BRIGHAM YOUNG UNIVERSITY

CS Department Colloquium Series

Robin Roundy

Professor, Operations Research
and Industrial Engineering
Cornell University

Thursday, March 2, 2006

1170 TMCB, 11:00 AM

Strategic Capacity Planning for the Semiconductor Industry: Current Industrial Practice and New Directions

We summarize a multi-year research effort designed to provide useful tools for capacity planning decisions in the semiconductor industry. The decisions are crucial and challenging. The business environment is volatile, but equipment has long procurement lead times and is extremely expensive. Capacity planning in a stochastic environment. We will review and evaluate current business practices. We present methods for quantifying the errors in demand forecasts. We present a novel approach for multi-dimensional demand modeling, and discuss practical and algorithmic implications of different stock out cost models. We present efficient algorithms for provably solvable versions of the capacity planning problem.

Biography

Robin Roundy is a professor of Operations Research and Industrial Engineering at Cornell University, where he has been since 1983. He graduated magna cum laude from Brigham Young University, where he received the Orson Pratt Award, which is given annually to the outstanding mathematics graduate. He then studied operations research at Stanford University, where he received his doctorate in 1984. That same year he won the Nicholson Student Paper Competition, sponsored by the Operations Research Society of America (ORSA). In 1985, he received a Presidential Young Investigator Award from the National Science Foundation. In 1988 he received the Fredrick W. Lanchester Prize of the Operations Research Society of America for the best paper of the year on operations research. Cornell's College of Engineering awarded him the S. Yau Excellence in Teaching Award in 1997 and 2002. He is a member of The Institute for Operations Research and the Management Sciences, and of the Institute of Industrial Engineers.

Donuts will be provided