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Evolution of telecommunications policy reforms in East Africa: Setting new policy strategies to anchor benefits of policy reforms

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Abstract

This paper is a strategic evaluation of telecommunications policy reform over a ten-year period 1993-2002. The focus of the paper is the three countries of East Africa - Kenya, Uganda and Tanzania. The evaluation is framed against policy objectives set out by the three governments and their outcomes as measured against relevance to stakeholders, performance by implementers based on the space created by the reforms, and success in terms of sustainability and impact. The paper finds that the short term gains of fast expansion of the communications system cannot be sustained in the long term. The policy design based on foreign capital and skills at the expense of local entrepreneurial capacity building exposes the region to vulnerabilities of the international market. The policy design did not provide tools to intervene in the market in the consumer interest. A further finding is that competition has resulted in a significant consolidation of market power with a consequent shift of monopoly power from government to the private sector. Finally, in practice the private sector operations have increased the disparity in the distribution of the infrastructure between urban and rural consumers. A new policy design should focus on long-term local entrepreneurial capacity building, effective policy tools to sustain competition and universal service programmes to address rural disparity.

Acronyms

ccTLD	Country Code Top Level Domain
DNS	Domain Name Service
gTLD	Generic Top Level Domain
HHI	Herfindahl-Hirschman Index
ISP	Internet Service Point
ITU	International Telecommunications Union
IXP	Internet Exchange Point
KENIC	Kenya Network Information Centre
KIXP	Kenya Internet Exchange Point
PoP	Point of Presence
PSTN	Public switched Telephone Network
SMS	Short Message Service
VoIP	Voice over Internet Protocol
WTDC	World Telecommunications Development Conference

Telecommunications operators in East Africa

<table>
<tr><td></td><td>Fixed line</td><td>Cellular</td></tr>
<tr><td rowspan="2">Kenya</td><td rowspan="2">Telkom Kenya Ltd</td><td>Kencell Communications Ltd</td></tr>
<tr><td>Safaricom Ltd</td></tr>
<tr><td>Uganda</td><td colspan="2">Uganda Telecom Ltd (UTL)</td></tr>
<tr><td rowspan="2"></td><td colspan="2">MTN Uganda Ltd (MTN)</td></tr>
<tr><td></td><td>Celtel</td></tr>
<tr><td rowspan="5">Tanzania</td><td rowspan="4"></td><td>Tritel</td></tr>
<tr><td>Vodacom Tanzania</td></tr>
<tr><td>Mobitel</td></tr>
<tr><td>Zantel</td></tr>
<tr><td colspan="2">TTCL & Celnet</td></tr>
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Introduction

This paper is a strategic evaluation of telecommunications policy reforms over a ten-year period 1993-2002 with a focus on the three countries of East Africa - Kenya, Uganda and Tanzania. The evaluation is framed against policy objectives set out by the three governments and their outcomes as measured against relevance to stakeholders, performance by implementers based on the space created by the reforms, and success in terms of sustainability and impact.

With inadequate telecommunications infrastructure, the three governments of East Africa embarked on policy reform predicated on a new framework for the supply of telecommunications services. This called for a shift from the government institutions as the only suppliers of telecommunications services to the private sector operators based on competitive market forces. The reform process, introduced at differing times in 1994-1999 in the three countries, gradually gained momentum with introduction of new technologies and services.

While the fast changing market and policy reform has expanded the volume and access to services in these countries, this has been at great cost. The 100-year-old fixed line operators are now irrelevant in the emerging information age. The fundamental policy framework based on competition and foreign investment leave long term issues regarding the sustainability of the growth of the sector unresolved. In particular, competition is at risk of being no more than a shift from public monopoly to private oligopolies. The supply industry is consolidating and the market is now amenable to international forces as never before. These trends obstruct and indeed block new players from entering the market and deny market forces of competition from driving services across the country. A fundamental shift policy and regulatory framework is needed.

Overview of the telecom sectors

The justification for reform – an historical context

It has been realized that telecommunications services in the East African region are inadequate for a long time. By the end of 1982, five years after the break-up of the East African Community[1], the region had collectively under 160 000 telephones with a penetration of less that 1 telephone to every 200 residents (see Table 1). This was inadequate to satisfy potential consumer needs. At the same time, international trends placed pressure on governments to expand telecommunications access.

Table 1: main telephone lines and penetration (source: ITU)

	Main lines (x000)	*Penetration %*
Tanzania (1981)	40.7	0.21
Kenya (1982)	88.1	0.51
Uganda (1982)	22.8	0.17

[1] This was an intergovernmental grouping of the three countries of Kenya, Uganda and Tanzania that broke up in 1977. The Community was providing certain services for the three countries including telecommunications. The organization has since been re-established.

Table 2: launching a new policy reforms (Summit Strategies)

	Policy framework launched	*Regulatory framework and regulators established*	*Amendments to the regulatory framework*
Tanzania	1993	1994	2001
Uganda	1996	1997	
Kenya	1997	1999	2002

As early as 1982, Kenya hosted the first International Telecommunications Union (ITU) Plenipotentiary Conference in Sub Saharan Africa that recognised the critical inadequacy of telecommunications in Africa. The Plenipotentiary Conference established a Commission[2] to study, identify and recommend ways of stimulating the expansion of telecommunications across the world. Three years later, Tanzania hosted a global conference on telecommunications – the first World Telecommunications Development Conference (WTDC) — to evaluate and make recommendations on the way forward based on the Commission's report. For the first time, world governments including the three governments of East Africa, made a declaration to ensure that there was a telephone within 'easy reach' by the early part of the 21st century (ITU, 1985). A series of other international conferences defined national strategies to achieve this goal. The generally accepted strategy to place the telephone within 'easy reach' was a reform of the telecommunications sector. Key components of the strategy were to commercialise the provision of telecommunication service and provide for a multi-operator environment, replace the public sector as the engine of development with growth anchored on competition. The strategy from ITU and World Bank cited above was appealing and implemented by the governments between 1994-1999 with Tanzania taking the lead in the reform process.

Comparative regulatory models

Tanzania, host of the first WTDC, was the first to take a decisive step towards reform of its telecommunications sector. In 1994 with the support of the World Bank, Tanzania launched a new telecommunications regulatory framework, and private sector operators soon entered the market within the new framework. As a result competition is now well developed in most market segments[3]. Kenya, the host of the landmark ITU Plenipotentiary Conference was last in line to usher reforms after Uganda (Table 2)

The essence of the telecommunication policies for the three countries was:

> *For Uganda* '…deliver a modern telecommunications infrastructure to take the country into the next century' and the policy '… demonstrates the Government's commitment to assisting Uganda's businesses to become fully competitive internationally, to increasing the country's attractiveness to major international investors, and to providing subscribers with telecommunications services of international standard' (MOWTC, 1996)
>
> *For Tanzania* '…ensuring the accelerated development of an efficient telecommunications network that can provide an info-communications infrastructure and universal access to telecommunications services by all sectors of the national economy and segments of the population' (MOCT, 1997)
>
> *And for Kenya* '… to optimise its [telecommunications sector] contribution to the development of the Kenyan economy as a whole by ensuring the availability of

[2] Independent Commission for the World Wide Telecommunications Development established under Resolution No. 20.
[3] Mobitel had entered the market earlier in 1993 as a joint venture partner with the then Tanzania Posts and Telecommunications Corporation.

efficient, reliable, and affordable communications services throughout the country' (ROK, 2001)[4]

The policy frameworks for the three countries followed a similar reform model with the following components:

- Defining and clarifying a policy, regulatory and operational role in the supply of telecommunications services
- Established an institutional framework to manage the liberalised multi- operator sector, an arbitration process for disputes (in Uganda and Kenya) and finally an institutional support mechanism to continuously review the policy (in Kenya)
- Introduced private sector through licensing new operators and privatisation of the incumbent fixed line operators

The three governments further established institutional infrastructure to nurture the markets towards defined policy targets. The main policy target was the rapid expansion of the telecommunications infrastructure with particular emphasis on the rural areas with extremely poor teledensity (Table 3).

Table 3: Targeting the rural consumer (*Source: policy documents MOWTC, 1996, MOCT, 1997, ROK,2001)*

	Target rural teledensity	Present rural teledensity	Instrument for rural development
Kenya	1 (2015)	0.16	Govt subventions Licensing obligations
Tanzania	1 line per village (2020)	0.05	Rural telecommunication development fund Licensing obligations
Uganda	66000 lines in rural areas in 5 yrs	0.04	Rural telecommunications fund Licensing obligations

The first step on the long road towards making a telephone, and all the benefits it can provide, within easy reach of the region's population in the early part of the 21st century had been taken.

Competition as a tool for development

All the three governments recognised competition as a tool to enhance value to the consumer on the premise that market forces of competition would:

- Promote innovation and production of new and improved services
- Reward innovation, entrepreneurship, responsiveness and enthusiasm
- Force operators and equipment suppliers to compete to win customers resulting in reduced prices, expanded coverage, quality guarantees etc
- Punish sluggishness and indifference to the consumer

Additionally, increased competition would enhance consumer sovereignty by increased choice and focus on the consumer. It is from this perspective that governments introduced competition in various market segments. However, market liberalization was to be phased in gradually with some market segments remaining a monopoly until July 2004.

[4] The policy statement was first published by the Ministry of Transport and Communications in 1997 though gazetted in Dec 2001.

Current status

The new policy dispensation has produced clarity in the policy formulation process, the regulatory framework and the institutional mechanisms for regulation. The policy has brought clarity on the role of provision services. The region now has 10 cellular operators with a combined 1½ Million customers and over 60 ISPs in operation (Table 4).

Table 4: Licences issued and the competition (Summit Strategies)

	PSTN	*Cellular*	*Paging*	*Public data*	*VSAT operator*	*Closed user group data*	*ISP*	*IXP*	*Cyber cafés*
Tanzania	2	5		8		4	13		
Uganda	2	3			8		17*		30
Kenya	1	2	5		2		72	1	

*Include PSTN but excludes Celtel

This is a direct result of the policy change. The policy change has also seen the decline of paging services, and gradual weakening of the fixed line operators.

The industry structure, strategies and trends

Services

Voice services

Between onset of the reforms and until 1998, the fixed line operators dominated the provision of voice services. The only cellular operators in existence made little impact in the market due to high costs that acted as barrier to consumer adoption. These costs included the prices of handsets, connection fees, and usage charges. The high tariffs reserved the service to the high-income earners.

The policy frameworks positioned cellular services as a value-add to the fixed line in the market structure. None of the cellular operators were therefore allowed to its build its own international and national infrastructure this being the preserve of the fixed line operator.

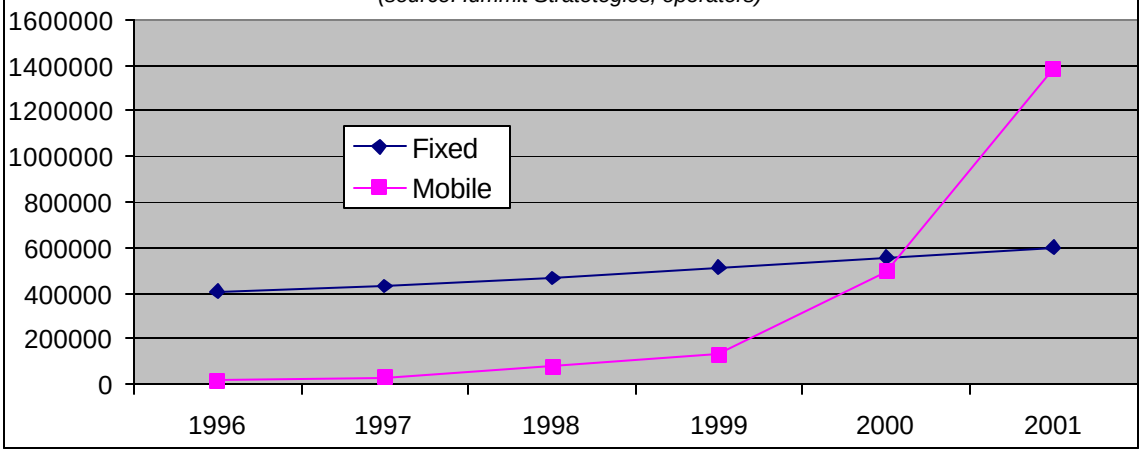
The change in telecommunications policy by the Ugandan government introduced full competition by a duopoly with a significant impact on the development of cellular services in the region. The entry of MTN Uganda Ltd (MTN) as the second national operator in 1998 was a turning point for cellular industry. MTN redefined a customer and subscriber lines with the following strategy:

- A subscriber line was technology insensitive and the technology choice was a market competition strategy,
- Cellular was not a preserve of the rich, the poor had a right to access cellular service, and
- Cellular service is a business tool much like the existing fixed lines

With that strategy, MTN changed the market dynamics overtaking the incumbent cellular operator - Celtel on the day of the launch and the fixed line operator half a year later. Shortly thereafter an increasing number of customers began to rely exclusively on cellular services for business. This began a paradigm shift that fostered a change of mindset among consumers and governments. The revolution heralded the gradual falling of the curtain of the 100-year-old fixed line operators. The fast uptake of cellular quickly overtook the fixed line services (Figure 1).

Vodacom Tanzania in neighbouring Tanzania replicated this revolution in 2000. Kenya was the last to introduce competition in cellular and achieved the same results. In the region, cellular over took fixed lines services in 2000. Fixed line operators, can no longer be considered the main access points to voice services or future information society services, with the present technology.

Figure 1 - Beginning of end: curtain falls for the fixed line operators
(source: Iummit Stratetegies, operators)



Cellular operators took advantage of the infrastructure of the fixed line operators for rapid takeoff in a tightly regulated market[5]. Now, the bigger cellular operators need more lines than the fixed line operator can offer. The last role of the fixed line operator is another rapid takeoff of broadband infrastructure using the buried copper and portions of optic fibre already implemented.

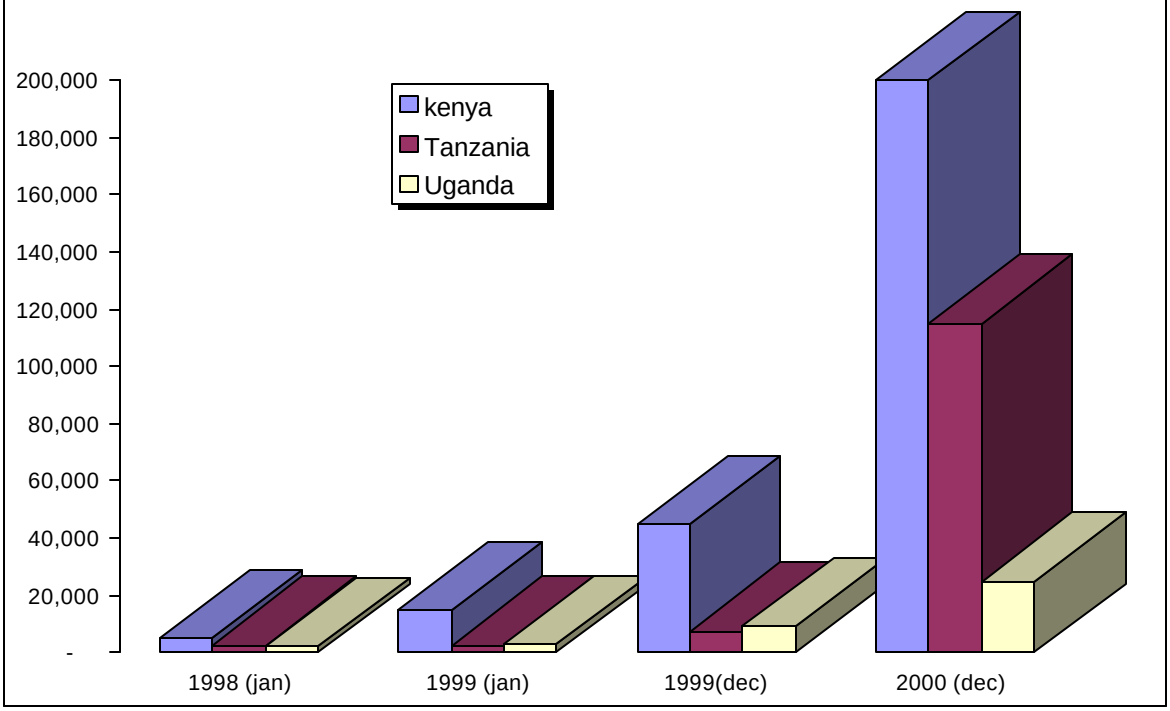
Privatisation of the fixed line operators has not thus far resurrected the incumbents. The limited experience in the region indicates that privatisation of the fixed line operator to improve efficiency will not accomplish this. The fixed line operations of Uganda Telecom Ltd (UTL) and Tanzania Telecom Company Ltd (TTCL) have not achieved significant growth after privatisation. The growth and attention is in the Internet and cellular arms of the privatised operation. Indeed, fixed line operation is not an area of significant interest to the strategic equity partner. UTL for example has invested US$35M in cellular, US$10M in Internet services against US$15M for the fixed services since privatisation (Communications Africa, 2002).

Internet services

Liberal policy for the licensing of Internet services have resulted in rapid growth in terms of service providers and retailers as indicated by the number of ISPs and cyber cafés. By 2002, there were 95 registered ISPs in the region. This figure includes operators like TTCL (Simunet), MTN and UTL. This liberalization has increased the number of Internet users with estimates of over half a million people online by 2001. Kenya has the largest user base (Figure 2).

[5] MTN is an exception having built its own infrastructure as a license requirement.

Figure 2 - how many online?
(source: www.nua.ie/surveys/how_many_online/Africa.html



The fast growth of ISPs is due to the easy entry in the market with a comparatively low level of investment. Depending on the regulatory regime in each country, ISPs have limited infrastructure to access the customer and international bandwidth. In such cases, the ISPs rely on the fixed line operator. This is the case in Kenya, while Uganda and Tanzania have no such restrictions. Despite the lack of the restrictions, the typical business model of an ISP relying on other operators for local loop is still predominant save for few corporate customers served by wireless links in Uganda and Tanzania market.

With the changing consumer taste to data and increasing acceptance of Voice over IP (VoIP), data is becoming a major revenue stream and is beginning to cannibalise the voice revenue of fixed line operators. MTN and UTL have responded and are participating as full Internet service providers at various levels of the Internet market segments. Not to be outdone, Celtel bought the largest ISP – Infocom to enter the market and gain a foothold in international gateway, albeit restricted to data. Further south, both TTCL and Zantel provide Internet. In Kenya, the regulator locked out Telkom Kenya out of the retail Internet business due to its monopoly of the international gateway and an equal exclusivity on the local loop. However, a subsidiary of Telkom Kenya licensed as an ISP in April 2002 over protests of the ISP industry worried about anti-competitive practices.

Support infrastructure

Equipment supply industry
A direct consequence of the policy reform is market consolidation in the equipment supplier market and the demise of the emerging local supply capacity

Three suppliers Siemens, Alcatel and Ericsson have taken over the market with Siemens dominating the regional market in terms of number of connections (Table 5). Supply to cellular operators revolves around a frame agreement over a medium term arrangement of up to 5 years with one supplier. The operators are outsourcing services including maintenance to the supplier to the point that the distinction between the supplier and the operator is blurring in

day-to-day operations. This trend has now taken hold in the privatised fixed line operators in Uganda and Tanzania resulting in gradual consolidation in the market.

Table 5; Supplying the operators: arching for a regional footprint (Summit Strategies)

Supplier	Kenya	Uganda	Tanzania	*Market share*[6]
Siemens	Safaricom	Celtel	Vodacom Tz, Tritel	47
Ericsson		MTN	Zantel, Mobitel	25
Alcatel	Kencell	UTL – Mango	TTCL – Celnet	28

In this scenario, local entrepreneurs have no entry point into this market and opportunities are dwindling fast.

The impact is a reducing access to the supply market for local entrepreneurs and consolidation of the market to few international suppliers. It also reduces the opportunity for capacity building in the new telecommunications technologies for the entrepreneurs in the region. Presently, the locally based supply industry has no value-add and relies exclusively on imports. This will continue until the market so determines or governments promotes proactive policies for technology transfer into the local market.

Human resources

An immediate impact of the policy reform and privatisation processes of the incumbents is reduction of staff. This is the case in Tanzania and Uganda where staff in the incumbent has been laid off. According to the Managing Director of UTL, Mr Hartmut B Fandrich, the company laid off 35% of its 1,840 employees immediately after he took over the company in June 2001. The staff reduction will continue with a view to towards improving the bottom line staff ratio and increase efficiency (Fandrich, 2001).

In Tanzania, consultants recommended a retrenchment of 1,659 of the company's 4,600 employees prior to the entry of the strategic partner in June 30, 1999 (World Bank, 1998).

Staff in the incumbent operators bore the cost of privatisation through massive layoffs in the quest for market competitiveness and efficiency. Neither Uganda nor Tanzania has retraining packages to prepare retrenched staff for the impact of retrenchment. Telkom Kenya, with its 19 000 staff, poses the greatest challenge to privatisation due to the scope of retrenchment that will occur.

While the telecommunications market has expanded after the policy reforms, a combination consolidation of suppliers and outsourcing strategies has reduced the number of the total human resource required in the telecom industry. Finally, new operators have low staff demands for their operations. Consequently, the net impact in privatisation was massive layoffs with no new opportunities created by privatisation for the retrenched staff. Total staff hired by new operators is lower than the layoffs and the market channels for cellular operators is through established retail chains. These chains (supermarkets, petrol stations) sought to exploit idle capacity and therefore few new jobs were created.

Finally, due the changes in technologies, training infrastructure and training institutions built in the past are now irrelevant. Training institutions established by the fixed line operators have to be reformed to play a role in the new scenario.

As the market expands, governments need to develop a technology transfer policy to encourage international suppliers to engage the local resource base - universities and entrepreneurs — to develop products and software locally. An East African market with 85 M people provides such an opportunity. Lack of technology transfer policy will reduce human resource capacity and increase reliance and dependency in the long term. Indeed the long-term efficiency benefits initiated by the massive layoffs can only be sustained by a technology transfer strategy in the region.

[6] Based on number of connections reported by operators by April 2002.

Financing telecommunications

A significant impact of the policy reforms is the entry of private capital in the telecommunications sector. This is one of the key designs of the policy reform and has been very successful. Between 1998-2001, the three governments received commitments of US$153.7M in new operator licences and US$503.5M in equity sales of incumbent operators. Additionally, the new strategic equity partners offered commitments to build 1.76M lines in 4 years at an estimated investment cost of US$1.8B[7]. This investment is huge and pressed with crippling poverty issues, governments are in no position to raise such huge investments for telecommunications internally.

The new operators have been successful in raising capital for development in local markets. Safaricom in Kenya has raised Ksh 6.5 B (US$84 Million) in two years from the local market. Vodacom Tz has high local ownership. A long-term effect is to empower the local money markets to participate in the fast growth of the ICT sector.

Foreign Direct Inflow
The telecommunications sector has contributed significantly in FDI in the region principally through sale of new operator licences and equity in telecommunications operators.

Kenya leads the way having received US$110M compared with Uganda that received US$5.7M for sale of operator licences. Tanzania has used an entirely different approach in the licensing process opting to select the potential operator based on a technology and business plans *beauty contest* (Table 6). Uganda and Kenya took funds out of the telecommunications sector; Tanzania decided to use the funds for network expansion.

On equity sale, the governments received US$150 M by the sale of approximately 84 000 fixed lines in both Uganda and Tanzania. The investors also committed to build a cumulative 750,000 in 4 years under certain exclusivity conditions. Kenya had offered for sale a much larger volume of lines and got an offer at US$350 M (Table 7). The deal was unsuccessful. Trends in the growth of cellular services show that the huge commitments by the strategy equity partners in the fixed line operation cannot be realised using the fixed line technology. Governments need to review such commitments.

Table 7: Equity sales the commitments for future expansion

	Price	*Stake sold*	*Lines operational at the time of sale*	*Additional lines committed in 4 yrs*
Uganda	US$ 33.5	51%	55 000	160 000
Tanzania	US$120	35%	162 000	800 100
Kenya (offered)	US$350M	49%	320 000	800 000

Price closely follows international telecommunications markets. Earlier sale of licences were almost free reflecting the high risk but most importantly cellular technology was less mature and the applications perceived as a value add to the fixed line infrastructure. Cellular licences in Tanzania (Tritel) and Uganda (Celtel) fall in that category. This trend changed with increasing maturity of GSM technology and its acceptance. By its late start in the privatisation, Kenya entered at the top of the crest and recorded highest sale of licences in the region. Additionally Kenya received the highest offer of equity sale despite only offering a minority stake in its fixed line operator.

Strategic equity partners
The policy reforms have resulted in the entry of investors in all markets with varying levels of foreign and local ownership. Until Nov 2001, Kenya telecom policy restricted foreign ownership in the sector to 40% while Uganda on the other hand, placed no restriction on foreign ownership. Tanzania imposed a restriction of 65% to reduce to 50% over five years.

[7] Includes offer to privatize Telkom Kenya Ltd and sale of Regional Telecom Operator licenses.

The current foreign ownership reflects those policies with the sector controlled by foreign operators in Uganda and Tanzania both in equity as well as management (Table 8). Kenya has avoided ownership control but ceded management control, a situation that is likely to change in future with the advent of new ownership policy.

Table 8: Impact of policy reform on ownership

	Operator	*Foreign partner and shareholding*	*Foreign ownership limits*
Kenya	Kencell	Vivendi 40%	70% (previously 40%)
	Safaricom	Vodafone 40%	
Uganda	MTN Uganda	MTN 50%, Telia 30%	None
	Celtel	MSI 90%, IFC 10%	
	UTL & Mango	UCOM 51% - Telecel and Orascom	
Tanzania	Tritel	TRI 60%	65% to reduce to 50% in five years
	Vodacom Tz	Vodacom 65%,	
	Mobitel	Millicom 57%,	
	Zantel	Itissalat and others 72%	
	TTCL & Celnet	MSI 35%	

Proponents of a high level of foreign ownership saw this as an opportunity to allow larger volumes of FDI and therefore a faster expansion of the network. Experience shows a different reality. Kenya with the least foreign ownership has received more investment that the other two countries. In 2000 and again in 2001, Safaricom floated a US$84M bond that was very successful. This has a positive impact in the evolution of the local money market. This innovation confirms a diminishing role of the multilateral agencies and government in funding telecommunication expansion.

Implications in the market place

Competition and market observations

Competition policy now implemented in the three markets have brought 5 fixed line operators and 10 cellular operators and over a 100 licensed ISPs (Table 9).

The market liberalisation is still limited at the basic services level. Uganda and Tanzania (Zanzibar) maintains a duopoly for basic services, while Kenya has attempted to implement a duopoly at the local loop through regional telecom licences. Both Kenya and Tanzania maintain a monopoly for the international loop on voice. Kenya however stands alone as the only country maintaining international monopoly of both voice and data.

Table 9: Licensed operators in the market place

	PSTN	*Cellular*	*Paging*	*Public data*	*VSAT operator*	*Closed user group data*	*ISP*	*IXP*	*Cyber cafés*
Tanzania	2	5		8		4	13		
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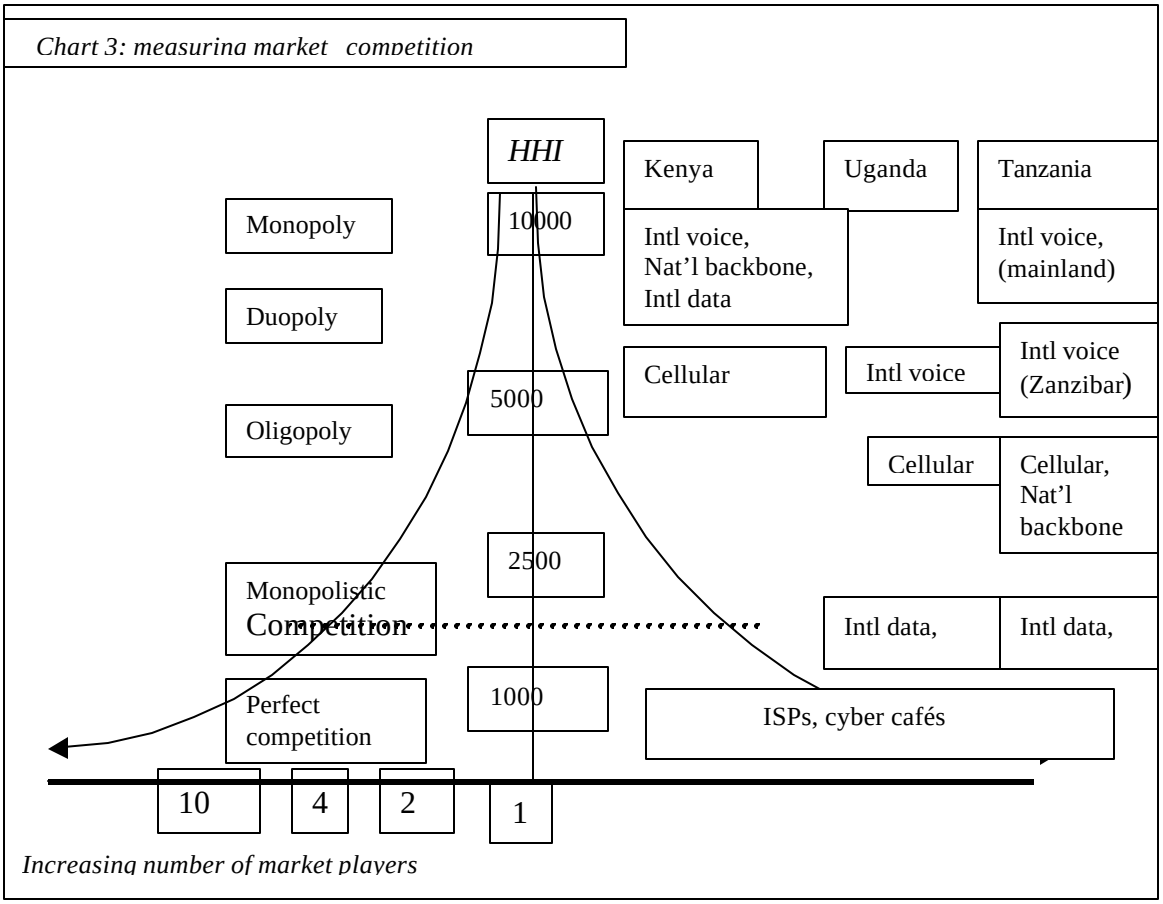
*Include PSTN but excludes Celtel

Significance of competition

How has competition played out in the market? To measure the impact of policy reform on the level of competition, the Herfindahl-Hirschman Index (HHI)[8] provides a useful tool to gauge success in competition policy.

[8]. HHI is the sum of the square of market shares of operators within a defined market segment. Consequently a monopoly market segment has a HHI of 10000 and an atomistic market tends to a HHI of 100.

By applying the HHI model to the region, it is clear that more policy and regulatory action is necessary to increase competition in a number of market segments to safeguard consumer interest and secure the benefits of competition (Chart 3). International voice is still a monopoly in Kenya and mainland Tanzania and a duopoly in Uganda; Cellular is a duopoly in



Kenya. The need for long-term benefits of competition demands a review of and removal of monopolies in all market segments.

There is need for a thorough review for a new policy. Key issues to consider is whether the current players and market segmentation is appropriate and how the governments can play a proactive role of the industry. An immediate issue is for the government to level out the market in the shortest time possible – remove barriers on the international access, national infrastructure etc.

The growth trend of Internet and convergence

The focus of growth in the last five years has been based around basic access to the Internet, initially, initially through dial-up and later through dedicated access for corporate clients on leased lines or where allowed, radio links. Non-access based services have largely been website development and support. The entry of telecommunications operators (fixed and cellular) who own the access infrastructure will have far reaching consequences for the typical access based ISP. These operators who will bundle Internet access with other offerings in order to maximize revenue from their infrastructure will have the end effect of locking out access based ISPs. To survive, the ISP must move up the value chain and develop non-access based services. The future lies in the value addition in the Internet by building applications. Areas of the opportunity include e-commerce to develop new marketing channels for corporate clients and in distance learning.

This trend will have a fundamental impact on the market. The typical ISP with no value addition to basic access services will struggle to survive in a market where their competition

owns the infrastructure and the number of ISPs can be expected to contract in the next two years.

Cellular operators have a natural reason to buy into ISP market to capture the impact of VoIP in their revenues and will be investing in the VoIP opportunities in near future. Cellular operators increasingly recognise the value of the Internet and are venturing into the market by outright purchase of an ISP (Celtel and infocom) strategic relationships where each contribute its expertise (Mobitel and Twiga) or overcome regulatory restrictions (Kencell and Swiftglobal) or as part of the licence (Zantel and MTN).

Downstream Internet provision through cyber cafes is extremely competitive due to the even fewer entry barriers – only Uganda requires licensing of cyber cafés. With limited service differentiation, at least as perceived by the consumer, the only available competitive tool is pricing. This has a significant impact on profits and the rate of closure among cyber cafes is very high threatening one of few venues that offer affordable shared access to the Internet. Successful cyber cafes have survived on branding, cost sharing with other business streams on the premises or have defined applications e.g. distance education.

This results in changing market segmentation and future policy should consider this.

Lessons of the reform process

Market structure is dynamic responding to changing technologies and business practices. The change in policy has brought new technologies and business practices with significant implication on the long-term market structure and survival of operators. Specific impacts include:

- *Collapse of paging services*. Initially desired due to cheaper costs, easy access, wider coverage and mobility. SMS and cellular has displaced paging due to lack of interactivity.
- *Imminent collapse of access based ISPs that do not offer value added services*. Infrastructure owners - cellular and fixed operators are coming on board to take over the market developed by ISPs. As cellular operators plan to roll out next generation mobile (2.5G), typical ISPs will play a marginal role in an IP based world they helped to create. An option is for ISPs to team up and build their own infrastructure and be a formidable force as the New Generation Networks (NGN).
- *Red flag for fixed line operators* - operators who are over 100 years old now see the voice market being taken away by cellular operators. The cost structure of the cellular operator is more competitive due to lower switching costs and local loop maintenance.
- *Collapse of payphone* operators - Adesemi in Tanzania, Starcom in Uganda faced difficulties in a competitive market without any value addition to the call process.
- *Shift in market power – from government monopoly to private oligopoly*. Competition in cellular has only resulted in a shift from publicly sanctioned monopoly to a private sector oligopoly. As the oligopolies entrench in the market, it becomes difficulty for competitors in the market and regulatory tools alone will be inadequate to guarantee competition.

As telecommunications become increasingly commoditised, there are more competitive factors outside traditional telecommunications that become significant. These are areas outside the purview of telecommunications regulators. Consequently, it is important the long-term inputs by Monopolies and Prices Commission in Kenya and Fair Trade Commission in Tanzania and Uganda be involved to refine competition ideals in the market in conformity with national economic policy. This is to implement corrective measures to sustain competition.

Observations on competition in the sector

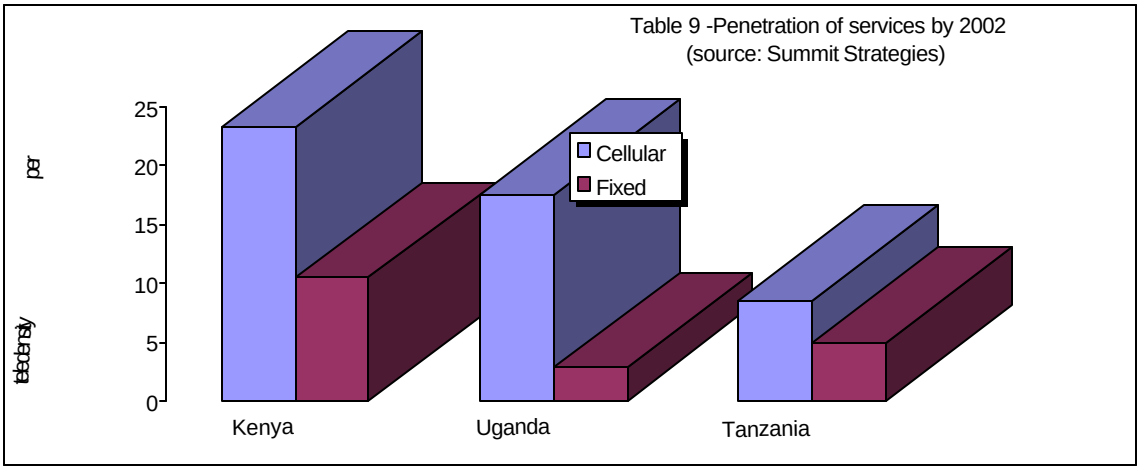
Competition policy process brings out some interesting observations:

- *Incumbents with exclusivity licences carry a heavier burden than the promised benefits from exclusivity and should renegotiate out of the exclusivities*. Legal exclusivity for incumbents places heavy responsibilities on the operator to deliver on universal access commitments. The performance indicator for the commitments are measurable through the number of lines installed, call completion rate etc. No operator has managed to deliver as expected and therefore risk penalties. On the other hand, with increasing traffic substitution and extra legal means of transporting traffic, the government and the regulator are increasingly not able to deliver part of their bargain to the disadvantage of the fixed line operator.

- *The shift from government monopoly is tending to private sector oligopolies.* Tanzania sought the benefit of increased competition by licensing 5 cellular operators. Today, Vodacom Tz control 55% of the market and can move the market at will. Across the border in Uganda, MTN controls 67% of the cellular market share. Increased efficiencies due to economies of scale will increase market share for these companies and hence increased market control. It is time for the government to rethink on the impact of private sector oligopoly and the expected gains of competition and design policy instrument to reduce market concentration by few private sector operators.

- *Increasing competition by increasing the number or operators did not result in increased service expansion*. Tanzania with the highest number of operators has the lowest penetration. Kenya with a cellular duopoly has the highest penetration. Economic fundamentals are critical to realise the full potential of competition tools.

Table 9 -Penetration of services by 2002
(source: Summit Strategies)



- *Increasing competition as measured by the number of operators does not correlate with reducing tariffs*. Kenya with a duopoly has the lowest tariffs as opposed to Tanzania with the highest tariffs.

- *The oldest cellular operators in Uganda and Tanzania are now the smallest and with a shaky future*. The only exception is Mobitel. Capacity to reinvest and market strategy is critical as demonstrated by Mobitel and Safaricom.

- *ISPs have a limited leeway to secure competition benefits for the end user despite competition.* Internet services appear competitive based on the number of ISPs operational, but by relying on Telkom Kenya Ltd infrastructure as in the case of Kenya to access international bandwidth and to the consumer, opportunity for competitive services is limited. End user tariffs are comparable in all the markets.

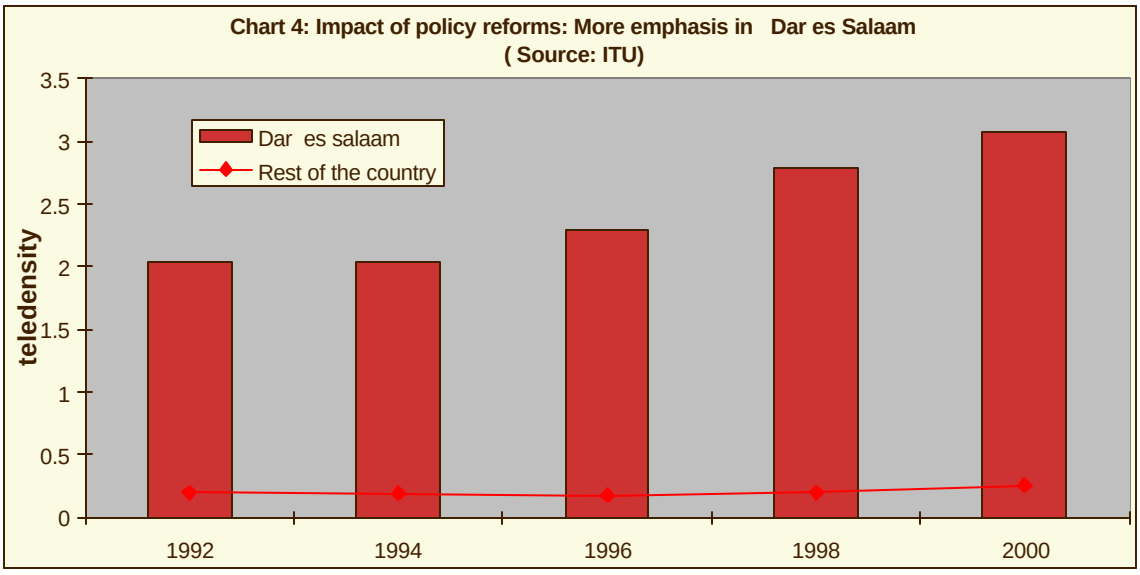
- *Competition pushed out technologies that do not respond to the present consumer needs*. This is the case for paging services and other services which do not add value which have been pushed out e.g. payphone operators. Economies of scale are just as critical and had a negative impact on the regional licence efforts in both Tanzania and Kenya

- *The price of high competition in cyber café is a high rate of bankruptcy among operators.* Cyber cafes epitomise perfect competition - easy entry, easy departure. End-user tariffs have come down and attempts of market moderation by trade lobby has not succeeded to raise tariffs to financially viable levels. This will continue until the market determines its equilibrium

- *There is no justification for the policy to prescribe the number of operators in a market*. This should be a decision by the potential operator. Zanzibar with a population of 1 million has five cellular operators and two fixed line operators and none so far have collapsed. This is equal to the number of operators in Uganda and Kenya combined. While the impact on tariffs and quality of service may be a matter of concern at some point, survival is a market issue.

- *Rural policy strategy is not working*. Competition shifted the focused of operators to the profitable urban areas at the expense of the rural areas despite a chief aim of the policy being the need to improve access in rural areas. Tanzania, which pioneered liberalisation in 1994, demonstrates this (Chart 4). Teledensity has stagnated in the rural areas while that of Dar es Salaam has improved consistently since 1994. It is necessary for government to design universal service mechanisms to support expansion in to the rural areas. Uganda is moving in this direction and has established a universal service fund.

Chart 4: Impact of policy reforms: More emphasis in Dar es Salaam
(Source: ITU)



Nevertheless, coverage has expanded with liberalisation, and cellular in particular, is addressing coverage concerns rather than exacerbating them. Cellular has expanded significantly in all the countries and over 50% of the population is now within cellular signal coverage.

Governments have to redefine basic services. With the increased value of Internet and multimedia attributes, it is imperative that universal service includes Internet. Uganda's policy review of 2001 is in this spirit and has a vision to build a point of presence (PoP) in every district over the next two years.

- *With entry of the foreign partners, East African residents can no longer be shielded from international market forces and fortunes of the strategic investors*. The impact is directly related to the level of shareholding and the market share. All the affected companies cited in foregoing have been marginal players; nevertheless, the impact of the change of mind of bigger players in the markets with only two players like Kenya can result in a majority disruption of service.

  Like any other investment, the strategic investor is in the market for business and will stay as long as it makes business sense. Vodafone sold off its shareholding in Celtel in Uganda in 1999 and quit the market to concentrate on Kenya. Celtel has not recovered and is now the smallest network in Uganda despite being the oldest operator in the country. Its former shareholder has helped build the largest network in Eastern and Central Africa – Safaricom in Kenya.

  Orascom, the largest shareholder in Ucom that controls UTL has given notice to sell its shareholding to focus on the larger markets in North Africa. One can only guess what TRI[9] will do with Tritel after facing financial difficulties back home in Malaysia.

  There is need for more players and reduced foreign shareholding for long-term stability of services and to balance the negative consequences of international investors. It is doubtful that regulatory tools by themselves would be flexible enough to respond as needed in this area.

Areas of policy attention for continued Internet growth

Key areas that require resolution for the increased growth of Internet in the long term are:

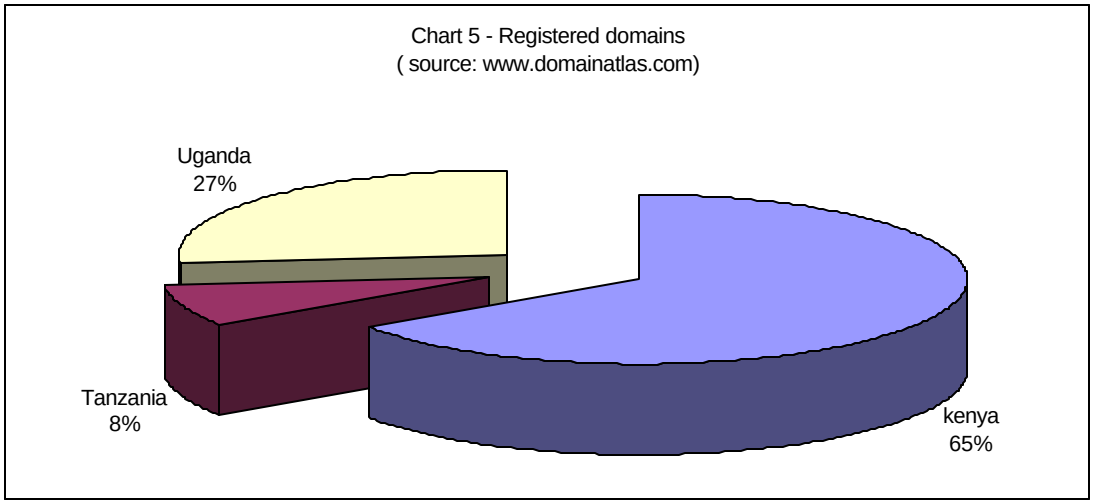
- *Bandwidth availability and costs* – none of the governments have encouraged a holistic view of the longer-term demand for bandwidth for Internet and indeed the whole telecom sector. Governments left the provision of bandwidth to operators with consequent proliferation of the stopgap solutions by use of satellite e.g. VSAT by ISPs or leased lines from telecom operators. Government policy needs to address long-term bandwidth availability by implementation of fibre optic at national and regional level linked to the global submarine cable systems.

- *Marginal role of individual ISP in the market* - ISPs provide a foundation for entrepreneurship and skill development in the local telecommunications service industry. This calls for a clear policy path to access bandwidth and build their own loop. Uganda has witnessed mergers of ISPs resulting in a stronger operator who has now been taken over by Celtel. Cyber cafes and ISPs provide an entry point for local entrepreneurs in the fast changing telecommunications market to compete with the oligopolies of telecommunications operators. Governments need to encourage mergers of ISPs to consolidate and play a bigger role in the emerging market.

- *Localising traffic* - Encourage local exchange of traffic within East Africa, Kenya Internet Exchange Point (KIXP) is an encouraging beginning.

- *Domain names* - bring the Domain Names System (DNS) under national control and reduce costs of the registration and transfer among hosting service providers. Kenya has initiated a process to address this objective by establishing Kenya Network Information Centre (KENIC). Uganda administers its DNS though the low number of the registrations reflects lack of the knowledge of the value of the DNS. For the three countries, there is a need to build a positive image and awareness of national country code Top Level Domain (ccTLDs) and get away from generic TLDs. Kenya has registered 65% of the ccTLDs in the region (Chart 5).

[9] Majority shareholder of Tritel from Malaysia.



With less than 1% penetration of Internet user base in the region, the untapped market is huge. Significant hurdles however remain - access to computers, illiteracy and the capacity to use the Internet etc. The challenge is to take advantage of the best tool of the Internet – multimedia capability to overcome illiteracy and reach out to all. Even then, interfacing tools and devices will still be a challenge until VoIP is legally accepted as one of the products.

Conclusions and Recommendations

Policy reforms launched in 1994/1999 have had a profound impact in the development and expansion of the telecommunications infrastructure in the region. The reforms have unleashed resources from the private sector to expand the infrastructure and generally made services cheaper and more accessible. The policy reforms helped clarify the role of the governments as a facilitator and gave space to the private sector to contribute in development of the region.

A singular focus on the expansion of the communications system based on a supply perspective failed to take into account the consequences of the reforms. High consolidation of suppliers, high reliance on international capital, definition of competitiveness with the exclusion of human resource strategy, and lack of adequate capacity to police competition have all affected long-term sustainability. While reforms facilitated the entry of the international operators, the process locked out opportunity for local entrepreneurial contribution and capacity building. Additionally, the policy design include the tools necessary to sustain competitive forces and therefore its benefits. This affects the performance and success of the policy reforms in the long term. As governments review policy, the next policy iteration should target the empowerment of the local entrepreneur and capacity building. New structures for competition are necessary to avoid an eventual shift of government monopoly to private sector monopoly.

Below are some suggested principles for future telecommunications policy

- Set the *goals not the means* - the regulatory provisions based on technologies should give way to service based goals that leave the operators to choose the best technology strategy to achieve the goals. Separation of licences as cellular and fixed is no longer viable.
- Focus on a *mobile information society* - recognise that cellular operators are mainstream service providers and impose universal service obligations on them if necessary, but also protect their revenue streams against unlicensed “grey market” operators.
- Foster and nurture *competition as a driver* for improved service guarantees in all market segments to the consumer and remove barriers to competition including market entry barriers for new operators

- Entice investment through *stable and predictable market policies* not regulatory edicts
- Foster *synergistic partnerships* to anchor international capital, skills and management. This should be long-term strategy to shield regional markets from extremities of international interests.

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