How to Change a Culture: Lessons From NUMMI

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GM and Toyota launched their joint auto plant where GM's work force had been at its worst. Here's what happened next. And why.

In Spring 2010, New United Motor Manufacturing Inc., the famed joint venture experiment by Toyota Motor Corp. and General Motors Co., will close its doors. As someone who was there at its launch and witnessed a striking story of phenomenal company culture reinvention, I am often asked: "What did you really *do* to change the culture at NUMMI so dramatically, so quickly?"

I could answer the question from high altitude by simply saying, "We instituted the Toyota production and management systems." But in the end that doesn't explain much. A better way to answer is to describe more specifically what we actually did that resulted in turning the once dysfunctional disaster — GM's Fremont, California, plant — into a model manufacturing plant with the very same workers.

And describing what we did, and what worked so profoundly, says some interesting things about what "culture" is in the first place.

Backstory: Why NUMMI Began, and How It Fared

Toyota hired me in late 1983 to work on the Toyota side of its new venture with GM. I was assigned to a newly formed group at the company's Toyota City headquarters in Japan to develop and deliver training programs to support its impending overseas expansion. All of this was just happening. NUMMI didn't even have a name yet. The agreement with the United Auto Workers union was yet to be signed. There weren't yet any employees of NUMMI, nor even any managers. NUMMI wasn't successful; it wasn't famous. It was just a dream.

Why was the joint venture attempted? GM, for its part, had a few very tangible business objectives that it thought NUMMI could address. It didn't know how to make a small car profitably. It wanted to put an idle plant and work force back on line. And, of perhaps less importance at the time, but still acknowledged, it had heard a little about Toyota's production system, and NUMMI would provide the chance to see it up close and personal; NUMMI would be a chance to learn.

On the other side of the fence, Toyota faced pressure to produce vehicles in the United States. It was already trailing Honda Motor Co. Ltd. and Nissan Motor Co., which were by then building cars in Ohio and Tennessee, respectively. Toyota could have just chosen to go it alone, which would have been quicker and simpler. But Toyota's aim was to learn, and to learn quickly. What better way than to get started with an existing plant (Fremont), and with a partner helping it navigate unfamiliar waters?

It is important to note, however, that from the beginning, Toyota's objectives at NUMMI were defined by learning rather than by the kinds of tangible business objectives that typically define a joint venture. And if there's one thing Toyota knows how to do it is how to learn, especially where learning is most important: down at the operational levels of the company. It was that approach to learning that defined its approach to NUMMI from day 1.

Not surprisingly, NUMMI was an incredible learning opportunity for me personally. Before I could help Toyota teach anything to GM or to anyone else, it had to teach me first. So, starting in late 1983, Toyota put me to work at headquarters and at the Takaoka plant, NUMMI's "mother plant" that produced the Corolla. I worked on all the major processes of car assembly. Then, working with Japanese colleagues, I helped develop a training program to introduce the Toyota system to the American employees of NUMMI.

At the time, the work force in the old GM Fremont plant was considered to be an extraordinarily "bad" one. Many considered it to be GM's worst. The work force in those days had a horrible reputation, frequently going out on strike (sometimes wildcat strikes), filing grievance after grievance and even sabotaging quality. Absenteeism routinely ran over 20%. And, oh yes, the plant had produced some of the worst quality in the GM system. Remember, this was the early 1980s. So to be the worst in GM's system at that time meant you were very, very bad indeed.

Toyota had many concerns about transplanting perhaps the most important aspect of its production system — its way of cultivating employee involvement — into a workplace as poor as Fremont. Toyota wondered how workers with such a bad reputation could support it in building in quality. How would they support the concept and practice of teamwork?

As it turned out, the "militant" work force was not a major obstacle. Many problems did crop up, but they were ultimately overcome. In fact, the union and workers didn't just *accept* Toyota's system, they *embraced* it with passion. The absenteeism that had regularly reached 20% or more? It immediately fell to a steady 2%. The quality that had been GM's worst? In just one year, it became GM's best. All with the exact same workers, including the old troublemakers. The only thing that changed was the production and management system — and, somehow, the culture.

What Is the Nature of a Good Company-Employee Relationship?

I have often been asked what motivates Toyota's employees in Japan to "work so hard." One powerful motivator, I believe, is the concept and feeling of membership. It is interesting to ask, "What is the nature of the company-employee relationship?" At Toyota or NUMMI, there is clear and evident commitment on the part of the company to the employees. Toyota, even in Japan and contrary to popular myth, does not guarantee lifetime employment. No employer can credibly make such a guarantee. What an employer can do and what Toyota does is state that the last thing the company wants to do is lay off employees. Only as a last resort will it turn to reducing the work force. Through such a policy, real trust can develop between the company and employees, along with the motivation for employees to accept responsibility and take ownership. At NUMMI, this policy was called "mutual trust."

“Laying off as the last resort” was put to the test in the late 1980s. NUMMI’s product simply wasn’t selling well. Production volume was down so much that there were several hundred workers who weren’t actually needed to run the plant. Naturally, workers who had experienced layoffs in the past became nervous. To demonstrate the company’s sincerity toward its employees’ welfare, NUMMI wrote into the contract the commitment that before anyone was laid off certain steps would have been taken, including reducing plant operating hours and cutting management bonuses. Employee motivation comes from assuring membership in the organization, rather than from buying and selling time, whatever the price tag.

In NUMMI’s very early days, there was a little-known and fascinating debate behind the scenes about basic human resource policy. It made sense to the people at NUMMI to have production floor leaders participate in the process of hiring their own team members — giving them authority along with responsibility. That thinking was shared by the new NUMMI American senior managers and the Toyota people who were stationed at NUMMI.

But the senior HR managers in Japan were strongly against this idea. In this case it wasn’t Japanese views versus American or Toyota versus GM; it was NUMMI — both the Japanese and American managers — versus Toyota. When I first learned of the issue from NUMMI friends, hearing only their side of the debate, I quickly agreed with them. Their plan seemed to be the right way to go.

But when I spoke with the senior Japanese managers at Toyota, I realized the issue was much deeper than I first thought. It strikes to the very heart of the company-employee relationship.

At Toyota, a worker’s immediate supervisor does not have the power to hire and fire. The company will stand behind each worker as an employee, to protect him from a frivolous boss. The worker is hired by the company. He is an employee — citizen, even — of the company, not of the individual who happens to be his supervisor today. “Personnel power” is held by the company’s personnel department, not by individual managers. Employees need to feel secure in their relationship with the company. With this feeling, they can also feel free to support and actively engage in kaizen, or continuous improvement. Then, even if kaizen happens to result in the need for fewer workers in a given process, there is no feeling of threat or insecurity that a specific person will lose his position as an employee of the company.

Thus, including production supervisors in hiring interviews represented a breach of the basic philosophy of separation of power and would send a message, however subtle, to new employees: that their employment was a matter of their relationship with their immediate boss.
I ended up agreeing with the views of my colleagues in Japan. However, the final decision was left to the local management in California. They decided that production supervisors would be included in the hiring interview process.

Writing this, I am reminded just how much everything at NUMMI underwent tremendous scrutiny. These little things were important. And anything that impacted mutual trust wasn't a little thing.

Need a New Way of Thinking? *Act* Your Way to It

"Okay, so, *how* did you change the culture? What did you do that changed such a troublesome work force into an excellent one?". That's a great question.

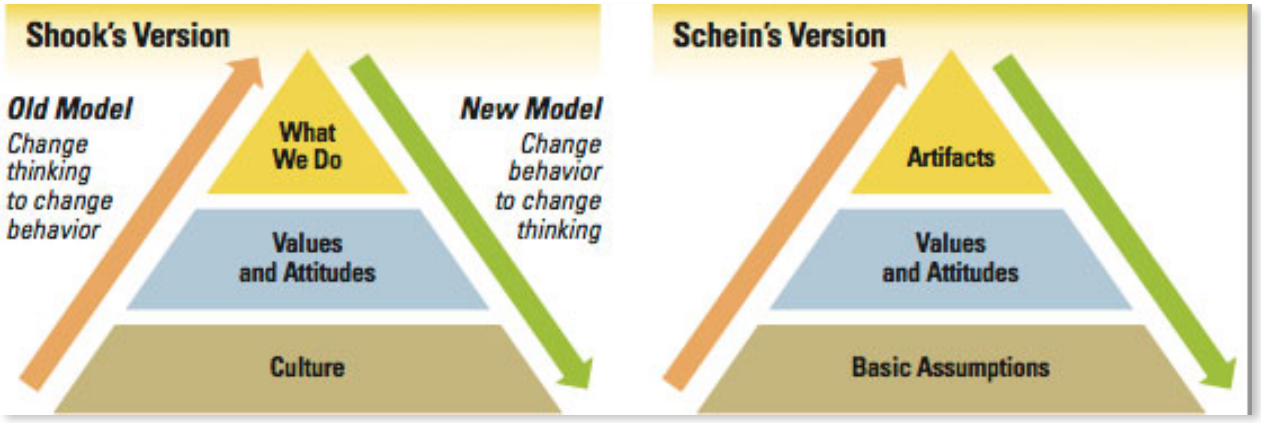
It's one thing to say the culture changed because we put in the Toyota Production System or changed the managers or management system, but it's another to define exactly what really changed the culture.

The individual who put the concept of "corporate culture" on our collective radar screen was Edgar Schein of MIT's Sloan School of Management. And, interestingly, there is no one who is more skeptical than Schein about claims of easily making wholesale changes in corporate cultures. Schein teaches that culture is hugely important, but he also argues that you don't change the culture by trying to directly change the culture.

Trying to capture what I had learned of how the culture was changed at NUMMI, I developed a simple pyramid model that I later found out was almost the same as a model Schein had created much earlier.

How Culture Changes — and Doesn't

The lessons from NUMMI are consistent with organizational development leader Edgar Schein's model of corporate culture. Schein proposed that the way to change culture is to change cultural artifacts — the observable data of an organization, which include what people do and how they behave.



Anyone wanting to change a culture needs to define the actions and behaviors they desire, then design the work processes that are necessary to reinforce those behaviors.

The typical Western approach to organizational change is to start by trying to get everyone to think the right way. This causes their values and attitudes to change, which, in turn, leads them naturally to start doing the right things.

What my NUMMI experience taught me that was so powerful was that the way to change culture is not to first change how people think, but instead to start by changing how people behave — what they do. Those of us trying to change our organizations' culture need to define the things we want to do, the ways we want to behave and want each other to behave, to provide training and then to do what is necessary to reinforce those behaviors. The culture will change as a result.

This is what is meant by, "It's easier to act your way to a new way of thinking than to think your way to a new way of acting."

Which leads to the question, How did we change behavior (and, as a consequence, the culture) at NUMMI?

"Stop the Line" (or, What It's Really Like to Give Workers the Means to Successfully Do Their Jobs)

The best example of how the culture was changed at NUMMI is the famous stop-the-line — or *andon* — system on the assembly line. All of the GM and NUMMI people who underwent training in Japan experienced learning and working with the stop-the-line system (or some variation of it). One of the decisions to be made in establishing production at the joint venture was whether to install the stop-the-line system. For Toyota, of course, that was no decision at all — it was a given. The *andon* system epitomizes Toyota's belief in, and commitment to, developing the means to enable employees to work in a way that "builds in" quality.

A key Toyota tenet is "Respect for People," the conviction that all employees have the right to be successful every time they do their job. Part of doing their job is finding problems and making improvements. If we as management want people to be successful, to find problems and to make improvements, we have the obligation to provide the means to do so.

When NUMMI was being formed, though, some of our GM colleagues questioned the wisdom of trying to install *andon* there. "You intend to give these workers the right to stop the line?" they asked. Toyota's answer: "No, we intend to give them the obligation to stop it — whenever they find a problem."

In Toyota's system, each worker on the assembly line knows precisely what his job is. He is given the knowledge and skills to know when he has encountered a problem (an abnormality that prevents him from successfully completing his task), what to do when he's found such a problem, and exactly what will happen when he notifies his leader about the problem. His team leader will come to provide assistance *within his job cycle*, or the time available to complete his assigned responsibilities. (Note: The line doesn't actually stop right away. It halts only after it reaches a certain point — called a "fixed position" — and only after the team leader has made the decision to let it stop.)

That translates into a promise from management to the work force: "Whenever you have a problem completing your standardized work, your team leader will come to your aid within your job cycle." That's quite a promise to a work force of a couple thousand whose job cycle is in the neighborhood of one minute. But Toyota learned that that is what it takes to enable workers to build in quality and to be engaged in problem solving and making improvements.

How the NUMMI Way Was Different From the Old Way

That is what changed NUMMI's culture. Given the opportunity — and challenge — of building in quality, the new-old NUMMI work force could not have been more enthusiastic about the opportunity to show that it could produce quality as well as any work force in the world. Quality, support, ownership — these things were integrated within the design of each job.

Contrast that with my first experience observing work on a Big Three assembly line.

In early 1995 at an assembly plant on the outskirts of Detroit, I observed a worker make a major mistake. A regular automated process was down for the day, so the worker was making do with a work-around. And with the work-around, he managed to attach the wrong part on a car. He quickly realized his mistake, but by then the car had already moved on, out of his work station. That's when I saw an amazing thing.

There was nothing that the worker could easily do to correct his mistake! Scratch the word "easily" from that. There was *nothing at all* that he could do. This was far from the NUMMI/Toyota process of making it (1) difficult to make a mistake to begin with; (2) easy to identify a problem or know when a mistake was made; (3) easy in the normal course of doing the work to notify a supervisor of the mistake or problem; and (4) consistent in what would happen next, which is that the supervisor would quickly determine what to do about it.

But for that worker on the Big Three assembly line, there was, practically speaking, nothing he could do about the mistake he had just made. No rope to pull. No team leader nearby to call. A red button was located about 30 paces away. He could walk over and push that button, which would immediately shut down the entire line. He would then indeed have a supervisor come to "help" him. But he probably wouldn't like the "help" he would get.

So he did nothing. To this day, no one knows what happened there except that worker and me. The contrast with the NUMMI/Toyota process couldn't have been more dramatic.

What changed the culture at NUMMI wasn't an abstract notion of "employee involvement" or "a learning organization" or even "culture" at all. What changed the culture was giving employees the means by which they could successfully do their jobs. It was communicating clearly to employees what their jobs were and providing the training and tools to enable them to perform those jobs successfully.

The stop-the-line *andon* process is just one example of acting the way to thinking, but it is a good one for two reasons. First, it deals with how people do their work *right now*. For each of us, every day, every moment, work comes at us. How are we equipped to respond? The *andon* system isn't just a set of manuals and principles or training — it is how the work is done.

Second, on a practical level, the most important and difficult "cultural shift" that has to occur in a lean manufacturing transformation revolves around the entire concept of *problems*. What is our attitude toward them? How do we think about them? What do we do when we find them? What do we do when someone else finds and exposes one? The andon process is about building in quality by exposing problems. Sometimes those problems are of our own making. Exposing them can be a very personal and threatening matter.

The Essential Value of Problems

Every person in a supervisory capacity, including hourly team leaders, visited Toyota City for two or more weeks of training at the Takaoka plant. The training included long hours of lectures but, most importantly, practical on-the-job training in which they worked alongside their counterparts to learn what was to be their job back in California. At the end of each training tour, we asked the trainees what they would most want to take back with them to Fremont of all they had seen at Toyota. Their answer was invariably the same: "The ability to focus on solving problems without pointing fingers and looking to place the blame on someone. Here it's 'five whys' [which means simply asking "why?" until reaching the root cause of any problem]. Back home, we're used to the 'five whos.'" Call attention to the problem to solve it, or to the behavior to change it, but not to the individual for being "wrong." That's not to say the Takaoka trainers weren't hard on problems. They were. And if problems repeated or if the same individual repeated the same mistake, individuals would be called out — loud and clear.

“Problems” were indeed viewed completely differently. Americans like to respond “no problem” when asked how things are going. One phrase known and used with gusto by every early member of NUMMI was the Japanese word for “no problem,” which, when spoken with a typical American accent, sounded pretty much like “Monday night.” So when Japanese trainers tried to ask how certain problems were being handled, American NUMMI employees could be heard all over the plant cheerily shouting, “Monday night!” The response to this by the Japanese was, “No problem is problem.” There are always problems, or issues that require some kind of “countermeasure” or better way to accomplish a given task. And seeing those problems is the crux of the job of the manager.

The first case I know of a Toyota manager issuing the now-famous Japanese English edict of “No problem is problem!” was Susumu Uchikawa. As general manager of production control — arguably Toyota’s area of most unique operational expertise — Uchikawa had a team of six very smart, midlevel GM managers working for him. Being very smart, young GM managers, they had a ready response whenever Uchikawa asked them to report on how things were proceeding — “No problem!” The last thing they wanted was their boss sticking his nose into their problems. Finally Uchikawa exploded, “No problem is problem! Managers’ *job* is to see problems!”

The famous tools of the Toyota Production System are all designed around making it easy to see problems, easy to solve problems, and easy to learn from mistakes. Making it easy to learn from mistakes means changing our attitude toward them. That is the lean cultural shift.

ABOUT THE AUTHOR
John Shook is an industrial anthropologist and senior advisor to the Lean Enterprise Institute in Cambridge, Massachusetts. He is the author of, among other books, *Managing to Learn: Using the A3 Management Process to Solve Problems, Gain Agreement, Mentor and Lead* (Lean Enterprise Institute, 2008).