

Interoperability in Electronic Government: The Case of Police Investigations

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ABSTRACT

Police investigations are information intensive work processes, where information, intelligence and knowledge are important resources to solve crime cases. Often, information is needed from other police districts, customs authorities, hospitals, tax authorities, and other public as well as private organizations. Interoperability between electronic information systems can improve the efficiency and success of police investigations. This article presents the case of police investigations in terms of their value configuration and knowledge management technologies. Geographic information systems illustrate the need for information from various sources.

Keywords: *Digital Government, Geographic Information Systems, Information Systems, Law Enforcement, Police Investigation, Stages of Technology*

INTRODUCTION

When a lorry loaded with family boats from Latvia passed the border of Norway from Sweden in December 2007, Norwegian police had instructed customs to let the lorry pass. The reason was that Norwegian police knew there were narcotics, in terms of amphetamines, hidden in one of the boats. Since the lorry was part of the organized crime, the police wanted to follow it to its destination. Norwegian customs, however, were desperately in need of success and stopped the lorry, invited the press and told them how much narcotics they had been able to capture. The criminal police were upset. From our perspective of interoperability, this situation occurred because the two federal organizations

have conflicting goals. While customs authority is concerned with confiscating smuggled goods, police authority is concerned with fighting organized crime. Interoperability between customs and police is at a low level. In such situations, improved computer systems do not help.

However, in situations where there are no goal conflicts, interoperability between electronic computer systems will improve the performance of cooperating agencies such as criminal investigations. An investigation is an effective search for material to bring an offender to justice. Knowledge and skills are required to conduct an effective investigation. Investigative knowledge enables investigators to determine if a given set of circumstances amounts to a criminal offence, to identify the types of material that may have been generated during the commission of an offence and where this material

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may be found. It also ensures that investigations are carried out in a manner, which complies with the rules of evidence, thereby increasing the likelihood that the material gathered will be admitted as evidence.

In this article, the case of police investigations in terms of the role of interoperability is presented. This research article makes a contribution to the literature on interoperability by illustrating stages of growth in systems use that represent the stages of requirements for interoperability. The case presented in this article is crime mapping, where information from various sources from both inside and outside law enforcement are required at higher stages of maturity.

This article utilizes secondary research and offers a case that reflects a practical problem. The article illustrates the importance of interoperability and the implications that organizations (or e-government in this context) may face as a lack of it. Generally, the mobilization of electronic information across organizations has the potential of modernizing and transforming information exchanges. The current information exchange is, however, often inefficient and error-prone (Eckman et al., 2007). Exchanges of information and services are often fragmented and complex, dominated by technical as well as organizational problems.

High-ranking issues among the defining purposes of e-government are highly agile, citizen-centric, accountable, transparent, effective, and efficient government operations and services (Scholl and Klischewski, 2007). For reaching such goals, the integration of government information resources and processes, and thus the interoperation of independent information systems are essential. Yet, most integration and interoperation efforts meet serious challenges and limitations.

Improved interoperability between public organizations as well as between public and private organizations is of critical importance to make electronic government more successful. In this article, stages of geographic information systems (GIS) representing levels of interoperability are presented. First, the case of GIS is

discussed, followed by the maturity model for stages of GIS. Then the case of police investigations is presented.

THE CASE OF GIS

Geographic Information Systems (GIS) are applied in a variety of electronic government situations, from tracing the origins and spread of foot and mouth disease on farms to locating crime hot spots for law enforcement. GIS have become indispensable to effective knowledge transfer within both the public and private sector.

However, as pointed out by Gottschalk and Tolloczko (2006) the level of sophistication varies among agencies applying GIS. Furthermore, the extent to which GIS interoperate with each other are subject to substantial variation. A survey on interoperability for GIS in the UK was conducted by the e-government unit of the Cabinet Office (2005b).

According to this survey, 49% of the surveyed government organizations participated in data sharing projects for GIS, indicating that half of the organizations were working on Stage 1 of the stage model for e-government interoperability. The fractions at higher levels were not identifiable from the survey.

Many different application packages were in use, such as ESRI, Mapinfo, Intergraph, GGP, CadCorp, INNOgistic and Autodesk.

To improve interoperability of such systems for GIS and other e-government systems, the UK Cabinet Office (2005b) developed an e-government interoperability framework. The framework is mostly technical in nature, stressing alignment with the Internet and adoption of the browser as the key interface. The framework intends to stimulate government agencies to work more easily together electronically, make systems, knowledge and experience reusable from one agency to another, and reduce the effort needed to deal with government online by encouraging consistency of approach. In terms of our suggested stage model for e-government

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