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## Game Theory for Understanding Pricing and Delivery of Internet Services

**John Musacchio**  
**UC Santa Cruz**

### **Abstract**

The Internet has been so successful in large part because of its decentralized architecture -- it is owned, operated, and upgraded by a large number of users and service providers who each seek to maximize their utility or profits. However, there are a number of shortcomings of the current Internet, such as poor or unreliable quality for real time services, or the lack of ubiquitous public wireless access despite the huge number of wireless access points that have been deployed in the past five years for private use. We argue that game theory is the natural tool for understanding these shortcomings. In this talk we develop game theoretic models for understanding the relationship between a wireless access point owner and a paying client, while we also study the decision Internet Service Providers to invest in upgrades when a large fraction of the benefits of such upgrades may accrue to other providers that are interconnected.

### **Biographical Sketch:**

John Musacchio is an Assistant Professor in the Technology and Information Management Program of the University of California, Santa Cruz. His current research interests include pricing of communication networks, applications of game theory in networking, and stochastic modeling and control of queuing networks. From 2000-2003, he was with the Silicon Valley start-up Terablaze where he helped develop a high-speed switch fabric chip-set. He received the M.S. and Ph.D. degrees from the Department of Electrical Engineering and Computer Sciences of the University of California at Berkeley in 1998 and 2005 respectively.

**3108 Etcheverry**  
**Monday, 23 October 2006**  
**3:30PM-4:30PM**

**COME EARLY! REFRESHMENTS WILL BE SERVED AT 3:00PM.**

**Next Seminar:**

**October 30 : Robert Nau, Scoring Rules, Generalized Entropy, And Utility Maximization**

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