



Shaun Pather

ICTs for participatory local development : Exploring a systemic approach
South African Overview and Cases



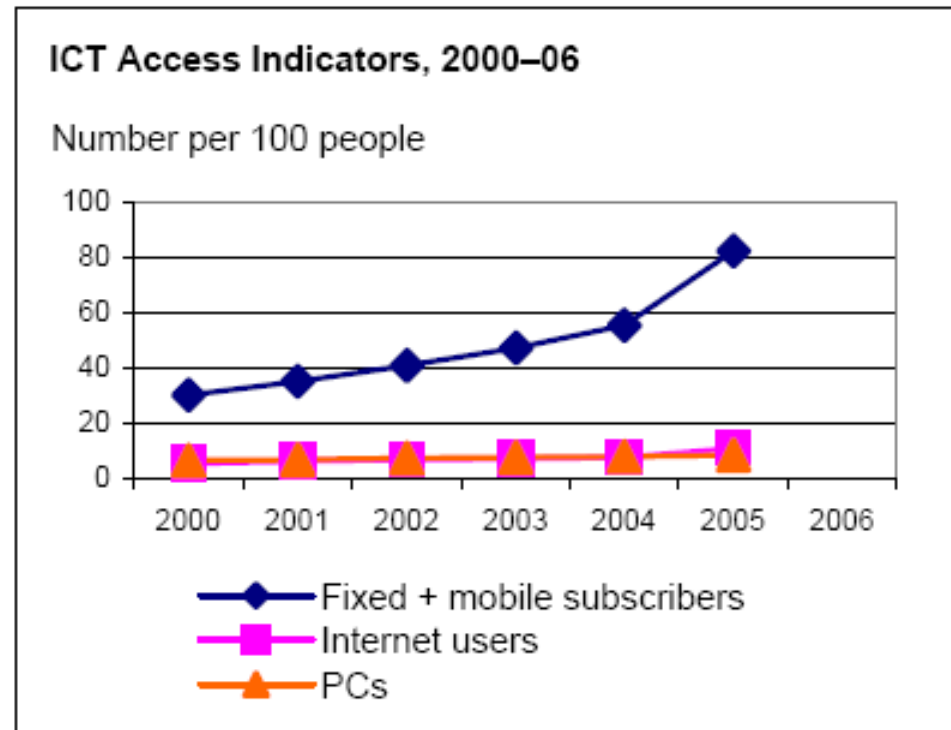
South Africa - Overview

- Population : 48.7 million (6% of Africa)
- Internet users : 9.9%
- Mixture of developed and developing.
- Digital divide rooted in apartheid legacy.
- Post democracy – widening of wealth gap.
- Of 13 million households
 - 15.4% comprise informal dwellings
 - 8.3% have no sewage system,
 - 29.1 % use wood or paraffin for cooking

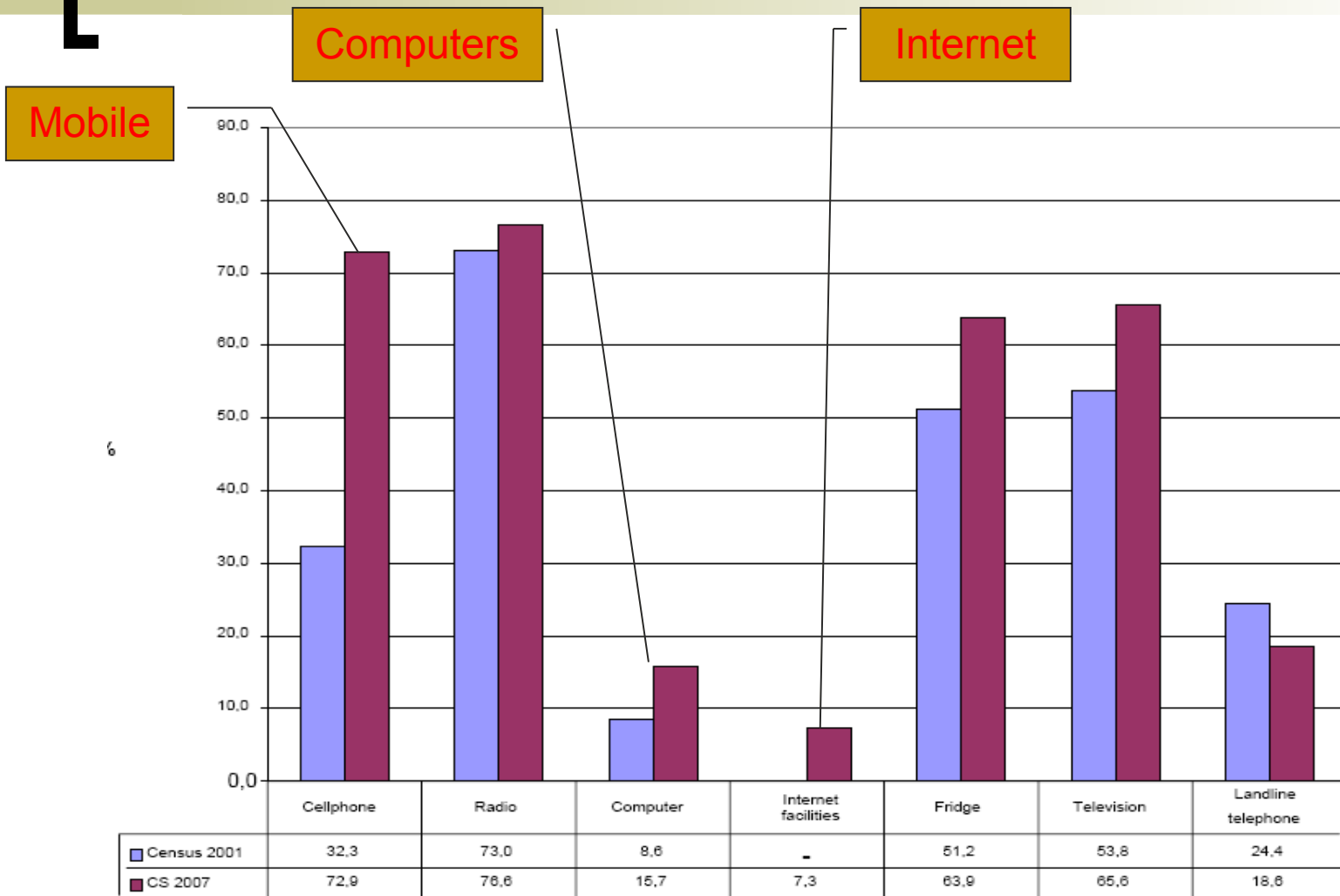


[Digital divide]

- 10.9 internet users per 100 people.
- 10% fixed line access.
- 90% mobile penetration.
- Improving broadband infrastructure, but slow uptake and access of internet.
- Costs much higher and bandwidth much lower than other similar countries (e.g. Brazil).
- Monopoly by one player has kept costs high –



Household goods in working order



Structure of government

- 3 levels: National, provincial and local.
- Provincial governments represented at national level through National Council of Provinces.
- Provinces demarcated into local municipalities with constitutional mandate to prioritise socio-economic development.



[Policy]

- Led by Department of Communications
- Many other service specific policies e.g. e-education; e-health etc.
- Electronic communications Act:
 - universal service and access
- Information Society and Development Plan (ISAD) : PNC, and IGRF



[10 pillars of ISAD plan]

- **Policy & Regulatory Environment**
- **ICT Infrastructure & Universal Access**
- **Local Content**
- **Digital Inclusion & e-Awareness**
- **Human Capital**
- **ICT Capacity Development & R&D**
- **Coordination & Integration**
- **Funding**
- **Institutional Mechanism**
- **Measurement of the Information Society**



[ICT4D initiatives]

- Many role-players.
- Lacks strong partnership strategy.
- Access, capacity building, education, health-care, e-gov, high on national agenda.
- Provincial level focus on e-gov, education, health, SMME development.
- Initiatives are less noticeable at local government level.
- Lots of effort at improving access and uptake – no coordinated strategy for social appropriation of ICTs.



[Case Studies]

- Cape Access (Centre for e-Innovation, Provincial Government of Western Cape) - www2.capeaccess.org.za
- Khanya (Department of Education, Western Cape) – www.khanya.co.za
- Methodology: Field visits, interviews, analysis of secondary data and documents.



[Western Cape]

- 11% of population.
- 24 local municipalities + one metropolitan.
- Has been a leader amongst provinces.
- Policy underpinned by White paper (2001) – *Preparing the Western Cape for the Knowledge Economy of the 21st Century.*
- Creation of a Centre for e-Innovation (CeI).



[Case 1: Cape Access project]

- Initiated by Cel in 2004.
- Aims of project
 - ensure that the public has access to the necessary technology infrastructure to interact with government, business and with each other electronically;
 - create an information society amongst citizens who are poor, unemployed and in need of help;
 - enable any community to access, utilize and share information and knowledge and empowers them to achieve their full potential.



[Background]

- Initially steered by multi–stakeholder reference group of mainly Provincial departments.
- Focus was on providing access.
- Uptake issues not clearly thought through.
- Community partnerships recognised as pivotal from outset.



[E-Community Forums (e-CF)]

- Recognition of local government involvement – gatekeepers of communities.
- Municipal officials facilitated community meetings through grassroots organisations.
- Steering committee established at initial meeting – role to market concept and impending launch.
- At a second meeting, election of the e-CF.
- 6 e-CFs established during pilot with a constitution in place.



Meeting of Genandendaal community to elect e-Forum in May 2008



[Technology & connectivity]

- Mainly wireless in semi-rural areas - Department of Agriculture research farms.
- GPRS in rural areas.
- Minimum of 8 PCs per centre



[Bua e-CF @ Struisbaai]

- A small fishing community.
- 4km from the Southern most tip of Africa viz. Cape Agulhas; 220 km from Cape Town.
- Established May 2005.
- Based in local library.
- Low income earners - More then 80% of the community dependant on the sea for an income and food.
- Lack of support from government for the fishermen



[Access only?]

- Uptake was extremely slow.
- Centre only utilised by few members of community.
- Mainly provincial government involvement through Cel – monitoring and reporting.
- No strategy for uptake...
- Until the fishing rights problem arose.



Bua e-CF – a site of struggle for fishing rights



Bua e-CF – a site of struggle for fishing rights



Vessel monitoring protest



[Community Benefits]

- Agents and consultants to process fishing rights applications.
- Daily weather data
- Support of subsistence activity:
 - ID Project;
 - Fishermen's ID Photo Project (saving of ZAR 14k amongst 186 fishermen;
 - Other e.g. Online tax filing; Email to MCM (proof of communication).
- Improved cohesion with sister communities.
- Stronger partnerships: Govt; NGOs; investors; community structures.



[Fisherman's ID project]



[Community benefits]

- E-Centre a site for government contact and interaction.
- Self-reliance and dignity.
- Social cohesion within and between communities.
- Appropriation of ICTs.



[Lessons]

- Good governance and support structures framed by e-CF constitution.
- No strong partnership with local municipality – non-funding arm plays a subservient role.
- Dependence on individuals in e-CF.
- Communities are able to take control when the system was threatened.
- Use of stipends.
- Concept was not systemic.



[Case 2: Khanya]

- Lack of skilled teachers in Maths & Science.
- A curriculum project rather than a technology project.
- *“By the start of the 2012 academic year, every educator in every school of the Western Cape will be empowered to use appropriate and available technology to deliver curriculum to each and every learner in the province.”*



[Digital Divide]

- Apartheid scars in education system.
- Only a few of the 1 570 public schools had any computer technology available for use by the learners
- Very few of the nearly one million learners had ever had the opportunity to see or touch a computer;
- Of 27 000 educators low PC literacy.
- Almost no technology use in classroom.



[E-Schools]

- Learners who utilise ICT to enhance learning.
- Qualified and competent *leaders* who use ICT for planning, management and administration.
- Qualified and competent *educators* who use ICT to enhance teaching and learning;
- Access to ICT resources that support curriculum delivery.
- Connections to ICT infrastructure.



[Design and implementation]

- Business plan approved by provincial cabinet.
- Sound project methodology (PRINCE) adapted to local needs.
- Two phases:
 - Create an e-facility;
 - Establish e-school – emphasis on enhancing education outcomes.



[Partnerships]

- Within government (including Cel)
- Strong private sector partnerships
 - technology, curriculum, donors.
- Civil society
 - Entrepreneurship / SME development.
 - Community training.



[Governance]

- Steering committee (high level education department officials);
- Executive committee (education line managers)
- Internal project management (full-time team).



[Technical implementation]

- Computer laboratories.
- Computers in class rooms.
- Audio-visual equipment.
- Electronic white boards and similar equipment.
- Video conferencing.



[Khanya e-Schools]



[Early adopters]



Beyond the classroom








- Khanya Learnership Programme - Sustainable Maintenance Project
- In partnership with business, trains interns from disadvantaged communities with skills required to support technology centres at schools.
- Encourage the formation of small businesses around schools - interns build relationships with schools during internships – form a nucleus of business upon graduation.
- The one year program culminates with a recognised (NQF level 5) qualifications.





Development of curriculum

Grade 4 Mathematics: Learning Outcome 1 Numbers, Operations & Relationships

Assessment Standard		Classroom Activities	Khanya Educational Software	Office Products	Open Source
4.1.1	Counts forwards & backwards in variety of intervals between 0 & at least 10 000				
4.1.2	Describes & illustrates various ways of counting in different cultures throughout history				
4.1.3	Recognises & represents numbers and describe & compare them: whole numbers to at least 4-dig?				
4.1.4	Recognises the place value of digits in whole numbers to at least 4-digit numbers				
4.1.5	Recognised & uses equivalent forms of numbers: common fractions with denominators ?				



[Green ICTs]

- First solar-powered computer laboratory at Bernadino Heights Secondary School in Kraaifontein.
- Enough electricity for other school needs as well.



Beyond maths and science: e-Music

- Khanya's Sound Lab Project.
- In conjunction with Curriculum Department developed learning outcomes and identified software applications.
- Partnership with Paul Bothner Music - training and technical expertise.
- Two schools to date on this project.
- Computers + software + musical keyboard + recording facility
- Recording of live instruments and voice-overs .
- Facilitates learning of music + sound and video technology.



[Khanya on track]

- ICTs incorporated into 953 out of 1500 schools
- 170 more schools in progress.
- A total of 38094 computers deployed.
- 22907 funded by Khanya or its donor partners; 15187 have been procured by the schools themselves through fund raising.
- 22272 Educators are being empowered to use technology optimally for curriculum delivery
- 746167 learners are already reaping the benefits of the project.



[Khanya awards]

- Bronze Award at the Western Cape Premier Service Excellence Awards 2007
- Gold Award from the Impumelelo Innovations Award Trust received on 17 February 2007.
- Silver Award at the Western Cape Premier Service Excellence Awards 2006 received on 23 November 2006
- Winner of the Technology Top 100 Awards: Leader in Empowerment 2006 received on 16 November 2006.
- Finalist in two categories of the ICT Achievers Award 2006.
- Silver Award at the Western Cape Premier Service Excellence Awards 2005 received on 21 November 2005.
- Kobus van Wyk, winner of the ICT Social Responsibility Award 2005 by Gartner received on 26 October 2005.
- Kobus van Wyk, winner of the Computer Society's ICT Personality of the Year 2005 received on 14 September 2005.=
- Finalist - Stockholm Challenge: Education - 2004
- +++++



[Benefits]

- Improved maths and science teaching and learning.
- Addresses digital divide.
- Wider access to services.
- Job creation.



[Lessons]

- Serves as a good model for e-education nationally (White paper on e-Ed.).
- Under utilisation in some schools.
- Extension of benefits to greater school community.
- Systemic perspective prevails – with room for expansion in interconnected systems.



[Systemic perspectives]

- Communities are natural systems.
- ICT interventions must integrate with the system – avoid alien invasive plant syndrome.



[Khanya]

- Born out of a deficiency in existing system viz. maths & science problem.
- Khanya objectives supported natural elements of education viz. teaching and learning.
- Implementers were an integral component of system viz. Dept. of Ed and thus able to influence change (ICT adoption and use).
- Policy formulation within education system.
- Extension to wider system i.e. local communities was easier given proximity of elements.



[Cape Access]

- Formulation of policies largely without input of local communities and local government – though firm recognition of these elements.
- Attempts made to systemize project – but not sustainable.
- No clear plan for systemic integration implied that uptake and effective use would be slow.
- Communities were *provided* with tools, but no context.
- Local municipality a key element of the system.



[Policy imperatives]

- Mechanisms for the integration of different levels of government to collaborate.
- Common policy, jointly developed that all government levels subscribe to.
- Identification of all elements of system, including social networks.
- Wider applications (e.g. education + job creation + empowerment) not narrow.
- Funding, where appropriate at the level of local government.
 - Funding by treasury as a core infrastructure item.
 - E.G. Budgets for traditional functions e.g. education, housing, must include ICT infrastructure and services
 - ICTs need to be viewed at a level akin to running water, sewage, and roads to assist systemizing.



[Roles of government]

CSFs	GOVT. LEVEL	Links	Analysis
STRONG INTELINKING MECHANISMS REQUIRED ACROSS ALL SPHERES.	National government	Strong link	Successful in conceptualisation of role of ICTs; Has created robust policy.
CLEAR ARTICULATION OF POLICY ACROSS LEVELS AND IMPLEMENT PROVINCIAL LEVEL E.G. E-EDUCATION	Provincial government	Weak link	Has been able to effectively interpret national policy, create synergistic policy in line with national government, and is undertaking delivery at local level.
LOCAL GOVERNMENT ROLE TO UNDERSTAND LOCAL CONTEXT AND IMPLEMENT COMMUNITY LEVEL INITIATIVES ACCORDINGLY	Local government		Need to give effect to policy, and to undertake some alignment of policy in respect of local conditions. Need to incorporate ICTs as tools for development within their <i>Integrated Development Plans (IDP)</i> This is the key level in terms of good governance for ensuring delivery and systemic application of ICTs.

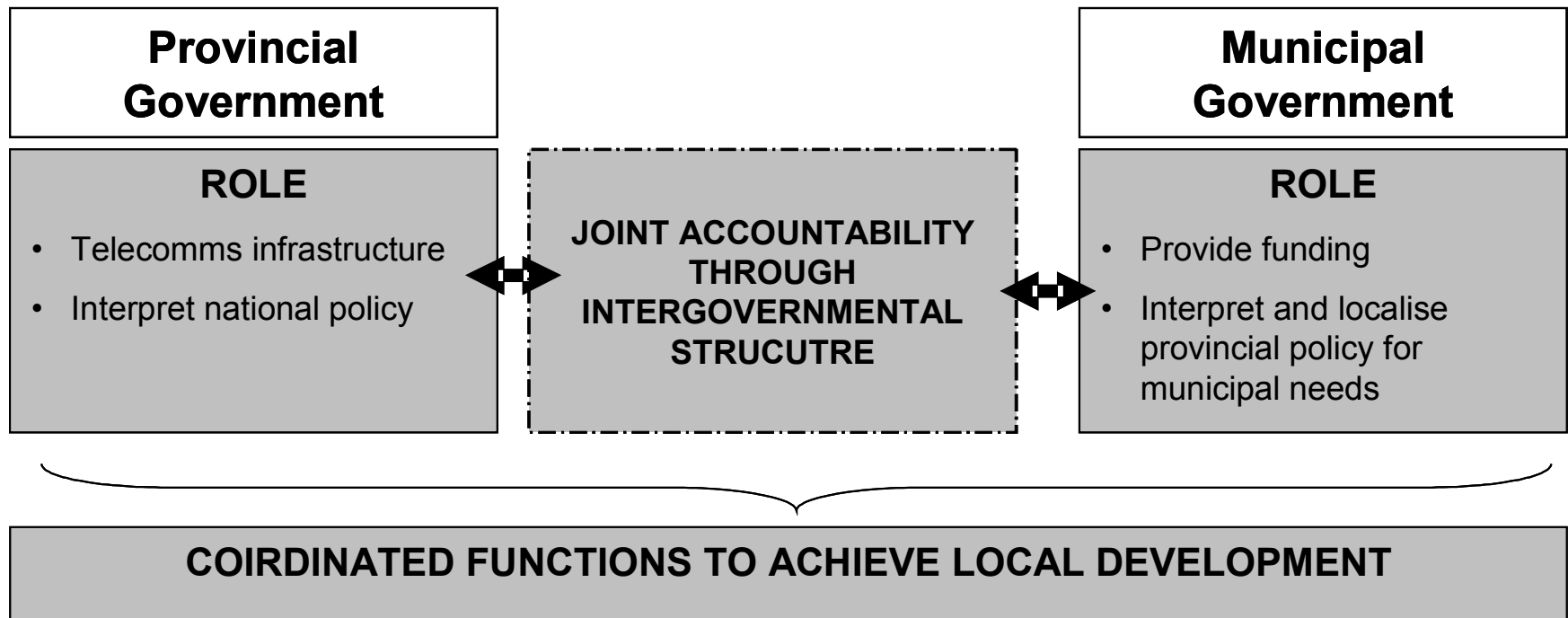


[Mechanisms]

- A common understanding and ownership of ICT4D initiatives
- Move towards community ownership with joint oversight from both levels of local government viz. provincial and municipal.



[Local ICT governance]



[Questions]

