E-Enforcement in Digital Government

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INTRODUCTION

In recent years, there has been a significant rise in "e-enforcement." E-enforcement is the use of electronic tools in law enforcement. In this article, we consider two new forms of e-enforcement which have recently been introduced in Europe. These are Weigh in Motion with Video (WIM-Vid) and the digital tachograph. WIM-Vid is a system involving sensors in the road and cameras in order to register overloading of heavy goods vehicles. WIM-Vid was developed and implemented in the Netherlands and is currently attracting international attention. The digital tachograph replaces the analogue tachograph in all heavy goods vehicles within the European Union. The machine registers drivers' driving and rest times.

In this article, we focus on the special position of the clients of e-enforcement, the regulatees. Although e-enforcement is a form of e-government or digital government, the position of the client is quite distinct. Many definitions describe e-government in terms of service delivery (Chen, 2002; Devadoss, Pan, & Huang, 2002; Finger & Pécaud, 2003; Hiller & Belanger, 2001; Ho, 2002; Moon, 2002). These descriptions feature the concept of customer focus (Devadoss et al., 2002; Finger & Pécaud, 2003; Ho, 2002). The purpose of e-government should be to satisfy these customers, whether they are ordinary citizens or parties in private sector (Finger & Pécaud, 2003). The clients of enforcement, however, are offenders or potential offenders. These clients are characterized by the fact that they do not want the service and generally exhibit uncooperative behaviour (Alford, 2002). They may, for example, actively evade the "service" of enforcement, or commit information fraud (Hawkins, 1984). In this article we will see what the distinct position of the clients of enforcement means for the effects of e-enforcement.

BACKGROUND

First we summarize the main theories on styles of law enforcement. Then we outline the state of the art in e-enforcement.

Law Enforcement Theories

In the literature on enforcement, two constituent styles of enforcement are often distinguished (Hawkins, 1984; Hutter, 1997; Sparrow, 2000). The first style is that of "sanctioning," "compulsion," "coercion," or "penalism." This style centers around the idea that the violation of norms must be punished in order to ensure that the regulatee will comply with these norms in the future. Both the rules and the context are unambiguous; the regulatee simply has to obey the rules. Inherent in this approach is a unilateral and hierarchic relationship between inspector and regulatee. The focus is not on the relationship but on enforcing the norm.

The second style is called "compliance," "conciliation," "compromise," and "remedialism." Enforcement is seen as a multilateral process of consultation and negotiation, since inspector and regulatee are dependent on each other. For example, the regulatee may be unaware of technological developments, thereby inviting an educational approach from the inspector. Consultation and negotiation also arise from ambiguity regarding the norm, for example when a rule is contradictory or different rules contradict each other, or when the application of a rule is seen as being unreasonable.

The first style has a binary character. There is a rule and it is either broken or not. If it is broken, the inspector will take action. The second style is serial and incremental in nature (Hawkins, 1984). After all, negotiation is more a process of give and take. Improvements in the behavior of the regulatee will therefore take place gradually. In the first style, supply of information is essential to the inspector: without solid information on the regulatee's behavior, there can be no adequate sanctioning and enforcement. In the second style, information is important, of course, but interaction also plays a crucial role: good enforcement is strongly dependent on the quality of the relationship between inspector and regulatee. The regulatee fulfils the role of "obligatee" (Alford, 2002). It is therefore not self-evident that he will behave in accordance with the norm. In many cases, he will behave strategically and act as an opposing player in relation to the inspector (McBarnet & Whelan, 1999).

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E-Enforcement State of the Art

E-enforcement is the use of electronic tools in law enforcement. It is a form of digital government. "E-enforcement" is an abbreviation for "electronic enforcement" (Smith, McFadden, & Passetti, 2000) and is synonymous with "automated enforcement" (Retting & Williams, 1996; Smith et al., 2000; Turner & Polk, 1998; Wilmot & Khanal, 1999; Wissinger, Hummer, & Milazzo, 2000).

There is only a limited number of e-government and digital government publications that mention the area of regulation and law enforcement (Chen, 2002; Chen, Schroeder, & Hauck, 2002; Strejcek & Theil, 2002). Also, the e-government applications involved all concern government-to-government interaction (Hiller & Belanger, 2001). In this article, however, we are interested in the relationship between government and businesses or citizens. Critical publications on this type of e-government can be found in the literature on automated traffic enforcement.

The literature on automated traffic enforcement discusses the use of electronic tools for the enforcement of laws against speeding (Glauz, 1998; Perone, 1998; Wilmot & Khanal, 1999), running red lights (Ruby & Hobeika, 2003; Walter, 1998), entering railway crossings when gates are down (Meadow, 1998), failing to pay tolls and high-occupancy vehicle lane violations, electronic toll collection systems, vehicle inspection, weigh-in-motion stations and remote emission sensing (Bartoskewitz, Carson, & Curry, 1999; Bochner, 1998; Turner & Polk, 1998). Bochner (1998) reports that automated enforcement is used in over 75 countries throughout the world.

Automated traffic enforcement is found to be very effective in reducing violations and ultimately in reducing accidents (Glauz, 1998; Meadow, 1998; Perone, 1998; Ruby & Hobeika, 2003). Some authors mention that motorists may oppose the introduction of automated traffic enforcement by seeking to influence politicians (Bartoskewitz et al., 1999; Turner & Polk, 1998). None of the authors, however, mention or investigate opposition or strategic behavior among inspectees after the definitive introduction of the systems. It is this type of opposition which forms the focus of this article.

TWO CASES ON E-ENFORCEMENT

For both cases, we outline the original method of enforcement and the method of e-enforcement. The complete case study descriptions including source references and description of the research method can be found in Koopmans-van Berlo (2003) and Koopmans-van Berlo & de Bruijn (2004).

Weigh in Motion with Video

Overloading of heavy goods vehicles can take two forms. The vehicle as a whole can be overloaded or there is an excessive load on one of the axles. Both types of overloading cause damage to roads and dangerous situations. As overloading represents a form of unfair competition, both types of overloading are liable to punishment as an economic offense.

Original Enforcement

Before the electronic enforcement system was available, inspectors and police conducted incidental checks at the roadside. Motorcycle brigades halted heavy goods vehicles on the road and led them to a parking space at the side of the road. The vehicles were selected by their appearance. Trailers with a large bulge on top or with sagging axles stood a good chance of being stopped and weighed, as did vehicles from haulage companies with a bad reputation or transport flows where there was a tendency towards overloading.

Once a driver had been led to the side of the road, he was required to drive his vehicle slowly onto a weighing platform and to stop at each axle. The weighing platform determined the load on the axles. If overloading was discovered, an official report was written out.

E-Enforcement

A definition of "weigh in motion" is "the process of estimating the total weight of a moving vehicle and the part of that weight carried by each wheel, each axle or axle group or a combination thereof, by measuring and analyzing the dynamic tyre forces of the vehicle" (Katz & Rakha, 2002). An innovative application based on the WIM system has recently been developed in Europe, by linking it with cameras (WIM-Vid, video) and registration databases.

Induction loops are placed in the road to register the passage of traveling vehicles, along with sensors which record the axle configuration and the axle loads. The axle configuration indicates the type of vehicle, thereby specifying the norms which apply to it. Cameras above and beside the road photograph the registration number, time of violation, the hazardous-substances sign and the vehicle as a whole. An infrared camera is also in place for night photographs. All passing heavy goods vehicles are monitored 24 hours a day. The measuring points are indicated by road signs.

Enforcement officers can watch the images of overloaded heavy goods vehicles in real time, either on loca-

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