Country Case Studies
report prepared for the ICT Vision 2020 Investment Workstream

Dalberg Global Development Advisors

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Executive summary: Pursuing a multi-pronged strategy, South Africa can drive broad-based national development and growth

South Africa's aspiration for 2020 is to achieve **100% broadband** coverage while maximizing both economic and employment growth. However, there are a number of paths that can be followed to achieve this including: 1*) enabling digital citizens, 2)supporting industry (both industry and ITES) and 3) building global leadership in ICT products and services.*

These **dimensions are not sequential**. For example, India was not a global leader in creating digital citizenship, it has achieved success in building ITES and ICT service industries. South Africa must choose to align itself to one or multiple dimensions. In which broad direction should South Africa be heading? In order to interrogate this question, we want to look at a number of countries that exemplify the three approaches and are in some way comparable to South Africa.

Country peer groups have been identified in order to set the appropriate targets for 2020 and lessons for driving growth, impact and investment. We have used the following categories to identify a peer group:
1. Comparable a decade ago to South Africa today, in terms of both socio economic and legacy infrastructure
2. Largely comparable, but less pronounced
3. Africa comparisons

Country peers include: Bolivia, Colombia, Latvia, Lithuania, Mexico, Philippines, Brazil, Malaysia, India, Kenya, Ghana, Nigeria. Comparatively, these countries have largely outperformed South Africa and offer learning in terms of the policies and solutions that have helped drive the growth of ICT.

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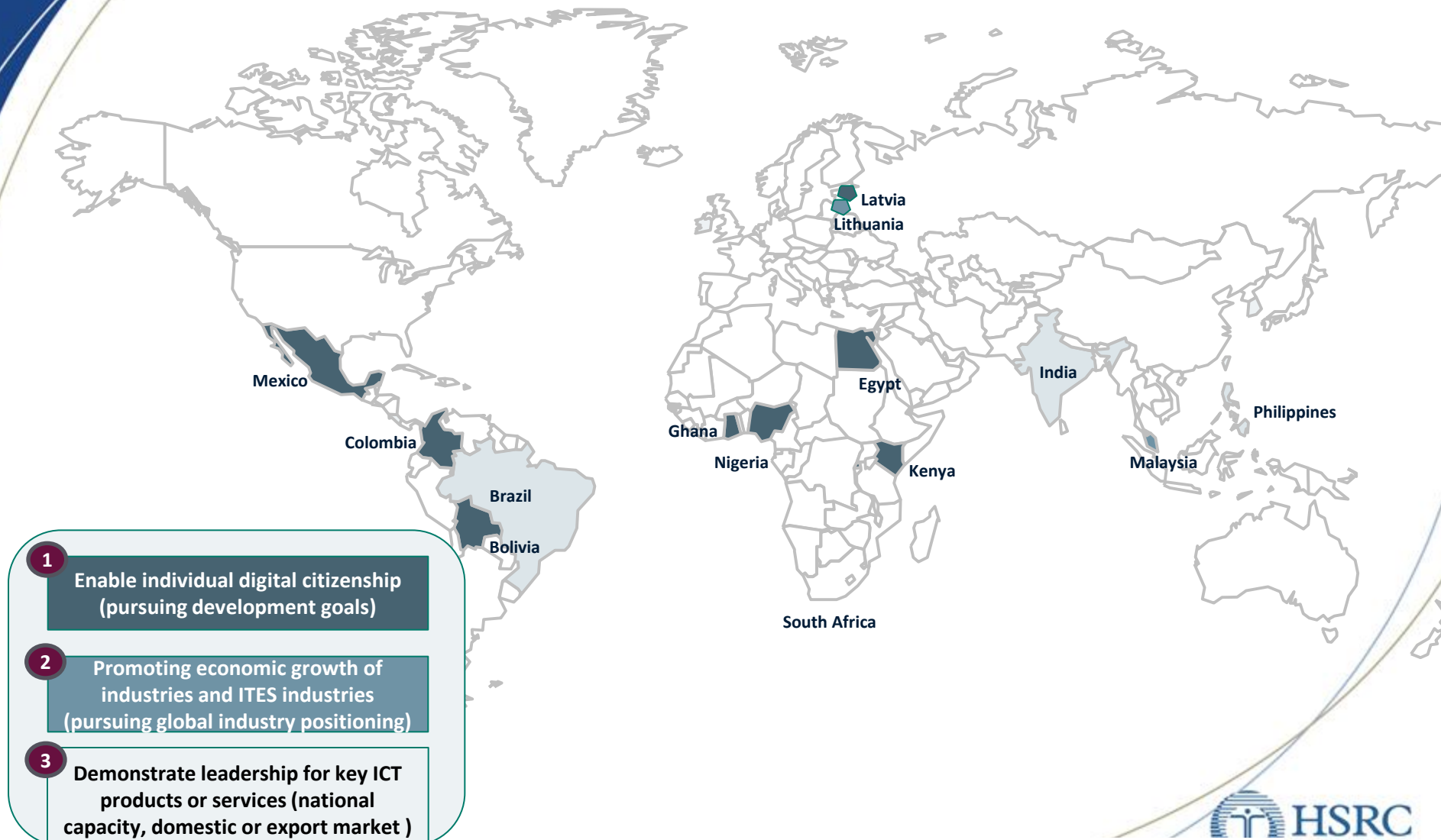
Implications for South Africa

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In order to achieve its targets for 2020, South Africa recognizes that user needs and objectives will not be uniform, but should be considered across three dimensions

Aspirations for 2020

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1 Universal individual access that will will maximize education, opportunity and productivity aligned with public policy goals *(Enable individual digital citizenship)*

2

Industry related access and services that will enable growth and job creation through the effective use of ICT *(Promote economic growth of industries and ITES industries)*

3

Industry access that will position South Africa to be globally competitive in key ICT dependent industries *(Demonstrate leadership for key ICT products or services)*

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National ICT Strategies typically prioritize one of these elements but these strategies are not necessarily sequential and can be implemented in parallel.

Latvia
Lithuania

Mexico

Colombia

Brazil

Bolivia

Egypt

India

Philippines

Ghana

Nigeria

Kenya

Malaysia

South Africa

1	Enable individual digital citizenship (pursuing development goals)
2	Promoting economic growth of industries and ITES industries (pursuing global industry positioning)
3	Demonstrate leadership for key ICT products or services (national capacity, domestic or export market)

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There are a number of ways in which a country can leverage ICT to drive economic growth.

Different countries have chosen to focus on different strategies but these strategies are not necessarily sequential and can be implemented in parallel.

1

Enable individual digital citizenship

Using ICT to empower citizens and build new industries

2

Promote economic growth of industries and ITES industries

Using ICT to improve the efficiency of industries and build out ICT enabled product or service deliver (e.g. SMEs, BPO, call centres, manufacturing, etc)

3

Demonstrate leadership for key ICT products or services

Using ICT to boost exports, domestic markets or national ICT capacity. ICT based goods (e.g. hardware, software and applications development)

Illustrative country examples

**Kenya
Colombia**

Malaysia

**Brazil
India
Philippines**

South Africa can address these focus areas through a multi-pronged ICT strategy that is aligned with the country's capabilities as well as its development mandate as an emerging economy.

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Each category will have different aspirations for social and economic impact which can be considered relative to appropriate country peers

- *Rationale for peer group countries: How is South Africa performing vs. peers? What do we aspire to achieve?*
- *What are the key levers for growth? How will impact be measured?*

Selection:

Countries were selected based on similarities in terms of socio-economic/demographic context and the overall use of ICT to promote national growth and competitiveness:

- Socio-economic & demographic context: What countries were comparable a decade ago to South Africa today in terms of socio economic and legacy infrastructure
- Use of ICT in and performance of key industries: What middle and low income countries are performing well in terms of the use and update of ICT

Metrics

- Income ranking; GNI per capita (PPP);
- Population density; Adult literacy ;
- Fixed telephone subscriptions; International fiber-optic links; internet subscriptions
- ITU Middle income countries
- Network Readiness Index

Primary peers:
- Bolivia
- Colombia
- Latvia
- Lithuania
- Mexico
- Philippines

Second order peers:
- Brazil
- Malaysia
- India

African peers:
- Ghana
- Kenya
- Nigeria
- Egypt

1 **Peer Group Selection**

Identify countries that in 2002, were comparable to South Africa today based on World Bank and World Economic Forum Data

Selection criteria	Weighting	Country Output

Selection criteria

1. GNI per capita (PPP $)
2. Population density (people per square km)
3. Urban population (% of total)
4. Literacy rates (% of adults)
5. Fixed telephone subscriptions (per 100 people)
6. Country Land Area (sq. km)

Weighting

Indicators 1-5 were scored based on their comparability with South Africa today within a reasonable range.

E.g. if the indicator was within 10% of SA's measure, it received the highest scoring. Ranges beyond this (25-50%, >75%) were scored lower.

Scores were then summed and countries were grouped based on overall score.

A second filter (Indicator 6 – Land Area) was then used to eliminate outliers (e.g. small islands)

Country Output

Most comparable:
1. Lithuania
2. Bolivia
3. Latvia
4. Mexico
5. Colombia

Comparable on a number of dimensions:
1. Brazil
2. India (Bangalore, Karnataka)
3. Malaysia
4. Philippines

Selected African peers:
1. Kenya
2. Nigeria
3. Ghana

Source: All statistics from World Bank Development Indicators with the exception of Fixed telephone subscriptions from ITU data;
Note: Countries in bold profiles in subsequent slides.

Peer Group Comparisons: Socio-economic comparison

- *Comparison of metrics between South Africa (2010) and peer countries (2002)*

Indicator / Country	South Africa (2010)	Lithuania (2002)	Bolivia (2002)	Latvia (2002)	Mexico (2002)	Colombia (2002)	Malaysia (2002)	Brazil (2002)	Kenya (2002)
GNI per capita (PPP $)	10360	10440	3200	9900	9140	5980	8890	7110	1160
Population density (people per square km)	41.16	55.35	7.98	37.53	52.80	37.02	74.62	21.19	57.86
Urban population (% of total)	61.70	66.84	62.76	68.06	75.34	72.70	64.24	82.40	20.10
Literacy rate (% of adults) latest available	88.72	99.65	86.72	99.75	90.54	No Value	88.69	86.37	73.61
Fixed telephone subscriptions (per 100 people)	8.43	27.03	6.83	29.83	14.59	18.91	19.05	21.65	0.98
Land Area (sq km)	1214470	62680	1083300	62190	1943950	1109500	328550	8459420	569140

- With the exception of Kenya, South Africa's fixed telephone subscriptions remains significantly lower than its peer group set of countries in 2002.

- South Africa's population density is most similar to those in Latvia and Colombia in 2002.

- South Africa's urban population percentage is most similar to that seen in Bolivia and Malaysia in 2002.

- South Africa's literacy rate is most similar to the level experienced in Malaysia in 2002.

Source: All statistics from World Bank Development Indicators with the exception of Fixed telephone subscriptions from ITU data.

Peer Group Comparisons: Socio-economic comparison
• Comparison of metrics between South Africa and peer countries (2002 & 2010)

Indicator / Country	South Africa	Lithuania	Bolivia	Latvia	Mexico	Colombia	Malaysia	Brazil	Kenya
2002									
Internet users per 100 people	6.78	17.66	3.12	22.06	11.90	4.60	32.34	9.15	1.21
Population covered by mobile network (%)	95.10	100	43	89	86	-	95	-	52
Mobile cellular subscriptions (%)	30.09	47.44	11.84	39.22	25.26	11.19	36.93	19.45	3.61
2010*									
Internet users per 100 people	12.33	62.18	20.00	68.70	31.00	36.50	55.30	40.65	25.90
Population covered by mobile network (%)	99.80	100	46	99	100	83	92	91	83
Mobile cellular subscriptions (%)	100.76	148.79	72.31	103.00	80.55	96.07	119.22	104.1	61.63
Compound Annual Growth 2002-2010									
Internet users per 100 people	8%	17%	26%	15%	13%	30%	7%	20%	47%
Population covered by mobile network	1%	0%	1%	1%	2%	N/A	0%	N/A	6%
Mobile cellular subscriptions (%)	16%	15%	25%	13%	16%	31%	16%	23%	43%

- South Africa has experience substantial growth rates in mobile subscriptions, and 100% of South Africa's population is now covered by mobile network.

- However, growth of internet users in South Africa has been very low and the percentage of South Africa's population now using internet lags way behind those seen in its peer group. This result is in part due to very high fixed line internet tariffs, as well as slow take-up and/or usage of smartphones in South Africa.

- Kenya has experienced the most rapid growth in internet users and mobile cellular subscriptions within this peer group.

Source: All statistics from World Bank Development Indicators and World Bank Little Book of ICT Statistics 2011.

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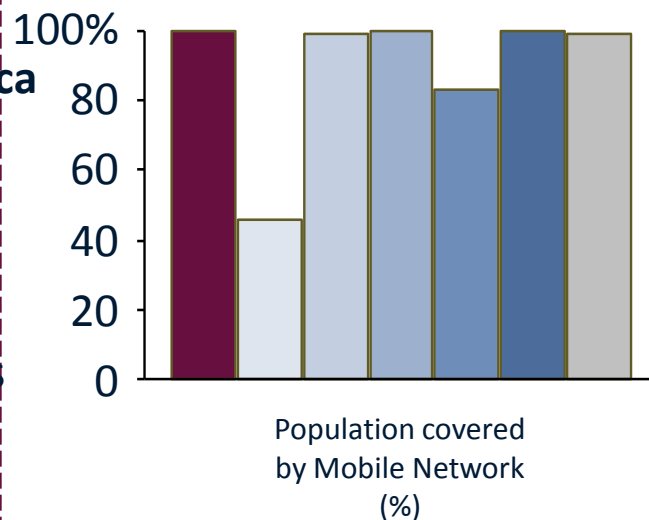# Peer Group Comparisons: Enabling Individual Citizenship

Overall, South Africa scores below its global and regional peers with regard to use and affordability of broadband services.

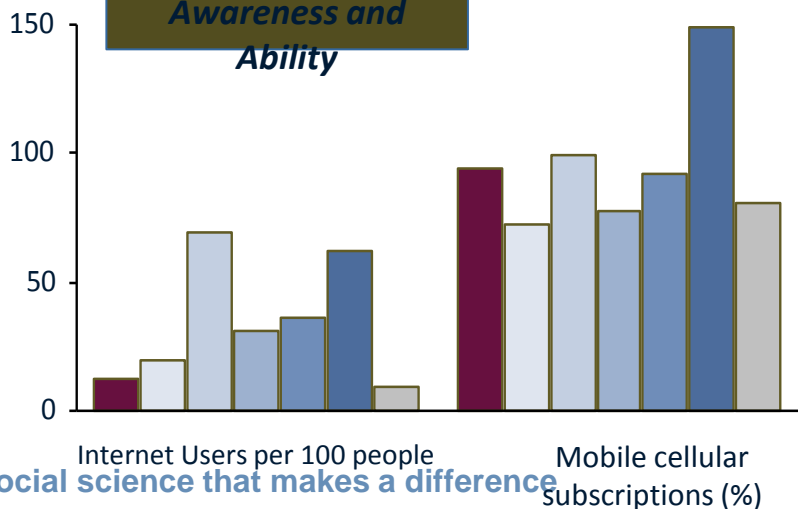**Key gaps for South Africa vs. its peers**

- In general, South Africa scores below its peer group countries on key broadband elements
- South Africa's growth of internet users over the past decade has been particularly poor
- South Africa scores relatively highly when it comes to mobile coverage and access

Legend:
- **South Africa**
- Bolivia
- Latvia
- Mexico
- Colombia
- Lithuania
- Philippines

Access & Availability

Population covered by Mobile Network (%)

Awareness and Ability

Internet Users per 100 people

Mobile cellular subscriptions (%)

Affordability

$USD

Fixed braodband internet tariffs ($ a month)
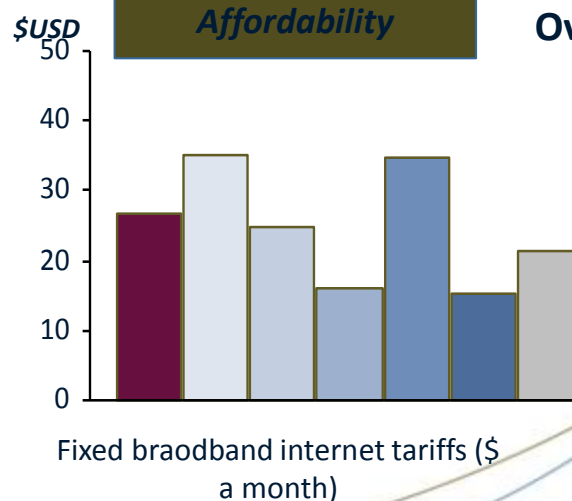
Overall NRI ranking:

Bolivia – 127th
Latvia – 41^{2t}
Mexico – 76th
Colombia – 73rd
Lithuania – 31st
Philippines – 86th
South Africa – 88th

Social science that makes a difference

Source: All statistics from World Bank 2011 Data Book of ICT, except NRI data taken from World Economic Forum Global Information Technology Report 2011; Dalberg Analysi

Top Middle Income Countries*	IDI Rank 2010	IDI Rank 2008
Barbados	41	33
Bulgaria	49	45
Serbia	50	47
Montenegro	51	50
Belarus	52	58
TFYR Macedonia	53	52
Uruguay	54	51
Chile	55	54
Argentina	56	53
Malaysia	58	57
Other selected peer countries	IDI Rank 2010	IDI Rank 2008
Brazil	64	62
India	69	70
Mexico	75	74
Colombia	76	71
Philippines	92	95
Lithuania	35	35
Latvia	40	39
Bolivia	102	102
South Africa	97	94

- South Africa's 97th ranking is significantly behind other middle income countries.

- This positioning is also well behind the majority of its peers

Source: ITU *Measuring the Information Society, 2011;* * As defined by ITU

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Correlation between country competitiveness and the use and development of ICT
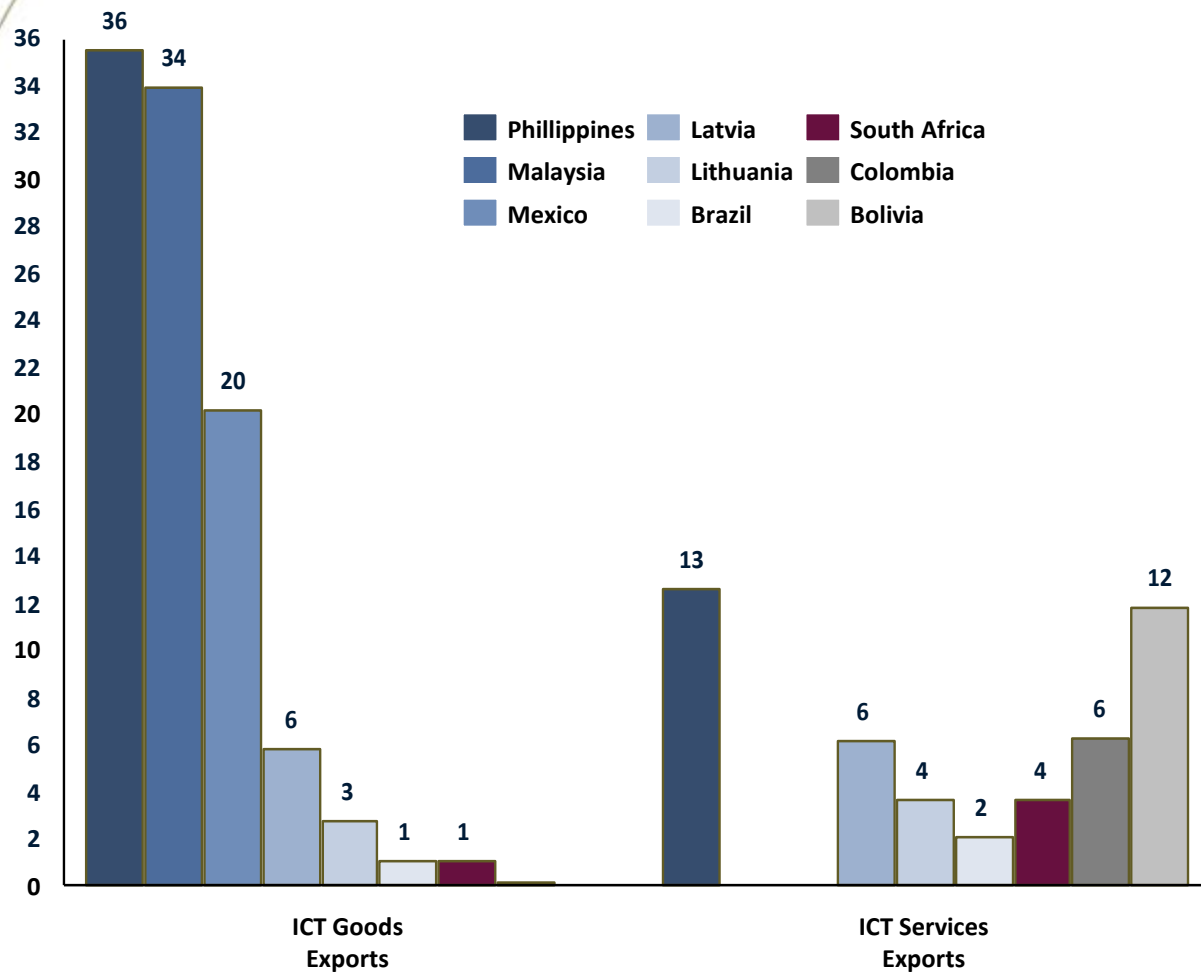

Country competitiveness
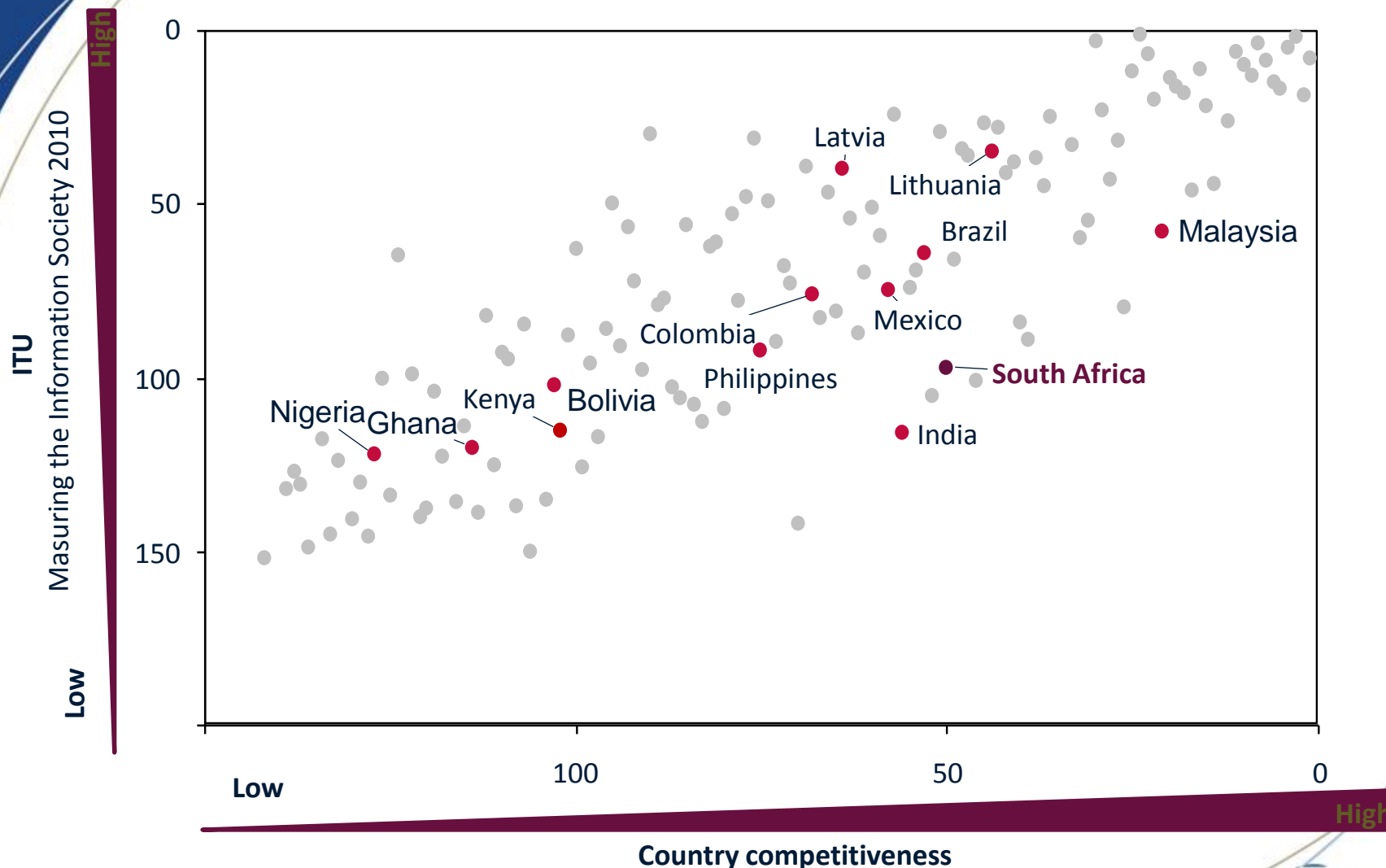
Global Competitiveness Index Rank 2010–2011

Source: ITU 2011 Measuring Information Society 2011. and WEF 2011-2012 Global Competitiveness Report, Dalberg Analysis;

Peer Group Comparisons: Both in terms of ICT goods and services exports, South Africa lags behind its peers (as well as countries that are demonstrating global ICT leadership)

•*Compared to its peers, South Africa is performing below average in terms of ICT goods and services exports (% of Total)*

Percentage of total exports (2010)

Legend:
- Phillippines
- Malaysia
- Mexico
- Latvia
- Lithuania
- Brazil
- South Africa
- Colombia
- Bolivia

ICT Goods Exports values: 36, 34, 20, 6, 3, 1, 1
ICT Services Exports values: 13, 6, 4, 2, 4, 6, 12

- **South Africa is performing well below its peers on both ICT goods and services exports (as % of total)**

- *Further, these average are significantly below the global ICT leaders such as South Korea, Sweden, etc.*

Social science that makes a difference

Source: World Bank ICT Indicators – ICT Goods Exports as % of total goods exports and ICT Services exports as % of total services exports (2010 data)

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- *The IDEOS phone unlocked latent demand for mobile broadband in Kenya by being priced affordably*

Description: While internet usage has historically been very low in Kenya, the release of the affordable IDEOS phone resulted in a major boost in internet accessibility for the average Kenyan and have driven internet adoption.

Lever: IDEOS and Google partnered with Safaricom, Kenya's leading mobile network to subsidize a smart phone for 8000Ksh (~$100) including a basic data plan.

Impact: Significantly increased the demand for, use and web capabilities of Kenyan public. IDEOS sold 60,000 phones within 5 months.

2 out of every 3 Kenyans currently access the internet through their mobile phones.

Results to date...

There was a significant increase in mobile penetration and internet access in the period directly following IDEOS release

- Mobile penetration (per 100 people)
- Percentage of population with internet access

Mobile penetration (per 100 people)

	Sep-10	Dec-10	Mar-11	Jun-11	Sep-11
Mobile penetration	56	63	64	62	67
Internet access	22	23	28	32	36
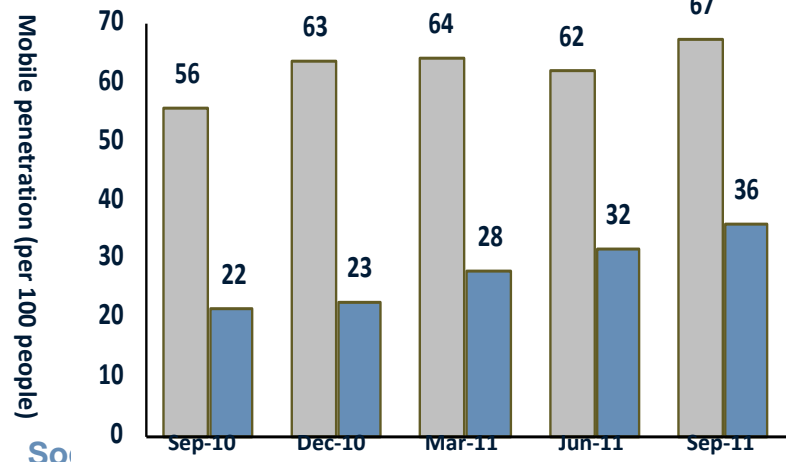
The growth rate in internet penetration was significantly higher that the CAGR of internet penetration over the four years prior to the IDEOS phone's release while the growth rate in mobile penetration was only slightly below the previous four year's CAGR despite significantly decreasing returns.

Mobile penetration growth Sept. 2010-Sept. 2011	Mobile penetration compound annual growth rate 2004-2009	Internet growth Sept. 2010-Sept 2011	Internet growth 2004-2009
19.6%	39.5%	63.6%	47.6%

Source: Communications Commission of Kenya Quarterly Sector Statistics Report July-September 2011; Singularity Hub Accessed from http://singularityhub.com, April 2012;

Country case study: Utilizing the private sector to establish telecentres in Colombia

Colombia's "Compartel" Programme incentivized the private sector in expanding rural telephony


Description: First Universal Access and Service fund to successfully implement a competitive bidding scheme for privately operated telecentres.

Lever: Bidding scheme from private sector maximized opportunities for economies of scale by packaging telecentres together in large numbers. Telephony programme funded by a combination of revenues generated from license fees, and a 5 percent revenue levy that is paid by Telecom, the national operator.

Impact: 1,490 telecentres throughout the country over seven years, benefitting an estimated 5.2million inhabitants. 10,045 rural telephone points over the same period benefitting 6million inhabitants. A number of community training programs created.

Results to date...

Colombia made tremendous improvements in internet penetration.
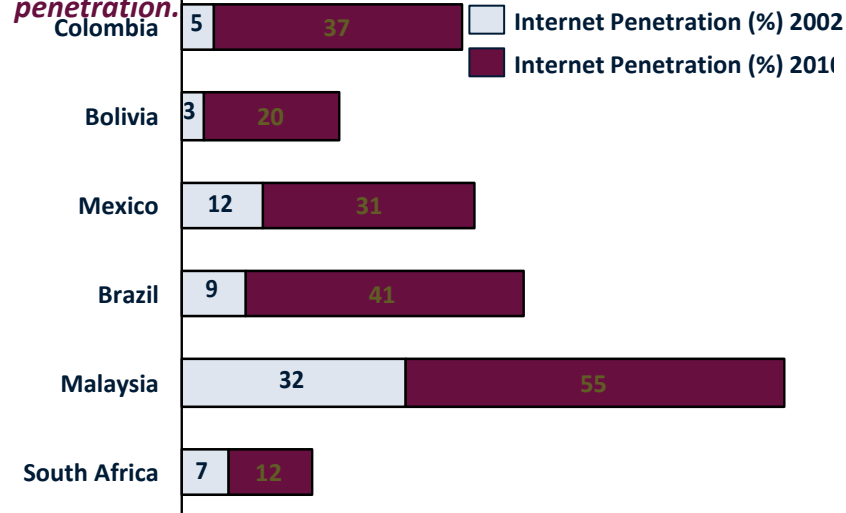
However, the geographic digital divide (shown below as the difference between the availability of broadband in the area of highest and lowest penetration) remains large.

Internet Penetration (%) 2002
Internet Penetration (%) 2010

Country	2002	2010
Colombia	5	37
Bolivia	3	20
Mexico	12	31
Brazil	9	41
Malaysia	32	55
South Africa	7	12

Broadband Penetration Highest % Area
Broadband Penetration Lowest % Area

Colombia   Brazil   Peru   Chile

Source: ITU infoDev *Practice Note* accessed from http://www.itu.int/ITU-D/fg7/case_library/case_study_2/Americas/Colombia_English_.pdf; Colombian Ministry of Communications C*ompartel Case Study*; Global Information Society Watch *Colombia 2007 Focus* accessed from http://www.giswatch.org/en/country-report/civil-

Country case study: e-learning in Malaysia

The Malaysia smart-school actively promotes e-learning and works towards a more technologically literate pop'n


Impact: The smart-school initiative was first piloted in 1997 to promote self-directed learning and ICT skills and capabilities. By 2010 the project was extended to all 9000 schools in the country. Through this and other ICT initiatives, Malaysia has transformed itself into a high technology knowledge based economy and has been very successful in encouraging more of its citizens to access the internet – the smart-school initiative contributed to this success by allowing citizens to engage with the digital economy from an early age.

Lever: The smart-school initiative and a range of other projects have been driven by *public private partnership* where government drives a framework but works closely with the private sector to implement the solution. The smart school is a fully integrated public private e-learning initiative that is built around technology.

Description: The smart-school initiative was introduced as a flagship application of the 8th Malaysian Plan (8MP) which aimed to promote sustained, productivity driven growth via a technologically literate and critically thinking workforce. The expansion of ICT services among the general public and rural populations was given priority under the 8MP. Total expenditure on MSC smart-school from 2001-2010, > RM530 million

RESULTS TO DATE

Malaysia ramped up expenditure on primary education following the smart-school initiative
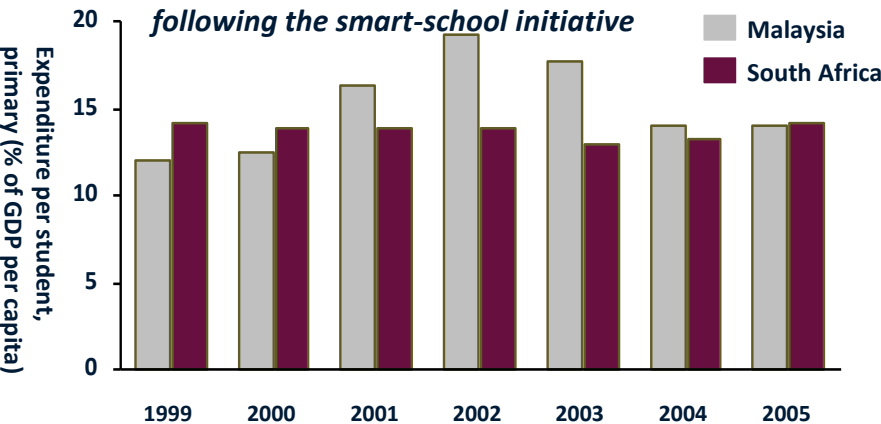
Malaysia's internet user growth has been impressive
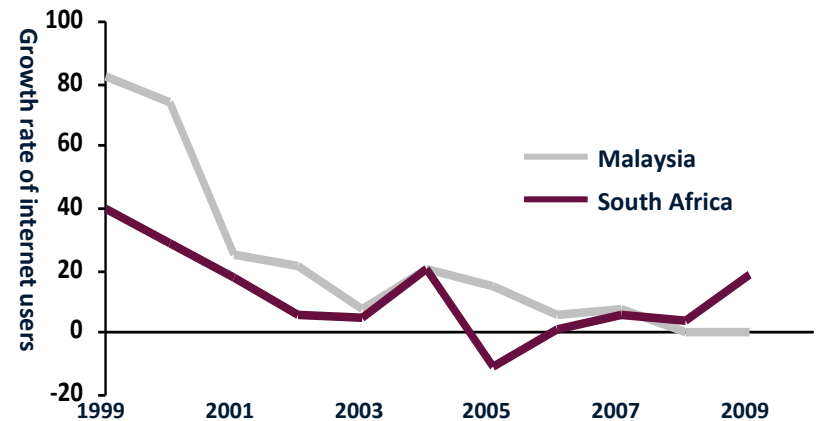
Source: World Bank Development Indicators; Asian Development Bank; Government of Malaysia 1997 Smart School Blueprint; Malaysian Ministry of Science Technology and Innovation 2008 ICT Roadmap; Dalberg Analysis.

Learning from peer group countries that have deployed interventions that promote economic growth of key ICT enabled industries

Definitional aspirations for 2020

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1 Universal individual access that will will maximize education, opportunity and productivity and align with public policy goals *(Enable individual digital citizenship)*

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Industry related access and services that will enable growth and job creation through the effective use of ICT *(Promote economic growth of industries and ITES industries)*

3 Industry access that will position South Africa to be globally competitive in key ICT dependent industries *(Demonstrate leadership for key ICT products and services)*

Source: Human Sciences Research Council; Kleeman, Michael expert opinion; Dalberg analysis.

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Country case study: Manufacturing growth in Malaysia

• The Malaysian smart-school actively promotes e-learning and works towards a more technologically literate population
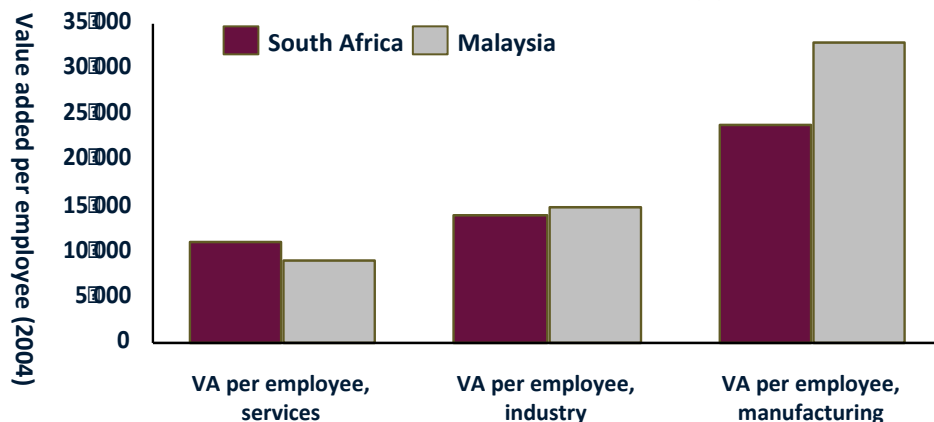

Description: The expansion of manufacturing in Malaysia has been both growth and equity promoting. The manufacturing sector has also been a major source of R&D activity in the Malaysian economy.

Lever: : Malaysia made a conscious decision to use ICT to reposition its economy to secure a competitive advantage in the global economy. It aimed to achieve this by creating specialised economies of expertise to compete with the global market for specific opportunities, namely in manufacturing. The manufacturing sector in Malaysia is a prime user of ICT and research has shown that ICT investments contributed to Malaysia's manufacturing growth.

Impact: The impact of ICT in the manufacturing sector has demonstrated a direct impact on overall GDP growth for Malaysia. Further, export-oriented manufacturing has played a central role in Malaysia's rapid growth.

Manufacturing is the sector where labour is the most productive, which creates growth and job opportunities…

Value added per employee (2004)

South Africa | Malaysia

VA per employee, services | VA per employee, industry | VA per employee, manufacturing

ICT contribution to manufacturing…

Every **1%** increase in
ICT investment by
the manufacturing sector grew **GDP**
in the Malaysian economy by
0.91%*

* From 1995-2006. Growth was 0.27% in the short run (Kuupusamy et al)

Source: Kuppusamy et al (2009), The Electronic Journal on Information Systems; Rodrik (2006), National Bureau of Economic Research; Malaysian Ministry of Science Technology and Innovation 2008 ICT Roadmap; Dalberg Analysis.

•*Lithuania is a country that has experienced significant growth in Business Process Outsourcing through supply interventions*
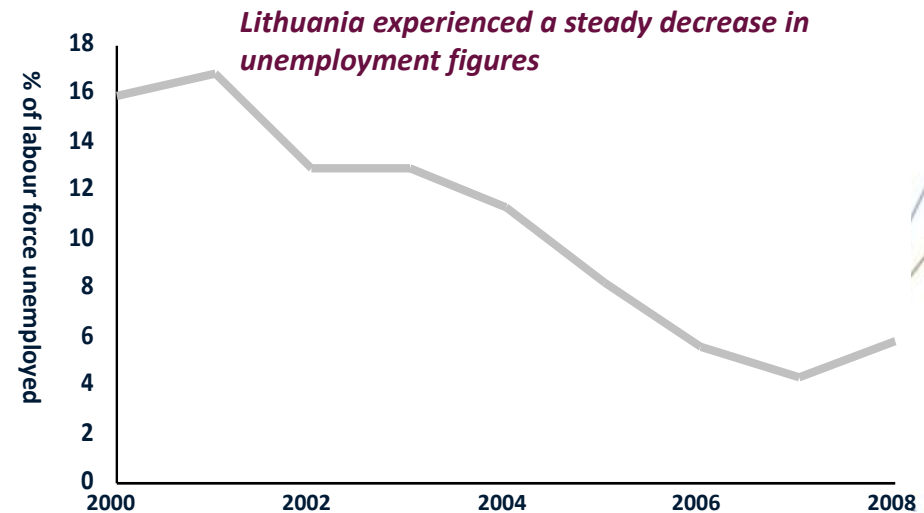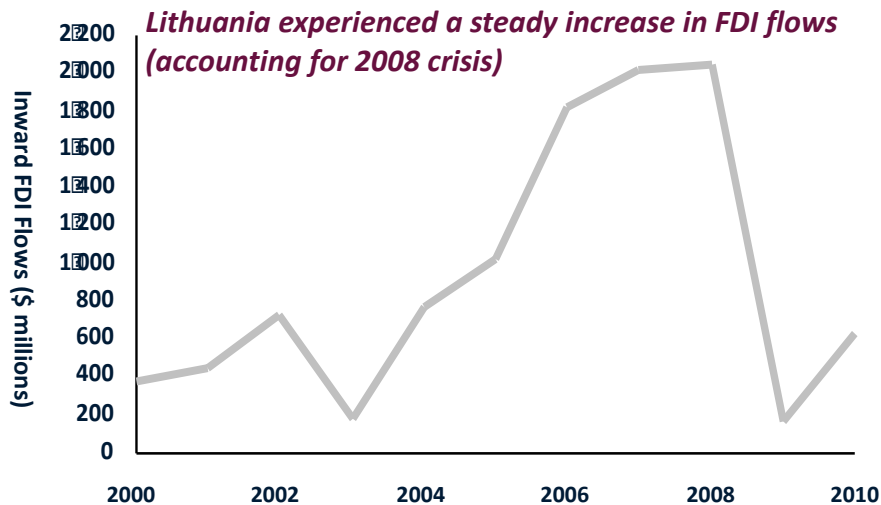

Description: Rapid growth in the last 5-7 years in BPO. Major examples include: Transcom Worldwide in 2002 (client relations management contact centre, WorldOne in 2003 (IT support and contact centre), CSC Baltic in 2008 (IT support and business process outsourcing), Barclays Bank in 2010 (IT services centre).

Lever: Government and private investments towards a leading ICT framework including Europe's highest fibre optic density, one of the world's fastest upload internet speeds and government investment in IT and communications training.

Impact: Lithuania has emerged as an attractive location for   shared services and outsourcing business developments.

Results to date...

Lithuania experienced a steady increase in FDI flows (accounting for 2008 crisis)

Lithuania experienced a steady decrease in unemployment figures

Source: World Bank Development Indicators and UN Conference on Trade and Development Data.
Note: Causation between ICT investment and FDI and unemployment improvements is difficult to entirely isolate however, additional review of other EU countries will be 24
considered

3

The Philippines is an example of a country that has seen significant growth and job creation through BPO without major government infrastructure investments

Why is the Philippines considered an ICT success story?

INVESTMENT AND GROWTH

- **Revenue generation**: $5.7 billion earned from contact center services. Estimated BPO revenues from 2011 are $11.6 billion.
- **Employment Growth in BPO:** Annual average growth of 68% (2000-2008) and quadrupled between 2004-2009.
- **Revenue Growth in BPO:** 35% (2004-2010)
- **Contribution to business service outsourcing** – From 2000-2008 increased from 0.1% to 3.6%.

Philippines growth in BPO revenues

Source: NASSCOM, 2010
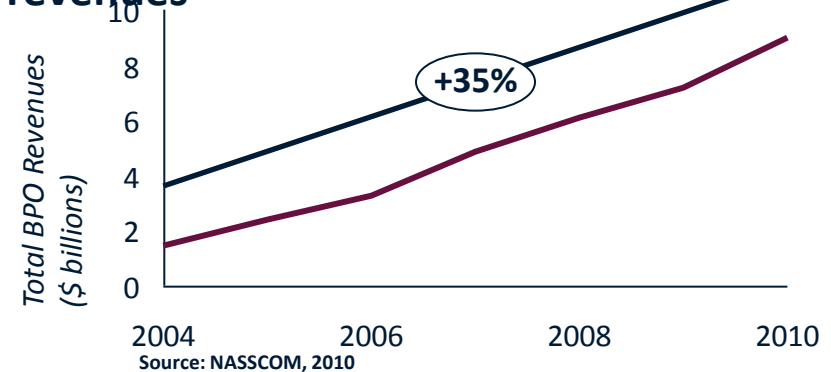
HUMAN CAPITAL

- **Jobs:** 442 164 (2009) in a formal urban workforce of 9.5million. Every new job in BPO creates an additional three to four jobs in local services
- **Employment in IT-BPO industry:** Philippines now taken over India in terms of numbers employed in the IT-BPO sector.
- **Growth in Knowledge Process Outsourcing:** Higher value more skilled than BPO. Particular growth in animation and content development

Employment in the Philippines (in thousands)

	Contact centres	Back office	Trans-cription	Animation	IT	Digital content / game	Total
2004	64	15	6.3	3	10	.2	98.5
2009	280	86	35.3	12	20.2	.6	434.2

Source: Altman, 2011

* In order to extend analysis until 2010, data is taken from two sources: Senate of the Philippines (2010) and the-outsourcing.com (2010)

Source: Altman 2011, *Industrial Strategy, offshoring and employment promotion in South Africa;* HBS student paper; rbtwelve.com; The Everest Group; Center for and Communication Foundation; BPAP 2009; NASSCOM 2010; Katz 2010 Dalberg Analysis.

Country Case Study: Philippines – driving economic growth through BPO (2/3)

The path to realizing this success included a number of factors.

How has the Philippines achieved this success?

Costs (labor, infrastructure and set-up)

- **Deregulated telecoms industry** allowed for private sector expansion **Increased available bandwidth** coupled with telecom deregulation dramatically decreased costs and long distance call rates
- **Lowered labor costs:** Labor costs typically 50-60% of total costs of a BPO unit. Philippines BPO salaries are roughly 14-20% of US equivalent.

Availability of skills

- **Focused efforts to increased the labor pool:** Allocation of Php 350million worth of scholarship funds for training of near-hires in IT/BPO.
- **Became regional leader** in education with one of highest levels of literacy (95%). More than 490k college degree graduates, 66.6% have courses suitable for BPO/IT (2008)
- **Low labor turnover:** Given comparable location performance indicators, Philippines has much lower rate of labor turnover than India.

Infrastructure Quality

- Ensured **reliable power supply** especially in Manila
- Philippines scores above India in the World Bank's Logistics Performance Index
- However, the Quality of infrastructure in the Philippines has been very irregular

Risk profile (macro economic, regulatory etc)

- Industry **supported by policymakers**
- **National Business Processing Association of the Philippines** set up in 2001 to market and support industry
- **Stable macroeconomic environment**, particularly amidst 2008 financial crisis

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Source: HBS student paper; rbtwelve.com; The Everest Group; Center for Research and Communication Foundation; bbc news, June 2012; Dalberg analysis.

3

Country Case Study: Philippines – driving growth through BPO (3/3)

Beyond favorable cost, skills, infrastructure and risk profiles, the Philippines' provided an attractive local market with a favorable economic climate, and a strong link to nearby markets.

Additional advantages   Description

Geographic location and alliances with the West

- Long standing **links with the US** and other Western economies helps boost demand from these regions and creates assimilated cultural styles. Legal system similar to that of the US.

Favorable Economic Climate

- **Stabilized economy:** Philippines economy relatively stable especially during 2008 recession. Stable fiscal deficits and debt ratios

- **Depreciation of the Philippines Peso** towards end of first decade of 2010 had a positive impact on foreign exchange earning BPO sector

Link with nearby markets

- Asia is also a notable consumer of BPO services from the Philippines, accounting for 25% of all BPO services exports from that country

The Philippines' proximity to major Eastern markets such as China and Malaysia has proven to be an advantage

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Country Case Study: India – Rapid BPO and ITO expansion (1/2)

India is an example of a country that positioned itself extremely effectively to harness the employment potential of BPO. The Indian strategy serves as a useful comparison to the Philippines' BPO expansion.
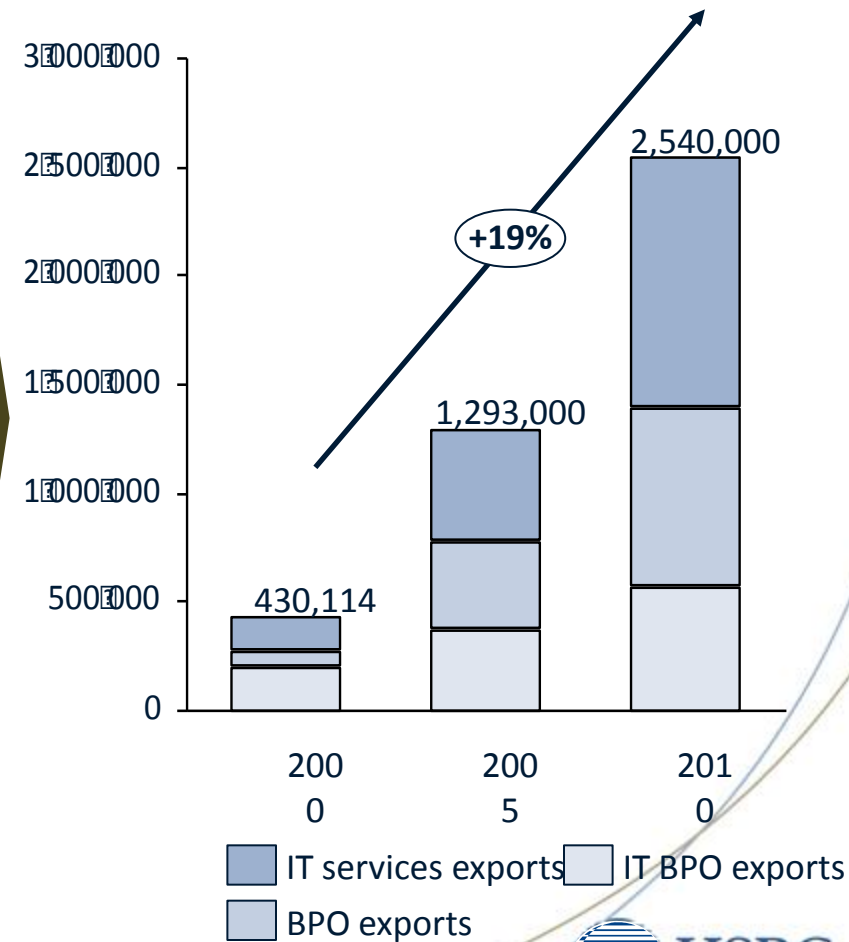
Why is India considered an ICT success story?

INVESTMENT AND GROWTH

- **Revenue generation**: ITO generates $45 billion in revenue, while BPO generates approximately $15billion.
- **Share of global BPO and ITO:** India has a 55% share of the combined global BPO and ITO market.
- **Increasing sophistication:** India's offshoring service portfolio has become increasingly sophisticated. Initially this was a result of larger numbers in IT related services. Multinationals are now assigning key strategic and research functions to their Indian offices. Information-technology enabled services (ITES) have become increasingly important employment generator.

HUMAN CAPITAL

- **Jobs:** 1.25 million employed in BPO&O activities, by 2010 this was 2.5 million (out of a workforce of 44 million).
- **Integration with other industries:** In Bangalore, horizontal and vertical collaboration in a cluster generated beneficial network effects and efficiency gains through learning and innovation.

Employment in India's BPO & O Industry

Chart: Employment in India's BPO & O Industry. Values by year: 2000 — 430,114; 2005 — 1,293,000; 2010 — 2,540,000. Growth arrow labelled +19%. Legend: IT services exports, IT BPO exports, BPO exports.

Source: Altman, Miriam: Industrial strategy, offshoring and employment promotion in South Africa; Table: calculated from NASSCOM (2010)

Country Case Study: India – Rapid BPO and ITO expansion (2/2)

The path to realizing this success included a number of factors. Government support and high labor skills are key differences when compared to the Philippines

How has India achieved this success?

Labor and skills

- **Existing skills at the beginning of BPO expansion:** Indian BPO growth began with substantial presence of Indian software engineers trained in the US who had returned to India to start companies services the US and EU markets.
- **Large range of skills to support various activities:** While the Philippines was successful in fostering necessary basic skills (such as high levels of literacy) India has generated a range of skills such as high-level management, technical and entrepreneurial capabilities. However, labor turnover is very high.

Government support and policy framework

- **Government incentive schemes:** Two key government support programs drove establishment of foreign firms in India. The use of "Special Economic Zones" developed in 2000 and "Software Technology Parks" (in collaboration with the National Association of Software Services Companies). Investors in software technology parks, exempted from tax for 10 years from establishment.
- **Telecoms deregulation:** Occurred just before the start of back-office processing in India and helped substantially lower the costs of telecoms.

Strong links to the West

- **Connections to the US:** BPO growth started with substantial numbers of software engineers training in the US and then returning to India.
- **Fostering business relationships:** Indians recognized and capitalized on strong interest among foreign investors in establishing operations in India and services Asian markets.

Fortuitous timing

- **Bursting of the dot.com bubble:** Encouraged firms to look for lower-cost locations. At this stage however relationships with Indian businesses already fairly well established.
- **Y2K scare**: coincided with Indian telecoms deregulation, but again Indian vendors capitalized on the opportunity.

Learning from peer group countries that have deployed interventions that promote economic growth of key ICT enabled industries

Aspirations for 2020

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1 Universal individual access that will will maximize education, opportunity and productivity and align with public policy goals *(Enable individual digital citizenship)*

2

Industry related access and services that will enable growth and job creation through the effective use of ICT *(Promote economic growth of industries and ITES industries)*

3

Industry access that will position South Africa to be globally competitive in key ICT dependent industries *(Demonstrate leadership for key ICT products or services)*

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Curitiba, Brazil is an example of a successful attempt on the part of government to become a hub for IT services, innovation and entrepreneurship

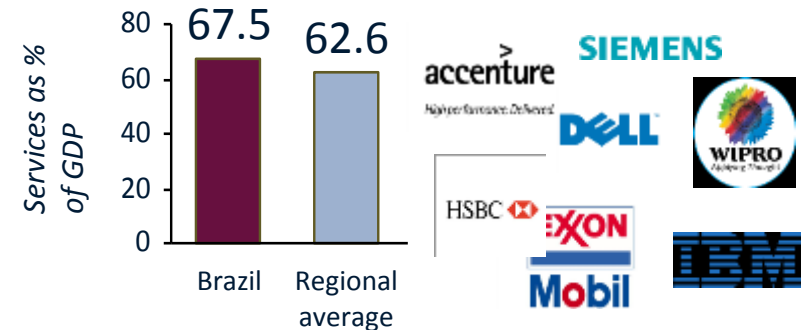## Why is Curitiba considered an ICT success story?

INFRASTRUCTURE

- **Fast Broadband:** Average peak connection speed of 12.6 Mbps (Q4 2010), fastest in Latin America.
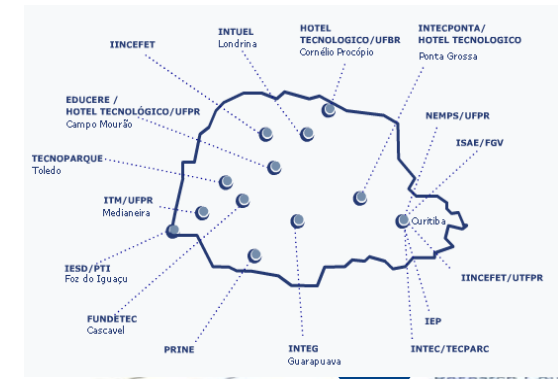- **Telecom Infrastructure:** Good network of fiber optic cables

Internet bandwidth per user 2010 (mbps)

	Brazil	India	China	Ghana	South Africa
	12,6	5,8	2,4	1,9	1,6
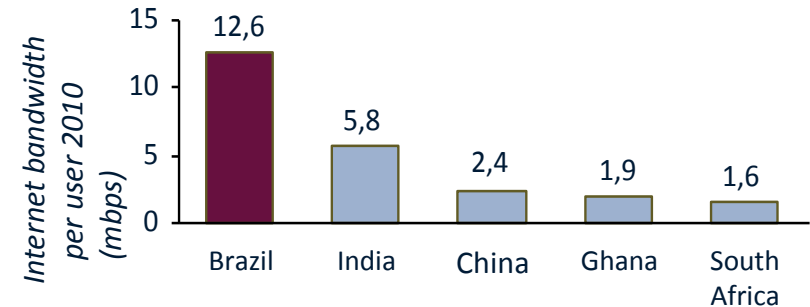
INVESTMENT AND GROWTH

- **Business investment**: Over 260 active companies (15 Capability Maturity Model Integration - CMMI - certified)
- **Wealth creation:** Fifth richest city in Brazil. 65% of GDP value added from services and commerce
- Projected to be **amongst the world's top 100 richest cities** by 2020

Services as % of GDP

Brazil	Regional average
67.5	62.6

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HUMAN CAPITAL

- **Jobs: 300K** IT/BPO workforce; **20K new IT/BPO** graduates added each year
- **IT and Business Expertise:**
  - 6 **software clusters** and 8 **technology incubators**
  - Software cluster corridor linking Curitiba with neighboring city Ponta Grossa
  - >30 **software specialties**;
  - >50 areas of **business expertise**

Map of Technology incubators in Curitiba and surrounding regions

The path to realizing this success included a range of investments in infrastructure, FDI and human capital...

How has Curitiba achieved this success?

Infrastructure investments

- **Provided reliable and fast broadband** from regional and national telecom providers
- **Established key areas (Technopark):** 5 million sq. meters of space to attract and connect public and private tech institutions, R&D companies and universities
- **Ensured quality assurance/ reliable power supply:** Very rare outages. Itaipu bi-national in Parana is largest hydroelectric power plant in Latin America.
- **Ensured easy access** to and from key cities Sao Paulo and Rio via road and air.

Regulation and policy

- **Reduced sales tax**
- **Instituted exemptions** on real estate
- **Provided VAT credits** for export oriented companies

Human capital

- **Aligned Technopark** with key educational institutions such as Universidade Technologica and fully integrated into business environment. The park was therefore connected to centers of learning in order to absorb and facilitate skills development and well connected to the business world so that it was able to attract necessary funding.
- **Providing incentives** for students to study science or engineering overseas. New Brazilian education initiative called "science without borders"

Social science that makes a difference

Country Case Study: Curitiba, Brazil – driving economic growth through IT excellence (3/3)

...and, beyond IT services and infrastructure, Curitiba tapped into its attractiveness and high quality of life.

Leveraging location and quality of life factors

Proximity to Rio de Janeiro, Sao Paulo and Buenos Aires

Curitiba's geographic location and city attributes have also contributed significantly to its success with IT/BPO services

- Winner of the **Sustainable Transport Award 2010** (Transport and Development Politics Institute)

- Listed in the **Greenest Cities** Index (Reader's Digest)

- **Low Cost** of Living

- **Time zone alignment** with North America and Europe

As such Curitiba is recognized as:

- Amongst the world's **most significant offshore business locations** (KPMG)

- **One of the 5 best cities for doing business in the Americas** (America's Economy Magazine)

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Lessons from peer group countries

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Implications for South Africa: Enabling digital citizenship

South Africa's **internet penetration is significantly low** - top ten middle income countries on the ITU index have more than 5x the internet penetration of South Africa. Therefore, enabling digital citizens with increased access is critical. Identifying the needs of South African citizens should be led by the public or social sectors while design and deployment of interventions that drive use and experience with the internet should implemented by the private sector

The **Kenyan and Colombian case studies** provide examples of two ways in which this can be achieved: by subsidizing hardware or providing community services. The Kenyan initiative worked well because it established a viable price point and total cost of ownership (also included an affordable data bundle) for previously excluded persons and the Colombian project worked well because it established an innovative public private partnership scheme. Both examples are relevant in the South African context.

There are however two key factors that cannot be ignored in the South African context.

First, **affordability** is a key constraint to demand in South Africa. South Africa's tariff rates remain exceptionally high and impose a key barrier to internet uptake. As such, subsidizing hardware alone is unlikely to be effective unless it is combined with reductions in tariff rates.

Second, **digital literacy** must form an integral part of any initiative to provide internet access for non-internet users. Basic internet usage capabilities should not be taken for-granted and simply providing citizens with facilities may not be high impact.

The **Malaysian SMART school initiative** is one example of digital literacy training and more generally a way in which South Africa can tackle of student access to learning materials (books, research papers and in many cases quality teachers).

However, our global research has shown that one of the best ways to train citizens in ICT use is to provide them with **relevant and affordable content** that rapidly accelerates use. Content investments should therefore form a key part of South Africa's digital literacy strategy. Relevant content will be defined by a strong understanding of user needs and as such content investment strategies provide a perfect vehicle for public private partnerships where the private sector is incentivized to develop and execute.

Implications for South Africa: Promoting economic growth of industries and ITES industries

ICT can help build both successful ICT enabled industries, such as manufacturing as well as IT enabled service industries such as **business process outsourcing (BPO).** This is clearly illustrated in examples from Malaysia, Lithuania, the Philippines and India.

As is evident from experience in the **Philippines**, **India**, and **Lithuania**, one of the most significant opportunities for job creation within ITES is in BPO.

South Africa has a number of strengths that it could leverage in the BPO space. India has shown that successful BPO is not reliant on massively fast BB infrastructure and South Africa's existing BB capabilities are therefore quite adequate. The cost of facilities in South Africa are significantly cheaper than in Manila (50%) and around 30% cheaper than in Bangalore. South Africa also has no significant legacy infrastructure that might be burdensome – South Africa can focus on adopting the necessary and most up to date technology that is needed in the BPO space moving forward. Critically however, South Africa has so far failed to build and nurture a sufficient number of global and corporate relationships. For example, South Africa has not managed to attract significant outsourced business from the US or the Netherlands, despite the US being the largest outsourcing nation, and South Africa's language synergies with both countries. The **Philippines** and **India** have illustrated the importance of such relationships as a means to achieving mass scale opportunities.

South Africa is probably likely to follow a model that is built on developing capabilities in certain niche areas – something closer to the **Indian BPO trajectory** which has seen increasing sophistication and a wider focus than call centers than that of the Philippines (call center focused) .

Although facilities are cheap, South Africa's labor costs are not suited to competing in the call center space. Despite this, there is extensive government support for call center expansion given its employment potential, and relatively little support given to attracting BPO&O in sectors where South Africa has a competitive advantage. Regardless of which route South Africa may take, it will have to lower the price of telecoms which are far too high, address skill levels across the board especially training better managers and place a much higher emphasis on building and maintaining global and corporate relationships.

Implications for South Africa: Demonstrating leadership for key ICT products and services (either domestic market, export or national capacity development)

Curitiba serves as a valuable example of how an emerging economy can be an ICT leader without having fully enabled digital citizenship. To form such an ICT hub, it is essential to provide ICT infrastructure of exceptional quality and relatively low cost, while population coverage and access are not essential for this purpose. Curitiba has also shown that there are different kinds of peripheral capabilities – for example transport, power, high quality of living and easy access to a strong pool of human capital.

Similar to Curitiba, South Africa is in many respects well positioned to develop a pocket of ICT excellence

- Access to top-tier research institutions and universities as well as skills and capabilities in specific niche fields (e.g. software or application development)
- Existing success creates access to networks and compelling role models. (e.g. Mark Shuttleworth); prove you can do it and inspire those that want to)
- Infrastructure (PE/VC environment) access to capital
- Soft factors - Conducive environment: Climate and surrounding environment (e.g. Pretoria or Stellenbosch)

However, South Africa needs to improve on some dimensions

- Affordability of accessing internet services
- Speed, reliability and quality of internet access
- Ability to align skills and capabilities with high demand markets and industries
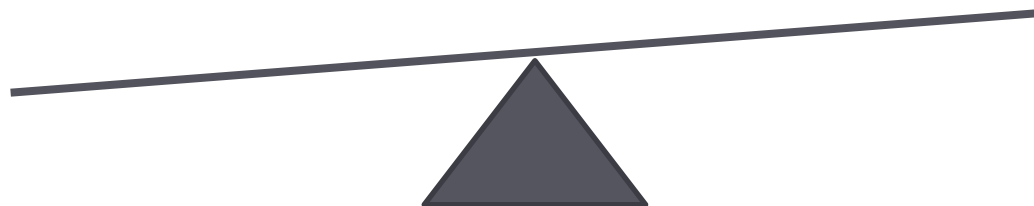
Not all of the challenges need to be addressed. Rather, South Africa can selectively address these issues in order to unlock opporutnity.

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