Simulating, Visualizing, Gaming and Analyzing: Modeling your Way towards Innovative Teaching Approaches

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Presentation Summary

Case Studies have long been considered as useful education tools in Business Schools and have served to train students in dealing with real world like situations. Recently, simulation and gaming techniques are becoming increasingly popular as a method of inquiry into several complex scientific problems and phenomena. Some even regard these techniques as a third way of doing science by combining induction and deduction methods [1]. Integrating such techniques and models into the classroom teaching and having students interact with the visualizations of these simulation models can have far reaching implications on the quality of Business school education and may be a significant step towards more complete student learning experience. Students can better relate to real world situations or problems and understand the underlying dynamic behavior by exploring different 'if-then-else' scenarios, manipulating various parameters and later analyzing the output. This is difficult to achieve with case study or closed solution approaches.

This panel discussion focuses on how simulation modeling, utilizing new tools and technologies, can be seamlessly integrated into teaching various MIS and Operations related courses. We will provide a few selected demonstrations from above domain areas to demonstrate how they can be effectively used and merged into regular teaching.

First demo will present the visualization of a simulation model that can be used in explaining the problem of managerial information overload resulting from excessive email processing. The sheer volume of emails, that demand knowledge workers' attention at random, in combination with poor choices of email processing decisions made by them is one of the leading causes of several major workplace problems such as information overload, stress, reduced productivity, prolonged task completion, email response time, etc. that knowledge workers have to deal with on a daily basis. Though some emails may require very quick responses, checking emails almost

continuously may lead to interruptions in regular knowledge work. Thus, managing email processing can make a significant difference in an organization's productivity by addressing the critical problem of the timing of email processing. It is a common practice for many knowledge workers to check and respond to their email almost continuously. Using simulation models, we will show how students can learn the impact of using different email processing strategies in different work environment. A more technical overview of the model is appearing in EOMAS 2008 conference proceedings [2].

Another demo will be based on a new Business Process Management (BPM) simulator, 'Innov8', recently developed by IBM [3]. Students will be able to interactively learn several important activities such as process design, process improvement, process analysis, etc. undertaken during the typical BPM life cycle of any project. Students will get first-hand experience at dealing with challenges encountered in managing the project efficiently and effectively.

We will also highlight some of the emerging applications of simulation and virtual gaming environments such as Second Life and provide a quick review of different ways in which it is being used to conduct simulation experiments such as running a virtual organization, devising emergency response strategies, etc.

References

1. Axelrod, R.: Advancing the Art of Simulation in the Social Sciences, Japanese Journal for Management Information Systems (2003)
2. Gupta, A., Sharda, R.: Simulating Email Flow within Knowledge Networks, EOMAS Conference Proceedings (2008)
3. Innov8: http://www-304.ibm.com/jct03001c/software/solutions/soa/innov8.html

Brief Biography

Ashish Gupta
Ashish Gupta is Assistant Professor at School of Business at Minnesota State University Moorhead. Ashish has a PhD in Management Science and Information Systems from Oklahoma State University (OSU), MS in Industrial Engineering & Management from OSU, and a BS in Mechanical Engineering from India. At the Oklahoma State University, where he was a visiting assistant professor, he received two awards for teaching effectiveness, "Outstanding Instruction Award" for the year 2005 and 2006. His research interests are in the areas of information overload, email management, interruptions, simulation modeling, and social networks. His recent articles appeared in journals such as *Communications of AIS*, *Annals of Information Systems, etc.* He has participated in panel sessions and made several presentations at premier national and international conferences. Ashish has co-chaired and organized conference sessions and has also made invited talks at premier national conferences and other venues. His research findings have appeared in popular business press such

as *Maclean's (Toronto), Advanced Philanthropy,* and a German newspaper *Süddeutsche Zeitung.*

Ramesh Sharda

Ramesh Sharda is Director of the Institute for Research in Information Systems (IRIS) , ConocoPhillips Chair of Management of Technology, and a Regents Professor of Management Science and Information Systems in the Spears School of Business at Oklahoma State University. He received his B. Eng. degree from University of Udaipur, M.S. from The Ohio State University and an MBA and Ph. D. from the University of Wisconsin-Madison. He started and served as the Director of the MS in Telecommunications Management Program at the Oklahoma, State University, a model program of interdisciplinary graduate education. His research has been published in major journals in management science and information systems including Management Science, Information Systems Research, Decision Support Systems, Interfaces, INFORMS Journal on Computing, Computers and Operations Research, and many others. He serves on the editorial boards of journals such as the INFORMS Journal on Computing, Decision Support Systems, Information Systems Frontiers, and OR/MS Today. His research interests are in decision support systems, especially neural network applications, and technologies for managing information overload. His team's work on forecasting box office revenue of movies has received a lot of press. Defense Ammunitions Center, NSF, the US Department of Education, Marketing Science Institute, and other organizations have funded his research. Ramesh is also a cofounder of a company that produces virtual trade fairs, iTradeFair.com.