

Abstract #: 191

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Abstract Title: Evaluating a Social Media Application for Conserving Energy and Improving Operations in Commercial Buildings

Abstract Text:

Compared to the wealth of research on residential energy behavior, studies on the energy attitudes and behaviors of commercial building occupants are few. However occupants exert significant influence over energy use in commercial buildings, and recent research shows that over 30 percent of total building energy use may be controlled or impacted by occupants. This study explores the potential for using a web-based social network to influence energy-conserving behavior in the workplace, and to improve building operations through enhanced occupant-operator communications. The research team developed a social media application prototype and conducted usability testing with over 130 subjects. The key findings include: (1) the influence of personalized energy feedback and preferences for energy metrics; (2) the influence of normative energy information; (3) the potential for sharing personal energy goals and energy data; (4) the potential effects of incentives such as self-selected goals or rewards, and (5) the implications of using a social media platform for improving communications between building occupants and operators. Findings are promising, and suggest that highly individualized energy information, at the level of individual workstations or offices, offers benefits for engaging individuals regarding energy use in the workplace. The social aspects of sharing individual energy use and energy goals were viewed favorably by test participants, and a social media application such as the prototype tested shows promise for improving communications between occupants and building management. The paper concludes with recommendations for the design of energy feedback systems having social media features.