prosper we must coordinate the hearts, minds and actions of all our people.

I offer this simple model for creating organizational alignment. The Japanese call this way of managing and coordinating "Hoshin Kanri"

Lewis Carroll wrote "if you don't know where you are going, any road will take you there".

We need to ensure that everyone in the organization knows where we are going and knows the road we are on together. It starts with our vision for excellence.

**VISION:** Your vision is not one of those single sentence motherhood statements "We will be envied by our Competitors and valued by our Customers for our Quality, Service, Blah, Blah, Blah". We have all seen those *mean nothing, say nothing change nothing* vision statements hanging in the foyer of countless corporate offices. To me they all look the same and could have all been taken from the same book of corporate vision statements.

Now, close your eyes and imagine how good your company's future could look on as many different levels possible. Imagine your people all enthusiastically participating in problem solving and daily improvement

activities. Imagine customer information being processed to completion immediately it arrives and production commencing immediately after that. Imagine the alignment of your Value Streams through your customer's organization, through yours and through your suppliers'. Imagine components flowing from one manufacturing process immediately to the next with no

**STRATEGY:** If the Vision is your destination, the Strategy is your travel plan, which describes the company's journey towards its Vision. It must be well articulated, written, understood by all employees and discussed regularly by Management.

It must connect the present to the future (Vision) in a clear and obvious way. The

## ALIGNMENT MODEL FOR PLANNING AND EXECUTING



COPYRIGHT LEVERAGED LEAN 2006

waiting in piles of WIP. Imagine raw materials flowing in just in time in response to visual signals from your shop floor. Imagine organizational unity of purpose where the Sales team are recognized and incentives not by the big "killer order" but by keeping order intake to a 5% span around the monthly mean. Imagine your accounting and measurement systems all in tune with, and supporting this lean enterprise. This is your vision. This is your true North.

This Vision is where your company is going. It must be an attractive destination that your people find intellectually and emotionally acceptable. Conflicts on either of these levels will ensure that commitment will not be possible. Above all, employees must find it an attainable and desirable future. The Vision must be formulated by the Executive and agreed at the highest levels within the company —commitment is vital. This Vision must be an easily and frequently articulated description of the future state. The frequent, free and passionate sharing of the Vision is a major role of leadership. The leader must make it clear that the future is not somewhere we are going; it's somewhere we are all making.

execution of your strategy is supported by the shared Values of the organization and I have written previously on this subject. These values describe how we expect to behave on the journey. Our strategy must address such questions as:

- *Are our people ready?*
- *Where are the knowledge gaps?*
- *Is our structure appropriate?*
- *Are our measurement systems supportive?*

**PRIMARY METRICS:** Around 6 to 10 Key primary metrics are selected that measure our achievement of key strategic elements. The company executive group is held responsible for achieving the annual strategic objectives and these might typically be:

- ◆ *Increase Inventory turns by 50 %*
- ◆ *Improve in-full, on-time delivery to 98%*
- ◆ *Reduce order to delivery average to 2 days*

- ◆ *Improve external quality to 15 parts per million*
- ◆ *Employee involvement increased 100%*
- ◆ *Profitability – EBIT target*
- ◆ *Etc*

The primary metrics are reported and reviewed monthly on a one page "Traffic Light" report describing how your company is progressing its strategy to achieve its vision. It takes the key indicators of success and assigns a colour, **Red** for behind target, **Yellow** for alert, and **Green** for on-plan.

**OPERATING PLANS:** Each business unit should have an improvement plan for the current year, which advances the organization's strategic journey towards its vision. These plans should enable the achievement of the primary metrics selected by the company executive. Each member of the business unit team should participate in, and understand the plan. These plans should be specific and measurable against agreed milestones. They will take each strategic element and create a plan to achieve the annual target through the deployment of specific Lean tools and programs. Under the strategic element of "Increased Inventory Turns" we might typically create a tactical plan such as:

- ◆ *Complete A, B, C (Runners, Repeaters, Strangers) analysis of products*
- ◆ *Value Stream Map all 'A' items*
- ◆ *Create work Cells*
- ◆ *Halve Set-up Time*
- ◆ *Halve Batch Sizes*

**SECONDARY METRICS:** These milestones must be able to answer the question "where are we now?" This is a one to two page traffic light report with the main tactical elements of the improvement program. These metrics are reviewed monthly.

There must be tactical operating plans for the achievement of all the strategic elements.

The Second Level report must be able to show how we are tracking year-to-date in the achievement of this tactical plan for each element.

**WORK TEAM OBJECTIVES:** Each work team must have targets for the achievement of the tactical items under their control. These would typically be things such as production to plan, first time quality, employee hours per part, average number of set-ups, average set-up times, number of continuous improvement ideas implemented etc.

**VISUAL MANAGEMENT:** It is important that the people in the work teams track these metrics and reviewed each day in their start-of-shift toolbox meeting. Site Leadership has a vital role in taking a genuine and active interest in these metrics. This is how we show our people what is important. Some of the cell level metrics might be:

- ◆ *Day-by-the-hour production*
- ◆ *Average set-up time*
- ◆ *Actual Vs Plan run times*
- ◆ *First time through quality*
- ◆ *Abnormality reporting*
- ◆ *Number of Kaizens this month*

The work teams record their performance with a white-board marker to ensure that they know whether they won or lost the game today. This gives the site Leadership the opportunity to show appreciation for the effort made and offer help where required.

**REWARD, RECOGNITION and REDIRECTION:** (aka – Leadership)

RR&R must be soon, certain and significant if behavioural change is to result. Material reward (movie tickets etc) should be mainly team based and monthly in most cases whereas recognition and redirection should be immediate. It is a basic human need to be appreciated and much of our human motivation in a work context comes from the fulfillment of this need. In an Adult-to-Adult relationship people will accept Redirection as the flip side to the same coin as Recognition. The development of this Adult-to-Adult relationship is vital in a world-class organization and many "ordinary" company relationships look more like "Day-care for Adults".

**PERSONNEL SKILLS DEVELOPMENT PLAN:**

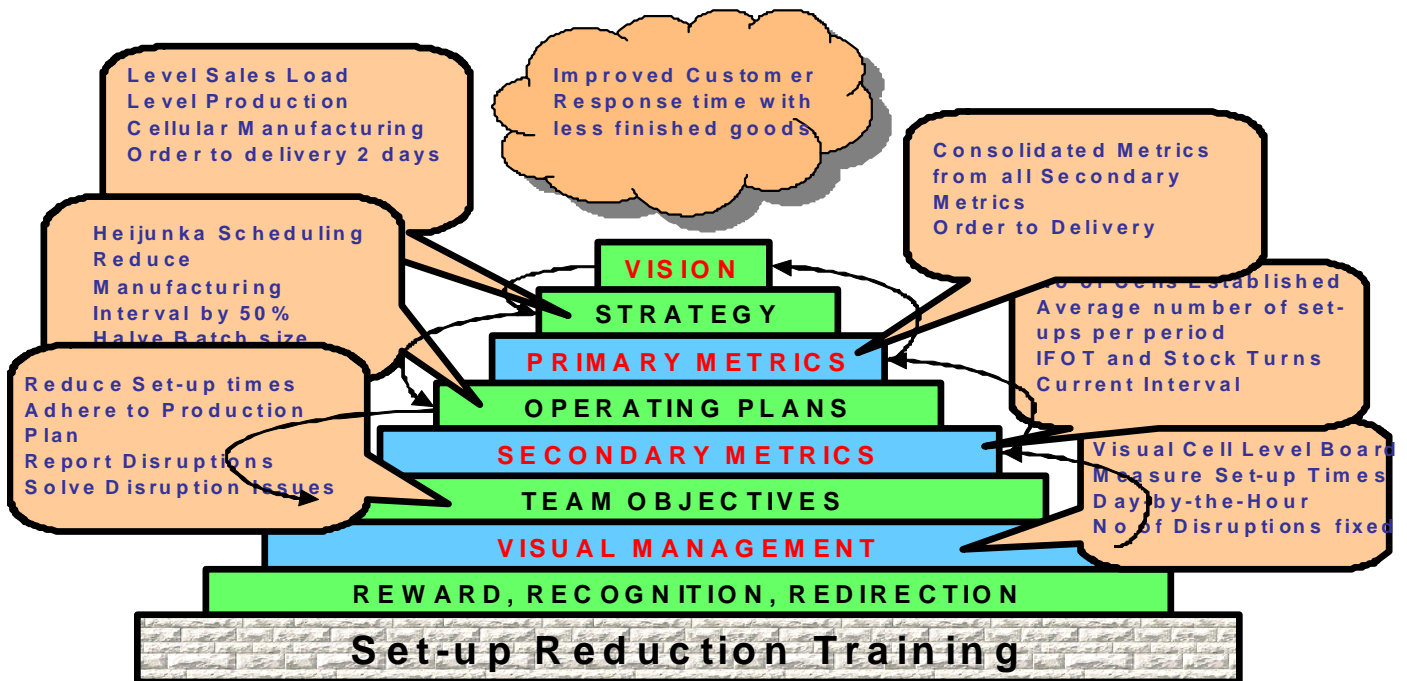
Training is delivered in a "Just-in-time" basis to give the people the necessary skills to

implement the plan. The model below demonstrates how Set-up Reduction training relates to the Vision element of "Improved Customer Response with Less Finished Goods".

**SUMMARY:** Building an Ant Colony takes time, patience and planning but the results of aligned thinking and action are worth the effort.

tangential to manufacturing itself – manufacturers are finding that IT can be applied to Lean philosophies to the benefit of business.

The schism between IT and Lean thinking occurred due to the incompatibility of existing manufacturing IT with the Lean environment at its conception. Lean advocates a "pull" action that conflicts with traditional IT



COPYRIGHT LEVERAGED LEAN 2006

systems (such as ERP) which supports a "push" chain.

## Lean manufacturing and IT: no oxymoron

By Chris Astall\*\* Chris Astall, product director, demand-driven strategies, Cincom 02 8875 1400.

LEAN theory dictates that manufacturing should be about the manufacturing process only and that all other activity is "non value-added". As such, IT systems are considered surplus to requirements when manual of visual systems will suffice. But in the business world, there are other systems that are necessary to run a manufacturing business, beyond the actual production line.

By applying Lean to the enterprise, rather than to one process – taking into account processes that are equally value-added but

In addition, the ways in which Lean and ERP maintain control are very different. ERP maintains control through work orders and inventory transactions – a "top down" process, centralised by the knowledgeable few. Lean promotes control in the hands of many, decentralised through simplicity and process visibility. It promotes pushing responsibility, ownership and execution as far down the hierarchy as possible, using simple, manual systems. IT is seen as anathema to this as it puts down decision-making into the hands of few.

Integration of technology – not complete removal – is the key to Lean success. By reviewing technology to use it only where it adds a genuine advantage, and integrating systems to enable the automation of

essential but non-specialist tasks (such as Kanbans), IT can add value to the processes surrounding manufacturing, as well as support the Lean environment. This boils down to applying the 5S philosophy (sort, set in order, shine, standardise, sustain) to your IT: sort out what systems add value, set them in order (integrate), shine them up (BPO), standardise them (BPM), and sustain them through appropriate support.

IT can demonstrate real value in terms of modelling, data collection and assimilation for decision support at the point of attack.

### Sales process

Far from putting information into the hands of a few, the skilled IT staff now puts it into the hands of many.

For example, with Knowledge-Based Guided Selling, IT can be responsible for quickly pushing knowledge forward into the hands of those who need to use it. The sales process, even for complex and demand-driven manufacturing, can therefore be simplified and expedited through the use of IT. This ensures "buildability" as well as the knowledge that the product being offered meets the needs of customers.

### Demand planning

Where problems exist in determining just when a product will or can be built, people are usually at the centre of the activities and knowledge is local or specific.

Modern demand-management applications assist in capturing knowledge about time and space constraints, which they use to sequence demand into available production slots. By understanding the constraints of the production process, IT can ensure the lead-time quoted is accurate and based on facts not assumptions.

### Material flow

Kanban systems were originally a purely visual system and are lauded by Lean purists.

However, high-tech Kanban systems can be made to include automated steps and can be fully integrated with suppliers, improving

efficiency throughout the supply chain. In the global supply chain, IT is irreplaceable because it enables information to be exchanged almost instantaneously, which otherwise would take valuable time.

### Product and process management

Examining a complex product and its almost endless array of possible configurations today presents the Lean manufacturer with two major issues:

1. How to acquire and assemble the necessary details about how a product is going to be built, including its BOM, its route and relevant documentation such as work instructions, process sheets, safety sheets etc.
2. How to maintain that information as things change along the way (product, processes, standards etc).

The most efficient and productive way to assemble all of this information in the first place is to do it using the knowledge gained during the sales process. With an integrated IT system linking sales to planning, information such as the BOM, the route and the documents needed to support the product build can be easily collected from re-usable components. Thus, BOMs and routes in particular must be engineered to be modular in nature and attribute-driven.

### Business process optimisation

The ability to respond quickly and efficiently to any request – internal or external – can be seriously hampered by inefficient or manually restrictive processes.

While important in any organisation, a critical factor for the successful Lean enterprise is establishing an environment where actions and decisions occur in or near real-time. Purists believe IT hinders this by virtue of its basis in rules. However, if the IT system is highly configured enough, it should facilitate the process, becoming the catalyst for the event-enable environment.

Lean manufacturing and IT is not an oxymoron. IT can be a means by which to improve the business processes that

surround and support manufacturing in order to bring Lean to every corner of the business; eliminate non-value added activity and focus on the needs of the customer. In short, to create the Lean Enterprise.

## Relationships count when a union shop goes lean

*This article was originally published in the Society of Manufacturing Engineers' e-newsletter and is republished with the author's permission [www.sme.org](http://www.sme.org)*

Culture change is important to any lean transformation. Companies who go lean know that without employee commitment, the journey won't go far. Likewise, without management support the journey will be a short one.

So how do we make sure an organization, including management, actively supports and encourages a lean transformation? And how does this work in a union shop?

Northstar Aerospace, a company that manufactures and refurbishes helicopter parts, was making little progress on its lean journey until a new management team came on board.

One of the company's two high-profile customers had made it plain that Northstar's inefficiencies were causing unacceptably long lead times. Although the customer wasn't yet threatening to pull its business, it was pressuring Northstar to improve.

One problem at Northstar was that the union wasn't actively supporting kaizen activities. They saw it as "just another management thing." To a union, lean manufacturing looks like losing people, the opposite of what it stands for.

The new general manager and lean promotion officer recognized that union involvement was critical to any real progress toward lean. The company had to convince the union that lean transformation was vital to the company's survival, not just another mindless exercise.

The management team started with the union executive committee and put all their cards on the table -- if the company lost one

of its biggest customers, no one's job would be secure. They said that lean isn't about cutting jobs, it's about cutting waste.

Once the union executives understood that lean wasn't being driven by management as much as by customers, they began to promote all things kaizen.

The union left it up to the membership to participate or not. But as union members learned that security must be earned, they jumped on the lean bandwagon. As a result, the company has so many kaizen volunteers that "second timers" must wait until all the first-time volunteers have participated.

In the future, more organizations operating in union environments will want to go lean. You can't take half of the facility on a lean journey -- everyone has to be involved. Both management and unions need to understand that their relationship counts. Both sides must take an "everyone on board" approach to make it work. There shouldn't be a union side and a management side; the effort must be all-inclusive.

Successful lean implementations in many companies have resulted in a checklist any company can use as a guide. The company can compare itself to best practices for starting and sustaining a lean transformation that involves everyone.

As you go through the list and check off items, you'll see where improvement is needed. People can see how they can contribute to the ultimate good of the company and its lean transformation.

### Lean transformation checklist

Top management actively supports the Kaizen Promotion Office (KPO)

- *Meets weekly with the KPO coordinator and measures organizational involvement*
- *Actively participates in and supports development of the KPO process*
- *Regularly visits the KPO office*
- *Regularly visits the application area where lean is being implemented*
- *Demonstrates knowledge of lean principles and interest in learning*
- *Insures that KPO principles are stressed to plant operating group*

- Meets with union chairperson to remove barriers to KPO implementation
- Mandates KPO policy deployment throughout the organization (e.g., review of team's minutes, focus on resolution of key issues)

Union leadership actively supports kaizen

- Meets weekly with the union coordinator
- Makes comments to Plant Implementation Team (PIT), application area, bargaining party (union), and union members, based on data supporting specific lean techniques
- Monitors and aids progress of the PIT and application area, with knowledge-base of lean principles
- Insures that KPO principles are stressed to plant union leadership
- Meets with top management to remove barriers to KPO implementation

Plant Steering Committee actively participates in and leads culture change

- Works with the KPO coordinators to remove roadblocks
- Displays an understanding of kaizen implementation
- Implements kaizen activities and measurables using a plant-wide business plan
- Communicates policy downstream in the organization
- Regularly reviews application areas and measures progress

Plant Implementation Team measures progress against kaizen plan

- Meets daily to set and measure action plans, next steps
- Actively trains the trainers in the application area
- Supports plan and answers questions about kaizen implementation steps
- Emphatically shares the vision of successful kaizen implementations
- Leads and directs the total culture change activities, starting with the application area

Application area is well defined and displays examples of kaizen

- Application area uses lean manufacturing tools
- Current and future state map(s) are visible, and activities are posted
- Total cost measurables are identified and tallied
- Before and after photos are visible
- The application area's open-issues list is posted and actively pursued

In the spirit of continued management support and open communication, Northstar is focusing on training employees on the basics of lean (Lean 101), everyone from the president of the company to the shop-floor workers.

The company is being aggressive about implementing lean, holding kaizen events every other week, and putting tools learned in Lean 101 into practice. One policy deployment objective for 2006 is for all managers to participate in at least one kaizen event, hand-in-hand with shop-floor workers.

Northstar will maintain open lines of communication in quarterly "town hall" meetings, updating all employees on the state of the business and the progress of the lean journey. This will keep the reasons for going lean at the forefront and show workers that their lean efforts are paying off.

Along with better communication, managers will continue building trust among all employees. They will listen to and act on employee suggestions and concerns, and everyone -- from management to shop-floor employees -- will "walk the walk," doing what they say and saying what they are doing.

Manufacturers can follow Northstar's example for improved communication and building trust. With the help of the checklist above, they can stack the deck in favour of a sustained lean transformation.

About the authors

Mike Caldwell, is Senior Management Consultant at TBM Consulting Group, Inc., and John Schulz is Lean Promotion Officer at Northstar Aerospace in Chicago, Illinois.

## Dan Jones' Recent Newsletter

I have always thought that lean is much more than improving the efficiency of

existing equipment, factories, supply chains, hospitals and service facilities. Lean teaches us to learn to see and improve the processes we are responsible for. It also challenges us to look up and out and cooperate with others to streamline the whole process from end to end, often across several organisations.

But ultimately lean is about re-examining the end product or service being delivered to customers. Does it really meet their needs at an acceptable cost without wasting their time? And is it sustainable and can it continue to generate an adequate return on investment? If we are honest we would have to conclude that in many cases it does not – we are actually delivering the wrong product through the wrong facilities in the wrong place using the wrong equipment. Our business model is actually a relic of the era of mass production and mass consumption.

Recognising this dilemma does not solve it! One of the key constraints may be the technology – which is still being designed by engineers resolutely focused on developing the next bigger, all-singing all-dancing piece of equipment. Other constraints may be the drag of existing assets and careers tied to the existing business model.

However lean engineers are always thinking about developing right-sized tools and lean entrepreneurs are always thinking about how these might be used in new business models that ultimately replace existing providers. We can see similar opportunities in the three great growth industries of our time - transportation, communications and healthcare.

One of the examples readers remember from *Lean Thinking* is the holiday flight to Crete, which took 13 hours door to door for 7 hours of actual travel time. Very little has changed about the process of flying on holiday in the last decade – except you can do it more often, from more places, to more destinations and for a lot less money. You just squeeze your knees between the seats, switch off with a good book and look forward to getting there.

Things have not got much better when we travel on business. In some cases they have got worse – it is a nightmare trying to schedule convenient connections between

medium sized cities in Europe - and a growing hassle connecting through massive hub airports. I just spent five days getting up before the crack of dawn and taking two flights via hubs, in order to do a day's work. Smaller jets carrying business travellers are now relegated to distant parking stands and often, after two bus trips and fighting my way through the terminal, I end up boarding the plane next to one I just left! In an exceptionally crazy 70 hour week I did 23 hours of valuable work – and then spent the weekend recovering my sanity!

But help is on the way. Video conferencing is getting better all the time – making some trips unnecessary. But equally the advent of the new very light jets promises to usher in a new era for the business traveller. In *Lean Solutions* we showed how point-to-point on-demand air taxi operations from local airports could save us all a lot of time and hassle. The Eclipse, the Hondajet and others from Cessna and Embrair are just the beginning of the story. Building and financing a viable business model and the necessary air traffic infrastructure come next. However the impact on the existing airlines and airport operators is likely to be profound.

This is a similar story to what has happened in communications – the PC replaced the mainframe and mobile operators are now challenging old telecom monopolies. I think we are on the threshold of a similar revolution in healthcare delivery.

There is a growing recognition that bringing diagnosis and treatment closer to patients rather than centralising them in big general hospitals will improve outcomes for many while saving time and cost. Health entrepreneurs and even retailers are thinking about new healthcare business models. This in turn depends on equipment providers developing smart, right-sized diagnostic and treatment equipment that can be used for self-diagnosis in the home or in local treatment centres. Existing equipment suppliers still seem wedded to bigger machines. Who is going to provide the right-sized technologies to make this happen?

## People and Change

*This article by Chris McKellen was published in Metalworking Production in 2004*

Several years ago, in their vision statement, one major USA based multi-national stated that 'people were their most important responsibility', but later, when the vision statement was reviewed 'people' moved to the fifth place and was replaced by a statement about shareholder value. But why?

People are the most important part of any business – whether as employees, management, shareholders, customers or suppliers. People have ideas and often many years of latent knowledge which can be used to improve the business.

It is the relationships and communications between people that make businesses work successfully and profitably. Using people, developing them and empowering them is a vital part of a 'lean' implementation programme.

## Gemba

The Japanese word 'gemba' is associated with the introduction of 'lean' and translates literally as 'workplace', but the definition is somewhat harder to understand.

Ohno, the father of the Toyota Production System believed that 'management begins in the workplace'. The philosophy of 'gemba' can therefore be interpreted as: -

- Managing by walking about
- Spending more time in the factory than the office
- Having support departments such as manufacturing (production) engineering located within the factory area, and
- Not having offices with walls in the work area

Resulting in the breaking down of barriers, openness and better communications

## Resisting Change

On joining a new company, many employees find that there is a resistance to change, or acceptance of new techniques, processes or ideas. Similarly, when companies merge, there is often a feeling from some employees 'that I need to protect my job' and sharing my knowledge may 'dilute my standing' within the organisation.

Many of us have experienced phrases: -

- *"Change doesn't come easily ..."*
- *"It's up to management to think of the changes and implement them".*
- *"It's been like this for years, so why change it now?"*
- *"All this change is demoralising".*
- *"Time will heal".*
- *"Well, let's allow nature to take its course ..."*
- *"We tried this, years ago, and it didn't work. So, why should it work now?"*

Achieving a lean transformation requires changes throughout the business, manufacturing, through administration departments to the suppliers. However, before we can change the business, we often need to change people's thoughts and the culture of the business!

We have two choices in implementing change – we can force it in and then address the repercussions, or, we can encourage all employees in the organisation to become part of the process, through planning the changes and then implementing them.

People who have carried out a task for several years often have many ideas on how to change their 'job' to make it better but often they have kept these ideas to themselves because 'nobody will listen'.

## High Commitment Work Teams

High Commitment Work Teams are the ideal format to encourage communication and change. Properly organised, and with training and full management support, High Commitment Work Teams gather momentum to implement the change processes. In a High Commitment Work Team, each employee is motivated, trained, empowered and committed to customer satisfaction and continuous improvement.

The employees become involved in making decisions that will affect both them and the profitability of the company. At the same time, the latent knowledge of the employee is being utilised and the employee can therefore become challenged. Ultimately, the employee feels that their status within the organisation has been elevated.

From a company viewpoint, the empowered

employee can help to achieve customer demands through increasing their productivity. Employee commitment is greater and the employee becomes more involved in reducing the company's operating costs.

## Changing roles

The roles of both employees and the management change with the introduction of the High Performance Work team.

The members of the team: -

- Accept responsibility for achieving some of the goals of the organisation.
- Develop trust and respect for each other.
- Seek help when necessary, and give help to other work teams whenever it is needed.
- Communicate amongst themselves and within the whole organisation, regularly and actively.
- Prepare and implement their daily work program.
- Measure and manage their performance.
- Make their decisions based on fact.
- Deliver good results by Continuous Improvement.

The Management Team: -

- Set the strategy for the business.
- Provide resources and training.
- Shares information regularly and openly.
- Shares power – and must be prepared to give up some of its responsibility.
- Listens.
- Seeks ideas.
- Implements suggestions and supports those raised by the team members.
- Allows mistakes and does not apportion blame.
- Praises, supports and rewards.

Note that it is often as difficult for the management to change its role as it is for the employee to accept the additional responsibility.

People and Change is a major subject, so later, in this 'lean' series, we will come back to look at empowerment, motivation and mapping and managing a change programme.

## Do you always read the instructions first?

By Mitchell Mazer

Recently I acquired a new piece of capital test equipment for my lab at EDO Corporation, Defence Systems, in Amityville, NY. The vendor offers a fresh, novel approach to those dreaded sets of instruction manuals we have grown accustomed to.

Many of us in the environmental testing and vibration business are all too familiar with those big, heavy, three-ring binder, multi-volume sets that used to come with our vibration control systems from HP, Scientific-Atlanta, Ling, GenRad, etc. And, might I add, those volumes were not user-friendly.

Although they would normally contain the requisite tables of contents, indexes, glossaries, and illustrations, it seemed like help for the crisis or problem of the day could never actually be found in the manual, thus requiring a call to the applications engineer or factory.

As is becoming more popular practice with all electronic test and instrumentation manufacturers, the instrument I acquired shipped with a conventional CD-ROM, which included a full instruction manual. No more printed instructions, which of course saves on shipping weight, ink, paper, trees and the environment.

Nothing new here, except there was an added bonus: a full tutorial/training course in PDF format. This 279-page course completely guides you through unpacking, setup, theory, operation, maintenance, and problem resolution for the equipment. Live hyperlinks are imbedded throughout the presentation to guide the user to a definition of a term, more information, or to e-mail the factory.

The material is loaded with full-colour detailed graphics, which can be enlarged by virtue of the PDF format. Step by step, the user, at his/her own pace, is guided through the various functions and features. Moreover, if a particular page is of greater interest, it can be printed out and referred to as needed, instead of having to carry around a set of paper manuals.

After going through the presentation with the instrument at hand, I have gained much more confidence in its use and full operational capabilities. It was almost as if a factory-certified trainer was "hand-holding" me throughout the entire learning and tryout period.

Based on this experience, I urge more electronic equipment manufacturers to offer a training PDF file in addition to the electronic and paper manual sets. Such tutorials will have the user up and running much more quickly and efficiently, which translates into greater user confidence and customer satisfaction.

With this review, Mitchell "Mitch" Mazer won the "Instruction Manual Stories" contest, held by the [Equipment Reliability Institute](#). Reprinted with permission from ERI News, May 2006.

## Jim Womack's recent email on Heroes and Farmers!

I recently met with the chief executive of a very large American corporation organized by business units, each self-contained with its own product development, production, purchasing and sales functions. I asked what a CEO does in this situation and got a simple answer: "I search for heroic leaders to galvanize my business units. I give them metrics to meet quickly. When they meet them, they are richly rewarded. When they don't, I find new leaders."

I noted that his firm, like many others I've examined, has a high level of turnover in its business unit heads. So I asked a simple question: "Why does your company need so many heroes? Why don't your businesses consistently perform at a high level so that no new leaders are needed? And why do even your apparently successful leaders keep moving on?"

The answer was that business is tough, leadership is the critical scarce resource, and that a lot of turnover indicates a dynamic management culture. But I couldn't agree. As I look at this and many other businesses I encounter on my walks, I usually see three problems apparently unnoticed by the heroic leader at the top rolling out the latest revitalization program.

These are confusion about the business purpose of the organization's core processes, poorly performing product development, production, supplier management and sales processes that tend to get worse instead of better and dispirited people operating these broken processes at every level of the enterprise. Needless to say, there are also mini-heroes at every level devising workarounds for the defective processes.

What's needed instead? More farmers!

Let me explain by means of a second example. Recently I received a copy of the leading motor industry magazine with its annual listing of the fifty most influential (read "heroic") leaders in the global motor industry. Bill Ford at Ford. Carlos Ghosn at Renault/Nissan. Rick Wagoner at GM. Etc.

What I found striking was that the list contained no "leaders" from Toyota, except for one American in a U.S. marketing job. Yet Toyota is the world's most successful car company. How could the most successful company have practically no heroes? Because its managers still think like the farmers around its headquarters in the remote Aichi region of Japan where the company was created.

The job of the hero is to tackle a situation in which everything is out of control and quickly impose some semblance of order. And sometimes heroes are necessary. Taiichi Ohno, Shotaro Kamiya, Kenya Nakamura, and Kiichiro Toyoda certainly took heroic actions at Toyota at moments of crisis as the company's core processes were being defined after World War II.

But heroes shouldn't be necessary once an organization is transformed. Instead every important process should be steadily tended by a "farmer" (who we often call a value-stream manager) who continually asks three simple questions: Is the business purpose of the process correctly defined? Is action being steadily taken to create value, flow, and pull in every step of the process while taking out waste? Are all of the people touching the process actively engaged in making it better? This is the gamba mentality of the farmer who year after year plows a straight furrow, mends the fence, and obsesses about the weather, even as the heroic pioneer or hunter who originally cleared the land moves on.

Why do we have so many heroes, so few farmers, and such poor results in most of our businesses? Because we're blind to the simple fact that business heroes usually fail to transform businesses. They create short-term improvement, at least on the official metrics, but it either isn't real or it can't be sustained because no farmers are put in place to tend the fields. Wisely, they move on before this becomes apparent. Meanwhile, we are equally blind to the critical contribution of the farmers who should be our heroes. These are the folks who provide the steady-paced continuity at the core of every lean enterprise.

I hope that as you think about your job you will become a lean farmer who takes responsibility for the processes you touch and that you will work every day to plow the straight furrow, mend the fence, and obsess about the weather. These are the real value-creating aspects of management. When present they insure that no heroes will be needed in the future.

## Bobcat attacks inventory and material-flow waste

*This article was originally published in the Society of Manufacturing Engineers' e-newsletter and is republished with the author's permission [www.sme.org](http://www.sme.org)*

Bobcat, a West Fargo, ND, producer of small loaders, excavators and other compact construction equipment, is faced with an increasingly competitive global market. As the company implements lean manufacturing techniques, it recognizes that improving inventory accuracy and material flow management is crucial to manufacturing efficiency.

Six months ago, the company decided to outsource its warehousing and inventory support operations to Menlo Worldwide, a company with experience in managing automotive industry logistics in North America, Europe and Asia.

"We wanted to focus on what Bobcat does best: designing and manufacturing the mini-excavators and other machines that our customers want, and growing the business," said John Mark Shaw, senior manager of material support for Bobcat. "We looked for a

partner whose core competency was lean warehousing and inventory reduction techniques, and who could meet our three priorities: safety, timely receipt and delivery of parts, and quality. One benefit was that we got a solution up and running quickly that began to deliver results almost immediately."

Bobcat had been conducting its receiving, inventory and material handling in a 10-acre outdoor area next to its plant, which presented a number of challenges, not least of which was weather. Shaw and his management knew that the process could be improved -- and would have to be if the company was to meet its goals for growth and the surging customer demand for its products.

Bobcat and Menlo formed a joint implementation team, secured resources and facilities, then mapped and analyzed current inventory management functions and material flow practices. In November 2005 Menlo opened a new manufacturing support centre for Bobcat in nearby Bismarck, ND and launched the initial redesign of material flow and inventory control processes.

The solution established a dedicated warehouse facility where Bobcat's receiving, inventory control, and material handling were centralized, reorganized, and adapted to lean warehousing methodologies. Although the ideal warehouse might be no warehouse, Bobcat knew it had to walk before it could run.

Improvement came fast. In the first five months of operations, overall inventory accuracy improved from 60 to 99 percent. The dollar value of on-hand inventory was reduced by 26 percent. Parts shortages were reduced by 90 percent; and expedited freight costs declined by 95 percent. "Overall, we've made our supply chain more flexible and accurate, and in the process, wrung out a lot of waste and unnecessary costs," said Shaw.

Menlo and Bobcat jointly designed the new solution using a principle called line-side back. That is, working from the side of the assembly line, back through the path the material takes to get there. The approach starts on the manufacturing floor, with the operators on the assembly line. It looks at how the operators work, and using their knowledge and insight, results in a plan for picking, staging, sequence and flow of goods

to the operator that will support the most efficient methods of production.

The study digs down to look at how parts are packaged and presented to the operator, the types of racks used to convey the parts to the work cell, and the position that best permits ease and efficiency of access.

"Once we understand, with the operator's input, how best to set up the work cell on the assembly line, we work back to design the material flow between the warehouse and the plant to optimize that work cell and the operator's tasks," says Jeff Rivera, Menlo's director of automotive warehousing. "We might design parts in kits, have them delivered at a particular frequency, set them in a specific sequence on racks, and even help the operator redesign the workspace to be more efficient."

The goal is to have the right parts at the right place and right time available to the operator. "A key point for the operator is to have the optimal ergonomic presentation of parts," explains Rivera. This means designing material arrival, sequencing and presentation to minimize the walking, bending or unnecessary motion required to take parts and assemble them on the line.

Following the line-side assessment, Menlo designed the ideal layout for parts in the warehouse, emphasizing safety and efficiency. Establishing optimal material flow, the Menlo team structures warehouse activities such as picking, kitting, staging and packing of goods. Processes are established for trucking materials to the plant and sequencing them for delivery to the line. The goal: maximize accuracy and efficiency of warehouse operations, and accurate, timely delivery of parts to the manufacturing floor.

Today, orders are received at the Menlo facility, pulled as truckload shipments, and delivered to the plant at precise times during the day. Parts are staged inside the plant before being delivered to a specific assembly point and operator.

The next improvement planned is to eliminate the staging of delivered orders. Racks of parts, sequenced in a specific order, will move directly from the truck at the receiving dock to the operator's cell on the plant floor.

Shaw noted another area ripe for improvement: supplier conformance. "We're looking at how we can get our suppliers to adopt more standardized processes," he said. "This gets to how we receive parts, how they are packaged, how they invoice us, the types and amount of information we receive, the method of receipt, technologies used, etc. It's another big area where we can drive out waste."

Bobcat has gained benefits in the following areas:

- Reduced costs of expedited transportation;
- Lower, more predictable expense for regular freight service;
- More consistent service from transportation providers;
- Fewer production line shutdowns due to parts shortages;
- Improved on-hand inventory accuracy and fulfilment, which reduces overall inventory costs and enables more precise production planning;
- Reduced costs from inventory loss; and
- Fewer damaged and unusable parts scrapped due to improper storage or handling.

Operations are judged against 26 different key performance indicators. They are used to evaluate performance against goals, identify discrepancies, and give both production planning and inventory control the ability to understand performance in ways they couldn't before.

"What gets measured gets done," says Menlo's Rivera. "Lean methodologies centre on two fundamentals: empowering employees to make change, and measuring what we do at multiple levels, continuously. Detailed performance metrics are the heart of the process. It's the magnifying glass that shows us where opportunities exist to further remove waste and find new areas where we can improve."

Menlo's responsibilities in the Manufacturing Support Centre include parts receiving and stocking, returnable container management, yard management, kanban management, kitting and sequenced line-side delivery of parts and sub-assemblies.

Shaw says the company is just beginning to see some of the biggest benefits. "We now have a continuous improvement process that ties in our total supply chain, from supplier through receiving to the plant floor," he explained. "We are proactively creating an environment for improvement from the line side all the way out to the supplier. That's powerful, and it demonstrates how a good partner with the right expertise and motivation can help guide you to improve in ways you never thought possible."

[Menlo Worldwide](#), headquartered in San Mateo, California USA, is the supply chain services subsidiary of CNF, Inc.

[Bobcat](#) is a business of Ingersoll-Rand Company Limited, a diversified industrial firm.