

Supply Chain Management Technology

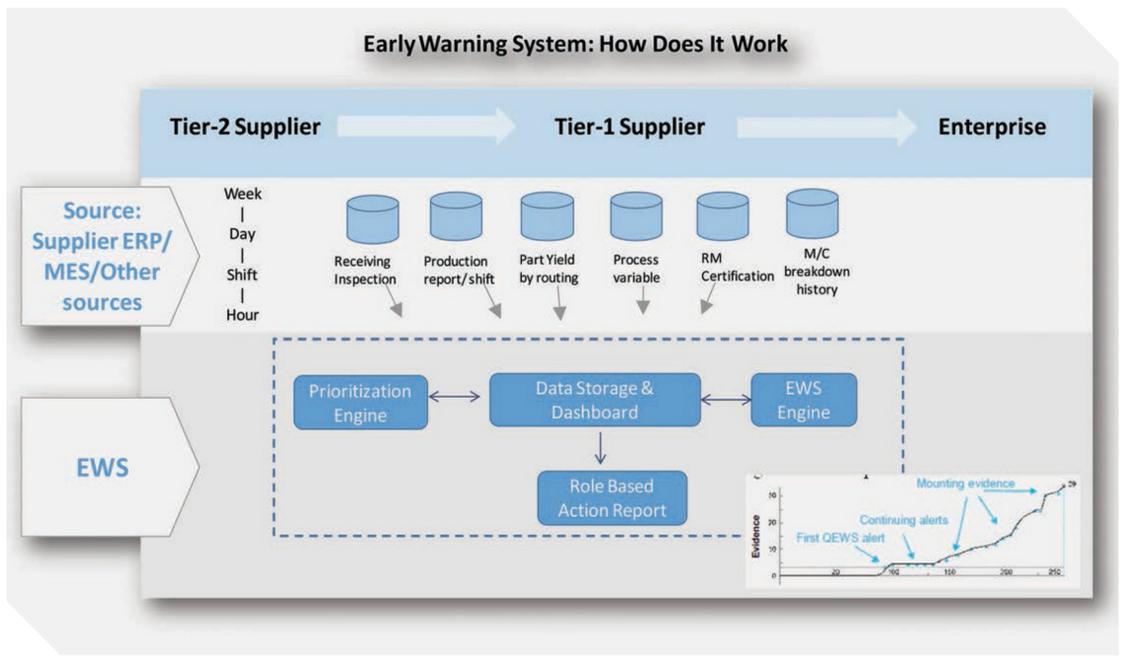
Quality: To be or not to be

The article talks about the need for a cultural shift from 'acceptable quality' to 'outstanding quality' in the Indian manufacturing sector and the way to go about it



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The last two decades of tremendous growth in automotive sector has created its own set of challenges for component manufacturers. Dealing with growth while being under constant pressure to cut costs has had its own impact on the level of quality that the current system can deliver. While there is no doubt that productivity improvements have increased significantly compared to the early nineties, the lack of good support on manpower capability and robust quality systems mean most Indian manufacturers have not been able to make the jump from percentage to ppm. Even today, factory managers and staff work long hours under constant fire fighting just to ensure delivery. This pressure on the system is unsustainable with a very high share of labour being contractual.



Quality matters

A common misconception among the supplier community is that quality hampers productivity. This belief lies at the root of their culture of throwing people at the problem; people with such rudimentary skills that even today, their ability to develop a deep-dive root cause analysis is non-existent. So most of the problem solving is essentially experiential and relies less on data. The application of old teaching from the classroom, such as control charts, is rare. There is hardly any time or investment made in skilling people on quality. What India needs right now is a culture shift in the way they think of investing in quality.

A good starting point is for owners and promoters to believe that investment in quality pays. This upside, however, is possible only at outstanding levels of quality. A recent McKinsey-CII customer survey has shown that while it is useful to go from 'poor' to 'good', the major upswing in business impact happens when moving from 'good' to 'outstanding'. An Auto OEM surveyed customers on their likelihood of buying their products if outstanding quality was delivered. The answer was that the increase would be 6x. Across many sectors, it is becoming increasingly evident that 'good enough' quality is not good enough. Commitment to outstanding quality could be the route to profitability.

Quality investment is about attitude

First, businesses need to recognise that high quality does not equal high cost or lower profit. Most of the Indian suppliers during their growth journey have acquired old assets from developed countries and deployed in India. It is amazing how the same assets that delivered outstanding quality for the original overseas manufacturers fail to deliver the same in Indian shop environments. The McKinsey-CII survey of plants across industries shows that the best quality plants are cost efficient.

A culture of quality

The understanding of a 'culture of quality' varies across leaders and organisations. Some wonder if culture even matters. Others intuitively believe that it does, but are unable to provide hard empirical evidence. Most practitioners would agree that culture is essential to impact shopfloor quality. However, culture alone is not enough.

Applying the right methods is equally important. Figure 1 depicts the approaches to addressing quality problems. On most shopfloors, the accepted approach to quality has been through visible models of continuous improvement and standard work. However, these are applied only when problems are reported. The shift that has to happen is a move to the two right quadrants in Figure 1, where problem solving utilises newer invisible methods to both solve and avoid problems. In short, factories must move towards more predictive abilities using data.

Predictive manufacturing

Is it possible for manufacturers to use predictive models that can detect failures before they happen? In today's digital world, it is. With hardware costs of sensors, chips, cameras becoming cheaper by the day, data acquisition today is much less a challenge than through traditional ERP systems.

The key lies in designing processes that use such data and to create predictive models that are useful to people on the shopfloor. Such processes and models can:

- Detect standard operating procedure violations before they happen
- Detect suppliers who are likely to deliver short or poor quality parts
- Detect a machine failure before it happens
- Provide quality personnel the top three reasons for part failures for further investigation

The more forward looking Indian manufacturers are exploring opportunities to take advantage of low cost data acquisition tools and are developing process capabilities based on early warning systems.

This is not a superficial change, but a fundamental shift in the way shopfloor works. It will drive a shift in the quality culture as well. This is a shift from saying, "I must solve the problem" to emphasising that "I must not allow problems to happen". And even when problems do happen, to use the power of data and computing to understand the underlying cause and effect relationships. It is only then that shopfloors can move away from fighting fires.

Early warning systems

Examples of predictive manufacturing or early warning systems are plenty. Traditionally, continuous process industry has made predictive manufacturing a way of life because the cost of an hour of stoppage can decide whether the month will end with a profit or loss. Over the years, process industries have developed industry standards in data acquisition and software integration so that adoption becomes widespread. Discrete industries have lagged behind.

Implementation can be undertaken in smaller steps, taking one problem at a time. With cloud computing environments becoming increasingly popular, investment hurdles for companies wanting to move to predictive manufacturing are even lower. This lower investment requirement should encourage more participation from Indian manufacturers.

While this in itself is not the panacea of all shortcomings in quality management, it has the ability to significantly change the way we think about driving quality from acceptable to outstanding.

No substitute to quality planning

Quality is integral to the reputation and bottom-line of an organisation. While quality lapses can have far-reaching negative consequences, outstanding quality can be both profitable and the basis for a solid reputation. Leaders can achieve excellence in their organisations by establishing quality across operating, management and people systems.

Leaders play a decisive role in articulating the impact of building outstanding quality, in setting aspirations and clearly defining the actions needed to embed and embody a winning culture of quality in their organisations. With computing power, even basic quality functions of preparing control charts becomes easy and cheaper to execute.

One thing that computing power cannot solve is the ability of factory personnel to plan things. That skill has always remained the exclusive domain of individual managers. Now, with the support of data and models, managers will have the planning abilities to get out of continuous fire-fighting. Everyone deserves to go home at the end of the shift!

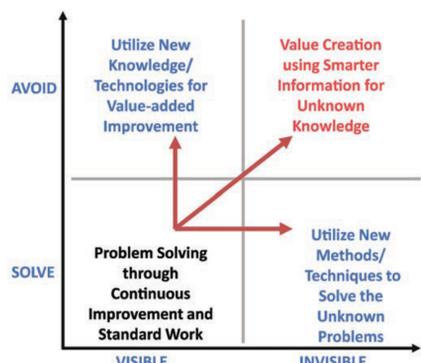


Figure 1: The graph depicts the approaches to addressing quality problems