

**SEMINAR SERIES**  
**Department of Quantitative Analysis and Operations Management**  
**University of Cincinnati**

**Optimization Services: A Framework for Distributed Optimization**

**Kipp Martin**

**Graduate School of Business**  
**University of Chicago**

**Friday, June 2, 2006**  
**12:30 p.m.**  
**214 Lindner Hall**

Software-as-a-service is radically changing the traditional software model. Companies are experiencing tremendous savings by using enterprise application software on an as-needed basis rather than purchasing and installing the software. There is no reason why optimization should not be available as a software service. Optimization Services (OS) is a project designed to make access to powerful optimization solvers as simple and ubiquitous as access to a network connection or electricity. In order to make optimization-as-service work, it is necessary to have a robust service oriented architecture (SOA) to link all parts of the system, including modeling languages, solvers, schedulers, and data repositories. This is especially true when the modeling language software, solver software, and data used to generate a model instance reside on different machines, in different geographical locations, and use different operating systems. In this talk we describe protocols that we are developing to 1) represent optimization problem instances, problem solutions, and solver options; 2) facilitate communication between solvers and clients that use the solvers; and 3) allow clients that use optimization solvers to discover their existence over the network. We demonstrate a working implementation of these protocols and show how to use free, open-source solvers as a service. This is joint work with Robert Fourer and Jun Ma in the Department of Industrial Engineering & Management Sciences, Northwestern University.

Kipp Martin is Professor of Operations Research and Computing Technology in the Graduate School of Business at the University of Chicago. Professor Martin's current research is focused on modeling systems and languages with an emphasis on incorporating Web technologies such as XML, XSLT, XQuery, and Web Services into the mathematical modeling process. He has a Bachelor's degree in Mathematics, an MBA, and a Ph.D. in Quantitative Analysis, all from the University of Cincinnati.

For more on the QAOM Seminar Series, contact [david.kelton@uc.edu](mailto:david.kelton@uc.edu)  
QAOM Department: <http://www.business.uc.edu/departments/qaom>  
QAOM Seminar Series: <http://www.business.uc.edu/departments/qaom/seminar>