

Put the People-Factor Back into Maintenance

My December 2009 article—“**Made in China!**”—sets the stage for this month’s article. Last month, I listed American industry’s seven strengths that we need to exploit now. Let’s review:

- Advanced manufacturing technology—but it must be **reliable**, first time, every time.
- Market proximity—but we must deliver **on time**.
- Workmanship—but we must attract and retain a skilled, **competent** workforce.
- Productivity—but we have to do **our very best**, first time, every time.
- Widespread electric power and utilities—but they, too, must be **reliable**.
- Responsiveness—but we must listen to our customers and have the **agility** to respond to market changes quickly.
- Capitalism—but we must drive waste, fraud, and abuse from the system at all levels.

Look closely at the list: reliable, on time, competent, our very best, agility. Unfortunately these admirable qualities do not happen automatically. The simple yet powerful motto I suggested—**Do it right the first time**—is truly a competitive advantage. But putting this saying on a poster, sending it out in emails to all employees, or wearing “DIRTFT” buttons will not make it happen. These qualities must become woven into the fabric of the work culture. This **work culture** can be simply defined as the **collective behaviors of people on the job**.

This begs the question: How do we change or align the work culture to become more reliable, more agile and more customer-responsive? This is the soft side of competitiveness. From the top down, senior executives, management and frontline leadership have to drive changes in the work culture in order to address competitive pressures head on. Then the entire workforce must be engaged to make things happen.

In our profession, the profession of maintenance and reliability, we are really good at focusing on what it takes to maintain **equipment**. We are also really good at developing **work processes** that define the procedures and methods for getting maintenance and reliability work accomplished properly. The bottom line here: **People** must be engaged to make equipment reliable using these work processes. Sometimes, we are not so good at that. We must **put the people factor back into maintenance** to make our businesses competitive and financially successful.

So, how do we do that? Here are a few historical examples of the people side of improving competitiveness from the early days of successful American companies.

McCormick and Company

A prescription for struggling times: Let’s go back to the 1930s and look into what grew into the world’s largest spice company. In 1932, at the height of the Great Depression, Charles P. McCormick instituted a new business philosophy. McCormick’s guiding belief was that a company, whatever its products or services, was nothing without its workforce and an empowered workforce made for an empowered, efficient and successful company. This original 1932 corporate philosophy and system of participative management was formally published as **Multiple Management** in 1938. McCormick’s main theme was “**business is people**.” In 1949, McCormick compiled an updated and expanded version of the book defining his operating philosophy at McCormick and Company: *The Power of People*.

Charles P. McCormick led the culture change of a struggling company, which he inherited upon the sudden death of his uncle in 1932 after the stock market crash and at the height of the Great Depression. Charles, within a year after taking up the head position, after cutting weekly work hours from 56 to 45, increasing wages 10 percent, and establishing his “Multiple Management” philosophy saw the company return to profitability. *The Power of People* (Harper Brothers, NY, 1973) is a great read. My copy from 1985 still has the aromas of allspice and cinnamon from the old Light Street plant in Baltimore, Maryland. (Editor’s note: *The Power of People* is out of print, but used copies are available at [Amazon](#) by searching for the terms “Power of People” and “McCormick.”)

Ford Motor Company

Setting a new industry standard, Henry Ford built his first car in 1896. In 1903, Ford Motor Company was founded based on Henry Ford’s vision to revolutionize the automobile manufacturing industry. In 1924, Ford produced their 10 millionth car. Then in 1926, in his book entitled *Today and Tomorrow* (reprinted by Productivity Press in 1988), Henry Ford describes what most experts today describe as the foundations of the Toyota Production System—more than 50 years ahead of Toyota’s breakthrough!

In his 1926 writings, Ford described his equipment reliability philosophy: Machines do not often break down because there is continuous cleaning and repair work on every bit of machinery on the place. And it is the fault of management if a machine or a series of machines leaves anything to be done by hand. He continued with his philosophy on abolishing central tool rooms: A man cannot be paid high wages for standing around waiting for tools. New tools are brought to them. (It was amazingly progressive for 1926.)

Since the 1920s, Henry Ford led a radical work culture change in the motor vehicle manufacturing business with the Ford Principles of Management:

1. Do the job in the most direct fashion without bothering with red tape or any of the ordinary divisions of authority
2. Pay every man well, and see that he is employed all the time through 48 hours a week and no longer.
3. Put all machinery in the best possible condition, keep it that way, and insist upon absolute cleanliness everywhere in order that a man may learn to respect his tools, his surroundings, and himself.

Henry Ford, the president of Ford Motor Company at the time, set very clear expectations for how work was to get done, how people were to be treated, and the conditions of the equipment. And it worked extremely well especially compared to their contemporaries.

Decline of the British Auto Industry

Unfortunately, the British auto manufacturing industry was unable (or unwilling) to adopt Ford’s proven manufacturing methods. For example in 1913, on the eve of the First World War, Ford’s American plant produced more than 200,000 vehicles compared to Peugeot (France’s largest) at 5,000 units, and the Wolseley Motor Company (Britain’s largest) at a mere 3,000 units for the year.

By 1924, Ford was producing their Model T automobiles in England advertised as “92 percent British-built.”

A great debate then ensued in England: “Fordism and the British system of mass production.” The less productive, higher cost British system of piecework and mass production prevailed. Combine this with powerful trade union stewards, management apathy, government labor protection, government wage controls, and finally the 1975 government takeover, which led to the ultimate demise of the British motor vehicle industry. Productivity (and quality) suffered. In 1976, the British industry produced 5.5 equivalent motor vehicles per employee. Germany produced 7.9 per employee. And the United States produced 26.1 equivalent motor vehicles per employee—nearly five times as productive as their British counterparts. This classic example of failure to address competitive opportunities (or challenges) through **work culture change** is documented in a book entitled *The Rise and Decline of the British Motor Industry* by Roy Church (Cambridge University Press, 1994)—another timely read.

The Quality Movement Begins

Six decades ago (c. 1950), an American name Edwards Deming successfully introduced the quality movement to post World War II Japanese industries. Their success then led to the 1980s when U.S. business leaders recognized the power of engaging (and empowering) all employees to build quality into every step they perform. Total Quality Control evolved into Total Quality Management and small group problem-solving activities. Although the Quality Assurance/Quality Control (QA/QC) departments specify and communicate quality standards, it was up to the people and their equipment, machines, and tools to build quality products every step of the way. The prior decades-old approach was to produce quantities of products and inspect for defective products at the end of the process or at key points along the way. This led to high scrap and rework rates, which increased the cost per unit produced.

International quality standards then surfaced in the 1990s. ISO 9000 quality standards and QS 9000 for the U.S. Big Three auto industry suppliers were developed for the purposes of standardizing, documenting, and assuring that quality-first methods were being used. Yet even though documented procedures and methods existed, it was still up to the people and their equipment and tools to build quality into every step. This dependence on people to **build quality in** as opposed to **inspecting defects out** relied on a significant **work culture change** in businesses desiring step changes in quality. The business case for improving quality was so compelling that senior executives set new expectations for defect-free production. A radical paradigm shift in the **work processes** represented a new requirement in the competitive marketplace. The QA/QC department alone could not have accomplished that culture change.

Culture Change is About People

No matter how well our processes, equipment, machinery, and facilities are designed, built, and installed, they must be properly operated and maintained throughout their lifecycle for business success. The culture of maintenance and reliability is much more than the maintenance department can handle by themselves. I have written about this before: A reliability culture must be led from the top with new expectations and accountabilities. People at all levels in the business must be engaged and empowered to sustain equipment performance and improve equipment reliability.

There are many, many historical examples that show the ways of creating high-performing and productive work cultures. One final example: When you study the original principles of Total

Productive Maintenance (TPM) documented and taught by its founder Seiichi Nakajima (as I have since the late 1980s), you will discover the elements of and methods for creating a work culture that leads to the highest levels of equipment performance and reliability. Unfortunately, TPM has been grossly misinterpreted and implemented by many companies, writers, consultants, and universities all over America, and it's "not invented here." Are we taking that same course as the British auto industries by ignoring and even resisting the proven people-side of maintenance and reliability? **Let's put the people factor back into maintenance in 2010.**

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