

# High Velocity Change: Energized for Excellence at Mitsubishi Consumer Electronics-America

*About involvement, dramatic business results falling out of the sky, and poets in the woodwork.*

Sherrie Ford

“I always wanted to do that!” “Really? What else did you always want to do?” This is the breakthrough dialog reported between an operator and an engineer resulting from a recent AME Kaizen Blitz<sup>SM</sup> at Mitsubishi Consumer Electronics, big-screen TV makers in Braselton, GA.

*Dramatic business results fall out of the sky, if you stay focused...*

Mitsubishi people discovered in 1996 that you learn a year’s worth about your systems in several days’ time during such a workshop. They’ve been so pleased with the results that they planned several more blitzes on a monthly basis:

- Your operators turn out to be the secret agents of continuous improvement
- Hard core resistance to change melts in the heat of a blitz
- Managing by function gives way to managing by process, at last!
- Your factory becomes an ad campaign for productivity utopia.

Poets appear out of the woodwork. At Mitsubishi we had the “Aging Antelopes” (“We quickly got rid of the TV aging process”); the “Mailmen” (“We deliver”); the “Pre-schoolers” (“We color outside the lines”); and the “Bin Busters” and the “Pack This!” improvement teams.

Everything accelerates: communication; conflict; conflict resolution; team bonding;

skating-rink-sized, new open spaces; and great gainsharing payouts.

Dramatic business results fall out of the sky, if you stay focused, come what may, during the blitz. We’re talking:

- 50 percent minimum gains in cycle time
- At least that much in WIP
- Almost 60 percent of the space opened up for increased capacity

Dramatic shifts in work culture emerge: transformed discipline in housekeeping (maybe we could *all* use a little maintenance training; the more you run blitzes, the less time they take to pull off.

### **Mitsubishi Follows High-performance Protocols**

How did the big screen TV makers arrive at these expected advantages and dynamics? In structuring the process, Mitsubishi followed basic, high-performing work culture protocols as they prepared people for their first blitz:

- Create a case for change
- Develop vision
- Create communication strategy
- Determine key result areas and key measures

*Set generous, even shocking boundaries.*

- Identify area(s) to be blitzed
- Set generous, even shocking boundaries
- Set extremely high goals for a short period of time

### **Blitz Team Improvements**

	<b>Blitz 1</b>	<b>Blitz 2</b>	<b>Blitz 3</b>
	Line 3	Warehouse	Cellular
Leadtime	58% ↓	67% ↓	61% ↓
WIP	61% ↓	72% ↓	61% ↓
Dollars Saved	\$145,00	\$2,500,000	\$203,000

**Figure 1.** Three blitz teams achieved significant improvements at the Mitsubishi plant.

- Open the checkbook for virtually any change the teams come up with; grit teeth and smile when opening the checkbook
- Train for empowerment and teamwork
- Managers encourage and support; otherwise, keep their distance
- Follow the conventions of high-performing teams; assign every member a role and give each and the team a system for accountability; use a meeting conduct code
- Videotape the evils of time, variation, and isolation in the targeted processes
- After trials are run, standardize any gains, then press on to next level
- Reinforce this intense behavior where it counts: in the paycheck, frequently, like every two weeks.

### **Three Blitz Teams**

Let’s look at the blitz bottom line results first, then briefly backtrack the blitz highlights. (See Figure 1.) Blitz 2, with a whopping impact of \$2.5 million in savings, jumps out at you and tempts you to focus on the warehouse. The fact is, the gains from blitzing the ware-

house would not have been realized had it not been for starting the blitz process on Line 3, the most complex of the three lines and which, the thinking went, would automatically resolve inefficiencies in all three.

**Full Line Kaizen Blitz: Line 3 (Cabinet Room, Alignment, Chassis Unpacking, Modification, Docking)**

In ten years of TV assembly, as the demand for production increased, a number of practices crept into the process of assembly, sub-assembly, and alignment. These unconscious practices ensured that operators would stay in a comfort zone, perpetually using placement, motion, and thought processes established for conditions that prevailed a decade ago.

For example, years ago massive defects in outsourced chassis led to having as many as 70 people in the department to handle all of the inspection and re-work before further

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assembly. This countermeasure led to another: creating special space not just for re-working defective chassis but also for having “enough extra” just in case. People believed that to properly build large-screen TVs, you need lots of space for lots of buffer, despite the fact that the supplier defects ceased to be a problem long ago. The result was separation by 300 feet between the chassis department and its internal customers in sub-assembly — no visibility, no communication, and a monstrous, expensive, bottleneck buffer.

A blitz experiment was to put the chassis department right next to sub-assembly, with no buffer. Three hundred feet became six feet, and workmanship problems are now solved immediately right on the line, with far fewer workers needed in this department.

Other aspects of this full-line blitz

included eliminating a cherished aging step, needed for CRT designs of yore but not today's. They also eliminated space for cabinet buffers and extra conveyors.

**Warehouse Blitz**

Removing the buffer from the chassis department led to increased forklift traffic to the warehouse. The idea of replicating the gains in Line 1 and Line 2, therefore, were thwarted, because tripling the effects on traffic was unacceptable. Thus, the warehouse became the object of a second blitz. The legacy thought here was, “Without a minimum of six weeks' worth of parts, we'd have to shut down the plant.” Blitz inquiry revealed that this belief came from a spiraling set of countermeasures which stemmed from simple inventory inaccuracies. The more “extra parts” that were built into the schedule to fend against shortages, the more inaccurate the parts inventory became.

The blitz experiment was to rope off all but two weeks' worth of parts, then empower employees in the warehouse to do whatever they needed to do to supply the line. This forced a transformation of vendor relations, being clear on needs for quantities, for time from dock to stock, and for other elements of time compression.

**Cellular Blitz**

This blitz has to be seen as a hybrid, because a new line entirely was being formed rather than improving an existing line. However, the process experts came from the existing line, and questioning their legacy beliefs formed the basis of the new cell design. In this case, legacy beliefs included these: You must have one large conveyor system around which operators specialize in narrow tasks on short-cycle jobs (such as, four screws just so, and that's it). You need lots of expensive equipment and many inspectors — all supervised by two levels. Don't trust operators to get it right.

After the blitz, the new belief is that you need no conveyor, operators in three small cells can learn all of the jobs, and equipment can be simpler because we need less automation, not more. We need lower volumes sched-

uled, with more frequent change-overs. Thus 30- to 60-second automated cycles become six-minute manual cycles, but now moving more in synch with customer demand rather than with batch manufacturing schedules.

The cellular line now sends to the distribution center less “anonymous” and potentially “spoiled” finished goods and more that fit exact customer demands. Brad Brannon, one of the industrial engineers facilitating the three blitzes, pointed out that TVs can spoil in the same way fresh foods do, sometimes because new features come out — making old inventory obsolete — and also when their own latest and greatest models wind up not selling because of an aggressive sales campaign for old models.

**Bonus Results**

With two-thirds less parts inventory in the warehouse and less unsold, potentially “spoiled” finished goods in the distribution center, this Mitsubishi plant won a bid to bring in a refurbishment center (for consumer

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repairs), allowing consolidation of functions into one building and increased jobs for the site. This is a persuasive action to hold up to the employees who fear that the impact of blitzing will be the loss of jobs, rather than this proven case of jobs increasing. And guess what: Luke Faulstick, the plant manager with the gritted teeth — actually a gigantic smile and major pride in what his employees have done — noted a blitz of this new refurbishment center held in May, 1997.

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