

Legends – Gary Heerssen’s Legacy: Remembering a manufacturing hero.

Gary Heerssen’s Legacy: Gary Heerssen, AMD’s Senior Vice President of Corporate Manufacturing, passed away on December 20, 2004. What a loss . . . to his family, to his co-workers, to AMD, and to the industry. I first got to know Gary in the 80’s when the trade war with Japan was at its hottest. Gary led from the front, transforming AMD’s manufacturing in the process. In making AMD competitive he became one of the key individuals to renew America’s leadership in the semiconductor industry. He made America competitive in manufacturing. He was a worker’s leader: his people enjoyed working for him, working far harder than they would have done for anyone else. I was always impressed at how lively and happy people seemed when I visited AMD’s factories. He knew how to make everyone feel like they were playing a critical role. That’s leadership. Talking to many people for several weeks now, I find it impossible to express the level of respect, admiration, and love that people felt for Gary.

Gary Heerssen’s legacy leaves many lessons to be learned at a time when America is again experiencing major challenges to its leadership. His focus on the primacy of people and capital were legend. He always sought ways to empower both and to take advantage of both. Gary was driven by the principle of knowing how to spend money to make money – often leaving cost in the back seat, but never profits. Back when he was the diffusion section manager at Texas Instruments MOS 11 in Houston, he broke out of the box by insisting that they have engineering content on all shifts. In those days, engineers only worked the day shift. The conventional wisdom was that it was too expensive to have engineers on all shifts. Yields soared at MOS 11, more than paying for the added expense.

In 1977, TI moved Gary on to run what would become the legendary Lubbock fab. This was J. Fred Bucy’s home town, so it was under close scrutiny. Yet it wasn’t doing well. Here, Gary became one of the first fab managers to focus on defectivity. In those days, most of the focus was on the many catastrophic yield crashes. Though it is hard to believe today, a fab manager once boldly told me that “we have all the yield we need.” Defects were low on the priority list. Defects were certainly not a priority at Lubbock, so he brought **Daryl Ostrander** (who is now Senior Vice President of MPU Manufacturing) in. He had been impressed with Daryl’s work on defects. But he knew that simply knowing about defects would not change anything. He flew Daryl in to preach defects to the people there at Lubbock. He wanted defectivity religion to be at the lowest manufacturing level. This was seldom done in those days. The only ones that flew were management. Another innovation Gary implemented in Lubbock was to introduce computers into the fab to manage it and to analyze it. Again, yields soared. Though hard to prove, legend has long had it that the industry’s first wafer with 100% yields was produced there. It was certainly TI’s first. Soon, the whole industry was talking about TI’s secret weapon in Lubbock. They were being beat on cost and couldn’t understand why Lubbock had such reputedly high yields. While they focused on cost, Gary was focusing on spending money to increase yields.

In 1986, Gary moved to AMD to run fabs 14 and 15 in Austin. It was a disaster. America was being killed by Japan’s manufacturing prowess and AMD was among the worst. What he found was the classic American view of manufacturing at the time: High levels of NIH (Not Invented Here), people are the problem, and cost is the customer. There wasn’t a single computer in the fabs. No PCs. No engineering analysis tools. When they proposed adding computers, a senior manager pushed back with the remark “I don’t want computers running my fabs. I want my guy’s

hands on the stick.” Defectivity was also not important at AMD at the time. There was little inspection equipment to be found. Worse, they were told not to listen to the people in development. Cost was king – to the extent that sprinklers were not put in to save money. The fabs were surrounded by dead grass. It was little different inside the fabs. With Japan looming and the worst downturn in years, AMD was facing a triple nightmare because they couldn’t yield their next node. But what a deal they had gotten on the fabs.

Gary would take this field of weeds and turn it in to a field of dreams. One of the first things he did was put sprinklers in. Why? He wanted to make the place look like they were proud of it. The sooner it looked like it, the sooner they would be proud of it, building an esprit de corps in the process. They brought in the tools they needed – even secretly in some cases. He asked the development people to come in to help with the yield problems. They were shocked. They had never been allowed in an AMD manufacturing area. He also went hat in hand to AMD’s suppliers. He had initiated the relationships that give AMD an unfair advantage in its markets. When Gary was finished a few years later and the downturn over, AMD was producing the same revenues from three fabs that they had made with more than ten prior to his arrival. He had rescued AMD. He had also become a shining example of how to do it right in America at a time when most companies were abandoning manufacturing.

Fab 15 was ready when, in 1990, AMD introduced its cloned 386. They were still under the gun. No one knew it at the time, but this 40MHz part was earlier and faster Intel’s best (a 33MHz 386). It was practically a miracle. Moreover, Japan’s much lauded efforts to field a competitive microprocessor had failed. No fabless microprocessor company would survive either. AMD – or more accurately, Austin – had trumped three giants at once. Gary had proven that manufacturing matters and real men did have fabs.

Now he had Jerry Sanders’ ear. For the first time, Gary would be able to implement the full breadth of his ideas about manufacturing.

In 1991, Gary implemented a long term vision called “Journey to Excellence.” The four cornerstones of Journey to Excellence are

- 1) Systems for better control.
- 2) People educated and empowered.
- 3) Detect problems before they are a problem.
- 4) Organizational structure that is modular rather than hierarchical.

Today, this is at the core of how AMD competes globally against far larger competitors with far greater resources. Proof of how strong AMD’s manufacturing is, is the fact that when management tried an outsourcing strategy in an attempt to blunt the cost of building its own 300mm fab, its products could be made. AMD is better than world class, they are the class of the world.

With all of this, one would think Gary would have slowed down. I remember meeting him at the United lounge in Narita, just a few years back. He had spent the day with suppliers and had plans to meet with more suppliers in California when we arrived. We spent the whole time talking about everything from strategy to specific tool selections. Gary knew it all. He did step back after his leukemia took him down, but he never stepped down. On Gary’s last day, a Saturday, he was in a phone conference in the morning to review resource plans for Dresden. The other executive

had to go for family duties. When he called back to follow up, Gary had gone. Gary never had any agenda other than what was for the good of the company. That is probably why he was called early to make that long flight upstairs. Things are a mess up there and they need some organizational skills.

Before I close, I would like to say that while this may read like Gary did it all, he would be the first to say it was the team that did it. At the same time I can't tell you how hard it was to prepare this. People were often choked up and driven to tears, as was I. I want to thank the many people who endured my questions and overcame the tears to help pass Gary's legacy along. As mentioned earlier, I find it impossible to express the level of respect, admiration, and love that people felt for Gary. Gary, you will be sorely missed. — *G. Dan Hutcheson*