Chapter 1
On Mobility and Interaction Landscapes:
Identifying Three Strands of Developments for Mobile Interaction Design Research

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ABSTRACT
In this chapter we address how the landscape of mobile HCI is changing. With a point of departure taken in how mobile interaction design is nowadays not only about interface design for digital devices, but about the design of wide-ranging interaction landscapes we explore how mobile HCI are now heavily interwoven in complex arrangements of computational devices, platforms and services. In exploring these current developments, this chapter identifies three contemporary strands of developments related to 1) the formation of new interaction landscapes, 2) the long tail of interaction, and 3) digital materialities. With a point of departure taken in these three strands, this chapter presents a research agenda for moving forward followed by a discussion on the implications of this agenda for mobile HCI research.

INTRODUCTION
The world is changing – and so are our computational landscapes. As to illustrate this development, it can be noticed how “social media”, only 10 years ago was something altogether different from what it is today. Back in 2004, the social networking service Facebook was just released, but only two years later it had around 500 million users (Nazir, Raza, & Chuah, 2008) and is now rapidly increasing towards 1.35 billion monthly active users (Prigg, 2014). Further on, about 10 years ago, there was a discussion in the field of mobile HCI on the development of the mobile web (WAP) vs. the development of the Internet (see, e.g., Anantharam, 2002; Buchanan et al., 2001; Chittaro & Cin, 2002). Today, the Internet, social media and mobile devices are heavily intertwined both technically as well as in practice. From being about UI design for small mobile devices, limited input modalities (see, e.g., Paelke, Reimann, & Stichling, 2004) and small screens (e.g., Qiu, Zhang, & Huang, 2004), these important aspects of mo-DOI: 10.4018/978-1-4666-8583-3.ch001
mobile HCI are now intertwined in complex arrangements of devices, platforms and services. As such, the field of mobile HCI is literally re-forming. Today there are around 7 billion mobile phones in the world (Ozcan, 2014), and phenomena such as “smart mobs” (Reingold, 2002) and mobile twitter revolutions (reference?) are now part of our everyday mobile life.

Mobile technologies and their use are truly ubiquitous today and are as such following the Weiserian vision of how these technologies would “weave themselves into the fabrics of our everyday lives” (Weiser, 1991, p. 66).

With these developments, the field of mobile HCI is also changing and with that come calls for new research agendas capable of addressing the current developments in this area. This chapter sets out to address this need for a new HCI research agenda.

In similar lines of development, other calls for updated research agendas have recently been published. One of these recent examples includes the experiential computing research agenda proposed by Yoo (2010) in which Yoo argues that there is a need for the IS – an Information Systems discipline to acknowledge trends such as the wide adoption of the iPod and the ubiquitous use of camera phones and accordingly adjust the research agenda to incorporate phenomenological approaches to everyday computing. Another example and a call for an updated research agenda is proposed by Tilson, Lyytinen, and Sørensen (2010) in which it is argued that digital convergence calls for a research agenda focused on “digital infrastructures” as to address the current developments in the field.

This chapter specifically sets out to present and describe a number of cases leading in the direction of the need for an updated research agenda for mobile HCI. More specifically, the aim is to illustrate this need through a walkthrough of a number of cases that illustrate the current development of new interaction landscapes, the long tail of interaction, and digital materialities. This chapter therefore presents the background for each of these three strands of development and a research agenda followed by a discussion on the implications of this agenda for mobile HCI research.

The rest of this chapter is structured as follows. First, it presents a background for how the area of mobile HCI has moved from a situation about 13 years ago in which researchers experimented with multiple mobile devices connected via cables (see, e.g., Myers, Stiel, & Gargiulo, 1998) to the current situation of today with myriads of wirelessly interconnected mobile devices in the society combined with 100s of thousands apps provided to users via App stores and application marketplaces. This marks the development from the early experiments with interconnected mobile devices to the current “landscapes” of mobile devices, apps and online services. Moving on from this background description, the chapter then presents interaction landscapes as a framing concept for this development towards interconnected digital devices and services. Following from that, the second stream of development is exemplified as being about the temporal aspects of these interaction landscapes and accordingly conceptually framed as the long tail of interaction. Having covered the spatial and temporal aspects of the new research agenda, the third and final stream of development deals with the intricate ways in which mobile technologies now “weave themselves into the fabrics of our everyday lives” (Weiser, 1991, p. 66) in which mobile HCI becomes part of our everyday encounters with objects and environments with computational capabilities. In this chapter, this trend towards a situation in which the digital becomes fully entangled in the products and services of our everyday life is empirically illustrated and further conceptually framed as digital materialities. Having outlined these three lines of development, the chapter concludes with an outline of a research agenda and initiates a discussion on the implications for mobile HCI research given this new research perspective.