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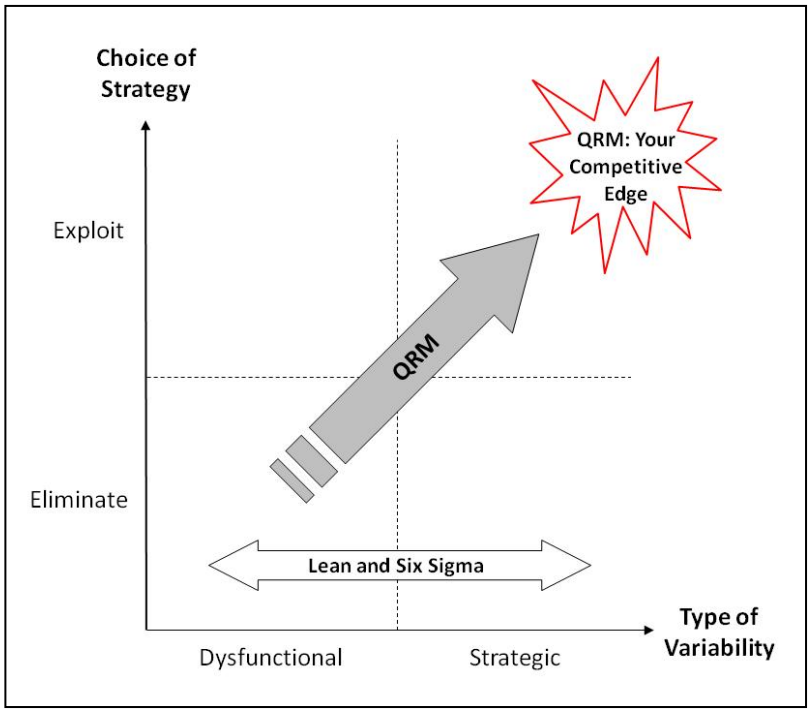


QRM Strategy Goes Beyond Lean and Six Sigma

Quick Response Manufacturing (QRM) is <u>not</u> an extension of Lean Manufacturing; the fundamental principles of QRM were already being identified by Professor Rajan Suri during the early to mid 1980s while at Harvard University, and then at the University of Wisconsin-Madison, before the first books on Lean were published.

For industrial competitiveness in the 21st century, QRM strategy goes beyond both Lean and Six Sigma. To see this, note that the origins of Lean are in high-volume, repetitive production, and the core tools in Lean such as takt times and level scheduling are designed to eliminate variability in operations. Likewise, Six Sigma is an approach to minimize variability – "Sigma" refers to a statistical measure of variation.

However, eliminating variability may <u>not</u> be the right strategy for all companies!

To make this clear, the QRM literature defines two types of variability:

- **Dysfunctional variability** caused by errors and poor systems. Examples are: rework; constantly changing priorities; and "lumpy" demand due to poor interfaces between sales and customers.
- **Strategic Variability** introduced by a company to maintain its competitive edge. Examples are: serving markets with highly unpredictable demand; offering customers a large variety of options; and offering custom-engineered products.

The core Lean and Six Sigma techniques aim to eliminate *all* variability in the manufacturing system. The QRM approach is aligned with Lean/Six Sigma in getting rid of dysfunctional variability. However, you do not want to eliminate strategic variability if it is the basis of your competitive advantage.

Hence, in QRM you do not eliminate strategic variability, instead you exploit it!

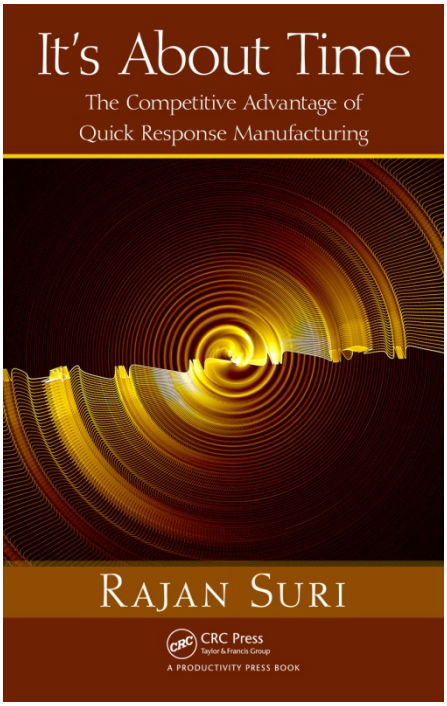
As explained in Suri's book, *It's About Time* (Productivity Press, 2010), QRM achieves this goal through four core concepts:

1. Realizing the Power of Time. Lead time is much more important than most managers realize. Long lead times create many organizational costs – such costs are four to five times labor costs. Shrinking these costs is a much bigger opportunity than reducing labor. Hence all management decisions need to be rethought using lead time impact as the primary driver.

2. Rethinking Organization Structure. QRM transforms traditional functional departments into an organization consisting of "QRM Cells." Although the cell concept has been known for some time, QRM Cells are more flexible, more holistic, and apply outside the shop floor too.

3. Exploiting System Dynamics. By getting managers to understand how capacity, batch sizes and other factors impact lead times, QRM enables them to make improved decisions that result in shorter lead times.

4. Implementing a Unified Strategy Enterprisewide. QRM is not just a shop floor approach, it is applied throughout the enterprise. This includes material planning and control, purchasing and supply chain, quoting, order processing and new product development. QRM provides a single, unifying approach for the entire enterprise using lead time impact as the driver.



The end result is that QRM redesigns the enterprise to cope with the strategic variability while maintaining a productive operation and at the same time achieving quick response. Hence QRM goes beyond Lean and Six Sigma (see Figure on previous page).

This capability of QRM is important for companies that offer high-variety and custom products today, but ***it will become increasingly important as we look to the future*** with customers demanding a wider array of options and customized features – a trend that is often referred to as "mass customization" in the literature. The innovative nature of QRM strategy and its potential for the future of manufacturing enterprises have been recognized by several awards for Professor Rajan Suri, the founder of QRM strategy. These include awards from the Society of Manufacturing Engineers and IndustryWeek.