

SMT Magazine Column: Jumping Off The Bandwagon

Do the High Paid Managers in Your Organization Add Value And, is it Necessary to be One of Those Managers to be a Leader?

For the October 2016 Edition

The first six *Jumping Off the Bandwagon* monthly columns have been dedicated to addressing the proper academic preparation of our high tech electronic product assembly workforce.

As the gap between industry need and academic preparation has continued to widen, a consequence has been the adverse effect this disconnect has had on the ability of a company to compete in the global manufacturing marketplace.

All competitive roads in any capitalist free market business ultimately lead to a cost versus contribution analysis – or said another way: a *value* assessment. The next series of columns in this space will explore another important cost driver – one that, like academic preparation, in many circles is at best awkward and uncomfortable, and at worst is dangerous to talk about.

What is the cost of *management and leadership*? And, what does a company get for that money?

These are questions that have been rarely discussed in an analytic way. They have been considered a given component of the administrative cost a company needs to absorb – the assumption always being it is a cost “needed” for the company to fit into a traditional hierarchal organizational structure.

Here are some of the additional questions and topics that will be addressed in this and subsequent columns in this series:

1. Is there a difference between management and leadership?
2. If so, what are the corresponding attributes of both?
3. What metrics can be used to evaluate the effectiveness of each attribute?
4. What role does a leader play in today’s high tech electronic product assembly industry?
5. Who can be a leader? Must he or she be a manager?
6. What is the management and leadership cost for a high tech electronic product assembly company?
7. Are there alternate organizational models that achieve management and leadership objectives at a lower cost?

This column will set the scene and take a first cut across these issues. Subsequent columns will drill down and discuss the details of each. As I am fond of saying – *el diablo está en los detalles*.

First, let’s clear the decks and make sure we have a common grasp of some very basic tenets of economics, and an understanding of the organizational business structure that companies in our industry have worked out of for decades.

Private ownership versus government ownership

A free market system based on private ownership continues to be the source of incredible wealth generation, middle class growth, and the rise in the standard of living of the masses. At the same time, left

unchecked, wealth can lead to significant inequities in individual incomes. Even Karl Marx recognized capitalism as a wealth-generating machine and thought it necessary to prime his communist pump – a required step in his application of Hegel’s dialectical materialism.

Friedrich Hegel developed his theory of dialectical materialism (thesis, antithesis and synthesis). Marx applied it to economic class struggle. Marx saw private property as the source of economic class creation and conflict. Capitalism accelerated the creation of wealth by a small group of bourgeois shop or business owners who exploited the large working class (proletariat) for their own selfish benefit. This would evolve into communism - the synthesis. The communist government would abolish private property and divide it among the people (1). Once up and running the government would take over the means of production and distribute its output based on need. *From each according to his ability, to each according to his need* (2). In the final phase, the government would not be needed and social ownership and management of the means of production would be done by a cooperative (common ownership). So, the thesis (bourgeois) creates the antithesis (proletariat) and a clash between two causes the synthesis (communism).

In 1932, Joseph Stalin went one step further. He saw the rich land-owning farmers (Kulaks) in Ukraine as a threat. They had been seeking independence from the influence of Russia, and now, since the 1917 Bolshevik revolution, the Soviet Union. Stalin seized their land and food. From that point, the farms were managed by government *collectives*. Notice he skipped a step - the government was still there - necessary to shepherd and manage

the process. Seven million Ukrainians died through government purges and starvation.

Capitalism makes the wealth “pie” bigger, regardless of the size of the slices.

Government collectivism, whether socialism or communism, is concerned in different degrees with the size of the pieces of the wealth “pie.” In the spirit of social justice, the government feels it is their responsibility to conduct the social engineering necessary to control the slice size.

It is cliché, but history has borne out the truth at its core: that pure capitalism makes everyone unequally rich, and pure socialism makes everyone equally poor.

The public and private sectors

There are two general umbrellas that companies reside under in a capitalist economic system: A company is said to be in either the *public* or *private* sector. Companies in both sectors require money, or capital, to start-up, operate and grow. The difference between the two is simply how that money is acquired.

A private sector company initially issues stock to the company’s owners when the corporation is formed. The share of equity an owner is allocated is typically based on their contribution, both monetarily and intellectually, to the company’s start-up and operation. If 100 shares are issued and an owner is given 40 shares, she owns 40% of the company.

One important point of clarification: A private sector company can have its stock (or ownership) either privately held or publically traded. When a private sector, privately-held company is said to “go public,” through an initial public offering

(IPO), it's still a private sector company. However, it is now permitted to raise funds from the general public. The private owners are effectively selling partial ownership in the company to the general public by the issuance of stock. The stock an investor buys provides them with an ownership or equity position in the company. As the company operates, the value of the initial stock offering price increases and decreases depending on the perceived value of the company. The stock shares are traded on a stock exchange.

In a public sector company, the government supplies the money, typically from tax revenue.

Managers with ownership positions in the company

The point of this is as follows: company management members who are shareholders have a different stake in the company than do managers who are not equity owners. The former very often invest funds from their own bank accounts, or borrow the needed start-up funds using personal assets like their house as collateral. These funds are risk. The latter non-equity managers don't. They simply are employed to perform indirect tasks within the organization. In our discussion the distinction between the two types of managers needs to be made.

The capital suppliers who have an equity (ownership) stake in the company can be participants in the ongoing operation or *silent* members. We will call operational managers who have ownership positions within an organization *manager/owners*. In either case people with equity positions, whether operational or silent, have one basic objective – getting a good return on their investment. Their investment is at risk. If the company performs poorly their

investment decreases in value, or in the worst case becomes worthless.

We have traditionally collected personnel of common education, background and responsibility into groups. Those groups organized into departments. So, manufacturing engineers are in the manufacturing engineering department. Personnel who do the buying for the company are found in the procurement department. Directors will be responsible for several departments with the managers of each reporting to them. This hierarchy has formed the business pyramid.

Personnel directly assignable to the assembly of a product are classified as *direct labor* and form the direct labor cost. Personnel who cut across many products, or are general employees not directly involved in a product's assembly are classified as either *indirect, overhead, or general and administrative*. The cost associated with all of these employees is loaded on or absorbed into the average direct labor cost to form the *labor sell rate* (when profit is added). These costs must be budgeted and managed. Typically, each department manager has this responsibility.

The difference between management and leadership

The other basic distinction that needs to be made is the difference between *management* and *leadership*. We often use the two terms interchangeably. However, they are very different.

1. Managers maintain the status quo. They plan the work and work the plan. They operate to schedules and budgets. All activities are conducted under the aegis of the company's standard operating procedures (SOPs). They may have the

administrative responsibility for a department – again, assigning work and measuring the performance of the members in their group. They define department tasks and cost estimates to marketing for proposals and quotes.

2. Leadership has historically manifested itself as an employee characteristic rather than a job category. Traditionally, there has not been a position in an organization called *Leader*. Sometimes personnel are assigned the role of *team leaders*, usually in the context of a project that has had a team formed from recruiting people from assorted departments with the needed skill sets. However, dubbing a collection of people who have been *matrixed* in from different departments a *team* does not in itself make a true team. In the same way crowning an individual *team leader* does not guarantee he or she will exhibit leadership skills. Anyone who has been part of a well-functioning team knows that the team output is always much greater than would be the sum of each member's output if they worked as individuals – that's the magic of teams.

True leaders within an organization challenge the status quo. They rock the boat. If it's not broke they break it. We have traditionally looked to company managers for leadership.

3. At the project or product management level, leaders are forward thinkers trying to anticipate potential storm clouds and develop contingency plans, proactively.

Their passion for excellence, and their unselfishness, high character and virtue attract others to act in the same way. Having a project manager with these leadership qualities is a big advantage.

These attributes do not come naturally. We'll discuss training the workforce in the next issue.

One of the best treatments of this subject has been done by John Kotter, the Konosuke Matsushita Professor of Leadership, Emeritus, at the Harvard Business School. (3)

At this risk of oversimplifying his groundbreaking work on the difference between management and leadership, Dr. Kotter concludes that companies that have been successful over the long term are found to have a good blend of both – leaders and managers.

The hidden responsibility of many managers

Another responsibility of managers not often spoken about or found in a manager's job description is their role in transitioning students into the real world. This is certainly true in the business of high tech electronic product assembly. The academic organizational structure is just very different than the for-profit company business model.

It is recognized that students have a learning curve to go up once they are employed in the real world. That learning curve consists of acquiring the technical skills to fill the gaps in their academic preparation, as well as attaining the needed soft skills such as working in teams and conflict resolution.

Management of entry-level personnel are important players in this often overlooked role. Try to remember your first real world job and the important influence your first manager had on your professional development.

Consider this: What is the metric used to determine a student's success? It's their grade point average. How does a student achieve a high G.P.A.? - By successfully competing as an individual against her fellow students in the classroom. They do this as individuals for some sixteen years, striving above all to get high marks on the tests they take.

Then, they leave academia and enter the real world and are asked to be team players!

Educating in a real world environment by using a for-profit EMS business as the classroom as suggested in last month's column (4) would eliminate the need for managers to provide this shepherding and remedial skill role.

I remember the early days of SMT... If I was composing a video essay at this point ethereal music would begin to play and the screen image would begin to fade and distort as we were clearly going back in time ... early in my professional development I came to the stunning realization that in high tech electronic product assembly the technical problems were the easy ones to solve. Like a lightning bolt from the blue, it hit me – could this be? It seemed the problems associated with co-workers priorities working in different departments and their respective manager's priorities were the difficult ones. Like baby birds vying for their mother manager's/director's attention these issues were much more complex. And

worse, they seemed to be intractable and unsolvable.

Now we begin to approach leadership and see it as a human characteristic, not a job title.

In those early days (cue the music again) we just did the near impossible by soldering IC packages whose lead pitch was reduced from 100 mils (0.100 inches or 2.54 mm – read last month's column) and, as important, developed the assembly processes that permitted the new devices to be soldered to circuit boards en masse for commercial, high volume product applications. The DIP – or, Dual In-Line package, was used practically from the advent of integrated circuit (IC) packages, to connect the silicon die to the other components in a product's circuitry. They came on the scene after the war (that's WWII). The need for increased pin-out and speed requirements in the early 80s caused product designers to embrace a new commercial plastic package that had been used in a ceramic form by the military for years (the leadless ceramic chip carrier). It had leads on a 50-mil pitch. In addition, the leads didn't go through the board. They were soldered on the same side of the circuit board as the component body resided. Then came fine pitch... However, the automated assembly equipment kept up and, although daunting when introduced, developing assembly processes to accommodate these new component packages was a reasonable task.

Contract manufacturing was beginning to take hold as electronic product design companies tried to avoid the ballooning cost of assembling their products – both capital equipment and personnel. One important role of a company's managers is to provide an operational

infrastructure that supplies data to permit performance measurement.

Here is an instructional example of the difference between a poor manager and a leader: In those days, production floor data was not as readily available as it is today. So, a concerted effort was needed to understand what a product actually cost to build. It took time and money to accumulate and track actual costs and use these as a measure against a product's standard cost (hopefully, used to bid on the job). As a manager, an alternate strategy was to whisper under your breath, "the hell with it. I'll just book as much business as I can by what I think it will cost and ship, ship, ship" Or worse, "I'll bid what I think will win the job without regard to its true cost and ship, ship, ship. We'll see at the end of the month if the company made or lost money." Not properly estimating cost beforehand leads to one of two reactions within an operation when a bid is successful:

- Sales / Marketing – We won! Hurray!
- Production – We won! Uh oh!

The good news is this "strategy" often caused the sales curves to go up and to the right. The bad news is the cost curves would also go up and to the right – at a faster rate. The sales and cost curves would never cross. The more you shipped the more money you lost! It was like wrapping a ten-dollar bill around every product that went out the door!!

In this case, the manager saw his role as shipping product for maximum revenue, literally, at any cost. The manager's primary objective was ill founded in the context of what was best for the company.

A leader would have challenged this approach and become a champion of

improving the operation's infrastructure to permit costs to be captured to help ultimately maximize margins.

So, often another difference between leaders and managers is a leader will advocate change by taking the longer view. The manager is normally preoccupied with meeting short-term goals, sometimes at the expense of long-term company growth and health.

Making my department "look good," even at the expense of other departments, is often the competitive dynamic set up by poor managers in the traditional organizational structure. To illustrate the ends a manager might go to achieve this objective, let me share another true story:

As you probably know the total cost of a product is the sum of the material and labor costs. The cost of material almost always dominates – typically, anywhere between 60% and 90% of the total product cost. In the material procurement world there is a metric called purchase price variance or PPV. It is simply the difference in the cost a procurement group estimates when quoting a bill of material (BOM) during the bidding phase (let's say the company is an EMS), and what they actually end up buying the material for when the job is won and the product is being prepared for actual production.

In this case the procurement manager would purposely inflate the material cost during the quote phase, so when called upon to actually buy the material a positive PPV could be reported – purportedly, because of the excellent negotiating skills of the manager and procurement department. This "strategy" was exposed when customers started to challenge the material side of the quote. "You have all

that volume buying leverage, yet we get better material pricing when we quote the bill than you have provided in your proposal!”

It is an example of why in my mind it makes sense to dismantle the traditional organizational hierarchy of departments. Your electronic product customer doesn't pay for your procurement department. They don't care that you have a process engineering department and a test engineering department and a production department and a finance department and a project management department and a marketing department. They buy products!

What your customer cares about is the price, quality, timely delivery of the product, and, sometimes, design-for-production input (DF MATERRS) (5) for a new product design – that's all.

So, “character” is an important trait of a good leader. I think in many ways it is the most crucial attribute: I like the definition that character is “doing what is right when no one is looking.” No compromise when the times get tough.

Setting an example by exhibiting behavior that is consistent with the values of the company is critical for the leader (assuming the company has admirable values).

Good delegation skills are another component of a good leader. The ability of being secure in one's decision-making, and not act defensively when those decisions are challenged will enhance the ability to lead, i.e., not having to be right all the time. Being empathetic is another good attribute of a leader. Daniel Goleman discusses the importance of empathy in his books on emotional intelligence. (6)

A unique leadership skill in today's organizations is dealing with the inability of many in the workforce to defer personal gratification and the rampant narcissism that exists. It's hard to have a truly functioning team when members of the team effectively have a blinking LED sign hanging around their necks that says “look at me!”

Managers are much more effective if they are also leaders. Managers that are leaders appeal to the workforce by their virtue. They do not manage by fear and intimidation. They encourage feedback from their group, both positive and negative. One of the ways they encourage negative feedback is not to “kill the messenger” who is the bearer of bad news.

However, probably the most important thing is that leaders don't have to be managers.

Anyone in the organization can be a technical leader through demonstrating their mastery of the technical component of their job – but, more important they can be a leader of the workforce by putting their team, project and the company before themselves.

Next month we'll drill down into some of these topics and work toward a saner organizational structure – one that permits a more efficient and cost effective way to manage electronic product assembly, one that exploits the natural leadership abilities within the company.

Hey, what do YOU say? I'd like to hear your thoughts and experiences.

(1) K. Marx; F. Engels - The Manifesto of the Communist Party (1848), Section 2

(2) K. Marx (1875) "Part I" - *Critique of the Gotha Program*.

(3) J.P. Kotter, John Kotter On What Leaders Really Do. Boston: Harvard Business School Review Press, 1999

(4) T. Borkes - The Child is Father of the Man – Turning the Relationship Between the Electronic Product Assembly Employer and Recent Graduates Upside Down. SMT Magazine, September 2016, Pg. 58-66.
<http://iconnect007.uberflip.com/i/721932-smt-sept2016>

(5) T. Borkes, Concurrent Electronic Product Design: DF MATTERS, Proceedings of Circuit Expo '95, Boston, Massachusetts, 1995.

(6) D. Goleman, Emotional Intelligence: Why It Can Matter More Than IQ, Bantam Books, 1995.