Abstract

A prosecutor’s office is a vital component in our criminal justice system. It is responsible for representing the people in court. To perform its duties many different types of technology are utilized. One of the most potent and controversial technologies is lawful intercept technology (i.e. wiretaps). In the realm of technology acceptance research, neither prosecutor’s offices nor lawful intercept technology have been studied. This paper represents a study in progress designed to fill these gaps in the literature. Using an extended version of Taylor and Todd’s Decomposed Theory of Planned Behavior, this study will interview and survey attorneys and investigators in a prosecutor’s office to examine the factors that influence their acceptance of wiretapping technology, specifically, and technology acceptance, in general.

1 Problem Statement

The area of technology acceptance continues to be an important area of research [16, 17]. Technology can affect humans and their work environment and vice versa [7, 24]. Over the years there have been many models developed in an attempt to understand technology acceptance [13]. However, a single unifying model to explain technology acceptance remains elusive due in large part to the context (or domain) in which the technology is used as well as the person using it [6, 12]. Within technology acceptance there is a sub-topic concerning situations in which the use of a technology is mandatory and not voluntary. The need for research in this area is supported by the literature [2, 28]. One mandatory-use environment that continues to be understudied is law enforcement [7, 21, 41]. A review of the literature suggests that the majority of the technology acceptance studies examining law enforcement have focused on police departments [4, 7]. However, police departments are just one part of the criminal justice system. There are also the prosecutors, judges and correctional officers. To date there is no research into technology acceptance in prosecutor's offices. There is support in the literature for this statement. Lambert [19] claims that his research into the technology acceptance by attorneys in private practice “may be the first of its kind within” the legal profession.

Law enforcement technology is hard to define because it encompasses so many different technologies. There are technologies that deal with running a police department and answer questions such as how should a police department allocate its resources, how are reports written and stored for future reference, how are arrests processed and documented, how are trends in crime analyzed, what is the police department’s budget, among others [8, 9, 10]. The federal government, through the National Institute of Justice (NIJ), an arm of the Department of Justice, plays an important role in the research, development and evaluation of law enforcement technology [37]. The NIJ identified 17 core law enforcement technologies including: Aviation; Biometrics; Body Armor; Communications Technology; Corrections; Court Technologies; Crime Mapping; Cybercrime; Explosives; Forensics; Information Technologies; Less-Lethal Technologies;
Personal Protective Equipment; Pursuit Management; School Safety; Sensors and Surveillance [37]. These core technologies are used primarily by police departments and correctional facilities and focus on keeping officers safe and solving crimes [37]. In a general sense, prosecutor’s offices come in contact with many of these technologies because of the evidence they uncover. However, it is important to keep in mind that a technology acceptable for the police may not be acceptable or useful to prosecutors. The police and prosecutors operate differently because of their distinct roles in the criminal justice system [25].

The technology used by prosecutors is also diverse. Just like police departments, prosecutor’s offices need technologies to run day-to-day operations. However, prosecutors also use technology that is generally called Legal Technology. This technology is used to create legal documents such as contracts, wills, subpoenas, and arrest warrants, conduct legal research, electronically file court documents, and, perhaps most importantly, present evidence in court [19]. Lambert [19] noted that “the heart of any lawyer’s case…is the presentation of information to the fact finder, whether in the form of an opening statement, evidence, or closing argument.”

From the variety of the technologies described above, this study will examine one of the most potent and controversial technologies used by law enforcement: lawful intercept technology (i.e. wiretapping) [3, 27]. This technology is potent and controversial because it allows a prosecutor’s office to eavesdrop on a suspect’s private communications. The information gathered with this technology has led to successful investigations involving organized crime (e.g., John Gotti), government corruption (e.g., ABSCAM), and national security (e.g., Aldrige Ames). Likewise, the use of this technology has led to issues regarding privacy concerns (e.g., the FBI’s Carnivore, and DHS’s ADVISE programs), constitutional questions (e.g., President Nixon’s excessive use of wiretapping in the name of national security, and President Kennedy and President Johnson’s wiretap of Martin Luther King Jr.), and worries about government intrusion and Big Brother (e.g., the databases created by the Total Information Awareness program).

At the most abstract level, lawful intercept technology must intercept a specific target communication secretly, and deliver it in a confidential, timely manner and, in a format that is useful to law enforcement. The law that governs lawful interception is the Communications Assistance for Law Enforcement Act (CALEA) of 1994. This act was in response to law enforcement's concern that the rapid growth and change in telecommunications would make lawful interception increasingly difficult, if not impossible. CALEA was designed to ensure that the ability to lawfully intercept communications was a "basic element" in the development of new telecommunications products and services [36].

Statistics gathered by the Administrative Office of the United States Courts show that lawful interception is a widely and frequently used tool that prosecutors (especially at the state level) are turning to increasingly. The graph below, which depicts the number of wiretaps from 2000 to 2010, is from the 2010 Wiretap Report, the most current report issued by the Administrative Office of the United States Courts on lawful interception.
In addition to gathering evidence about known criminals and their activities, lawful interception uncovers criminals and networks of criminals previously unknown [3, 22]. However, lawful interception is not without its critics and challenges. There are those who question its productivity and the truthfulness of its results [26, 27]. Nunn [26, 27] asserts the law enforcement technologies are "rarely" scrutinized and that "scholars have rarely examined the extent and production of routine, court-ordered wiretaps in the U.S." There are those who see challenges from evolving telecommunications technology and the telecommunications marketplace [15]. Koops and Bekker [15] claim that advances in telecommunications and changes in the telecommunication marketplace may place "ever larger portions of telecommunications traffic … out of reach of lawful interception." There are those who question the security of the government technology standard used for lawful intercept technology, CALEA [32]. In general, legislative mandates, such as CALEA, to ensure wiretapping on any telecommunications network have been met with resistance. Creating "a hole in the security of a network" where there wasn't one before is a source of concern [3]. The research of Sherr et al., [32] points out that CALEA's architecture is open to attack using simple methods that are difficult to detect. Specifically, the connections between the telecommunications company and the law enforcement agency are vulnerable to attack [32]. And there are those who question how statistics on lawful intercepts are gathered [31]. Schwartz [31] asserts that any investigation of lawful interception is difficult given the "haphazard and incomplete" nature of government statistics.

The criticisms of lawful interception outlined above and the increase in its use by the government make lawful interception a worthy research topic. To supplement support for this statement, the following quotes from the literature illustrate the value of lawful interception as a research topic.

Branch [3] observed that "it is little appreciated how important Lawful Interception is to the Law Enforcement Agencies."

Kennedy and Swire [14] assert that "the use of wiretaps and other electronic surveillance at the state level" is an "area of longstanding, large, and growing significance" Furthermore, Kennedy and Swire [14] noted that "the volume and diversity of state wiretap law and practice has not been accompanied by corresponding scrutiny."

Nunn [26] stated that "criminal justice technologies are rarely targeted by close inquiry."

Schwartz [31] points out that "neither the U.S. government nor outside experts know basic facts about the level of surveillance practices."

Nunn [27] stated that " The traditional role of wiretapping as a fundamental surveillance technology is clearly acknowledged, but the literal analysis of wiretap data has been minimal in the broader literature on surveillance and undercover police work."

In summary, the literature points to two gaps in the research regarding prosecutors and lawful intercept technology. The literature expresses the need for research in technology acceptance in general and mandatory-use environments, such as law enforcement, specifically. Furthermore, the literature indicates that technology acceptance studies of law enforcement have focused on police departments, ignoring other members of the criminal justice system, namely prosecutors. This study will address this gap in the literature. With respect to technology, the literature expresses the need for research of law enforcement technologies. One important law enforcement technology that has not been studied from a technology acceptance perspective is lawful intercept technology. This
study will address this gap in the literature, as well.

2 Purpose

The purpose of this study is to respond to the need for and improve the understanding of technology acceptance, in general, and mandatory-use environments, specifically. It does this by examining a previously unstudied domain, prosecutor's offices, and a previously unstudied technology, lawful intercept technology. Prosecutor's offices are a vital and distinct component of the criminal justice system [34, 35] and lawful intercept technology is one of the most potent and controversial tools used by law enforcement [3, 27]. The instrument used to conduct this examination is an extended version of Todd and Taylor's [33] Decomposed Theory of Planned Behavior (DTPB). The DTPB is extended using factors that the literature has found to be indicative of technology acceptance and factors that the literature has found to be relevant in a law enforcement setting. Extending an existing model is a valid and proven form of research [5, 7, 38]. This new model is called the Law Enforcement Technology Acceptance Model (LEM).

The LEM will be tested using a combination of quantitative and qualitative methods. The quantitative method will be a survey of 150 investigators and 25 attorneys. The qualitative method used will be interviews of 6 investigators and 2 attorneys.

3 Research Questions

The purpose of this study is to understand technology acceptance in a mandatory-use environment. To that end, a technology acceptance model was developed, namely the Law Enforcement Technology Acceptance Model (LEM), which will be used to study technology acceptance of lawful intercept technology in a law enforcement setting, namely a prosecutors' office. The research questions that address the purpose of this study and that the LEM was designed to answer are as follows:

3.1 Research Question 1

What factors influence technology acceptance of lawful intercept technology in a law enforcement setting?

This research question will be addressed by the Law Enforcement Technology Acceptance Model which was developed by integrating factors that the literature has found to be indicative of technology acceptance and relevant to the law enforcement domain. Using Taylor and Todd's [33] Decomposed Theory of Planned Behavior (DTPB) as the foundation, the LEM was developed with relevant factors in the literature from Rogers [29], Jeyaraj et al. [13], and Hu et al. [11]. Additionally, this study will conduct a focus group of the target population to uncover other potential factors.

3.2 Research Question 2

How do these technology acceptance factors influence each other?
This research question will also be addressed using the LEM, which is the basis for a questionnaire designed to test the extent the factors influence each other. Using questions adapted from the literature, the questionnaire will test the following:

The extent to which the factors Attitude, Subjective Norm and Perceived Behavioral Control influence Intention.

The extent to which the factors Relative Advantage, Complexity, Compatibility, and Observability influence Attitude.

The extent to which the factors Peer Influence, Subordinate Influence, and Superior Influence influence Subjective Norm.


Additionally, this study will conduct a focus group of the target population to uncover other potential factors.

3.3 Research Question 3

Do the values of these factors differ between and among investigators and attorneys in the law enforcement domain?

This research question will be addressed by analyzing the results of the questionnaire based on the LEM for differences between and among the target populations. One aspect that makes this study unique is the diversity of the investigators and attorneys to be examined. Previous technology acceptance studies involving law enforcement have focused on police departments [4, 7, 39]. The investigators and attorneys of this study work in a prosecutor's office and come from all levels of government (city, state, and federal) and have varying levels of experience in the private and public sector.

4 Methodology

This study will use a combination of qualitative and quantitative methods to investigate the factors that influence technology acceptance of lawful intercept technology in a prosecutor's office. This combined approach has been found to provide a fuller understanding of the research questions being investigated [1, 20, 30]. The qualitative method will be interviews of 6 investigators and 2 attorneys. A review of the literature indicates that interviews are a qualitative method used by previous technology acceptance studies [20, 30, 40]. Furthermore, interviews can yield new and emerging technology acceptance factors not found in the literature [20, 30, 40]. The quantitative method will be a survey of 150 investigators and 25 attorneys in a prosecutor's office. A review of the literature indicates that a survey is a common quantitative method used to study technology acceptance [1, 7, 11, 18, 20, 30].

5 Significance

This study makes theoretical and practical contributions toward the understanding of technology acceptance, in general, and mandatory-use environments, specifically. Knowing the factors that govern user acceptance that are theoretically informed and empirically validated will assist both the research and law enforcement communities.

5.1 Theoretical Contributions

This study makes theoretical contributions toward the understanding of technology acceptance. This is accomplished by extending Taylor and Todd's [33] Decomposed Theory of Planned Behavior using factors that the literature has found to be
indicative of technology acceptance and surveying previously unstudied users, investigators and attorneys in a prosecutor's office, who have no choice in the technology they use. Furthermore, the technology to be studied, lawful intercept technology, has not be examined previously.

Based on the support in the literature mentioned above, this study makes the following theoretical contributions:

This study responds to the need for and improves the understanding of technology acceptance, in general, and mandatory-use environments, specifically.

This study responds to the need for and improves the understanding of technology acceptance in a previously unstudied domain, prosecutor's offices, a vital and distinct component of the criminal justice system.

This study responds to the need for and improves the understanding of technology acceptance of a previously unstudied technology, lawful intercept technology, one of the most potent and controversial technologies used by law enforcement.

5.2 Practical Contributions

This study makes practical contributions toward the understanding of technology acceptance. The literature asserts that awareness of technology acceptance factors will help aid in the development of policies, guide the implementation of technology, and improve the productivity and efficiency of users [1, 5, 11, 18, 23, 30]. For instance, Colvin and Goh [5] assert that "administrators would benefit from aligning their vision of new technology with those of the people who were expected to use it." Furthermore, Colvin and Goh [5] contend that "officers who readily accept new technology would optimize resources that facilitate their efforts to serve community members effectively." Likewise, Hu, Lin, and Chen [11] state that knowing user acceptance factors and how they influence each other enable administrators and law enforcement personnel to better implement technology.

Based on the support in the literature stated above, this study makes the following practical contributions:

This study supports the work of information technology administrators, in general, by identifying factors that influence a user's acceptance of technology.

This study supports the work of information technology administrators in law enforcement, specifically, by identifying factors that influence an investigator's and attorney's acceptance of technology.

6 Conclusion

Prosecutor’s offices are an important part of our criminal justice system. To represent the people in court different types of technology are used. One of the most potent and controversial technologies allows prosecutor’s to eavesdrop on private conversions (i.e., to wiretap) Within technology acceptance research, prosecutor’s offices and lawful intercept technology remain unstudied. This paper describes a work in progress designed to address these gaps in the literature. Using a modified version of Taylor and Todd’s Decomposed Theory of Planned Behavior, this study will examine the factors that influence technology acceptance in a prosecutor’s office. The goal of this research is to contribute to the theoretical understanding of technology acceptance and to the practical implementation of technology.
7 References


