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Preface

The advancement of information and communication technologies (ICT) has enabled broad use of ICT and facilitated the use of ICT in the private and personal domain. ICT-related industries are directing their business targets to home applications. Among these applications, entertainment will differentiate ICT applications in the private and personal market from the office. Comprehensive research and development on ICT applications for entertainment will be different for the promotion of ICT use in the home and other places for leisure. So far engineering research and development on entertainment has never been really established in the academic communities. On the other hand entertainment-related industries such as the video and computer game industries have been growing rapidly in the last 10 years, and today the entertainment computing business outperforms the turnover of the movie industry. Entertainment robots are drawing the attention of young people. The event called RoboCup has been increasing the number of participants year by year. Entertainment technologies cover a broad range of products and services: movies, music, TV (including upcoming interactive TV), VCR, VoD (including music on demand), computer games, game consoles, video arcades, gambling machines, the Internet (e.g., chat rooms, board and card games, MUD), intelligent toys, edutainment, simulations, sport, theme parks, virtual reality, and upcoming service robots.

The field of entertainment computing focuses on users' growing use of entertainment technologies at work, in school and at home, and the impact of this technology on their behavior. Nearly every working and living place has computers, and over two-thirds of children in industrialized countries have computers in their homes as well. All of us would probably agree that adults and children need to become competent users to be prepared for life and work in the future. Especially children's increasing use of entertainment technologies brings with it both the risk of possible harm and the promise of enriched learning, well-being and positive development.

Between now and the near future, digital technologies will become more powerful and affordable for all users and at every level, in digital networks and in product offerings. An increasing number of people will be able to compile, program, edit, create and share content; as a result, they will gain more control and become more immersed in media experiences. But more than technical challenges, the social implications on human behavior will be of most importance. We need a media ecology movement to heighten consciousness to fight the waste and pollution that the media produces. It is indeed a question of the mental environment for our children and future generations. The questions we must ask ourselves are: Do we give them a world that is challenging, stimulating, inspiring, and really entertaining? Do we encourage their intelligence, creativity and curiosity?

To address and hopefully answer these questions and to advance this newly born area of entertainment technologies it is important to build a good relationship between academia and industry, and to set up a task force group. This was the main motivation that in August 2000 prompted the International Federation for Information Processing (IFIP) General Assembly to approve the setting up of the Entertainment Computing

Specialist Group (SG16) under the auspices of IFIP and the Committee for Cooperation with Industry (CCI).

First of all, the major efforts of SG16 activities were directed toward demonstrating that the subject could be mature enough to attract the broad interest of the ICT community. For this purpose a technical event, the 1st International Workshop on Entertainment Computing (IWEC), was planned, and IWEC Steering Committee members were appointed (Bruce Blumberg from MIT Media Lab, USA; Marc Cavazza from the University of Teesside, UK; Jaap van den Herik from the Universiteit Maastricht, Netherlands; Tak Kamae from Laboratories of Image Science and Technology, Japan; Donald Marinelli from Carnegie Mellon University, USA; Ryohei Nakatsu from ATR, Japan; Matthias Rauterberg from the Technische Universiteit Eindhoven, Netherlands; and Demetri Terzopoulos from the University of Toronto, Canada).

The first important opportunity came when IFIP TC13 on "Human-Computer Interaction" kindly offered a time slot for a first international panel on entertainment computing at the prestigious INTERACT 2001 conference in Tokyo (Japan) in July 2001. The IWEC Steering Committee decided to accept this kind offer to increase the presence of SG16 and IWEC. At the panel many participants showed interests in entertainment computing.

In the next year, 2002, the first international workshop on entertainment computing (IWEC) was launched. IWEC 2002 was successfully held at Makuhari (Japan) on May 14–17, 2002. IWEC 2002 attracted over 100 participants and over 60 papers were published in the proceedings by Kluwer (edited by Ryohei Nakatsu and Junichi Hoshino). At IWEC 2002 were many high-quality papers and several interesting technical demonstrations. In other words, evidence that entertainment computing was already an important technical area. At IWEC 2002 we had an extended SG16 meeting, and it was agreed unanimously that the formation of a new technical committee (TC) on entertainment computing should be proposed formally to IFIP at the General Assembly at Montreal in 2002.

Based on the success of IWEC 2002, SG16 organized the next International Conference on Entertainment Computing (ICEC 2003), that was held during May 8–10, 2003 at the Entertainment Technology Center at Carnegie Mellon University, Pittsburgh (USA). ICEC 2003 was also successful with more than 100 attendees, 20 highly select papers, several prestigious keynote talks, and invited panels. All the papers for ICEC 2003 were accepted by ACM for inclusion in their ACM online digital library.

To complete the first around-the-world cycle "Japan–USA–Europe", the 3rd International Conference on Entertainment (ICEC 2004) was held in Europe at the Technische Universiteit Eindhoven during September 1–3, 2004. This conference attracted 27 full papers. Around 150 attendees from academia and industry participated in this successful conference. In several parallel sessions full papers, short papers, posters, system demonstrations and exhibitions from industry were presented. The program included three well-received keynote talks, three specially invited topic talks, and an outstanding super-chess contest organized by Jaap van den Herik.

For more information about ICEC 2004 have a look at the homepage on the Internet: <http://www.icec.id.tue.nl/>

For making ICEC 2004 such an outstanding event, we have to thank the following people who volunteered in the organization: Jaap van den Herik and Anton Nijholt as co-chairs, Jacques Terken as review chair, Ben Salem as treasurer and chair of the organizing committee, as well as all members of the different committees, in particular the long list of distinguished experts from all over the world in the scientific and industrial program committee, the several sponsors, all cooperating societies, and last but not least all researchers who submitted and presented their outstanding research results at ICEC 2004, documented in this book. We gratefully acknowledge their contributions, effort and valuable input.

Eindhoven, June 28, 2004

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