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# Interactive Digital Entertainment: A New Direction for Information Systems Research

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# INTERACTIVE DIGITAL ENTERTAINMENT: A NEW DIRECTION FOR INFORMATION SYSTEMS RESEARCH

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## Introduction

Interactive digital entertainment (IDE) includes Internet-based gaming, wireless gaming, online discussion clubs for sports or music fans, and any other form of *consumer-to-consumer (C2C) entertainment that involves human-computer or human-human interaction via the Internet (or wireless)*. According to a recent article in *Financial Times* (Foremski et al. 2003), the corporate spending on IT has become stagnant in recent years while the market for consumer technologies maintains a strong growth trend. IDE is an especially bright spot among the fastest growing business models targeting the consumer market (Black 2003). For instance, 5 years into the U.S. market, Sony's popular online game, EverQuest, has already attracted 400,000 subscribers and is expected to earn Sony up to \$500 million in 8 years (Hardy 2004).

This stellar growth is not without problems: many early business developments on IDE, even the ones from the largest and most experienced game developers such as Electronic Arts, have faltered. These failures can cost IDE companies tens of millions of dollars (Hardy 2004). Past failures and successes seem to suggest that the success of IDE depends not only on solid *IDE systems development* that deliver competitive technological performance and enduring entertainment content, but also on deep comprehension of *IDE systems adoption and usage* by consumers who ultimately decide the fate of any IDE product. Newer generations of IDE systems, such as World of Warcrafts from Blizzard Entertainment, have greatly improved their technological performance by tapping into the latest computing and communication technologies. Nevertheless, huge gaps exist in our understanding of how to make IDE systems and content more entertaining while controlling the development cost. Furthermore, IDE providers often fail to capitalize on their investment. For instance, Internet-based board games, while popular, have contributed little profit to vendors as consumers generally shun fee-based games. Finally, there is a lack of understanding about the roles of IDE communities in IDE markets. After all, IDE users typically interact with a community of peers, a feature that distinguishes IDEs from stand-alone entertainment or TV-based entertainment.

The purpose of this panel is to bring together industry experts and IS researchers to (1) introduce the development of the IDE industry to an IS audience and discuss the problems encountered in this development process, (2) lay out an array of new research venues around IDE systems and communities, and (3) discuss the impact of IDE on individuals and the society.

We will argue that IDE represents an under-explored, new territory and IS researchers are well-positioned to tackle the aforementioned problems with our interdisciplinary background and accumulated knowledge in technology systems. The likely venues of research include

- *IDE systems adoption and usage*: How do different wireless usage-patterns in the United States and the rest of the world affect the design of wireless entertainment systems? How does the adoption of high-speed Internet in homes affect game experience? How does the convergence of PCs and game consoles affect game design? What role does externality play in adoption of IDE? The existing literature on adoption and usage focuses more on goal-oriented systems than on experiential-oriented systems, more on employees than on customers, more on isolated individuals than on individuals embedded in

communities. Thus the research on IDE adoption and usage is likely to expand the boundaries of existing adoption and usage theories.

- *Players' incentive:* Are we able to provide incentives for players (status, fame, or monetary rewards)? How do we design pricing schemes for IDEs? How do we nurture an IDE community that attains players?
- *Implications of IDE:* What are the consequences of intensive IDE usage on individuals and society? There is serious debate on the moral implications of IDE. On the positive side, some argue that IDE may aid in developing strategic skills. On the negative side, the prevalence of interactive digital entertainment also provokes social concerns. Some critics worry that violent games like “Asheron’s Call 2” might make people violent in the real world, although a recent survey by Williams and Skoric (2005) suggests that better-designed studies are needed to obtain concrete results. IDE also raises concerns of addiction, and it has been blamed for poor academic performance and health concerns among students. Balancing between developing highly entertaining and profitable IDE and mitigating its potentially negative social implications is both a design issue and a policy issue that has a far-reaching impact on the industry.

## Format of the Panel

The panel the chair will give a brief introduction of IDE, followed by an overview of the industry. Each panelist will then deliver a short presentation. Presentations on the academic side will emphasize the role IS research can play in IDE, as well as discussing research opportunities. Presentations on the industry side will emphasize the evolution of IDE, the industry’s *status quo*, and challenges and opportunities in business practice. A brief discussion among the panelists will be followed by questions from the audience. The inclusion of both industry experts and IS scholars enables us to present broad perspectives on IDE. We expect this panel to have an impact both on future IDE business developments and new research on IDE systems and communities.

## About the Panelists

**Andrew B. Whinston** is Hugh Roy Cullen Centennial Chair Professor in Information Systems at the McCombs School of Business, University of Texas at Austin. He is a professor in the departments of Economics and Computer Science, a Fellow of the IC2 Institute, Austin, and director of the Center for Research in Electronic Commerce, a pioneering research facility in Electronic Commerce. His current research spans various realms of electronic commerce, its impact on business protocols and processes, on organizational structure and corporate networks, electronic publishing, electronic education, complementarity of convergent computational paradigms, and business value of IT. He is the coauthor of several books about electronic commerce, and has published over 300 papers in leading academic journals in Economics, Business, and Computer Science.

Andy is a proactive promoter of research on the digital lifestyle. He thinks that IS research and teaching should not be limited to corporate information systems. Areas involving consumer markets, such as digital home, online, and wireless computer games, have enjoyed sizable growth in recent years, raising numerous new research questions. He has delivered several talks on the subject of interactive entertainment.

**Matti Hämäläinen** is the cofounder of Codetoys, a mobile entertainment company in Finland, that has been developing and operating over-the-air interactive games based on globally recognized brands such as Who Wants to be a Millionaire™ and Trivial Pursuit™ since 1999. These games have been made available to over 300 million wireless subscribers, resulting in tens of millions of games played. To promote standards in the emerging field, Matti was also a board member of the Mobile Games Interoperability Forum (MGIF), which developed open specifications for mobile game services and has since merged into OMA. He also holds a position as a senior researcher at the Helsinki University of Technology, focusing on future wireless and mobile services.

In the panel, Matti will discuss the specific issues and opportunities involved in introducing interactive connected wireless games to the market when compared to standalone (e.g., downloadable) games. He will also share experiences from different incentive mechanisms (e.g., monetary versus nonmonetary/emotional prizes) and promotional tools.

**Richard Garriott**, also known as “Lord British,” is one of the most influential game designers of all time. Founder of the renowned software company Origin Systems, and creator of the Ultima series of role-playing games, he has greatly contributed to the development of the gaming business. Richard has been credited on games developed by Origin Systems Inc., Blue Sky

Productions, Cryptic Studios, Attic Entertainment Software, Spiderweb Software, Electronic Arts Canada, and Pioneer Productions.

**De Liu** is an assistant professor in Information Systems at University of Kentucky. He has been conducting research on multiplayer interactive games since 2001, when massive multiplayer online (MMO) games were emerging as an industry. His dissertation, titled *The Optimal Design of Skill-based Consumer Contests in the Context of Online Entertainment*, focused on designing contest structures in multiplayer online games. He utilizes a game-theoretical approach to analyze the high-level design issues in multiplayer games, such as how to allocate the rewards, how to segment and handicap players, and how to set entry fees. He also draws on psychology, marketing, and human-computer interaction literature to study what engages a player in interactive online games. His publications include a book chapter, "Status Seeking and the Design of Online Entertainment Communities," in *Managing in the Information Economy: Current Research Issues* (edited by U. S. Karmarkar and U. M. Apte, Kluwer Academic Publishers, New York, 2004).

**Xianjun Geng** is an assistant professor in Information Systems at the University of Washington. His research focuses on pricing and competition in IT-enabled new markets, information distortion and trust, and new information technology and systems. His work has appeared or is forthcoming in academic journals such as *Management Science*, *Marketing Science*, *MIS Quarterly*, *Journal of MIS*, and *IEEE Computer*.

Geng has been involved in research on interactive digital entertainment since 2001. His current research on IDE focuses on incentive-based online community developments. His paper, "Health of Electronic Communities: An Evolutionary Game Approach," published in *Journal of MIS*, studies when and how reputation mechanisms can sustain cooperation among online community members. Another paper, "Implications of Reduced Search Cost and Free Riding in E-Commerce," published in *Marketing Science*, studies how strategic plays by individual community members can negatively affect the provision of informational goods to the whole community. Geng believes the success of future IDE systems depends critically on balanced incentive structures that, on the one hand, impose enough controls to encourage cooperative behavior, while on the other hand carefully limit these controls so that they do not overly limit the friendliness of IDE systems, which are important for business growth.

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