Dynamic Measures Underlie Improvement

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During the next decade, measurement paralleled the manufacturing revolution — converting raw materials into a finished product in a package that is shippable. Of the many metamorphosed measures one could discuss in this area, scrap and rework make a good example.

In the early 1980s, scrap/repair used to be measured as a “percent of cost of goods sold.” It was accepted practice for this amount to be 5–15 percent of production volumes and more in some industries, such as semiconductors. The manufacturing productivity revolution ensued and the metric was redefined, all the way to “defects in parts per million, or Six-Sigma.” In both distribution and manufacturing, productivity improvements drove the need for new measures. The metrics initially...
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Now, in the 1990s, measurement will parallel the product development revolution — getting a product concept into a documented product and process design. In the late 1990s and beyond, it will parallel the product conceptualization and innovation revolution — synthesizing products from customer and market needs and getting this information into a tangible product concept. The issue in the 1990s, however, is that industry is only in the beginning of the product development revolution and cannot look back and understand how measures changed. Industry must recognize that product development measures are in the process of changing and try to find the leading measures that will ultimately remain once the product development revolution matures over the next ten to twenty years.

In the few short years that industry has focused on product development productivity improvements measures are already changing. One of the metrics that will survive time is fairly widely known and serves as a good example — "percent of sales due to new products." In the late 1980s, when 3M popularized the measure and it became widely used, the metric was defined as "X percent of current year sales due to new products released in the past three years." This measure, in the mid 1990s, is now more often calculated using a one-year or two-year period versus three-year. "X" is also changing as well. The early figure defining successful performance was 30%. It has now risen to over 50%. Some world class companies are achieving 60-65% and better.

"The first measures simply captured overall time-to-market. New measures are capturing time by phase, time by milestone, and finally overall time."

Summary

Rapid changes in metrics and measurement systems occur with only incremental improvement. Transformational change results in the definition of a new basis for measurement. What then will be the product development revolution equivalent to Six-Sigma? Product development professionals will have to get there to find out.

Biography

Bradford L. Goldense is Founder and President of Goldense Group, Inc., a twelve-year old Cambridge, MA consulting and education firm that concentrates in advanced business and technology management practices for line management functions. He has consulted to over 60 of the Fortune 1000 and has worked in over 200 manufacturing locations throughout North America, Europe, and the Middle East.

Brad is a Member of the faculty at the University of Dayton in Dayton, OH and the Gordon Institute of Technology University in Medford, MA, and is also a member of the University Council at Cornell University. He holds a BS in Civil Engineering from Brown University and an MBA in Cost Accounting from the Johnson School at Cornell. Brad is a Certified Manufacturing Engineer by the SME, a Certified Computer Professional by the ICCP, and is Certified in Production and Inventory Management by APICS. He is a member of the Board of Directors for Society of Concurrent Engineering and is the President of the Boston Chapter.