

Playability and player experience of casual games

Licia Calvi, Stefano Gualeni,
Koos Nuijten
NHTV International University of
Applied Sciences, Breda
Mgr. Hopmansstraat 1
P.O. Box 3917, 4800 DX Breda
The Netherlands
(+31)76 5302545
{calvi.l, gualeni.s,
nuijten.k}@nhtv.nl

Lennart Nacke
Blekinge Institute of Technology

Lennart.Nacke@acm.org

Karolien Poels
University of Antwerp
Sint Jacobstraat 2
2000 Antwerpen
Belgium
(+32)032655587
Karolien.Poels@ua.ac.be

ABSTRACT

This workshop focuses on the development and use of biometrics tests and data harvesting to evaluate games. Although all game genres are addressed, casual games are considered the preferred focus, since playtesting metrics are very much in demand and yet not much often used within the casual gaming industry, although already standard practice in the larger game development studios. The focus of this workshop consists therefore in defining which methods are best to apply in the domains mentioned above, and in analyzing their efficacy and applicability.

Categories and Subject Descriptors

H.5.3 [Information Systems]: Group and Organization Interfaces – *evaluation/methodology*.

General Terms

Measurement, Performance, Design, Experimentation, Human Factors.

Keywords

Biometrics tests, playtesting metrics, player experience, casual games.

1. INTRODUCTION

This workshop focuses on the development and use of biometrics tests and data harvesting to evaluate games. Although all game genres are addressed, casual games are considered the preferred focus, since playtesting metrics are very much in demand and yet not much often used within the casual gaming industry, although already standard practice in the larger game development studios. The focus of this workshop consist therefore in defining which methods are best to apply in the domains mentioned above, and in

analyzing their efficacy and applicability.

The workshop will look at examining how, for example, innovative physiological metrics, collaborative design approaches and advanced evaluation techniques can lead to the creation of player-centered games enhancing the player experience. Workshop organizers will also open up the debate around how to identify suitable evaluation methodologies for the above mentioned scenarios as well as to relate game designers to data harvesting and analysis [5].

Besides researching games from a developer's, designer's and evaluator's perspective, this workshop will focus specifically on discussing the possibility to derive a practical framework that can be utilized by game development companies that want to create casual games but lack a design methodology for including end-users and iteratively evaluating their design.

1.1 Topic

Position papers are invited on the use of different evaluation methods for games. The focus lies on the possible different techniques that may be used to evaluate games. In the workshop, special attention is given to biometric evaluation, especially when applied to casual games (although other games typologies, i.e., serious games, will be considered as well). Additional issues include the specific value of evaluation techniques/methodologies (such as physiological metrics) for developing games, the player experience associated with it and its implications for interface design (see [3]).

1.2 Objectives

This workshop addresses the following issues:

- Biometric observations and playtest metrics
- Game design methods, principles and processes in relation to biometric measurements since the prototyping phase
- Evaluating games and measuring player experiences
- Player-centered game design

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee.

Conference '04, Month 1–2, 2004, City, State, Country.
Copyright 2004 ACM 1-58113-000-0/00/0004...\$5.00.

- The added value of biometric evaluation on casual games
- The use of playability heuristics in casual games design
- Subjective and objective evaluation methods
- Game evaluation techniques
- Accounts of the particular challenges of studying and designing for game evaluation
- Guidelines linking physiological responses to player evaluation of games
- Play-testing player-centered game development models
- Integration of game industry demands into a coherent player-centered design methodology.

The aim of this workshop is to build a multidisciplinary research community around the topic.

1.3 Audience

The workshop is intended for game developers and designers; human factors practitioners; interface evaluators and testers; academics, researchers and students with interests in game evaluation and in biometrics evaluation in particular.

Although no particular skills are required, basic knowledge of game issues is recommended.

1.4 Before the Conference

Workshop organizers will commit to publicize their workshop. The call for participation for this workshop will be distributed via game and user-experience related mailing lists (e.g. British Computer Society Human-Computer Interaction Group), and will be distributed as a one-page leaflet at several HCI and game-related conferences (e.g., FuturePlay Conference 2010, Game Developers Conference 2010).

A website will be created in order to provide information about the workshop, the participation modality, and links to related material, so candidates can become familiar with the scope of the subject and the goals of the workshop. Accepted position papers and other pre-workshop materials will be made available there to participants, so presentations during the workshop can be kept short, and reflection on the subject is stimulated before the workshop. Position papers will be grouped into one of the two sessions (see below), in order to organize the discussion thematically.

1.5 Detailed Plan for Conducting the Workshop

The workshop is designed as one-day presentations alternated with group discussion. Every instructor will actively interact with the audience to stimulate discussion around the presentations and outline the key points that will be useful for the whole group debate.

The workshop itself will be organized in the following way:

1. In a short opening session, the organizers of the workshop will introduce the topic, define the scope and give examples of evaluation techniques for games
2. Presentations will be structured so as each presentation will last about 10 minutes and 5 minutes for questions
3. At the end of each session, an open discussion will be encouraged under the lead of an appointed moderator. Every moderator will actively interact with the audience to stimulate discussion around the presentations and outline the key points that will be useful for the whole group debate
4. At the end of the workshop, the organizers will hold a closing session to wrap up the discussion and summarize the considerations and suggestions that have emerged during the workshop.

1.6 Participation

Workshop candidates are requested to send a position paper (no longer than 4 A4 pages) about a research or study they have been involved with before April 15th 2010 to calvi.l@nhtv.nl. Participants will be selected on the basis of the relevance of their work and their interests and familiarity with the topic.

1.7 Deadlines

- 15/04/2010: Workshop submission deadline.
- 30/05/2010: Workshop acceptance/rejection deadline.
- 10/07/2010: Authors submit to organizers camera-ready versions of papers.
- 15/09/2010: Workshop at Fun and Games 2010.

1.8 Dissemination

During the workshop a poster will be produced in order to present a summary of the results at the conference poster session.

Workshop organizers will commit to organize a Special Interest Group (SIG) at the conference.

After the workshop, the accepted papers will be made available on the website, the summarized results of the workshop will be published and further discussion about the topic is stimulated in a wider audience.

Accepted papers will also be published by the University Press of the NHTV University of Breda.

The workshop organizers will consider, after the workshop, the publication of a revised version of the papers presented as a special issue of a journal such as Game Studies, Entertainment Computing or Computers in Entertainment. In order to be considered for publication in this special issue, papers will have to be resubmitted and undergo a reviewing process with external reviews (still to be defined).

1.9 Organizing Committee

Licia Calvi (calvi.l@nhtv.nl)

Stefano Gualeni (gualeni.s@nhtv.nl)

Koos Nuijten (nuijten.k@nhtv.nl)

Karolien Poels (Karolien.Poels@ua.ac.be)

Lennart Nacke (Lennart.Nacke@acm.org)

Primary contact: Licia Calvi (calvi.l@nhtv.nl)

1.10 Organizers' Backgrounds

The workshop organizers have experience in organizing workshops and tutorials (CHI'06, DIGRA '09 [1,2,4]).

Licia Calvi, PhD, is a senior lecturer at the NHTV University of Breda (The Netherlands). She has been lecturing HCI and Hypertext and Hypermedia in several universities in Europe, such as TCDublin, TU/Eindhoven and University of Parma. Her research interests include usability and evaluation of (especially) e-learning systems, rhetoric and argumentation in digital media. She is a member of the editorial board of the International Journal of E-learning, of Social and Humanistic Computing and of Technology Enhanced Learning.

Stefano Gualeni, MA. Trained as an architect, Stefano Gualeni is an Italian game designer best known for creating the games Tony Tough and the Night of Roasted Moths and Tony Tough in a Rake's Progress. Among his other popular works is the internationally licensed European basketball simulation series Fronte del Basket (European titles vary: International Basketball, ACB Total, etc.). Gualeni is currently pursuing his PhD in the field of digital media while working as a lecturer of Ludology, Game Design, and Game Architecture at the International Game Architecture and Design program at the International University of Applied Sciences of Breda, The Netherlands. When time allows, he works as a design consultant for a variety of gaming companies and an occasional contributor to international gaming magazines.

Koos CM Nuijten, has an MA in pedagogy and a PhD in communication science. He is senior lecturer and head of research in the VR laboratory at the Academy for Digital Entertainment at NHTV International University of Applied Sciences, Breda. His expertise covers media processing theories and research linking media form and content to media effects (e.g., learning, persuasion). His research interests include media and learning, effects of in-game product placement, subliminal advertising, and behavioral research in virtual settings. He taught courses in communication science, general research methodology, content analysis and media ethics at several universities in the Netherlands and he is member of the advisory board for a PSB sponsored project on media literacy.

Lennart Nacke, PhD, received one of Europe's first PhD degrees in Digital Game Development from Blekinge Institute of Technology, Sweden. He chaired and co-organized several expert panels on psychophysiological player measurement and game usability and UX at academic conferences (e.g., DiGRA, Future Play) and industry venues (e.g., GDC Canada, Quo Vadis Berlin). As much as an avid gamer, he is a passionate scientist, whose research interests are psychophysiological player testing for example with EEG (i.e., brainwaves) and EMG (i.e., facial muscle contractions) or eye tracking as well as quantification of gameplay experience in player-game interaction, technology-driven innovation (e.g., playability metrics, physiological computing) and innovative interaction design with digital entertainment technologies.

Karolien Poels, PhD, is an Assistant Professor of Strategic Communication at the University of Antwerp (Belgium), where she specializes in consumer psychology and digital gaming research. She has an MA in Communication Studies and a PhD in Social Sciences (both from Ghent University). She previously worked as a post doc researcher at the Human Technology

Interaction Group of Eindhoven University of Technology, where she was involved in the FUGA-project (EU-FP6, NEST). Her current research focuses on the player experience and consumption of digital games and strategic communication in digital games.

1.11 Programme Committee

Hans Bouwknecht, PhD, is an Associate Professor of Digital Media Concepts at the NHTV University of Applied Sciences in Breda. He studied Film and Television Studies at the University of Amsterdam. During his study, he sold some cross media concepts and started a cross media company. Hans held several creative positions in the international media industry, and was a lecturer at the University of Amsterdam and the University of Bayreuth. In Bayreuth, he developed the digital media program at the department of Media Studies.

Yvonne de Kort, PhD, is assistant professor of Environmental Psychology and co-director of the Game Experience Lab at Eindhoven University of Technology. Her main research interests are restorative effects of environments, situated social interaction and play (digital gaming), and locatedness in mediated communication and social interaction.

Yvonne leads two European funded projects at TUE (PASION and Games@Large), and is involved in three additional European projects (FUGA, ASTRA, 3D Presence). She supervises PhD students and postdocs, has published numerous papers in various journals and conference proceedings, has co-organised scientific workshops and conferences (e.g. Persuasive '06 and '07), and is active as a reviewer for various journals and conferences.

Wijnand IJsselsteijn, PhD, has a background in psychology and artificial intelligence, with an MSc in cognitive neuropsychology from Utrecht University, and a PhD in media psychology/HCI from Eindhoven University of Technology. He currently holds a position as assistant professor in the area human factors and advanced media environments, specialising in social digital media, immersive media technology, and digital gaming. His focus is on conceptualising and measuring human experiences in relation to these advanced media. Wijnand is significantly involved in various nationally funded as well as EU funded projects, including the Games@Large, PASON, FUGA, ASTRA and MUTED projects. He is associate director of the Media, Interface, and Network Design labs (<http://www.mindlab.org/cgi-bin/default.pl>). He has published over 100 journal and conference papers and edited two books. He is highly active as an organiser of various conferences and workshops (PRESENCE conference series, PERSUASIVE '06 and '07, etc.), as well as a reviewer and editor for various journals and conferences.

Steven Malliet, PhD, is an Assistant Professor of Media Culture at the University of Antwerp (Belgium), and Senior Researcher at the Media and Design Academy (Catholic University College of Limburg - KHLim). In his present and past research he has studied the effects of digital gaming, perceived game realism, game history, game theory and serious gaming subjects on which he has published internationally. He is currently involved in projects on the educational use of digital games (PWO, in collaboration with EDM – University of Hasselt), and on the immersive potential of full dome video audiovisual projections (in collaboration with the University College for Science and Arts – Leuven). He has studied digital gaming from both a qualitative and a quantitative perspective, and has research experience with

both the cultural and the socio-psychological approaches towards digital gaming.

Christof van Nimwegen, PhD, has a master in Cognitive Psychology, with specialization Cognitive Ergonomics. He worked several years as a usability engineer and interaction designer in Internet related businesses in the Netherlands and abroad. At the end of 2002, he became a junior teacher at Utrecht University, after which he enrolled in a PhD project in 2003. In March 2008 he received his doctor's degree. His interests are representations in interfaces, and Human Computer Interaction in general. He started working as a senior researcher at CUO on Januari 1st, 2008.

Marianna Obrist, PhD, is Assistant Professor in the HCI & Usability Unit of the ICT&S Center at the University of Salzburg. She holds a doctoral degree in Communication Science from the University of Salzburg. She holds a master degree in Communication and Political Science from the University of Salzburg. The focal point of her research lies in human-computer interfaces, user-centered design of interactive services, and in particular the user involvement into the development of new products/systems. She is involved in several research projects concerned mainly with the evaluation of user experience and acceptance for iTV, IPTV (i.e. iiTV@home, iTV 4 all, CITIZEN MEDIA). She was part of the organization team for the MobileHCI2005 and ACE2007 conferences, both organized by the HCI & Usability Unit. She was conference co-chair for

EuroITV2008 hold in Salzburg. She is currently involved in the organization of the Aml2009 and Fun 'n' Games2010 conference.

2. REFERENCES

- [1] Roibás, A.C., Geerts, D., Furtado, E. and Calvi, L. Investigating new user experience challenges in iTV: mobility & sociability. CHI Extended Abstracts 2006, 1659-1662, 2006.
- [2] Roibás, A. C., Geerts, D., Calvi, L., Anttila, A. and Daly-Jones, O. Mobile iTV: new challenges for the design of pervasive multimedia systems. CHI Extended Abstracts 2006, 407-410, 2006.
- [3] Nacke, L. Affective Ludology: Scientific Measurement of User Experience in Interactive Entertainment. Ph.D. Thesis, Blekinge Institute of Technology, Karlskrona, 2009.
- [4] Nacke, L. E., Drachen, A., Kuikkaniemi, K., Niesenhaus, J., Korhonen, H. J., Hoogen, W. M. v. d., Poels, K., IJsselsteijn, W. A. and Kort, Y. A. W. d. Playability and Player Experience Research. In Proceedings of DiGRA 2009: Breaking New Ground: Innovation in Games, Play, Practice and Theory (London, UK). DiGRA, 2009.
- [5] Nacke, L. and Lindley, C. Affective Ludology, Flow and Immersion in a First- Person Shooter: Measurement of Player Experience. Loading... 3, 5 (2009), <http://journals.sfu.ca/loading/index.php/loading/article/view/72>.