

Abstract #: 151

Author Name: Kevin Price

Author Company: Evergreen Economics

Second Author's Name: John Cornwell, Evergreen Economics

Abstract Title: Affecting Lighting-related Behaviors in a Connected World

Abstract Text:

Broadly affecting the lighting-related behaviors of consumers is difficult. The Internet of Things brings new opportunities, as well as new challenges. This paper will focus on two lighting technology groups that perfectly demonstrate the stark differences across design strategies: connected LEDs that require user input (typically via a smart phone or tablet), and those that adapt themselves to the user with little or no input (requiring additional embedded controls, such as occupancy sensors and photocells). Behavior change – lighting usage optimization – is central to the cost effective energy savings potential of connected LEDs, as they are currently more expensive per reduced watt than most standard, unconnected LEDs on the market. Therefore, three critical questions remain. First, do we want consumers to be in charge of their lighting behaviors (via phone or tablet)? Second, when they retain control, will consumers use the added functionality at all, and, in particular, will they use it in the ways we want (to save energy)? Third, are consumers willing to relinquish some control and rely on a lighting system to facilitate usage optimization? This paper will explore existing research on connected LEDs, and provide thoughtful insight into the pros and cons of adding more complexity to consumers' lighting functionality versus specifically tuning lighting systems to optimize lighting usage. The discussion developed in this paper will be useful to program designers and technology developers as they determine the best path for affecting the lighting related behavior of consumers.