

5-2019

Translating a Digital Strategy for South Africa's Police Services

Rene W. Alberus

University of the Western Cape, ralbertus@uwc.ac.za

Follow this and additional works at: <https://aisel.aisnet.org/confirm2019>

Recommended Citation

Alberus, Rene W., "Translating a Digital Strategy for South Africa's Police Services" (2019). *CONF-IRM 2019 Proceedings*. 41.
<https://aisel.aisnet.org/confirm2019/41>

This material is brought to you by the International Conference on Information Resources Management (CONF-IRM) at AIS Electronic Library (AISEL). It has been accepted for inclusion in CONF-IRM 2019 Proceedings by an authorized administrator of AIS Electronic Library (AISEL). For more information, please contact elibrary@aisnet.org.

Translating a Digital Strategy for South Africa's Police Services

Abstract

Information and communication technology (ICT) has become an integral requirement to develop and implement a digital policing strategy for South Africa's Police Services (SAPS) for 2020 and beyond. ICT is vital for transformation to ensure information technology is implemented to revolutionise ailing state departments in South Africa. Information Technology (IS) has become part of everyday life in the twenty first century to transform policing in Europe and the Oceania's, while South Africa has been lagging in creating an enabling policing environment to provide effective and efficient service to manage crime. Phenomenal advances in digital policing have transformed research in Europe and the Oceania's but South Africa have a dearth on research and the impact of ICT service delivery for policing. Current socio-economic and political turmoil and an increase in violent crime is creating uncertainty for the South African economy which has stagnated due to international investment slowing down. South Africa's Police Service (SAPS) is floundering under pressure due to lack of service delivery and bureaucratic leadership. The objectives of this research is to revolutionise SAPS by implementing a digital strategy to achieve the following objectives; a) implement digital technology to transform all aspects of policing using a phased approach; b) provide a wide ranging assessment of police employee challenges relating to recruitment and development, assessment of the current training facilities and education and understanding the use of technology; c) re-engineer policing practices to understand police organisation units focusing on outcomes, and d) promoting relationship between policing and communities by prioritising technology for communication. Prioritising these objectives further research will be required and a strategic plan will be developed and implemented for SAPS creating an enabling work environment to address the surge of crime and make the communities safe for families. In order to achieve these results government should prioritise funding to address policing challenges in dealing with crime effectively, paving the way for a safer and crime free society.

Keywords: ICT, Information Technology, Digital, Strategy, Transformation

1. Introduction

South Africa ranks amongst the most dangerous countries in the world due to the rise in violent crime and an ineffective government to put measures in place to deal with corruption and an underfunded South African Police Service (SAPS). The failure of police to respond effectively to crime stems from underfunding and a shortage of trained police officials with suitable competencies to manage the crime pandemic. According to Seedat, et. al, (2009), South Africa is not a country at war, yet it faces an unprecedented burden of morbidity and mortality arising from violent crime and injury. Injuries and death rates resulting from crime is twice the global average and the rate of women murdered by their partners is six times the global average (Seedat, et. al, 2009). Advancement in Information and Communication Technology (ICT) has the potential to assist with controlling crime and gain efficiency in policing efforts to serve communities (Nuth, 2008). ICT has led to more effective policing and therefore is an essential infrastructure for modern policing. It has become a gateway and an enormous playing field for both criminals and police who use technology to their advantage; in the case of police to solve crimes and for criminals to perpetrate crime (Impagliazzo, & More, 2002).

Deficient and viable information technology infrastructure to streamline processes has made it considerably difficult for police to cope effectively with investigating cases and solving crimes. ICT has the potential to illuminate discussion and analysis of crime in South Africa, thereby enhancing access to data through technology to ensure crime is addressed more robustly and mitigated effectively (Livingston, 2013). In order to have the benefits of information technology (SAPS) need to employ skilled and committed individuals that will ensure that the increase in accessible information technology is utilised beneficially to address crime.

Crime has reached epidemic proportions, the people of South African have lost faith in the ruling party and the police and are fearful of their safety and security. Statistics released in 2018 provided a report showing that the murder rate in South Africa has increase by 6,9% in 2017/2018 (Sicetsha, 2018). The statistics show that in 2018 on average 57 people are killed a day in the country, of which 46 are men, eight women and two children. Attempted murder increased by 0.2%, cash-in-transit heists increased by 152 with the Western Cape with the highest list of crimes reported at police stations. Nyanga Township remaining the most notorious area infamous for gang violence. The murder of women and children was notable however Police Minister Bheki Cele said the following “*as much as there is quite enough to be worried about, the stats also saw a decrease in marked areas of concern*” (Sicetsha, 2018). A few days later when he addressed the media he told them “*South Africa is bordering on being a war zone*” (Osborne, 2018), it is not clear if the Minister is aware of the correct statistics and the impact of crime on communities and the citizens of South Africa. The government have been downplaying crime statistics in South Africa by using incorrect population estimates (Kriegler, 2018). Based on the above statistics Minister Cele, what are you going to do, to address the scourge of crime that is destroying the nation?

Disillusionment with the lack of progress is creating stressful working conditions for most officers who is turning to a life of crime. Police struggle with mental health challenges and there is a notable increase of suicide amongst police officers (Pienaar, Rothmann & Van De Vijver, 2007). Effective and efficient policing should be prioritised, technology might not be the solution for the immediate future, however it could become an enabling strategy that could assist with expediting prosecution of criminals (Minnaar, 2007). ICT has the potential to improve police responsiveness to white collar crime as well as violent crime and ensure police

accountability, thereby minimising corruption and mismanagement of cases. South Africa does not only face personal threat in terms of violent crime, online crime which includes fraud, human trafficking, hate crime, cyber-attacks and cyber-warfare is increasing significantly (Birchall, 2018). Police currently in service and new recruits need to be technologically up-skilled to use technology to their advantage to investigate crimes and to find solution to ensure prosecution.

According to Wiklund, (2005) a provision of fit for purpose ICT is a prerequisite to achieve a digital strategy, hence the urgent need to invest in information technology (IT) resources, infrastructure and systems to improve operational effectiveness. The technology gap is widening significantly and the governments focus on changing the digital landscape of SAPS is conical. This paper will provide a summary of the current state of the SAPS, the impact of crime on the country's economy and the community, raising the question how and when, will these challenges get addressed? This review of the SAPS will strike many as critical, which it is. The aim is to highlight the urgency to address the status quo in the hope that government and the private sector will realised that citizens are traumatized and something should be done to ensure positive outcome for the future of South African citizens. Based on the existing state of affairs and new technology that is available, government should start collaborations with stakeholders that want to see South Africa succeed and turn the tide on dealing with crime effectively. They could benefit from engaging academics and in-house staff to assist with research for transformation and ICT service delivery steering clear from private consultants that has thus far been a liability to state enterprises in South Africa (De Wet, 2017; Gerber, 2018).

The State Information Technology Agency (SITA, 1998) was established to work on ICT service delivery strategies to provide information technology systems and related services for government but their progress is not noted in the public domain. There is an increase in international research related to ICT for performance management and organizational change (Yates & Van Maanen 1996), however there is a dearth of research on impact of information technology to re-engineer SAPS practices and service delivery in South Africa. This research aims to provide a digital strategic plan for ICT service delivery and the goals outlined should be viewed as interconnected and fundamental for understanding and finding solutions to the challenges of policing. The research will provide background on corruption and politics in South Africa for context, however it is not the focus of this research. More generally the research seeks to explain the impact of a digital strategy on SAPS performance for effective service delivery in dealing with crime efficiently.

2. An Assessment of SAPS

South Africa's Police Service have been strained long before the advent of democracy in 1994. Before democracy the apartheid government trained police to rule with fear, brutality and intimidation, 24 years down the line the current police have adopted similar principles. The only difference is that all races are at risk not just Non-White South African. Abuse of power and rampant corruption is one of the major challenges facing SAPS (Zondi & Ukpere, 2014). Crime in South Africa has numbed the nation and a "new apartheid" has emerge bearing a frightening resemblance to old apartheid structures. The end of apartheid provided optimism that there will be an end to violence but a new urban panic has engulfed South Africa which is criminal activity.

SAPS have undergone major transformation structurally (Bruce, 2002), however little has been done to improve infrastructure and information technology to create a digital policing platform aligned with 21st century innovation similarly to the likes of Europe and the Oceania's. Transformation was notable in terms of rank changes and it shifted from a predominantly white workforce to a Non-white workforce (Van der Walt, 2002). Current socio-economic and political turmoil is creating uncertainty for South African citizens and those who orchestrated apartheid are finding safe passage to Europe, North America and the Oceania's while ordinary Non-White citizens are bearing the brunt of the apartheid regimes legacy. The ineffectiveness of government to implement information technology to create a paperless work environment for SAPS have not gain traction due to government contracting consultants that have had ulterior motives. Since the advent of South Africa's democracy consulting companies have been exploiting state enterprises opportunistically for their own enrichment (Comrie & Van Wyk, 2017; De Wet, 2017; Gerber, 2018).

Information technology, a competent workforce and funding could be the solution to address crime and assist police to keep accurate track of crime statistics. Crime in South Africa has reached epidemic proportions in destroying public confidence. Embedding old philosophies of "Umkhonto we Sizwe" (MK) into a new democracy is not helping with confidence in South Africa especially in light of unreliable statistics being recorded. Statistics indicate that if the South African government does not act swiftly to implement digital technology to transform all aspects of policing imminently the prospects to curb crime and deal with corruption looks bleak.

Basic changes that was introduced in the late nineteenth century such as two-way radios, motor vehicles and basic telephony for dispatching police services during the twentieth century brought some change for police (Chan, 2001). In South Africa innovation seem to have stopped during the twentieth century. SAPS currently have a crime line 10111 which is not functioning optimally hence the need for a dedicated call centre operating 24/7 recording and monitoring calls and response times of the police to victims complaints. ICT service delivery is not taking traction due to incompetent leadership plagued by corruption which is having a negative impact on police performance overall. South Africa fell into an abyss of corruption during President Zuma's reign 2010 -2017 widening the chasm to address crime during the looting of the state under his regime. In 2018 when Cyril Ramphosa became the president South Africa had to focus on addressing 'State Capture' first, restricting innovation for the immediate future until corruption could be addressed (Thamm, 2018).

Corruption, leadership challenges, political infighting and an ineffective government allowed SAPS and most state enterprises to spiral out of control leaving South Africa on the brink of bankruptcy. Until we rid the country from the rot occupying key government positions revolutionising SAPS will remain a pipe dream (Maqhina, 2018). The new Finance Minister Tito Mboweni appointed 2018 indicated that state employee salaries are 35,2% of government spending and that the public sector wage bill has become a serious drain on the public purse. With R8 out of every R10 being spent by government for civil servant salaries (Wilkinson, 2018). Mbeki, M., et. al (2018) mentioned that "South Africa is headed for a fiscal cliff due to declining revenue and rising expenditure".

Regardless of the bleak reports something must be done to change the Zuma legacy by purging government of ghost employees, paying lucrative termination packages to those who have captured and looted the state and to fire government officials charged with wrong doing, not suspend them on full salaries indefinitely (Letsoalo, 2018; Maqhina, 2018). Clearing up the

oversubscribed government might assist South Africa to survive the current recession and demise of a country with so much wealth and prospects. Dealing with corruption and the decay of South Africa will require a review of the principles of good governance which has been inhibited by corruption (Pillay, 2004).

Implementing information technology to replace redundant manual processes will improve efficiencies, public confidence, decision-making, front-line visibility, reduce cost. Establishing an inter-agency database to incorporate biometrics from financial institutions, hospitals, home affairs, credit agencies, security companies and the licencing department should be prioritised and the data migrated to the cloud to ensure information is accessible to track criminal activities and police involvement in crime. South Africa's communities will remain at risk if SAPS is not revolutionised (Corruption Watch, 2017).

2.1. Objectives of information technology in policing

Gathering intelligence and meaningful information is a major commodity for police to improve their intelligence and investigative capabilities making sure criminal records are accessible real-time. Police institutions have been run on externally imposed demands for public accountability, politics and procedural regularity and not economic influence like private sector organisations that use information technology for the improvement of performance and management (Earl, 1989). Technology has always had a close affinity with police work promising to improve police effectiveness and efficiency in managing crime, it has also enriched the professional status of police (Ericson & Haggerty 1997).

Since the 1980s, a new conception of public accountability has arisen in a number of Western democracies such as the Oceania's and United Kingdom (Davids & Hancock 1998). Policing practices and procedures have been governed by laws and rules enforced by the courts, politicians and police hierarchies respectively. The main approach for control was deterrence through legislation and rule-making, investigation and enforcement, criminal sanctions and organisational discipline. Under a new policing order, police should be scrutinised internally by surveillance technology, internal audits and investigations, externally by the community and regulatory agencies and emphasis should be placed on the need for information technology (Chan 1997: Leishman, Loveday & Savage 2000). Seeking new managerialism for policing has transformed traditional police management into organisations with vision and mission statements, business plans and marketing strategies placing new emphasis on crime management and performance measures (Hoque, Arends & Alexander, 2004). This change in policing methods was called "entrepreneurial revolution" in policing (Ackroyd et al.1992).

Police are regularly called upon by insurance companies to provide crime and accident data, hence the necessity for information technology and digitally managed databases to collate and disseminate information seamlessly without manual intervention. If crime records are digitally accessible there will be fraud will be minimised and cases will be solved increasing police performance and providing legitimacy to their role in the community regarding their ethos "to protect and serve". With a robust information technology platform SAPS could commodify and sell data to private organisations to generate revenue as a cost-recovery measure and partly to discourage police from fraudulently trading information (Ericson & Haggerty 1997).

3. Opportunities for Progress

According to Cibbora, (2009) ICT encompasses three processes which, firstly attends to the relationship between the administration and the citizen and the related re-engineering of internal administration. Secondly the role of technology can be observed making clear the

benefits of transparency, accountability and agility between the public and the state. Thirdly it facilitates the discourse for aid from international agencies that want to assist developing countries to improve governance (United Nations Development Programme, 2001). In the Oceania's and the United States of America it has been proven that information technology have had a major impact on police performance to effectively deal with crime thereby supporting the identification of winning strategies (Avalos & Times, 2016).

There are various opportunities that will be distilled that could transform policing in South Africa. Firstly, a pilot police station need to be setup with a control room and state of the art information technology. Telephony linked to computers that record all incoming and outgoing calls from victims/witnesses and automatically assign a case ID and dispatched an investigator to the crime scene will support effective policing. GIS mapping software should be used to provide the victims location, ensuring that the closes patrol vehicle is dispatched using the shortest route to reach the location of the crime. The investigator will go to the crime scene to interrogate potential witnesses/suspects to get a statement from the victim that will be recorded real-time to prevent disputes at a later stage. Police should wear a body camera that will record the collection of forensic and DNA evidence from the crime scene which will be sent for testing using advance analytics which will be vetted when it is completed.

Technology with automated workflow will be used to store case files and any other data collected. Biometric technology contributes to forensic investigation positively identified suspects which will lead the correct suspects being arrested thereby avoiding incorrect convictions (Meuwly & Veldhuis 2012). CCTV, video analytics, digital interrogation and recordings can assist with profiling and identification of suspects. There are multiple private security companies that have very sophisticated equipment in place and SAPS could benefit from collaborating with shareholders of these private security companies. These security companies are doing the work SAPS should be doing, adding an additional financial burden to already cash strapped citizens who are paying taxes.

4. Strategic Plan

Building on the opportunities for progress, the aim is to develop and implement strategic objectives that will be outlined below which will require more detailed research to test the strategies and technology functionality in a pilot project using a phased approach. Objective 1. *Create an enabling digital platform to automate all manual processes and revolutionise policing through the following processes.* The benefits of a integrate digital policing platform using biometrics and electronic data processing is outlined in (Annexure A) to assist police to deal more efficiently with crime. Digital policing will allow police to evolve with the demands of the 21st century too ensure crime is addressed and solved effectively (Edwards, 2017).

Objective 2. *The focus is on factors that influence police decision-making and performance, the skills needed to advance police leadership and the need to reframe police colleges as learning organisations with state of the art technology.* Police proficient will improve with the use of technology, social media, and will advance decision-making skills which will be key to the future success of police using technology. Current training and education programs should be evaluated and redesign to incorporate technology. Reviewing police offices current skills, education and experiences should be prioritised for today's policing needs by evaluating workforce cycles such as recruitment, selection, retention, promotion, assignments and attrition) and identifying challenges by promoting good practice. Existing police aptitude and technology capability should be assessed to ensure they are proficient in the use of technology and their autonomy and decision making skills should be tested. Police training programs should be hands on and practical. ensuring police conduct is professional when executing their

duty without prejudice. Objective 3. *Operational leadership, partnerships with external organisation, police characteristics influencing performance and policing practices designed to address police accountability and transparency is vital for successful policing.* Upgrading police performance evaluations systems to accommodate the changing environment will ensure police skills match the rapid changing world view. Evaluating policing mission statements, culture and structured impact programs, practices, and strategies designed will advance police performance. Revising existing police diversion and deployment strategies is key for crime reduction to ensure information remain relevant and that information sharing is monitored to avoid confidential information being leaked. An assessment of management practices is needed to ensure the leadership structure is dependable and have the competence to provide continuous improvement plans to guarantee transformation (Leggett, 2003). Objective 4. *The objectives will focus on promoting partnerships between the police and the communities, to build trust and confidence.* Comprehensive research is required for community-oriented policing programs, to build and advance police-community relationships, develop and evaluate programs to reduce crime and enhance the quality of life of the residents in the community. Community engagement strategies should be evaluate to build trust and confidence between police and communities. Police require an in-depth understanding of South Africa's diversity to assist with recognising each the community's needs (Mengistu, Pindur & Leibold, 2000).

5. Closing the Gap

This plan aims to close the gap between manual policing practices by introducing information technology into the SAPS work environment to manage policing activities efficiently. Each strategic objective will serve as a guide, ensuring that research goals have high applicability to developing and implementing new strategies. Will technology assist with streamlining police process or will it make the situation worse considering that corruption is South Africa's greatest crisis under the current ruling party?

South Africa currently cannot move forward until 'The Nugent/Zondo Commission of Inquiry' is completed and the people and institutions involved in 'State Capture' is held accountable (Thamm, 2018). 'State Capture' and inflated civil servant/ministers salaries amongst other issues has been a major liability for the South African economy, leaving little or no funding for re-engineering or transformation in state departments to deal with the replacement of redundant and disruptive technologies. Reputable consulting companies that have been contracted by South Africa's state enterprises to share expert knowledge and intellectual capital have opportunistically looted the state and delivered inadequate results that have barely added value. After contracting consulting companies for cost saving strategies and technology rehabilitation, state enterprise are bankrupt and the South African economy is in shambles. Consulting companies such as Mckinsey, Trillian, KPMG, BAIN and EOH to mention a few have been complicit in looting the state (Comrie & Van Wyk, 2017; De Wet, 2017; Gerber, 2018). Some have owned up and taken partial responsibility promising to payback some of the money, however they can never make up for destroying the South African Economy and robbing millions of citizens of a sustainable livelihood (Omarjee, 2018).

It is inconceivable and unconscionable that these organisations are allowed to walk away with a mere apology for the destruction they have caused. Further research will be conducted to highlight the challenges in state enterprises but most importantly the goal is to implement technology for change and transformation at SAPS which will be imperative for the future of South Africa. Through research and vigilance from the government, consulting companies should never be in a position to take advantage of taxpayers money and should be held

accountable before any other country is on the receiving end of their deceit in the future. South Africa's government need to utilised and train in-house personnel to transform SAPS, after all, R8 of every R10 collected in tax is spend on civil servants salaries and the country have little to show for the money spend on unproductive civil servants and an inflated government wage bill (Staff Writer, 2018).

6. Conclusion

Progress will only be made with a realistic assessment of the current state of affairs and by recognising the challenges ahead, change will be mastered. For those seeking to take a stance against crime and challenge the failing government to provide a better life for South Africans are remarkable. During apartheid communities lived in fear of speaking out against the lack of policing in disadvantaged areas, today even though they can voice their opinions it is falling on deaf ears. The South African government has become dysfunctional and their focus is on the enrichment of themselves at all cost, making public safety and effective policing an afterthought.

To ensure that crime is managed effectively and efficiently SAPS will have to make sure that robust screening processes are used for police recruitment and that continuous training and performance management systems are in place to ensure a disciplined approach is used for executing their duty to ensure public safety. Successes in other areas of ICT research provide good reason to be optimistic about the future, a new strategic approach is necessary to implement technology to assist in revolutionising SAPS, which is on the brink of dysfunction due to ineffective governance.

Further research will be conducted to test the strategic goals and objectives using an interpretivism approach to ascertain how a) information technology will be received by the police and what will be the consequences of acceptance or resistance, b) to what extent will information technology assist in creating a paperless environment for police and change routine work related efforts, c) how technology will affect performance management and supervisory practices, d) how technology will assist in maintaining governance and accountability for monitoring policy. A mixed methods sequential explanatory method will be applied which comprises of both quantitative/qualitative data being analysed in two consecutive phases. According to Ivankova, Creswell & Stick (2006) mixed methods integrates two data streams and allow for a more robust analysis, taking advantage of the strengths of each.

References

- Ackroyd, S., Soothill, K., Harper, R., Hughes, J. A., & Shapiro, D. (1992). *New technology and practical police work: The social context of technical innovation*. Taylor & Francis, Inc..
- Avalos, G & Times, C. C. (2016). Police use New Technology to Fight Crime. <http://www.govtech.com/dc/articles/Police-Use-New-Technologies-to-Fight-Crime.html>
- Birchall, G. (2018). CAPE FEAR: South Africa is ‘close to a war zone’ with 57 murders EVERY DAY, police minister reveals. <https://www.thesun.co.uk/news/7239269/south-africa-gang-crime-murders-war-zone/>
- Bruce D (2002). *New Wine from an old Cask? The South African Police Service and the process of Transformation*. Johannesburg: Centre for the Study of Violence and Reconciliation.
- Chan, J. B. (1997). *Changing police culture: Policing in a multicultural society*. Cambridge University Press.
- Chan, J. B. (2001). The technological game: How information technology is transforming police practice. *Criminal Justice*, 1(2), 139-159.
- Ciborra, C. U. (2009). Interpreting e-government and development: Efficiency, transparency or governance at a distance?. In *Bricolage, Care and Information* (pp. 90-110). Palgrave Macmillan, London.
- Comrie, S., & Van Wyk, P. (2017). McKinsey, Trillian Ripped R1.6bn From Eskom, And Planned To Take R7.8bn More. https://www.huffingtonpost.co.za/2017/09/14/mckinsey-trillian-ripped-r1-6bn-from-eskom-and-planned-to-take-r7-8bn-more_a_23208490/
- Corruption Watch. (2017). The Real Police Numbers Behind South Africa’s High Crime Rate. <https://www.corruptionwatch.org.za/real-police-numbers-behind-high-sa-crime-rate/>
- Davids, C., & Hancock, L. (1998). Policing, accountability and citizenship in the market state. *Australian & New Zealand journal of criminology*, 31(1), 38-68.
- De Wet, A.S. (2017). SA’s own ‘Guptas’: Dany and Jehan Mackay? (Retrieved, 2019-03-17). <https://www.iol.co.za/business-report/sas-own-guptas-danny-and-jehan-mackay-10323452>
- Earl, M. J. (1989). *Management strategies for information technology*. Prentice-Hall, Inc..
- Edwards, C. (2017). How is Computer Technology used in Law. (Retrieved 2019-03-21). <https://itstillworks.com/computer-technology-used-law-enforcement-1233.html>
- Ericson, R. V., & Haggerty, K. D. (1997). *Policing the risk society*. Clarendon Studies in Criminology.
- Gerber, J. (2018). Bain says it made 'significant errors of judgement' in Sars work. <https://mg.co.za/article/2018-12-18-bain-says-it-made-significant-errors-of-judgement-in-sars-work>

Hoque, Z., Arends, S., & Alexander, R. (2004). Policing the police service: A case study of the rise of “new public management” within an Australian police service. *Accounting, Auditing & Accountability Journal*, 17(1), 59-84.

Impagliazzo, R. & More, S. M. (2002). Anonymous credentials with biometrically-enforced non-transferability. (Retrieved 2019-03-19).
http://portal.acm.org/ft_gateway.cfm?id=1005150&type=pdf&coll=&dl=ACM&CFID=15151515&CFTOKEN=6184618

Ivankova, N. V., Creswell, J. W., & Stick, S. L. (2006). Using mixed-methods sequential explanatory design: From theory to practice. *Field methods*, 18(1), 3-20.

Kriegler, A. (2018). South Africa won't become less violent until it's more equal
<https://qz.com/africa/1388122/south-africa-crime-statistics-inequality-behind-the-violence/>

Leggett, T. (2003). What do Police do? Performance Measures and the SAPS. (Retrieved, 2019-03-20). <https://issafrica.s3.amazonaws.com/site/uploads/PAPER66.PDF>

Leishman, F., Loveday, B., & Savage, S. P. (Eds.). (2000). *Core issues in policing*. Pearson Education.

Letsoalo, M. (2018). #ANC106: Prosecute those implicated in State Capture – Ramaphosa.
<https://mg.co.za/article/2018-01-13-anc106-prosecute-those-implicated-in-state-capture-ramaphosa/>

Livingston, S. (2013). Africa's Information Revolution: Implications for Crime, Policing, and Citizen Security (No. NDU/ACSS-RP-5). NATIONAL DEFENSE UNIV FORT MCNAIR DC AFRICA CENTER FOR STRATEGIC STUDIES.

Mbeki, M., Rossouw, J., Joubert, F., & Breytenbach, A. (2018). South Africa's fiscal cliff barometer. *New Agenda: South African Journal of Social and Economic Policy*, 2018(70), 29-33.

Maqhina, M. (2018). Sack Ministers implicated in State Capture.
<https://www.iol.co.za/pretoria-news/sack-ministers-implicated-in-state-capture-13377702>

Mengistu., B, Pindur., W, & Leibold, M. (2000). Crime and Community Policing in South Africa. <https://digitalcommons.kennesaw.edu/cgi/viewcontent.cgi?article=1000&context=assr>

Meuwly, D., & Veldhuis, R. (2012). Forensic biometrics: From two communities to one discipline. In *2012 BIOSIG-Proceedings of the International Conference of Biometrics Special Interest Group (BIOSIG)* (pp. 1-12). IEEE.

Minnaar, A. (2007). The implementation and impact of crime prevention/crime control open street Closed-Circuit Television surveillance in South African Central Business Districts. *Surveillance & Society*, 4(3).

Nuth, M. S. (2008). Taking advantage of new technologies: For and against crime. *Computer Law & Security Review*, 24(5), 437-446.

- Omarjee, L. (2018). State Capture: 4 Companies that owe SA millions. <https://www.fin24.com/Economy/state-capture-4-companies-that-owe-sa-millions-20180910>
- Osborne, S. (2018). South Africa has become a WARZONE: Police chief says nation on brink with 57 MURDERS a day. <https://www.express.co.uk/news/world/1016518/south-africa-murder-rate-warzone-police-minister-crime-rate>
- Pienaar, J., Rothmann, S., & Van De Vijver, F. J. (2007). Occupational stress, personality traits, coping strategies, and suicide ideation in the South African Police Service. *Criminal Justice and Behavior*, 34(2), 246-258.
- Pillay, S. (2004). Corruption the challenge to good governance: a South African perspective. *International Journal of Public Sector Management*, 17(7), 586-605.
- Seedat, M., Van Niekerk, A., Jewkes, R., Suffla, S., & Ratele, K. (2009). Violence and injuries in South Africa: prioritising an agenda for prevention. *The Lancet*, 374(9694), 1011-1022.
- Staff Writer. (2018). Governments insane wage bill. <https://businesstech.co.za/news/government/235879/governments-insane-wage-bill/>
- State Information Technology Agency Act, 1998. <https://www.gov.za/documents/state-information-technology-agency-act>
- Sicetsha, A. (2018). Crime stats South Africa 2018, the murder rate increased by 6.9%, <https://www.thesouthafrican.com/crime-stats-south-africa-murder-rate-2018/>
- Sicetscha, A. (2018). Crime stats: The numbers for South Africa are worse than SAPS predicted. <https://www.thesouthafrican.com/crime-stats-murder-rate-data/>
- Thamm, M. (2018). Nugent and Zondo Inquiries: Where meandos go to die-flushing out lies, waffle and BS in State Capture Projects. <https://www.dailymaverick.co.za/article/2018-10-01-nugent-and-zondo-inquiries-where-meandos-go-to-die-flushing-out-lies-waffle-and-bs-in-state-capture-project/>
- Wiklund, H. (2005). A Habermasian analysis of the deliberative democratic potential of ICT-enabled services in Swedish municipalities. *New media & society*, 7(2), 247-270.
- Wilkinson, K. (2018). Do South Africa's civil servants get R8 out of every R10 the government spends? <https://africacheck.org/reports/do-south-africas-civil-servants-get-r8-out-of-every-r10-the-government-spends/>
- Yates, J., & Van Maanen, J. (1996). Editorial notes for the special issue. *Information Systems Research*, 1-4.
- Zondi, Z. V., & Ukpere, W. I. (2014). Police brutality in post-apartheid South Africa reviewed. *Mediterranean Journal of Social Sciences*, 5(3), 574.

Annexure A.

Definition	Benefits of Biometrics
<p>“Biometrics” means “to measure life,” and that is what modern biometric devices do: they measure and analyse an individual’s characteristics, ranging from physical traits, friction ridge patterns on hands, iris and facial structure, e.g. manage behaviour-related characteristics, such as fingerprints, voice dynamics and handwriting. Biometric devices consist of a sensor that scans the targeted characteristic, software that converts scanned data into digital form, and a database that stores biometric data for comparisons. Biometrics is the embodiment of science.</p> <p>https://www.fbi.gov/services/cjis/fingerprints-and-other-biometrics/</p>	<ul style="list-style-type: none"> • For identification of know criminals, suspects, crime investigation, in which forensic people are continually involved to collect and match biometric patterns collected from crime scenes. • Is leveraged for surveillance, intelligence gathering and security, biometric data during criminal booking can be used for security in the prison system and streamline integration of databases, as well as booking new criminals not yet on the radar. • Biometric applications using facial and fingerprint recognition can help prison officers maintain law and order within the jails and correction centres. • Tracking of inmates during their movements within the facility is one of the many challenges, which biometric applications can address. • Crime scene investigation, collection and processing of human biometric identifiers are the standard procedures for resolving crimes, and they are not new practices. • Biometric traces left behind by the people involved in a crime is key to solving cases.
<p>Computers for Electronic Data Processing (EDP) is the digital management of databases, typically stored on a shared server and allow simultaneous access to all parties.</p> <p>https://itstillworks.com/computer-technology-used-law-enforcement-1233.html</p>	<ul style="list-style-type: none"> • Computer technology allow SAPS to store and retrieve vast amounts of data, which includes details of incident reports, DNA evidence, fingerprints, identifying marks, vehicle registration involved in criminal activity amongst other • Sharing information through the use of computers is invaluable between individuals, state departments and law enforcement agencies, e.g. documents, photographs and other material can be sent instantaneously from different locations, encrypted emails can be used to send important data securely while mitigating the risk that the information they contain will fall into the wrong hands. • Mobile computing devices, laptops, notebooks, computer and tablets are very useful to police for taking notes, access records or contact colleagues in other districts, without leaving a vehicle, they can check the identity or other credentials of individuals at the scene of a crime, as well as recording and tracking vital data such as vehicle license plates. • Criminals often use the Internet, those responsible for a crime incriminate themselves by discussing it on social media e.g. Facebook or Twitter this information can be used to prosecute them.

Figure 1: The benefit of biometrics and electronic data processing.