

United Technologies Corporation (UTC), based in Hartford, Connecticut, owns a wide variety of companies that operate in different businesses and industries. Some of the companies in UTC's portfolio are more well-known than UTC itself, such as Sikorsky Aircraft Corporation; Pratt & Whitney, the aircraft engine and component maker; Otis Elevator Company; Carrier air conditioning; and Chubb, the security and lock maker. How can UTC effectively operate so many different kinds of businesses, in so many different kinds of industries?

UTC's CEO George David claims he has created a unique and sophisticated method to continuously change and improve the performance of all its diverse businesses. David joined Otis Elevator as an assistant to its CEO in 1975, but within 1 year, Otis was acquired by UTC. UTC sent David to manage its Japanese operations and he had formed an alliance with Matsushita to develop an elevator for the Japanese market. The resulting "Elevonic 401" elevator, after being installed widely in Japanese buildings, proved to be a disaster. It broke down much more often than the elevators made by other Japanese companies, and customers were concerned about its reliability and safety.

Matsushita was extremely embarrassed about the elevator's failure and assigned one of its leading TQM experts, Yuzuru Ito, to head a team of Otis engineers to find out why it performed so poorly. Under Ito's direction all the employees—managers, designers, and engineers—who made the elevator worked together to analyze why they were malfunctioning. Through their intensive study, the elevator was completely redesigned and, when it was launched worldwide, it became very successful. Otis's share of the global elevator market increased dramatically and one result was that David became CEO of UTC.

Now responsible for all of UTC's diverse companies, David decided that the best way to increase the company's performance, which had been declining, was to find ways to improve efficiency and quality across all its companies. David convinced Ito to move

to Hartford to lead the effort to use TQM to improve the performance of all its companies. Ito developed UTC's TQM system known as *Achieving Competitive Excellence*, or ACE.

ACE is a set of tasks and procedures used by employees from the shop floor to top managers to analyze all aspects of the way a product is made. The goal is to find ways to improve *quality and reliability*, to *lower the costs* of making the product, and especially to find ways to make the next generation of a particular product perform better—in other words, to encourage *technological innovation*. David makes every employee in every function and at every level responsible for achieving the incremental, step-by-step gains that can result in innovative and efficient products that enable a company to dominate its industry.

David calls these techniques "process disciplines," and he has used them to increase the performance of all UTC companies; his success can be seen in the performance UTC has achieved since he took control. He has quadrupled UTC's profits, and UTC is normally one of the top three performers of the companies that make up the Dow Jones industrial average. David and his managers believe the gains that can be achieved from UTC's process disciplines are never-ending because its own R&D—in which it invests over \$2.5 billion a year—is constantly producing product innovations that can help all of its businesses.

Is UTC pursuing evolutionary or revolutionary change or both?

In what ways do you think UTC's ACE program improves its employees' ability to adapt to changing contingencies? How easy would it be for other companies to implement a change program similar to UTC's?