

The Hong Kong University of Science and Technology

Department of Information Systems,  
Business Statistics and Operations Management

Seminar Announcement

***The Design of Cyber-Physical System:  
Building Economics on Top of Engineering***

*Prof Andrew B. Whinston*

*Center for Research in Electronic Commerce  
Department of Information, Risk, and Operation Management  
McCombs School of Business  
The University of Texas at Austin*

**Date: Thursday, 1 December 2011**

**Time: 11:00 am – 12:30 pm**

**Venue: ISOM Conference Room 4379 (Lift 17/18)**

~~~~~ All interested are welcome ~~~~~

**Abstract:**

The role of network computing has significantly expanded due to the growth of cloud computing applications and more recently, cyber physical systems. The later development almost completely eliminates human interaction. Driverless cars and algorithmic trading are two examples. Inherent in designing such systems are hardware, software, and networking errors that result in failures of varying degrees of severity. The design challenge is to provide incentive to the builders of cyber physical systems to exert a proper level of effort to manage the failure rate. We outline an approach based on economic theory that leads to the specifications of a contract between the developer and end users that aligns the incentives. The resulting contract is contingent on the timing of the failure and can be solved using computational methods. Generalizations of this approach can take account of multiple failures and its impact in payments.

**Bio:**

Andrew B. Whinston is the Hugh Roy Cullen Centennial Chair in Business Administration, Professor of Information Systems, Computer Science and Economics, John Newton Centennial IC2 Fellow, and Director of the Center for Research in Electronic Commerce at The University of Texas at Austin. He is editor of the journals Decision Support Systems and Organizational Computing, and Electronic Commerce, and co-author or co-editor of 23 books and over 250 articles. Recent research interest is the area of electronic commerce.