CEP Chemical Engineering Progress

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A Change in Culture

Cultural change necessarily involves resistance to change. This sentiment often rings true for advancements in technology. On pages 12–13 of this issue, contributing editor Alan Brown asks the question, "Web-based plant design tools are ready, but are engineers?" The Internet is definitely an ideal collaborative tool for enabling engineers from around the globe to communicate and collaborate with one another, but how many are actually taking advantage of it? As it turns out, much fewer than anticipated. In the course of Brown's research, he determined that it's not the technology that is the limiting factor, but rather current practices and people. According to Trinity Technology's Joe Morray, "We are not limited by collaborative technology. We're limited in using it effectively by work processes and our cultural expectations of what can be done."

To implement cultural change successfully, there must be personnel acceptance at all levels, particularly management. Such is the case for Six Sigma. In James Wheeler's article on Six Sigma basics (pp. 76–81), "management commitment and broad participation across the company" are just a few of the reasons for Six Sigma's success.

In our upcoming July issue, we will follow up Wheeler's article with an application of Six Sigma in an ethylene production unit at Sasol, N.A. According to the author, Yogesh Trivedi, "Such a [Six Sigma] program is structured to bring together the essential elements of total quality management — commitment, culture, communication and cooperation. The application methodology eliminates the use of opinion and drives the organization towards more scientific and robust means of decision making." Thus far, Sasol is claiming success. The firm has been able to recover as much as 65% of the opportunities that could have been lost.

Changing a thought process is certainly a challenge, but not impossible. On the general public level, it will be interesting to see if Stephen Wolfram's (developer of Mathematica software) recently released book, "A New Kind of Science" (Wolfram Media, Inc.; ISBN: 1579550088), which outlines a new way of modeling complex systems, will stir up a storm of controversy, and perhaps open our eyes to a new way of thinking. For those not familiar with the book, Wolfram uses simple non-mathematical rules to define complex systems (*e.g.*, stream eddies and snowflake patterns), rather than complex equations.

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