Second International Workshop on Physicality

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ABSTRACT
When designing purely physical products we do not necessarily have to understand what it is about their physicality that makes them work - they simply have it. However, as we design hybrid physical/digital products we now have to understand what we lose or confuse by the added digitality - and so need to understand physicality more clearly than before. This multi-disciplinary workshop will seek to construct a fundamental understanding of the nature of physicality: how humans experience, manipulate, react and reason about 'real' physical things and how this may inform the design process and the design of future innovative products.

Categories and Subject Descriptors
H.1.2 [**Models and Principles**]: User/Machine Systems – *human factors, human information processing, software psychology.*

General Terms
Design, Human Factors, Theory.

Keywords
Physicality, digitality, product design, design process, design techniques, tangible interfaces, ubiquitous computing.

1. INTRODUCTION
We live in an increasingly digital world yet our bodies and minds are naturally designed to interact with the physical. From electric kettles that switch themselves off when boiling, to washing machines, TV remotes and in the future increasingly automated homes, the products of the 21st century are and will be syntheses of digital and physical elements – and for the user, these will become indistinguishable just as we do not consciously think of the wire between a light switch and bulb.

The pace of change is such that waiting for craft understanding to develop is untenable, hence the need for more radical and fundamental understandings, informed by and informing praxis. As we design hybrid physical/digital products we have to recognise what we lose or confuse by the added digitality.

As well as commercial and technological pressures, there are also research agendas which are predicated on the increasing digital infiltration of day-to-day objects, in particular tangible user interfaces, mixed reality and the Weiser vision of ubiquitous computing [1]. Despite the rush of research in this area the large majority is focused on technological proof of concept, with occasional user evaluation, but little systematic design knowledge construction.

2. BACKGROUND
This workshop follows on from the successful 'First International Workshop on Physicality, which was held at Lancaster University in 2006 [2]. The workshop showed that the importance of the topic is recognised widely and attracted contributions from disciplines including design, computing, sociology and music.

In April 2007, we started work on the 'DEPtH: Designing for Physicality' project which is part of the Designing for the 21st Century Initiative[1]. Both the timeliness of the topic and the substantial possibilities it offers, give good reasons for holding a second workshop this year. This workshop is supported by the DEPtH project[2].

3. AIMS
The aim of this workshop is to provide a forum for researchers to discuss how the move from physical to digital or hybrid products affect our understanding of the technology and more importantly, how people interact with them and eventually adopt, shape or are shaped by them.

The workshop also offers a unique opportunity for participants to draw and consolidate a wider perspective of physicality from an interdisciplinary group.

Application areas that address physicality are intentionally wide and include but not limited to:

- design at the physical-digital frontier;
- the philosophy of physicality;
- artefact-focussed social interaction;
- physically-inspired interaction in virtual worlds;
- creativity and materiality;
- interactive art and performance.

4. PARTICIPANTS

This workshop is intended to bring together a multidisciplinary group of researchers from industry and academia – including product designers, interaction designers, researchers in ubiquitous computing, tangible interface and cognitive, social and philosophical fields, and indeed all excited by this new challenge of the third millennia.

5. ORGANISATION

The workshop is organised by Devina Ramduny-Ellis and Alan Dix from Lancaster University and our collaborators on the DEPtH project, Steve Gill and Joanna Hare who are affiliated with the National Centre for Product Design & Development Research at the University of Wales Institute in Cardiff.

The Programme Committee for the workshop is international and covers a wide breadth of disciplines:

- Monika Buscher, Dept. of Sociology, Lancaster Univ., UK

- Hans Gellersen, InfoLab21, Lancaster Univ., UK

- Gabriella Giannachi, Performance and New Media, Univ. of Exeter, UK

- Masitah Ghazali, Information Systems Dept., Universiti Putra Malaysia, Malaysia

- Eva Hornecker, Pervasive Interaction Lab, Open Univ., UK

- Caroline Hummels, Department of Industrial Design, Technische Universiteit Eindhoven, The Netherlands

- Simon Lock, InfoLab21, Lancaster Univ., UK

- Gareth Loudon, National Centre for Product Design & Development Research, UWIC, UK

- Ann Morrisson, Information Environments Program, School of ITEE, Univ. of Queensland, Australia

- Mark Rouncefield, InfoLab21, Lancaster Univ., UK

- Paula Alexandra Silva, InfoLab21, Lancaster Univ. UK

- Jennifer Sheridan, BigDog Interactive, UK

- Lucy Suchman, Centre for Science Studies, Lancaster Univ., UK

- Steve Viller, Information Environments Program, School of ITEE, Univ. of Queensland, Australia

6. PROCEDURE

The Call for Papers for the workshop will be distributed to relevant mailing lists to solicit submission of 4-6 page position papers. We would also like to encourage contributions in other forms such as demonstration, artwork, performance, etc.

A website will be developed to support the workshop and will provide up-to-date information to prospective participants.

All submissions will be peer-reviewed and judged on the basis of originality, contribution to the field, technical and presentation quality, and relevance to the workshop. All accepted contributions will be published in the workshop proceedings.

The workshop will run over two days and will include invited talks, short individual presentations, and group activities. The latter will be designed to encourage interaction among participants and discussion on selected themes. The workshop will conclude by consolidating the findings over the two days and generate some tangible outputs.

We are also planning to have a slot for some prototype demos that exemplify the issues surrounding physicality.

The DEPtH project will fund two speakers to give a keynote address on their viewpoints on physicality to the workshop. We are looking for renowned researchers to stretch our conceptions of physicality, for example with a philosophy, sociology or emerging technologies background.

Building from this workshop and the previous one, we are planning a journal special issue and would hope that some of the workshop contributions will be expanded for submission to this.

7. ACKNOWLEDGMENTS

8. REFERENCES

[1] Weiser. M. The computer for the 21st Century. Sci Am 265(3), 1991, 99-104.

[2] Ghazali, M., Ramduny-Ellis, D., Hornecker, E., Dix, A. (Eds) Proceedings of the First International Workshop on Physicality, Physicality 2006 (6-7 February 2006), Lancaster University, UK, ISBN: 1862201781, http://www.physicality.org/physicality2006/Physicality2006Complete.zip.