

# What We Can Learn From Toyota

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Toyota taught us how to build a successful lean production system, and now it's teaching manufacturers what to do — or what NOT to do — when faced with massive recalls.

Manufacturing.net sat down with Ron Atkinson, past president of the American Society for Quality and long-time auto manufacturing expert to discuss what we can learn from Toyota's problems.

**Mnet: Toyota is now on its second attempt at trying to fix its problems with sticky gas pedals. Could they have perhaps rushed it the first time? Should manufacturers rush to find a fix right away?**

**Atkinson:** Well I don't think the two are mutually exclusive. Yes, you should always rush to immediately find out what the problem is and how you can irreversibly fix that root cause. At the same time that you're doing that as quickly as you can, you also have to make sure you do it right the first time. I have been involved with numerous recalls over the years and we found that whenever we had a recall, we rushed as quickly as we could to get a solution, but we'd make sure it was correct before we implemented it. In some cases, two or three different solutions were presented before we had one we knew would work.

**Mnet: When these recalls occur, what steps in the lean manufacturing system might need to be corrected?**

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**Atkinson:** There may be none. It depends on what caused the problem because if it was something that happened in the design process that no one had anticipated then you should add that to your design checks, but you wouldn't necessarily change anything in the manufacturing system. If something happened in the lean manufacturing process that caused the recall, in other words, the components were not made correctly, then what you'd do is determine what needs to be done differently and use the lean process to make those changes in your documentation and make that process part of the system.

**Mnet: In Toyota's recall of the sticky gas pedals, reports say poor design was a major factor. What impact does a design versus manufacturing-related recall present to manufacturers?**

**Atkinson:** Usually, if it's a manufacturing defect, the numbers of vehicles affected would be smaller because it's typically discovered in the manufacturing process and limited to only those vehicles already manufactured.

The bigger recalls are typically design errors and really big ones fall under two areas.

One is when a period of time before the problem is discovered, such as in a recent GM steering recall — it took 20,000 to 30,000 miles before the problem appeared. So you're not going to see a problem for the first year or two the vehicles are on the road, and while those vehicles are on the road, they're still producing more vehicles. When problems are found immediately, that reduces the size of your recall.

The other thing that increases the size of a recall is if they're having a problem with a component part that is seen on more than one type of vehicle. Multiple recalls using the same part heightens the number of recalls they'll have.

**Mnet: How can manufacturers ensure that they are getting quality product from their suppliers?**

**Atkinson:** Before a supplier is given a contract, typically they need to be evaluated by purchasing, engineering and quality to make sure they can produce the product in an acceptable manner for a long period of time. Engineers and quality specialists then work with the supplier to mold their tools and equipment and do extensive testing before the supplier can ship parts. Once they get the go ahead to ship parts, periodically quality people from the manufacturer come in and check to make sure everything is okay. From both the manufacturing location and assembly location they are constantly evaluating parts that come in from suppliers and make sure that everything appears to be to spec.

**Mnet: With more quality control in place, does this make it easier to find a problem, or more difficult?**

**Atkinson:** It makes it easier to find the problem, especially now that systems are so much better. With automated systems, we now get faster responses so it allows

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you to react quicker to the problem.

### **Mnet: When a recall does occur what can be done to improve quality reputation? How long would it take?**

**Atkinson:** It depends on how quickly the recall is handled.

For example, in GM's steering wheel recall mentioned earlier, they issued the recall ahead of time — they told the public exactly what is going on, that they will recall the vehicles, but they don't have replacement parts yet. They told the public the vehicles are still safe and the steering will still work, but it might get harder to steer under 15 mph. As soon as GM gets parts, they'll notify people of the older vehicles because they are more likely to have the problem and then work through to the newer vehicles and will have the repair done before any major problems.

When you do a recall that way, there is virtually no damage to your reputation. Where you damage your reputation is when it hits the front page of the paper or gets the attention of the government. Sometimes it's irreparable and if it is repaired, it takes a long time. It takes a long time to build up a good reputation and that can be destroyed rapidly, and taking just as long to re-build it.

### **Mnet: How can manufacturers ensure the problems doesn't happen again?**

**Atkinson:** First, make sure that whenever you find a problem like this, you get to the root cause, and that information is communicated so everyone learns from that design or situation. Once the problem is fixed, it's important to use the lessons learned to make sure that defect never happens again on any of your vehicles.

You also need to do everything you can to ensure that your design and the testing of your design is adequate and applies to every condition. Testing should be very stringent. If something comes up that is a potential problem, then you need to go back to the design to make sure it doesn't happen again.

### **Mnet: Toyota has admitted they grew too big, too fast and lost sight of quality. How can quality be ensured when business is booming?**

**Atkinson:** By having a consistent, understood process in place, such as lean. That's an excellent way to minimize the possibility. If one location finds a better way to do something, then that information should be shared with other locations. Generally, if you find something that can cause problems, you share that information with other locations to make sure they take advantage of your new information. Also, when using lean design you find the design that works the best — not only initially but also long term, and that is the design you use from then on as much as possible until you find a better way of doing it.

A good lean system minimizes waste, and recalls are waste. Costs can be reduced by minimizing waste, but lean does not mean you arbitrarily minimize costs without there being consequences. If you're just eliminating costs and it results in more waste, then that is contrary to the lean principle.

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*Ron Atkinson, past president of ASQ, is a Six Sigma Black Belt and holds certifications as a quality engineer, auditor, manager, and quality improvement associate. For more information, visit ASQ at [www.asq.org](http://www.asq.org) [1].*

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