Pay as You Speed, ISA with incentives for not speeding: A case of test driver recruitment

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ABSTRACT

The Intelligent Speed Adaptation (ISA) project we describe in this article is based on Pay as You Drive principles. These principles assume that the ISA equipment informs a driver of the speed limit, warns the driver when speeding and calculates penalty points. Each penalty point entails the reduction of a 30% discount on the driver’s car insurance premium, which therefore produces the name, Pay as You Speed. The ISA equipment consists of a GPS-based On Board Unit with a mobile phone connection to a web server. The project was planned for a three-year test period with 300 young car drivers, but it never succeeded in recruiting that number of drivers. After several design changes, the project eventually went forward with 153 test drivers of all ages. This number represents approximately one thousandth of all car owners in the proving ground of North Jutland in Denmark. Furthermore the project was terminated before its scheduled closing date. This article describes the project with an emphasis on recruitment efforts and the project’s progress. We include a discussion of possible explanations for the failure to recruit volunteers for the project and reflect upon the general barriers to using ISA with ordinary drivers.

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1. Introduction

1.1. Intelligent Speed Adaptation

Recent developments in Intelligent Transport Systems (ITS) have demonstrated that Advanced Driver Assistance Systems (ADAS) may play an important role in future improvements in traffic safety. Over the past two decades, several studies have conducted tests of a specific type of ADAS, Intelligent Speed Adaptation (ISA). These studies have demonstrated the great safety potential of ISA. The estimated net effect of a full ISA implementation is a reduction of up to 50% in the number of road traffic accidents resulting in fatalities or injuries (Carsten and Tate, 2005; Marchau et al., 2005; Regan et al., 2006; Vlassenroot et al., 2007). Moreover, some scholars also have suggested that ISA may reduce fuel consumption and thereby, automobile pollution (Servin et al., 2006).

ISA is not a specific technology. It belongs to a group of ADAS technologies best suited for keeping track of the speed and position of a vehicle travelling on a segment of road. By comparing these registrations with the speed limit on various road segments, ISA can inform a driver of the relevant speed limit by means of a display in the car. ISA can also alert the driver if the car’s speed exceeds the current speed limit. The speed alert function may assume different forms. The most common form is a visual display combined with an acoustic warning. Researchers have also tested resistance in the accelerator that prohibits the driver from increasing speed (Almquist, 2006).

1.2. A short history of ISA studies

The Department of Traffic Technology at the University of Lund in Sweden conducted the first ISA field study in 1992. The study included 75 test drivers, a test car with an active accelerator pedal and a fixed test route. It importantly demonstrated that test drivers held more positive attitudes towards the equipment after the test drive (Persson et al., 1993). This study was followed by a number of ISA projects in several different countries. In Sweden, larger field trials were conducted between 1999 and 2001. These Swedish field trials tested different types of ISA equipment and included approximately 5000 drivers (Warner, 2006; Hjälmåh, 2004; Värhelyi et al., 2004). Studies have also been conducted in the UK, the Netherlands, Belgium, France, Australia and Finland (Janson et al., 2006; Regan et al., 2006; Pelitola et al., 2004). The first Danish field study was completed in 2001. In this “INFATI” project (INFATI is an abbreviation for the projects Danish name: Intelligent FARTtIl-passing), the system continually presented the speed limit on a console-mounted display in the car and warned the driver by a