Thesis Abstract

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Title of Thesis:

Enhancing Team-Level Behavior Change Using Information Sharing

Summary of Thesis:

  The rapid spread of smartphones and wearable devices has significantly been enabling activity sensing technologies, and it allows that most people who have the devices, to collect various type of activities in their daily life as lifelog data conveniently. In the ubiquitous environment, the collected data is used for promoting a human behavior in any cases. Besides, the majority of people are spending their most of time in organized groups with their devices.

  To the best of our knowledge, existing behavior change researches mainly focused on an individual- or group-level behavior change using lifelog data that is collected by mobile/wearable devices. Moreover, traditional approaches in Social Psychobiology and Behavior Science tackle to analyze human behavior just by observation without dynamic intervention using information technologies. However, most people spend in organized groups surrounded by ubicomp environment in the near future, so that methodologies for empowering the team-level activity is a significant research subject in the organized group in the ubicomp era.

  In this dissertation, we designed and implemented *Sapplication Platform* for enhancing and measuring team–level behavior change using information sharing among team members in the ubiquitous environment for the first time. As an intervention method for a team, *Sapplication Platform* can share lifelog data via six types of information sharing models that are based on the "competition" and "collaboration" techniques on existing researches. As evaluations of the platform in this dissertation, we conducted two studies using *Sapplication Platform* over a period of six weeks with baseball- and rugby-team in the university.

  Through the evaluations, our analysis showed that the platform could be used in daily activities on real teams. Further, use of the team–based competition" concept model (*iCL+eCP*) was most effective for teams on competitive teams, such as sports teams, among the proposed models.

Keywords Life-log, Team, Behavior Change, Information Sharing, Ubiquitous Computing