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Prevention of Becoming the Database to a Crime Scene

Samiyeh KHOSRAVI[1]

[1] Faculty of Electrical and Computer Engineering, University of Birjand, Birjand, Iran, skhosravi@birjand.ac.ir

Abstract: Crime prevention has been one of the most fundamental issues in our society that has historically been implemented in various ways. Along with the development of information and communication technologies, the aim is to launch a comprehensive system of information storage of criminals in police records. Through the use of data mining and knowledge discovery techniques, one can analyses the roots tracing offenses, including theft for Iranian Police for legal purposes.

Keywords: *crime; databases; data mining; crime scene.*

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1. Introduction

1.1. Background:

The task of data mining, exploration and extraction of resources has valuable information hidden in massive amounts of data for extraction. 'Data mining' is the translation of «Data Mining» which means 'to explore data mining'. The main difference between data mining and statistics is the volume of data analysed, data modelling and application of artificial intelligence (Weatherburn, Hua & Moffatt, 2006). Data mining works with the standard process of 'Crisp ADM' that runs over six stages.

Reports have been published that emphasizes about role of knowledge of victims of crime in Ireland more generally (Fakoor et al., 2015), on the ease of use of support services for victims of crime, as well as on specific kinds of crime, including sexual abuse and violence (Fakoor et al, 2016; Khodayari et al., 2017) and domestic violence. Some of such explanations accomplish create reference to people with disabilities on the sexual abuse of people with intellectual disabilities, and study in which questions were asked regarding domestic violence amongst people with longstanding health problem; see also Bartlett and Mears (forthcoming)).

A short, other than on the rise, body of work has explored police attitudes and perceptions towards people in Australia, the US and UK. Such investigations propose that police officers often endorse general stereotypes about people with intellectual disabilities being vulnerable and lacking the capacity to be competent witnesses. Edwards et al., (2012), as an instance point to how police officers in Australia held myths about women with learning problems, that they were sexually promiscuous and lacked credibility as complainants. Smith & Jones (2008).

Spohn (2007) qualified investigation about police officers in the US and Australia also notes how police officers stated that they were more likely to be sympathetic if the victim of a crime was someone with intellectual disabilities, by this means reinforcing notions of vulnerability, whilst US research found that many police officers had difficulty recognizing among various disabilities, most particularly intellectual disability and mental illness. In next investigation, also raised concerns about the lack of awareness of autism as a specific impairment, a finding backed up by research in the UK. Awareness of disability is variable therefore, and stereotypical views abound which in turn shape police practices.

Knowledge discovery using database identification process is simple and useful. It results in understandable patterns of data models that reflect the stage of the knowledge discovery using data mining. The algorithms are

within the limits of acceptable accounting effects, textures and models discovered in the data. This data model helps to describe the relationship within a subset of the data. This relationship is valid, simple, easy to understand and new. In fact, data mining is one of the most important methods by which useful patterns in data are generated with minimum user intervention. These patterns are identified and the information is made available to users and analysts facilitating critical decision-making based on the organization that has adopted this method. Correlation rules are one of the most important findings in the data mining methods. Perhaps, this could be the most common form of pattern discovery methods in learning systems where no regulatory norms are mentioned (Williams & Gibbs, 1981). Data mining is closest to people's behaviour when they start learning about the search for gold in the gold through the means of wonderful database. In other words, a rule that says something about the database that was not understood before is a very interesting aspect of data mining. In this way, all the desired patterns may be found in the database. On one hand, the rules are a strong point because anything that has not been explored yet can be explored, however it may be a disadvantage as such unexplored data will encounter a lot of rules. This reduces the efficiency as this process can be very time consuming and expensive (Von Hirsch & Ashworth, 1998).

Confidence, support coefficient A => B

Where A and B are subsets of the collection where no superset items exist (Weatherburn, 2010).

1.2. Problems:

At the beginning of the data mining process, the company or organization may face some problems, such as privacy and security of their data; however, with the help of artificial intelligence, the solution to these problems will be available (Zhang & Webster, 2010). After solving the problems encountered at the beginning of the data mining process, the recorded information in the company is received as a line of tiny codes (Woodhouse, 2010).

1.3. Suggested Solution:

Based on this information and the mechanisms involved in your business, a computer modelling method is used to identify the solution to the problem. This method used the concept of 'machine learning', which can help to eliminate the problems relating to documentary and software issues.

Transmission Encryption Technique	Pros	Cons
Enable the multiprotocol netlib and enable encryption	Easy to implement	Symmetric encryption only Requires NT/ Windows authentication
Implement IPSec	Can protect all communications between hosts Requires no changes to SQL Server	Complex setup for most SQL DBAs and developers
Enable SSL Encryption on SQL Server (SQL Server 2000 only)	Strong Crypto Works over all netlibs	Complex setup for those without certificate setup experience

Fig 1: This figure shows Several Options for Encrypting Data Between SQL Server Clients/Servers

2. Crime scene examination and postmodernism issues

Postmodernism provides many challenges for criminology, an academic discipline initially built upon foundationalist epistemological assumptions. Through engaging with the challenges some criminologies have changed. Public criminology recognises the need to incorporate a range of experiences and knowledge. It critically examines the role of research and how this relates to broader criminological/sociological issues such as the defining and policing of certain acts as criminal. Reflexive criminological practice does require criminologists to ponder on issues of allegiances in all stages of research. However, allegiance or strong objectivity does not automatically equate with a simple taking of sides.

It has been shown in the preceding sections that managerial, organizational, methodological and technological dimensions' influence crime scene examination. Moreover, a great diversity exists in the way such models are implemented. For example, investigation colliding with court's needs, sworn vs. civilian, centralization vs decentralization, laboratory divide, etc. Finally, the search for the ideal model seems to be confronted with a series of basic, often implicit, contradictions. These contradictions cause the pendulum to balance according to the solutions for short terms preoccupations, instead of being identified in line with a long-term and coherent strategy. The model proposed in this study capitalizes on the view presented in part I and is resolutely connected to an intelligence based

strategy. It states that a specific policing model influences crime scene examination making it crucial to recognize the impact of this influence. A valid point to explore would be if such a model may introduce a sense of bias in the judgment of the scientist. This critical point is the motivation behind most of the recommendations that demand for the separation of forensic activities from the influence of police organizations. This is discussed in the below section (Weatherburn, Hus & Moffatt, 2006).

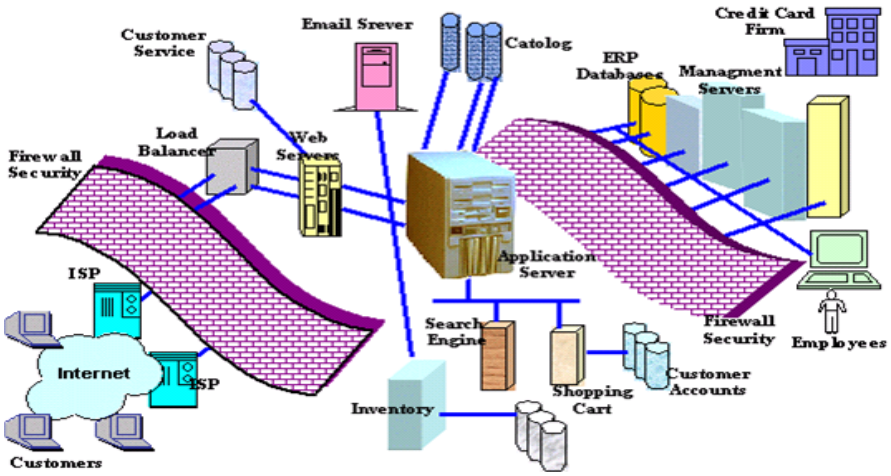

Fig 2: This figure shows four fundamental layers for keeping databases secure in one organization.

3. Integration of Forensic Information into the Intelligence Database

Swiss police forces are organized on three different levels, represented by city, state and federal police. The federal police are responsible to conduct investigations, mainly, in fields related to organized crime and provide an international single point of contact. They also manage the national level databases (such as AFIS and DNA databases) (Williams & gibbs, 1981). State police and two teams of city police, of varying capacities, are in charge of the investigations of all the remaining types of crime. Each jurisdiction has a crime analysis team dedicated to the sustained monitoring and analysis of repetitive crimes, mostly high-volume crimes. Since 1994, four years after the creation of the first crime analysis unit in one state, a regional approach has been settled upon in the French and Italian speaking

parts of Switzerland in order to coordinate intelligence efforts. Intelligence units from the seven states have been grouped into a regional analysis centre, called CICOP (an acronym in French that translates to the Coordination of Intelligence Effort for Operational and Preventative Efforts) (Zhang & Webster, 2010). Similar structures have been developed later across other parts of the country. Since 2008, a common interstate information platform has been implemented. This has helped to collate information automatically from the manifold databases that are located in the six French-speaking states. It is now available to all the analysts across all police forces (Garmani, Amrani, Baslam & Ayachi, 2017). The development of this database was a real challenge as the subject police forces are of significantly varying sizes and cover various types of territories. Since they are structured differently, they have developed their own computer infrastructure (Iduwo, 2016). Legal challenges also had to be overcome. This shared intelligence database has been developed according to a common methodology that has been devised by crime analysts and continues to be iteratively updated over time. The implemented intelligence process collects information from criminal events, investigations and other sources of data and integrates them into a memory. This memory is specially designed and is organized to support various analytical processes (Kansal & Singh, 2016). The delivery of targeted products contributes to operational and strategic decisions. The aim of the platform is to support the tracking of crime phenomena and to detect specific patterns in a crime series. In this article, the term series has been used for cases that are assumed to be perpetrated by the same offender or by offenders belonging to a same group of criminals. In order to detect and assume the actuality of a series, several types of links between the cases are integrated in the database (Wenzel, 2004). They are generated by the comparison of situational (e.g. MO, loot, spatiotemporal) and forensic information (e.g. DNA, shoe marks, images) (Zhang & Webster, 2010), as well as, the analysis of stolen and recovered vehicles. In this context, links are considered as an aid to globally interpret the crime environment for intelligence purpose or for investigations, however, not as a proof of common source dedicated to a Court (Garmani, Amrani, Baslam & Ayachi, 2017; Weatherburn, Hua & Moffatt, 2006). Crime events data are integrated on a daily basis by each state unit. This data is classified according to a harmonized doctrine including modus operandi, loot, spatiotemporal information and a dedicated system of classifying events.

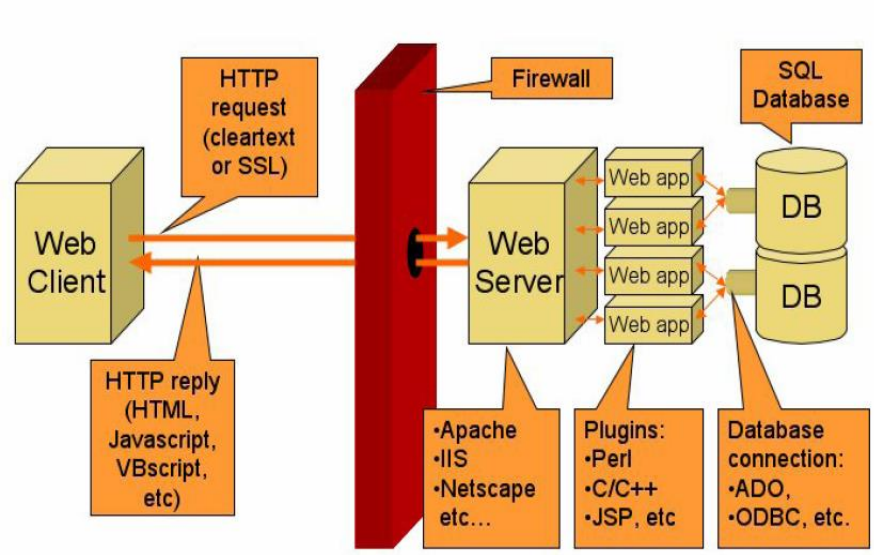

Fig 3: Simple attack to the databases with use ofweb application layers.

4. The use of web site technology on the Force Intranet

The Metropolitan Police computer network, OTIS, is a modem network providing administrator support to more than 35,000 police and civil staff (Weatherburn, Hua & Moffatt, 2006). A Forensic Resources Centre website has been created on the Force Intranet. Operational data has been fed into the website and at present, it is ready for use (Williams & Gibbs, 1981). This has enabled both personal and mass communication in a very large police force. On an intranet, less confidential information that is vital to the operation of an active intelligence system can be shared with the Force, while leaving the dedicated intelligence (Systems Intelligence Detection SIDs) (Iduwo, 2016) systems to handle the more sensitive information that is collected in context of the present activities. All crime offices in the Metropolitan Police Service had been scheduled to have the OTIS system installed by April 2001. In conclusion, for the cost of a tiny proportion of the Metropolitan Police budget, which is approximately £400,000, an effective integrated intelligence system was brought into operation in 2001 (Pradhan & Kumar, 2015). For the first time in its history, the Metropolitan Police will be able to locate and compare the codes of a high proportion of its more useful forensic retrievals within seconds besides having access to information on criminals. The ability to show coded material in graphically mapped presentations at the touch of a button will

become a reality as the Metropolitan Police Service moves towards the next goal of fully utilizing the project DIANE (Divisional Intelligence Analysis Network Environment) (Tay, 2005).

5. Comparison between our method and Data mining

Data mining is a philosophy of the future which mimics the past. The future cannot always be predicted by the past (Weatherburn, Hua & Moffatt, 2006). Data mining helps to conduct business using the data from the past, thereby allowing one to precisely predict the future with a high degree of approximation. For example, data mining helps to predict two critical factors in any major business (Kansal & Singh, 2016). Anticipate the needs of a particular customer in the future and thereby retain the customer and forecast market demand at any time and in different regions. This helps to organize the business' distribution system (Woodhouse, 2010).

6. Conclusion

At any time during an enquiry, one of the personnel either managing or attending the crime scene may decide that it is necessary to take the support of a forensic archaeologist. In such a case, although the archaeologist would mostly be studying the crime scene on his own, he will undoubtedly come into contact with various types of people, all of whom have a role at the scene of the crime. Although the forensic archaeologist would be the most qualified person to excavate at the scene, there are many other tasks that must be undertaken in conjunction to the excavation that cannot be completed by the same person. Not only will the forensic archaeologist need assistance but also, she/he will have to liaise with other personnel, who may be holding a higher rank or be of a lower specialization. The forensic archaeologist cannot individually excavate the entire scene. In the case of buried remains, the forensic archaeologist is the primary person responsible for maximizing the forensic potential of the scene. She/he must understand the requirements of other specialists in order for them to contribute effectively to the investigation.

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