The Creation of the Kenya Digital Economy

QUICK FACTS ON ICT

ICT in Africa
3.5%
African mobile market contributes 3.5% towards the continent's total GDP. Mobile payments are considered the greatest opportunity for market growth

ICT in Kenya
64bn
Kenya's Information Technology market is estimated to be worth Ksh.64 billion, as at the end of 2013

$1.3mn
Revenues generated from mobile phone industry

$330mn
Investments in the mobile phone industry

$16.6mn
Data/Internet revenue in Kenya

$3.8mn
Data/Internet investments in Kenya

KENYA MOBILE DATA SUBSCRIPTIONS

99% **38.9Mn**
Internet/data subscriptions are through the mobile phone

KENYA ICT MARKET SPEND AND SIZE

$3.5bn
Total spend in ICT
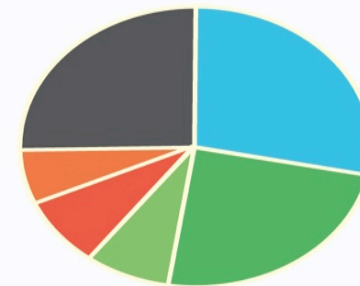
$746mn
Hardware, IT services, software

$2.7bn
Telecommunication services

ICT SPENDING PER VERTICAL SECTORS

Investments and spend in the sector in the short term will be on hardware, software and services.

However longer-term growth is expected to mainly come from services

- Consumer 28.4%
- Other verticals 25.3%
- Communications 24.1%
- Government 8.0%
- Banking 7.9%
- Process manufacturing 6.3%

SOURCES
Julisha National ICT Survey, 2012
CCK Quarterly Report Jul-Sep, 2013

GOVERNMENT SUPPORT IN KENYA's DIGITAL TAKE OFF

The Kenyan government is among few others in the continent that have adopted a national vision on developing the ICT sector, playing a primary role in championing the gains derived from ICT

VISION 2030

KENYA VISION **2030**
Towards a globally competitive and prosperous nation.

Kenya's development blueprint:
- ICT as an enabler of economic growth
- Kenya as the top BPO in Africa
- Investment in the ICT sectorn in Kenya by and multinationals

Kenya's priorities in ICT development

- Infrastructure Development
- Local Digital Content Development
- Capacity Development
- Promotion of ICT Led Industries
- Innovation in Economic and Social Systems

The Kenya Communications Act unbundled Kenya Post and Telecommunication into five entities

- Telkom Kenya privatized
- Postal Corporation of Kenya (Posta), for postal services;
- Communications Commission of Kenya (CCK) as the sector regulator;
- National Comm. Secretariat (NCS) to advise the government
- Appeals Tribunal for arbitration between parties

Current ICT Institutions

- Ministry of ICT
- Communications Authority of Kenya (CAK)
- ICT Authority
- Postal Corporation of Kenya

SOURCES

Kenya Vision 2030
Kenya ICT Board; Progress Report 2007-2013
Harmonised Jubilee Coalition Manifesto 2013

Infrastructure Development

Infrastructure improvements creating an enabling environment for developing digital services

5,500 KM undersea cable

4,233 KM terrestrial fibre optic cable laid

National Optic Fibre Backbone Infrastructure – NOFBI project connecting all major towns in Kenya

Last Mile Connectivity: For high speed internet in all county offices and more goverment institutions

Immediate Plans on Infrastructure Development

- 1,600Km of National Optic Fibre Backbone Infrastructure (NOFBI) Phase 2
- Local Area Networks (LAN) in 3 Buildings at each County Headquarters
- Laying of the fibre in all the 47 counties
- Installation of a unified telecommunication system
- Funding by World Bank of $30 million to finance counties' efficiency and effectiveness in public service delivery'

Achievements of broadband connectivity of Government Institutions

- Digitization of court registries
- National electronic payment system used by all banks
- Kenya Institute of Education has a radio and TV education channel
- KSHS — Integrated Financial Management Information System
- KSHS — Kenya Revenue Authority adopted the Electronic Tax Register Machines
- KSHS — iTax, an online platform to efficiently file tax returns
- Transport Information Management System

ICT bills currently tabled in parliament

Access to Information Act (2016)

Data Protection Bill, 2012

Capacity Development

- **15,000** Over 15,000 ITES/BPO jobs were created
- Subsidized bandwidth and successful software development for local BPO Operators
- Software Development Certification: for entry level developers in college
- Centers of Excellence (COE) to train on IT enabled services
- IBM Research Lab to drive innovation.
- Promoting Science and Technology among the youth through KENET project
- 14,730 laptops to university students through the Wezesha Laptop Program

Local digital content development

Tandaa Grants; targeting content generation

Kenya Open Data Initiative (KODI); Facilitation of public access to Government information.

Jubilee goverment committment to the ICT sectors

- Infrastructure development
- Digital registration
- Support for ICT businesses
- Building human capital in ICT
- Digitizing govt

63 Pasha Centres have benefitted from the digital villages program

Huduma Centres: One-stop shop Centre for provision of e-government services.

Public Key Infrastructure Project: To enhance information security in government agencies.

Kenya Education Network (KENET): Promoting use of ICT in institutions of higher learning

Digital Villages: To increase rural access to information and facilitate job creation

Innovation in economic and social systems

1. Mobile money facilitating basic payments and a tool of financial inclusion for the unbanked economy
2. Ushahidi interactive mapping: Now used in Africa, Asia, the Americas, Europe and the Middle East.
3. Other social services through ICT include
   - Goverment shared services
   - E-learning
   - Online marketing businesses
   - Access to the internet for homes in Kenya

CAPACITY AND SKILLS IN DRIVING THE DIGITAL TAKE-OFF

Education in ICT programs is designed to meet the demands of the students and may not meet the ICT labour requirements and market demands. Inherent in the ICT sector are various opportunities of training, skills transfer, higher employment and technology leadership

10.8%

IT employment is expected to grow at an annual rate of 10.8% over the next five years.

EDUCATION & EMPLOYMENT OVERVIEW

200,000
Number young Kenyans that enrol for university each year

50,000
Number of graduates that join the labour market annually

9,600
Professionals added to the ICT market each year

27,000
Professionals employed in the ICT sector

7,000
Jobs created to-date in the BPO/ITES sector

Kenyan Universities are ranked top in East Africa in ICT with 6 out of the top 10 universities being Kenyan

ICT EDUCATION

ICT Programs in Kenyan Universities include Computer Science, Computer Engineering, Electronic Engineering, Information Systems, Software Engineering and Computer Technology/IT

3
Universities that offer ICT graduate programs at Masters Level.

2
Universities offer ICT graduate programs at doctoral level.

STATISTICS ON EMPLOYMENT IN ICT SECTOR

6,671
Data/Internet market

5,617
Mobile phone industry

91,750
Mobile money active agents

OPPORTUNITIES IN ICT SKILLS DEVELOPMENT

Professional ICT training opportunities in private and public organizations

Building capacity in learning institutions in network environment, ICT infrastructure and ICT training programs

GAPS IN ICT SKILLS

ICT professions like Project Mangers, Consultants, Application Systems Analysts and Software Developers

INITIATIVES IN ICT CAPACITY BUILDING

Hubs in building business capacity like iHub, mLab, Start-up Garage, NaiLab, Pawa254, iLab Africa, The GrowthHub, FabLab, C4D Lab and JKUAT

Adequate workforce to transform and innovate businesses using ICT

INITIATIVES IN ICT SKILLS DEVELOPMENT

SAP
SAP Skills for Africa Program; scholarship scheme for SAP Certification Training

BPO/ITES Centre of Excellence; training capacity for the BPO industry

chipuka
Chipuka; software development certification

IBM
IBM Research Lab; Develop high end skills

NetHope Academy
NetHope Academy; IT training and internship and mentorship program

Safaricom
Private in-house trainers: Techno Brain, Philips, Oracle, Seven Seas and Safaricom Academy

SOURCES

Kenya ICT Board; Progress Report 2007-2013
Rockefeller Foundation, The labour market and digital jobs in Africa:
Kenya's workforce potential in Impact Sourcing, June 2013
CCK; Quarterly Report, Apr- Jun, 2013
IDC, 2011
Julisha National ICT Survey, 2011
School of Computing and Informatics, University of Nairobi
CPS International; Top 100 East African Universities Survey 2012
The E-Readiness Survey of Kenyan Universities, 2013

TOWARDS EFFECTIVE SERVICE DELIVERY THROUGH GOVERNMENT DIGITAL PAYMENTS

Cashless payment solutions provide for effective financial inclusion; Improvements in transparency, security; corruption; and provide potential for cost savings for both government and financial intermediaries. The government plans to go cashless by 1st July 2014 in its operations and also in public transportation As part of Public Key Infrastructure ideals the government will also launch digital certificates for ease in e-commerce

80%

UPTAKE OF E-COMMERCE
Kenya leads the world in uptake of mobile banking with 80% of 31.3 million users subscribed

USE OF MOBILE FINANCIAL SERVICES
Use of mobile phone financial services more than doubled

62% 2013
28% 2009

FACILITATION OF FINANCIAL TRANSACTIONS

- Payment service providers & financial institutions eg banks, payment aggregators
- Mobile network operators and service integrators
- Payment instruments for online payments
- Infrastructure

FINANCIAL DEVICES UPTAKE

POSs
2010 – 18,170
2011 – 19,906
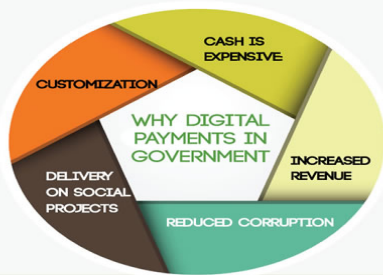2012 – 18422

ATMs
2010 – 2,061
2011 – 2,208
2012 – 2,380

Cards
2010 – 7,972,685
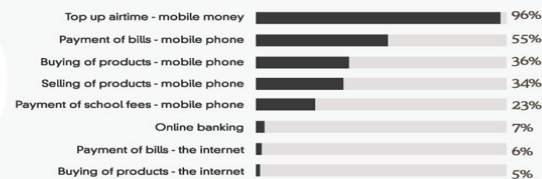2011 – 10,132, 780
2012 – 10,861, 837
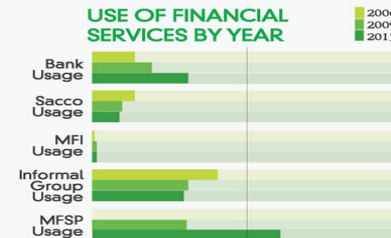
CURRENT END-USER REVENUE SOURCES

Mobile money	Mobile social networks	Mobile commerce	Ringtones	Music	M-advertising	Infotainment apps	Games	M-education	M-health
53%	37%	30%	22%	20%	16%	14%	14%	11%	10%

Greatest opportunities for mobile market growth

Mobile payments	Mobile advertising	Increased smartphone	Enhanced services	Connected devices	Cross network common	Apps eco-system	Freemium	Device & OS convergence	Multiscreen
87%	64%	64%	39%	39%	38%	32%	32%	26%	11%

WHY DIGITAL PAYMENTS IN GOVERNMENT
- CASH IS EXPENSIVE
- INCREASED REVENUE
- REDUCED CORRUPTION
- DELIVERY ON SOCIAL PROJECTS
- CUSTOMIZATION

FINANCIAL SERVICES ON THE INTERNET AND MOBILE PHONE

Top up airtime - mobile money	96%
Payment of bills - mobile phone	55%
Buying of products - mobile phone	36%
Selling of products - mobile phone	34%
Payment of school fees - mobile phone	23%
Online banking	7%
Payment of bills - the internet	6%
Buying of products - the internet	5%

USE OF FINANCIAL SERVICES BY YEAR

2006
2009
2013

- Bank Usage
- Sacco Usage
- MFI Usage
- Informal Group Usage
- MFSP Usage

ADOPTERS IN GOVERNMENT DIGITAL PAYMENTS
- Integrated Financial Management Information Systems (IFMIS)
- Transport Integrated Management System
- Faini Chap Chap (Judiciary of Kenya), court fines via mobile money
- E-Construction Permits System (City Council of Nairobi)
- State Law Office in business registration
- Ministry of Lands, front office
- Utility bills payments to government organs including Kenya Power

SOURCES
MEF Africa; Growth Markets Survey 2013 - Kenya Country Report
Jalisha National ICT Survey, 2012
FinAccess; National Survey 2013
United Nations Department of Economic and Social Affairs' e-Government Development Index
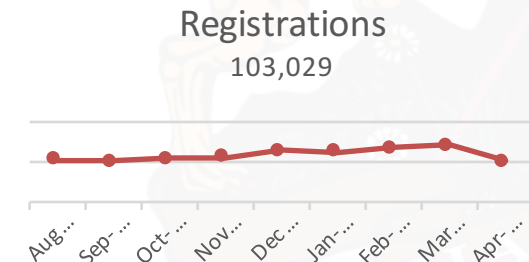Accenture Development Partnerships; Digitizing Government Payments, Kenya Study, April 2013

Revenue
KES 966,576,588.00

Invoices
317,193

Registrations
103,029
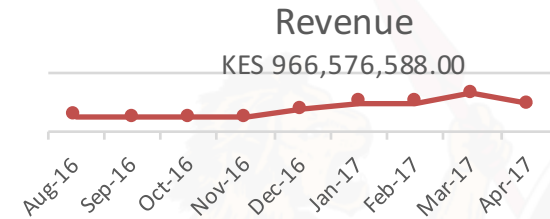
- KES **12.45 Billion** Collected to date
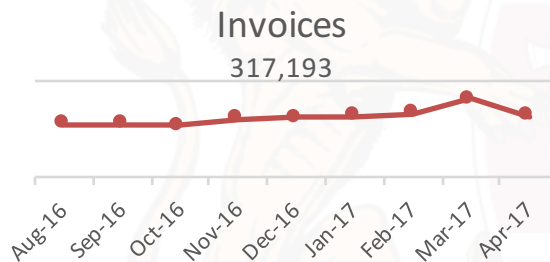
- **5.93 Million** unique applications Processed

- **Over 3.09 Million** unique registered individuals

- **207 payment** services are live

- **3 County Governments** – Mombasa, Nyeri, Kisumu

THE WAR ON CYBER CRIME FOR RESILIENT & EFFICIENT DELIVERY OF SERVICE TO CITIZENRY

ECONOMIC CRIMES

Increase in digitized payments leads to breaches in credit card information, electronic funds theft and also identity theft

NATURE OF CYBER CRIMES

Cyber crime is one of the fastest growing categories of crime in the world. The motives are curiosity, financial gain and theft. Methods: hacks, introduction of malware, spyware. Cyber criminals include employees, spies and hackers.

THE BIG 5

54% of reported economic crimes are committed by middle management

The predominant economic crimes are asset misappropriation, accounting fraud and corruption, procurement fraud and cybercrime. The impact of economic crimes in Kenya is less than $100,000 at organisational level.

EXTENT OF CYBER CRIMES

50% total fraud committed in complicit with banking employees

Kenya is losing Ksh. 1.6 billion annually to fraud. Employees with administrative rights are known to manipulate data and circumvent IT controls. Cyber attacks are more sophisticated, adaptable and relentless.
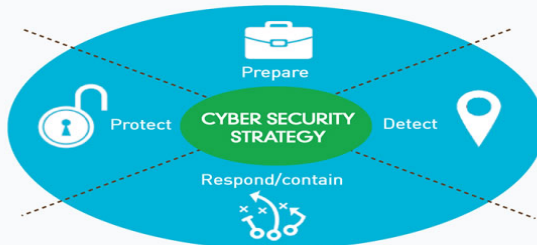
PROTECTION AGAINST CYBER-CRIME

> Policies & Procedures
> 24/7 Cyber Watch
> Governance
> Security Awareness
> Proper Configuration

> Defence in Depth
> Compliance
> 24/7 Monitoring
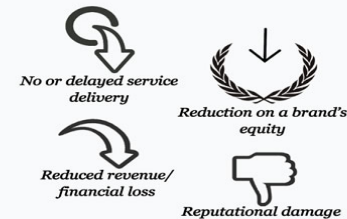> Digital Forensics

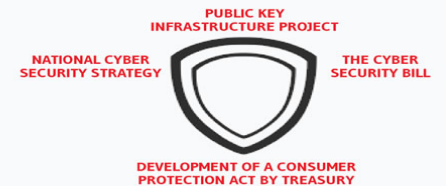Computer and Cybercrimes Bill 2016

PROACTIVE APPROACH TO SECURITY

Prepare

Protect

CYBER SECURITY STRATEGY

Detect

Respond/contain

INSTANCES OF CYBER CRIMES

37%

50%

Instances of economic crime in Africa and the world

IMPACT OF CYBER-CRIME

No or delayed service delivery

Reduction on a brand's equity

Reduced revenue/ financial loss

Reputational damage

INTERVENTIONS OF CYBER SECURITY BY THE KENYAN GOVERNMENT

PUBLIC KEY INFRASTRUCTURE PROJECT

NATIONAL CYBER SECURITY STRATEGY

THE CYBER SECURITY BILL
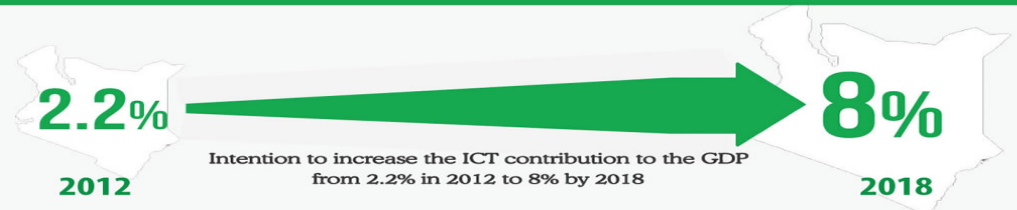
DEVELOPMENT OF A CONSUMER PROTECTION ACT BY TREASURY

SOURCES
PwC: 2014 Global Economic Crime Survey, Kenya Report
Deloitte EA Report Financial Crime Survey 2013
Deloitte; E-Crime & Identity Theft Current trends and mitigation measures, 2013

LOOKING TO THE FUTURE: **OPPORTUNITIES & PROJECTIONS**

Kenya's development blueprint views ICT as a key driver of socio economic development, with a view to facilitate provision of equitable and affordable quality information and communication services countrywide. The roadmap to achieve Kenya's Vision 2030 is the National ICT Masterplan whose objectives include developing a robust ICT sector that will enhance economic growth through creation of businesses and employment
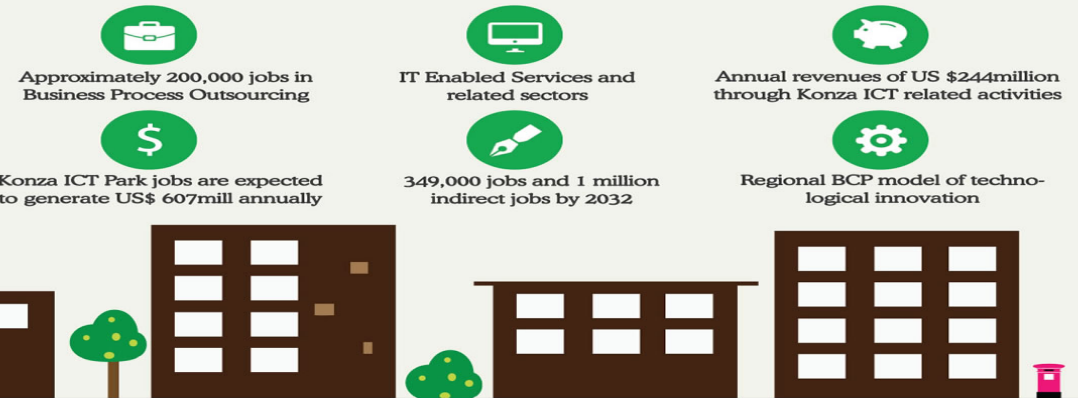
2.2%
2012

8%
2018

Intention to increase the ICT contribution to the GDP from 2.2% in 2012 to 8% by 2018

COUNTY ICT PLANS

| Aligning of the County ICT Plans in line with the National ICT Master Plan

| ICT interventions at the county level to make service delivery to the citizenry more efficient

Konza Technopolis Development Authority's (KOTDA)

Making Konza Techno City grow into a sustainable world-class technology hub and a major economic driver for the nation, with a vibrant mix of businesses, workers, residents, and urban amenities.
The development of Konza city will further bolster Kenya's economy

Approximately 200,000 jobs in Business Process Outsourcing

IT Enabled Services and related sectors

Annual revenues of US $244million through Konza ICT related activities

Konza ICT Park jobs are expected to generate US$ 607mill annually

349,000 jobs and 1 million indirect jobs by 2032

Regional BCP model of technological innovation

QUESTIONS?