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EFFECTIVENESS OF POLICY ON DIGITAL TRANSFORMATION IN KENYA'S NATIONAL GOVERNMENT: HUDUMA SERVICE DELIVERY CASE STUDY

Kevin O. Goga

A research report submitted to the Faculty of Humanities,
University of the Witwatersrand, in partial fulfilment of the requirements
for the degree of Master of Arts in the field of ICT Policy and Regulation

February 2017

Declaration

I declare that this report is my own, unaided work. It is submitted in partial fulfilment of the requirements of the degree of Master of Arts in the field of ICT Policy and Regulation at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in any other university.



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Kevin Otieno Goga

16th February, 2017.

Abstract

"Flagship projects" is a hackneyed phrase that features prominently in Kenya's government policy documents. Yet soon after their unveiling, some of these projects, notably ICT projects have stagnated or diverged from their core objectives as outlined in the said documents. Combining two established theoretical approaches, Hanna's (2016a) digital transformation approach and McConnell's (2010b) policy-as-a-programme framework, this study makes an original contribution to address the gap in literature and policy analysis, by tackling the complementarities in thinking about digital transformation as a programme and policy as a programme as it relates to Kenya's Huduma citizen service experience. Employing a multi-method case study, including 20 key informant interviews, one 7-person focus group, observations at Nairobi's City Square Huduma Centre and Huduma's Network Operations Centre, and analysis of 18 policy documents relevant to this study, the research found that most digital innovation projects emphasised technology, while neglecting other key elements in the digital transformation space. However, the Huduma programme was different in that it paid due attention to several framework elements namely, policies and institutions, ICT infrastructure, ICT industry, human capital and public value, resulting into the category of resilient success. The analysis emphasises that sustainable digital transformation of public services can only be realised if all the transformational elements are prioritised in order to fit into the citizen's way of life and integrate the Kenyan government's "islands of automation". The study makes a case for a "whole-of-government" (WoG) digital transformation that extends beyond flagship projects. This will require creating and fostering collaborative leadership structures to enable digital transformation across national government ministries, departments and agencies, encouraged by youthful, highly-trained, non-political, professional leadership, and continuous learning in order to inculcate policy effectiveness and sustainability of digital transformation as a culture in all facets of national government.

Key words: Digital transformation, effectiveness, policy, Huduma programme

Dedication

To the fond memory of my mother, the only muse I ever knew.

Acknowledgement

Kenya's Maasai community has a vintage saying: "The village which is not discussed is not built". Well, this "village" would not exist without my supervisor, Dr. Lucienne Abrahams' erudite support during our supervision sessions and unwavering guidance in the programme's administrative processes; my friend Axel, for calming the logistical storm during my stay in Jo'burg – *you sir, are an absolute gem*; Retired Lady Justice Rawal, the former Deputy Chief Justice and Vice President of the Supreme Court of Kenya, for granting me permission to attend coursework despite frequent leave applications; my co-workers Flora and Sokoro, for being amazing sounding boards; Charles and Christine, for their counsel, when making the crisp decision to go somewhere unfamiliar to further my education; Ketra, for lessons shared along the way; and Mbogo Bunyi for creating time to moderate the focus group session despite a busy calendar. I also thank the academics and fellow classmates in the 2015 ICT Policy and Regulation cohort, from whose interactions I shaped ideas.

Lastly, my heartfelt appreciation extends to all the study participants including, institution heads at the Huduma Kenya Secretariat, ICT Authority, Institute of Economic Affairs-Kenya, Kenya Institute of Public Policy Research and Analysis, National Communications Secretariat, and the Kenya Vision 2030 Delivery Secretariat for making this study an illuminating and worthwhile endeavour.

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Glossary of Key Terms

Digital transformation or **e-transformation**	Remodelling of government systems through ICT innovation so as to deliver public services to citizens at their convenience and in ways that fit their real needs.
Effectiveness	The ability of a policy to meet or exceed the goals or objectives it was intended to achieve.
Mwananchi	Kiswahili translation for a “Kenyan citizen”.
Policy	A plan by government outlining its intentions to address an identified problem.
Programme	A technology-facilitated government system designed to implement policy.
Public value	Benefit that accrues to a citizen as a result of using a programme.

List of Acronyms

APR	Annual Progress Report
BPR	Business Process Reengineering
CA	Communications Authority of Kenya
CKM	Connected Kenya Masterplan
CoE	Centre of Excellence
DC	Data Centre
DCX	Digital Customer Experience
DLP	Digital Literacy Programme
DTM	Digital Transformation Manager
EGS	e-Government Strategy
e-ProMIS	Electronic Project Monitoring Information System
ERS	Economic Recovery Strategy
FGP	Focus Group Participant
GCCN	Government Common Core Network
GDP	Gross Domestic Product
HU	Huduma User
ICT	Information Communication Technology
ICTA	Information Communication Technology Authority
ICTs	Information Communication Technologies
ID	Identification services
IEA	Institute of Economic Affairs
IFMIS	Integrated Financial Management Information System
IoT	Internet of Things
ISD	Integrated Service Delivery
KES	Kenya Shillings
KICA	Kenya Information and Communications Act
KICTB	Kenya Information Communication Technology Board
KIPPRA	Kenya Institute of Public Policy Research and Analysis
KNBS	Kenya National Bureau of Statistics
KNIM	Kenya National ICT Masterplan
M&E	Monitoring and Evaluation
MDA	Ministry, Department or Agency
MoICT	Ministry of ICT
MTP	Medium Term Plan
NBS	National Broadband Strategy
NCS	National Communications Secretariat
NDRS	National Digital Registry Services
NESC	National Economic and Social Council
NHIF	National Hospital Insurance Fund
NICI	National Information & Communication Infrastructure
NICTP	National ICT Policy
NIMES	National Integrated Monitoring & Evaluation System
NOC	Network Operations Centre
NOFBI	National Optic Fibre Backbone Infrastructure
NSSF	National Social Security Fund
OECD	Organisation for Economic Cooperation and Development
OTT	Over The Top
PDTG	Presidential Digital Transformation of Government
PDTP	Presidential Digital Talent Programme
PINF	Policy Informant
PKI	Public Key Infrastructure
PM	Policy Maker
PPP	Public Private Partnerships
QMS	Queue Management System
RPMS	Real-time Performance Monitoring System
SMART	Specific, Measurable, Achievable, Realistic and Timely
SSA	Sub-Saharan Africa
TEAMS	The East Africa Marine Cable System
UID	Unique Identifier
UPS	Uninterruptible Power Supply
USSD	Unstructured Supplementary Service Data
VDS	Kenya Vision 2030 Delivery Secretariat
WoG	Whole-of-Government

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Chapter One: Mapping Kenya's Digital Transformation Landscape: What is Broken?

1.1 A Place at the Digital Society Table

For a time, idealists on modernisation, popular opinion in the West, some scholarly discourse or supposed pundits on the subject of Africa's state of development and limited innovation; entertained their ideas using the oft-cited phrase that Africa is a "dark continent". Somehow, the tack changed advancing narratives such as "Africa is rising" to assuage political correctness. Aware of the ire this may elicit from today's stalwarts of Pan-Africanism, in the wider scheme of things, we are still a living paradox. Kenya for instance, in three successive financial years has been losing a third (over KES. 600 billion) of its national budget to wastage and unauthorised expenditure if sentiments by the country's former anti-corruption boss are anything to go by (Miriri, 2016). Kenya's 2015 budget statement lends credence to these assertions as the government conceded that such loss of public finances is largely due to corruption (Republic of Kenya [RoK], 2015a). The integrated financial management information system (IFMIS) and iTax, two ICT-enabled services mentioned in this study, were identified in the aforesaid statement as opportunities to eliminate certain types of graft and to reduce levels of wastage of public funds. These are just two examples that reveal government's commitment to the digital evolution envisaged in a digital economy. Yet in 2010, the Judiciary's tele-presence project, a programme billed to save Kenya's Court of Appeal users costs and time, became defunct barely a year into its introduction; the technology deployed during the country's 2013 elections to avoid a recurrence of the post-electoral violence witnessed in 2007/2008 malfunctioned on the election day; the cashless solution designed to bring the multibillion-shilling public transport industry into the tax net is moribund; the National Digital Registry Service (NDRS) that would have given Kenyans a digital identity by June 2016 has not met its deadline; while the profile of IFMIS has failed to change perceptions of financial mismanagement. This suggests certain weaknesses in existing policy, which need to be identified.

In addition to broader plans such as the African Union (AU) Agenda 2063 to (closer home) the East Africa Community (EAC) Vision 2050, the past decade has witnessed an ICT fervour that has seen several countries in Sub-Saharan Africa (SSA) region notably, Rwanda, South Africa, and Tanzania, embark on ICT policy enactment "sprees". This effectively confirms that the adage "if you're not at the table, you're on the menu" rings

true to Africa in her efforts to avert her fiscal vulnerability or being left out (Johnson, 2016). Akin to her counterparts, Kenya has enacted policies confirming her awareness that socio-economic transformation is hinged on implementing sound ICT policies and plans (Dzidonu, 2002). A recent report by the Organisation for Economic Co-operation and Development (OECD) (2015), while recognising their societal impact, admits to a burden ICTs place on policymaking. Digital transformation should thus be guided by policy or strategy to realise its potential (Kane, Palmer, Phillips, Kiron, & Buckley, 2015). However, this pivotal role of policy in delivering digital transformation outcomes in key public sector environments, including finance, transport and public service, has been downplayed. This study sought to understand the arguments for Kenya to adopt the kind of policies that would enable sustainable digital transformation; in effect proposing a framework to ascertain the effectiveness of Kenya's present policies on digital transformation in government and suggest appropriate measures for policy advancement.

1.2 Contextualising the Research Problem

This section provides an overview of Kenya including its location (Figure 1), population and political structures. In addition to the use of tables to highlight key socio-economic indicators such as literacy, information society and employment, the section also offers insight into the country's debt, cost of living and gross domestic product (GDP). The section also introduces Kenya's digital transformation including an outline of her ICT policy environment, the problem statement and objectives of this study.

Figure 1: Map of Kenya



Source: Maps of World, 2014

1.2.1 Country economic, social, political and ICT profile

Kenya is predominantly an agriculture-driven economy, a fact attested by its highest contribution of 30pc to GDP in 2015 according to recent economic survey results (Kenya National Bureau of Statistics [KNBS], 2016, p.22). The ICT sector has remained subdued with a contribution of 0.9%, a drop of 0.7%, from the 1.6% recurrent plateau last witnessed in 2011 and 2012. The biggest employer is the informal sector, accounting for over 80% of the total employment, as shown in Table 1, which also gives a synopsis of other selected indicators.

Table 1: Country indicators

Indicator		2011	2012	2013	2014	2015
Population (Million)		39.5	40.7	41.8	43.0	44.2
Total expenditure (KES. Million)		1,016.7	1,241.4	1,533.0	1,950.7	2,224.0
Recurrent revenue (KES. Million)		798.2	896.5	1,001.4	1,134.5	1,474.6
GDP at market prices (KES. Million)		3,725.9	4261.2	4,745.4	5,398.0	6,224.4
GDP growth rate (%)		6.1	4.6	5.7	5.3	5.6
ICT contribution to GDP		1.6	1.6	1.4	1.2	0.9
Inflation rate (%)		14.0	9.4	5.7	6.9	6.6
Total employment[1] ('000)		12,116.2	12,781.1	13,517.0	14,319.2	15,160.8
Wage employment ('000)		2,084.1	2,155.8	2,283.1	2,370.2	2,478.0
Student enrolment ('000)	Primary schools	9,561.1	9,757.6	9,857.6	9,951.0	10,090.8
	Secondary schools	1,767.7	1,914.8	2,104.3	2,331.7	2,559.0
	Universities	-	251.2	361.4	443.8	512.9
Government Debt[2] (KES. Million)		1,347.6	1,532.5	1,732.7	2,217.3	2,601.4

[1] *Excludes small scale agriculture and pastoralist activities*
[2] *Internal and external*

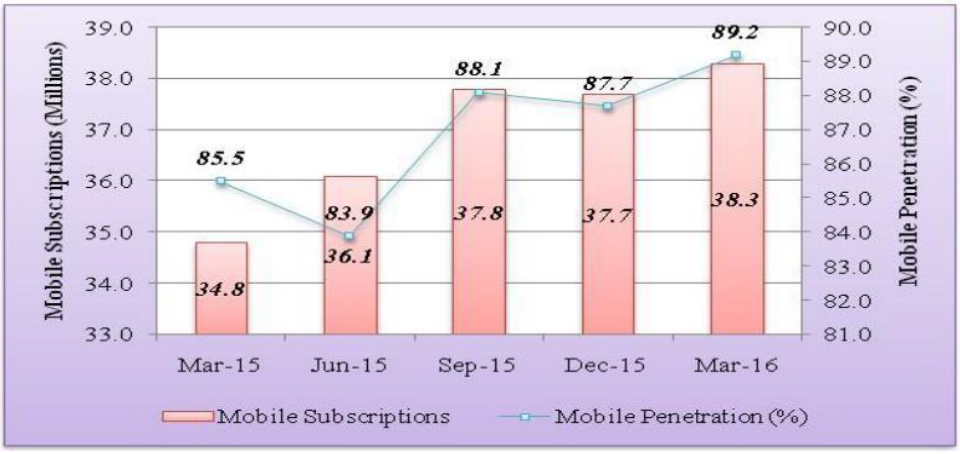
Source: Kenya National Bureau of Statistics [KNBS], 2016

The promulgation of a new Constitution in 2010 has seen the country experience far-reaching innovation in form of institutional reforms in governance structures. In addition to the national government, there are 47 counties that constitute the devolved government constitutionally mandated to work in consultation with the former (Republic of Kenya, 2010, Articles 6 & 189). The government is headed by the President, who also heads the executive arm of government, which includes the Deputy President and the Cabinet (Articles 130-131). The country's legislative wing is comprised of the National Assembly and the Senate (Article 93). The Judiciary, the third arm of government, derives its mandate from Article 159 of the Constitution. A detailed description of national government is explored later in this chapter when discussing the research setting.

As a testament to its extensive mobile access, the latest statistics by the sector regulator suggest mobile penetration in Kenya has been on an incremental trend and

currently stands at 89.2 % (Figure 2), a 3.7% surge from a similar quarter's results last year (Communications Authority of Kenya [CA], 2016). In addition to Sema Mobile Services, a newly licensed Mobile Virtual Network Operator (MVNO), the country is served by four other telecommunication companies that provide mobile services. The total subscription stands at over 38 million with Safaricom, the largest telco enjoying a 66% share of this subscription (CA, 2016, p.10). However, mobile access does not necessarily translate into a vibrant information society.

Figure 2: Mobile subscriptions



Source: Communications Authority of Kenya [CA], 2016, p.8

Despite broadband subscriptions that nearly doubled between 2015 and 2016 from 4.1 to 7.9 million (p.25), almost 90% of Kenyans have internet access. This according to the regulator, is impelled by growth in mobile-based internet penetration through 3G coverage across the country and popularity of social networking among her population (p.22) as shown in Figure 3.

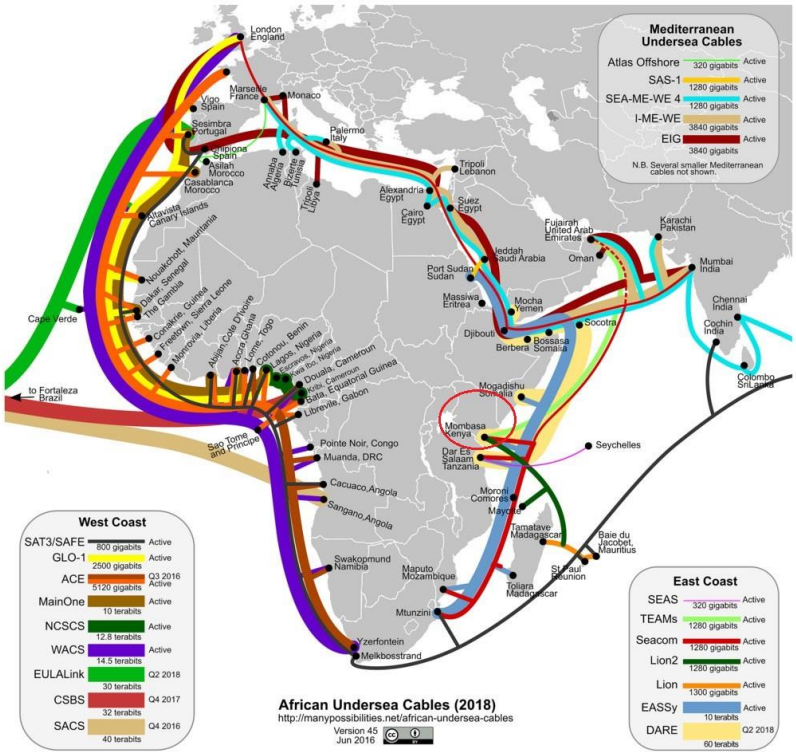
Figure 3: Internet users and penetration estimates



Source: CA, 2016, p.24

In addition to satellite, the country is served by four submarine cable systems, as highlighted in Figure 4.

Figure 4: Current and future Africa undersea cables



Source: Song, 2016

The said infrastructure account for an available (Lit/Equipped Capacity) international bandwidth of over 1.65 million Mbps at present as shown in Table 2.

Table 2: Available international internet bandwidth (Mbps)

International Connectivity Bandwidth	Mar - 16	Dec - 15	Quarterly Variation (%)	Mar - 15
SEACOM	870,000	770,000	13.0	770,000
TEAMS	702,000	702,000	0.0	820,000
Telkom Kenya Limited (EASSY)	39,060	39,060	0.0	39,060
Lion 2	39,210	39,210	0.0	39,220
Satellite Internet Bandwidth	524.0	498.20	5.2	265.6
Total International Internet Bandwidth (Mbps)	**1,650,439**	**1,550,771**	**6.4**	**1,668,546**

Source: CA, 2016

Out of this available capacity only half of it is in use as shown in Table 3. From these statistics, the used internet connectivity has grown by about 10pc in the past year. The regulator attributed this to use of the Internet for e-services and social networking including OTT services (CA, 2016, pp.26-27).

Table 3: Used international internet connectivity bandwidth (Mbps)

International Leased (Used) Bandwidth (Mbps)	Mar - 16	Dec - 15	Quarterly Variation (%)	Mar - 15
International Undersea Internet Connectivity	861,300	854,300	0.8	783,490.00
International Satellite Internet Connectivity	419.9	250.90	67.4	71.60
Total International Internet Connectivity	**861,719.9**	**854,550.90**	**0.8**	**783,561.60**

Source: CA, 2016

1.2.2 Digital transformation

Despite the wide protests staged against it – including Indonesia or even closer home in Kenya where there have been incidences of its drivers being threatened or their cars vandalised – Uber's unique smartphone-enabled platform including its discounted tariffs to customers, continue to make it resilient as a globally renowned ride-hailing company, now also offering helicopter services. Governments, in fact, appear torn between intervening in the sector through regulation and advancing the power of disruptive innovation (BBC, 2016; Mohammed, 2016). Such "uberisation" attests to the ICT-driven transformation climate that was theorised at the tail end of the erstwhile millennium as will be demonstrated in Chapter 2 of this report.

There are various definitions to digital transformation. i-Scoop (2016) for instance, defines it as "the profound and accelerating transformation of business activities, processes, competencies and models to fully leverage the changes and opportunities of digital technologies and their impact across society in a strategic and prioritized way" (para 1). Drawing on the ideas of Hanna and Summer (2014, p.4) and Hanna (2016a), this report favoured their definition on digital transformation as the continuous realignment in the economy and society fuelled by the deployment and diffusion of digital technologies to create a new techno-economic paradigm whose key constructs are a digital economy and networked society.

1.2.3 Impetus for digital transformation in Kenya

Despite being considered a regional economic hub with notable strides in the ICT sector, the 2015 fragile states index report highly ranked Kenya as a fragile state globally, a position that has exacerbated over the past decade owing to renewed insurgence by Somalia-based terror group that continues to jeopardise her security (Messner *et al*., 2015, pp.14, 22-23). Graft remains a disconcerting vice in Kenya, a view not only buttressed by Kenya's President on his declaration of corruption as a national security peril (Government of Kenya, 2015) but also the lacklustre score in successive corruption perception indices

(Transparency International, 2014; 2016). In a witty jest, Wrong (2014) opined that the global anti-corruption body owes its existence to the country's corruption! To mitigate these among other challenges, in an Executive Order No. 6 (RoK, 2015b), state corporations were directed to migrate their procurement systems to an e-procurement platform. In the last two budget statements by the National Treasury, this obligation also extends to other government departments (MDAs) through the aforementioned IFMIS (RoK, 2015a; RoK, 2016, p.10).

Corruption is likely to persist in the wake of malfeasance that led to the defrauding of the National Youth Service (NYS), a parastatal, through the IFMIS that cost the taxpayer over KShs. 800 million (Wafula, 2015). The laptop-for-every-child project that was crippled at the procurement stage and countermanded altogether at some point (Malakata, 2015) found a new lease of life upon its reintroduction as the digital literacy programme (DLP) with a revamped multiagency approach and leadership to steer its implementation (ICTA, 2015). The Government is currently distributing devices to schools nationwide.

1.2.4 Digital transformation in Kenya

Kenya has experienced other particular forms of transformation, these include, M-PESA, a highly acclaimed mobile money innovation widely used across Africa. The Safaricom-owned platform, accounted for nearly 50% of its non-voice revenue with transactions totalling five trillion Kenya Shillings run through the platform (Wainaina, 2016) – a figure equivalent to Kenya's 2014 GDP! The Huduma Kenya Programme (hereafter referred as *Huduma*), has transformed service delivery in a public sector previously riddled by long queues (RoK, n.d.) through one stop points where citizens obtain nearly 50 government services. Huduma, which translates to "service" in Kiswahili, Kenya's national language, has extended its services to the counties and created at least 600 new jobs (Njanja, 2015). In addition to local accolades, it was feted at the 2015 United Nations Public Service Awards (UNPSA) owing to its pivotal service delivery role (UNDESA, 2015).

eCitizen, a recent payment platform in the country, has also effectively enabled people access 115 various government services including, renewal of driving licences, and making of visa and passport applications. Since its inception, the programme has processed over 2 million applications, collected over four billion Kenya Shillings in revenue, and has at least 1.7 million registered Kenyans as at June 2016 (RoK, 2016, p.11). This is attributed to its ability to eliminate middlemen whose lifeline was hinged on the erstwhile inefficiencies in provision of government services (Ochieng', 2016). The 2015 budget

statement committed to harmonise services between Huduma and eCitizen so as to eliminate duplication and ensure proper resource utilisation (RoK, 2015a, p.9). iTax, an initiative by the country's revenue authority, has enabled taxpayers to submit annual income tax returns online. By July 2016, a mandatory directive on online tax filing by the taxman saw 4.2 million taxpayers registered on the platform with an average of 175,000 new monthly registrations (Kenya Revenue Authority, 2016). Other examples of visible digital transformation efforts in the country, particularly government are shown in Table 4.

Table 4: Examples of digital transformation in Kenya's government

Government Ministry	Social Media Presence		E-transformation Programme	ICT Policy/ Strategy
	Facebook	Twitter		
1. Agriculture, Livestock & Fisheries	✓	✓	✓ PMS, MIS	✓
2. Defence	×	✓	×	×
3. Devolution & Planning	✓	✓	×	×
4. Education	✓	✓	✓ KNEC Results, HELB-COC	✓
5. Energy & Petroleum	✓	✓	×	×
6. Environment &Natural Resources	✓	✓	×	×
7. Foreign Affairs & International Trade	✓	✓	✓Diaspora Portal System	×
8. Health	✓	✓	✓ KMHFL, KHIS	✓
9. ICT	✓	✓	✓ DLP, Konza Techno City	✓
10. Industrialization & Enterprise Development	✓	✓	✓ Agribusiness Information Portal	×
11. Interior & Coordination of National Government	✓	✓	✓ IPRS, e-VISA	×
12. Labour & East Africa Affairs	✓	✓	×	✓
13. Land, Housing & Urban Development	✓	✓	✓ NLIMS	×
14. Mining	✓	✓	✓ MCP	×
15. Office of the Attorney General & Department of Justice	✓	✓	×	×
16. Public Service, Youth & Gender Affairs	✓	✓	✓ GHRIS, Huduma Kenya	×
17. Sports, Culture & Arts	✓	✓	×	×
18. The National Treasury	✓	✓	✓ IFMIS, e-Citizen, iTax, e-ProMIS	×
19. Tourism	✓	✓	×	×
20. Transport and Infrastructure	✓	✓	✓ TIMS	×
21. Water and Irrigation	✓	✓	×	×

KEY:

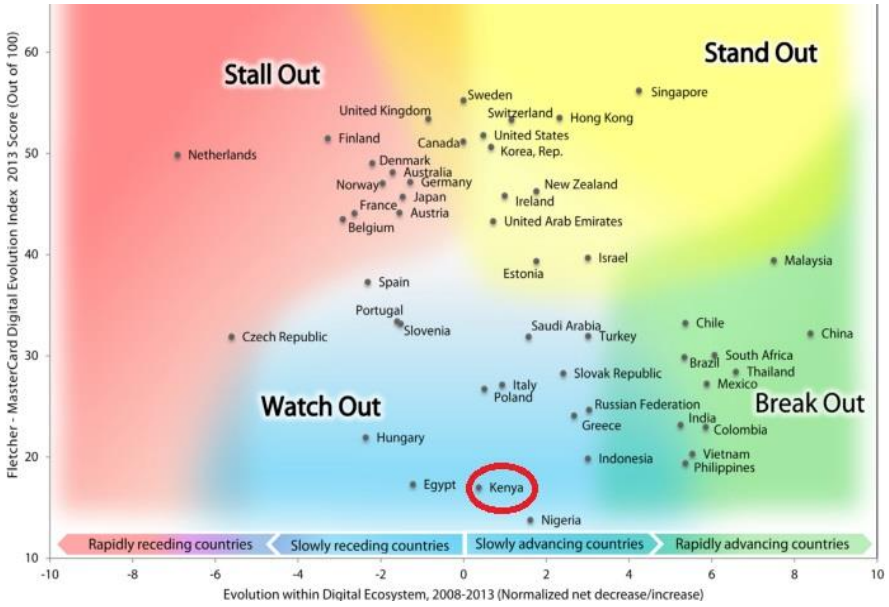
DLP	Digital Literacy Programme	**e-ProMIS**	Electronic Project Monitoring Information System
GHRIS	Government Human Resource Information System	**HELB-COC**	Higher Education Loans Board - Certificate of Clearance
IFMIS	Integrated Financial Management Information System	**IPRS**	Integrated Population Registration System
KHIS	Kenya Health Information System	**KMHFL**	Kenya Master Health Facility List
KNEC	Kenya National Examinations Council	**MCP**	Mining Cadastre Portal
MIS	Market/Management Information System	**NLIMS**	National Land Information Management System
PMS	Performance Management System	**TIMS**	Transport Integrated Management System

Updated as at 19th August, 2016

Source: Author, 2016

Digital transformation programmes have plausibly earned Kenya an enviable position in globally respected rankings. For instance, Kenya was one of the only four African countries ranked in a 2014 digital evolution index (Figure 5).

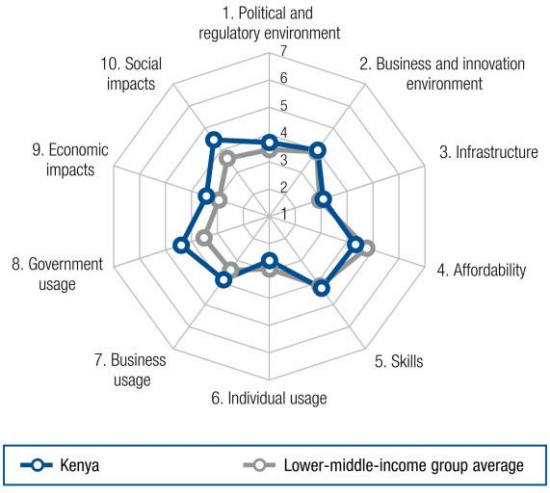
Figure 5: Kenya's position in the digital evolution index trajectory chart



Source: Chakravorti *et al*., 2014, p.10

From the World Economic Forum's (WEF) 2015 Global Information Technology Report, Kenya's networked readiness improved six places from the previous year, a position that has been steady since 2012 (p.14), and is attributed to some of the already mentioned transformative ICT initiatives such as M-PESA. The country's ranking remained unchanged in the 2016 report scoring slightly above average against her counterparts as shown in Figure 6.

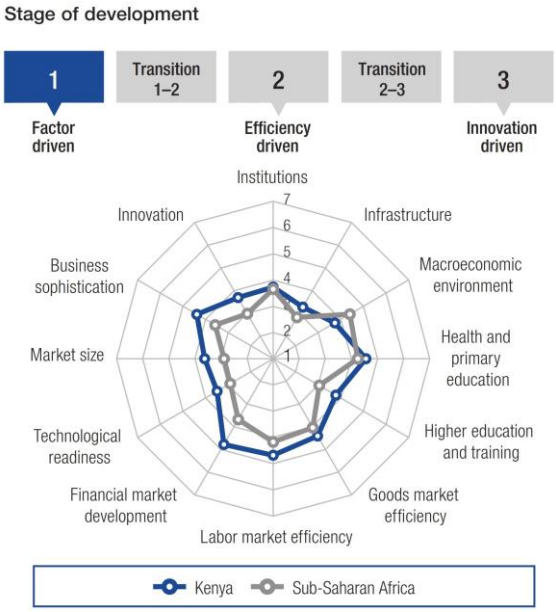
Figure 6: Kenya's networked readiness index 2016



Source: World Economic Forum [WEF], 2016, p.121

In 2015, WEF, in its Africa Competitiveness Report, classified Kenya as a factor-driven country due to its stage in economic development. This is because of its dependence on its unskilled labour and natural resources. Competitiveness at this stage calls of inter alia, well-developed infrastructure, functioning public institutions and a literate workforce (pp.8-9) in order to advance to the next levels shown in Figure 7.

Figure 7: Kenya's competitiveness index 2015



Source: WEF, 2015b, pp.134-135

Another notable point from this report was that no African nation has reached an innovation-driven stage of economic development. In addition to basic requirements such as institutions and infrastructure, technological readiness and human resource elements are suggested as efficiency enhancers to improve the country's scores against the SSA average. In addition to the much-extoled mobile money benefits in the 2016 World Development Report by the World Bank (2016a), Huduma is also one of the initiatives the Bretton Wood institution pays a glowing tribute for improving ease of doing business in the country (World Bank, 2016b, p.50).

These indices largely attest to the country’s ICT readiness and not specific to the impacts of ongoing digital transformation initiatives but they provide insight into their existing enabling environment.

1.2.5 What is broken?

While the above initiatives and others that are underway such as the Real-time Performance Monitoring System (RPMS) indicate Kenya’s efforts in combating the aforesaid challenges, a desktop spot check conducted by the researcher across government

departments as illustrated in Table 4 above, revealed 60 percent have ongoing digital transformation initiatives, but a paltry 20% have an institutional ICT policy or strategy in place. This absence of targeted policy for specific areas of government and public service presents a challenge that possibly cripples digital transformation programmes.

Not all initiatives have been successful. The ambitious cashless fare system designed for the public transport sector, formerly the BebaPay electronic payment solution (Goga, 2013), is presently sluggish and in most routes abandoned altogether. This is despite an existing headlong legislation[1] that required public service operators to implement the initiative by July 2014 (RoK, 2013b, p.2388).

Figure 8: Kenya's President and other stakeholders using the cashless card to pay for a ride



Source: Kuria, 2014

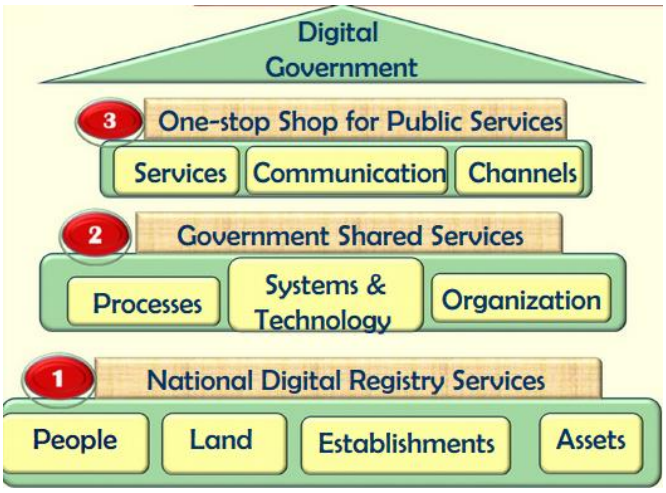
In 2010, the Kenyan judiciary introduced a telepresence system to reduce costs of litigation and expedite justice to litigants. It was hoped that its successful application in Kenya's Court of Appeal would eventually cascade it to prisons and subordinate courts (International Records Management Trust, 2011). The project barely subsisted for a year.

The 2013 general elections were the first to be ICT-facilitated as recommended by the Kriegler Commission established by the government to investigate the post-poll violence witnessed in Kenya in the aftermath of the 2007/2008 elections (Office of the Auditor General, 2014, pp.83-84). On the Election Day, the biometric voter registration (BVR) and the electronic voter identification devices (EVID) failed, leading to use of manual registers. The results transmission system (RTS) also malfunctioned, in the process multiplying the results eight times (Andago, 2014). These problems have been widely acknowledged as administrative, rather than technological. Curiously, Kenya's electoral body is still considering purchase of new devices barely a year before the 2017 polls (Igadwah, 2016).

[1] *See also* Legal Notices No. 23 dated 11th March, 2014 and No.75 dated 11th June, 2014.

The presidential digital transformation of government (PDTG) that would have seen Kenyans have electronic identities (eIDs) by mid-2016 was initiated in the wake of the 2013 terror attacks on the Westgate Mall. The programme would address insecurity that can be attributed to corruption in government and her limited knowledge of its assets, people, land and establishments; bridge silos in MDAs that have propelled wastage due to duplication and a procurement and vendor-driven culture. In addition to addressing bureaucracy, it would inculcate a performance and results-oriented culture (Gatabaki, 2014). The initiative was to be implemented through three strategic programmes aimed at providing end-to-end solutions as shown in Figure 9.

Figure 9: Kenya's PDTG strategic programmes



Source: Gatabaki, 2014, p.6

The NDRS would provide complete, correct, available and secure national data (i.e. "single source of truth"); Government Shared Services which included establishing a Performance and Delivery Unit, would enhance efforts to achieve efficiency, effectiveness and accountability in government; and one-stop shop was posited to provide citizen-centric public services that are accessible, available, and affordable. However, in circumstances that still remain unclear, the promising project was shelved, the government again missing a defining moment of digital transformation (Kabaara, 2016).

A high-level panel at ICTA's 2016 annual conference, discussing why government ICT projects go wrong, highlighted that most ICT projects in Kenya's government are lopsided, with vendors driving the process, the pressure to "go live", inadequate capacity-building among the users, lack of stakeholder buy-in, or mistakes due to rushed deployment carried on into subsequent initiatives. Among the solutions advanced were introducing benchmarking, project champions, effective budgeting; investing in project management skills and change management; managing politics, self-interest and stakeholder

expectations. Participants favoured the idea of technological fit with user requirements, prioritisation of projects with high public value, radical process reengineering, and automating what is necessary.

1.3 Statement of the Research Problem

Embedded innovations such as M-PESA and more nascent ones like eCitizen evince Kenya's digital transformation. Under the e-government banner, government departments deploy ICTs to streamline operations that aim to enhance service delivery to citizens, increased revenue and accountability for public finances. However, beyond the boilerplate exhortations made during the flamboyant launches of these transformative projects, most tend to be ephemeral, partly because they steer towards addressing short-term institutional and infrastructural shortcomings (Chakravorti *et al*, 2014, pp.11, 33). Policy, the bearer of goals such as public value, sustainability and follow-up mechanisms, remains an overlooked element in Kenya's digital transformation space. To sustain this ecosystem's harmony, proponents of digital transformation postulate the need for interdependence between all elements within this ecosystem. The literature by Hanna (2016a); Sarantis, Charalabidis, and Askounis (2010); and Solis *et al* (2014) argues for the need to understand the human, technology, infrastructure, services and policy aspects of transformation. For purposes of this research, the knowledge gap identified relates to the effect of public policy on digital transformation, as there is little or no published research that explains the extent to which a transformative programme meets the goals and requirements of its enabling policy in Kenya. It is therefore necessary to gain a deep insight into the strengths and weaknesses of existing policies and their digital transformation effects, including the value of monitoring mechanisms to ensure the said policy is effectively implemented and sustained.

1.4 Purpose, Justification and Significance of Study

This study examined the effectiveness of policy as a tool in facilitating digital transformation in a selected ministry in Kenya's government. The study aimed to establish how effectively public policy has contributed to the implementation of digital transformation in national government; understand the depiction of such transformation programmes in policy instruments, identify the enablers and barriers to digital transformation in existing ICT policy and propose avenues to improve the said policies, by conducting a single in-depth case study.

For a country whose budget deficit progressively inflates its public debt (KNBS, 2016), Kenya's development is intricately hinged on digital transformation. Transformative

programmes can seal loopholes for misappropriation to ensure proper accountability of public funds, effectively manage government revenue and improve public service delivery. SSA countries like Kenya ought to probe weaknesses within their digital transformation environments and determine the points of intervention required for greater levels of policy effectiveness (McConnell, 2010b).

This study is significant for various stakeholders including, fellow African governments looking to revamp their service delivery using ICTs, policymakers, ICT industry players, future researchers, and citizens due to specific recommendations it makes on *inter alia* varying or aligning of extant ICT policies for coherence with the country's digital transformation efforts. In effect, the research posits a policy monitoring framework to inform future studies and policymaking targeted towards public sector transformation using digital tools.

1.5 Research Questions

To investigate the research problem, this study sought to answer the question: How effectively has public policy contributed to the implementation of digital transformation programmes at the national level of government in Kenya? In order to answer this question, the study posed three sub-questions:

i. How is government digital transformation characterised in Kenya's public policy environment?
ii. What elements of policy enable or inadvertently create barriers to digital transformation in government?
iii. How should existing digital transformation policies in Kenya be strengthened to ensure their effectiveness?

1.6 ICT Policy in Kenya

In 2015, a seminar convened in France in the style *closing the gap between public policy and digital transformation* (Futur en Seine, 2015) observed that government lags behind in digital transformation, yet, uberisation [digital transformation] of the public sector is not about resilience, but about better management of public affairs. It also highlighted that sometimes solutions generate frustrations more than solve problems and that policy despite balancing reality and ambition in programmes, must reflect the value of the changes technology brings.

ICT policy in Kenya is characterised by documents ranging from overall national strategy documents such as the 2003 Economic Recovery Strategy for Wealth and

Employment Creation (ERS) and Kenya's Vision 2030 to more ICT-specific ones like Kenya's National ICT Masterplan, the National ICT Policy, the National Cybersecurity Strategy, and the e-Government Strategy of 2004. These policies and others, as will be demonstrated in Chapter 4 and 5, provide a national level guide to digital transformation in government, but also have strengths and weaknesses, in terms of their relevance to the elements of the digital transformation ecosystem, and in their application, that need to be better understood through this study.

1.7 Research Setting

In addition to the aforementioned bicameral legislature, the executive, the Judiciary, and the county governments, another segment is the commissions and independent offices (RoK, 2010, Article 248-254). Article 249 is categorical that these bodies are subject only to the Constitution and the law and are not subject to control by any person or authority. Some scholars argue that owing to this sacrosanct place they hold in discharging their mandate, these independent establishments may as well be the "unofficial" fourth arm of government (Sihanya, 2013). Nevertheless, the Supreme Court of Kenya (2011, p.16) ruled that these bodies may occasionally find it essential to consult with other institutions and as such cannot act in seclusion. What is then the purview of national government in Kenya?

1.7.1 National government

Cabinet consists of the Attorney General and cabinet secretaries (constitutionally limited to 22) who head ministries. Kenya currently has 21 ministries (Embassy of the Republic of Kenya in Japan, n.d.). In addition to the 41 state departments across these ministries, there are at least 260 state corporations distributed across nearly all of them. The Presidential task force on parastatal reforms proposed the number of state corporations be reduced to 187 and renamed as government owned entities (GOEs) (RoK, 2013a, pp.42-44). The proposal awaits full implementation upon the enactment of the GOE bill. In this report, the term national government is therefore confined to government at the executive level. More specifically, it is used in reference to a Ministry, its Department or supporting Agency (MDA). This study investigated the Ministry of Public Service, Youth and Gender Affairs, in particular, its Huduma initiative.

1.8 Global Best Practice

When it comes to digital transformation programmes that fit elements in our definition, various countries for example, Australia, Denmark, Estonia, Rwanda and Singapore have made it a reality. Claros and Packman's 2014 study suggested that Africa's

lack of electronic filing of taxes is to blame for the complications that plague tax remittance (pp.16, 34). In this study, Kenya was a leading economy in the continent having reduced its compliance period by 32 hours due to online tax filing (p.40). Compared to Kenya's iTax, Estonia's 15-year old equivalent has evolved to a simple confirmation and digital signing portal that completely outdated paper-based tax declaration following 98% compliance (Gemalto, 2015). Closer home, Rwanda's e-tax system filing saw at least 26% of her small taxpayers utilise the platform with plans to make it accessible on their mobile phones (Investment Climate Facility for Africa, 2014).

Estonia and Denmark's e-procurement are akin to Kenya's IFMIS. In Singapore, e-procurement is implemented through the Government Electronic Business (GeBIZ) portal catering for both local and international suppliers. Kenya's Huduma and eCitizen initiatives are much less advanced than Singapore's *eCitizen* or Estonia's *EESTI.ee* that provides a gateway to a myriad of government services. On the policy front, unlike Kenya, Rwanda's policy approaches seem to be more proactive through establishment of a long-term Vision (2020) and a "well-scheduled execution plan [NICI plans phases I-IV]...including specific milestones and expected outputs" (Ministry of Youth and ICT, n.d., p.18). Singapore exhibits a similar approach stemming from its civil service computerisation programme days, through the e-Government Action Plans (eGAP) and *iGov2010* and *eGov2015* masterplans. Its ICT authority website highlights it is currently implementing a policy dubbed *Infocomm Media 2025 Plan*. Australia has also not been left behind especially in light of the exclusive Digital Transformation Office it established in 2015 to "transform government services, make services available digitally from start to finish" (Prime Minister of Australia, 2015).

A prevailing feature across these selected best practices is that they have programmes similar to Kenya. This is not fortuitous. The difference is that their initiatives are more advanced than Kenya's. Succinctly put, Kenya's digital transformation programmes ought to advance in order to address some of the country's present challenges.

1.9 Chapter Summary and Structure of the Report

The above insights on Kenya's digital transformation efforts and the drawbacks plaguing such initiatives in her government, provides a basis for this study to find a theoretical base upon which the issues highlighted will be better understood. A foundation in literature will thus guide the creation of a framework to be utilised in understanding the intrigues Kenya's government faces in its digital transformation journey and perchance the steps necessary to ameliorate this challenge.

The rest of this report is structured as follows: Chapter 2 discusses the theoretical leanings of digital transformation zeroing in on policy as a key constituent of such transformation. It concludes with an integrated analytical framework to investigate the effectiveness of digital transformation policies. Chapter 3 adopts and discusses facets of a qualitative case study methodology including, the study's research philosophy, data collection methods, sampling techniques, ethical considerations and concludes with the study's limitations and delimitations. Chapter 4 organises and presents the multi-method case study evidence; whereas Chapter 5 provides a scrutiny of key findings as supported in literature, their inference and how they fit within the established digital transformation and policy framework. Chapter 6 concludes this report by reflecting on the challenging task of public sector digital transformation and its barriers particular to Kenya, by answering the research question. It also makes recommendations for future research, reflecting on this study's advancement of knowledge, originality and contribution to theory.

Chapter Two: Theoretical Underpinnings of Digital Transformation

In this chapter, a complex interplay of themes plays out when the researcher appraises various schools of thought and debates on digital transformation. The chapter is divided into two parts: the gist of the first is a general discussion on the nature of digital transformation that materialise into its enabling constituents namely, human capital, the ICT industry, ICT infrastructure, institutions and policies. The rest of the chapter underscores policy as a mutually inclusive yet the driver of the digital transformation ecosystem. In total, the study distinguished arguments in seven frameworks and merged two of them to create a theoretical and conceptual framework that guides the rest of the report.

2.1 Building the Foundations of the Digital Society

Contemplating the emergence of the knowledge economy for Australia, Houghton and Sheehan (2000, p.1) noted:

> [We live] through a period of profound change and transformation of the shape of society and its underlying economic base...The nature of production, trade, employment and work in the coming decades will be very different from what it is today.

Key observations made by these authors were that this economy would be characterised by flexible organisations; a workforce whose skills complement ICTs; and innovation systems created through collaborative relationships between actors and institutions (pp.10-11). A prominent feature also identified was the information technology (IT) revolution whose value of would be appreciated by users through emerging computer applications and communication systems that would converge at the Internet (p.2). Resonating the sentiments on the IT revolution as a feature of the new economy, Castells (2010) christened this phenomenon as the *network society* characterised by a shift to new technological patterns in the form of a pervasive, flexible, networked and converged environment through progressive and agile ICTs – the driver of such transformation being the technologies of information processing and communication (pp.30, 69-72, 78). He also suggested that the new economy is "spearheaded by the information technology industry, increasingly organized around the Internet, as the source of new technologies and managerial know-how for the whole economy" (p.161).

2.1.1 The digital economy

In 1995, Tapscott's work conceived the new economy as *the age of networked intelligence* predominantly characterised by transformation in business, governments and individuals through the help of ICTs (Tapscott, 2015, p.12). In addition to recognising this new economy as knowledge-based, he coined the term "digital economy" to describe this economy citing its ability to harness information traveling across networks (pp.15-17). A more explicit view was held by Turban, McLean, and Wetherbe (2004, p.5) who suggested a digital economy refers to "the convergence of computing and communication technologies on the Internet and other networks, and the resulting flow of information and technology that is stimulating e-commerce and vast organizational change".

Alluding to Castell's networked society, Hanna (2016a) reasons in favour of a budding smart, connected and learning economy and society spurred on by interactive infrastructure that lead to social transformation (pp.15-23). Hanna's views are in concert with the findings of the OECD in a recent examination of the ICT sector. The OECD contends that at the heart of the digital economy is the Internet, broadband, mobile applications and services. It also highlights that this economy is cross-cutting and not constrained to the ICT sector (OECD, 2015, pp. 83, 131).

From the above discussion, it is possible to reason that scholarship in the earlier works, demonstrated by the authors' prescient arguments, bears significance to modern-day reality. Without delving into their individual merits, a prominent and cogent position emanating from these works is that there is a transformation anticipated in the society and the nature of such transformation is digital.

2.2 What is Digital Transformation?

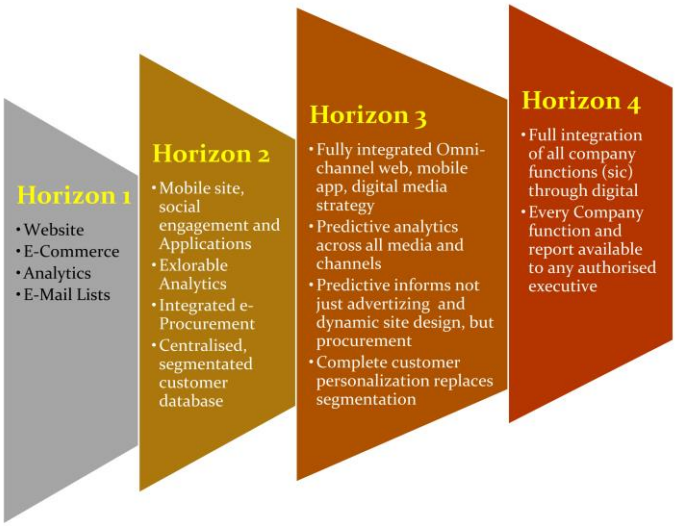
A perusal of various sources does confirm there is no one-size-fits-all definition to digital transformation. In Chapter 1, the study identified a working definition on digital transformation; it is imperative to rationalise how and why that specific definition was preferred. Digital transformation is also an evolving phenomenon as suggested by Terrar (2015, para. 10) who defines it as:

> The process of shifting your organisation from a legacy approach to new ways of working and thinking using digital, social, mobile and emerging technologies. It involves a change in leadership, different thinking, the encouragement of innovation and new business models, incorporating digitisation of assets and an increased use of technology to improve the experience of your organisation's employees, customers, suppliers, partners and stakeholders.

Although personalised around improved customer interactions in business and not organisation-wide transformation, Solis, Li, and Szymanski (2014, pp.7-8) define digital transformation as "the realignment of, or new investment in, technology and business models to more effectively engage digital customers at every touch-point in the customer experience life cycle". Friedlein (2013) views digital transformation as a journey of a company from its present to where it aspires to be digitally. He infers a digital organisation as one whose focus is on customer experience and has a digital culture, sentiments consistent with those of Solis *et al*. Westerman, Bonnet and McAfee (2014a, para. 1) suggest digital transformation is "the use of technology to radically improve performance or reach of enterprises". The authors argue that the focus of such transformation is customer experience, operational processes and business models (para. 6). However, they contend that more than technology is needed to achieve true digital advantage citing leadership and vision as integral drivers of such transformation (Westerman, Bonnet, & McAfee, 2014b). Cascading through these definitions are key themes such as improving business models, customer experience, performance, leadership, and innovation; all enabled by the use of ICTs.

Baker (2014, pp.11-12) distances himself from the definition debate on digital transformation suggesting its meaning varies in different contexts. He however asserts that such transformation extends beyond websites or a strategy, and its digital aspect is achieved through establishing certain planning milestones as shown in Figure 10.

Figure 10: Digital transformation milestones



Adapted from: Baker, 2014, p.12

The milestones advanced by Baker allow for synthesis of the general ideas established in the work of Hanna who posits that digital transformation is a shift to a new techno-

economic paradigm characterised by deep changes in the economy and society fuelled by deployment and diffusion of ICT. e-Development, ICT-enabled development, information society and a knowledge economy collectively comprise this paradigm (Hanna, 2011, p.2). He espouses similar views in a subsequent policy guide where he substitutes the term digital transformation for e-transformation (Hanna & Summer, 2014, pp.4-5). Like Baker (2014), Hanna contends that e-transformation or digital transformation extends beyond automation of existing processes to incorporate radical redesign and innovation in an organisation practices through digitised data to monitor resources, improve relationship with stakeholders, deliver services, improve policymaking and secure citizen feedback (Hanna & Summer, 2014, pp.4-5; Hanna, 2011, p.2; 2012, p.24; 2016a, p.28).

There are ample definitions for digital transformation and owing to its dynamism, they will continuously evolve. It is against this backdrop that this report adopts: (a) Hanna's (2016a) definition of digital transformation in entirety owing to the extensive approach and consistent arguments on the subject; (b) a rider that the themes identified from the earlier definitions in this section, albeit tailored for a corporate environment, persuade the arguments for a conceptual framework as demonstrated shortly in this chapter; (c) a corollary that there is no difference between the terms digital transformation and e-transformation and for purposes of this report they are interchangeable; and (d) the term "ICTs" to include any internet-enabled desktop, laptop, and tablet, mobile or digital devices not yet invented (Baker, 2014, p.154).

2.3 The Why and Where of e-Transformation

Ulieru and Verdon (2009, p.17) observed that the digital economy is characterised by unprecedented techno-social systems that have challenged the traditional top-down approaches. They suggested the need to find "the right balance between the old and new that would enable us to navigate most successfully through the trials and tribulations of today's (mostly unforgiving) economic realities". Tapscott and Hanna are even more unrelenting in their sentiments: If you don't embrace the sweeping transformation, extinction is your fate. Tapscott (2015), elucidates that the digital economy is untenable for old approaches to doing things citing consequences to businesses, governments, individuals etc. who are unwilling to glean from the improved knowledge, skills and human resource capabilities brought about by such transformation. On the other hand, Hanna (2016a, pp.4-5) contends that this transformation avails opportunity for the said individuals, organisations and society to adopt leading practices that utilise digital tools and infrastructure to reinvent

processes that were hitherto mundane, for cost-cutting, efficiency and innovation purposes. Digital transformation thus presents itself as a colossal phenomenon and this study cannot promise to appraise its intrigues in every touchpoint of the industry. Of particular interest though, is government.

2.3.1 Digital transformation in government

Rubino-Hallman and Hanna (2006) posited that the realisation of the IT revolution is pegged on government's participation as a key player. The authors noted how government's role is manifested for instance, regulation which is its exclusive preserve; fast-tracking infrastructural development; lowering transaction costs for the private sector; protecting societal interests; improving living conditions and investing in posterity; advancing education; leading buyer and employer; and in the developing world (like Kenya) where marginalised communities are rife, the authors state that government is often the only institution with muscle to reach regions and populations to promote universal access (p.33). Generally, government wears many hats and unlike businesses which are primarily motivated by profits, it acts as, and enables much of the needed societal transformation (Zysman, Feldman, Murray, Nielsen, & Kushida, 2011, p.34).

Castells (2005) arguing for implementation of projects that reflect social needs and values also weighed in on the policy debate by arguing that the public sector is the decisive actor to develop and shape the network society even if it is the same place transformative ICTs are least diffused and plagued by obstacles. Castells reasoned that successful transformation of this segment of society will command everything else (pp.16-17). Tapscott (2015) acknowledges a sluggish nature of governments embracing the new order. He states "the so-called reinvention of government is not possible without reinventing the delivery system for government – dramatically reducing costs and improving services the government provides to its customers" (p. xviii); a view consistent with that of Asgarkhani (2005) who suggested that service improvement ranks high in the list in government digital transformation efforts. Rubino-Hallman and Hanna (2006) also contend that the role of transformation in the public sector cannot be understated particularly in the context of developing countries where budgetary challenges plague inefficient government institutions. The authors argue that e-transformation plays a vital role in ameliorating corruption, promoting collaborative decision making, creating an integrated government, and inculcating new skills in civil servants.

2.4 The Digital Transformation Ecosystem

Biology taught us the term ecosystem refers to a number of organisms interacting within an environment. This definition was favoured by Fransman (2010, p.8) when he suggested that the ICT sector should be conceived as an ecosystem. In the ecosystem he advances are four distinct interdependent actors namely: networked element providers, network operators, content and application service providers, and consumers. Fransman argues that these actors interact within an environment defined by institutions that influence their behaviour and surmises that these institutions are driven by organisations that have the power to change them including, government. Undoubtedly, the author raises valid arguments on the role of government in policing the new ecosystem to encourage innovation; however, Fransman's work relegates government and institutions as mere behind the scene actors; it effectively falls short of proposing a scenario where government or such institutions are players in that ecosystem.

Ajakaiye and Wangwe (2011, pp.25-27) conceived the ICT system as an integrated system comprised of technology infrastructure, institutions, social structures and processes as actors within the system. The authors decried Africa's lagging nature of transformation owing to among other things, lack of parity between human skills and the new ICT environment, ineffective institutions, inadequate infrastructure, that is germane to digital inclusion by ensuring affordability, and policy inadequacy in addressing digital divide. These components fall squarely within the domain of government and validate the discussions in the previous section.

2.4.1 Actors in the digital transformation ecosystem

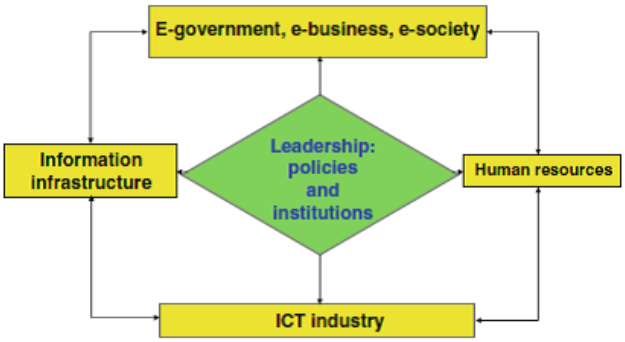
Solis *et al* (2014, pp.26-58) proposed digital transformation elements as (i) articulated vision and strategic leadership that calls for rallying of stakeholders; (ii) digital customer experience (DCX) with a holistic focus beyond technology; and, (iii) a digital transformation team composed of digitally skilled cross-functional teams and stakeholder education. Similarly, Eggers and Bellman (2015, p.4) found strategy, leadership, workforce skills, digital culture and user-focus as factors driving digital transformation in government. These works provide a good foundation in understanding the holistic nature of digital transformation.

2.4.2 A digest of Hanna's works

Hanna (2010a, pp.11, 103-104, 138) argued that e-transformation extends beyond sheer investment in ICT and involves implementing elements of e-development using ICT

as an enabler and a holistic socio-economic transformative tool. These elements were: (a) Human resource, which encompasses technical skills and digital literacy; (b) a dynamic and innovative ICT industry (e.g. suppliers); (c) an affordable and competitive information infrastructure such as the Internet and other connectivity tools; (d) the application or usage of ICT in government, business, and society; and (e) visions, policies institutions and leadership, which create an enabling environment in which all the other elements interact. In the same year he upheld similar views in his book solely targeted at transformation within the government environment (Hanna, 2010b, pp.246-247) and reiterated these elements in subsequent publications (Hanna & Knight, 2011, pp.7-8; 2012, pp.29-30). A representation of these interdependencies is illustrated below.

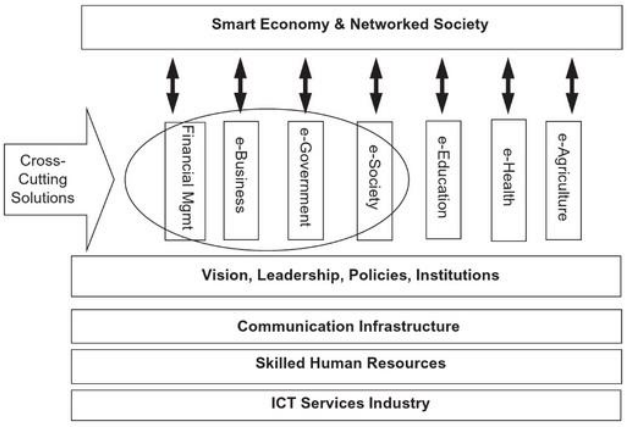
Figure 11: Five elements of e-transformation



Source: Hanna and Knight, 2012

In 2014, Hanna, in a co-authored publication, slightly improved his earlier works citing the emergence of new technologies namely, cloud computing, big data, smartphones and the internet of things (IoT) (Hanna & Summer, 2014, pp.9-10) and in his most recent book he not only coalesces his ideas over the years on digital transformation but upon reflection, upgrades the e-government architecture he conceptualised in 2010 to a digital transformation architecture (Hanna, 2016a, pp.41-43) as illustrated below:

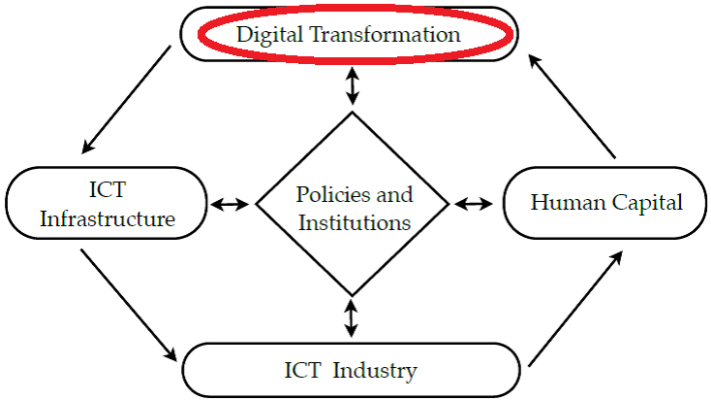
Figure 12: Digital transformation architecture



Source: Hanna, 2016a

Another notable observation is that the framework revises the application and/or usage element i.e. e-government, e-business, e-society in previous frameworks to digital transformation as shown in Figure 13.

Figure 13: Digital transformation ecosystem



Source: Hanna, 2016a, p.42

Previous research has found that ICTs' systemic failures in certain areas is traceable to fragmented approaches that missed key enablers, were largely bureaucratic, and ignored the synergy required in transformative and innovative ecosystems (Hanna, 2008, p.1; Hanna & Knight, 2012, p.22). It is perhaps why across all the above works, there is a resounding emphasis on the holistic nature of e-transformation and that all the elements within its ecosystem must have a symbiotic relationship. For instance, he argues that "e-government cannot be inclusive and sustainable without a critical mass of users…unless e-literacy, relevant content, and affordable connectivity and delivery channels are developed at the same time" (Hanna & Summer, 2014, p.6).

In a Singaporean study that sought to examine the evolution of e-government as an example of ICT application supported by other elements in the e-transformation ecosystem, Chua (2012) argued that Singapore's e-government possibility is pegged on its infrastructure, institutions, capacity development and stakeholder inclusion. The author also acknowledged that e-government efforts are commensurate with the country's ICT plans which are emphatic on human resource development, literacy among Singaporean people and businesses, infrastructure and connectivity, and efficiency in government (p.44). Chua's framework has value for the concepts of digital transformation that corroborate Hanna's framework. A similar position is found in the work of Abrahams and Goldstuck (2010, p.29) and Abrahams (2011, pp.146, 168). In these works, Hanna's framework was used to analyse e-development in the case of South Africa and it was found that the state of the

country's e-development is informed by the synergy in the elements in the e-transformation ecosystem that lead to value creation through facilities such as e-government.

2.4.3 Public value

Chua (2012) also argues for customer-centricity when proposing a model to indicate the maturity level of the country's Government to Business and Citizen (G2BC) level of e-government (pp.50-52). The focus of the current study is on this level due to the transactional nature (Chen, 2002, p.224) of e-services at this level. Transactional services as posited by the UK Digital Efficiency Report (2012) "involve an exchange of money, goods, services, permissions, licences or information between the government and a service user, resulting in a change to a government system". The report favoured digital transformation in government citing benefits such as convenience and reduced costs of services. Other benefits include improved user experience when dealing with government; improved economic growth as online services are good for the public purse; transparency, accountability and citizen empowerment (Gupta, Dasgupta, & Gupta, 2008, p.141).

Bannister and Connolly (2014) assert ICT transformation in government must be underpinned by public value. For instance, in the course of providing a service, the government must seek ends such as accountability, prudence in utilisation of public funds, transparency, efficiency, effectiveness, and responsiveness to its citizens. And rightly so, e-government initiatives or projects usually dip into the public purse as they are intended to serve the public and as such should be driven by the value it creates to the people (Otieno & Omwenga, 2015). It emerges therefore, that if public value must be at the heart of e-transformation, "the collective expectations, and the policies needed to accomplish [said] expectations, are complex in nature and not predefined" (Cordella & Bonina, 2012, p.519).

2.4.4 The place of e-government in e-transformation

Hanna (2010b, p.295) reasoned that e-government initiatives tend to disregard the soft but critical factors necessary for transformation including, policy change and process re-engineering which if integrated to ICTs increase benefits that would ameliorate the frequent failures of e-government projects. The present study does not endeavour to add another literature to the already overflowing fountain of substantial research written on e-government. It would be futile as much of the existing literature concentrates on technological rudiments and the challenges facing advanced economies and not understood in a developmental context (Hanna, 2010b, p.69). The late Ciborra (2005) reasoned that in the context of developing countries, understanding e-government is difficult if limited to among other things, only the technological features and called attention to the synergies

between actors involved in these initiatives. He contended that "implementation of efficient service delivery will lead at best to the point where a radical transformation is required to make the applications function, but [e-government initiatives] do not enable such changes *per se*: they presuppose them". Yong and Koon (2003, p.11) correspondingly asserted that e-government "is not just about technology, infrastructure…or human resources. It is all these areas (and more) combined and integrated" (pp.270-271).

e-Government must therefore be understood as a prong off the multi-factor digital transformation phenomenon and is thus hinged on broader policy framework otherwise it remains a veiled attempt "for superficial changes in public service delivery and not an instrument of sustainable transformation" (Hanna 2010b, pp.251, 282-283).

2.5 The Role of Policy in e-Transformation

Hanna and Summer (2014, pp.6, 84) advanced that sustainable transformation is hinged on enabling policies, leadership and institutions; what Hanna in earlier works calls the "soft infrastructure" of digital transformation. The authors caution countries against bypassing these soft infrastructures at the expense of the promises of new technologies. In fact, Hanna (2016a) asserts that shaped by vision and leadership, policies and institutions create the environment in which interaction among all other players in the e-transformation ecosystem are either enhanced or hindered (p.41).

Hanna and Knight (2012, pp.224-225) called for a long-term perspective of e-transformation that demanded building the soft infrastructure instead of focusing on the current craze or the "next best thing" citing an initiative like laptop for every child. The authors categorically state neglecting the latter leads to "proliferation of isolated, unsustainable ICT applications, with little scale, synergy, and impact on transformation". Consequentially, "a whole-of-government approach cannot be pursued, sequencing and phasing options are not considered, [and] cumulative institutional learning is aborted". Using Hanna's model while examining South Africa's state of e-development, Abrahams and Goldstuck (2012, pp.146, 148) argued against short-termist policies and called for "policy futurism" if the goals of e-transformation particularly in the services sector is to be realised.

A growing body of literature seems to favour thinking around what exactly drives digital transformation. The World Bank recently conceded that *digital revolution needs offline help to realise its potential* (The World Bank Group, 2016). The Bretton Wood institution contends that this will be manifested through non-technological factors that include implementing policies that provide an enabling environment for infrastructure

development; creation of services that encourage institutional collaboration for holistic service delivery in government; and effective public resource utilisation (World Bank, 2016b, pp.152, 203, 272-273). The report also suggests that "digital technologies amplify the impact of good (and bad) policies, so any failure to reform means falling farther behind those who do" (p.4). However, in an immediate review of this report, Hanna (2016b, paras. 10-13) suggested that the Internet was overtly painted to represent the whole ICT ecosystem neglecting other elements within the e-transformation space and their interactions; and the report failed the test in addressing the pivotal role of national digital transformation strategies and oversimplified the role of institutions and capacities necessary for effective transformation to take place. While Hanna's review is poignant, the World Bank's reasoning must strictly be confined to the context of its policy arguments which persuade the current study.

In their aptly-titled report, *Strategy, not technology, drives digital transformation*, Kane *et al* (2015, p.5) found that processes performed by digital access technologies do not lie in these technologies but rather, how they are integrated to ensure organisational transformation. They argue further that the leading position e-transformed organisations occupy squarely lies in their strategy and leadership to drive such transformation. A subtle way to understand their reasoning would be to argue that success of e-transformation lies in an organisation's ability to manage and monitor programmes across the organisation (Sharma, 2000, p.31).

2.5.1 Does policy drive government e-transformation?

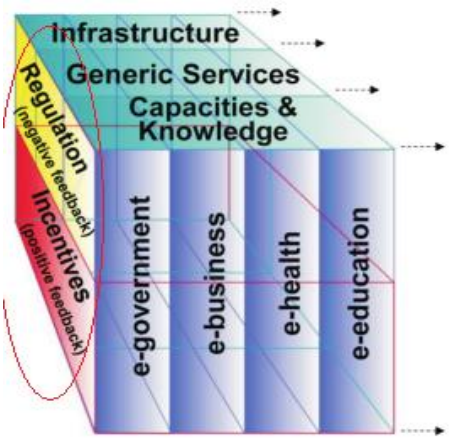
Failure of government programmes has been linked to a proclivity to emphasise ICTs as solutions in themselves (Gigler, 2014, p.33); public sector digital strategies lacking foresight to accommodate emerging ICTs or services with focus on digital technologies as a panacea to fix organisational problems instead of services – a focus detrimental to the citizen; and non-involvement of stakeholders in crafting said strategies (SQUIZ, n.d.). The Oxford dictionary defines a strategy as "a plan designed to achieve a particular long-term aim" (Oxford University Press, 2006, p.1425). In the context of government, one may argue that strategy is basically policy. An Australian publication (ACT Government, 2010, p.5) defines policy as "the strategic direction agreed by the government to address an identified issue" and a [programme] as the "initiative designed to implement the policy direction outlined" – definitions this study fully adopts.

Janowski (2015, p.233) when proposing a model for Digital Government Evolution argued such evolution is implemented in certain stages namely, digitisation, transformation,

engagement and, contextualisation. He encourages research on how these patterns are able to serve public policy needs in different national, local and sectoral contexts. Summer (2014) held that in ICT-driven transformation, public policy outlines the scope, rewards and subsistence of the gains a society expects to realise from such transformation; a view shared by Atkinson and Castro (2008) who stated that digital transformation must be prioritised in key public policy areas (p.12). In their quest to enact an e-Government Transformation Project Management Framework Sarantis, Charalabidis, and Askounis (2010, pp.118, 127), advanced the arguments for soft infrastructure when they state "transformation to e-government must be part of an overall strategy and policy of government reform…focus must be shifted to national strategies and public policy and to a perspective that strongly takes institutional innovation into account". The authors also argued that e-government is a complex system dependent upon multifaceted actors which include, mature institutions and regulatory/policy frameworks. However, its success is pegged on non-technical elements of its implementation. While this article raises salient points on e-government as a component within e-transformation, the proposed framework is more of a technical tool to assess progress of individual e-government projects. Nevertheless, an outstanding point from this literature is that transformation ought to be a strategic innovation and not just automation.

Hilbert's 2012 cube framework nearly captured all elements of e-transformation. However, the author conceded that the static nature of the framework limits it to a mere classification tool. The policy area (regulation and incentives) in particular, may not be relevant to the present study due to the scope limitations and must thus be disregarded. Luna-Reyes and Gil-Garcia (2014, p.554) argue that government transformation requires multiple actors to collaborate to sustain the momentum of such a process urging dynamism as a key to integration and quality services to citizens, a view contrasting Hilbert's framework.

Figure 14: Hilbert's cube framework



Source: Hilbert, 2012

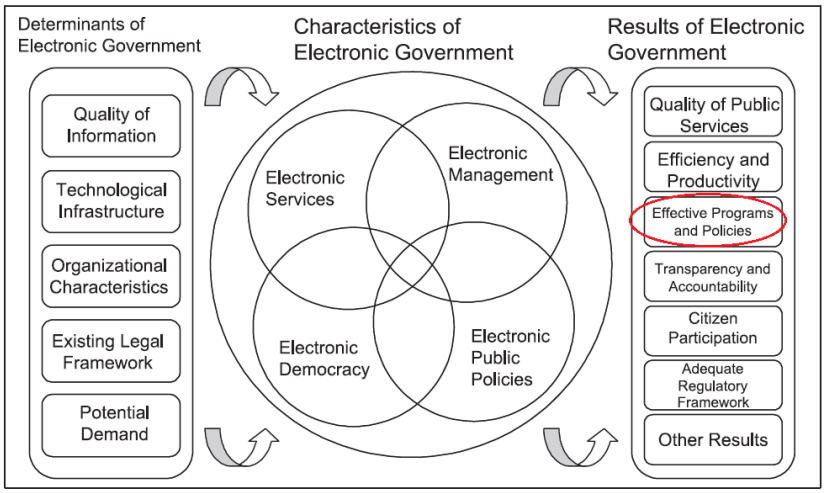
Although organised around e-government policy without emphasis on other constituents of e-transformation, a lot of merit is to be found in the work of Cordella and Iannacci (2010) which lessens the researcher's burden to establish the relationship between policy and ICTs when it contends that there's little written on the subject. The authors contend that existing literature has tended to lean towards the effects of ICTs thus downplaying the impacts broader policy would have on government transformation. This is evident even on a casual perusal of recent works that have attempted to study effects of the Huduma programme (Abdalla *et al*, 2015; Ng'aru & Wafula, 2015) and eCitizen (Ondego & Moturi, 2016). Building on Fountain's technology enactment framework, Cordella and Iannacci (2010, pp.53, 65) held that "policies shape the choice and design of ICT projects so that technologies become the carriers of the [digital transformation] policies and aims". They also stated that "…technology [e-transformation programme] should be conceived of as a carrier of long-lasting interests that are often outlived by those visions and values inscribed in extant e-government policies". From this argument, it emerges that outcomes of digital transformation efforts in government are shaped by policies.

With the benefit of literature, the schema of Hanna (2016a) is simplified and practical for this study. It is also clear that the content in other frameworks are contemplated in Hanna's work. While this study adopts Hanna's holistic framework, the only point of departure is isolating policy as an offshoot of the e-transformation ecosystem, and elevating it to a status of the driver of digital transformation in the context of government. The burden now lies in demonstrating how and whether it intersperses with other elements of the digital transformation ecosystem. Only on this basis would one be able to assess its effectiveness as demonstrated in the next section.

2.5.2 The politics of policy effectiveness

Luna-Reyes, Gil-Garcia and Romero (2012) attempted to model a multifaceted framework to comprehensively evaluate e-government. Their framework, albeit holistic, poses complexities in understanding phenomena such as digital transformation. For example, the results e-government anticipates in their framework is effective policies and programmes as shown in Figure 15. Yet, the current study is concerned with how effective those policies are on e-transformation initiatives. This suggests there is a difficulty in evaluating ICTs.

Figure 15: A framework for measuring e-government



Source: Luna-Reyes, Gil-Garcia and Romero, 2012, p.326

Heeks (2006, p.258) opined such difficulty in form of time, money and loss of interest. He however argued that occasions may arise where evaluation is possible and advises the need to go back to the set objectives. In the digital transformation space, this would be policy. Yet, in a study that investigated factors that affect successful implementation of government ICT projects, Gichoya (2005) argued that ICT policy inhibits implementation of these projects despite an earlier assertion of vision and strategy as success factors (pp.179-180). This seems contradictory since the latter – in light of elements of digital transformation – are ascribed in policy. Baqir, Palvia, and Nemati (2009) conversely identify policy design-actuality gaps and reiterate that they "are opportunities that developing countries can capitalize on for an increased role of ICT in reducing ambiguities in government and business transactions with citizens and customers" (Baqir *et al*., 2009); sentiments affirmed by Njuru (2011, p.15) in an intricate cause and effect argument when he implicitly suggests that e-transformation environments such as e-government have a bearing on public policy to yield results which include increased efficiency and effectiveness.

Gil-Garcia's 2012 (pp. 17, 20) work on e-government argued its success should be related to the attainment of goals and objectives, be it service provision or "the improvement of managerial effectiveness (including efficiency)". The author nonetheless cautioned that, in the public sector environment, success measures should supersede efficiency and cost savings to include *inter alia* policy and programme effectiveness as an outcome. In their work on understanding failures and successes in public policy, Bovens, Hart and Peters (as cited in Brändström and Kuipers, 2003, p.280) argued that efficiency and effectiveness are the variables used to assess public policy in the context of a programme or instrument.

Cascading across literature is that to ascertain policy effectiveness, there is need to deviate from evaluating policy on its own as it is associated with something that makes it live up to its objectives (Pinter *et al*., n.d., pp.52-53; Potter & Harries, 2006, p.843). In our case, this would be including the digital transformation initiative or programme. Kakabadse, Abdulla, Abouchakra, and Jawad (2011, pp.8-9) contended that transformative initiatives in government are usually viewed in isolation rather than building blocks of a coherent national vision yet "initiatives only work if they are sewn into a broader transformational canvas". Dzidonu (2002), argued that the success of a national ICT strategy relies on the coordination and interweaving of the players involved such as, infrastructure, human capacity, content and applications, enterprise and policy aspects that are agreeably captured in Hanna's model. A congruent reasoning by Dzidonu (2002, pp.5-7) was:

> If African countries are to achieve rapid and radical social and economic transformation in the new information age, they will need to implement comprehensive ICT-led socio-economic development policies, strategies and plans…it will not be enough for [them] to implement a number of isolated ICT projects and programmes or sectoral policies that are not tied to their overall socio-economic development strategy.

Smith (1973, p.199) decried the situation that bedevil third world countries as a result of creating ambitious policies and sweeping programmes intended to transform them yet lack capacity to implement. The author blamed this scenario to graft, lack of skilled human resources, inadequate leadership, and opposition to the said policy. Smith's sentiments coincide with Melody (1996, pp.258-259) who confirmed the obsession by organisations including governments to churn out highly ambitious vision statements yet advantages lie in realistic policies that would direct ICTs towards attaining specific societal needs and priorities of the institutions applying them. A cogent argument he made was that the socio-economic efficiency of initiatives must be demand-led, and not supply forced. These observations however dated, cannot be wished away. Heeks' (2002, pp.101-102) study on information system failure in developing countries underscored the absence of evaluation as a cause to such failure. He further stated that those usually willing to evaluate are incapacitated due to lack of resources whereas those empowered with resources are deprived of the willpower to evaluate.

There's a near consensus to the meaning ascribed to public policy effectiveness: Nagel (1986) reasoned it as the extent to which policy achieves its intended benefits plus any unanticipated ones (p.99); or the extent to which a policy achieves its set goals (Lubell, 2003; Rossell, 1993). Contending that a policy or programme may be evaluated in terms of

effectiveness and efficiency, Bemelmans-Videc (1998, p.7) suggested effectiveness as the degree of goal realisation due to the use of certain policy instruments whose pros and cons must be taken into consideration when evaluating the effects. Briefly revisiting the assertions made earlier in favour of policy futurism, Rush, Bessant, and Lees (2004, pp.330, 338) made a compelling argument that long-term effectiveness as an element of policy evaluation is difficult to measure owing to the time it takes to evolve; and in a government environment only two questions should be asked to assess effectiveness: Was it the right thing to do and, was it done well? To answer the latter, they arrive at the same finding not so long ago in this section, you need a project or programme to fall back on. The authors even argue for "real-time monitoring and adaptation of programmes while they are actually running". The researcher appreciates the strength of the arguments in this work as it nearly unravels the straitjacket currently under investigation. However, the authors unfortunately fail to provide a framework that would depict such an interaction.

Boyne (2003, pp.213-214) argued that the effectiveness debate lacks vigour and tends to be focused on success or failure of single organisations when modern policy debates are service-focused. Heeks (2002, pp.101-102; 2005, p.52) broadly categorised failure of ICT-led initiatives as: (a) Total failure, where the initiative was never implemented or if implemented was immediately abandoned; (b) partial failure, where major goals for the initiative were not attained and/or there were significant undesirable outcomes and, (c) success, where majority of stakeholders attained their major goals and did not experience significant undesirable outcomes. It is not surprising that Boyne's argument is partly refuted by Marsh and McConnell (2010a, pp.567-568, 581) who contested it as too focused on performance improvement effectively ignoring other forms of success. On the basis of this literature it is conceivable that the concept of effectiveness and success are intertwined.

Yet, while talk abounds on policy success, there is apparently little written on it creating a lacuna in terms of a framework to understand its various related and complex issues (McConnell, 2010a). While Marsh and McConnell (2010a) recognised that policy success is largely an uncharted research territory, they argued that their work was only empirical and not a model framework. Such an argument is modest since by identifying indicators in relation to programmatic success whose excerpt is provided in Table 5 below, they effectively offer the much-needed scintilla on a fitting framework based on foregoing arguments in this report.

Table 5: Programme dimension of policy success

Indicators	Evidence
• Implemented as per objectives • Achieved intended outcomes	Internal programme/policy evaluation, external evaluation e.g. stakeholder review
• Efficient use of resources	Internal efficiency evaluations, external audit reports/assessments, absence of critical media reports etc.
• Implementation benefits intended actors	Political speeches, parliamentary committee reports, ministerial briefings, interest groups/stakeholders' speeches, pressers, media commentary, think tank reports etc.

Source: Marsh and McConnell, 2010a, p.571

Bovens (2010) commending the work by Marsh and McConnell as innovative in the area of public policy argued that in place of the unilateral concept of dimension, a distinction ought to be made between the locus and the focus, what is simply the object and the perspective in policy evaluation respectively. However, in a brief rejoinder to Bovens, Marsh and McConnell (2010b, p.586) contended that such focus would drown the "elegant simplicity in terms of what forms of success can exist and/or be constructed". In a later article that sought to build on his work with Marsh and address the above concerns by Bovens, McConnell (2010b, pp.351, 356) once again alludes to the absence of an overarching framework that would support scholarship beyond the rhetoric of success and failure by reflecting on the concept of public value; and in sentiments consistent with the works of Heeks, defined policy success as when it "achieves the goals that proponents set out to achieve and attracts no criticism of any significance and/or support is virtually universal" [and vice versa if talking about the opposite]. To evaluate policy as a programme, McConnell proposed a five-pronged spectrum viz. objectives, outcomes, benefit, policy domain criteria and opposition as illustrated in Table 6 below.

McConnell (2010b, p.357) further states that policy outcomes are usually not tidy and require judgment rather than scientific precision. Such an exercise would therefore involve exhaustively examining say, a selected digital transformation programme against selected policy instruments then scoring the programme based on the proposed parameters to determine the level of success. He also looks into how programmes ought to be considered vis-à-vis politics. However, the process and politics strands of policy fall outside the province of the present study due to scope limitations.

Table 6: McConnell's policy-as-a-programme ranges from success to failure

Parameters	Program Success	Resilient Success	Conflicted Success	Precarious Success	Program Failure
Goals	Implemented in line with objectives.	Broadly achieved despite minor refinements or deviations.	Mixed results with some successes but accompanied with unexpected controversial problems.	Minor progress towards implementation as intended, but beset by chronic failures, proving highly controversial and very difficult to defend.	Implementation fails to be executed in line with objectives.
Outcomes	Achieved.	Broadly achieved despite some shortfalls.	Some successes, but the partial achievement counterbalanced by unwanted results, generating substantial controversy.	Some small outcomes achieved as intended, but overwhelmed by controversial and high profile instances or failure to produce results.	Failure to achieve desired outcomes.
Benefit (Public Value)	Creates benefit for a target group.	A few shortfalls and possibly some anomalous cases, but intended target group broadly benefits.	Partial benefits realised, but not as widespread or deep as intended.	Small benefits are accompanied and overshadowed by damage to the very group that was meant to benefit. Also likely to generate high profile stories of unfairness and suffering.	Damaging a particular target group.
Policy Domain Criteria	Meets policy domain criteria.	Not quite the outcome desired, but close enough to lay strong claim to fulfilling the criteria.	Partial achievement of goals, but accompanied by failures to achieve, with possibility of high profile examples e.g. ongoing wastage when the criterion is efficiency.	A few minor successes, but plagued by unwanted media attention e.g. examples of wastage and possible scandal when the criterion is efficiency.	Clear inability to meet the criteria.
Opposition	Virtually absent and/or support is virtually universal.	Stronger than expected, but outweighed by support.	Equally balanced with support for same.	Outweighs small levels of support.	Virtually universal, and/or support is virtually non-existent.

Adapted from: McConnell, 2010b, p.354

It follows therefore that McConnell's work, confined to policy as a programme, appears to be the most relevant to answer the question on policy effectiveness.

2.6 A Framework for Policy Effectiveness on e-Transformation

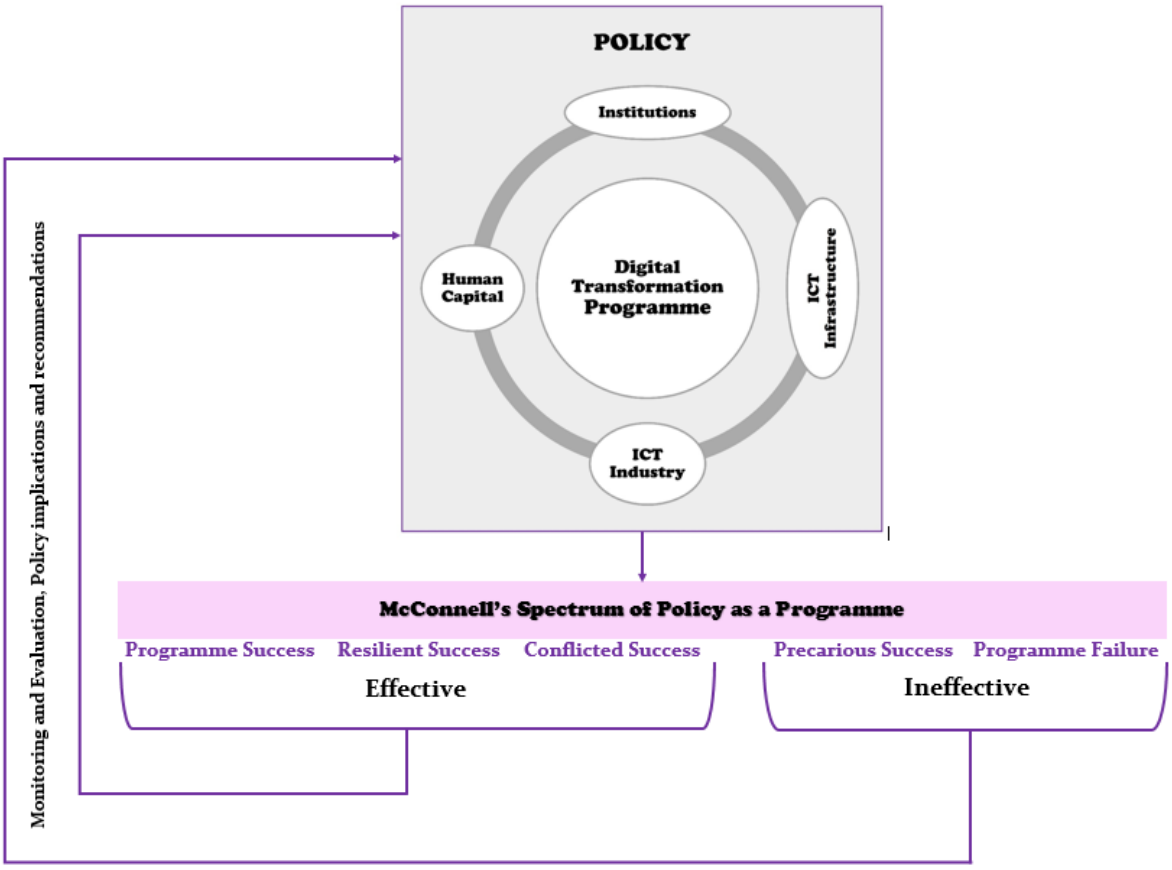
Munyoka and Manzira (2013, p.1761) implored policy makers in developing countries in the SSA region to put in place measures for constant monitoring and evaluation of e-government policies and implemented projects to ensure such projects are fully realised instead of "[dying] mid-way into implementation". However, their study also failed to provide a framework that could fill the gap on such a strategic alignment. The significance of such a framework cannot be understated. Abrahams and Burke (2012, p.6) posit that monitoring and evaluation frameworks offer value for integrative leadership that "can identify obstacles, gaps and failures and push forward decision-making that enables sustainable transformation". Policy is a product of such leadership due to its power to anticipate events, provoke conversation but in principal, is its authority to cause changes in its environment (Bohn, 2001, p.29). Such a framework would provide ontological and epistemological realism to the multifaceted subject that is e-transformation (McConnell, 2010b).

The upshot of the foregoing is that all the frameworks alluded to in this chapter have some value for, but may not independently deliver the objectives of this study. In order to fill the research gap, the researcher is inclined to combine Hanna's digital transformation and McConnell's policy-as-a-programme frameworks. Hanna's framework roundly embraces the lucid arguments in the other frameworks whereas McConnell's framework, as already demonstrated, meets the threshold to ascertain the effectiveness of policy as a key element in Hanna's framework. A précis of this review is illustrated in Figure 16.

From the diagram, in order to appreciate the role of policy on e-transformation there is need to look at the programme the said policy envisages, creates or supports. For instance, Kenya's Vision 2030 vis-à-vis Huduma. The programme must be backed up by institutions mandated to oversee it for its authenticity. It must also be supported by skilled human resources and stakeholders. What is the use of digital transformation if there are no users or actors to support it? It should also be anchored on available ICT infrastructure for example, the terrestrial backbone. If these interdependent elements are all present, there is an assurance of optimal performance as proposed by Hanna. Thereafter, subject the e-transformation programme in question to McConnell's policy-as-a-programme spectrum. Depending on the scores we give Huduma guided by parameters in Table 6, it is possible to

deduce effectiveness or its contrary drawing implications to make recommendations on policy.

Figure 16: A framework for effectiveness of public policy on e-transformation in government



Adapted from: Hanna, 2016a; McConnell, 2010b

2.7 Chapter Summary

It is well established that human capital, stakeholder involvement, ICT infrastructure and institutions are key themes that must not escape scholarship on e-transformation. This study argues that policy, though a constituent in the e-transformation ecosystem; drives such transformation in the government environment to yield public value. In subsequent sections of this report, particularly Chapters 4 and 5, these themes will be apparent based on the findings. The above framework was thus useful in examining a selected e-transformation programme in national government, so as to prove whether it has a bearing (or not) on the effectiveness of Kenya's policy environment.

Chapter Three: A Qualitative Case Study Methodology for e-Transformation

Having identified themes that demystify e-transformation; a research design will structure these themes in order to obtain accurate data that tackle the research problem. This chapter presents a discussion on the case study methodology adopted for this study by outlining the study's philosophical leanings; data collection methods, instruments, and sampling techniques the researcher deployed to obtain and analyse research evidence for an interpretation that befits the conceptual framework.

3.1 Research Questions

This study sought to answer the question: How effectively has public policy contributed to the implementation of digital transformation programmes at the national level of government in Kenya? In order to answer this question, the study posed three sub-questions:

i. How is government digital transformation characterised in Kenya's public policy environment?
ii. What elements of policy enable or inadvertently create barriers to e-transformation in government?
iii. How should existing digital transformation policies in Kenya be strengthened to ensure their effectiveness?

3.2 Philosophical Foundations of Case Study Inquiry

Creswell and Piano Clark (2007) suggest that any research must have a solid foundation for its inquiry to demonstrate the inherent worldview researchers bring to their studies. A worldview or paradigm is a researcher's assumptions about reality and knowledge production, and the methods of acquiring such knowledge (p.21). Due to their usefulness in understanding complex subjects such as e-transformation, this research adopted constructivist and interpretivist approaches to inquiry. Constructivism is "understanding of phenomena through participants' subjective views shaped by their social interactions and personal histories" (Creswell & Piano Clark, 2007, p.22); effectively providing understanding of various realities and emboldening closeness between the researcher and that which is being researched. Neuman (2007, pp.43-44) contends that the interpretivist approach is a methodological paradigm that focuses on people's ideas, beliefs, and perceptions of reality. He asserts, "people socially interact and respond based on what they believe to be real [rather] than what is objectively real" thus providing the researcher

with the opportunity to enter the world of his or her subjects and seek understanding *(verstehen)* of those personal perspectives. Miller and Brewer (2003, p.93) argue that such understanding is achieved by looking at all aspects of a phenomenon to understand how they interrelate to form a whole, in addition to the understandings or meanings of the people involved.

In this study, the researcher combines constructivist (key informant interviews and focused interviews) and interpretivist (personal on-site observation and document review) paradigms of inquiry, not only as the foundation for qualitative research (Ponterotto, 2005, p.129); but also because they enable the researcher to shape the study by organising diverse data sets into broad patterns that can lead to analysis and conclusions. These approaches are applicable to understanding digital transformation, based on the ways in which policy artefacts and key informants constructed the reality of such transformation, while the researcher interpreted this data. Key elements of this paradigm are summarised in Table 7 below.

Table 7: Constructivist-interpretivist elements in an e-transformation study

Ontology (Form and nature of Reality)	**Multiple and constructed:** Researcher obtained diverse perspectives drawn from individuals' experience and perceptions about e-transformation.
Epistemology (Relationship between the researcher and inquiry)	**Close:** Researcher interacted with participants at their sites, captured and described their "lived experience" (*Erlebnis*).
Axiology (Role of values)	**Biased:** Researcher's lived experience and/or background was not ignored while interpreting data.
Methodology (Process and research procedures)	**Inductive:** Researcher organised participants' views into patterns, theories and generalisations.
Rhetoric (Language of Research)	Researcher writes in a literary, personalised style.
Theoretical perspective	Interpretivist.

Adapted from: Creswell and Piano Clark, 2007, pp.24-25; Ponterotto, 2005, pp.130-132

3.3 Designing a Strategy of Inquiry in Qualitative Research

This study was qualitative as it sought to examine and interpret the meanings individuals assign to e-transformation as a phenomenon, data that cannot be easily captured in numbers (Anderson, 2010). Creswell (2009, pp.11, 13, 177) contends that researchers must also decide on a type of study within this choice of research including, case studies, for cases where a researcher seeks to comprehend processes, activities and events.

3.3.1 A case study design

Labuschagne (2003) contends that in order to obtain data in the form of feelings, experiences, opinions, descriptions and interactions of a phenomena, a researcher must actively participate through methods such as in-depth, open-ended interviews, direct observation, and perusal of documents. Data obtained from these methods are thereafter organised into themes, categories and cases (p.101). Gagnon (2010) suggests that a case study method is the most appropriate design to deploy in order to obtain in-depth data about a phenomenon, its constitutive processes and players involved. Gagnon also recognises constructivism as the paradigm available to case study researchers in their quest to understand complexity of social systems (pp.2-3, 13).

A case study is "an empirical inquiry that investigates a phenomenon in depth and within its real-life context especially when the boundaries between the phenomenon are not clearly evident" (Yin, 2003, p.13; 2009, p.18). Stake (1995) argued a case to be a bounded system with parts that work together, sentiments consistent with those of Yin who contends that case studies are unique to environments where there are multifaceted variables of interest and consequentially reliance on multiplicity of sources to obtain data (2003, p.14). A case study was therefore the most appropriate design for this study as it addresses the issue of the multifaceted nature of policy and digital transformation.

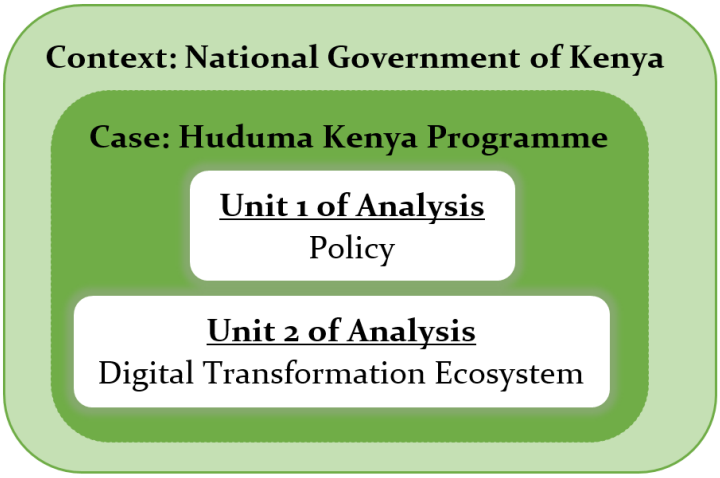
Particular attention was paid to the Huduma programme, a government initiative selected as a case due to availability of access to potential data and its ability to illuminate the research questions (Yin, 2009, p.26). Another argument that favoured a case study approach in this study is (as outlined above) its strength in accommodating a multiplicity of evidence. Noting the perspectives of Stake (1994, p.237), Huduma as a case is also instrumental. In instrumental case studies, "the case is often looked at in depth, its contexts scrutinised and its ordinary activities detailed" with the aim of assisting the inquirer pursue an external interest. Thus, investigating Huduma played a supportive role to facilitate broader understanding of how digital transformation efforts in Kenya intersect with her public policies.

3.3.1.1 Embedding a single case study.

A single case study design was adopted due to its suitability in among other things, testing theory and representativeness as the lessons can be assumed to be informative about the experiences of an e-transformation programme in public service environments. The case study was also embedded as shown in Figure 17. This means, the researcher investigated more than one unit of analysis. The exercise of analysing these sub-units cannot be gainsaid

as they provide opportunity for a richer analysis that enhances insight into the whole case. The researcher was however cognisant of the pitfalls in this design particularly the likelihood failing to return to the larger unit of analysis (Yin, 2003, pp.39-45; 2009, pp.46-52).

Figure 17: Embedded single-case study design



Adapted from: Yin, 2009, p.46

3.3.2 Methods and sources of case study evidence

In an interpretivist research approach, interviews, observations, focus groups and documentary analyses enable a researcher to cull evidence of how people interpret and react to their environments (Fisher, 2010 p.188). Deploying such an array of methods in collecting data strengthens research findings and as a result, triangulated evidence. Triangulation, a term coined by Denzin in 1978, refers to use of multiple methods to collect data (Mouton, 1996, p.156). Farquhar (2012) argues triangulation is a crucial concept in case study research as it ensures investigating a phenomenon such as digital transformation from different perspectives yields a solid foundation for the findings and supports arguments for its contribution to theory. The data collection methods used in this study are discussed below.

3.3.2.1 Document analysis.

Bowen (2009, p.27) asserts document analysis as a logical process where documents are examined or evaluated to obtain data for purposes of interpretation to elicit meaning, promote understanding and develop knowledge. Labuschagne (2003, p.101) suggested document analysis yields data that are organised into themes. Document analysis as already mentioned, if used in concert with other qualitative research methods, provides a confluence of triangulated evidence to enhance research credibility. Documents also provide a background into the phenomenon being researched, suggest questions that need to be asked,

point to situations that need to be observed, track change and development, and verify findings from other sources (Bowen, 2009, pp.29-30). Blaxter *et al* (2010, pp.74, 186, 191) propose reliance on several documents including those that have a policy focus. They however caution a researcher to be aware of issues such as conditions and time it was made. In this study, 18 documents with a national policy focus on e-transformation, as shown in Table 8, were analysed to generate data on themes identified study's framework.

Table 8: Policy documents reviewed

Document	Year	Source (s)
1. Economic Recovery Strategy for Wealth and Employment Creation	2003	Ministry of Planning and National Development
a) End Term Review of the ERS	2009	"
2. E-Government Strategy: The Strategic Framework, Administrative Structure, Training Requirements and Standardization Framework	2004	Cabinet Office: Office of the President
3. National Information & Communications Technology (ICT) Policy	2006	Ministry of Information and Communications
4. Kenya Vision 2030	2007	Government of the Republic of Kenya
a) First Medium Term Plan, 2008 – 2012	2008	"
b) Second Medium Term Plan, 2013 – 2017	2013	"
c) End Term Review of The First Medium Term Plan (2008-2012)	2014	Monitoring and Evaluation Department, Ministry of Devolution & Planning
d) First Annual Progress Report 2013 - 2014 on the Implementation of the Second Medium Term Plan (2013-2017)	2015	"
5. Transforming Kenya, Securing Kenya's Prosperity 2013 - 2017: The Shared Manifesto of the [Jubilee Coalition]	2013	The Jubilee Coalition
6. The National Broadband Strategy: A Vision 2030 Flagship Project	2013	Ministry of ICT, Communication Commission of Kenya
7. Connected Kenya: 2017 Master Plan	2013	Kenya ICT Board
8. The Kenya National ICT Masterplan 2013/14 - 2017/18	2014	ICT Authority
9. National Cybersecurity Strategy	2014	Kenya's Ministry of ICT
10. National ICT Policy (Draft)	2016	Kenya's Ministry of ICT
11. Annual Reports on Measures Taken and Progress Achieved in the Realisation of National Values and Principles of Governance	2013 2014 2015	The Presidency Republic of Kenya The Executive Office of the President

Source: Author, 2016

3.3.2.2 Participant and non-participant observation.

Observation serves a formulated research purpose when it is systematically planned, recorded and subject to controls on validity and reliability (Kothari, 2004, pp.96-97). Despite being time-consuming and producing limited data, the author contends that observation minimises subjective bias if properly executed; and, the data obtained from this method relates to what is actually happening, past behaviour, attitudes, or future intentions notwithstanding. In the current study, observation was conducted at the Huduma City Square Centre in Nairobi's Central Business District for five days to ascertain customer experience as an integral theme in e-transformation. When commencing the observation, the researcher was a detached observer not sharing in the life of those being observed (disguised or non-participant observation). However, during the actual exercise, the researcher found it necessary to participate in the observation so as to experience certain elements of what citizens went through in their interaction with the service and clarify a statement that arose from an interview with the site manager. On the third day of observation, the researcher also ran into an old colleague who works at the said site. This was a magnanimous individual who explained certain aspects of the Huduma programme a disinterested approach would not have yielded. Participant observation was also conducted at Huduma's network operations centre.

3.3.2.3 Interviews.

Constructivist and interpretivist paradigms anticipate a researcher's interaction with people to understand a phenomenon. Yin (2009, pp.106-107) suggests the interview is one of the most important sources of case study information that should be a guided conversation rather than structured questions; and in case studies, it must satisfy the needs of the researcher's line of enquiry as a friendly and non-threatening process. Creswell (2009, p.181) contends that in qualitative research, the researcher may conduct face-to-face interviews with participants, engage in focus group interviews or interview participants over the telephone using unstructured and open-ended questions to elicit their views and opinions. These are methods that were deployed in the present study and are described hereunder. The focus group discussants highlighted, inter alia, public value of e-transformation programmes as contemplated in literature whereas the experts shed light on what is happening on the ground regarding the elements of digital transformation and the policy instruments the researcher reviewed.

A. In-depth interview.

In this type of interview, the researcher's goal was to obtain information from respondents regarding the facts of a phenomenon and if necessary, their proposals into certain occurrences that could be used for further enquiry or suggestions on other potential data sources. Such roles make an interviewee an informant rather than a respondent (Yin, 2009). An informant is a person well-versed in the phenomenon being researched and is willing to share such information with the researcher (Babbie, 2010, p.195). In this study, data on Huduma was collected through in-depth interviews with individuals handling the e-transformation programme. Further insight on the policy documents identified earlier was sought and obtained through in-depth interviews with key informants drawn from institutions involved in, or close to, the processes of public policy and e-transformation implementation.

B. Focus group interviews.

In this type of interview, the researcher interviews a group of six or more informants, for a short time, following a certain set of questions, to collect data based on a group perspective, rather than an individual perspective, as the group may highlight unknown data. A focus group discussion, which is a structured and focused discussion on a precise topic of interest, with a small group people to obtain qualitative data (Masadeh, 2012) was conducted in this study. Dilshad and Latif (2013, pp.193-197) assert that a focus group involves a homogenous group (usually between six and nine) brought together by a researcher to explore attitudes, perceptions and ideas about a given topic and is useful in studies that relate to the improvement and evaluation of programmes. Frankfort-Nachmias and Nachmias (1992, p.224) suggested that a focus group interview is appropriate where respondents' involvement in a particular experience is known; situations have been analysed prior to the interviews; proceeds on the basis of an interview guide; and focus is on the subjects' experiences regarding the situation being studied. Yin (2009) suggests that the researcher must carefully word questions so as to "appear genuinely naïve about the topic and allow the interviewee to provide a fresh commentary about it" (p.107).
The researcher recruited 20 citizens at the Huduma Centre for this purpose by giving them a flyer that communicated among other things, incentives to attend **(Annexure 1)**; and a participant information sheet **(Annexure 2a)**. The researcher also obtained their telephone contacts for follow-up.

Masadeh (2012) recommends the selection of a site accessible and convenient to all participants devoid of noise and disturbances (p.66). The researcher obtained permission to

use space within Kenya's Supreme Court building that enjoys proximity to the City Square Huduma Centre. On the material day, of the 20 invited, seven participated in the focus group that was moderated by a designated facilitator. This was to reduce bias (Morgan's 1988 work as cited in Masadeh, 2012) of the researcher, who had concluded the observations earlier that week.

C. Telephone interviews.

Carr and Worth (2001, pp.516, 518) argued that the telephone interview is appropriate in qualitative researches where previous contact with the participants can be demonstrated. In this study, using the same protocol administered for the focus group **(Annexure 3)**, telephone interviews were conducted with six participants who had been recruited at the Huduma site for the focus group but could not turn up yet had conveyed an interest not to be excluded from the study. The researcher simply reiterated contents of the participant information sheet prior to starting the interview and deemed a participant's verbal agreement as consent.

3.3.3 Sampling design

In qualitative research, a researcher intentionally identifies a number of participants to provide in-depth information regarding the phenomenon being studied due to their experience (Creswell & Piano Clark, 2007). Such a handpicked strategy is what various writers call purposive, judgmental, selective or subjective sampling (Babbie, 2010; Frankfort-Nachmias & Nachmias, 1992; Kothari, 2004; Lund Research Ltd. [LRL], 2012). As an offshoot of non-probability sampling, purposive sampling prescribes that the chance of a sampling unit being selected relies on the subjective judgment of the researcher (Babbie, 2010, p.193; Frankfort-Nachmias & Nachmias, 1992, p.175). In the current study, purposive sampling was used across populations that possessed the required information to meet the objectives of this study (Mugenda, 2008, p.196). These were namely: Documents and key informants. LRL (2012) suggests certain elements that are of significance in sampling: (i) Population, which is the units being studied (e.g. people, cases, pieces of data etc.); (ii) sample, which is the particular selection as it is impractical to study an entire population; (iii) sample size, which is the number of units; (iv) sampling frame, which is the population from which the sample is drawn; and (v) sampling techniques, in our case non-probability sampling. Use of purposive sampling as suggested by this article, ensures that research focuses on particular aspects of a population that best assist a researcher to answer the research questions.

An advantage of purposive sampling is that it can be further divided into an array of sampling techniques. Of interest to this study were three: (a) Homogenous sampling which requires similarity in characteristics of the units. The researcher used this technique to select the focus group participants who had utilised Huduma; (b) extreme or deviant case sampling, where focus is on a case that is special or unusual, to highlight a notable outcome, failure and success. Lessons from such a sample are usually used as a yardstick for future research and practice. Huduma was selected as an extreme or deviant sample as it exhibits aspects absent in most government e-transformation initiatives. As the findings will later demonstrate, such peculiarities in its features could be imported to advance other government e-transformation programmes; and (c) expert sampling, where the researcher gleans from individuals who possess a particular expertise in form of wide and deep knowledge of the area of interest (Mugenda, 2008, p.198). It is on this basis that the 14 key informants were selected.

Despite its inherent risk of bias (Kothari, 2004, p.59) purposive sampling was used in this study as it provides a rich platform to draw on, including making generalisations (LRL, 2012), sentiments consistent with Johansson (2003, p.8) who argued that if a case is purposefully selected then there is an interest in generalising its findings. Table 9 summarises the sampling strategy in this study.

Table 9: An e-transformation study non-probability sampling design

Population	Sampling Units	Sample	Sampling Frame	Sample Size	Purposive Sampling Technique
People	Key Informants	Huduma users who have used NHIF, NSSF, ID Replacement and registration of business name	20	13	Homogenous
		Experts on e-transformation or policy	20	14	Expert
Cases (Organisations, programmes etc.)	National Government Ministries	Ministry of Public Service, Youth & Gender Affairs	21	1	Extreme/ Deviant
	e-Transformation Initiatives	Huduma Kenya Programme	N/A	1	Extreme/ Deviant
Pieces of Data	Documents	Policy documents	18	18	Homogenous

Adapted from: Lund Research Ltd. [LRL] 2012

In summary, the researcher interviewed 27 key informants, and reviewed 18 policy documents.

3.3.4 Quality assurance in case study research

To build rigour in qualitative research, a researcher must examine data for reliability (reproduction of the findings) and validity (findings being an accurate representation of the phenomenon they are intended to represent) (Anderson, 2010, p.2).

3.3.4.1 Reliability and validity.

Yin (2009, pp.40-45) contends that empirical social research such as case studies require four tests that enhance the quality of the research design: (i) Construct validity, a tactic at the data collection stage where the researcher identifies correct operational measures for the study concepts by using multiple sources of evidence, establishes a chain of evidence and having key informants review the case study report. To address construct validity, the researcher deployed triangulation (i.e. document review, interviews, observation) and asked study participants similar questions; (ii) internal validity, a method at the data analysis stage, to establish causal relationships through matching patterns, building explanation and addressing opposing accounts. The researcher addressed internal validity through limiting researcher bias (i.e. data interpretation was shaped by the researcher's familiarity in the context of Kenya's government) by presentation of counter-arguments to the themes; (iii) external validity, a tactic at the research design stage that defines the extent to which findings can be generalised. The researcher satisfied external validity using thick description when presenting the findings to give a potential reader of this report a feel of the researcher's lived experience (Creswell, 2009, pp.190-192); and (iv) reliability, a process at the data collection stage, whose emphasis is on documenting procedures that would enable a researcher conducting the same study reach similar findings. In this study, the researcher administered observation protocol, focus group, and interview protocols when interacting with study participants.

3.3.4.2 Generalisation.

Considering the arguments made in the research problem regarding a tendency for e-transformation programmes to fail, a cogent position on the generalisation debate was of immediate relevance. On external validity, Yin (2009, pp.43-44) alludes to criticism for single case studies as a basis for generalising making the test a barrier in case study research. He further states that generalisation is not automatic and needs theory testing in additional cases through replication. Despite citing a raft of literature that paradoxically oppose emphasising generalisation in any research, Stake (1994, p.238) argued that while case studies may be a step toward generalisation, researchers should not neglect important features that would illuminate the selected case in their strong quest to generalise or create theory. Acknowledging that literature tends to vary, dismiss or ignore generalisation, Lewis

and Ritchie (2003, pp.268-269) held that qualitative research is generalisable in three contexts:

(i) representational, which is whether the findings in a research sample can be held to be equally true of the population it was obtained. The researcher considered whether the views, experiences, behaviours and outcomes of Huduma would be found in the parent population (other transformational initiatives in national government);

(ii) inferential generalisation, which is concerned with whether the findings in a study can be generalised to other setings or contexts beyond the sampled one. This type of generalisation is a matter of judgment with the role of researcher providing a thick description of the researched context and findings that allow for later researchers to assess its transferability to another context; and

(iii) theoretical generalisation, where conclusions from a single study can be used to develop a wider theory for general and/or universal application.

Heeks (2002, p.102) study on failure of information systems in developing countries found that though robust, literature on the subject tended to be too focused on case studies of individual projects. The current study does not intend to take this idiosyncratic approach. Despite the suggestion by Yin (2009, p.15) that generalisation must rest within the confines of theory and not populations; the reasoning of Lewis and Ritchie (2003) must be upheld as resounding enough to conclude that the huduma case study can be generalised not only to other e-transformation programmes in Kenya's government but also other ministries or institutions within government (contexts). Besides, Flyvbjerg (2006, p.225) disproved claims that one cannot generalise from a single case arguing it depends upon the particulars of the case and how it is selected.

3.3.4.3 Originality, role of variables and theory.

In addition to the above three approaches, originality is a key quality assurance measure in scholarly research. Cryer (2006) lists eight areas where originality in research may be found: Tools, techniques and procedures; exploring the unknown; exploring the unanticipated; data; by-products; the research experience; potential for publication; and transfer of mode or place of use. The researcher will revisit this section in Chapter 6 of this report when reflecting on this study's originality.

While policy is set as the independent variable and the success of digital transformation initiatives is set as the dependent variable, in this study, the dependent and independent variables suggest a causal relationship, though this is not considered as a precise causality, given that this is a qualitative enquiry and there are many other variables

influencing the dependent variable (Frankfort-Nachmias & Nachmias, 1992, p.55; Blaxter, Hughes, & Tight, 2010, p.61). In other words, the study considers the causal nature of the relationship between policy and implementation of digital transformation.

Due to the public value nature of e-transformation programmes, this study is anchored in social theory exploring digital transformation in the relationship between government and society.

3.4 Recording Data

For the document review, the researcher highlighted themes based on the conceptual framework. The researcher having defined the units to be observed, the style of recording the observed data, standardised conditions and selection of certain data to be observed in advance, made the observation structured (Kothari, 2004, p.96). The process was recorded using an observation protocol **(Annexure 4)**, which is a useful instrument to organise an observation (Creswell & Piano Clark, 2007, p.115). Data from the expert key informants was aided by an interview guide **(Annexure 5).** Out of 14 interviews with these informants, 11 were audio recorded and this data transcribed by the researcher to supplement the notes taken in the other three interview sessions. For the focus group, the facilitator was guided by a focus group discussion protocol **(Annexure 3)**. The session was also audio recorded and the data transcribed for presentation. The six telephone interviews were also administered using Annexure 3. Five telephone interviewees consented to audio recording for accuracy purposes after being assured by the researcher that the interview recording would be held in confidence and their identity anonymised in the research report (Burke & Miller, 2001, para.13-14).

3.5 Data Analysis

3.5.1 Thematic analysis

Though nearly similar to content analysis that organises data into categories to reflect research questions and allow discovery of features in large amounts of material (Bowen, 2009, p.32; Neuman, 2007, p.21); Bowen suggested that thematic analysis recognises patterns in the data through a focused review aimed at discovering themes appropriate for analysing a phenomenon. The distinction between the two is that the former introduces a quantitative element to a qualitative source with the researcher obligated to look into the frequency with which issues or themes occur in the material (Kombo & Tromp, 2006, pp.119-120; Lewis & Ritchie, 2003, p.200; Fisher, 2010, pp.201-202). In the

present study, thematic analysis was used to analyse the textual data from policy documents.

3.5.2 Coding research data

Fisher (2010, p.199) defines coding as the process of extracting the usable material from all a researcher has collected. Creswell (2009, pp.186-187) suggests that detailed analysis of data commences with coding which is the process of organising text or image data into categories labelled with a term often based in the actual language of the participant. Creswell recommends codes that are: Easily discernible to a reader; surprising and may not have been anticipated at the start of the study; of conceptual interest to the readers and; address a larger theoretical perspective in the inquiry. The researcher utilised predefined codes (elements identified in the theoretical and conceptual framework) for documents reviewed (Bowen, 2009, pp.32-33). For data from interviews, the researcher used a combination of the pre-set and emerging codes. Data from the latter are themes the researcher did not contemplate but emerged during the data collection process and had bearing to the study at hand. Table 10 summarises codes used in analysing the data.

Table 10: Identified codes and themes for research data

Predetermined codes	Themes emerging from the data
Human Capital	Business Process Reengineering
ICT Industry	Integration
ICT Infrastructure	Executive Leadership
Institutions	Monitoring and Evaluation
Public value	Prioritisation

Source: Author, 2016

3.5.3 Deductive, inductive and counter-inductive reasoning

Owing to the multifaceted nature of e-transformation, this study was guided by the principles of axial coding that involves relating themes to each other using a combination of deductive and inductive reasoning. (Fisher, 2010, p.423). Miller and Brewer (2003) suggested that in qualitative data analysis, induction contemplates that, rather than empirical generalisations being used to interpret the findings, theory develops from the data. This is the opposite of deduction where hypotheses are derived from theory and then tested against data to confirm or refute the original theoretical proposition. Miller and Brewer also allude to abduction or counter-inductive reasoning where the researcher poses alternative explanations. These approaches allowed the researcher to allow themes emerge from the data so as to verify and refine the theory in literature.

3.6 Other Research Administrative Issues

3.6.1 Permissions and ethical considerations

Access to data sources such as people and sites require permission from individuals in charge of such sites (Creswell & Piano Clark, 2007, p.113). In this study, particularly the case of Huduma, the researcher made a formal request to the institution head who granted him permission to conduct the observation exercise and also availed three informants to provide insights to the study **(Annexure 6)**. Similar requests were made to 20 potential key informants close to, or involved in digital transformation and/or policy processes, 14 of which were acquiesced. The above permission was in partial fulfilment of the requirements the University of the Witwatersrand Human Research Ethics Committee that ensures research protects participants by adhering to ethical standards. This committee unconditionally granted the researcher clearance **(Annexure 7)** to conduct this study.

Participant information sheets **(Annexure 2 collectively)** were presented to participants highlighting *inter alia* how their anonymity and confidentiality would be guaranteed in the study. In addition, an informed consent form **(Annexure 8 collectively)** was presented to participants seeking their agreement to participate in the study. This study also ensured that the privacy of research participants is addressed when compiling this report through the use of anonymous identifiers shown in Table 11 and captured only what the informants told the researcher omitting "off the record" remarks.

Table 11: Anonymous identifiers

Key Informants	Total	Anonymous Identifier
Focus group participant	7	**FGP1, FGP2, FGP7 etc.**
Telephone interviewee	6	**HU1, HU6 etc.**
Digital transformation manager	3	**DTM1, DTM2, DTM3**
Policymaker	3	**PM1, PM2, PM3**
Policy informant	8	**PINF1, PINF2, PINF8 etc.**

Source: Author, 2016

The full list of this study's participants is found in **Annexure 9**.

3.6.2 Pre-testing research instruments

Prior to actual data collection, the researcher conducted a pilot test using prepared research instruments. The interview protocol was administered to a professional human resource consultant familiar with interview processes. Satisfied with the ease in which he answered nearly all the questions, the researcher deemed it appropriate for this study's key

informants after modifying one or two vague questions. The focus group discussion protocol was administered on two of the researcher's work colleagues who had utilised Huduma. Both answered the questions to the researcher's satisfaction that the study would generate the required data.

3.6.3 Supervisor's special visit to Huduma

Towards completion of this report, the researcher had occasion to accompany the supervisor, Dr. Lucienne Abrahams, to the Huduma centre at City Square on the sidelines of the 2016 International Telecommunications Union (ITU) symposium on capacity building convened in Nairobi. The supervisor had first-hand experience of the site of the observation, the researcher clarifying some of the actions he had previously undertaken. Dr. Abrahams also met the centre manager who shed light on some of the findings presented in this report. These actions reinforce this study's external validity and reliability.

3.7 Limitations of Study

Simon (2011) defines limitations as the potential weaknesses in a study that are beyond the researcher's control. In this study, only one case (Huduma) was examined. Yin (2009, p.61) contends that single-case designs may not provide a rich analysis that exists if two or more were examined. The researcher had initially planned to carry a multiple-case study that included the IFMIS programme, access to which was not possible despite numerous follow-ups to the request made to the relevant department. Despite making requests to them, access to certain key informants was also hampered due to their marginal status.

3.8 Delimitations of Study

This refers to aspects of a study within the researcher's control and limit its scope and define its boundaries (Simon, 2011). This research was limited to two national government institutions: Ministry of public service and that of ICT. However, they were not looked at in equal terms. The former was primarily selected because of the Huduma programme and the latter for its policy and oversight role. Huduma's selection as an extreme case was premised on the suggestion by Yin (2009, p.185) that an exemplary case study is of general public interest; and its underlying issues bear national significance to theory, policy and practice. On the policy front, the study confined itself to 18 instruments deemed to reflect a national e-transformation policy standpoint.

Briefly revisiting the earlier arguments on construct validity that recommends sharing the report with the informants for validation; the researcher did not find this necessary

considering the strict timelines of the study. Besides, the lengthy waiting times it took to be granted interviews (and in some cases postponement) with most of the key informants was indicative enough.

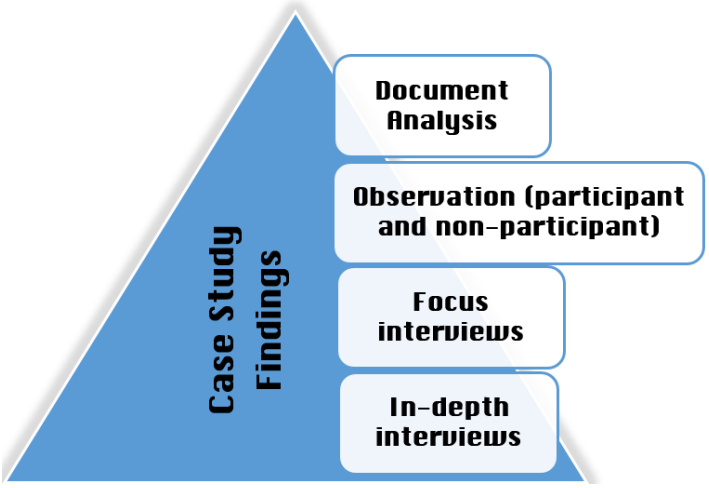
3.9 Chapter Summary

This chapter has presented the intrigues the researcher confronted prior to collecting qualitative research evidence, during the actual data collection, and when collating the findings. Otherwise it would defeat the purpose of ensuring the study is not only reliable but also accurate and generalisable. By arguing for Huduma as an extreme case purposive sampling technique, and using triangulated sources evidence, this methodology hints at possible ramifications that may extend beyond national government. In the following chapter, the researcher presents the output of the data collection process.

Chapter Four: Government e-Transformation in Practice

This chapter organises the evidence drawn from data sources identified in Chapter 3 as shown in Figure 18. The chapter is structured in three broad areas: First, are findings from the document review of 18 policy documents; the second part narrows into the Huduma programme by presenting data from the observation, focused interviews and in-depth interviews with e-transformation managers. The chapter concludes with findings obtained from interviews with policy informants.

Figure 18: Converging the single case study evidence



Adapted from: Yin, 2009, p.117

4.1 Taking Stock: Kenya's 14-year Flurry of e-Transformation Policymaking

Kenya's policymaking targeted towards digital transformation has been on track as demonstrated by the following review of policy documents first identified in Table 8. The review also includes evaluation reports that provide evidence, consistent with the perspectives of Marsh and McConnell (2010a) (see Table 5)

4.1.1 Economic Recovery Strategy (ERS) for Wealth and Employment Creation – 2003

The ERS, a policy based on a political party's manifesto that replaced a five-term president to form government, proposed to invest in ICT education and training by revising curriculum to integrate IT so as to develop appropriate skill requirements, implement tax incentives on hardware and software to make them affordable, and develop an e-government masterplan. To promote efficiency in public service, strategic focus would be on building efficient, client-oriented ministries that do not strain the public purse. The

policy also planned to institutionalise a Monitoring and Evaluation (M&E) mechanism and a commission for stalled projects. This was in addition to The National Economic and Social Council (NESC) established to advise government on policies essential to emerging socio-economic issues; and provide a forum for synergy between the private sector, the business community and the government (Ministry of Planning & National Development, 2003, p.46).

4.1.1.1 End term review of the ERS.

By the end of the ERS period, The East African Marine Cable System (TEAMS) was initiated; 1000km out of the 5500km targeted National Optic Fibre Backhaul Infrastructure (NOFBI) terrestrial fibre to fully utilise the undersea had been laid; a universal access fund was established to reach underserved areas; and taxes on ICT equipment and services were lowered or abolished making it affordable (GoRK, 2009, p.47). In addition to the 2004 e-government strategy, a National ICT Policy was launched in 2006. A National Integrated Monitoring and Evaluation System (NIMES), spearheaded by the Monitoring and Evaluation Department under the then planning ministry, had also been established to track implementation of government policies, programmes and projects and provide a reliable mechanism to measure the efficiency and effectiveness of public policy (pp.197-198). However, limited access to ICT infrastructure; human resource constraints; absence of institutional framework to implement automated services; the official Secret Act, that inhibited digitisation of public information; and lengthy tendering process were cited as challenges. It was recommended that communication sector projects needed funding through private sector involvement leading to a proposal for legislation for Public Private Partnerships (PPP) (GoRK, 2009, pp.50-51).

4.1.2 e-Government Strategy (EGS) – 2004

The EGS identified e-government objectives in Kenya as a result-driven government that is efficient and citizen-centric. The document also highlighted the disparate and unlinked nature of MDAs systems leading to duplication and resource wastages (Cabinet Office: Office of the President, 2004, p.5). The policy suggested the need to design and deliver services to fit the way citizens want to access and use them with traditional systems retained to customers who cannot or do not want to use these new methods of access (p.12). E-Government was to be spearheaded by the Head of Public Service to coordinate dispersed initiatives across agencies (pp.17-19). The policy also proposed that people involved in the implementation or use of e-government services would be trained. Basic training would target all staff; operational training would assist in information maintenance; and technical

level training (e.g. system analysts, programmers etc.) for those designing, developing, implementing and supporting systems (p.21). As a measure of e-government standards, the strategy recommended the use of appropriate electronic solutions through proper identification of equipment needed and the issues at hand prior to its deployment (pp.25-26).

4.1.3 National Information and Communications Policy (NICTP) – 2006

Emanating from the ERS, this policy intended to harness IT as an empowerment and literacy tool for the population and potential users; e-government as a tool to improve internal efficiency and quality of public service delivery; assist in the fight against corruption and provide adequate infrastructure in the country for IT to flourish (Ministry of Information & Communications, 2006, pp.9-10). The policy emphasised on providing incentives for ICT infrastructure and sufficient internet capacity through a nationwide fibre optic network (p.11). Such infrastructure would enhance service delivery to the public through PPPs in their development. The policy also proposed to attract and retain skilled persons through integration of IT in the school curriculum, creating ICT Centres of Excellence (CoEs), enhancing capacity for research and development in IT, and supporting and encouraging IT training for decision-makers, community and civil society leaders (pp.14-15).

Through e-government, the policy proposed to make government result-oriented, efficient and citizen-centric. A sustained high level ICT leadership and championship at national level to provide oversight, inspiration and political goodwill and also mobilise resources was also envisioned (p.7). In order to meet the aspirations of this policy, the government would develop, implement and coordinate policy, and enable an environment for investment in the sector. The National Communication Secretariat (NCS) established through the 1998 Kenya Information and Communication Act (KICA) would remain the government's policy advisor on ICT affairs (p.47).

4.1.4 Kenya Vision 2030

The expiry of the ERS in 2007 signalled an opportunity for Kenya to enact another development blueprint set to be implemented between 2008 and 2030 through successive five-year medium-term plans (MTPs) (GoRK, 2007, p.1). Below are highlights Vision 2030 first and second medium-term plans (henceforth referred to as MTP1 and MTP2 respectively).

4.1.4.1 MTP1 (2008-2012).

Under ICTs, which was aptly tagged "strengthening the foundation for a knowledge economy" (GoRK, 2008, p.25); MTP1 acknowledged challenges such as limited national ICT awareness, digital divide, financial and human resource constraints and "islands of automation" in government (p.26). To address these, the government committed to install: (a) The East African Marine System (TEAMS) by 2009 under PPP arrangements; (b) a national terrestrial fibre optic network to complement TEAMS by ensuring utilisation and connectivity throughout the country; (c) Government common core network (GCCN), a shared and secured interoperable government-wide ICT architecture, to improve inter-ministerial sharing of databases and exchange of information to eliminate duplication and redundancy, improve public access to government services and ensure responsiveness in reporting and M&E; (d) Local Area Networks (LANs) and Wide Area Networks (WANs) which would be linked to GCCN to create a national information infrastructure for seamless communication within government; and (f) establish a data centre for its databases (p.26). Other strategies proposed included zero-rating ICT hardware to make ICT services affordable and setting up national ICT CoEs to develop a critical mass of human resource as a capacity provision for the industry (pp.27-28). Under the public sector reforms agenda that sought to make government "a citizen-focused and results-oriented institution" the government prioritised citizen-centred policy review, citizen participation and decentralisation of service delivery (GoRK, 2008, pp.36-38).

4.1.4.1.1 Reviewing MTP1.

A report evaluating the implementation of MTP1 highlighted certain milestones: The 5500km undersea cable was fully operational; 5000km of the terrestrial fibre through the NOFBI project was halfway complete with 47 major towns connected. However, their utilisation remained low (Ministry of Devolution and Planning [MDP], 2014, p.43). An integrated service delivery (ISD) programme was initiated with a memo on its justification developed and submitted to the cabinet in 2011 (pp.46-47). The report linked inadequate funding for flagship projects was to MDAs' formulation stage, where requirements for said projects are not aligned to budgets and assumptions that donor support or PPP funding was a guarantee. Prioritisation mechanisms to assist key projects and finalisation of the PPP framework to enable public institutions access financing from the private sector was recommended (MDP, 2014, p.124).

4.1.4.2 MTP2 (2013-2017).

This plan was to be implemented in line with the priorities in the Jubilee Coalition Manifesto (discussed later), a political party elected into office in 2013. Under the ICT sector, the government proposed to: (a) Expand fibre networks; (b) create the universal service fund to finance infrastructure deployment to underserved regions; (c) establish data centres for public data; (d) implement a public key infrastructure (PKI) for authorisation and authentication of information systems; and (f) set up national ICT CoE to develop a critical mass of human resource to support capacity for the industry (GoRK, 2013, p.23). In efforts to "[transform] the public service for accountability and provision of efficient and quality services," the government sought to prioritise service delivery systems that promote efficiency, quality, speed, convenience and dignity in service delivery (p.30). This would be through establishing the Huduma Kenya integrated service delivery model, a multichannel platform providing a "single window" for citizens to access government services using one stop shop citizen service centres, an online web portal, a mobile phone platform, call centre and an integrated payment gateway. A real-time performance monitoring system (RPMS) for online real monitoring of performance at all levels by the president, and other government staff to obtain feedback was also proposed. The government also proposed reviewing legislation to recognize electronic records and support Huduma and business process reengineering (BPR) in line with ISD in the public service (GoRK, 2013, pp.30-33). An M&E legislation to support implementation of a computerised NIMES and empower the institutional framework and capacity building of M&E was also envisioned. The PPP legislation enacted in 2013 would also be operationalised (pp.113-114).

4.1.4.2.1 Reviewing the MTP2.

The Annual Progress Report (APR) produced within the NIMES framework to track the MTP2 noted that the country's mobile penetration stood at 82%; 891km out of the targeted 2100km under the NOFBI project had been laid; an IBM research laboratory had been set up as a hub for innovations, capacity building and solutions development; and a presidential digital talent programme (PDTP) targeting to train 500 youths in management and service excellence in private and public sector had seen 100 graduates recruited (RoK, 2015d, pp.101-102). The Huduma programme was also launched in 2013 with 21 centres operational, then serving over 15,000 citizens daily. BPR had also been initiated in all services at the Huduma centre (p.65). However, the report noted that programmes and projects are plagued by territorialism, silo management and non-alignment of programmes leading to overlapping responsibilities and multiplicity of efforts among agencies (p.182).

Other shortcomings were inadequate project management skills, and the PPP framework not working as anticipated.

4.1.5 The Jubilee Coalition Manifesto (JM) – 2013

The Jubilee Manifesto (JM) document was considered since most current policy documents in Kenya have tended to align to it. Its timeline is confined between 2013 and 2017 where sweeping changes across government and all societal facets to make Kenyans live a "life which they deserve" making Kenya "where people are big and government small" (The Jubilee Coalition, 2013, pp.10, 33). The vision proposed solutions such as, solar-powered computers for every school age child in Kenya; technology institutes for youth to be empowered with skills to service the modern economy and innovation centres to support the generation of highly creative citizens; and enactment of PPP legislation to encourage investment in public projects. Kenya's poor use of ICT for efficient and effective government was identified as a priority, the Jubilee Coalition (2013, p.40) stating:

> [ICTs] do not operate in a silo. The adoption of ICT across all our policy positions is critical if we are to meaningfully utilise ICT in the way we do business. The challenge will be how to translate ICT into programs that add value to…achieve the overall goal of driving economic growth.

The coalition contended its plans were attainable but more prominently, they could be put in place quickly and effectively (p.70).

4.1.6 The National Broadband Strategy (NBS) – 2013

This policy aimed to transform Kenya into a knowledge-based economy through a reliable high-capacity nationwide broadband network delivering a minimum of 5 Mbps to homes and businesses (GoRK, 2013, p.8). One also learns that the government implemented 4233km of NOFBI and plans to extend it to achieve a target of 50,000km (pp.16, 41). In addition to building two neutral national data centres to host content reliably, the government through the private sector proposed to increase submarine cables to six (p.48). The strategy also claimed that Kenyans are content consumers making the country pay more for international bandwidth than hosting it locally (GoRK, 2013, p.25). It also highlighted glaring skills gap in technical aspects of broadband infrastructure and general citizens' use of ICTs. It argues that the slow uptake of e-government can be blamed on low IT literacy skills.

The document categorised human capacity into two: Supply-side, whose focus is on the technical skills required to develop manage and maintain broadband services; and

demand-side, whose focus is on digital literacy skills awareness. The strategy proposed enhancing quality standards for higher education curricula implementation and assessment of core technical programmes to address the former. To address the latter, the strategy suggested awareness drives targeted at end users through various media platforms, creation of multilingual and publicised content or deploying mandatory use of e-services on different platforms in all sectors (pp.27-30).

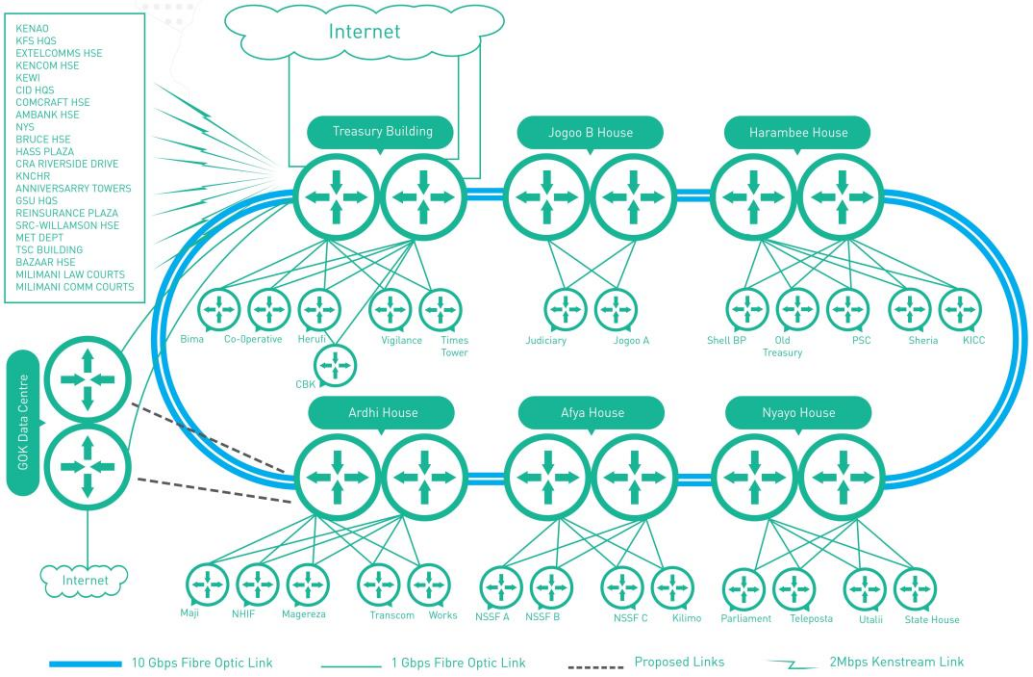
4.1.7 Connected Kenya: 2017 Masterplan (CKM) – 2013

Though momentary, this policy recognised ICT development clusters (i.e. iHub, Nailab) as an avenue for innovation of applications and information services. It also proposed a fifth undersea cable to supplement the current four so as to double the country's internet capacity (Kenya ICT Board [KICTB], 2013, p.5). It envisioned enhancing public value through affordable, accessible and available secure ICT (p.30) for Kenyans. This would be realised through a one-stop-shop approach to deliver 80% of public sector services to persons and establishments leading to an improved a whole-of-government (WoG). A solution favoured to address the funding of ICT projects was adoption of PPP models with the private sector building and operating the service while the government funded. A suggestion advanced in this plan was that government would penalise vendors and partners for sub-standard delivery of ICT projects (pp.45-46).

4.1.8 The Kenya National ICT Masterplan (KNIM) – 2014

This policy was enacted to review the CKM for validation, increased stakeholder participation, and alignment with the Jubilee Manifesto (Ministry of Information Communications & Technology[MoICT], 2014, p.17).
It highlighted Kenya's infrastructure including, the aforementioned GCCN illustrated in Figure 19 below.

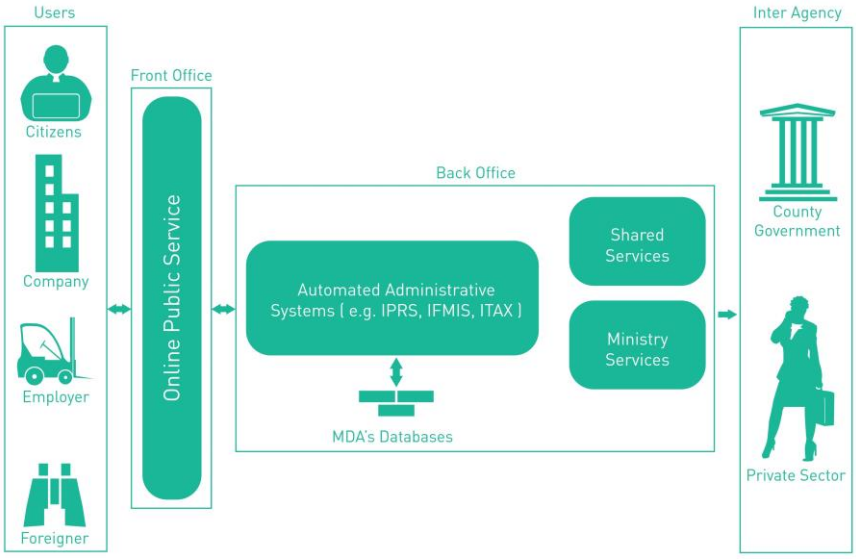
Figure 19: GCCN architecture



Source: Ministry of Information Communications & Technology [MoICT], 2014, p.26

A generic e-government model for e-government services in Kenya was also described in the masterplan as shown in Figure 20.

Figure 20: Kenya's generic e-government model

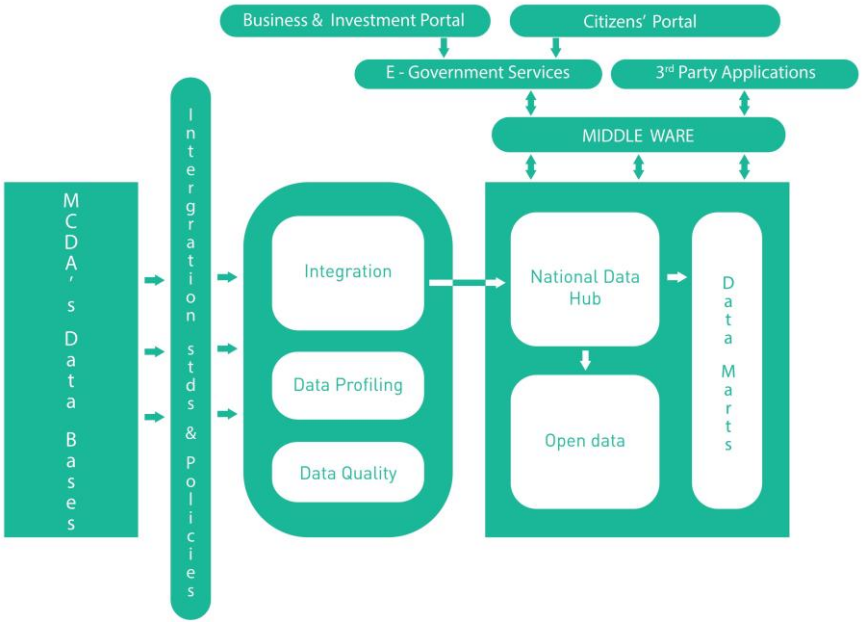


Source: MoICT, 2014, p.28

By 2017, the masterplan projects to have available sustainable local high end ICT skills to meet industry needs and an ICT literate population. This is to be achieved through establishment of five CoEs to develop high end skills; strengthening ICT programmes to increase PhD throughput in ICT areas and establishing a body for ICT professionals to encourage professional development and learning and implementing awareness programmes

(MoICT, 2014, pp.41-43). The masterplan contemplated improved public service delivery void of duplication and wastage through one stop shop initiatives such as the Huduma centres as shown in Figure 21. By institutionalising an integrated data and information sharing infrastructure based on the UID concept to enable information sharing across MDAs, it hoped to effectively eliminate silos, as a result of institutions creating their own systems, processes and data centres which affect resource utilisation, operational inefficiencies and inadequate human capacity to sustain such systems (pp.52-55).

Figure 21: Citizen-centric one-stop service model



Source: MoICT, 2014, p.53

Through reengineering and the aforesaid integrated systems, the masterplan intended to have increased public value of e-government with 50% of adults accessing an e-service; and eight out of 10 users being 'very satisfied' with the quality such services (p.60).

To implement the policy, funding would be sought from government, development partners, and PPPs who would be offered fitting incentives and tax breaks (pp.80-81). The policy also identified ICTA (a creation of Legal Notice 183 of August 2013 that merged three previous ICT bodies) as the vehicle for executing and operating all information systems services and ICT infrastructure projects in the public sector (p.82). In addition to the establishment of a project management office with strong M&E capability, executive championship to facilitate and monitor the masterplan's implementation would be through the president's chairmanship.

4.1.9 National Cybersecurity Strategy (NCS) – 2014

This policy sought to protect critical information infrastructure, and proposed human capacity interventions needed to sustain such infrastructure affordably since Kenya's government relies on a common IT infrastructure to enhance efficiency and effectiveness of government services.

4.1.10 Draft National ICT Policy (NICTP) – 2016

This policy aims to review the 2006 document due to developments in the ICT sector including, Internet of Things (IoT), big data and Over the Top (OTT) services. It proposes to support the entire public sector with high quality ICT infrastructure through PPPs; instituting innovation clusters to generate a critical supply of highly skilled technical personnel; and supporting human resource development and capacity building and ICT training (MoICT, 2016, p.13). On e-government**,** the policy targets a result-oriented, efficient and citizen-centred government prioritising automation of government services and the extending Huduma services to counties (p.45). ICTA is proposed to oversee development of integrated ICT projects (p.48). The policy also recommends the creation of national ICT professional bodies to foster professional ethics, standards and human resource development in the sector (pp.49-50). The MoICT, NCS, and ICTA are also to develop an M&E framework to ascertain the policy's impact.

4.1.11 Reports on National Values and Principles of Governance (2013-2015)

National values and principles of governance include good governance, integrity, transparency and accountability; and sustainable development (RoK, 2010, Article 10). The Constitution mandates the President to annually report the measures taken and progress achieved towards their realisation (Article 132). The 2013 report mentions the development of Huduma, an initiative bringing together key government agencies to offer multiple services under one roof for transparent and faster access to various Government services (The Presidency, 2014, p.1650). The 2014 report highlights establishment of 12 additional Huduma centres as a key milestone achieved by government with a commitment to extend the centres countrywide (RoK, 2015c, p.737). The 2015 report indicates that the PPP framework has been institutionalised and operationalised (The Executive Office of the President, 2016, p.1266) and Huduma centres increased to 26, with approximately 7.5 million Kenyans accessing its services. It was also estimated that the centres serve 35,000 people daily with a 95% excellent customer satisfaction rate (p.1272).

From the above review, it is discernible that Huduma is an output of e-transformation gleaned from successive government policy instruments. The ERS for instance, suggested the creation of client-oriented ministries, the EGS proposed integration of government services to provide a single point of access to these services, the 2006 ICT policy, like MTP1, envisioned a result-oriented, efficient, citizen-centred government and decentralised service delivery. However vague these aspirations are, there are concerted efforts towards their realisation going by development of infrastructure such as TEAMS, NOFBI and creation of infrastructure such as GCCN (Figure 19). From the report reviewing MTP1, we learn that an integrated service delivery model was advanced and submitted to cabinet. This panned out as the Huduma programme as explicitly highlighted in MTP2.

4.2 Huduma Kenya Programme

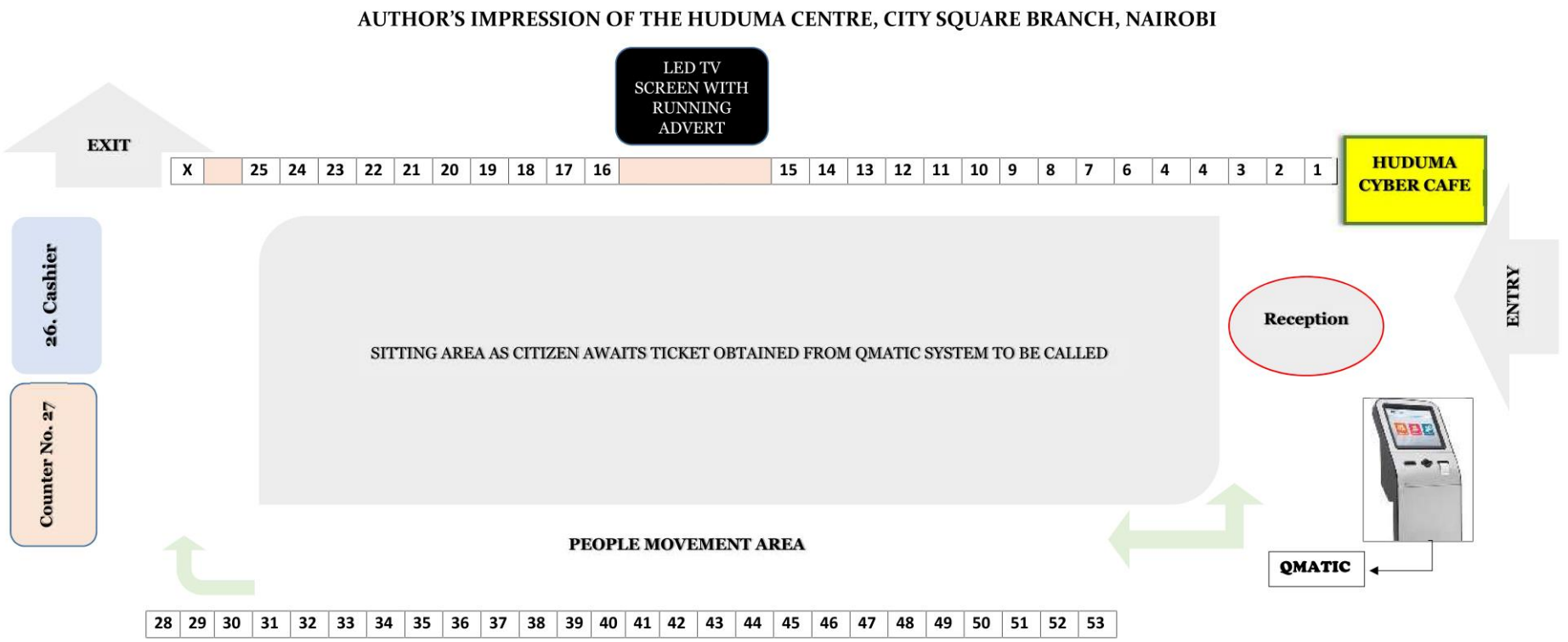
This section presents data on ICT infrastructure, ICT industry, human resources, institutions and public value on the Huduma initiative as interpreted by the researcher through observation and constructed by its users and managers.

4.2.1 Visiting a Huduma Centre

Throughout the observation, a poster at the City Square Huduma centre's entrance indicated that the duplicate ID system was inoperative. Inside the centre was a spherical reception area with about 10 members of staff, all conspicuously dressed in branded uniform. Like other citizens, the researcher was warmly received and guided to another member of staff issuing tickets from a machine. Except the first day, this machine was not functional for the remaining observation period. The centre was an air-conditioned hall buzzing with activity. Its population was comprised of adults from all walks of life and age who waited for a service at the seating bay or were at a counter. A cyber café opposite the reception was emblazoned with the programme's banners disclosing its values (i.e. courtesy, efficiency, innovation, integrity and transparency); taglines such as "efficient government services available at the convenience of the citizen" and the café's services. At strategic points within the centre are posters whose content range from "anyone seeking assistance or clarification on services at **Huduma**, kindly ask **uniformed** members of staff at the customer care desk"; "kindly take notice brokers are not and will not be allowed to transact business on behalf of Huduma or any other services being offered in the centre"; to "only a maximum of three name searches is allowed per person".

There were 53 counters at the site as shown in Figure 22 below.

Figure 22: The observation site



KEY:

1. Ministry of Health	7. Business Name Registration	13. Police Clearance Certificate	19. Pensions	25. NHIF	32. Foreign Affairs	39. Unlabelled	46. Unlabelled
2. Unlabelled	8. Women Enterprise Fund	14. NTSA	20. Issuance of Temporary Pass	X. Business Name	33. Foreign Affairs	40-41. Stamps	47. Box/Bag
3. Birth Certificates	9. Issuance of Police Abstract	15. Issuance of Duplicate ID	21. Kenya Power/Electricity Services	28. Unlabelled	34. Driving Licence	42. Unlabelled	48-50. Box Rental Payments
4. Unlabelled	10. Issuance of Seasonal Parking Tickets	16. NSSF Registration	22. Unlabelled	29. Unlabelled	35. Stamp duty	43. Photocopying	51-53. Registration delivery
5. Welfare Groups	11. Business Permits/ KRA Services	17. NSSF	23. NHIF Registration	30. Parcel	36. Unlabelled	44. No activity	
6. Business Name Registration	12. Payment of Rent and Rates	18. NSSF	24. NHIF	31. EMS Courier Service	37-38. Utility Bills Payment	45. Payment voucher	

Source: Author, 2016

Counters 1 to 25 had display units above them. Except the first day, a number of these were off during the rest of the observation. Above the identity card (ID) section was a screen running an advert. On the first observation day it also displayed tickets being processed and at what counter. A public address system called out the numbered ticket a citizen collected from the machine (referred to as Qmatic); and the counter which they report to. The display units above the counters flicker indicating a ticket that has been called. The Qmatic system also had a five-option device (i.e. Excellent, Good, Acceptable, Poor and Unacceptable) users are expected to use to rate a service.

4.2.2 The *"Mwananchi"* experience with Huduma

In this section, the researcher collates the perspectives by citizens' who have utilised Huduma in terms of: motivation, speed, necessity of a mobile phone or the Internet, and the programme's benefits. Their views on the awareness, staff skills, challenges of the programme and its sustainability are also captured.

Positive experiences outweighed the negative ones with the latter featuring slow service due to long queues and inadequate staff assistance once at a Huduma centre. Participants whose experience was satisfactory maintained that the all-under-one-roof concept was less bureaucratic compared to traditional systems they previously used to obtain services (i.e. government offices, MDA headquarters etc.) For example, HU2 stated:

> "I was impressed because I could get the abstract there. It was all inclusive unlike a few years back where you were supposed to go to the police station, get an abstract, then go back to a different office; I like the fact that you get all the services at the right time and at the same place".

Overall, users were satisfied with the speed it takes to obtain service at the centre. FGP6 and HU2 argued that speed is dependent on the service one seeks. Other participants who had reservations about the speed were those who had sought the ID service. HU4 for instance stated: "In a scale of 1 to 10, 10 being the worst, 1 being the best, I'd give them 11".
A common position among all the users was that they did not need the Internet or their mobile phone to use the programme. A participant however suggested that the mobile phone could ease the queue like in eCitizen.

A resounding benefit cited by all users was that Huduma's integrated approach saves time and reduces cost of traveling as compared to legacy systems of public service delivery. FGP3 for instance, said:

> "All the government procedures are centralised. For example, she talked about getting an NHIF card, I talked about getting an ID, someone else wants to register a company, if you are one person and you want to do all those, you go to Huduma".

In addition to improved turnaround times, the programme also provides equity and closes avenues for bribery. HU6 argued "Brokers are not possible. You can't exchange money with an officer. The only exchange is documents".

It was a near-consensus that Huduma personnel are courteous, a respite from the previous overbearing face of government staff. Most participants had no qualms about the skills of the Huduma staff with arguments that it was not really a contentious issue as the programme's processes are basic. In addition to observing most of the staff at the centres are youthful, HU3 stated:

> "Skills is a technical word to use, it is not exactly a skill-based type of job they do. They have sufficient training at least to understand and guide someone on the processes. It is not a rocket science kind of situation".

All participants were also unequivocal that the system downtime is a major problem facing the programme and ought to be urgently addressed. FGP1 reasoned:

> "When the systems are down, you can't access several services but sometimes you may find that the IT systems are down yet the NHIF is working…maybe it is not the same system".

Other participants suggested awareness drives for first time users and increase in the number of staff and the centres. A roundly embraced idea among discussants was the need for a mobile facility fashioned similar to the mobile clinics to reach people in remote areas. FGP3 also proposed that the public address system calling out ticket numbers ought to incorporate Swahili for all-inclusiveness. FGP6 suggested that on their own, the buttons a client presses to rate a service are not sufficient to obtain feedback and citizens' concerns ought to be captured in more detail.

Half of the study participants attributed their awareness of the programme to TV advertisements when the President formally launched it. Others had been recommended by friends, redirected by the head office, or even through happenstance as seen by HU6:

> "I was walking in my rural town, the post office looked different. I picked a document to renew my driver's licence. As I walked towards the KRA counter I saw different services in the other counters".

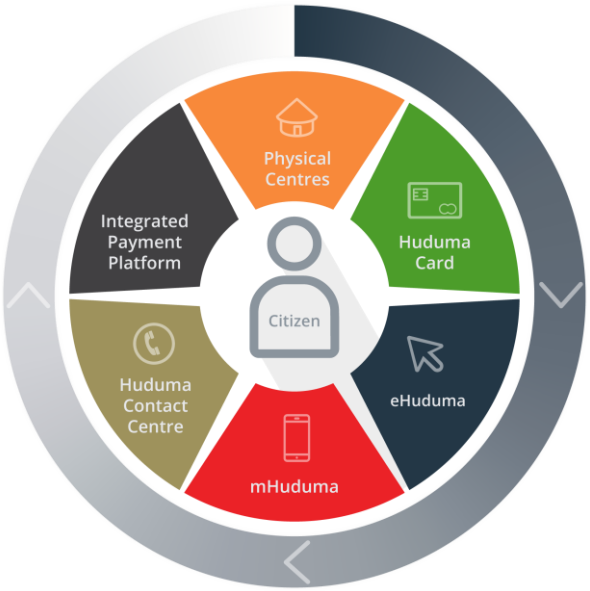
Nearly all users were optimistic the programme will last principally as it serves the interests of the common *"mwananchi"* (translates to citizen in English). HU4 was however divergent

arguing eCitizen had seen some services at Huduma centres go online: “I don’t think Huduma will last if the Government decides to introduce biometrics. At the moment it exists because you have to be physically present to have your fingerprints taken”.

4.2.3 Digital transformation managers’ perspective

This section presents data obtained from in-depth interviews with three managers involved in Huduma’s implementation. A common position was that the programme’s strategy is two-phased as spelt out in Vision 2030’s MTP2. Phase 1 is infrastructure-focused hence the ICT solutions running in the centres (e.g. LAN, power, UPS, thin clients for connectivity connecting staff to their back-end systems through a virtual desktop infrastructure solution and the QMS used to manage large groups); and Phase 2 will see digital channels activated (See Figure 23).

Figure 23: Huduma programme strategy



Source: Huduma Kenya Secretariat, 2016

DTM1 told me that in addition to a mobile application for those with smartphones, there will be Unstructured Supplementary Service Data (USSD) to cater for those with ordinary phones. DTM1 and DTM3 also indicated that Huduma’s strategy is underpinned by its elaborate leadership structure headed by the President, who is the vision bearer and project owner **(See Annexure 10)**.

DTM1 also stated that Huduma operates from two active data centres (DCs) in different geographical locations (cloud implementation) but is also supported by highly centralised solutions (i.e. high end servers; CPU memory and storage; network and security). The centres connect to the DCs through WAN links leased from two

telecommunication firms. These DCs are connected to the ministries. At the Huduma Centre exists virtual desktop infrastructure thus there is no physical CPU but only peripheral devices such as a mouse, keyboard and monitor (CPU is the high end server in the DCs). USBs are blocked thus one cannot transfer documents. DTM1 asserted that there is so much one cannot do due to the highly sensitive information Huduma deals with. A two-factor authentication login process was also highlighted with Huduma personnel only accessing the programme to the extent of their clearance (back-end systems). The programme also deploys Unified Threat Management (UTM) which detects and prevents intrusion into its systems. DTM3 suggested that such robust infrastructure has to be available to ensure the system is available 95% of the time.

The three managers informed me that there are no direct staff from Huduma Kenya as all are seconded from different MDAs to provide services at the centres. DTM1 also informed me that the staff at the secretariat are young graduates with relevant certifications. He also identified citizens as users to the ICT solutions namely, the QMS to obtain a ticket; screens indicating how queues are flowing; and a Customer Display Unit (CDU) showing the counter and ticket number when called. He also described a customer feedback unit where clients rate the experience of that service. DTM2 intimated that the observation site serves between 2500 and 3000 persons daily if the networks are okay and the services are running. It was generally agreed that the programme's objective is to bring government services closer to the people so that they do not have to visit various offices. DTM2 contending that having brokers at the centre kills the essence of the programme, asserted that it has reduced malpractices.

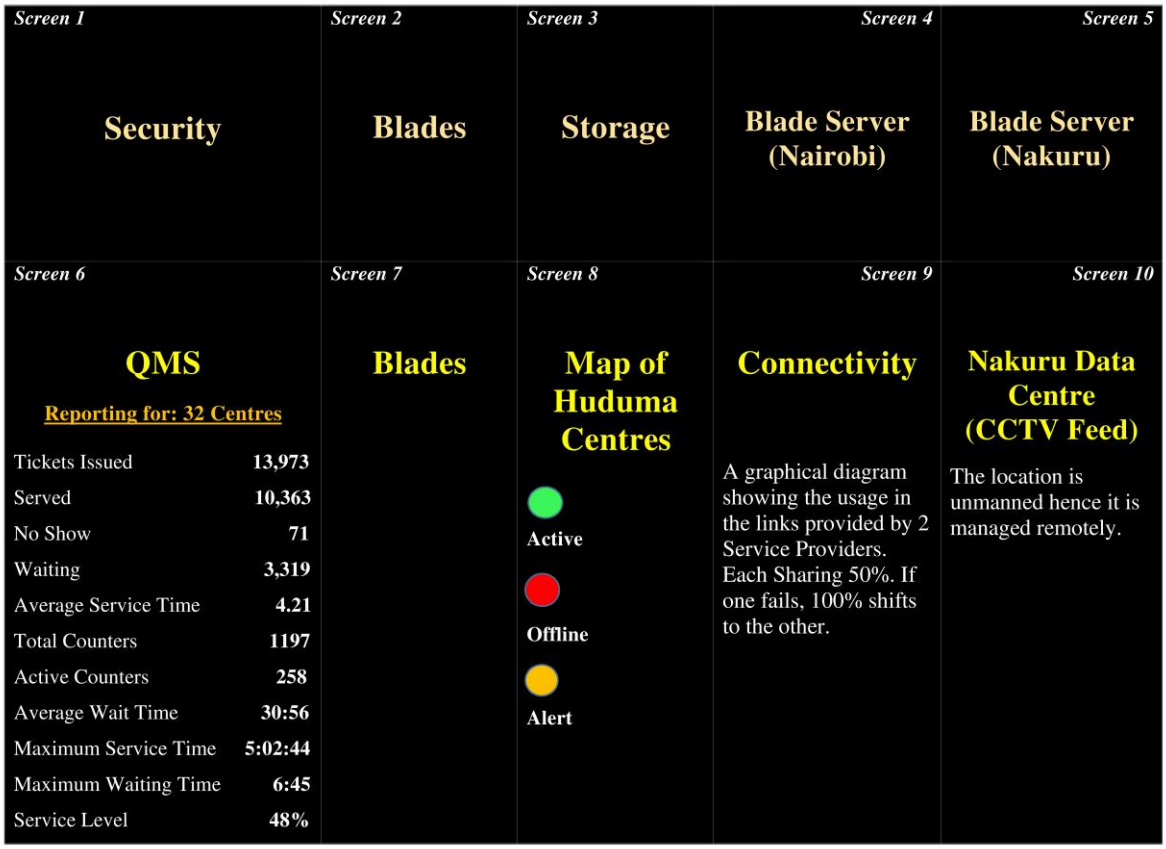
DTM1 informed me that other government departments have played a key role. ICTA for instance, interlinked Huduma with all the ministries by connecting its data centres to the GCCN. The ministries also provide the back-end systems Huduma connects to. Suppliers and manufacturers deliver, implement, commission and maintain the programme's solutions. DTM2 exemplified this using the cyber café located within the Huduma centre that is outsourced to a private company.

According to the managers, leadership from the CEO, teamwork within the ICT personnel and other departments, and the support of back offices are key factors for the programme success. DTM2 called for backup measures to minimise situations of network downtime and failure and suggested that maintenance ought to be conducted over a reasonable time. In addition to an active social media presence, DTM1 told me that 94-95% of the client feedback rate the programme as excellent and that the programme has also been feted for best use of ICT in the public sector and customer service institution. However,

DTM2 indicated the programme was getting a lot of criticism at the time due to an ID systems upgrade that had taken over three weeks. According to him, *mwananchi* may not know the working arrangements between Huduma and the MDAs. He also acknowledged that social media may not be sufficient as far as the elderly citizens are concerned and suggested the need to put notices on radio, TVs and newspapers. DTM3 indicated that there are plans to initiate outbound campaigns to follow up on client feedback.

DTM1 also informed me that Huduma is evaluated on how the services are being offered and infrastructure is performing, including its reliability and availability levels. The researcher confirmed this on a visit to Huduma's network operations centre (NOC) where one is able to have visualisations of some of these elements as illustrated in Figure 24 below. The centralised architecture ensures threats are neutralised centrally through the UTM (Screen 1) or timely identification of network glitches at a specific centre (Screen 8).

Figure 24: Visualisation at Huduma's network operations centre (NOC)



Source: Author, 2016

4.3 Insights on Policy as an Element of Digital Transformation

This section presents key data obtained from in-depth interviews with 11 policy informants pursuing the constructivist methodological approach discussed in Chapter 3. The section uses a coding approach to presentation of the case study data (Table 10).

4.3.1 Government e-transformation has a mixed record

Informants were generally divided on the state of national government e-transformation. It was however palpable that it is not ahead of its time. Another set of interviewees held the view that it is a mixed record. This was attributed to its implementation where pockets of agencies have done well whereas various areas still have disparate registries that need automation. Other informants stressed that government e-transformation is lagging. PINF5 and PINF6 argued that Vision 2030 had envisioned advanced e-government structures by now. PINF2's sentiments albeit ominous, had a vestige of optimism: "We have 400 years to go. Given our resources and national mind set, you could blame it on history. This is not bad, every society has its own time to mature and probably reach its apex".

PM2 believed government e-transformation in its present state is riddled with elitism whereas PINF7 claimed digital transformation in government is inconsistent. She opined:

> "The problem with inconsistencies is you can have many things done. I am not convinced we are doing it the right way. We have to see how they come together. Once you create that picture there is also the synergy".

4.3.2 Impact of policy on digital transformation

Some interviewees agreed policy has had an impact on e-transformation after reflecting on some of the benefits government programmes have availed. However, PM1 and PINF3 suggested that the government lacks the ability to anticipate technological trends making policy lag behind and/or exist to support existing technology. PINF3 alluded to a fragmented way of looking at policy matters; what PM2 described as "losing the wood for the trees," a common leaning of Kenya's public policies. This was a resounding argument by other informants. PINF4 stated:

> "We have an ICT policy, an ICT authority, the regulator, private sector players and big elaborate instruments as departments also develop their own IT strategies. Sometimes when you see very elaborate systems; that even tells you people are not clear on what needs to be done".

Though acknowledging that policy is an instrument that defines the end picture for e-transformation initiatives and provides a guiding framework to the picture, like other informants, PINF7 was not entirely persuaded that policy has had an impact on e-transformation; arguments ranged from e-transformation being an implementation issue (PM3; PINF2; PINF3; PINF6); or weak bureaucratic, economic and political interest in

executing ICT policy (PINF1). A cogent yet controversial view was that of PINF2 who contended that policy is an ideal towards promoting e-transformation but on closer scrutiny it does not:

> "People charged with implementing such polices are older in age and may not necessarily understand the transition to digital. Makers of public policy in government institutions are likely to be young, intelligent and recent graduates from university who have fresh ideas but the persons implementing it are guys who are archaic. What follows is a series of obstacles deliberately put to ensure e-transformation not take place".

4.3.3 Hindrances to government e-transformation

Human resource capacity. DTM3, PM1, PM2, and PM3 identified human resource constraints as a challenge in implementing e-transformation programmes despite the ICT master plan identifying the ICT skills needed to sustain e-transformation initiatives. PM1 faulted the ICT training in the universities and colleges citing a difficulty to place graduates based on their grounding in specific ICT issues. Noting that the idea of CoE's has not taken off, he argued that universities ought to be empowered to teach and develop capacity on the specific skills needed in the economy. He stated that in as much as ICTA is making efforts towards this through the PDTP, there was no need for government to do it as its core business is public service and the private sector can deliver it better. Failure to conduct change management to transition both technical and end users into e-transformation was also identified as a bottleneck by DTM3 and PINF7. PINF7 however stated that the only time change management may not be necessary is when implementing something that "fits in exactly into how people live their life".

Lack of holistic planning. PM1 stated that transformative programmes cannot succeed without thinking through all the issues that may derail the programme however right the idea is. He alluded to a dearth of end to end planning saying "Our policies look at the resource then we plan with it. In my opinion we should look at the need then plan the deed". PINF3 doubted whether the right people are involved in all the stages policy has to go through. Citing the cashless solution for public transport, he argued that involving the key people who will interact with the policy makes it easier to implement.

Policy mismatches. PINF3 informed me that people trusted with policies at implementation are in most cases unwilling to implement them. He also posited that a good policy should provide some scenarios or options for instance, when X happens what should be done? Something he felt is a major drawback in current policy. PINF2 stated that policy is drafted in a technical high-minded manner with undue regard to the common *mwananchi*.

PINF2 also indicated that inaccessibility of policy to both institutions and people is a hindrance and in most cases it is tied to unawareness of its existence. PM2 intimated that policy in Kenya is usually created with the aim of creating a job in most cases for the drafter. She also stated that the people who design policy account for 7% of the population leading to a mismatch between policy and reality.

Selling e-transformation as a hype. PINF1 and PINF4 suggested that government e-transformation efforts take the approach of being sold as a fashion and not as a service leading to short-term solutions. Using KRA's ICT systems (iTax) as an example of a programme done quietly and not as something fashionable, PINF1 stated "If we take e-transformation as a fad, you will be in a hurry/fast food mode, because you want to showcase leading to very non-durable solutions".

Vendor pressure. PINF4 stated that government is very procurement-focused with any public problem having money and technology "thrown at it". Vendors being ahead of the curve promise and provided they have been paid you never get to see them again. He also expressed reservations on whether anyone ever independently audits whether what is bought is what is required or the full cost of implementation, cost-effectiveness of IT systems or challenges experienced elsewhere. PINF6 citing the laptop project as an example, argued that most people saw procurement rather than equity in the content being provided to every Kenyan child.

Policy has not been at the right level. Contrasting the aforementioned views of PINF2, PINF5 suggested that ICT strategy has not been at the right level with the top leadership in ministries leaving it to junior ICT officers in government who have no power and strategic view.

Entrenched interests. Like PINF1, PINF5 contended that there are very many entrenched interests in government opposed to changing systems in the form of gatekeepers who feel "if you take this online, what is my power?"

Funding. PM2 contended that money is the delicate balance between resources and implementing a social policy such as e-transformation. This view coincided with PM1 and PINF6 who alluded to overreliance on the treasury informed by the notion that these are government projects yet the bulk of such funding is mostly spent on operations as suggested by PINF3. DTM3 also indicated that Huduma is 100% government-funded and is thus not immune to budgetary constraints. A delay in release of funds by the treasury also delays disbursements to contractors and suppliers on time.

Lack of political goodwill and follow through by the project owner were cited as a hindrance by PINF2 and PINF7 respectively. PM2 also alluded to a deep-rooted culture of lack of reflection as a society on policy issues that would inform its evaluation.

4.3.4 Interventions for desirable e-transformation outcomes

Executive leadership. A common position among all informants was that e-transformation ought to be driven from the top, preferably the Presidency. DTM3 reasoned that executive support at times pushes people. In its absence, people tend to delay and treat the programme as "good to have". PINF1 reasoned that e-transformation in government is not something outsourced to a minister but ideally located and led from the presidency. According to him:

> "It is a very political process because it changes the way business of government and that of the public is done. This affects so many interests that are vested in the way things are done presently. If you outsource it to a second-tier political leader, it will die".

PINF5 also reasoned: "You need somebody central saying once you automate, the whole government say Huduma centres for instance, will come here. For that to happen high level decisions have to be made". Nonetheless, PINF7 argued that the President has to choose someone to champion the agenda for him as he may not be available on a day to day basis. Favouring the office of the chief of staff and head of public service to lead the agenda, she argued that e-transformation being a holistic affair means dealing with different Cabinet Secretaries, and "if you make one of the cabinet secretaries the head, there's too much vested interests".

Synergetic planning. PM1 and PINF3 called for synergetic planning where government brings all relevant stakeholders are together to holistically think through what it wants to do with emphasis on public participation. PM1 reasoned that this saves money and time in the future as opposed to doing projects for political mileage or to achieve quick wins. He stated:

> "The challenge we have as a nation is not really to aspire for what we want to achieve but it is to plan today, invest today, and sacrifice today so that tomorrow we can achieve that which was our dream yesterday".

Capacity building and training. A number of informants recommended the need to build capacity for e-transformation initiatives. PINF2 proposed the introduction of a course in the high school and university curriculum on the need, use and scope of e-transformation programmes or policies; public education on the benefits, and sustained development of the

ICT sector in its entirety. DTM3 proposed training people to possess the necessary skills to on board into e-transformation making it a total transformation such that they become part of the change process. He argued that human capital demands someone be continuously developed. PM1 though uncertain who would do it, called for an audit of the ICT skills requirement in the Kenyan economy. PINF3 was also emphatic on training policymakers as they are the champions of most of the country's policies so as to make such policies realistic and implementable.

Evidence-based policy. PINF3 and PINF6 were categorical that government needs to leverage on research in enacting e-transformation. PINF3 argued that Government tends to be reactive rather than proactive as it makes policy based on what is happening, a concern that was also noted by PINF2. Using the KNIM (2014) argument that ICT will be a standalone sector by 2017, PINF3 argued, that this is a dream as the sector is currently plagued by a lot of challenges and has not been able to sustain itself yet 2017 is just months away. According to him, government ought to sell initiatives to people in proactive ways that will convince them that initiatives will pay off even if it is in the future. PINF3 also suggested that no bargaining should take place with the exchequer unless an MDA has demonstrated the viability of an e-transformation programme.

Learning. PM2 advanced the need to foster a culture of learning. She reasoned that some of Kenya's policies made in the 60's particularly education, are still relevant today as they were based on strong research. According to her, learning geared towards e-transformation would encourage smart policies such as Sao Paulo's e-waste management and the Parisian sewer system where optic fibre cables run. According to PINF7, the idea of Huduma coming up with a card in its strategy shows there is no learning – its cashless transport counterpart having failed. Supporting her arguments, she argued that managers of e-transformation projects need to have the conviction that the initiative will actually resolve a problem.

Policy on digital transformation must align with the people. PINF3 reasoned that on the government's part, ICT has been more on automating, which is a technical, rather than policy point of view. According to him, the government is answerable to the citizens on how e-transformation policy is going to assist them. PINF4 contended that e-transformation programmes deliver efficiency when they are based on simple effective platforms based on what people are already doing, using and are comfortable with. PINF6 reasoned that the community is the biggest asset in e-transformation as they might not have the cash, but they have the sweat capital, and sustainability. He reasoned that systems are sustained by the citizen seeing there is value. PM2 stressed the need for government to

enact smart policies. Such a policy has three components: Regulation; integration (which brings together what you have and potential for the future) and social engineering. It is the latter where transformation exists. She stated that "policy must be aligned with the people and not the other way round as changing people is difficult".

PINF5 stated that e-government as a subset of technological transformation has to "live where we live," and as practical as possible in terms of understanding what a ministry's processes are and then automating them, not practical to protect vested interests. Citing the Konza Technocity as an example, PINF4 argued that building a cluster is extremely difficult and focus should be on building something for which there is a need. These sentiments were consistent with those of PM3 who argued that a smart city cannot be originated where infrastructure is absent, and PM2 who stated that the real needs in a society is what drives e-transformation and technology should respond to this need. She stressed that, technology must "integrate with the existing" so as to "build on its strengths to cover the weaknesses".

Public private partnerships. PM1, PINF7 and PINF6 proposed the need to address funding of e-transformation programmes by leveraging the business community through PPPs.

Business process reengineering (BPR). PINF5 suggested a coordinated approach across MDAs by the Ministry of ICT so that systems "talk to each other" and not have situations where every single minister is "buying their own thing". He argued that this would be possible through BPR along the lines of ICT. Another view was that of PINF4:

> "If you do not fit technology to purpose then you have disasters like BVR kits. In many cases when IT systems come in, it's all about selling government hardware and expensive software. They are not integrated in the thing that will make the most change".

PINF7 suggested that Kenya's policy issues stem from lack of understanding of what we want to do. She agreeably insisted that when doing digital initiatives, government must look at it from end to end.

4.3.5 Digital transformation versus policy aspirations

The general feeling among all informants on whether programmes have achieved national policy artefacts aspirations, was varied. DTM3 acknowledging Huduma is living up to what was set up in the Vision 2030 policy document; called for awareness drives on what needs to be achieved so that stakeholders (including citizens) know their roles. PM1 reasoned that policy envisions a knowledge economy through infrastructure such as the fibre available throughout the country though it is not sufficiently used. PINF2 pointed out

that the scope of e-transformation is much larger than perceived and that the programmes have fulfilled such aspirations in a very limited and minimal manner only for the immediate users (e.g. suppliers) and not the broader public. His view coincided with that of PINF4 who argued that some programmes have to the extent of public service. However, it has not been carried throughout the course and is more of who is in which office to ensure that it works. PINF3's sentiments were telling:

> "Yes and No. We are happy to see a lot of things taking shape. Huduma Centre serves 30,000 citizens per day as opposed to an isolated way of doing things. We have also adopted cashless way of doing payments through IFMIS yet the same system is being used to pilfer funds through alteration of records".

PINF1 contended that the assumption that technically-competent policy such as e-transformation will self-sell is a falsehood. According to him, the soundness of policy should be judged by its "implementability". He stressed that "a policy that cannot navigate vested interests successfully is bad policy since its implementation strategy has not been thought through," he further reasoned that "a policy's main role is to choose and you may only choose from options that exist and those options have interests around them so you have to offend those interests".

4.3.6 Citizen empowerment for e-transformation

Most informants agreed that *mwananchi* has the capacity to take part in e-transformation however he is not empowered enough to take up such initiatives. PINF4 described human capacity as a demand and supply-side constraint. He reasoned that apart from a radio and TV the only other basic gadget Kenyans have is a mobile phone. However, infrastructure may not be available to enable them use devices because the more services, the more sophisticated the device whose income may not be available. PINF5 was also sceptical that Kenyans are empowered citing the lack of access. PINF7 stated that "the aptitude for adopting and adapting to technology exists, what is necessary is an enabling environment to empower citizens". PM3 opined that ICT policy prescribes access and the revised policy would emphasise it in terms of availability, affordability, accessibility, awareness and ability (skills).

4.3.7 e-Transformation and digital Divide

From arguments advanced by informants, policy has not addressed digital divide. PM1 argued that the cause of digital divide is the means to access. He also cited electricity as an overlooked element in the digital divide debate arguing that communities benefit

through such complementary infrastructure, a view that was also held by PM3. PINF3 contended that a number of policies exist to address the digital divide issue (e.g. community centres where people can access computers). He also argued that the Internet is becoming affordable with fibre being deployed to the counties. However, according to him mobile phones may be cheaper yet still expensive to the rural people. He hoped an emphasis on PPP will address this. PINF2 was emphatic that:

> "Unlike the oversimplified notion that divide is between those who know and those who do not; there is the divide based on where the infrastructure is for instance, urban centres versus the rural; and a divide based on knowledge and skills with people who know how to operate an ICT equipment but do not know how to access government services online".

In his reasoning, government e-transformation must recognise such complexities of divide. PM2 also contended that majority of Kenyans are good on social media but still deficient to use the Internet for innovation. PINF4 also contended that the digital divide in Kenya is real in terms of urban and rural due to the infrastructure deficit the government needs to pull into the rural areas. He also stated that "information is available on a differentiated basis, governed by where one lives and their income".

4.3.8 Policy and public sector institutions

It was generally agreed that institutional collaboration is key as government e-transformation is a multiagency affair. DTM2 and DTM3 informed me that Huduma is not a talk-down approach since participating institutions are involved at the onset making them keen to see how their objectives are met which is also key to ensure services are delivered as per Huduma's service delivery charter. PM3 credited the NICTP (2006) for setting parameters in which institutions operate.

ICTA's role could not be ignored during the interviews. However, PINF1 contended it appears not have enough muscle within the architecture of government to drive change. In his opinion, most initiatives by government institutions have succeeded in spite of the authority. This he pegged to the leadership of those institutions that is key for the transition to ICT. Alluding to Rwanda's State House-centric and led approach, he argued:

> "Perhaps Kenya is such a plural and diverse society that the big bang approach may not necessarily work, which then means that institutional autonomy needs to be encouraged with a competition of sorts among government-led positive ICT initiatives. That way, you may end up bringing everybody on board eventually. Maybe that's another thing an ICT policy should speak to. Are we as a society actors' interests so diverse that we need a disaggregated intervention strategy rather than a unified strategy?"

PINF3 contended that despite a good working relationship between the policymakers and implementers, there is no control in ensuring that what was preferred has been implemented. The implementer in most cases being a different agency that may choose whether to implement it or not. Similarly, PINF4 noted a penchant for creating a lot of institutions arguing it is a big flaw on who is really in charge and leads to a clash in their roles.

PINF5 opined that the issue of bloated institutions is a political discussion. According to him, a much-needed philosophical shift to be internalised by top leadership is that government exists to create jobs as opposed to giving people direct jobs. He stressed that there are too many institutions leading to duplication of roles, and thus inefficient. Equally, PINF6 conceded to duplication in public sector blaming it on the government's silo management that exists deliberately yet e-government was to break those walls.

4.3.9 Emerging issues

4.3.9.1 Monitoring and evaluating e-transformation.

PINF4 stated that the current complexity of evaluation in government is due to duplication. He asserted that however pervasive, "M&E does not feedback in a way to show it justifies its cost and also to tell you that people use that content to improve how work is done." He proposed that M&E should be established as an end in itself. PINF3 reasoned that innovative ways ought to be outlined to ensure there is a coordinated way of doing e-transformation policies. He proposed the establishment of a policy authority modelled in similar fashion to the Competition Authority. The mandate of such a body will not just be confined to ICT matters but cut across all sectors. Such a body could also direct that each policy to be made, must be supported with evidence, and also conduct the M&E. PINF3 also suggested the need to create a mechanism to track what is happening in a given area, at the click of a button stating.

PINF8 told me of plans that are underway to launch a dashboard similar to the e-ProMIS called e-NIMES which the President will be able to click and see the status of all the projects in the entire country. A major challenge he highlighted facing M&E in Kenya was funding. Drawing comparisons from a similar function in South Africa, he pointed out that their budget for M&E is equivalent to what the entire host Ministry in Kenya is allocated in the annual budget hence relies a lot on donor support and development partners. He indicated that legislation is currently underway to empower the M&E department to obtain data from MDAs within prescribed timelines failure to which consequences may ensue. The department also faces human resource constraints with staff already trained on

M&E being transferred to other areas of the public service but not necessarily for that role. In his reasoning, an ideal situation for M&E is to have sector-based divisions each with a head and staff attached to it. PINF6 suggested that in addition to the community, the fourth estate is a better monitor of transformative programmes.

4.3.9.2 Prioritisation.

PINF4 asserted that government ought to identify services it provides to the people most frequently and in bulk; and automate those that show the greatest demand. According to him, "e-government should start where it would be more justifiable to use it and not where most money will be spent". A further suggestion he made was that government, as a matter of policy, should emphasise to its departments that "the existence of long queues outside our office does not show you are important but inefficient". PINF5 also reasoned that government ought not to automate every single inefficiency since "automation is about eliminating certain bureaucratic processes because there is a direct way".

4.3.9.3 Digital transformation is not about "the physical".

Using the DLP as an example, PINF3 argued that government's way of conceptualising things is physical due to the need to impress the public limiting its ability to track emerging issues. PINF4 for instance, argued that government overbuys equipment without investing enough in establishing systems to enable it interact well with *mwananchi* in a more sustained way. He stated that government ought to ask itself, "what are the things we do as government that are important to Kenyans and we can do through ICT?" and not "what are the shiniest things we can buy that can give the impression that we are a digital government?" Similarly, PM2 contended that as a country, we are obsessed with gadgets (e.g. laptops for kids etc.). "Technology dazzles the eye but payoffs exist in its content," she stated.

4.4 Chapter Summary

This chapter presents a rich tapestry of findings drawn from both primary and secondary sources. The former was presented in form of results out of an observation conducted at the Huduma City Square centre; a focus group interview with the programme's users and in-depth interviews with key informants close to the processes of public policy, e-transformation and implementation. The secondary findings presented were drawn from an examination of selected national policy instruments dating back to 2003. The researcher also organised these findings into themes that weave into the framework identified in Chapter 2 (Figure 16).

In the next chapter, the researcher analyses these findings and the issues they raise using this framework. This analytical exercise enables the study to respond to the research questions identified in this study. It is also noteworthy that Huduma as an e-transformation programme, was a flagship project contemplated in successive government policy instruments. Should government e-transformation programmes therefore strictly bear the "flagship project" tag to succeed?

Chapter Five: Making Sense of Policy and Digital Transformation in the Kenyan Context

In this chapter, the researcher scrutinises key findings presented in Chapter 4 and discusses their meanings and how they tie back to literature. Overall, the units that fall within the ambit of analysis are policy and the digital transformation ecosystem (Figure 17) structured around the Huduma programme.

5.1 Recapping the Theoretical and Conceptual Framework

The two-pronged framework for effectiveness of public policy on e-transformation in government that first appeared in Chapter 2 identified specific elements that constitute the digital transformation ecosystem: ICT Infrastructure, Human Capital, ICT industry, application of digital transformation (e.g. e-government), policies and institutions (Hanna, 2016a). The framework (Figure 16) was supported by a raft of works that considered the payoffs of such transformation in the public sector for instance, public value (Gupta *et al*., 2008; Cordella & Bonina, 2012; Bannister & Connolly, 2014; Otieno & Omwenga, 2015).

Literature also suggested that policy drives e-transformation (Cordella & Iannaci, 2010; Kane *et al*., 2015) by creating an environment that may enhance or hinder how the other elements operate (Hanna & Summer, 2014; Hanna, 2016a). To ascertain policy's effectiveness in this role, literature considered the digital transformation programme (Dzidonu, 2002; Kakabadse *et al*., 2011). In addition to monitoring and evaluation mechanisms (Heeks, 2005; Abrahams & Burke, 2012; Munyoka & Manzira, 2013), McConnell's (2010b) framework was identified to provide a simplified way to analyse policy as a programme. This would address the gap identified in literature on the absence of a framework to provide a strategic alignment between policy and e-transformation efforts in government.

5.2 Research Questions

This study posed key questions to guide the research. The main research question was: How effectively has public policy contributed to the implementation of digital transformation programmes at the national level of government in Kenya?
To answer this question, the study broke it down further into three segments:

i. How is government e-transformation characterised in Kenya's public policy environment?

ii. What elements of policy enable or inadvertently create barriers to e-transformation in government?

iii. How should existing digital transformation policies in Kenya be strengthened to ensure their effectiveness?

The findings in Chapter 4 have effectively responded to the second sub-question. However, sub-questions (i) and (iii), require in depth reflection, better understood by analysing the findings based on the issues they elicited. Only then will this study certainly answer the main research question and make necessary recommendations.

5.3 Policy and e-Transformation

Summer (2014) suggested that public policy outlines the scope, rewards and sustainability of the gains a society expects to realise from e-transformation. This informed the study's approach when considering acres of text in policy documents and how they address each of the elements in the e-transformation ecosystem as summarised in Table 12 below.

5.3.1 "Islands of automation" lag e-transformation

From Table 12 below, policy instruments reveal that the push for e-transformation in Kenya's government is driven by the quest to have decentralised, efficient, and citizen-centric services through reinvention in the service delivery system of government (Asgarkhani, 2005; Tapscott, 2015). While various MDAs have implemented systems, they are still disparate and unlinked leading to duplication and wastage of resources; a scenario MTP2 described as "islands of automation" in government (GoRK, 2008, p.26). Policies thus envisage that the Kenyan government digital transformation is to be achieved through integration. Efforts towards this integration appear to first take place in 2011 when we learn of an integrated service delivery (ISD) programme that had been initiated and a memo on its justification submitted to the Cabinet (MDP, 2014, pp.46-47). This later became the Huduma programme as prioritised in MTP2 to promote efficiency, quality, speed, convenience and dignity in public service delivery (GoRK, 2013, p.30). This is consistent with the reasoning by Hanna and Summer (2014) that e-government must consider efficiency and resource management through simplified and reengineered government processes; and improvement of public services by reducing transaction costs to citizens through the one-stop shop concept (pp.26-27).

Table 12: Elements of digital transformation in policy instruments

Policy / Element	ERS(2003)	EGS (2004)	NICTP (2006)	VISION 2030		JM (2013)	NBS (2013)	CKM (2013)	KNIM (2014)	NCS (2014)	NICTP (2016)
				MTP1 (2008-2012)	MTP2 (2013-2017)						
e-transformation in government	Efficient, client-oriented ministries	Integrating government services for a single point of access; services to fit the way citizens want to access them	e-Government to improve internal efficiency and quality of public service delivery; result-oriented, efficient and citizen-centred government.	Make government citizen-focused and results-oriented; Integrated Service Delivery (ISD) programme developed and submitted to cabinet in 2011.	Established Huduma Kenya Integrated Service Delivery Model; real-time online monitoring system proposed.	Knowledge from digital environments to enhance government efficiency.		Public value through one stop approach to deliver 80pc public services leading to an improved whole of government (WoG).	UiD to consolidate government-wide IT programmes.		Result-oriented, efficient and citizen-centred government; extend Huduma to the counties
ICT Infrastructure	Tax incentives on ICT equipment, TEAMS, NOFBI & liberalisation of telecom industry.	ICT equipment standards, network connecting government buildings.	Provision of incentives for ICT infrastructure, high capacity national infrastructure to enhance service delivery.	TEAMS operational, NOFBI halfway complete despite low utilisation, GCCN to bridge "islands of automation", LANs&WANs, and zero rating ICT hardware.	891 of 2100km NOFBI laid, creation of USF, data centres, fiscal concessions to promote local software affordability, establishing Public Key Infrastructure (PKI).	Expanding fibre optic network.	NOFBI targets 50,000km, building of 2 neutral national data centres and increasing submarine cables to 6 through the private sector.	Fifth undersea cable to supplement the current four to double country's capacity.	Wireless broadband network to be developed and a tier-2 Government Data Centre (GDC).	Protect government common IT infrastructure.	Data centres, broadband deployment, ICT-friendly tax regimes on devices, PKI-enabled security services.
Human Capital	ICT education and training, and integrating IT into curriculum.	Basic, operational and technical training for e-government services; Government training programmes to have an IT component.	Integration of IT into the school curriculum. Establishment of National CoEs, enhancing capacity for research and development in IT & encouraging IT training for decision-makers.	National ICT CoEs to develop critical mass of HR to be set up.	Setting up National ICT CoEs, a skills audit to align training to demand proposed, PDTP launched in 2013 saw 100 graduates recruited.	Technology institutes to empower youth and innovation centres. Increasing HR capacity in ICT through improved ICT education	Quality standards for higher education curricula and assessment of core technical programs Digital literacy, creation of multilingual and publicity content and deploying mandatory use of e-services.	ICT development clusters, and development of skilled human resources for the ICT sector.	Public value with 50% adults accessing an e-service and 8 out of 10 users being "very satisfied"; Creation of CoEs to develop high end skills & an ICT professional body.		Life-long learning through digital literacy programmes to existing workforce, ICT training for political decision makers, establishment of a national CoE, and innovation clusters.

Policy / Element	ERS(2003)	EGS (2004)	NICTP (2006)	VISION 2030		JM (2013)	NBS (2013)	CKM (2013)	KNIM (2014)	NCS (2014)	NICTP (2016)
				MTP1 (2008-2012)	MTP2 (2013-2017)						
ICT Industry	PPP legislation proposed.	Collaborate with other government institutions, and the business community.	PPP in ICT development through an enabling environment, development partners, investors and operators, consumers and users, ICT professional bodies.	Called for finalisation of PPP framework	PPP to be operationalised.	Proposed enactment of PPP legislation.	Stimulation of PPP within the ICT sector and promotion of government buy in.	PPP where private sector build and government funds. Sub-standard delivery would see vendors and partners penalised.	PPP with favourable incentives and tax breaks.		PPP for ICT-enabled systems.
Institutions	Commission for stalled projects was proposed, NESC and planning ministry.	GITS, e-government directorate.	High level ICT leadership and championship, NCS would remain policy advisor on ICT matters.	MDAs, Planning ministry to track policy, programmes& projects, NESC would advise government and liaise with the private sector.	MDAs		ICT ministry, VDS, creation of a new institution for public ICT infrastructure, M&E by government unit responsible for it.	ICT Ministry, KICTB, PMO.	ICTA, NCS, CA, KENIA.	ICT Ministry	ICT Ministry, NCS and ICTA to develop M&E framework.

Source: Author, 2016

The findings also allude to a one-stop approach through an improved WoG approach to enhance public value in government services by consolidating end-to-end e-government processes through reengineering and integration to one-stop non-stop service models using the UiD concept that would lower the operational costs for MDAs (MoICT, 2014, pp.52-55). Interviewees suggested that e-transformation in government lags because of this disparate nature of government-wide systems. PINF7 for instance, stated that government does more computerisation than automation without looking at things from end to end. She informed me that even at Huduma, there are situations where one is sent back to the ministry's back office for a physical file to be accessed as the back-end system is digitised only to some extent; inhibiting data analytics or what PM1 called data mining. For example, the ID service that had been inoperative for three weeks at the Huduma site, is traceable to an agency's back-end system. This is discernible from PINF4's assertion that Huduma might have ensured services are delivered efficiently however it has not reduced cost and thus remains a replicated system to bypass a blockage as the traditional national registration bureaus for ID cards still exist. Could Huduma's current integration be in fact the façade alluded to by Yong and Koon (2003), Ciborra (2005) and Hanna (2010b)?

A possible explanation could be that government decided to implement a proposal previously deliberated by the Cabinet. It is noteworthy that Kenya's incumbent president who oversees Huduma, served as Kenya's deputy prime minister and minister for finance around 2011. This suggests Huduma had a long-term perspective as per the views of Hanna and Knight (2012) who reasoned that its contrary could result in isolated and unsustainable systems that make a WoG transformation untenable. Hanna (2016a) posits that a WoG approach encourages information sharing across agencies centred around user needs to overcome silos, duplication and fragmentation.

The data suggested that the Official Secrets Act of 1968 inhibited digitisation of public information. They also proposed legislation to recognise electronic records (GoRK, 2009, pp.30-33). This could probably be the recently assented Access to Information Act, 2016. However, an opportunity the government had towards this integration was through the NDRS identified in Chapter 1. Its quiet collapse however means that the government "islands of automation" persist. Curiously, integration of government systems was a priority in the national masterplan set to lapse in 2017 (Figure 21). This is a situation that must be attended to on priority as Huduma's digital channels will most likely rely on such integration.

5.3.2 Infrastructure deficit widens digital divide

Infrastructure is a foundation of a vibrant digital transformation ecosystem as it serves unconnected populations who can be reached through universal access (Hanna & Summer, 2014). Policy appears to have favourably considered ICT infrastructure through installation of TEAMS, NOFBI, GCCN (Figure 19) and data centres that support the Huduma programme. It further proposed additional undersea cables to increase the country's capacity despite their low utilisation (MDP, 2014, p.43), a view shared by PM1 who argued that the business community ought to create value out of the infrastructure government has invested in. Hanna and Summer (2014) contended that for digital transformation, policymakers must emphasise on diffusion if ICT and inclusion through universal access and nationwide supply of broadband (pp.74,88). Asked whether policy has addressed digital divide, a number of interviewees alluded to an infrastructure deficit between urban and rural areas. The focus group participants exemplify this in their common suggestion for mobile huduma clinics to serve remote areas and calls for an increase the number of Huduma centres. FGP1 for instance, intimated that from his rural home it takes about four hours to reach his provincial headquarters to obtain the programme's services which has cost implications that is unaffordable to a number of residents.

PM3 stated that 80% of the Kenyan population is rural-based. The fact that Huduma centres are located in urban settings attests to majority of rural populations still being left out. Focus must therefore be on expanding the NOFBI so as to ensure optimal utilisation of the current undersea cables. This should be possible through the universal service fund by the sector regulator. Complementary infrastructure such as electricity could also encourage inclusion. Kenya Power, a state-owned power corporation, recently commenced a pilot project to link homes to its 4,000km fibre network (Ochieng', 2016b). Connecting populations to the national grid has been a priority of government. From the perspectives of PM2 on smart policy, such innovative initiatives must be encouraged for infrastructure to reach rural populations.

5.3.3 Human capital: An enduring challenge?

Most interviewees were unequivocal that human capacity is necessary for e-transformation. This also appears to be an urgent commitment across policy instruments. Hanna (2010a) stressed that skilled human resources are a prerequisite to leverage the opportunities in e-transformation. He reasoned that e-tranformation policy must address three areas: (i) e-literacy whose focus is on the awareness and skills of the population; (ii) e-leadership which focuses on policymakers' awareness and competency of policymakers to

set policies and manage their resultant transformation; (iii) education and training of ICT professionals; and (iv) leveraging of ICT to improve education quality and lifelong learning (pp.161-177).

Despite Huduma users calling for accuracy in the information on services provided, from the findings of this study, the programme has a critical mass of users (approximately 35,000 per day) whose satisfaction rate stands at 95%. This is commensurate to the 8 out of 10 "very satisfied" users public value element envisioned in the 2014 masterplan. The government must strive to maintain this status even when Huduma's digital channels finally roll out. PM2 alluded to a divide based on knowledge where Kenyans can access social media (e.g. Facebook, Twitter etc.) but have a problem accessing or submitting government documents online. The findings revealed that Kenyans are content consumers, a fact supported by the impressive internet penetration rates we saw in Chapter 1 (Figure 3) which intriguingly, is attributed to social networking. Innovation around the Huduma digital channels ought to be friendly just like social media sites to bring Kenyans on board the programme. However, at present, priority should be including Kiswahili in the systems so as to embrace the users who may not understand English.

The EGS argued that traditional systems would be retained for customers who "cannot and do not want to use" new method to access government services (Cabinet Office: Office of the President, 2004, p.12). On the other hand the NBS in addition to multilingual systems, proposed to deploy mandatory use of e-services on different platforms (GoRK, 2013, pp.27-30). This is a visible policy contradiction that can traced back to its formulation which confirms the hindrance cited by some interviewees on the gap between the policymakers and those whom it is intended. The policy review proposed training of decision makers, sentiments that were stressed by PINF3 and support the above reasoning by Hanna (2010a). This could address such conflicts. Such training would also ensure e-transformation is positioned at the right level especially if not focused on technical but ICT-led institutional issues (Hanna & Summer, 2014, p.60).

The idea of establishing a National ICT CoE is prominently a feature in nearly all policies yet there is no evidence it has ever been done and so is the skills audit. It is almost mortifying that the 2016 draft ICT policy is falling into the same trap. Who will finally establish this CoE? Is it the right approach to meet the supply-side requirements for local high-end skills that the findings revealed? The government (through ICTA) in collaboration with the private sector has embarked on equiping 500 ICT graduates annually with high-end industry skills through the PDTP. This model coincides with the suggestion by Hanna (2010a) on public-private talent development (pp.167-168). But is the PDTP a long-term

solution? Considering these trainees absorption in government is not guaranteed, these skills are clearly not being retained where they are needed most. One area the PDTP could work is perhaps in developing standards for government e-tranformation programmes that the data revealed is non-existent. Besides, these trainees get acquainted with the ICT industry which supplies ICT solutions to government.

In recent events, the leader of the majority party in Kenya's National Assembly introduced the ICT Practitoners Bill, 2016[2] that seeks to create a body to register and licence ICT graduates in the country, approve courses and oversee continuous training and development in the industry. The Bill has been widely condemned as amorphous with the intention to stifle innovation. Kenya's MoICT when formally denouncing it, asserted that it does not represent the policy position of the Government of Kenya (Chao-Blasto, 2016). This is despite policy instruments alluding to establishment of a body of professionals to encourage ethics, standards and human resource development in the ICT sector. This Bill however contentious, may actually be helping the government's case in addressing supply-side human resource issues that hinder e-transformation.

5.3.4 The public private partnerships (PPP) rhetoric

Huduma relies on two local telecommunication firms for internet services in addition to the suppliers who maintain its solutions. These suppliers constitute the ICT industry. In addition to these vendors, a rhetoric across documents and interviewees is the PPP arrangement. For example, the running of the cyber cafés within Huduma centres is outsourced to a private company and the monotonous advert the researcher saw running at a screen at the centre was by a private company. Hanna and Summer (2014, p.55) emphasised that government cannot blindly invest in systems, outsource such services or rely on private providers to define their transformation requirements. Yet the findings revealed there is a lack of standardisation of components and systems procured and applied in government (RoK, 2015d, pp.52-56) despite proposals by the EGS on developing these standards and the defunct CKM proposing penalties for substandard delivery of ICT systems. If the Qmatic system being inoperative and an ID system upgrade that had taken three weeks is anything to go by, it could be possible that vendors have an upper hand due as they are not bound by any standards. There is also the need to demarcate the issue of standards between MDAs and suppliers; Huduma and MDAs; and Huduma and its suppliers. This is because say the ID platform in Huduma is not working, the citizen blames the programme and not the parent unit providing the service.

[2] *See* Kenya Gazette Supplement No. 84 dated 7th June, 2016.

PPPs are key for purposes of transferring the private sector quality standards to government, increasing service turnaround times, providing requisite expertise, funding e-transformation programmes to mitigate their budget shortfalls and facilitating infrastructure diffusion. The data revealed PPP arrangements have not taken off as expected despite being operationalised. This suggests that government may still be deficient in its capacity to harness the benefits of PPPs and that the model is not a guarantee for automatic funding for e-transformation programmes a situation Hanna and Summer (2014) agreeably suggested is not easy due to dynamism of technology and uncertainty of how benefits will be shared with the private partners (p.87).

5.3.5 Institutions authenticate e-transformation

A common position policies and interviewees revealed are the bloated institutions managing e-transformation projects that have led to overlapping responsibilities (RoK, 2015d, p.182), a situation PINF4, PINF5 and PINF6 stated is deliberate. We shall revisit this point later as it has a significant bearing on one of the researcher's major recommendation. Like policies, institutions create the environment in which interfaces among all the other elements is either enhanced or hindered (Hanna, 2016a, p.41). In earlier work, Hanna suggested the need to consider the primary institution mandated to lead and coordinate the e-transformation process. Notably, Kenya was then cited as having a lead ministry model (i.e. MoICT) (Hanna, 2010a, p.153). Literature also alludes to a designated e-development agency model which basically involves an autonomous ICT agency holistically coordinating e-transformation (Hanna & Summer, 2014, p.56). The latter is applicable in this study considering the creation of ICTA.

ICTA was established in 2013 as a state corporation through a Presidential Order in a Legal Notice (RoK, 2013c) as an amalgamation of previous bodies namely, the Kenya ICT Board established under a Legal Notice, the Directorate of e-Government and the Government Information Technology Services (GITS), established under Presidential and Treasury Circulars respectively. ICTA's functions include, enforcing ICT standards for human resource, infrastructure, processes, systems and technology for the public service; deploying and managing all ICT staff in the public service; facilitating and regulating the design, implementation and use of ICTs in the public service; promoting e-government services, ICT literacy and capacity; and supervising critical ICT projects across the public service (pp. 2118-2119).

The 2014 masterplan contended that ICTA is perceived as a statutory body under the MoICT rather than an ICT leader with oversight over all flagship ICT projects across the

public service, a perception that ought to change (MoICT, 2014, p.84). In retrospect, the same masterplan backtracks that in as much as ICTA is an ICT leader, "government is large, and this structure could lead to having a large and bureaucratic organisation" hence ICTA would only provide high-end ICT professional services to departments implementing large flagship projects (p.85). This explicit conflict between legislation and policy supports the assertion by PINF1 that the authority has seemingly not gained traction across government. PM1 informed me that among the challenges the Authority faces, is budget and human capacity constraints especially its project management function assigned by the masterplan hence it relies on individual project managers in the MDAs.

In addition to maintenance of a database for ICT professionals in Kenya, other changes the 2014 masterplan proposed for ICTA was the establishment of an ICT oversight committee to be chaired by the President. This was to be done through an amended legal notice with the said changes being effected a year into the launch of the masterplan. Unfortunately, the only amended notice in existence addresses drafting issues of the former. It would appear that policy aspirations have not materialised considering that the institution even informants posit to oversee digital transformation in government seems not to have exceptionally been empowered in its role. An alternative avenue the masterplan identified to effect the governance changes would be through an Act of Parliament (p.97) none of which is currently available. The current notice is revocable and the Authority risks suffering a similar fate as its predecessors; a scenario consistent with the reasoning of Hanna & Summer (2014) who argued that the agency model is vulnerable to changes in the authorising environment.

Hanna's perspectives on institutions as either enhancers or a hindrance must therefore be upheld as true. This could also be said of the PDTG taskforce that was set to implement the NDRS whose role is subsumed in the 2014 masterplan as the persons, establishments and assets data hubs (pp.101, 117-118). PINF7 intimated to me that the said taskforce was not gazetted otherwise if it were done it would authenticate the project. As much as DTM3 argued that the duplications in eCitizen and Huduma are complementary, ICTA ought to have taken a position by now on the matter. eCitizen might actually be the portal Huduma envisions in its strategy despite being a project by the National Treasury. The ICTA Act may perhaps be timely to give the Authority a similar status as the Communications Authority of Kenya and the National Communications Secretariat, two autonomous bodies whose mandates are firmly established under the Kenya Information and Communications Act (RoK, 2011; 2013d).

5.3.5.1 Huduma's unique executive support.

Huduma must be understood on the basis of its own peculiar facts. For instance, most interviewees suggested that e-transformation must be led from the presidency. *Annexure 10* depicts a multifarious governance structure of the Huduma programme. The programme's leadership commences at the level of a service delivery summit led by the President. No other e-transformation programme in government has such an elaborate array of institutions supporting it. In retrospect, even focus group participants when asked how they got to know that a service is offered in the programme, recalled the President reading out a list during its launch. Thus at the heart of e-transformation is strategic leadership (Hanna, 2010a; Solis *et al*., 2014; Eggers & Bellman, 2015) considering it has fostered the process of BPR and brought down a lethargic service culture. If such executive support was missing, individual MDAs would uphold territorialism or the turf wars (Hanna, 2010a, p.148).

Without discrediting executive leadership, perhaps the argument favouring political leadership to spearhead programmes has been rather overstretched. This particularly stood out in the KNIM (2014) in its arguments for a committee under the president's chairmanship to overseee its implementation – which did not happen. Curiously, systems such as iTax and eCitizen appear to work effectively without any special "presidential" attention. PINF1 credited this to the leadership of these institutions. During the key informant interviews, the researcher observed that the Huduma Secretariat mostly has youthful staff who are highly-trained and have ably delivered the programme. Two of the three youthful managers of the Huduma programme interviewed also sit at its highest levels of decision making. Notably, all stated that their CEO always inspires passion among all staff to deliver. Does this portend that non-political leadership actually empowers the younger generation of skilled professionals, and may have possible ramifications for future digital transformation policymaking?

5.3.6 Policy futurism is a prerequisite for e-transformation

Except for the two MTPs and the ERS, it is not immediately clear whether the objectives of all the other policy documents were fulfilled. Despite very detailed implementation matrices in these documents, there appears to be no review. These policies also have timelines in which they operate; it is not so clear what happens after. It is perhaps why some informants argued that policy aspirations for e-transformation have been achieved in a very limited manner. PM2 attributed this to a prevalent African culture of non-reflection. The ERS for instance, proposed the creation of a commission for stalled

projects. This body's mandate would perhaps have encompassed e-transformation projects that have not taken off as expected and/or formally close them if necessary. This has never done. NESC remains disenfranchised in the whole e-transformation narrative since, even specific ICT policies seem unaware of its role as a private sector liaison (RoK, 2004, p.2107) and that it may be better placed in making PPP work. The masterplan envisioned linking the aforesaid islands of automation in government and also called for the National ICT policy to be finalised for its implementation (MoICT, 2014, p.95); what then happens after 2017? The draft 2016 ICT policy, safe for a cursory innovation on emerging technologies, it more or less reiterates the contents of other instruments, the bulk of which is lifted from its 2006 counterpart. This situation attests to a disjointed policy environment, that renders policy instruments mere statements of intent.

5.3.6.1 Monitoring and evaluating digital transformation.

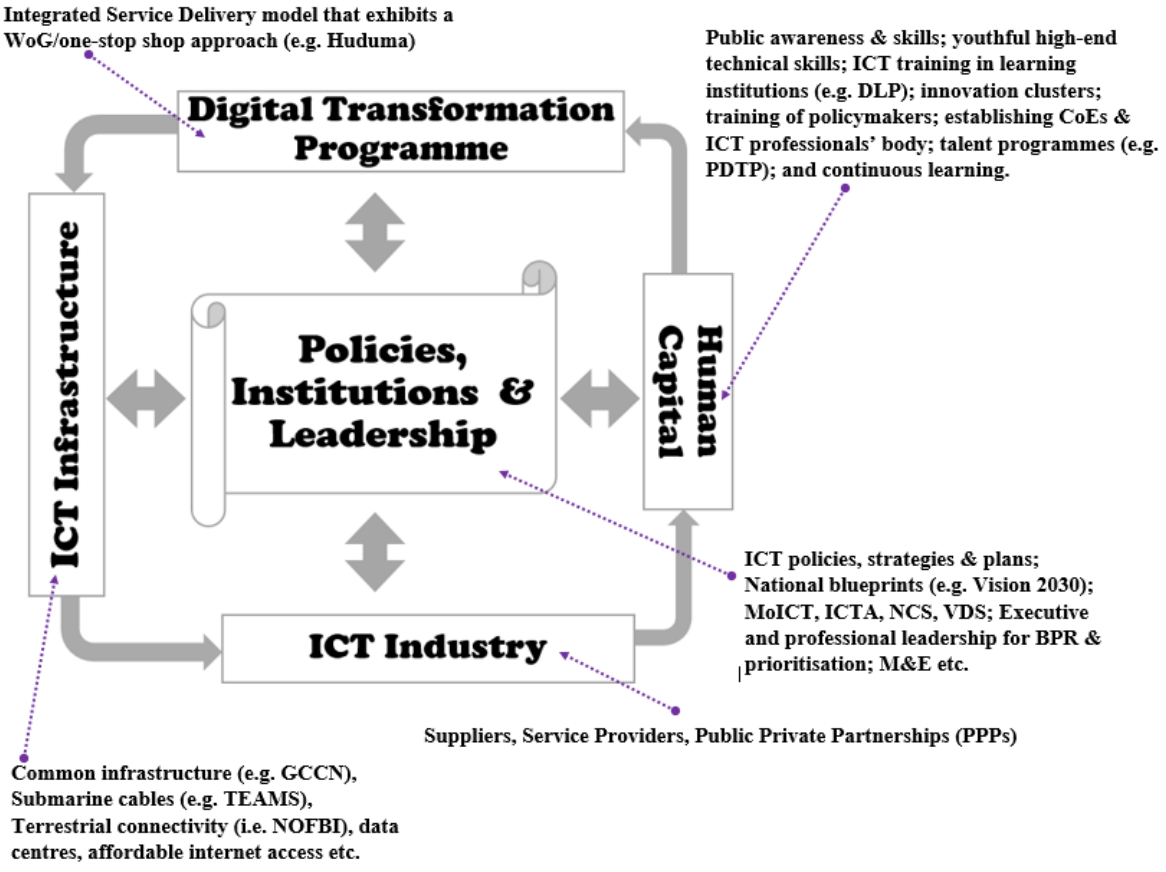
The above scenario depicts e-transformation policymaking as a supply-forced affair (Melody, 1996) and short-termist (Abrahams & Goldstuck, 2012). Hanna and Summer (2014) contend that e-transformation requires commitment to the future through a long-term perspective that calls for anticipating, monitoring and managing its inter-linkages (p.80). Policy as suggested by Abrahams and Burke (2012) identifies obstacles, gaps and failures so as to enable sustainable transformation. This literature is in tandem with the 2013 report on realisation of national values that urged institutions to dedicate resources to M&E so as to identify and address any challenges in their systems and processes for sustainable development (The Presidency, 2014, pp.1656-1657). Hanna & Summer (2014) also suggested that results-oriented M&E safeguards timely adjustments on e-transformation programmes, encourage adaptive learning and elicit citizen feedback. NIMES, the current mechanism designed to track government policies and projects including e-transformation programmes, only monitors Vision 2030 through progress and review reports. It is not immediately clear what actions follow these reports. An observation, which may also be a weakness in these reports, would be their timing most having been prepared outside the time frame of their instruments of focus. One may argue that new developments in the country influence their authorship.

Data suggests the possible creation of a single outfit to coalesce government M&E efforts and legislation to support the implementation of a computerised NIMES. This may be the yet-to-be-realised real-time performance monitoring system (RPMS) that is also a flagship project in MTP2. The fact that no comprehensive evaluation or impact study of programmes has ever been conducted since NIMES was initiated (RoK, 2015d, pp.183-185) should be telling. If the funding challenge for M&E is anything to go by, the suggestions by

PINF3 and PINF4 are not farfetched that M&E should be established as an end in itself. In its current state, it is more of receiving data from MDAs, organising it then producing a report which as PINF4 noted, does not show whether it improves how work is done; findings consistent with Bohn (2001) who posited that policy and implementation functions (e-transformation programme) "react to the results they cause" to create feedback that "enables a system reach its objectives without knowing in advance how to do it" (pp.30-31), and Hanna and Summer (2014, p.97) who cautioned against designing M&E systems that generate massive and expensive data that remain unutilised (p.97). Be that as it may, data on Huduma appears to be readily available based on the reviews under the NIMES framework and reports on realisation of national values. Another aspect of monitoring of the programme would be the NOC (Figure 24) which typifies real-time monitoring of the programme when it is actually running (Rush *et al*., 2004).

The above analysis of the digital transformation ecosystem elements and how they fit into Hanna's framework particularly for Kenya is summarised in Figure 25.

Figure 25: e-transformation framework applied to Kenya's national government



Adapted from: Hanna, 2016a

It must be stressed that the synergy in the elements of e-transformation ecosystem particularly for Kenya's government, requires leadership from highly skilled professionals able to drive strong institutional reforms that holistically think through the e-transformation agenda.

5.4 Huduma's Resilient Success and Policy Effectiveness

In the policy-as-a-programme schema by McConnell (2010b), literature urged researcher-judgment as opposed to scientific precision on the parameters. From the findings, Huduma appears to demonstrate resilient success at this point in time, which means that as an e-transformation programme it meets the threshold of policy effectiveness. The researcher will revisit the concept of resilient success and what it means for digital transformation programmes in the final chapter.

5.4.1 Goals, outcomes, benefit, policy domain criteria and opposition

The reasoning behind the aforesaid analysis is that the Huduma programme was implemented as contemplated in Vision 2030's MTP2. Despite the systems downtime and lack of the aforementioned integration, its outcomes have also been broadly achieved. Most of the 35,000 citizens who use the programme daily have also broadly benefited as demonstrated from the focus group findings and the programme's 95% citizen satisfaction rating. This attests to existence of public value as enumerated in literature (Otieno & Omwenga, 2015). However, the digital channels having not yet been activated for the citizen, makes the programme not fully meet the prescription of policy, what McConnell (2010b) refers to as the policy domain criteria. The programme's opposition is virtually non-existent. Upon being questioned on its sustainability, users were unanimous that Huduma will last as it serves the needs of the common *mwananchi.* The programme has also been feted locally and abroad; more particularly it was the first place winner in the 2015 United Nations awards on public service delivery in Africa and was also Kenya's ICT Association first place winner on the best use of ICT in public service. The researcher's depiction of Huduma's score against the McConnell of policy-as-a-programme framework is captured in Figure 26.

From the little anecdotal evidence gathered in this study on the IFMIS programme, unlike Huduma, it plausibly borders around conflicted success owing to controversies it has generated in the recent past. Notwithstanding, it featured prominently as a flagship project in nearly all the policy documents reviewed. Would the situation have been any different were it modelled similar to Huduma?

Figure 26: Huduma's score on McConnell's policy-as-a-programme spectrum

Parameters	Program Success	Resilient Success	Conflicted Success	Precarious Success	Program Failure
Goals	Implemented in line with objectives.	Broadly achieved despite minor refinements or deviations.	Mixed results with some successes but accompanied with unexpected controversial problems.	Minor progress towards implementation as intended, but beset by chronic failures, proving highly controversial and very difficult to defend.	Implementation fails to be executed in line with objectives.
Outcomes	Achieved.	Broadly achieved despite some shortfalls.	Some successes, but the partial achievement counterbalanced by unwanted results, generating substantial controversy.	Some small outcomes achieved as intended, but overwhelmed by controversial and high profile instances or failure to produce results.	Failure to achieve desired outcomes.
Benefit (Public Value)	Creates benefit for a target group.	A few shortfalls and possibly some anomalous cases, but intended target group broadly benefits.	Partial benefits realised, but not as widespread or deep as intended.	Small benefits are accompanied and overshadowed by damage to the very group that was meant to benefit. Also likely to generate high profile stories of unfairness and suffering.	Damaging a particular target group.
Policy Domain Criteria	Meets policy domain criteria.	Not quite the outcome desired, but close enough to lay strong claim to fulfilling the criteria.	Partial achievement of goals, but accompanied by failures to achieve, with possibility of high profile examples e.g. ongoing wastage when the criterion is efficiency.	A few minor successes, but plagued by unwanted media attention e.g. examples of wastage and possible scandal when the criterion is efficiency.	Clear inability to meet the criteria.
Opposition	Virtually absent and/or support is virtually universal.	Stronger than expected, but outweighed by support.	Equally balanced with support for same.	Outweighs small levels of support.	Virtually universal, and/or support is virtually non-existent.

Adapted from: McConnell, 2010b

5.5 Chapter Summary

From the foregoing, the researcher has established that the theoretical framework identified in Chapter 2 was indeed useful in responding to the three research sub-questions. Digital transformation is clearly contemplated in Kenya's public policy instruments. The challenge is perhaps the disjointed way in which its elements are treated across government-wide programmes, hence the need for collaborative policy leadership to harmonise these elements in order to yield value to *mwananchi*. While the researcher finds no reason to disturb Hanna's framework (as some of the issues from the analysis broadly fit within the digital transformation elements as illustrated in Figure 25), outlying issues from the findings such as entrenched interests and politics persuade the study's reflections on theory, and response to the main research question in the ensuing final chapter of this report.

Chapter Six: Building Resilient Success in Government Digital Transformation: Moving Beyond Flagship Projects

Upon identifying a tendency for promising e-transformation programmes by Kenya's national government to fail, this qualitative single case study set out to explore the cause. Literature suggested that such transformation is anchored on certain underlying concepts. Policy, as one of these concepts, was found to influence e-transformation programmes and to ascertain its effectiveness, certain considerations must be made for that programme. Consequently, Huduma, a flagship project, was selected to illuminate these principles. Guided by the ideas in literature vis-à-vis the findings, this study involved the question of whether a nexus exists between Kenya's public sector e-transformation programmes and the effectiveness of their enabling policy as posed by the study's focal question: How effectively has public policy contributed to the implementation of digital transformation programmes at the national level of government in Kenya? This question was supported by sub-questions whose answers have since been subsumed in Chapters 4 and 5. In this chapter, the researcher responds to the main research question guided by the analysis of the research findings in order to make specific recommendations. Further, the researcher reflects on this study's contribution to knowledge, its originality, and theory to inform future research.

6.1 Summation, Conclusion and Advancement of Knowledge

The research problem arose in the context of inadequate theoretical discourse and framework particularly in Kenya that offers a strategic alignment between her e-transformation programmes and national policies – a framework not presented before in literature reviewed and discussed in this study. Kenya's commitment to e-transformation cannot be gainsaid. To her credit, policy instruments have prioritised public sector reforms through e-government, *mwananchi* being the target of such reforms. Huduma epitomises such goals, one of its policy rationales being, bringing dignity in service delivery. Despite their diverse motivations and experiences using the programme, all the thirteen (13) Huduma users interviewed attest to a transformation that has taken place in service delivery, thus at the heart of e-transformation in government is public value.

Within the broader policy spectrum, Kenya's public policy environment prescribes the path (or provides a picture) to e-transformation from the perspectives of Hanna (2016a). From the analysis, all the policy documents reviewed speak to the supportive elements of the digital transformation ecosystem viz. ICT infrastructure, ICT industry, human capital,

institutions, and the digital transformation programme. While themes varied across the policy informants interviewed in this study, the underlying conclusion of the interview data is that digital transformation can never be simply based on hype but must reflect a society's real needs and fit into the citizen's way of life. This gives it sustainability. High-level leadership, ideally placed at the presidency, was recommended to ensure that the interest formation against e-transformation is neutralised and also BPR takes place. This can be discerned from the unique governance structure of the Huduma programme.

More threatening to digital transformation are the themes – though inexplicit in the framework – antithetical to government e-transformation namely, "islands of automation" in government, vendor pressure, emphasis on physical technology as a panacea, inadequate funding, weak policy design and monitoring and evaluation. Among the solutions that crystallised include, prioritisation of programmes to ensure that not every single inefficiency is automated; inculcating a culture of adaptive learning especially among policymakers so as to inform evidence-based and/or smart policymaking; and synergetic planning for e-transformation projects.

Having presented a case study analysis that leads to a conclusion of resilient success in one government digital transformation project in Kenya, the researcher has contributed to addressing the gap in literature on digital transformation with respect to published knowledge about how public policies can incorporate the relevant transformational elements and how a specific programme reflects these same elements, all in the same policy context. The research has applied two related analytical frameworks to a particular focus on policy and programme in Kenya, in order to extend the scholars' understanding of digital transformation. Previous articles that studied Huduma have tended to emphasise its effects, however this study extends the conversation to the impact of broader policy on a programme, from its conceptualisation to final implementation. While this study advances knowledge specifically with respect to the Huduma programme, it also presents the opportunity to reflect on the need for the Kenyan government to move beyond pilot projects, demonstrating that in Kenya it is necessary and possible to move beyond flagship projects. The import of this is that government will reduce operating costs as a result of integration and only have programmes that reflect the country's priorities and address *mwananchi's* real problems.

Taking this hierachy of thinking, it is axiomatic that given the multifaceted nature of digital transformation, navigating its elements towards resilient success is not easy, and requires non-lopsided approaches that will guarantee that: Kenya's plethora of national government institutions concerned with e-transformation are brought to the policy table;

ICT (including complementary) infrastructure is optimally utilised; policy instruments commit to posterity and are synchronised with legislation; and the challenging, yet quintessential aspects of human capital and the private sector are leveraged to ensure public sector e-transformation is sustained even for programmes that do not fit the "flagship" status.

6.2 Recommendations

The above exposition, emerging from the findings and their analysis, inevitably gives this study a basis to make recommendations as follows:

6.2.1 The importance of collaborative, youthful, highly-trained, non-political, professional leadership

When political party manifestos become policy documents, as discerned from the ERS and the MTP2 policies, this raises the issues of policy-as-politics, not only the policy-as-a-programme dimension of the McConnell (2010b) framework. Policy-as-politics falls into the realm of elections in Kenya, where there is a tendency for political elites to craft manifestos laden with populist promises. When in government, the political class also push for the creation of institutions to deliver the promised projects. As a result, programmes face the pressure to "go live" in order to give this political class the basis for re-election. As a consequence, most of these programmes are short-lived, due to lack of holistic planning and in some cases, multiplicity of institutions to oversee them, as presented in this study's findings. As already suggested in this study, digital transformaton is a long-term journey and will only be sustained if it is forward-looking, without focusing on immediate payoffs and election cycles. This is the reason why this researcher argues that collaborative, youthful, highly-trained, non-political, professional leadership must become a stated requirement for the leadership of digital transformation in government.

6.2.2 Firmly establish Kenya's ICT Authority as a legal entity

Despite Kenya making strides and even obtaining global recognition for transformative programmes such as Huduma, it must be frowned upon that the lead agency entrusted with implementing the government's e-transformation agenda is still vulnerable to political changes. The ICTA Act proposed in the 2014 ICT Masterplan ought to be fast-tracked to give the Authority a status similar to the Communications Authority or the National Communications Secretariat. This will embolden it in its role to coordinate government-wide digital transformation for programmes to "talk to each other" effectively

eliminating any duplicated services across MDAs, such as the case between Huduma and eCitizen, or prevent such situations altogether for austerity ends.

6.2.3 Pursue integration to encourage infrastructure utilisation

While the draft 2016 ICT policy has incorporated emerging technologies such as IoT, OTT and big data, its 2006 counterpart ought to be reviewed and in doing so, must take into account the issue of integrating disparate government-wide systems. This should not be problematic considering the masterplan set to lapse in 2017 had a similar priority – which realistically speaking, will not be realised. Alternatively, government may opt to revive the NDRS (Figure 9) as a flagship project in the third medium-term plan or the proposed public sector transformation strategy (RoK, 2015d). This would ultimately facilitate the utilisation and deployment of terrestrial infrastructure to far-flung areas across the country for citizens to access services, further reducing the glaring digital divide.

6.2.4 Incentivise partners implementing e-transformation programmes

While efforts towards PPP may have taken place through the PPP unit at the National Treasury or the presidential roundtables suggested by PINF7, it may be advisable to seek stakeholders' views on what incentives they require to make PPP's work for e-transformation purposes. Huduma could for instance, enter into agreements with private companies to run adverts in its centres at a fee. However, it must be made clear that such incentives will not compromise on quality and must seek to support the service delivery charter, which is the social contract between government and *mwananchi*. The role of NESC on PPP around e-transformation needs to be showcased more, being one of the pivotal roles conferred to it by legislation.

6.2.5 Streamline institutions to conceptualise and evaluate e-transformation

The National Communication Secretariat and the government think-tank Kenya Institute of Public Policy Research and Analysis (KIPPRA), are two semi-autonomous agencies manned by experts with knowledge and expertise on ICTs and policy respectively. Prior to enacting any policy, the MoICT may find it necessary to consult KIPPRA so as to ensure the issues around proposed policy are considered against evidence and best practice anchored on research. This would eliminate the current procurement-led and government's fascination with physical devices. Being Kenya's *de facto* policy authority, government could consider building KIPPRA's capacity to include a research element for e-transformation projects. The institute's mandate could also include giving some sort of green light to MDAs future e-transformation policies and programmes before they are pursued. This, in effect, would give the National Treasury the prioritisation mechanism as

per its proposal in the 2015/2016 budget statement to only release funds for programmes that have been appraised and meet the policy yardstick (RoK, 2015a, p.9).

Government-wide M&E is currently conducted by the M&E department in Kenya's planning ministry, which generates reports provided by the MDAs under the NIMES framework. The Vision 2030 Delivery Secretariat also works together with the said department. In practice, e-transformation is a cursory part of the data collated by these two institutions. ICTA and KIPPRA personnel, who bring technical project management and professional analytical skills respectively, on e-transformation, could have working groups for M&E of e-transformation programmes.

6.2.6 Leverage human capital through learning and innovation

Digital transformation affords a country an opportunity to reinvent ways it goes about its business. While government does not risk extinction like businesses or commercial entities, benchmarking both regionally and globally is an opportunity for it to obtain cutting edge ideas that may be integrated into local e-transformation drives. To address supply-side human constraints facing e-transformation, the government should consider retaining its best trainees from the PDTP to shape the standards around its digital transformation projects. Having been exposed to the private sector, these young graduates are familiar with its workings and are capable of beating vendors at their own game. Despite renouncing it in public, the MoICT also ought to have a conversation with stakeholders on the controversial ICT Practitioners' Bill. If considered against government policy documents this study reviewed, including the proposed national ICT policy, it may perhaps be government's solution towards the much-needed skills audit on the available high-end human capital. On the demand front, government must ensure that e-transformation programmes are aligned to *mwananchi's* real needs or where it would make the most impact as seen with Huduma. Training of policymakers also ought to be encouraged with particularity on legislators who approve budgets. If Kenya's decision makers see reason in e-transformation initiatives through training, it is unlikely the budgets for these projects will be slashed.

Revisiting McConnell's (2010b) policy-as-a-programme framework in a digital transformation context, "resilient success" could then be rethought, in terms of the objectives, target group and opposition parameters. So, possible parameters for resilient success in the digital transformation context could include:

(i) programme objectives should not be designed exclusively by governmental leadership, but in collaboration with ICT industry partners and citizens as a common view contributes to programme implementation;

(ii) while citizens are the main target group to benefit from digital transformation, government institutions and their leadership should consider themselves as beneficiaries in terms of their own efficiency and performance improvements. Seeing themselves as beneficiaries may encourage public officials to be more engaged in achieving resilient success in digital transformation programmes;

(iii) it is not possible from this study to extend the McConnell framework with respect to the opposition parameter.

These contributions enrich McConnell's (2010b) framework for policy-as-a-programme, when applied to digital transformation programmes.

6.3 Reflections on Originality and Future Research

Briefly revisiting the work of Cryer (2006) first mentioned in the methodology chapter, the originality of this research is found in what the author calls "transfer of mode or place of use" which suggests that originality exists when familiar or published theory is applied in new situations (Para 8). From this study's findings and analysis, the researcher has demonstrated the applicability of the theories postulated in the digital transfomation (Hanna, 2016a) and the policy-as-a-programme (McConnell, 2010b) frameworks to understanding the complementarity between policy programmes and digital transformation programmes in a new context (in the Kenyan government). Moreover, in the course of literature review, the researcher did not come across any published works that have specifically interrogated either of these two frameworks in Kenya. Future research can apply these two analytical frameworks in combination.

While McConnell's (2010b) policy-as-a-programme arguments are compelling, this research expands McConnell's framework with respect to the policy objectives and target groups parameters. This expanded component of the McConnell analytical framework can be used for future research on digital transformation policy-as-a-programme in Kenya and elsewhere. Kenya also has a very small ICT industry, mostly importing digital infrastructure, technologies and applications, with a fledgling software entrepreneurship sector. Future scholarship on digital transformation should interrogate how the PPP framework can be enhanced to strengthen the role of the ICT industry in e-transformation. As a measure of smart policymaking, it may also be prudent to find out how prioritisation mechanisms could actually be introduced in Kenya's policies to make digital transformation a continuous culture.

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Annexures

Annexure 1: Flyer to Recruit Focus Group Participants



FRIDAY, APRIL 29TH AT 3.00 P.M.

SHARE YOUR OPINION ON THE HUDUMA PROGRAMME

Invitation to be a Research Participant!

My name is **Kevin**, a student at the University of the Witwatersrand, conducting research on transformative initiatives at National Government such as the Huduma programme.

Due to your firsthand experience as a user of this program, I invite you to be part of this study as a participant in a focus group discussion. Hearing your thoughts, feelings, and experiences with the Huduma Kenya Programme, will help me understand how this service delivery program works and also note your recommendations on how it can be improved and made more sustainable.

If you are available on the above date and willing to take part in this exercise, kindly reach me on the contact details provided for further information on logistics.

In collaboration with:

huduma KENYA

UNIVERSITY OF THE WITWATERSRAND JOHANNESBURG

This will be a 1 hour discussion.

It is your opportunity to voice your concerns and views regarding the Huduma programme.

To Confirm Attendance, Please Contact:
Kevin Goga

Tel: **0722 807 304**

kevin.goga1@students.wits.ac.za

Snacks and light refreshment will be provided.

Source: Author, 2016

Annexure 2(a): Participant Information Sheet (Focus group participants)

1 Jan Smuts Avenue
Braamfontein 2000
Johannesburg, South Africa
Tel: +27 (0)11 717 1000

PARTICIPANT INFORMATION SHEET

Effectiveness of Policy on Digital Transformation in Kenya's National Government

Dear Sir/Madam,

My name is **Kevin O. Goga**, a student at the **University of the Witwatersrand** in **Johannesburg, South Africa** currently pursuing **a Masters of Arts** in the field of **ICT Policy and Regulation**. In partial fulfillment of this programme, I am in the process of conducting a research study on the role of policy in delivering selected digital transformation programmes deployed at Kenya's national government level. This research aims to make recommendations that will ensure that these initiatives remain sustainable and relevant to Kenya's development efforts. Owing to your firsthand experience as a user of this programme, I am inviting to be part of this study as an interviewee. Prior to your decision on whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please read the following information carefully.

Deciding whether to participate
Participation in the research is completely voluntary and you may withdraw your consent and participation at any time and without giving a reason. If you do decide to take part, you will be given this information sheet to keep and be requested to sign a consent form. Additionally, if you agree to participate in this study, you will be requested to take part in a focus group discussion that will last for at most 60 minutes. The discussion may be recorded. There are no direct risks in participating in this interview. There will be no direct monetary benefit to you for your participation.

Anonymity and confidentiality
As you will be in a group setting where you will share and hear experiences from other participants, confidentiality cannot be guaranteed. However, you will be requested as a matter of courtesy to respect the views your fellow participants by not disclosing anything you hear during the discussion to an outsider. In addition, any personal information collected about you will be kept strictly confidential; any identifiers that can compromise your identity will be removed from the data when the research findings are consolidated into a report and will not be included in any subsequent publications. The anonymized data generated in the course of the research will be kept securely in paper or electronic form for a period of five years after the completion of a research project. It may be used for further research and analysis. The final report will be accessible on the internet and will also be made available to you upon your request.

Research Ethics
If you have any other concerns about the research, its risks and benefits or about your rights as a research participant in this study, you may contact my supervisor, whose contact details are provided below.

Thank you for your time.

Contact for Further Information

Supervisor:	**Researcher:**
Lucienne Abrahams	Kevin Goga
✉luciennesa@gmail.com	✉ goga.kelvin@gmail.com or kevin.goga1@students.wits.ac.za
☎+27 82 569 7675	☎+254 20 200 8716 / +254 722 807 304

Annexure 2(b): Participant Information Sheet (Key informants)

1 Jan Smuts Avenue
Braamfontein 2000
Johannesburg, South Africa
Tel: +27 (0)11 717 1000

PARTICIPANT INFORMATION SHEET

Effectiveness of Policy on Digital Transformation in Kenya's National Government

Dear Sir/Madam,

My name is **Kevin O. Goga**, a student at the **University of the Witwatersrand** in **Johannesburg, South Africa** currently pursuing **a Masters of Arts** in the field of **ICT Policy and Regulation**. In partial fulfillment of this programme, I am in the process of conducting a research study on the role of policy in delivering selected digital transformation programmes deployed at Kenya's national government level. This research aims to make recommendations that will ensure that these initiatives remain sustainable and relevant to Kenya's development efforts. Owing to your invaluable experience and expertise in the sphere of public policy and/or e-transformation, I am inviting you to take part in this study as an interviewee. Prior to your decision on whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please read the following information carefully.

Deciding whether to participate
Participation in the research is completely voluntary and you may withdraw your consent and participation at any time and without giving a reason. If you do decide to take part, you will be given this information sheet to keep and be requested to sign a consent form. Additionally, if you agree to participate in this study, you will be requested to take part in a face to face interview that will last for at most 60 minutes. The interview may be recorded. There are no direct risks in participating in this interview. There will be no direct monetary benefit to you for your participation.

Anonymity and confidentiality
Any personal information collected about you will be kept strictly confidential. Any identifiers that can compromise your identity will be removed from the data when the research findings are consolidated into a report and will not be included in any subsequent publications. The anonymized data generated in the course of the research will be kept securely in paper or electronic form for a period of five years after the completion of a research project. It may be used for further research and analysis. The final report will be accessible on the internet and will also be made available to you upon your request.

Research Ethics
If you have any other concerns about the research, its risks and benefits or about your rights as a research participant in this study, you may contact my supervisor, whose contact details are provided hereunder.

Thank you for your time.

Contact for Further Information

Supervisor:	**Researcher:**
Lucienne Abrahams	Kevin Goga
✉luciennesa@gmail.com	✉ goga.kelvin@gmail.com or kevin.goga1@students.wits.ac.za
☎+27 82 569 7675	☎+254 20 200 8716 / +254 722 807 304

Annexure 3: Focus Group Discussion Protocol

1 Jan Smuts Avenue
Braamfontein 2000
Johannesburg, South Africa
Tel: +27 (0)11 717 1000

FOCUS GROUP DISCUSSION PROTOCOL

Effectiveness of Policy on Digital Transformation in Kenya's National Government

Date: _____

Group Interviewed: _____

Interview Completed by: _____

Good Morning/Afternoon,

Welcome to this session and thanks for sparing your invaluable time to help me understand and appreciate your thoughts, feelings, and experiences with the Huduma programme. This focus group help me understand how this service delivery program works and also hear your recommendations on how to ensure it is sustainable.

Questions

1. Please, tell me about your experience using the Huduma Kenya Programme (e.g. what service brought you to the Huduma center? How frequently do you use the facility? How did you get to know about it?)
2. What would you say about the speed it takes for one to be served in the Huduma program?
3. To what extent has a facility such as the internet or mobile phone helped your interaction with the programme?
4. What social or economic benefits have you derived by using the Huduma programme?
5. Do you think the Huduma programme staff possess skills necessary for the programme?
6. In our opinion, what challenges face the Huduma initiative and how can they be addressed?
7. Do you have any other comments or suggestions about the Huduma Program I may have missed?

Once again, thank you for your participation.

Annexure 4: Observation Protocol

1 Jan Smuts Avenue
Braamfontein 2000
Johannesburg, South Africa
Tel: +27 (0)11 717 1000

OBSERVATION PROTOCOL – HUDUMA KENYA PROGRAMME

Effectiveness of Policy on Digital Transformation in Kenya's National Government.

Date: _____
Time: _____
Length of Activity: _____ minutes
Site: _____
Observation Completed by: _____

Guiding Question: What is a citizens' experience when using the Huduma Kenya Program?	
Descriptive Notes	**Reflective Notes**
Physical Setting: Provide a visual layout of the Huduma Centre	**Comments:** Questions to self, observations of nonverbal behaviour, my interpretations
General Description	
Describe how a day in a Huduma Centre begins Describe participants Describe activities Describe individuals involved in activities	**Comments:** Questions to self, observations of nonverbal behaviour, my interpretations
Sequence of activity over time	
15 minutes 30 minutes 45 minutes 60 minutes	**Comments:** Questions to self, observations of nonverbal behaviour, my interpretations
Interactions	
Who is interacting? How does the interaction take place? How does the interaction end? Participants' comments during the interaction: 'expressed in quotes'	**Comments:** Questions to self, observations of nonverbal behaviour, my interpretations
Unplanned events during observation (if any)	**Comments:** Questions to self, observations of nonverbal behaviour, my interpretations
Other	
Researcher general observation of what seems to be recurring Identify strategy for identifying participants for the focus group discussion	

Annexure 5: Interview Protocol



1 Jan Smuts Avenue
Braamfontein 2000
Johannesburg, South Africa
Tel: +27 (0)11 717 1000

Interview Protocol

Effectiveness of Policy on Digital Transformation in Kenya's National Government

Date: _____ **Interviewer: _____**

A. Interviewee Profile	
Name:	**Title:**
Institution:	**Department:**
Please tell me about your experience and more particularly the nature of your involvement, or that of your unit with **digital transformation** and/or **ICT policy.** *(Select one depending on the level of questions of interviewee).*	
B. Questions to Programme Managers	
1. How does the Huduma programme intersect with your work? 2. What was your organisation's strategy in deploying the program? 3. Who are the users, their present capacity and nature of their interaction in the program? 4. What, in your opinion are the perceived social and economic opportunities to be derived from this programme? 5. What skills and competencies are necessary in this program to realise its objectives? 6. What has been the influence of other institutions within the national government on the outcomes of this program? 7. How has the involvement of other stakeholders in the ICT industry impacted program? 8. Briefly describe the ICT infrastructure that supports this program? 9. Outside the parameters mentioned above, what other factors have been critical to the success of this program? 10. Has the programme been subjected to any significant criticism or external praise? If any, please elaborate on their nature and how the program addressed or reacted to these. 11. Does the institution evaluate the current e-transformation program? If yes, what is working well and what do you see as the drawbacks? 12. To what extent has this programme helped formulate a viable policy position on issues?	

C. Questions to Policy Informants

1. Do you think digital transformation within the national government is on schedule, lagging or ahead of its time?
2. What impact has public policy had on the implementation and uptake of digital transformation programs at the national level of government in Kenya?
3. The uptake of e-transformation initiatives seems to be a gradual affair and in some cases, promising programs by government even wane over time. What elements of policy hinder digital transformation in government?
4. What interventions can be made within the current policy environment to overcome these bottlenecks and realise e-transformation program outcomes?
5. In your opinion, have e-transformation programs fulfilled the aspirations of national policy artefacts? Please elaborate.
6. To what extent would you say Kenyans have the capacity to actively participate in e-transformation?
7. Do you think policy has adequately addressed the gap between e-transformation and digital divide?
8. How has policy empowered the role of public sector institutions to oversee successful implementation of digital transformation programmes?
9. Are there any other policy issues which you think would help this research understand its role on the implementation, uptake and sustainability of digital transformation initiatives?

Annexure 6: Authorisation Letter from Huduma Secretariat

REPUBLIC OF KENYA

THE PRESIDENCY
MINISTRY OF PUBLIC SERVICE, YOUTH AND GENDER AFFAIRS
HUDUMA KENYA SECRETARIAT

Telegraphic address: "Personnel", Nairobi
Telephone: 020-6900010
When Replying please quote
Ref. No. MPYG/HUD.2/279

P.O. BOX 30050–00100
NAIROBI
KENYA

7th April, 2016

Director
Wits Link Centre – University of the Witwatersrand
Nairobi-Kenya

ATTN: Kevin Goga

Approval to Conduct Research on "Effectiveness of policy on digital transformation initiatives in Kenya's National Government"

Following your request to undertake the above captioned research as part of your Master of ICT Policy and Regulation at University of the Witwatersrand, this is to inform you that your request has been approved and you can proceed to obtain information as regard your research from the target research area at City Square Huduma Centre.

The officer's incharge of ICT Infrastructure, Information Management Systems and Centre Manager City Square will facilitate all aspects of your study.

We wish you all the best in your study and look forward to get a copy of your final report.

Dennis Mutuku
SECRETARY/ CEO

INFORMATION REDACTED

Annexure 7: HREC (Non-Medical) Clearance Certificate

Research Office

HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)
R14/49 Goga

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER: H16/03/09**
PROJECT TITLE	Effectiveness of policy on digital transformation in Kenya's national government
INVESTIGATOR(S)	Mr K Goga
SCHOOL/DEPARTMENT	SLLM/
DATE CONSIDERED	18 March 2016
DECISION OF THE COMMITTEE	Approved unconditionally
EXPIRY DATE	28 April 2019
DATE 29 April 2016	**CHAIRPERSON** (Professor J Knight)

cc: Supervisor : Ms L Abrahams

DECLARATION OF INVESTIGATOR(S)

To be completed in duplicate and **ONE COPY** returned to the Secretary at Room 10005, 10th Floor, Senate House, University.

I/We fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee. **I agree to completion of a yearly progress report.**

_____ _____/_____/_____

Signature **Date**

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

Annexure 8(a): Informed Consent Form (Focus group)



1 Jan Smuts Avenue
Braamfontein 2000
Johannesburg, South Africa
Tel: +27 (0)11 717 1000

INFORMED CONSENT FORM

Effectiveness of Policy on Digital Transformation in Kenya's National Government

Please TICK against the box

1. I confirm that I have read and understand the information sheet for the abovementioned study and I have had the opportunity to ask questions. ☐

2. I understand that my participation in this study is voluntary and that I may refuse to answer any question that makes me uncomfortable and I may withdraw at any time without giving a reason. ☐

3. (a) I understand that the researcher will not identify me by name in any reports using information obtained from this focus group discussion and that the views expressed here will remain confidential; ☐

   OR

   (b) I agree to listing of my name as a participant in the annexure to the report, but not referenced within the body of the report. ☐

4. I agree to the discussion being audio recorded ☐

5. I agree to the use of anonymised quotes in the final report ☐

6. I agree that data gathered from me in this study may be stored (after it has been anonymised) and may be used for future research. ☐

Name of Research Participant	**Date**	**Signature**
_____	_____	_____
Name of Researcher	**Date**	**Signature**
Kevin Goga	_____	_____

Annexure 8(b): Informed Consent Form (Key informants)



1 Jan Smuts Avenue
Braamfontein 2000
Johannesburg, South Africa
Tel: +27 (0)11 717 1000

INFORMED CONSENT FORM

Effectiveness of Policy on Digital Transformation in Kenya's National Government

Please TICK against the box

1. I confirm that I have read and understand the information sheet for the abovementioned study and I have had the opportunity to ask questions. ☐

2. I understand that my participation in this study is voluntary and that I may refuse to answer any question that makes me uncomfortable and I may withdraw at any time without giving a reason. ☐

3. (a) I understand that the researcher will not identify me by name in any reports using information obtained from this interview and that the views expressed herein will remain confidential; ☐

   OR

   (b) I agree to listing of my name as a participant in the annexure to the report, but not referenced within the body of the report. ☐

4. I agree to the interview being audio recorded ☐

5. I agree to the use of anonymised quotes in the final report ☐

6. I agree that data gathered from me in this study may be stored (after it has been anonymised) and may be used for future research. ☐

Name of Research Participant	**Date**	**Signature**
_____	_____	_____
Name of Researcher	**Date**	**Signature**
Kevin Goga	_____	_____

Annexure 9: List of Study Participants

Interviewee	Organisation	Interview Date	Interview Duration
Duncan Okello	Government	19.04.2016	25 minutes, 3 seconds
DTM1	Huduma Secretariat	21.04.2016	34 minutes, 19 seconds
Herbert Mburu	Huduma Secretariat	22.04.2016	54 minutes, 57 seconds
DTM3	Huduma Secretariat	27.04.2016	41 minutes, 56 seconds
PM1	MoICT	05.05.2016	47 minutes, 21 seconds
Dr. Katherine W. Getao	MoICT	22.04.2016	About 2 Hours
Eng. Vincent Adul	MoICT	09.06.2016	Over 2 Hours
Matthew Kimanzi	Government	12.05.2016	35 minutes, 5 seconds
PINF3	KIPPRA	18.05.2016	1 hour, 13 minutes, 40 seconds
PINF4	IEA-KENYA	26.05.2016	40 minutes, 33 seconds
PINF5	Private Sector	13.06.2016	27 minutes, 16 seconds
Prof. Gituro Wainaina	Vision 2030 Secretariat	16.06.2016	56 minutes, 47 seconds
Mwende Gatabaki	McKinsey & Company	28.06.2016	1 hour, 47 minutes, 38 seconds
PINF8	Government	20.05.2016	About 25 minutes

Focus Group Discussion **Held on:** *29th April, 2016* **Duration:** *78 Minutes*	**Telephone Interviews**		
Participant	**Interviewee**	**Interview Duration**	**Interview Date**
Godfrey Laisi	HU6	About 8 minutes	29th April, 2016
John Nyaga	Donna Summer O.	11 minutes, 35 seconds	3rd May, 2016
Charles Muriithi	Jack Kinyanzui	28 minutes, 38 seconds	3rd May, 2016
Wilfrid Jean-Louis	HU3	19 minutes, 37 seconds	3rd May, 2016
FGP2	HU1	6 minutes, 2 seconds	3rd May, 2016
Serah Maina	Grace Orido	12 minutes, 54 seconds	4th May, 2016
John Junior Madete			

Annexure 10: Huduma Governance Structure

CORRIGENDA

IN Gazette Notice No. 1402 of 2014, *amend* the expression printed as "Cause No. 723 of 2013" to *read* "Cause No. 727 of 2013".

IN Gazette Notice No. 1655 of 2014, *amend* the title No. printed as "Tigoni/Mabrouke Block 1/675" to *read* " Tigoni/Mabrouke Block 1/1675".

IN Gazette Notice No. 1927 of 2014, *amend* the Act No. printed as "No. 3 of 2006" to *read* "No. 13 of 2006".

GAZETTE NOTICE NO. 2174

THE CONSTITUTION OF KENYA

APPOINTMENT

IN EXERCISE of the powers conferred by Article 250 (2) (*c*) as read with Article 171 (1) (*f*) of the Constitution, I, Uhuru Kenyatta, President and Commander-in-Chief of the Kenya Defence Forces appoint—

TOM ODHIAMBO OJIENDA (PROF.)

to be a member of the Judicial Service Commission of Kenya for a period of five (5) years, with effect from 6th February, 2014.

Dated the 31st March, 2014.

UHURU KENYATTA,
President.

GAZETTE NOTICE NO. 2175

THE CONSTITUTION OF KENYA

APPOINTMENT

IN EXERCISE of the powers conferred by Article 250 (2) (*c*) as read with Article 171 (1) (*d*) of the Constitution, I, Uhuru Kenyatta, President and Commander-in-Chief of the Kenya Defence Forces appoint—

JUSTICE AGGREY OTSYULA MUCHELULE

to be a member of the Judicial Service Commission of Kenya for a period of five (5) years, with effect from 26th October, 2013.

Dated the 31st March, 2014.

UHURU KENYATTA,
President.

GAZETTE NOTICE NO. 2176

THE CONSTITUTION OF KENYA

APPOINTMENT

IN EXERCISE of the powers conferred by section 7 (2) of the Kenya Institute for Public Policy Research and Analysis Act, 2006, I Uhuru Kenyatta, President and Commander-in-Chief of the Kenya Defence Forces appoint—

MOHAMED S. MUKRAS (PROF.)

to be the Chairman of the Board of the Kenya Institute for Public Policy Research and Analysis, for a period of three (3) years, with effect from 1st March, 2014.

Dated the 31st March, 2014.

UHURU KENYATTA,
President.

GAZETTE NOTICE NO. 2177

ESTABLISHMENT OF GOVERNANCE STRUCTURE FOR HUDUMA KENYA SERVICE DELIVERY PROGRAMME

IT IS NOTIFIED for the general information of the public that the President and Commander-in-Chief of the Kenya Defence Forces, has established the following governance structure for the implementation of the Huduma Kenya Service Delivery Programme in Government—

1. *The Service Delivery Summit:*

The Service Delivery Summit shall consist of—
H.E. the President of the Republic of Kenya - (*Chairperson*)

Members:

Cabinet Secretary, Ministry of Interior and Co-ordination of National Government
Cabinet Secretary, Ministry of Information, Communication and Technology;
Cabinet Secretary, the National Treasury;
Cabinet Secretary, Ministry of Land, Housing and Urban Development;
Cabinet Secretary, Ministry of Industrialization and Enterprise Development;
Cabinet Secretary, Ministry of Education;
Cabinet Secretary, Ministry of Labour, Social Security and Services;
Cabinet Secretary, Ministry of Health; and
The Attorney-General.

Secretary:

Cabinet Secretary, Ministry of Devolution and Planning

2. *Functions of the Service Delivery Summit:*

(1) The Service Delivery Summit shall be responsible for developing the vision and overall policy for the transformation of the public service delivery.

(2) In the performance of its functions, the Summit shall–

(a) provide the vision and overall policy direction and priorities for the Huduma Kenya Service Delivery Programme;

(b) ensure commitment at the highest level of Government to the Huduma Kenya Service Delivery Programme;

(c) review the progress and address high level challenges of the Huduma Kenya Service Delivery Programme; and

(d) approve the necessary policy, legislation, regulatory and institutional frameworks for successful implementation of the Huduma Kenya Service Delivery Programme.

3. The Service Delivery Summit shall meet at least twice in each year at such a place as it shall consider appropriate.

4. The Service Delivery Summit may co-opt such persons from such institutions as it considers necessary for the performance of its functions.

5. *The Technical Committee*

The Technical Committee shall consist of the –
Cabinet Secretary, Ministry of Devolution and Planning *(Chairperson)*;
Cabinet Secretary, Ministry of Interior and Co-ordination of National Government (*Alternate Chairperson*);
Principal Secretary, Department of Interior;
Principal Secretary, Ministry of Information, Communication and Technology;
Principal Secretary, the National Treasury;
Principal Secretary, Ministry of Land, Housing and Urban Development;
Principal Secretary, Ministry of Industrialization and Enterprise Development;
Principal Secretary, Department of Education;
Principal Secretary, Ministry of Health;
Principal Secretary, Ministry of Labour, Social Security and Services;
Solicitor-General, Office of the Attorney-General; and
Principal Administrative Secretary, Directorate of Public Service Management.

6. *Functions of the Technical Committee:*

(1) The Technical Committee shall be responsible for the co-ordination and implementation of the Huduma Kenya Service Delivery Programme including the sourcing and development of relevant management information systems and information communication and technology infrastructure.

(2) In the performance of its functions, the Techinical Committee shall—

(a) develop policy, legislative and any other recommendations on the implementation of the Huduma Kenya Service Delivery Programme for the approval of the Summit;

(b) approve the establishment of all Huduma Kenya service delivery channels including online and mobile portals, management information systems, information, communication and technology infrastructure, equipment and the physical Huduma centres;

(c) review enabling policy, legal and institutional framework to support the implementation of the Huduma Kenya service delivery initiatives in the Government;

(d) develop service delivery standards and regulations for the Huduma Kenya Service Delivery Programme;

(e) implement the business process re-engineering and automation of processes for service delivery within their Ministries or agencies;

(f) implement the decisions of the Service Delivery Summit;

(g) provide content and data within the respective MDA custody for Huduma Kenya platforms;

(h) develop, codify, market and export intellectual property created or acquired in public service delivery innovation;

(i) promote private sector participation, especially youth enterprises in provision of public services through digital villages, call centres and biashara agencies;

(j) submit quarterly progress reports to the Service Delivery Summit on the development and implementation of the Huduma Kenya Service Delivery Programme;

(k) source, commit and deploy financial, human and other resources necessary for the implementation of the Huduma Kenya Service Delivery Programme;

(l) commission research and development and liaise with entities within and outside Kenya for the improvement of integrated service delivery in Government;

(m) ensure commitment at the highest levels of Government to the Huduma Kenya integrated service delivery programme;

(n) make recommendations for policy decisions on the implementation of the Huduma Kenya integrated service delivery programme to the Service Delivery Summit; and

(o) perform such other duties as may be conferred on the Committee from time to time.

7. The Technical Committee shall hold such number of meetings at such a place as it shall consider appropriate.

8. The Technical committee may co-opt such persons from designated institutions as it considers necessary for the performance of its functions.

9. *Huduma Kenya Secretariat:*

The Huduma Kenya Secretariat shall consist of—

(a) a secretary; and

(b) such other persons as may be necessary for the performance of the functions of the Secretariat.

The members of the Secretariat shall be appointed by the Cabinet Secretary, Ministry of Devolution and Planning from the public and private sector.

10. *Functions of the Huduma Kenya Secretariat*

The Secretariat shall be responsible for –

(a) the day to day implementation of the Huduma Kenya Service Delivery programme;

(b) the implementation of the decisions of the Technical Committee;

(c) the management and co-ordination of the operations, staff, finances and physical facilities to support the Huduma Kenya Service Delivery Programme including the Huduma Centres;

(d) the preparation of implementation plans and quarterly reports ;

(e) monitoring and evaluating the performance of the Huduma Centres and other Huduma Kenya channels;

(f) the general administration of the Secretariat; and

(g) undertaking any other functions as may be directed by the technical Committee.

Dated the 31st March, 2014.

UHURU KENYATTA,
President.

GAZETTE NOTICE NO. 2178

THE NATIONAL FLAG, EMBLEMS AND NAMES ACT

(*Cap. 99*)

GRANT OF PERMISSION

IN EXERCISE of the powers conferred by section 3 (1) of The National Flag, Emblems and Names Act, the Cabinet Secretary for Interior and Co-ordination of National Government grants permission to Apex Creatives (Afrique) Limited permission to use the National Flag or its image or likeness on their manufactured EXERCISE BOOKS intended for distribution to Schools and not for profit making purposes.

Dated the 31st March, 2014.

JOSEPH OLE LENKU,
Cabinet Secretary,
Ministry of Interior and Co-ordination of National Government.

GAZETTE NOTICE NO. 2179

THE NATIONAL FLAG, EMBLEMS AND NAMES ACT

(*Cap. 99*)

GRANT OF PERMISSION

IN EXERCISE of the powers conferred by section 3 (1) of The ational Flag, Emblems and Names Act, the Cabinet Secretary for Interior and Co-ordination of National Government grants permission to Awali Entertainment Limited permission to use the National Flag or its image in their production of television drama series.

Dated the 31st March, 2014.

JOSEPH OLE LENKU,
Cabinet Secretary,
Ministry of Interior and Co-ordination of National Government.

GAZETTE NOTICE NO. 2180

THE KENYA DEFENCE FORCES ACT

(*No.* 25 *of* 2012)

APPOINTMENT

IN EXERCISE of the powers conferred by Defence Forces (Pensions and Gratuities Officers and Service Members) Regulations as read with Sections 310 (1) (*b*) and 310 (2) of the Kenya Defence Forces Act, the Defence Council, for the Kenya Defence Forces renews the appointment of the following appointees for the boards as shown hereunder—

Defence Forces Pensions Assessment Board

Brig (Rtd.) A. O. Nyandong	Member
Janet N. Mugo (Mrs.)	Member
Joseph Sitinei (Dr.)	Member
Shem Obongo' Nyakutu	Secretary

Source: Republic of Kenya, 2014