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STATE OF COMPETITION IN ZAMBIA'S TELECOMMUNICATIONS SECTOR[1]

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Abstract: Zambia, situated in the Southern African region, has a population of 13 million and GDP in 2009 was estimated at ZMK61.1 trillion or approximately USD12.8 billion. Economic composition of GDP by sector is 40.2% services, 38.2% industry and 21.6% agriculture. GDP growth averaged 4.8% in the decade between 1999 and 2009, with strong performance in the construction, mining and agricultural sectors. However, as a services-based economy, growth is constrained by, inter alia, slow emergence of a competitive telecommunications sector that can provide the platform for the national and international flow of information and communication required for further rapid advances in economic development. This article reviews the state of competition in Zambia's telecommunications sector, with due attention to the fixed line and international gateway, the mobile telephony and Internet markets.

KEYWORDS:

Competition policy, competition law, telecommunications sector reform, consumer welfare, Zambian telecommunications sector

INTRODUCTION

The Zambian telecommunications sector has been subjected to competition since 1997 when the first privately owned mobile cellular enterprise entered the market. This was Telecel Zambia, taken over in 2006 by MTN. The entry followed economic reforms commenced in 1991, the first since the notable "Mulungushi Reforms" of 1968 on the nationalisation of industry. While liberalisation was embraced, influential government officials prevailed over the state to retain 100% ownership of the state-owned Zambia Telecommunications Company Limited (Zamtel) for almost 15 years after the beginning of the privatisation process. Zamtel was hardly a cash cow – its survival was based on a small number of fixed landlines and a vociferously protected international gateway monopoly. The greatest customer for Zamtel was government, which was also its largest debtor.

Zambia's liberalisation of the economy from 1991 spelt trouble for Zamtel, not because it was facing competition per se, but because its operations were dogged by old technology, lack of recapitalisation and a larger workforce than the leaner private sector entrants, which would include Zamcell, later renamed Celtel, then Zain, now Airtel.

As with many public enterprises that exhibit sentimental rather than economic value, local interest in the telecommunications sector in Zambia concerned the wealth and health of Zamtel, just as at a certain time, discussing Zambia's public transport system was not possible without mentioning the United Bus Company of Zambia (UBZ), despite its chronic financial woes,

1 This article builds on previous articles prepared by the author in collaboration with the then Communications Authority of Zambia (now Zambia Information & Communication Technologies Authority – ZICTA) in 2008, as well as a paper that was presented to the Multi-Year Expert Meeting on Services, Development and Trade of the United Nations Conference on Trade and Development, Geneva, 17- 19 March 2009.

notoriety for lack of time-keeping or "no-shows", and accidents on inter-town routes. Similarly, discussing the privatisation or breaking the monopoly of companies such as Zamtel was an emotional socio-political issue with public outcry over what would happen to the country if such a "big" company was sold, especially to foreign owners. Calls for protecting Zamtel from competition were based on the fear that Zamtel was "not ready for competition". There is, however, little doubt that the development of the telecommunications sector in Zambia has been driven by a degree of competition, which has resulted in greater benefits for the consumer, particularly with respect to the Internet and mobile telephony.

The benefits of liberalisation to Zambian society have been immense, compared with the limited value offered by the closed fixed-line and international gateway markets. Thus, despite public sentiment, the Government of Zambia took a bold decision to dispose of 70% of Zamtel equity to LAP Green of Libya in the first quarter of 2010. The Government simultaneously and effectively removed the Zamtel monopoly over the international gateway. While the fixed-line market has offered little attraction for private sector participation, the liberalisation of the international gateway and the reduction of licence fees to USD350 000 immediately attracted new entry. With such entry, the Zambian public had a very rare treat when they saw reductions in international calling rates by as much as 70% (*Zambian Economist*, 2010; *Lusaka Times*, 2010). This perhaps is thought-provoking empirical evidence that policy makers, regulators and the opinion leaders may need to count the cost to consumer welfare arising from any protectionist tendencies in the ICT sector.

This article looks at the state of competition in Zambia's telecommunications sector. The article provides an overview of the relevant telecoms and competition legislation; looks into various sub-sectors of the broader telecoms sector and reviews the state of competition in these sub-sectors. It argues that (a) while competition in telecommunications markets is generally regarded as necessary for social welfare, the Zambian landscape has been slow to adapt to competition, and (b) now that an agenda for change is being more clearly articulated in policy and legislation, regulators should more actively pursue the objective of promoting competition in the fixed line, international gateway, mobile telephony and Internet markets.

A PERSPECTIVE ON COMPETITION IN TELECOMMUNICATIONS MARKETS

A careful analysis of the variables that affect competition in a multi-billion dollar sector is a process that any country should take seriously. A proper analysis of what makes markets work and how the various factors of competition affect market development is an important aspect that should be fostered in any study of the telecommunications market in Zambia. This process goes beyond price regulation and promoting competition through licensing. A number of studies, including the report on the Status of Competition in Canadian Telecommunications Markets (CRTC, 2004) have acknowledged that assessing the state of competition in a market is not a simple matter. Collection of information related to telecommunications markets, including market size and market share, is a first step in order to monitor the status of competition.

Factors that determine the study or analysis of competition include the market definition, market concentration ratios, barriers to entry, substitutability, countervailing power and dominance, ie determination of market power and/or significant market power. This approach is also used in the European Union as adopted in the *Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services* (EU, 2002).

The Organisation for Economic Cooperation and Development (OECD) has noted that "the telecommunications industry has been transformed by increasingly vigorous competition in an environment of rapid change" (OECD, 2001, 1). As new technologies emerge and markets expand, firms need to connect to each other's networks. Hence, the OECD (2001, 1) argues that "the most complex questions facing regulators … are frequently focused on the conditions of access of one network to another's network". Opportunities for competition in underdeveloped markets depends on the demand for new services, the economies of scale and scope that emerge over time and the technological innovations introduced. In order to grow a particular market for telecommunications services, governments may require mandatory access and interconnection arrangements, but may use different approaches to set the "financial terms of access" (ibid.). Access prices should reflect the underlying mechanisms that might be used to recover fixed costs, in other words access prices should be cost-based (Mason & Valletti, 2001). These are key issues for regulators.

MARKET POWER AND DOMINANCE

OECD (2002) offers reasons for regulation, as do Bar & Borrus (1997), including promotion of universal access to telecommunications services and fostering competitive markets for telecommunications services in order to ensure good quality of service, advanced services and efficient prices. Key matters for the attention of regulators include preventing abuses of market power and other forms of anti-competitive behaviour by dominant firms, creating the environment for network investment and protecting consumer rights.

With respect to transport infrastructure, though the principles would apply equally to telecommunications infrastructure, the UN (2001, 180) argues that the concerns of competition authorities and infrastructure regulators with respect to promoting competitive markets are focused on established operators that have market power. Firms without market power are simply not able to cause serious problems in the economy or in the sector. If they raise their prices above market levels, for example, they will simply lose customers and profits. In general, market power is defined as "the ability of a firm to raise prices above competitive levels, without promptly losing a substantial portion of its business to … rivals …" (Infodev, nd, 24). This practice can occur to such a degree as to make market participation unprofitable for other parties or new entrants. Factors frequently considered in determining whether a firm has market power include vertical integration, barriers to market entry, market share, pricing behaviour, profitability (Intven, 2000, 5-11; 5-12). In particular, effective access to advanced telecommunications can only be possible with the removal of barriers to entry, including lowering the costs of entry, thus potentially leading to the maximisation of social welfare (Carlton & Perloff, 2005; Blees, Kemp, Maas & Mosselman, 2003).

Where there are barriers to entry, their importance depends on the circumstances. They are likely to be less important when there are multiple incumbents with varying characteristics and interests, when technological change is rapid and when potential entrants are established firms with a presence in related markets. To the extent that incumbent firms are able to take advantage of the existence of barriers to entry to engage in exclusionary behaviour, remedies may be sought under the Competition and Fair Trading Act 18 of 1994 (Cap 417) of the laws of Zambia.

A firm controlling essential telecommunication services can exhibit certain dominance traits in the market, more so when it owns the international gateway system, as Zamtel did. The refusal to supply scarce facilities or resources required by a competitor is an anti-competitive act. More so, it is an abuse of dominance where the dominant firm, by virtue of controlling an upstream essential facility such as the telecommunications backbone, may be able to push up the price of a scarce input to the point where entry in the downstream market is unprofitable. The Canadian Competition Bureau (2001) argues that such approaches "may be profitable to the dominant firm(s), despite the higher price it also pays for the input, because it avoids the dissipation of profits that (any new) entry would bring".

Refusal to deal with a prospective entrant in signing interconnection agreements and/or co-location of equipment necessary to enter and grow in the industry at lesser cost is an instance of abuse that may also need to be checked in the Zambian telecommunications market. "Simply making competition possible by the existence of rights to resale or to build and operate facilities is not enough…" (Bar & Borrus, 1997).

RESPONSES TO MARKET DOMINANCE

While there are many possible responses to market dominance, regulators need to carefully select among the range of mechanisms that may or may not revolutionise the telecommunications industry and aid in the reduction of high market concentrations and abuse of dominance. In the absence of effective substitutability, owing largely to behavioral rather than structural impediments, there would be little if any effective competition in the mobile telephony subsector in particular.

LEGAL FRAMEWORK FOR COMPETITION IN ZAMBIA

The Competition and Fair Trading Act, No 18 of 1994 (Cap 417), was the first legislation in Zambia that defined dominance and highlighted certain conduct in which a dominant firm, so identified, could not engage. Under Section 2 of Cap 417, "monopoly" was defined in the context of "dominance", as follows:

A dominant undertaking or an undertaking which together with not more than two independent undertakings –
a) produces, supplies, distributes or otherwise controls not less than one half of the total goods of any description that are produced, supplied or distributed throughout Zambia or any substantial part of Zambia; or
b) provides or otherwise controls not less than one-half of the services that are rendered in

Zambia or any substantial part thereof (Government of Zambia, 1994).
From the above definition, the elements could be dissected to enable us to understand a monopoly undertaking as:
(i) a dominant firm, which has at least 50% market share in Zambia or a substantial part of it (ie unilateral market power);
(ii) an undertaking which, with not more than two independent undertakings, has a combined market share of at least 50% (ie combined market power as in the case of collusion).

Dominance or monopoly power may be exercised by a single firm or two or more independent firms acting in concert by colluding to have similar or complementary marketing strategies. Any firm acting singularly with at least 50% market share is deemed to be a monopoly and/or a dominant firm. Equally, dominance and/or monopoly standing would be inferred where firms agree to have the same market price, same distribution channels, packaging, etc to the exclusion of other firms. These combined practices are commonly referred to as "cartels", "horizontal restraints" or "horizontal arrangements" and are prohibited under Section 9 of Cap 417.

There are generally two tests in the determination of dominance. The first is a quantitative test, which is a per se determination based on the market share of a firm. For instance, Cap 417 in Zambia defined the structural test with a 50% threshold. In a relatively concentrated market, a 40% market share could be considered to be a dominant market share in effect. This is because the conduct of the firm may indicate that it does actually exercise characteristics of a dominant firm regardless of its market share. There is always a dispute on market shares and their computations, consequently competition law jurisprudence has tended to focus on the behavioral test, which is a rule of reason determination based on the actual behaviour of a firm in a defined product market. Thus a firm may argue that its market share does not give it the necessary market power to act independently of other market actors. The rule of reason thus allows the determination by a competition authority to go a step further and consider each case on its own merits. Section 2 of the Competition and Consumer Protection Act No. 24 of 2010 (Government of Zambia, 2010) has since clarified this through defining "dominant position" as a situation where an enterprise or a group of enterprises possesses such economic strength in a market as to make it possible for it to operate in that market, and to adjust prices or output, without effective constraint from competitors or potential competitors. Section 15 further adds a second test where there is a presumption of dominance at 30% market share.

The practice of competition law has emphasised the need to decipher instances of abuse or misuse of market power, as opposed to mere dominance. Section 7(2) of the Competition and Fair Trading Act required[2] enterprises to refrain from specific acts of anti-competitive behaviour, including predatory behaviour, discriminatory pricing and discrimination in terms and conditions, bundling goods and services and collusion.

2 All the terms used in this section except for "dominance" are not defined in the Act. A useful guide for definitions is the G*lossary of terms used in EU Competition Policy - Antitrust and control of concentrations.*

THE ZAMBIAN TELECOMMUNICATIONS MARKETS

Few studies on the telecommunications sector in Zambia have reviewed the state of competition. Generally, there are four principal markets, being the landline (fixed/terrestrial) and the international gateway markets and the mobile telephony and Internet markets. Telephone ownership was restricted to 0.3% of rural households, while only 8% of rural households had access to a public phone within a walking distance of five kilometres, compared with 95% for urban households. Virtual monopoly service provision in multiple service markets severely limited the access expansion rate for most of the decade from 2000 (World Bank, 2006).

Zambia has a population of 12.9 million and GDP is estimated at K61 trillion or roughly USD12.8 billion (AfDB, 2010a, 388-389). In the decade 1999 to 2009, it has shown consistent growth at an average 4.8% per annum (AfDB, 2010b). The geographic telecommunications market covers the areas where there is a concentration of the population and business, being principally the areas along the railway line joining the Copperbelt in the north through Lusaka in the central region to Livingstone in the south. There is also the emerging "New Copperbelt" area around Solwezi in the North West Province.

Despite promising penetration growth rates, Zambia is still behind regional standards with regard to providing access to telecommunication services for its citizens. The sector is characterised by limited access to infrastructure services, with only three lines per 100 people and stagnating fixed-line penetration rates.

It is evident that Zain dominates the mobile telephony market in Zambia and under the competition law, is actually legally enjoying a monopoly position. On the other hand, Zamtel enjoys absolute monopoly in the fixed landline segment of the market and, until recently, in the international gateway market. There used to be arguable concerns that the structural advantage of Zamtel was a source of market power, which was then used to deny equitable access to certain backbone infrastructure in telecommunications. Zamtel no longer exercises any such dominance, since the entry of Zain/Airtel. In addition, the lack of interconnection regulations for some time in the sector has also led to instances of abuse by dominant operators in the sector, where they have used this to frustrate the completion of calls emanating from other networks. This has however been rectified through the passing of interconnection guidelines under the ICT Act of 2009. ZICTA commissioned Price Waterhouse Coopers (PWC) UK to carry out an ICT Cost of Service Study in 2009. Following this, ZICTA issued guidelines following sections 41 (5), 47 (2), 48(3) and 50 of the ICT Act (Chalwe, 2010).

THE FIXED LANDLINE MARKET

By 2000, household fixed-line penetration was approximately 5.6%, while "the average annual growth rate in teledensity of 3.7% … barely kept up with the population growth rate of 3%" (Kakubo, 2000). IP telephony was not allowed in Zambia and international voice telephony was the monopoly of the PSTN operator until mid-2010. Tele-density in Zambia, similar to other countries, is higher than average in urban areas. In four major cities, tele-density reaches 2.01 per 100 persons, though average teledensity has not increased significantly since 2007, with estimates of 0.77 fixed-line subcribers per 100 inhabitants and 22.6 mobile subscribers per 100 inhabitants (AfDB, 2010b).

The fixed landline market (PSTN) was a privileged monopoly of the state-owned Zambia Telecommunications Company (Zamtel) Limited. The evident lack of a proactive competition policy in this market until 2009/10 was a historical phenomenon and had a cost-based rationale. Historically, the state-owned Post and Telecommunications Corporation (PTC) Limited was the sole supplier of telecommunications services in Zambia. With 100% funding from the State Treasury, PTC put up the key backbone infrastructure in the industry. The PSTN infrastructure has suffered from systematic vandalism, a lack of recapitalisation and a lack of productive and allocative efficiencies, while mobile telephony has become an effective substitute. In Zambia, the installation costs for fixed telephony are relatively low, more so with the introduction of the prepaid TelZ fixed landline service. However, the historical lack of a focused market development strategy has seen this market grow more slowly than the mobile telephony segment.

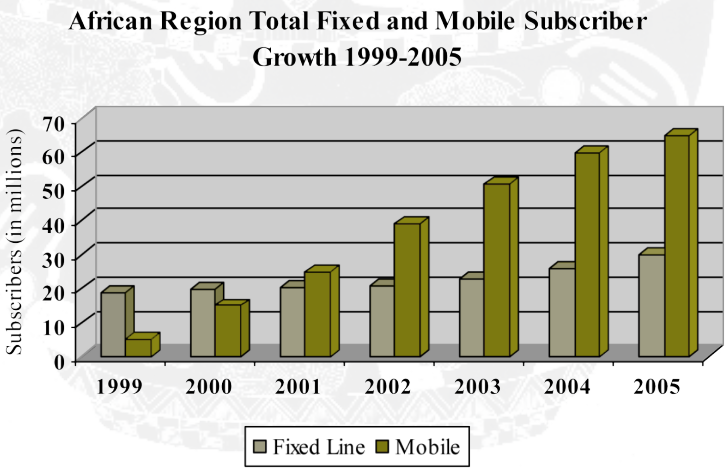
THE INTERNATIONAL GATEWAY MARKET

The international gateway market in Zambia was opened to competition in 2010, when the government reduced the licence fee from the previous USD18 million to USD350 000. Within a week of the reduction, private firms MTN and Zain, entered the market and announced a reduction of international call rates by as much as 70%. As noted by the Zambia Competition Commission (2008), lack of private sector entry led to very high international call tariffs, as well as lack of investment in modern and more efficient technology in the international gateway system.

THE MOBILE CELLULAR MARKET

The mobile telephony market has grown tremendously in Zambia and in Africa generally. Mobile telephony is the fastest growing segment of the telecommunications sector. As Graph 1 shows, the mobile market has outgrown the fixed-line market in Africa, from about four million subscribers in 1999 to 65 million subscribers in 2005, while fixed-line growth moved from 19 million to 30 million subscribers over the same period (ITU, 2008).

GRAPH 1: AFRICAN TELECOMS SUBSCRIBER GROWTH



Source: International Telecommunication Union (ITU), April 2008.

Mobile telephony appears to have grown at the expense of the fixed line because of the relatively easier set-up process, as well as the convenience of using a mobile phone. There are also numerous technological advantages to mobile telephony – a mobile phone offers a personal directory of contact details, the short messaging service, mobile Internet and even access to mobile payment systems.

The Zambian mobile market has witnessed competition since the 1999 entry of Zamcell, renamed Celtel, then Zain (and renamed Airtel). Zain was the largest mobile operator in Zambia and had more than two million customers as at 30 June 2008, providing coverage to 71% of the population and offering a range of voice services, international roaming, pre- and post-paid subscriptions, SMS and mobile Internet to individual, corporate and SME customers (Zain, n.d.). The following figures give a snapshot of mobile market shares as at 2008:

Table 1: Zambia mobile market shares

Service provider	Subscribers as at 31.12.07	Market share	Subscribers as at 30.06.08	Market share
Zain	1 956 976	78.9%	2 040 014	76.1%
MTN	262 186	10.6%	452 799	16.8%
CellZ	261 225	10.5%	190 069	7.1%
Totals	2 480 389	100%	2 688 882	100%

Source: Communications Authority Zambia (CAZ), April 2008

Zain had registered phenomenal growth, having entered the market in 1999 after CellZ (the Zamtel Cellular) and MTN (then Telecel). An aggressive entry marketing strategy at the time when GSM was introduced, assisted by a less capitalised Zamtel Cellular and MTN, would appear to have jolted Zain to an unprecedented market growth from 0% at point of entry to 76% 10 years later.

The Internet market

The Internet has been described as one of the most influential technologies of the century. This is because it has completely redefined the concepts of communication and information exchange. Zambia first became connected to the Internet in 1994 through a slow leased line to South Africa with about 250 users, many of whom were academics and medical staff. Over the past 10 years, the Internet has changed dramatically and has become an exceedingly influential and indispensable tool to businesses and individuals alike. The three main challenges related to the growth of the Internet in Zambia have been identified to be insufficient or less developed communication infrastructure, high cost of delivering Internet bandwidth and high cost of computers and related communication accessories, though import duty has been lowered.

By 2008, Zambia had seven licensed Internet Service Providers (ISPs) and the market has generally been open to new entrants due to the large untapped and perhaps yet to be Internet-enlightened market. Out of the seven, one is owned by the recently privatised Zamtel, while the others are privately owned. Statistics show that few Zambians are accessing the Internet through a broadband connection:

Table 2: Internet market shares as at 30 June 2008

ISP	Subscribers		Subtotal	Market share
	Dial up	Broadband		
Africonnect	0	1 600	1 600	9.6%
Zamnet	4 540	1 222	5 762	34.6%
Zamtel	6 415	157	6 572	39.5%
CopperNet	655	586	1 241	7.5%
UUNET	372	118	490	2.9%
Microlink	310	502	812	4.9%
Real Time	0	150	150	1%
Total	12 292	4 335	16 627	100%

Source: Communications Authority of Zambia (CAZ), 2008

The majority of Internet subscribers have generally been institutional subscribers, while the market is yet to capture the individual household on a mass scale. Compared with countries in the region, Zambia's Internet usage is low, with approximately 816 000 subscribers out of a population of nearly 13 million in 2010, while Zimbabwe had 1.4 million Internet users in 2010 or 11.4 users per 100 inhabitants (ITU, 2010, 106).

MARKET CONCENTRATION

MARKET CONCENTRATION IN FIXED LINES

The fixed-line operator has enjoyed a monopoly position with no competition restraints of any sort. The development of this part of the telecommunications sector has remained unexplored by the private sector. The market concentration is 100% monopoly, with an Herfindahl-Hirschman Index (HHI) of 10 000.

MARKET CONCENTRATION IN THE INTERNATIONAL GATEWAY

Since June 2010, the gateway has been effectively liberalised, but new market shares are yet to be compiled. If the mobile telephony market shares are to be used as a measure, then the market share for international calls may be in favour of Zain/Airtel – more so when roaming is factored into the profile. Zain/Airtel has a wider roaming network than MTN and CellZ. However, if we take the traditional view, the fixed landline has ordinarily been the business line, as well as the line for international calls. The mobile telephony providers have reduced their international call rates by as much as 70%, which, depending on market response and use, may become as inexpensive as the fixed land line.

MARKET CONCENTRATION IN MOBILE TELEPHONY

There appears to be high market concentration in all countries in the mobile telephony market. As noted in the table below, Canada's national HHI for mobile wireless telecommunications services in a market with three carriers is lower than the HHIs of some countries with four carriers, and is almost identical to the Netherlands, which has five. The HHI can also be

expressed as a fraction and inverted to yield what is known as a numbers equivalent. This is the number of equal-sized competitors that would yield the observed HHI. Canada is closely bunched with a large number of countries with a numbers equivalent around three. Hong Kong, the US and the UK are much less concentrated, while Norway, New Zealand and Switzerland are much more concentrated. In many markets, the fourth and sometimes even the third carrier have relatively small market shares and are thus regarded as minor competitive forces (McFetridge, 2008).

TABLE 3: CONCENTRATION OF DEVELOPED COUNTRY MOBILE WIRELESS MARKETS

Country	Number of carriers	2 - Firm concentration ratio (CR)	HHI	Numbers equivalent
Norway	2.0	100.0	5 508	1.8
New Zealand	2.0	100.0	5 016	2.0
Switzerland	3.0	81.8	4 627	2.2
Belgium	3.0	77.0	3 65	2.7
Canada	3.0	68.9	3 400	2.9
Netherlands	5.0	73.4	3 396	2.9
Singapore	3.0	71.8	3 372	3.0
UK	5.0	49.1	2 257	4.4
US	4.0	51.5	2 016	5.0
Hong Kong	5.0	44.6	1 606	6.2

Source: Merrill Lynch Global Wireless Matrix 3Q, 2008

For the Zambian concentrations, the HHI for Zain of 5 791in June 2008 showed a fairly monopolised market, with the other incumbents offering more "niche" than mainstream competition, although for strict application of HHI, it falls short of the 10 000 index required for a monopoly existence.

TABLE 4: MOBILE MARKET CONCENTRATION (HHI CALCULATIONS)

Service provider	Market share (31.12.07)	Herfindahl Hirschman Index (HHI)	Market share (30.06.08)	Herfindahl Hirschman Index (HHI)
Zain	78.9%	6 225.21	76.1%	5 791.21
MTN	10.6%	112.36	16.8%	282.24
CellZ	10.5%	110.25	7.1%	50.41
Totals	100%	6 447.82	100%	6 123.86

Source: As compiled by author based on data from Communications Authority Zambia (CAZ)

With an HHI level of over 6 000, of which the largest proportion is attributed to one player, the market does not enjoy significant competition, as there is a dominant market player who acts as a guide to other players in terms of price and product offers.

In this view, the three-firm market concentration ratio shows a concentration of 100%, which was an indication of a highly concentrated market with little if any effective competition to Zain/Airtel. Celtel, the forerunner to Zain, had grown to be the dominant firm in the sector, and with the change-over to Zain enjoyed a decisive market control of 76% by 2008. This, however, has been changing since June 2010 when the interconnection regulations became effective. The mobile cellular market, which started off as a monopoly and then became a duopoly, is theoretically an oligopoly, but from a competition point of view, it is characterised by monopolistic competition.

MARKET CONCENTRATION IN INTERNET

The Internet market has been relatively competitive compared to other segments of the telecommunications sectors, as shown in Table 5:

TABLE 5: INTERNET MARKET CONCENTRATION

Internet service provider (ISP)	Market share	Herfindahl Hirschman Index (HHI)
Zamtel	39.5%	1 560.25
Zamnet	34.6%	1 197.16
Africonnect	9.6%	92.16
CopperNet	7.5%	56.25
Microlink	4.9%	24.01
UUNET	2.9%	8.41
Real Time	1%	1
TOTAL	100%	2 939.24

Source: Communications Authority Zambia (CAZ), 2008

The Internet service market is the most competitive of the four main product markets in the telecommunications sector. By 2008, Zamtel controlled almost 40% of the market, while Zamnet controlled about 35% of the market. While an HHI of 2 939 shows a market that is highly concentrated, this development is still a move in the right direction, noting that in 2002, four firms had a market concentration ratio of 100%, while presently the four-firm concentration ratio (CR4) is 91.2%. While this is still high, it is a trend that should be fostered, more so with the presence of the niche broadband service entrants.

Zamtel has perhaps managed to hold such a high market share due to the integrated nature of its fixed landline telephony service provision, combined with the internet subscription. The success of Zamnet in the sector shows the first private mover advantage and the brand loyalty attached to Zamnet (also applicable to Zamtel). Africonnect, CopperNet and the other ISPs appear to be niche players who are trying to break into the mainstream market through offering broadband services.

BARRIERS TO ENTRY IN THE ZAMBIAN TELECOMMUNICATIONS MARKET

STRUCTURAL BARRIERS TO ENTRY

Electricity is crucial to sustainable access to telecommunications services. About 39% of Zambia's population resides in urban and peri-urban areas, chiefly in Lusaka and the Copperbelt area, while about 49% of the urban population and a meager 3% of the rural population have access to electricity (Central Statistical Office, nd). This leads to an overall national electrification rate of less than 20% of the country's roughly two million households – mainly in the urban areas. About 61% of Zambia's population lives in scattered rural areas, living on almost a third of the income for urban areas. Furthermore, ICT service providers have focused their areas of coverage along the main rail line from Ndola to Lusaka and from there on to Livingstone, leaving a large fraction of the population without access to these services.

These characteristics of the economy partly explain the urban-rural disparity of ICT penetration for the fixed, mobile and Internet sectors. Structural barriers have historically been high in fixed telephony, as well as in the international gateway (due to seemingly high opportunity costs), where such barriers prevented investment and thus competition was frustrated for many years.

ADMINISTRATIVE, LEGAL AND REGULATORY BARRIERS TO ENTRY

The fee structure in the telecommunications sector does not appear to contribute to reduction of the sunk costs in the industry. For instance, the requirements, in 2006, by the then Communications Authority of Zambia, for the fourth mobile service provider to pay a non-returnable application form cost of ZMK300 million, approximately USD 63 296, was queried by some stakeholders. They questioned whether this figure was intended to limit the number of applicants – more so that the public policy objective at the time was to allow Zambian owned firms to operate a fourth mobile service provider.

CREATING A PROGRESSIVE GROWTH PATH FOR THE ICT SECTOR

A number of shifts are observed to have taken place in the telecommunications sector, which have helped shift the industry in Zambia in recent years, 2006 to 2010:

(i) The adoption in 2006 of the national ICT Policy, which is pro-competitive, reflects an extensive consultative process and provides a basis for revitalising the sector. Zambia's ICT Policy has been developed in close coordination with other sectors and in alignment with other national development plans.

(ii) The drafting of legal frameworks, The Information and Communications Technologies Act, No. 15 of 2009 (Government of Zambia, 2009a) and The Electronic Communications and Transactions Act, No. 21 of 2009 (Government of Zambia, 2009b), which are comprehensive and are expected to improve the transparency and predictability of regulatory interventions.

(iii) The decision to liberalise the international gateway by removing prohibitive and anticompetitive measures in the international telecommunications segment, in order to allow existing service providers to participate and compete alongside Zamtel.

Historically, free and fair competition has met some form of resistance in the telecommunications sector. From a policy point of view, it was viewed with mixed feelings for many years, ranging from national security concerns to outright protectionist tendencies, even where the welfare losses far outweighed the protectionist gains.

For almost 12 years, there was fragmented regulation of the ICT sector in Zambia, involving the Zambia Competition Commission, the Communications Authority of Zambia, and the practically "self-regulated" Zamtel. There was a "new deal" in the ICT sector in 2010, following the implementation of two complementary policies and promulgation of two complementary laws. The national ICT policy and the competition and consumer protection policy have provided a detailed policy landscape for the furtherance of the development of ICTs in Zambia. The ICT Act has repositioned the former Communications Authority of Zambia to become a more robust and dynamic Zambia Information and Communication Technologies Authority (ZICTA), while the Competition and Consumer Protection Act has transformed the Zambia Competition Commission into the Competition and Consumer Protection Commission.

The national ICT policy envisions Zambia as an "information society", ie a country where ICT has been fully exploited, is part of everyday life and is an enabler of socio-economic development. It also proposes that Zambia become a "knowledge based economy", ie "where ICT is extensively used to enhance the knowledge of society in general so that higher human capital brings improvement to the economy" (MCT, 2006). The key strategies aimed at achieving these new forms of society are evidently to attract new entry and investment in the telecommunications sector.

With the privatisation of Zamtel, the State is no longer an active player in the ICT sector. However, it is possible that there may be a recurrence of protectionist tendencies through lobbying government to promulgate certain regulations, laws and policies that protect incumbent players from prospective competition, notably foreign competition. There are conflicting views on whether welfare gains may be maximised by limiting the number of entrants in a sector or whether welfare gains may equally be maximised through an open competition approach. With a history of competition phobia in the Zambian telecommunications sector, it is not surprising that there exists a statutory instrument (SI) that appears to be at variance with ICT, investment and competition policies.

Statutory Instrument No 111 of 2009 (SI), issued under the ICT Act of 2009, has "reserved" entry into the mobile telephony market in Zambia for a period of five years, effective December 2009. With a growing population and labour force, the market for mobile and fixed landlines in Zambia is not saturated. The development of any market is evidenced by the entry of new players in a particular sector. Investors do not enter into markets they have not studied and where they consider their returns would not be achieved.

The essence of regulation should be to promote business entry, growth and socio-economic development by controlling and prohibiting anything that prevents such development. While it is necessary to have powers to regulate industry, such powers should not be unfettered and

should be amenable to an impartial judicial organ. Regulation should have a two-fold approach – regulation through the state and self-regulation. For example, the Competition and Consumer Protection Commission (CCPC) and the Zambia Information and Communication Technologies Authority (ZICTA) can jointly, or through consultation, develop guidelines for what critical information service providers should disclose as part of their customer service .

Progressively, ZICTA has devised a programme to educate consumers on the latest developments in the ICT sector. It has promulgated guidelines and policies, including how consumers might test to verify whether their provider is providing the type of service that it promises to deliver. This is commendable. It is trite that regulation should equally ensure that there are incentives to measure network performance and monitor whether it matches the promises of broadband providers. Given the vigilance of many ICT users, it is likely that complaints will be presented to institutions such as CCPC and ZICTA, where performance deviates in practice from what was promised, requiring action from regulators.

In looking for a balance between minimising government intervention and ensuring certainty and predictability in the application of competitive safeguards, a broad trend toward a converged approach to competition policy has emerged. In most countries, principles traditionally associated with competition law have been imported into the telecommunications regulatory framework. To different degrees, these have included principles of market definition and a focus on dominance (ITU, 2002). Telecommunications regulators have often applied broad-ranging rules or regulations that apply either to the entire industry or to certain categories within it. These regulations are typically applied ex-ante and are precise in setting the parameters of acceptable market behaviour. They range from explicit retail price control to the determination of access terms and conditions. These trends are slowly being understood in Zambia. Where there is concurrent jurisdiction, as in the Zambian case, telecommunications regulations would have to be realigned with the objective of facilitating competition, and where they are not, they have to be amended or removed.

PROMOTING AND ENHANCING CONSUMER WELFARE IN ICTs

All key stakeholder government, quasi-government and non-governmental agencies need to work together to ensure effective protection of consumers and facilitate the healthy development of this market. Consumers are an effective force in checking any potential abuses of market power by service providers.

On the consumer protection front, the reality today is that most consumers are not well informed about the state of their telecommunications service and, to the extent that network providers engage in any forms of prioritisation (or blocking of particular applications), consumers are generally unaware about the existence of such prioritisation. Increasingly, technologies are being developed to prioritise different forms of Internet traffic and carriers are likely to adopt such technologies. From the consumer perspective, it is critical that they be informed about the relevant offerings and are thereby placed in a position to demand particular levels of performance.

Disclosure is an important aspect of transparent telecommunication services provision. For instance, the nature of broadband Internet access is not always clear to consumers and there would appear to be a lot of leeway to exploit those consumers. It may be necessary to intensify efforts to develop appropriate consumer education and consumer protection enforcement strategies.

Disclosure is about making public information that increases consumer understanding in relation to the service being provided and promoting markets in which consumers are aware of quality of service issues. Quality of Service (QoS) in both content and context is critical. Information on off-peak and peak-time rates, the cost to the consumer to make a mobile phone call per second or per minute, may also be critical to enhancing consumer satisfaction.

CONCLUSION

Since the liberalisation policies of the early 1990s, there have been great strides made to ensure that the Zambian ICT sector does not lag behind, and in many ways growth has been exponential, more so in the mobile telephony and Internet sectors. Where there has been reluctance towards competition policy, growth has not been evident, for example in the fixed landline market and, prior to 2010, in the international gateway market.

There is greater need now, in this highly dynamic and volatile industry, for competition-friendly policies, laws and regulatory approaches. The adoption of national ICT, competition and consumer protection policies by the Zambian government in 2006 and 2010 have been major milestones that have impacted greatly on the recasting of laws with respect to ICTs, competition and consumer protection.

In the context of the Zambian government's resolve to create jobs and maximise tax income, competition can provide a self-regulatory and self-adjusting mechanism to ensure growth through introducing new market entrants and innovation by incumbent firms, thus broadening the tax base. Government should therefore be wary of a strong lobby from incumbent players whose interest is to restrict market entry and entrench their market positions to a level where they engage in predatory conduct to frustrate new entrants.

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