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## The Use of Modern Technology in Crime Control: A Plus or Minus

Oluyemisi Bamgbose\*

### Introduction

The existence of crime is as old as man himself. As far back as human beings existed and lived together, the issue of crime has been. The issue of crime is a matter of concern in all societies and there have been attempts to control and reduce it as much as possible.

Crime is an act or omission which renders the person doing the act or making the omission liable to punishment under the law. They are wrongdoings which directly threaten the security and well being of a society. Between the time a crime is committed and the time the suspect is prosecuted and if found liable is punished, there are several processes which include investigation.

Over the years, the rate of crime has increased considerably and crimes are carried out with more perfection and sophistication. However, because of the threat it poses to the society, there are concerted efforts to control crime. Various methods have therefore been adopted by different societies in combating crime. In the traditional African society, the use of superstition, supernatural powers and extra judicial devices such as trial by ordeal, oath taking and divination through oracle were common, approved and acceptable methods of crime control.<sup>1</sup>

The techniques and technologies adopted in the prevention and detection of crime have improved and changed greatly. They have shifted from crude implements and traditional methods and devices to modern, scientific and sophisticated techniques. Modern technology has become a vital tool in crime control worldwide. The traditional and age long systems and practices of preventing, detecting and investigating crime have failed to withstand the existing trend of crime pattern. There is a shift to improved technology as an

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<sup>1</sup>Bamgbose O, Crime Detection Methods and Health implications: Forensic Science Versus the Traditional African System in *Traditional and modern health system in Nigeria* by Toyin Falola and Mathew Heaton, eds. (Trenton New Jersey: African World Press Inc.. 2006) 429

alternative to combating crime.

This paper addresses this topic from a global perspective and in particular focuses on the position in Nigeria. The paper also discusses modern methods and techniques used in the prevention, investigation and detection of crime and its effectiveness. The advantages and disadvantages of these methods and techniques are highlighted and recommendations are made.

### Technology and Crime Control

The application of technology in the criminal justice system is not new. Since the inception of modern policing and correction, there have been innovations in the technology used in the criminal justice system.

There is now the realization that no society can successfully police itself using the orthodox techniques of beats and patrol alone in an increasing technology driven age. There is no country that is absolutely crime-free. Many nations are using technology to ameliorate and investigate any crime committed, using scientific and forensic methods; so as to bring perpetrators to book. It is then expected that nations must be adaptable and responsive to modern changes. The current and emerging technologies for crime surveillance, prevention, and protection in the past few decades are evidence of development in the criminal justice system to meet with the challenges posed by criminals.

The different stages in crime control and the technology used are discussed below.

### Crime Prevention and Modern Technology

There has been the introduction of new technologies in home equipment, automobiles, the telecommunication sector and the computer. There are also new forms of criminal activities in the society. This has posed a threat to persons who own and use such items and a challenge to the law enforcement agencies. In turn, it has led to intensified efforts to improve technology to fight and prevent crime. Installation of home alarm systems and surveillance devices instead of the orthodox methods of padlocking, use of patrol law enforcement agents and the availability of many gadgets to control crime are proof of technological advancement in crime prevention.

Before the advent of modern technology, various methods have

been adopted by individuals and law enforcement agents to prevent crimes on persons, corporations, and properties. Individuals have used physical resistance to prevent bodily attacks and intrusion to property and corporations have employed guards to keep watch and prevent crime. Relying on the confession of the criminal was also used and is still used in the interviewing and questioning of suspects. All these methods have now been found either inadequate or ineffective. This is because criminals have devised other techniques in committing crime. Criminals, who commit crimes against persons, usually attack those they consider weaker than themselves. These include women, children and senior citizens. Senior citizens have been known to use their canes and umbrellas to attack their attackers.

New technologies have now evolved in the prevention of crime against persons or property. Some of these are discussed below

### Technology and Crime prevention against persons

Crimes against persons are found in the penal codes of countries worldwide. Different techniques have evolved to prevent such attacks. Some of these are discussed below.

#### Pepper Spray

Pepper spray or *Oleoresin Capsicum* (OC) has gained wide acceptance in law enforcement as a swift and effective way to subdue violent and dangerous suspects and for personal protection. It is made from essence of chili pepper diluted with water.<sup>2</sup>

When there is an assault or attempt of an assault on a person, pepper spray enables a person to defend him or herself while keeping a safe distance from the attacker. A one second burst to the face of the attacker or suspect, will cause temporary blindness, choking, coughing and nausea. Manufacturers have designed the device in such a way that it can be concealed and easily carried about. According to Brenner, pepper spray is in a canister which could be in an attractive case or pouch with a key ring making it to look like an ordinary purse, easy and decent to carry about<sup>3</sup>

<sup>2</sup> Brenner, E. "Pepper spray effects and its Antidote May 12 2008 in GoArticles.com available @ <http://goarticles.com/article/Pepper-Spray-Effects-And-Its-Antidote/918494/> Retrieved on 1 October 2011

<sup>3</sup> *ibid*

### *Stun Guns or Tasers*

Law enforcement agents have used and still use objects like batons to prevent crime. The physical presence of a law enforcement agent should normally bring about fear in a suspect. In certain instances, bodily contact is used by the law enforcement agents to restrain suspects who defy warning. Stun guns or tasers are crime prevention devices designed to offer high level of individual protection and are also used by law enforcement agents to subdue a violent or fleeing suspect. People owe it to themselves to feel safe. A stun gun is a self protection device and an inexpensive way to have peace of mind against unwanted attacks. The stun gun is a non-lethal weapon, an incapacitating weapon and direct contact weapon with an electric shock that momentarily disables a person.<sup>4</sup> The prongs at the end of a stun gun must be applied directly to the perpetrator. Touching a person with the prongs on the stun gun quickly immobilizes the attacker. The electrical charge can pass through clothing. The stun gun is designed to key into the nervous system. This is said to cause disorientation and loss of balance and leaves the attacker in a passive and confused condition for several minutes. Like pepper spray, the device is designed to temporarily disable an attacker and provide enough time for the victim to call police or simply flee.<sup>5</sup> It is also said that Stun Guns are designed in such a way that it is easy to carry about without arousing suspicion. Some designs are made to look like pens, lipsticks, flashlights and cell phones. Like the stun gun, a taser is also a self defense electronic control technology that uses propelled wires or direct contact to conduct energy to affect the sensory and motor functions of the nervous system. The taser and stun gun perform nearly similar functions but should not be confused with each other. They are both highly effective non lethal self defense devices. The goal is to incapacitate an assailant, to allow for escape or to subdue the assailant. The differences are that a taser has a higher incapacitation rate; it transmits more energy than the stun gun. A taser is effective up to 21 feet away whereas a stun gun must be applied

<sup>4</sup>Harris T. How Stun Guns Work. 29 August 2001. HowStuffWorks.com available @ <http://electronics.howstuffworks.com/gadgets/other-gadgets/stun-gun.htm> and retrieved 29 September 2011.

<sup>5</sup>Spy Center Taser Gun vs Stun Gun February 04 2011 available @ <http://artdealer.com/blog/tag/taser-stun-gun-personal-defense-protection-shock-electricity> retrieved on 01 October 2011

directly to the assailant's/suspects body. Tasers affect the nervous and muscular system but stun guns affect only the nervous system. Tasers are more expensive than stun guns and tasers are bigger in size than stun guns.<sup>6</sup>

Despite the sophistication and effectiveness of these crime prevention devices, some have been said to have adverse effects. These are discussed later in the paper.

### *Technology and Crime Prevention against Property*

Certain crimes are directly against the properties of individuals. In such cases, there has been concerted effort to prevent such crimes with modern gadgets and technology. Some of these are discussed below.

#### *Car Alarm*

Since 1896 when the first car theft was documented, car theft has been on the increase worldwide. The use of pedal and steering locks were commonly used and still used to prevent car theft. These techniques are no more effective to prevent car thefts. Modern sophisticated car alarm systems are now installed in cars. Car alarms now have sensors that may be triggered off by force or shock. The devices are in different brands.<sup>7</sup>

#### *Ink Tags or Security Tags*

Losses incurred by departmental stores through theft, have made them conscious of the need for crime prevention devices. Security guards were commonly used to prevent pilfering and shoplifting. In the information technology age, stores have adopted more sophisticated methods of preventing the crime of theft. One of such is the use of ink tags for the prevention of theft of clothing's and wearing apparels.

The ink tag or security tag is a loss prevention device that a sales clerk is expected to remove with special equipment after the payment for such an item.<sup>8</sup> The ink tag is a loss prevention solution that some

<sup>6</sup> Ibid

<sup>7</sup>Cheong, J. "Integration of Latest Car Alarm Systems" October 14 2006 available @ Articlesbase <http://www.articlebase.com/technology-articles/integration-of-latest-car-system.62979.html> and retrieved on 1 October 2011

<sup>8</sup>TAGSDIRECT What is ink tag 2007 available @ <http://www.tagsdirect.net>

stores use on clothing's and textiles, especially those that are high priced to prevent shoplifting. The device is usually made of plastic with two halves. One side in the outside of the garment has a warning to the prospective shoplifter not to tamper with the device or risk releasing ink. The tags are designed to trigger the detector gates at exit. It is known that at times, the detectors are defective, and an innocent customer attended to by an inattentive checkout clerk may have to go back to the store, for the ink tag to be removed. In such a case there must be proof of purchase. However, a shoplifter who successfully removes the item from the store without detection may have to find a way of removing the ink tag. Ink tags fall into the loss prevention category called benefit denial.<sup>9</sup> This is because this device denies the shoplifter from benefiting from his or her crime because the device is made in such a way that any attempt to remove the ink tag from the item will result in the ink spilling and destroying the item. The security device is also designed to defeat any attempt to easily remove it from the clothing with scissors, pliers and wire cutters. Therefore, it is very difficult to disable the device in a shop without anyone noticing.<sup>10</sup> Shoplifters, who succeed in removing the items from the store, have however devised means of removing the ink tag without spilling the ink. The effect is that the manufacturers of this device have also developed new technology to prevent this. Despite the sophistication and effectiveness of the technologies, some have been said to have adverse effects and shortcomings. These are discussed later in the paper.

### Technology and Crime Surveillance

Surveillance is a secretive close watch over persons, objects or locations. The technique is employed to gather information that could prove useful to the investigation. In some countries, sophisticated surveillance technology has replaced the use of police officers to keep surveillance. Suspects ordinarily will avoid places where they are likely to be noticed when committing the crime. Positioning of surveillance equipment if visible, deters crime. The use of

and retrieved on 28 September 2011

<sup>9</sup> ibid

<sup>10</sup> Ink Tag Removal Ink tag removal: Removing Ink Tags Inadvertently Left on Merchandise November 16 2003, available @ <http://sites.google.com/site/inktagremoval/> and retrieved on 28 September 2011

surveillance technology devices to control crime has increased considerably. Some of these devices are discussed below.

### Closed Circuit Television (CCTV)

Surveillance cameras are recognized as a standard security device used in crime detection, traffic control and property monitoring. They are primarily used for monitoring.<sup>11</sup> CCTV has proven to be a reliable and cost effective deterrent that can aid in apprehending and prosecuting offenders.<sup>12</sup>

CCTV is the most common surveillance device used worldwide. In Britain, it is said that between 150- 300 million pounds per year is spent on the surveillance industry covering shopping areas, housing estates, car parks and public facilities in towns and cities.<sup>13</sup> Countries such as North America, Australia and some European countries now make use of this technology.

In Nigeria, the cities of Lagos, Abuja, Port-Harcourt, Yenagoa and a few other major cities have adopted this modern technology in crime control.<sup>14</sup> The Lagos State government on its part, decided to adopt a public/private sector collaboration to tackle the issue of security and crime in the state. The government called on the corporate sector and emphasised the step in actualising the initiative in 2009. There was a practical demonstration of its city- wide security camera control capability. Before the demonstration, about one thousand surveillance cameras were installed. According to the Governor, "18 million people cannot be protected and policed by 33,000 police officers"<sup>15</sup>

<sup>11</sup> Akintunde K., Surveillance Camera for Lagos. *The Newswatch Magazine* of Monday September 22 2008.

<sup>12</sup> Sawyer S, Curbing Crime with CCTV-Technology. *Tell Magazine* March 9, 2009 p. 51

<sup>13</sup> Flaherty, D.H *Video surveillance by public bodies: A discussion*. Investigation Report p98-012 @ <http://www.oipcbc.org/investigation/reports/invrpt12.html> and retrieved 28 September 2011

<sup>14</sup> Lagos State Installing Security Cameras To Fight Crime. *Zimbio Nigeria Crime News*, May 30 2011 @ <http://www.zimbio.com/Nigeria+Crimes+News/articles/7HkRMtsFil/Lagos+State+Installing+Security+Cameras+Fight> and retrieved on 1 October 2011

<sup>15</sup> Akintunde K Surveillance Cameras for Lagos. *The Newswatch* Monday, September 22, 2008 available @

The Governor added that *in an information technology driven world, we have stood up to be counted as one of those states and communities who will adopt best practices. Cameras, sensors, tracking devices are the nerve center of this facility that would assist men and officers of the Nigerian police, fire services among others to do their duties much more effectively*"

He further added:

*"It is a beginning of a very big dream. All of my life, what we have demonstrated here today as happening in Lagos, used to happen only in movies, but it is real now. We have taken the very first step."*<sup>16</sup>

Lagos has a high crime rate and did not have a reliable emergency response service and efficient crime control system. The introduction of the CCTV in Lagos was as a result of the Lagos Safe City Project funded by a private- public sector generated Lagos Security Trust Fund. The Safe City Project is the deployment of technology throughout the state to increase the capacity to monitor not only crime but other challenges like traffic and accidents. With this technology, the problem of crime will be controlled via a central security command unit/centre.<sup>17</sup> The CCTV is managed remotely by Wireless Connection.<sup>18</sup>

The Lagos state government also put in place other facilities to ensure the efficient working of the technology. The problem with technology is that it keeps on improving and a new technology may become obsolete within a short time. According to Uwaje,<sup>19</sup> the choice of the Lagos state government of CCTV camera as against

<http://www.newswatchngr.com/editorial/allaccess/nigeria/10922154707.htm> and retrieved 28 September 2011.

<sup>16</sup> Lagos demonstrates operation of security cameras. *Business Day online* 16 January 2009 Business day Online, available @

<http://www.businessdayonline.com/index> and retrieved 27 September 2011

<sup>17</sup> *Vanguard Online*, January 28 2009

<http://www.vanguardngr.com/content/view/27391/51/> retrieved 02 October 2011

<sup>18</sup> [http://www.lagosstate.gov.ng/e/portal/layout?p\\_i\\_id=PB.1006.33](http://www.lagosstate.gov.ng/e/portal/layout?p_i_id=PB.1006.33) retrieved on 29 October 2011

<sup>19</sup> Uwaje, C. Lagos State CCTV surveillance camera project: How sustainable? *Vanguard*, January 19 2011 available @

<http://www.vanguardngr.com/2011/01/lagos-state-cctv-surveillance-camera-project-how-sustainable/> Retrieved 30 September 2011

another technology of surveillance camera was not well considered. According to him "CCTV Solutions are several decades aged and lag behind the technologies of the future."

On May 24 2011 the Federal Government inaugurated an integrated digital surveillance system that would enable the Police monitor and detect criminal activities in the country's largest city, Lagos, more effectively. Under this federal Government initiative, digital security surveillance cameras have now been installed in Lagos.<sup>20</sup> At the inauguration ceremony of the surveillance camera, it was explained that the cameras being installed under the system, and at 50 locations in various parts of the city, were wired with security gadgets and provided with solar panels that would ensure their uninterrupted performance.<sup>21</sup> It was said that 12 vehicles with automatic locator systems had also been provided to complement the operation of the system. The Minister of Police Affairs who inaugurated the systems stated that through the installation of the system, the Nigeria Police was being provided with a technology-driven capacity to maintain, real-time surveillance of public facilities and infrastructure, in order to fight crime and criminality. He said: "The Digital Security System is a state-of-the-art technology for ensuring real time surveillance, especially in those areas that could be perilous to security personnel"<sup>22</sup>

### Technology and Crime Investigation Process

After the commission of a crime, the investigation stage is very vital. At the crime scene, careful examination may provide evidence that may lead to the identification of the suspect or provide clues for the location and probable arrest of the suspect or recovery of a lost person, property or body.

The processing of the crime scene is an important phase of the investigation of a crime. This starts with sealing off the crime scene immediately to prevent tampering with evidence by trampling or contamination. A crime scene is a location at which a suspected

<sup>20</sup> The close circuit challenge to Lagos crime January 26 2009. *TMC News* available @ <http://www.tmcnet.com/submit/2009/01/26/393959> and retrieved 30 October 2011

<sup>21</sup> Federal Government inaugurates first digital surveillance system in Lagos. *Safer Nigeria resources* May 25 2011

<sup>22</sup> *Ibid*

criminal act has occurred and it is the best place for investigation to start for physical evidence. The scenes differ from one to the other and though there may be similarities, no two scenes will have identical evidence.

Before the advent of modern technology, in the investigation process, much reliance was placed on eye witness accounts, informants, the skills of the detectives at interviews and the confession of the suspect. These old techniques had their limitations. An illustration is the United States of America case of Jacques Rivera, convicted of a gang related murder in 1990 and sentenced to 80 years in prison based only on the eye witness account of a twelve year old boy. In 2010, the 12 year old boy now 35 years recanted his testimony and swore to an affidavit that he had identified the wrong individual. On 4 October 2011, Jacques was released from prison after 21 years behind the bars.<sup>23</sup> According to Gilbert,<sup>24</sup> it was only in the 21<sup>st</sup> century that the importance of physical evidence in crime control became an issue of interest and importance. A crime scene, if properly processed, will contain physical evidence. It is said that "75 per cent of all criminal cases have one form of digital or electronic evidence or the other."<sup>25</sup>

According to the Locard exchange principle, every contact leaves a trace.<sup>26</sup> Physical evidence comprises all objects and items found in connection with an investigation. Evidence must be carefully collected, transported and processed by experts. The physical evidence is not restricted to the crime scene; although a lot may be found there. A lot of physical evidence can also be found on the suspect and the victims.

<sup>23</sup> Meisner, J. Man freed after charges dropped in '88 killing. *Chicago Tribune*. 05 October 2011 pg 11 available @ <http://www.chicagotribune.com>

<sup>24</sup> Gilbert J. (1986). *Criminal Investigation 2<sup>nd</sup> Edition*. (Columbus, Ohio: Charles E Merrill Publishing Company)

<sup>25</sup> Uzor, B. Jr. New Evidence Act paves way for electronic evidence in courts. 26 July 2011. *Business Day*, available @ <http://www.businessdayonline.com/NG/index.php/tech/telecoms/25087-new-evidence-act-paves-way-for-electronic-evidence-in-courts> Retrieved 04 October 2011

<sup>26</sup> Thornton, J. I. The General Assumptions and Rationale of Forensic Identification in Faigman, D.L., Kaye, D, Saks, M.J. and Sanders, J. (1997). *Modern Scientific Evidence: The Law And Science Of Expert Testimony*, Vol. 2, (West Publishing Co).

According to Kirk,

*"Wherever he steps, whatever he touches, whatever he leaves, even unconsciously will serve as silent evidence against him. Not only his fingerprint or his foot prints but his hair, the fiber from his clothing, the glass he breaks, the footmarks he leaves; the paint he scratches, the blood or semen that he deposits or collects, all these and more bear minute witness against him. This is evidence that does not forget. It is not confused by the excitement of the moment, it is not absent because human witnesses are. It is factual evidence. Physical evidence cannot be wrong, it cannot perjure itself. It cannot be wholly absent. Only its interpretation can err. Only human failure to find it, study it and understand it can diminish its value."*<sup>27</sup>

Considering the importance of physical evidence in the investigation process of crime, the techniques used at the scene and thereafter in processing the evidence are discussed hereafter.

#### *Use of Technology in the Investigation Process of crime and Crime Scenes*

During the investigation of a crime, the crime scene and the evidence recovered there are very important. Crime scene evidence varies in size, form and composition. While some are visible to the naked eyes, some are minute to the point of being microscopic. Some could be liquid, or solid in form. Improper handling in the investigation process which includes collection of evidence, preservation, transportation and processing may result in the rejection of an important item during the trial.

With the various types of evidence that may be recovered at the crime scene, the investigator when going to the crime scene, must be

<sup>27</sup> Kirk, P. *Crime Investigation: Physical Evidence and the Police Laboratory* Interscience Publishers, Inc., New York, NY 1953 Chapter 1, page 4. Cited in *The Forensic Sciences Foundation*.



prepared. Generally, equipment such as cameras whether digital or still, lighting equipments, forceps for minute solid objects, tweezers for minute metals, scissors, saws, magnifying devices, metal detectors may be needed. Some of the devices required for the investigation process at the crime scene for collection or analyzing/processing of evidence are discussed.

#### Cameras/Photography

A camera is one of the most important and often used items in a crime scene investigator inventory. It is used to capture a crime scene and evidence recovered. Photography is the first means of processing a crime scene. It provides permanent records and supports the oral testimony during the trial.<sup>28</sup> It is best taken before any object is moved or altered. Specific objects are focused on and the general scene is captured. The use of either motion picture or still photographs is vital. The photographs taken must be free from distortion and misrepresentation.

Due to continued advancement in digital technology and software, digital cameras are increasingly being used by the police in investigation. In spite of the importance and usefulness of photography, new technology has created the possibility to alter photographs therefore bringing doubts to photography. This will be discussed later in the paper.

#### Scanners

In the ever changing technology, significant advances have been introduced in the equipment used at the crime scene. One of such is the 3D Laser Scanner.<sup>29</sup> The technology is able to quickly measure the crime scene with greater speed accuracy than the conventional scanner. It is said to have the capability of recording a scene with millimeter accuracy.<sup>30</sup>

<sup>28</sup> Gilbert J. op cit

<sup>29</sup> *New scientist*: January 11 2009 available @ [http://www.newscientist.com/article/mg20126904.400\\_scanner\\_paint\\_avirtuaal\\_crime\\_scene.html](http://www.newscientist.com/article/mg20126904.400_scanner_paint_avirtuaal_crime_scene.html) and retrieved on 4 October 2011. Also see Deltasphere Technology 2011 Capturing Crime Scene in #D and Colors. August 19 2011 available @ <http://www.deltasphere.com>

<sup>30</sup> Ribeiro, A. Texas Police Department adopts 3D Crime Scene Laser Scanner. *Leica Geosystems Inc*, 5 November 2008 available @ <http://metrology.leica->

The technology was adopted by investigators in many States in the United States of America, including Texas<sup>31</sup> and California.<sup>32</sup> It was also used in New Zealand,<sup>33</sup> and Britain. According to a report, it was used by British police to reexamine the Paris tunnel where Diana, Princess of Wales died in a car crash in 1997.<sup>34</sup> The advantages and disadvantages of the scanner will be discussed later.

#### Finger Printing

The collection of evidence at the crime scene is important in the investigation process. Evidence, if properly collected and processed, may lead to the arrest, trial and prosecution of the suspect. According to the President of the Computer Forensic Institute of Nigeria (CFIN), a large percentage of all criminal cases have one form of digital or electronic evidence or the other.<sup>35</sup>

Fingerprints may be collected at a crime scene by the crime scene investigators (CSI) as they are called in the United States of America or Scene of Crime Officer (SOCO) as they are referred to in the United Kingdom. Fingerprints are regarded as the best evidence to place a suspect at the crime scene. This statement has however been a

[geosystems.com/de/1075.htm?id=1833&p=1&pagemode=print](http://geosystems.com/de/1075.htm?id=1833&p=1&pagemode=print) and retrieved on 28 October 2011

<sup>31</sup> *Point of Beginning News*, November 11 2008 available @ [http://www.pobonline.com/articles/industry\\_news/BNP](http://www.pobonline.com/articles/industry_news/BNP) retrieved on 4 October 2011

<sup>32</sup> Foster, R. California DOJ invests in 3D crime-scene laser scanners to support forensic crime scene investigation. *Criminal Justice*, January 27 2009 available on [http://www.criminaljustice\\_online\\_blogspot.com/2009/01/california.doj.invest.3d.crime.html](http://www.criminaljustice_online_blogspot.com/2009/01/california.doj.invest.3d.crime.html) and retrieved on 29 October 2011

<sup>33</sup> *New Scientist*, January 11 2009 [http://www.newscientist.com/article/mg20126904.400\\_scanner\\_paint\\_avirtuaal\\_crime\\_scene](http://www.newscientist.com/article/mg20126904.400_scanner_paint_avirtuaal_crime_scene).

<sup>34</sup> Le Shreeve J. Show me the Evidence. *The Independent*, 30 March 2005 available @ [www.independence.co.uk/news/science/show-me-the-evidence-530511.html](http://www.independence.co.uk/news/science/show-me-the-evidence-530511.html) retrieved on 27 September 2011

<sup>35</sup> Atili, A. Forensic Institute hails Jonathan on new law. *The Nation*, 04 August 2011 available @ <http://www.thenationonlineng.net/2011/index.php/business/infotech/14574-forensic-institute-hails-jonathan-on-new-law.html> retrieved on 02 October 2011

subject of debate.<sup>36</sup> Fingerprints are peculiar to the person from whom they originate.<sup>37</sup> Every person is born with a unique mark or identity in the pattern of the skin on the tips of the finger. It cannot be changed. Attempts in time past to erase it failed as the skin grew back. It cannot be forged, erased or altered.<sup>38</sup>

According to Gilbert, Alphonso Bertillon, the founder of criminal identification was also instrumental in the use of the science of fingerprinting. He was the first identification expert in Europe to solve a murder solely by means of fingerprinting.<sup>39</sup> Gilbert also stated that in South America, Juan Vacetich (1858 – 1926) was the first person to secure a criminal conviction based on fingerprint as the sole clue.<sup>40</sup> Furthermore, he stated that Francis Galton (1822 – 1911) was the first individual to publish scientific data to prove that finger prints are both unchangeable and unique for each individual.

There has been remarkable development technology in the processing of fingerprints collected at the crime scene.<sup>41</sup> However, Onashile stated at a workshop on forensic science that very few Nigeria police criminal investigation sections take fingerprints of arrestees for so many man-made reasons.<sup>42</sup> Chigbo further stated that the Nigeria police do not have anybody that could be rightly called a fingerprints expert, and that the old hands with little or no science background and adequate training are still in charge. Reports have revealed that there are ongoing efforts in training of forensic officers

in the Nigeria police and the equipping of the forensic unit.<sup>43</sup> There is however an urgent call to equip, train and empower the police in Nigeria to perform efficiently.

#### *Technology and Processing of crime scene Evidence*

Body fluids such as blood, semen and other tissues are physical evidence and if they are properly processed, may link the suspect to a crime scene and result in successful prosecution and conviction of the suspect. The old system of using the serological testing laboratories is obsolete. It will not yield accurate and faster results which are being obtained with modernized technology. The use of deoxyribonucleic acid (DNA) tests has not only made tests quicker and more accurate but it has also enabled definite results that have led to the determination of paternity and exoneration of innocent persons. This was illustrated in the case of *The People and C. V George Wesley*.<sup>44</sup> Harold Hill, spent 12 years behind bars for a murder he was later cleared of, after DNA evidence indicated he was not responsible for raping and killing the victim. A sum of \$1.25 million has been recommended to be paid to Hills.<sup>45</sup> In 2008, the City of Chicago paid a sum of \$700,000 to the estate of Dan Young Jr, who was sentenced to life imprisonment but was cleared when DNA test pointed to other persons.<sup>46</sup> The use of the combined DNA Index System (CODIS) has facilitated the processing of physical evidence. DNA has also been used in processing hair and fiber found during the investigation of crime. There will always be some transfer of hair and fibers in crimes involving contact between the victim, the suspect and fibers. Hair and fiber evidence are important in sexual offenses and homicide. It can link a suspect of crime to a victim or crime scene. Hair from the beard, eyelashes, mustache and pubic are sources of scientific

<sup>36</sup> Randerson, J. Quest reliability of fingerprint Evidence. *The Guardian*, 22 March 22 2007 available @ <http://www.guardian.co.uk/science/2007/mar/25/crime.penal> and retrieved on 04 October 2011

<sup>37</sup> Soderman, H., (1962). *Modern Criminal Investigations*. (New York: Funk & Wagnalls Study)

<sup>38</sup> *R V Castleton*, (1909) 3 C.A.R. 74 and *R. V Bacom*, 1915 11 CAR 90

<sup>39</sup> Gilbert J. (1986). *Criminal Investigation 2<sup>nd</sup> Edition*. (Columbus, Ohio: Charles E Merrill Publishing Company)

<sup>40</sup> Ibid

<sup>41</sup> Onashile, Y. (2002). *Scientific Criminal Investigation: Detection and Prosecution*. (Ibadan: Sam Bookman Publishers).

<sup>42</sup> Chigbo, L. Nigeria: Unsolved Murders - Forensic Evidence, the Missing Key. *The Daily Champion* 18 October 2009 available @ [allafrica.com/stories/200910190205.html](http://allafrica.com/stories/200910190205.html) and retrieved 04 October 2011

<sup>43</sup> Eferaro, S. Revealed: Why police cannot solve high profile murders. *National Mirror*, 03 February 2011, available @

<http://nationalmirroronline.net/opinion/4874.html> and retrieved 04 October 2011

<sup>44</sup> *The People and C. versus George Wesley* 3 No. 18 1994 N.Y. Int p. 49.

<sup>45</sup> Byrne, J. City proposes \$1.25 Million deal in wrongful conviction in Chicago Tribune. 05 October 2011 available @ [www.article.chicago.tribune.com/./ct-met-wrongful-convictions-settlement-20111005-1-wrongful-murder-conviction-dna-test-dna-evidence](http://www.article.chicago.tribune.com/./ct-met-wrongful-convictions-settlement-20111005-1-wrongful-murder-conviction-dna-test-dna-evidence) and retrieved on 05 October 2011

<sup>46</sup> Ibid

evidence.<sup>47</sup>

DNA evidence was used in the trial of the accused persons in the Omagh bombing case in August 15 1998 and the murder of Peter Falconio in July 2001.<sup>48</sup> The use of DNA in the trial of the case of Sean Hoey, the only person to face a criminal charge in the Omagh bombing came under serious criticism. This resulted in his acquittal on 20 December 2007.<sup>49</sup> This case has raised concerns about the use of forensic evidence in crime control.

In the second case of the murder of Peter Falconio by Bradlet Mordoch, 3 crucial pieces of DNA evidence were relied on and found to be overwhelming. This resulted in the conviction of the accused to 28 years imprisonment on December 15 2005. His appeal on 10 January 2007 was dismissed.<sup>50</sup> Demarco Whitely was accused of sexually assaulting a 15 year old girl in 2009. At first, he denied having any recollection of the offence. Whitley changed his story after he was told that his DNA was found in the girl and on her clothing. He admitted that he had sex with the girl.<sup>51</sup>

#### Technology used in Questioning and Interview of Suspects of Crime

Scientific knowledge and technology have been instrumental to securing information from suspects. The data obtained through this method vary in objective accuracy and in the court room admissibility. This is a departure from the traditional methods under the African legal system where in the maintenance of law and order and crime control, the use of superstitions, supernatural powers and

<sup>47</sup> Onashile, Y. (2002). Op cit

<sup>48</sup> Brown, D. Peter Falconio killer's conviction may be reviewed over DNA concerns. *The Times*, December 24, 2007, available @ <http://www.timesonline.co.uk/tol/news/uk/crime/article3090509.ece> and retrieved 1 October 2011

<sup>49</sup> Moore, M. Omagh bombing: Sean Hoey found not guilty. *The Telegraph*, December 20 2007.

See also Omagh Last Victim in *The Guardian* 20 December 2007 available @ [www.guardian.co.uk/commentisfree/2007/dec/20/omaghlastvictimjustice](http://www.guardian.co.uk/commentisfree/2007/dec/20/omaghlastvictimjustice) and retrieved on 01 October 2007

<sup>50</sup> The Peter Falconio Murder Case. *The Guardian* 10 January 2007 available @ [www.guardian.co.uk/world/peterfalconio](http://www.guardian.co.uk/world/peterfalconio) and retrieved 01 October 2011

<sup>51</sup> Houde, G. (2011) Ex-athlete's defense: sex consensual in Chicago Tribune. 05 October 2011 [ChicagoTribune.com](http://www.chicagotribune.com) available @ [www.article.chicagotribune.com](http://www.article.chicagotribune.com) and retrieved on 05 October 2011

extra judicial devices played a crucial role to determine if the suspect was lying or not.<sup>52</sup> Some of the technologies are discussed below.

#### Polygraph

This is a technique used in determining deception. It is a scientific device to measure an individual's blood pressure as an indication of question evasion. The technology developed since 1800's but has been improved on, and commonly called a "lie detector" is used in police departments in some countries.<sup>53</sup> It measures physiological changes in the body, triggered by emotional responses to specific verbal question. The physical reaction are noted and measured in graph-like fashion. According to Wikipedia, it is "an instrument that measures and records several physiological indices such as blood pressure, pulse, respiration, and skin conductivity while the subject is asked and answers a series of questions, in the belief that deceptive answers will produce physiological responses that can be differentiated from those associated with non-deceptive answers." The apparatus is attached to the chest, upper portion of arm and fingers to measure changes in breathing, blood pressure, and skin reflex wherein there is an increase in electric current during deception.<sup>54</sup> This technology is being explored in Nigeria.<sup>55</sup> In January 2011, Nate Gordon, the President, American Polygraph Association (APA), in a presentation at the Credibility Assessment Limited's public presentation of Polygraph Technology, in Lagos, Nigeria said "Polygraph has been identified as the most effective way to prove innocence or uncover deception as there are no other methods available with the same accuracy and reliability. It has been successfully used as an effective tool to verify truthfulness and lie

<sup>52</sup> Bamgbose, O. (2006) Crime Detection Methods and Health implications: Forensic Science Versus the Traditional African System in *Traditional and modern health system in Nigeria* by Toyin Falola and Mathew Heaton, eds. (Trenton New Jersey: African World Press Inc.) 429

<sup>53</sup> Gilbert J. *Criminal Investigation* 2<sup>nd</sup> Edition. Columbus, Ohio: Charles E Merrill Publishing Company 1986

<sup>54</sup> ibid

<sup>55</sup> Haruna, G. Boosting Crime Detection through Polygraph. *This Day Live* 21 Jan 2011 <http://www.thisdaylive.com/articles/boosting-crime-detection-through-polygraph/85183/> retrieved 04 October 2011

detection for many years.<sup>56</sup> He further stated that "countries such as Canada, USA, South Africa, Japan, Australia, Spain and several others, use the Polygraph for law enforcement testing, national security, fraud and pre-employment and periodic screening among others".<sup>57</sup>

#### *Videotaping of interviewing the suspect*

This is a visual method of recording a suspect's confession, admission and also the statement of important witnesses. It is used during the interview of a suspect and it has a positive impact on the judge or jury, because it shows and suggests voluntariness in making a confession. It has the backing of the judiciary; it is accepted and proven to be effective. Videotaping is also used to show a crime scene. It provides easily understandable viewing evidence and shows the layout of crime scene.

#### **Technology Used in Crime Detection**

The use of informants was a popular method used in tracking suspects, victims of crime and stolen items. However, the practical application of science to crime detection has greatly improved easier tracking down of criminals, victims and recovery of stolen items. Some of the technology used is discussed below.

#### *Mobile/Cell Phones*

There has been a lot of discussion on the use of mobile phones and crime. While it is said that the use of this technology has sometimes resulted in crime, such as the use of mobile phones while driving, resulting in breaking traffic light rules and fatal accident, it is also said that it has been of tremendous help in fighting crime by easily contacting the authorities to report crime and also tracking the criminal. The use of telecommunication to enhance national security and public safety has grown in prominence in the last decades. The current thinking around the world is that mobile phone has aided criminal investigation. In many countries around the world, it is now an accepted procedure in crime detection and control to track suspects through their mobile phones. With modern technology, it is possible

<sup>56</sup> Agabi, C. Banks look at lie detecting tech to stem rising fraud. *Sunday Daily Trust* Friday, 28 January 2011

<sup>57</sup> Ibid

to track the movement of persons through the signals emanating from the handset. The use of cellular technology is a tool which can easily and secretly monitor the movement of suspects. Therefore surveillance can be kept on a suspect. The use of mobile or cell phones is taking over from conventional phones and service providers are exploring the phone tracking abilities. For example in the United States, operators like Verizon wireless, know within about 300 yards, the location of their subscribers whenever a phone is turned on.<sup>58</sup> In Nigeria, operators such as Globacom Limited (Glo) and Mobile Telephone Network (MTN) and other network providers have the phone tracking device.<sup>59</sup> When a phone is not in use, it is communicating with a cell phone tower site and the service provider keeps track of the phones position as it travels. The cell location data is very crucial to finding the suspect or corroborating the suspect's whereabouts with a witness' statement. This cell phone location records can be kept for months or years. Therefore, it can be made legally available when needed. No country can survive or be sustained today without an integral telecommunication infrastructure. Communication is a vital aspect of human existence.

In the European Union, the communication of every mobile phone user is recorded. Therefore by tracking the whereabouts of a SIM card (a specially portable programmed microchip in the mobile phone) the police are able to locate criminals.<sup>60</sup>

In the 1998 Omagh bombing in the United Kingdom, recording of the mobile phone conversation made on the day of the incident were crucial to police investigation.<sup>61</sup> In 2005, the call made from the mobile phone by Hussain Osman, a key suspect in the failed suicide bombing in London on July 21, enabled Italian police to track Osman

<sup>58</sup> Richtel M Live tracking of mobile phones prompt court fights on privacy. *The New York Times*, 10 December 2005 available @ <http://www.nytimes.com/2005/12/10/technology/10phone.html> and retrieved on 05 October 2011

<sup>59</sup> Awolowo, M. Globacom, gap add vehicle tracking solution. available @ <http://itedgenews.com/glogap.htm> and retrieved 02 October 2011

<sup>60</sup> Ohia, U. NCC and mobile phone user Registration (2). Dec 20, 2008 available @ <http://www.nigerianmuse.com/20081223175113/telecomproject/ncc-and-mobile-phone-user-registration.html> and retrieved 04 October 2011

<sup>61</sup> BBC News, GCHQ monitored Omagh bomb call. September 2008 available @ <http://bbc.co.uk/1/hi/uk/7606834.stm> retrieved 04 October 2011

to his brother's house in Rome.<sup>62</sup>

In Ohio, in 2003, federal agents used cell tracking data to arrest and convict two men on drug charges.<sup>63</sup>

The detection of the hiding place of Pablo Escobar, a notorious Columbia cocaine dealer was facilitated by tracing his mobile phone activity.<sup>64</sup> In Africa, the police in Kenya worked with Safaricom to apprehend Simon Matheri, a notorious criminal that terrorized residents of Gachie, a village near Nairobi.<sup>65</sup> In all cases, the police worked with mobile phone providers to apprehend the criminals.

In Nigeria, communication and the technologies that support it have witnessed tremendous improvement. The development of telecommunication in Nigeria started in 1886. However, the Information and Communication Technology (ICT) penetrated the country in 1999.<sup>66</sup> According to Ohia, the democratic government saw the need to transform the ICT sector to stimulate the economy. By the year 2000, Nigeria had only about 400,000 connected lines and 25,000 analogue mobile lines. Since 2001, the telecommunication industry has witnessed an average growth rate of about 8 million lines per annum and by the end of October 2008, Nigeria had attained about 59 millions lines of which about 51.6 million are digital mobile lines.<sup>67</sup> He further stated that this is about 0.4 lines per 100 inhabitants in 1999 to 42 lines per 100 inhabitants by the end of 2008.<sup>68</sup>

With current technology in Nigeria, it is easy to follow a criminal via mobile phone. The telephone providers developed software and the changing of a phone sim card from a phone to another may not even be of help to a criminal as a tab can always be kept. On

<sup>62</sup> Boden, N. How bomb plot manhunt unfolded. *The Independent UK*, February 4 2008 available @ <http://www.independent.co.uk/news/uk/crime/how-bomb-plot-manhunt-unfold777878.html> retrieved on 04 october 2011.

<sup>63</sup> Richtel, M. Live tracking of mobile phones prompts court fights on privacy. *The New York Times* 10 December 2005 op cit

<sup>64</sup> O'Brien, M. Killing Pablo. *CNN Transcript*, May 25 2003 available @ <http://transcripts.cnn.com/TRANSCRIPT/030525/cp.00.html> and retrieved on 04 October 2011

<sup>65</sup> Wanjiku, R. Kenya Moves to thwart mobile phone crimes. *Networkworld* May 16 2008 available @ <http://www.networkworld.com/news/2008/051608Kenya-Moves-to-thwart-mobile-phone-crimes.html>. retrieved on 05 October 2011

<sup>66</sup> Ohia, U. NCC and mobile phone user Registration (2). Dec 20, 2008, op cit

<sup>67</sup> ibid

<sup>68</sup> ibid

September 28, 2011, the mandatory registration of SIM cards in Nigeria was concluded. According to the Nigerian Communication Commission, the reason for the registration was for security reasons and to assist in crime control.<sup>69</sup>

When a mobile phone connects to a mobile phone network, it identifies itself in two ways. The SIM card transmits its international mobile subscriber identity (IMSI) number which starts with the country code of the user, followed by the network code and finally the telephone number. The mobile phone itself transmits another number known as the International Mobile Equipment Identity (IMEI) number, which is a unique electronic serial number assigned to each handset and which remains constant even if the SIM card is changed.<sup>70</sup> If the Nigerian Communications Commission (NCC) compels mobile operators to transmit the IMEI, detecting the location or user of a stolen mobile phone will become very easy. With these numbers, and working in collaboration with the telecom operators it will be easy for the police to detect or locate stolen handsets and criminals using phone lines anywhere in the country. This technology has raised Privacy rights issues.<sup>71</sup>

#### Auto tracking

Car theft is on the increase all over the world. People loose cars at gun point and car parks are no longer safe. As technology develops to control crime, criminals employ ingenious technology to circumvent the crime control devices. According to the Nigeria technology guide, with modern technology, even when a car is stolen, the owner may be able to know where the car is and the state of the car, through a modern technology using a vehicle tracking system.

<sup>69</sup> Ayantokun, O. Glo emerges City People's company of the year. *The Tribune*, Wednesday, 07 April 2010 @ <http://www.tribune.com.ng/index.php/tele-info/3660-glo-emerges-city-peoples-company-of-the-year> Retrieved on 2 October 2011.

<sup>70</sup> Ndukwe, E. "Nigeria: From telecoms backwaters to a regional Hub-tracking. The role of the regulator in telecom. *Allafrica*, December 8 2008 available @ <http://allafrica.com/stories/2008.2080348.html> and retrieved on 02 October 2011

<sup>71</sup> Cohen, A. Cell Phone Tracking: The Most Important Case You've Never Heard of. *The Atlantic*, Feb 12 2010, available @ <http://www.theatlantic.com/national/archive/2010/02/cell-phone-tracking-the-most-important-case-youve-never-heard-of/35827/> and retrieved 04 October 2011

This may not stop the car from being stolen, but it will give the owner the peace of mind of knowing where the vehicle is and the state in which it is.<sup>72</sup> The device also enables a 24-hour monitoring of cars by car owners.

In Nigeria, mobile network operators like Globacom Limited (Glo) and MTN offer asset tracking solution within their network. Glo mobile was the first mobile operator to launch an automobile tracking system in Nigeria. The tracker system by Glo mobile is called Glo Fleet Manager.<sup>73</sup> The service is based on GSM/GPS technologies. It is powered by Global Asset Protection (GAP) Ltd. MTN C track is another GSM/GPS based auto tracking service in Nigeria. It is powered by Adata C track and supported by all networks in Nigeria.<sup>74</sup> A technology known as C track puts the owner on alert when the system of the car is tampered with, so it prevents theft. It also warns the owner of any movement of the vehicle whether the ignition is on or off. Owners are also able to set the area within which a vehicle can operate and once the vehicle leaves the area, the owner is alerted and loss is quickly prevented. The technology of C tracking includes a crash sensor that alerts C tracking of a crash involving the vehicle and this leads to a fast medical response.

Apart from the alert system, there is a demobilizing system, which allows officials of the tracking company to demobilize the vehicle from their office if the need arises.<sup>75</sup>

#### Crime Information Processing in the IT Era

Information gathered as a result of a crime is absolutely vital in the investigation, arrest, prosecution of the suspect and for crime control. The technique used in the processing is therefore very important. Documentation of information ensures a permanent record and allows for easy sharing of information on data collected. Agencies involved in the investigation of crimes provide and need

<sup>72</sup> Nigerian Technology Guide: Vehicle Tracking; Where is your Car or Vital Asset May 2008 available @ <http://naijatechguide.blogspot.com?2008/05/vehicle-tracking-where-is-your-car.htm> and retrieved on 04 October 2011

<sup>73</sup> Ayantokun, O. op cit

<sup>74</sup> ibid

<sup>75</sup> Nigeria Technology Guide, op cit

such valuable information whether in a case they are handling or in future cases that may occur.

It was known that information or data on criminals were recorded in crime diaries at the different agencies. This has been taken over by the use of computerized electronic data.

The use of database technology has been adopted in the United States, United Kingdom and countries in Europe. In Nigeria, there is only the National Identity database managed and maintained by the National Identity Management Commission.<sup>76</sup> Depending on the type of database, databases contain a lot of information. Some databases on crime are discussed below.

#### National Crime Information Center

In the United States, information is stored and processed through the National Crime Information Center (NCIC) launched in January 1967.<sup>77</sup> NCIC is a computerized index of criminal justice information. According to the Encyclopedia Britannica, the NCIC stores the information in a central computer bank in Washington. The information or data is provided by the Federal Bureau of Investigation, Federal, state, local, foreign and criminal agencies and authorized courts.<sup>78</sup> According to the FBI, "NCIC helps criminal justice professionals apprehend fugitives, locate missing persons, recover stolen property, and identify terrorists. It also assists law enforcement officers in performing their official duties more safely and provides them with information necessary to aid in protecting the general public"

The Central computer of the NCIC is linked to thousands of police agencies by remote computer terminals. The purpose is to provide a computerized data base for ready access. The data base allows tracking of the information of a suspect in any other jurisdiction. It allows other agencies to be put on notice of stolen properties, missing persons and wanted persons. The data base is operational 24 hours a day throughout the whole year and it is

<sup>76</sup> <http://www.nimc.gov.ng>

<sup>77</sup> Federal Bureau of Investigation <http://www.fbi.gov/about-us/cjis/ncic> . See also Encyclopedia Britannica: National Crime Information Centre – [www.britannica.com/EBchecked/topic/955400/national-crime-information-centre](http://www.britannica.com/EBchecked/topic/955400/national-crime-information-centre)

<sup>78</sup> Ibid

protected against unauthorized users/access.<sup>79</sup>

The system is exempted from the Privacy Act although the Act requires the FBI to make reasonable efforts to ensure the accuracy and completeness of the records in the NCIC system. There was an opposition in 2003 on the decision by government to lift the Privacy Act requirement that the FBI ensure the accuracy and completeness of the over 39 million criminal records it maintains in its National Crime Information Center (NCIC) database.<sup>80</sup>

#### ***Criminalistic Laboratory Information System (CLIS)***

The CLIS is another modern technology used in crime control in different states in the United States of America.<sup>81</sup> It is a nationally known computerized service that collects and disseminates forensic science data and provides this information to law enforcement agencies, assisting them in their investigation of crime. According to the Iowa Department of Safety, the CLIS keeps abreast of the latest technology in the different areas of forensic science and provides timely and accurate results to the agencies that need such information. The laboratories are supported by trained personnel who undergo periodic intensive training. The laboratory stores latest analysis methods.

#### ***National DNA Database (NDNAD)***

The NDNAD is a database located in the United Kingdom for information storage on DNA. It performs similar services to that of CLIS in the United States but stores information on DNA.<sup>82</sup>

<sup>79</sup> *ibid*

<sup>80</sup> <http://www.petitiononline.com/ncic/petition.htm>

<sup>81</sup> Iowa Department of public Safety 22 January 2009 available @ [www.dps.state.io.us/DCI/crime-lab/index.html](http://www.dps.state.io.us/DCI/crime-lab/index.html) and retrieved 2 October 2011. See also Texas Department of Public safety Crime Laboratory services. 30 January 2009 available @

[www.txdps.state.tx.us/criminallaw\\_enforcement.laboratory](http://www.txdps.state.tx.us/criminallaw_enforcement.laboratory) service and retrieved 2 October 2009

<sup>82</sup> Parliament Office of Science and Technology. The National DNA Database February 2006 No. 258 available @ <http://www.parliament.uk/documents/post/postpn258.pdf>. Retrieved 2 October 2011. See also directory M: Beyond Codis available @ <http://article.directorym.net/beyond-codis-9909558.html>

#### ***Unified Identity Management System (UIMS)***

The UIMS is a new integrated data system in Nigeria which is to capture the data of all Nigerians from the ages of 18. The project which is managed by the National Identity Management Commission (NIMC) is executed in conjunction with different agencies of government which currently keep their own separate identity data.<sup>83</sup> The agencies include Independent National Electoral Commission (INEC), Federal Road Safety Commission (FRSC), National Health Insurance Scheme, (NHIS), amongst others. With the new integrated system, all existing data will be networked to create a common database from where several agencies can access for their own purposes. The NIMC is created by statute in Nigeria. The government of Nigeria has recognized the importance of a national identity database.<sup>84</sup> A national identity database is a gamut of information which allows the government to have information of all its citizens but facilitates long term development planning and helps in crime control. It will ensure the effective operation of crime control and criminal justice administration. Considering the fact that some criminally minded persons use fictitious names, the National Identity Database will check this anomaly.<sup>85</sup>

The National Identity Management Commission (NIMC) is established by the NIMC Act No 23 of 2007. The NIMC has a statutory responsibility to:

- Create, manage, maintain and operate the National Identity Database.
- Harmonize and integrate existing identification database in government agencies into the national identity database.
- Create a secure database that will promote national security.<sup>86</sup>

According to Nwuagwo, it is the function of the commission to establish and maintain secured communication links with any existing relevant identity related database or agency and respond to verification enquiries regarding the identification of individuals. This

<sup>83</sup> Archibong, E. FG approves ₦30.66billion for Unified Identity Management System. *The Next* September 29, 2011

<sup>84</sup> <http://www.nimc.gov.ng/>

<sup>85</sup> Yusuf, A. Imperatives of a National Identity Database. *Business Day* 02 October 2008 available @ <http://www.businessdayonline.com> and retrieved 02 October 2011

<sup>86</sup> <http://www.nimc.gov.ng/> See also Yusuf Akin *Ibid*

means that the NIMC will have to harmonize the existing databases which include the National Health Insurance Scheme (NHIS), National Population Commission (NPC), Independent National Electoral Commission (INEC) and the Nigerian Immigration Service (NIS).<sup>87</sup>

In Nigeria, there is an ongoing attempt to harmonize data collated from different agencies that deal with the identity of persons in the country. This is with the National Identity Management and Harmonization Committee under the National Identity Management System.<sup>88</sup> Before this initiative, there was no centralized national identity database and no system of National Identity Management which efficiently links public and private sector identity schemes. There are only fragments of data.<sup>89</sup>

#### *Data for Forensic Use in Nigeria*

In relation to forensic data in Nigeria, there are three (3) laboratories in Nigeria functioning at different capacities. Information is not transmitted electronically from one to the other. These are the Forensic Science Laboratory in Oshodi, Lagos State, the Police Forensic Science Laboratory at Alagbon in Lagos State and the Government Chemist in Kaduna. Of the 3 laboratories, the laboratory in Kaduna was the most operational with fairly modern equipment for analysis of physical evidence as hair, fiber, blood analysis. In 2010, a United States based Sorenson Forensics provided intensive forensic DNA training for Nigerian scientist-police officers to prepare them for establishing and operating a law enforcement DNA laboratory in Nigeria.<sup>90</sup>

<sup>87</sup> Nwuagwu, O Imperatives of a National Identity Database. *Business Day*, 03 October 2008 available <http://www.businessdayonline.com> and retrieved 04 October 2011

<sup>88</sup> National Identity Management System: Handbook on Business Processes, Standards and Specifications 6th January, 2011

<sup>89</sup> Oni, A. Nigeria – Toward reliable identity database. *This Day* 12 February 2009 available @ <http://allafrica.com/stories/200902130147.html> retrieved 02 October 2011

<sup>90</sup> Amu, B. Nigeria Police builds DNA laboratory to tackle crime. *Technology Times* June 3, 2010. available @ <http://www.technologytimesng.com/2010/06/03/nigeria-police-builds-dna-laboratory-to-tackle-crime/> Retrieved 2 October 2011. See also Ewache, A. Nigeria Police builds DNA Lab to tackle crime waves. *The Nigerian Voice* 04

The Forensic Laboratory at Oshodi was established in 1953 as a unit under the Department of Hospital Services of the Federal Ministry of Health. The laboratory is facing serious challenges of manpower and modern equipment. At the Police Forensic Science Laboratory, handwriting and analysis of disputed documents are carried out, finger printing and ballistic examinations are also carried out. This laboratory was also facing the same challenges as the other laboratory at Oshodi. It is expected that with the training of some officer in forensic evidence in the United States and equipping the laboratory with modern equipments, the laboratory will be more effective.<sup>91</sup> There are other laboratories under the Economic and Financial Crimes Commission (EFCC).

In Lagos state, a public record database of citizens of Lagos state has been embarked on by the government. This is through the establishment of an agency called Lagos State Residents Registration Agency (LASRRA).<sup>92</sup> The non availability of a database was recognized as a reason why crime thrives and criminals evade arrests because their records are not available. According to the Commissioner, one of the benefits of the database is security of lives and properties of the people.<sup>93</sup> In addition, the database will allow for verification of information supplied to security agents and financial institutions and it is to be used in traffic management, traffic offence control and from it a criminal database will be generated.

#### *Computer Forensic Institute of Nigeria*

Another attempt at adopting technology in the area of crime control is the approval of the Computer Forensic Institute of Nigeria (CFIN). The approval was given in January 2009 to this professional body to provide a nationally recognized and unblemished certification in the

June 2011, available @ [www.thenigerianvoice.com.nvnews/25930/1/nigerian-police-builds-dna-lab-to-tackle-crime-wave.html](http://www.thenigerianvoice.com.nvnews/25930/1/nigerian-police-builds-dna-lab-to-tackle-crime-wave.html) and retrieved on 04 October 2011

<sup>91</sup> Ravey P. Sorenson: passing forensics knowledge on to Nigerian police. 02 June 2010 available @ [www.policeone.com/police-products/investigation/DNA-forensics/articles/2075234-Sorenson-passing-forensics-knowledge-on-to-Nigerian-police/](http://www.policeone.com/police-products/investigation/DNA-forensics/articles/2075234-Sorenson-passing-forensics-knowledge-on-to-Nigerian-police/) and retrieved 02 October 2011

<sup>92</sup> Year 2011 Ministerial Briefing: Press briefing by the Honourable Commissioner, Ministry of Science and Technology on Friday, May 20, 2011

<sup>93</sup> *ibid*



area of digital and forensic computer.<sup>94</sup> The CFIN should assist Nigeria save a lot of the foreign exchange that is expended in sourcing for digital and forensics experts from outside the country whenever their services are required and increase the level of professionalism and advance the field and science of digital and computer forensics.

The Institute conducts research and development into new and emerging technologies and methods in the science, digital and computer forensic examination in Nigeria.

The signing into law of the new Evidence Act 2011 by the Nigerian President, is a good development for technological growth. The new law amended the 68 year old Evidence law in the country. The new law will allow the admissibility of computer and electronic generated evidence in courts. The President of CFIN, while congratulating the president and Nigerians explained that computer forensic is the science of detection and investigation of crime committed either using the computer, internet or other digital devices with the intent of giving digital evidence in litigation. He stated that "computer forensic can be used to detect and gather evidence that can lead to the prosecution of a criminal".<sup>95</sup> He noted that "with the amendment of the Evidence Act, the coast was now clear for the full practice of computer forensic in Nigeria, declaring that Nigeria will witness a new era of legal and judicial administration".<sup>96</sup> In his concluding remarks he said "Nigerians can now make full use of the expertise of certified digital and computer forensic examiners as expert witnesses in court cases as is the case in countries with the same type of Nigeria's new Evidence Act".<sup>97</sup>

#### **National Biotechnology Development Agency (NABDA)**

An attempt was made by NABDA and the Nigerian in trying to use

<sup>94</sup> Oduagwu, P. Federal Government approves Computer Forensic Institute of Nigeria *Vanguard Online* January 28 2009 available @ <http://www.vanguardngr.com/content/view/27391/51/> retrieved 02 October 2011

<sup>95</sup> Atili, A. Forensic Institute hails Jonathan on new law. *The Nation* 04 August 2011 available @

<http://www.thenationonlineng.net/2011/index.php/business/infotech/14574-forensic-institute-hails-jonathan-on-new-law.html> and retrieved 02 October 2011

<sup>96</sup> *ibid*

<sup>97</sup> *ibid*

the application of biotechnology to fight crime.<sup>98</sup> The use of biotechnology has been recognized as an effective method in monitoring crime. The operation was to have started in 2009 but it is yet to take off.

#### **The Use of Technology in Crime Control: A Minus or Plus**

The introduction of technology in crime prevention, investigation and detection has no doubt brought many improvements into the criminal justice system. However, as more developments and advancements are made, there are some negative impacts in using such technology. The positive and negative impacts (plus and minus) of using technology in crime control are discussed below.

#### **The minus in the use of Technology in Crime Control**

The computer is a modern technology used alongside other modern equipment in crime control. The advent of computer technology brought different opportunities and some of these are criminal in nature. The internet technology is a miracle of science. The advantages of the internet are numerous. They include saving time that would have been used in flying or travelling to transact business to seconds, linking people who are miles apart in seconds, making purchases easier and faster, and generally making life easier. The proliferation and integration of computer, most especially the internet into every aspect of the society have inevitably led to internet related criminal activities. This diversity of criminal activities associated with the internet has given rise to a whole new dimension of crime. This development of the computer technology and the ability to connect anyone anywhere in the world, with the rest of the world, presents very significant new and enhanced security risk to individuals and the society. It has also posed a challenge to the law enforcement agents. The computer technology is now an avenue through which many people of dubious character perpetrate their crimes. It is used in the fraudulent process of altering information put in the system, manipulating the programs, processing the information,

<sup>98</sup> Odium, F. Agency Policy to use biotechnology for crime control. *The Guardian* 27 April 2008, available @ <http://www.nguardiannew.com/news/article04/indexnzi/html> and retrieved on 02 October 2011

altering the output and hacking and distribution of virus. Information stored in crime dairies constitutes a nuisance as they could be bulky and storage becomes a problem. Storing information on the computer appears to solve a lot of problems however this gives rise to the commission of some crimes. Such computer related crimes include *data diddling*.<sup>99</sup> This involves changing data or programs that should be put or is put in a computer. It includes forging input documents, false data entry or imputing improper information. Another computer crime is *super zapping*. This is where the program used will by-pass all controls and this may be used to modify or get information about the content or information in a computer. This pose a danger for crime information stored in the database.<sup>100</sup>

#### *Right to Privacy*

There has been a lot of controversy on the use of the surveillance camera, information of persons in databases and the right to privacy. Surveillance by cell phones though good, is like an electronic tracking device that can follow people into homes and other personal spaces. It must therefore meet the high legal standard required to obtain a search warrant to enter private places. It has raised serious Fourth Amendment concerns in the United States. In the United States, the Privacy Act 1974 was passed by congress, following revelation of abuses. Agencies were banned from disclosing record in a system of record to any person except with written request by or with written consent of the individual to whom the record pertains. This was subject to some exceptions. The opposition to the exemption given to NCIC discussed earlier in this paper is an example of Privacy issues that may arise in the use of technology in crime control.<sup>101</sup>

#### *Labeling and Witch Hunting*

There has been complaint on the use of the CCTV. It has been argued that the CCTV is sometimes used to target particular people in the society for "no obvious reason" or for frivolous reasons because they

<sup>99</sup> The Legal Practitioner Encyclopedic and Information Reference: Data Diddling available @ [http://legal.practitioner.com/computer-crime/computercrime\\_3\\_2\\_7.htm](http://legal.practitioner.com/computer-crime/computercrime_3_2_7.htm) retrieved on 02 October 2011

<sup>100</sup> Encyclopedia Britannica: National Crime Information Centre - [www.britannica.com/EBchecked/topic/955400/nationalcrimeinformationcentre](http://www.britannica.com/EBchecked/topic/955400/nationalcrimeinformationcentre)

<sup>101</sup> <http://www.petitiononline.com/ncic/petition.htm>

are out of time or out of place. It has therefore been said that there is no justification for its use.<sup>102</sup>

#### *Downsizing and Job Loss*

Technology has taken the place of human resources. This has led to the adoption of technology in preference to human resources with all the human limitations. According to a Tell magazine report, though the crime detector devices are vital in today's economy, the use in organizations that employ the services of security guards will have its human resources reduced.<sup>103</sup>

#### *Distortion in Photography*

The camera, which is the most important item in the investigation of a crime scene and the product, the photograph which is supposed to be a permanent record is now subject to abuse. New technology has created the possibility to alter photographs with precision and quality in a completely undetectable manner. Digital manipulation of photographs is happening more and more often these days.<sup>104</sup>

There is a common phrase in photography that pictures do not lie. While there was absolute truth in this phrase at one time, it no longer applies to modern photography.<sup>105</sup> This problem of distortion is creating ethical dilemmas in the society and the practice of digitally doctoring photographs is so common today. Altering photographs was not so easy until computers came along. The use of computer to alter the content of photograph can be done virtually in any way. This is done electronically with no trace.<sup>106</sup> It is fast becoming the age that photos can be considered evidence of anything, though it used to be known as record of fact. This is no longer the case.

<sup>102</sup> Neighbourhood Spycam helps catch murder suspect, 09 February 1999 available @ <http://cnn.com/us/9902/09/bigbrother/index.html> and retrieved on 02 October 2011

<sup>103</sup> Sawyer, S. Curbing crime with CCTV Technology. *Tell Magazine* March 9 2008 pg 51

<sup>104</sup> PhotoReflect: The camera always lies - Photographs and reflections from Lincolnshire, England January 16, 2010 retrieved 02 October 2011

<sup>105</sup> Photos do not lie or do they? available @ [www.foxfoto.us/forensic.doc](http://www.foxfoto.us/forensic.doc)

<sup>106</sup> Lasica, J.D. Photographs that lie: The ethical dilemma of digital retouching, *American Journalism Review* June 1989. See also [www.jdlasica.com/articles/wjr.html](http://www.jdlasica.com/articles/wjr.html)

Digital manipulation throws all pictures taken at the crime scene into a questionable light and this is gradually creating doubt in the viewers' mind. According to Lasica<sup>107</sup> when a photograph becomes syntheses, fantasy rather than reports, then the whole purpose of the photograph dies.

It is not the technology that is the culprit. Machines aren't ethical or unethical. People are. The digital technology is making in-road that threatens the credibility of the photograph.

**Incessant Power Failure**

This is a setback for technology use in some developing countries. The use of computerized technology requires uninterrupted supply of power or immediate power back up in extraordinary cases. However, in Nigeria, where there is incessant power failure, this is a setback against the technology revolution from developing at a fast rate. Retrieving of data, analyzing or processing of evidence and the auto tracking device require uninterrupted supply of power. This is a big setback in Nigeria.<sup>108</sup>

**Health Risks**

New technology such as the pepper spray may be swift and effective in crime control; however, it has health implications if not properly used. According to medical experts, it has adverse cardiac, respiratory and neurological effects and may cause death.<sup>109</sup> Dermal exposure to pepper spray, causes burning pain, swelling and redness. Respiratory exposure causes wheezing, shortness of breath, cough, gagging and respiratory arrest.<sup>110</sup> The misuse or abuse of pepper spray is dangerous. Pepper spray is readily available on the internet for purchase and in most places little restriction is placed on the purchase. Many buyers do not know enough about the potential hazards and very few have training on its

<sup>107</sup> Ibid

<sup>108</sup> Oketola D, Power is a big challenge for tracking business. 7 February 2009. *The Punch* available @ <http://www.punching.com/articles.aspx> and retrieved on 04 October 2011

<sup>109</sup> Smith, C.G and Stoford, W. Health Hazard of Pepper Spray available @ <http://www.geocities.com/capitolhill/6416/smith/ok.html>

<sup>110</sup> Ibid

use except to point and spray.<sup>111</sup>

**Human/External Influence**

At times, circumstances external to the technology may affect the accuracy of the results. For example, the polygraph results are not generally accepted as evidence in criminal proceedings. The state of mind of the accused or the skill of the operator may affect the result.

**Manipulation**

The use of the highly sophisticated laser scanner in the movie world to create visual effects and use in the entertainment world to create highly unbelievable and unreal world, creates doubt that the new technology is an easy one to manipulate so that the crime scene is simulated.

**High Cost**

The development of the modern technology has financial implications for agencies using them. Some of the equipment are very expensive and this is a challenge facing certain agencies in replacing, purchasing and using such effective technology.

**The Plus: Arguments for the use of modern technology in crime control.**

The use of modern technology in crime control has brought a lot of improvements in the criminal justice system. It is a miracle of science and there are argument canvassed for its continued use.

**Positive, Accurate and Detailed Results**

The use of modern technology provides real confidence in the results obtained. The DNA technology for example has the ability to positively identify an individual or connect a suspect with a crime. The chances of any two or more persons having the same DNA typing is one in 21 million in women and one in 41 million in men.<sup>112</sup> The DNA testing has been used in exonerating innocent suspects based on its accuracy and non controversial technique. From the evidential

<sup>111</sup> Cohen M.D. The health effect of pepper spray: A review of the literature and commentary. *Journal of Correctional health care* 1997;4:73 – 89.

<sup>112</sup> Onashile, Y. op cit

point of view, the laser scanner is detailed as it can point out where everything was at the crime scene.<sup>113</sup> It allows enormous scenes to be captured to the minutest details and levels. It records the scene of crime with millimeter accuracy.<sup>114</sup>

#### *Saving of Foreign Spending*

The use of modern technology will save the government a lot of foreign exchange which would have been spent in sending samples abroad for processing and analysis.

#### *Easy and Fast Detection Techniques*

Modern technology has made the work of law enforcement agents easier. The roving cameras and surveillance devices have been able to detect and solve crimes especially in cases where there are no eye witnesses. With the aid of the camera, suspects of crimes have been caught.<sup>115</sup> The use of cameras in schools in the era of sporadic shooting has been advocated. The use of scanning detectors for unlawful and dangerous weapons in schools has helped in easy detection of concealed weapons.

#### *Prompt Action*

The alarm systems and tracking devices allow prompt actions to be taken and alert the law enforcement agents. This prevents further commission of crime, enhances timely recovery of property and rescue in accident cases.

#### *Time Saving*

The use of computerized technology to transmit information, analyze data and process evidence has saved valuable time. Activities that took months in processing and transporting can now be done and received in seconds by just clicking the mouse.

#### *Easy Networking*

The ability of the modern technology to link persons, unite agencies

<sup>113</sup> The Independent 30 March 2005, op cit

<sup>114</sup> <http://twine.com/item/iisdhglyh-80/scanner-paints-a-virtual-crime-scene>. January 12 2009

<sup>115</sup> CNN, February, 9, 1999 op cit

and organizations that are far apart has facilitated networking within related agencies and information can easily flow from one to the other. The creation of the National Crime Database in the United States wherein information can be shared is a good example and is unsurpassed.

#### *Limited Contamination*

The introduction of modern technology at the crime scene in collecting, analyzing and processing physical evidence reduces contamination occasioned by orthodox equipments and techniques. The laser scanner for example allows capturing of the crime scene accurately from a standoff point.

#### *Enhanced and increased Global Cooperation*

With advancement in technology, increased cooperation has been observed among nations. Technical and financial supports are given by more technologically advanced countries to those not as advanced. Training in the use of these devices and techniques is necessary to keep abreast of the ever advancing technology. A donation was made by the United Kingdom for the training of Nigerian police officers in investigation techniques to improve crime detection and prosecution.<sup>116</sup> Similarly, some police were sponsored for training in Salt City, Utah USA in collection and processing of DNA evidence. The training was carried out by Sorenson Forensics a USA based agency that has gained a reputation among law enforcers as the place for groundbreaking work in forensic technology and for solving cold cases using sophisticated DNA identification procedures.<sup>117</sup>

#### **Conclusion**

The introduction of modern technology into the sphere of criminal justice has brought tremendous improvements in crime control techniques. However as discussed above, there are loop holes that need to be addressed. It is therefore recommended that in Nigeria, there should be reforms in some of the obsolete laws and enactment of new laws that will address contemporary issues arising in relation

<sup>116</sup> Peter-Omale, F. Crime control: Nigeria gets 1.2 Million Naira UK grant February 15 2006, op cit

<sup>117</sup> Ravey P. Sorenson passing forensics knowledge on to Nigerian police, op cit

to crime. The reform in the Evidence Act in September 2011 is a welcome development. Effort should be made to speed up the establishment of a crime data bank. The laboratories should be well equipped and periodically updated with recent technology.

Technology is not static; therefore efforts must be made by relevant agencies using the techniques to keep abreast of the recent technology. Government should ensure adequate funding to secure current and up to date equipment to tackle the issue of crime.

The security and safety of citizens are a priority for the government as it will foster economic development. The steps taken by different countries in ensuring that crime is reduced to the minimum should be vigorously pursued and Nigeria should not relent in her effort in this direction.

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