

BACKGROUND

The Universal Motor Company is one of the world's largest manufacturers of automobiles and trucks. In 1980, purchase content was 65 percent of the cost of goods sold. The purchasing organization was well managed and staffed with seasoned, well-educated professionals.

During the late 1970s, the U.S. government began addressing the air pollution issue by establishing vehicle emissions standards and corporate average fuel consumption economy targets for vehicles sold in the United States. The auto industry was faced with major technical problems. The U.S. government-mandated standards could not be achieved with available technology. These mandated standards required the auto industry to design engine control computers (fuel intake, spark timing, etc.) to manage engine efficiency more precisely.

Management was highly confident that established purchasing policies and procedures that had been used successfully for so many years would apply to the procurement of the new semiconductors required for the manufacture of the new engine control computers. By 1980, it was obvious to the individuals directly involved that something was wrong. The tried and true methods of purchasing stampings and plastic injection molded parts were not getting satisfactory results when applied to the purchase of semiconductors. The company purchased about \$10 million worth of semiconductors in 1980 from twenty suppliers. Stock-outs leading to production disruptions (absolutely forbidden in the auto industry) were occurring regularly. In fact, semiconductors were a greater cause of production disruptions than were all other purchased materials. Semiconductor suppliers, for the most part, seemed

uninterested in the firm's problems and did not react to these emergencies in the normal auto industry supplier fashion.

Those responsible for the procurement of semiconductors were under intense pressure from management to resolve these difficulties. But nothing they tried seemed to make a difference. During these dark days some important observations were made:

- The total 1980 worldwide auto industry semiconductor requirement represented less than 2 percent of the semiconductor market. Therefore, members of the semiconductor industry did not see the auto industry as an important market requiring or deserving any special service.

- The purchasing practice of sourcing from many suppliers (to ensure competition and a low purchase price) was aggravating an already difficult supplier relations issue and further complicating the situation.

- Purchasing management projected its semiconductor requirements out over the next five years. The projection was shocking: The current \$10 million annual requirement was forecast to grow to over \$90 million by 1985. It seemed likely that this growth would be replicated by the entire auto industry. Interestingly, however, this growth did not increase the market position of the auto industry, as the semiconductor industry was growing faster than the automotive industry market component.

Based on these observations, it became clear that something had to change. The 1980 semiconductor supply situation was intolerable. Of equal or greater concern, projected growth in electronics requirements appeared to be unsupportable.