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Preparing South Africa for Information Society 'E-Services': The Significance of the VANS Sector

William H. Melody, Willie Currie and Sean Kane

Abstract

New Value-Added Network Services (VANS) provide the foundation for the wide variety of applications (e-commerce, e-government, e-education, etc.,) that will make-up the e-economy in new information societies. Internet services are only a part of the VANS sector. The development of VANS is influenced primarily by three factors – technological improvements, government policies/ regulations, and the market structure of the VANS sector. South Africa has announced clear information society policies, but has not yet implemented them. Although the national fixed telecom network has experienced declining coverage in recent years, for those connected, the network is fully digitalised and makes increasing use of Internet Protocol. Technologically, South Africa is well prepared to be a leader in VANS development. However, its policy and regulation arena has been a site of continuous conflict and indecision, which has resulted in VANS development being restricted rather than promoted by government policy. Telkom's aggressive activity in attempting to maximise its service exclusivities has restricted VANS development even further. Telkom's exclusivity period under the government's "managed liberalisation" policy ended 7 May 2002. If South Africa is to see its information society and e-economy policies implemented, it will have to establish, and implement through strong regulation, a commitment to promoting an innovative VANS sector. The forthcoming convergence legislation provides an opportunity to do so.

1. Introduction

After a decade of policy declarations by national governments and international organisations, and two years of preparation, the World Summit on the Information Society (WSIS) convened in Geneva in December 2003 to confirm the profound importance and significance of electronic information networks to 21st Century economies and societies. In practice, the information societies evolve by the development and application of new electronic communication services that make possible advanced information exchanges. These in turn can improve the efficiency and effectiveness of organisations and individuals by orders of magnitude. In its various areas of development and application, this activity has been given such labels as "electronic commerce," "e- banking," "e-education," "e-government" and the "e-economy." Today the "e"-prefix is everywhere.

Most people think of the new "e-services" as Internet services, because most individuals access them via the Internet. But there are many additional services that are provided as private networks to facilitate the management of firms, industries, government agencies and other organisations. The increasing number and variety of specific services are more precisely and comprehensively described as "Value-Added Network Services (VANS)," or in some countries, "Enhanced Services." As the names suggest, they are services that provide advanced functionality beyond conventional public voice telephone services. The advanced functionality typically involves digital communication of data, pictures, sound, higher quality voice, etc., depending upon the requirements of particular network applications for specific customers, e.g., buying tickets to a performance, registering for a university course, filing tax forms.

Perhaps the most easily recognised widespread application of the new e-services is in banking and finance (ATMs) and retail sales (point-of-sale terminals). However, the major applications of VANS are to improve internal management and service capabilities, i.e., communication and information

linkage with customers, suppliers and partners of organisations of all sizes. Applications of VANS permit firms in every sector of the economy to manage more efficiently and to extend the geographic and product-line limitations of their markets, thereby tending to increase competitive opportunities, including exports, wherever they are adopted.

In this new environment where organisations, industries and government agencies are all working feverishly to develop and implement appropriate e-services, their opportunities are influenced primarily by the capabilities of the VANS market sector – the services this sector provides or can provide, its efficiency and price levels, and its continuing innovativeness in applying new technologies that enable new and improved e-services.

VANS provide the e-service foundations for e-services applications everywhere. They provide the essential specialised communication networks upon which firms, industries, government agencies, educational institutions and others can develop their own special services and become "e-enabled." The preparedness of a country to move ahead in the development and application of information society services depends very much on the conditions in its VANS sector. For that reason this article examines VANS sector development in South Africa in light of developments in leading "e-applications" countries, and suggests steps that might be taken to increase its innovativeness in preparing the foundations for South Africa's new information society.

2. Factors Shaping VANS Sector Development

The development of VANS is influenced primarily by three factors:

1. continuing technological improvements (mostly software) that enhance the capabilities and reduce the costs of services on the telecom network, and enhance the terminals attached to the network;
2. government policies and regulations promoting and/or restricting the development of VANS; and
3. the market structure of the VANS sector – its competitiveness and innovation, and barriers to entry and participation.

For the most part, the major technological advances are developed in global markets and provide opportunities for rapid global diffusion, as illustrated by the Internet. Developing country opportunities for employing these new technologies are restricted by their affordability (in light of the vastly fewer resources they have available), and, in some countries, by self-defeating import duties and taxes. The "digital divide" is not a technological divide; it is an economic and policy divide.

Government policy and regulation influence VANS sector development in several ways. Although most countries have made World Trade Organisation (WTO) commitments to un-bundle their telecom network facilities and services sectors, and to liberalise trade in services, there is a vast difference among countries in the speed of their telecom reforms and the effectiveness of their implementation. The extent to which national government policy and regulation have removed restrictions and opened opportunities for VANS development varies significantly across countries. Some countries encourage new entry into the VANS market; some discourage it. The effectiveness of the telecom regulator has been a major factor determining the dynamics and growth of the VANS sector in various countries.

The VANS sector is a relatively recent creation – a creation of the telecom reform process underway in most countries. Not too many years ago, telecom service provision was a government monopoly. VANS and the Internet have been made possible by an un-bundling of telecom network facilities from the services provided over those facilities. Today, incumbent telecom operators, like Telkom in South Africa, tend to dominate the provision of network facilities and are also major players in the provision of VANS and Internet services. But the vast majority of innovation and new market development in these services has come from the new entrants to the sector. In some countries the anti-competitive behaviour of the incumbent operator, and market barriers to entry, have restricted opportunities for innovation and market development, while in others a dynamic and progressive market has developed. The market environment has been a key factor in determining the size, structure and innovative capabilities of the VANS sector in different countries. As a result, VANS development in many countries is also influenced by the effectiveness of national competition authorities in overseeing the VANS sector and ensuring that the monopoly power of the incumbent telecom operator does not impair innovation in the VANS sector.

Finally, national governments in many countries are investing heavily in the transformation of government agencies at all levels, and small and medium-sized business, to become e-enabled. This creates demand for VANS and can provide a major stimulus for innovation in the sector. But this can only be effective if the other factors shaping VANS sector development have provided the dynamic market environment needed for innovation.

3. The Evolution of VANS

3.1 Separate and Distinct Services

The inherited telecom networks around the world were designed for a single service: voice communication. The basic technology, analogue transmission, was suited to voice communication, and telephone monopolies provided both the network facilities and services for a public switched telephone service (PSTS), as it is called in South Africa. The introduction of digital technologies provided the possibility of reducing any form of communication – voice, data, graphics, music, video – to "bits" for transmission and re-assembly at an appropriate receiving terminal. The gradual transition from analogue to digital technologies in telecom network facilities, terminal equipment and information content has been underway since the 1960s.

The opportunities provided by digital technology were a driving force behind the un-bundling of the telecom equipment market (including customer terminals) and the telecom service provision market from the monopoly control of incumbent telecom operators. On digital telecom networks, there can be many other communication services in addition to voice telephony that can be provided, and many other firms wishing to provide them. The first stage of liberalisation of telecom service provision, implemented initially in the US in the 1970s and Europe in the 1980s, was to differentiate between the traditional voice PSTS and the new services. The new services added value over basic voice service and so were labelled "value-added" (VANS) or "enhanced." In most countries, the PSTS -- the basic public voice service -- has been reserved by policy and regulation as a monopoly service of the incumbent operator for a limited period, while VANS have been fully liberalised fairly rapidly.

3.2 Implications of Convergence

When VANS were initially established, a clear distinction could be drawn between the PSTS, which provided a general public service of specified standards and quality, and VANS, which provided

specialised services, often with different standards, quality, service characteristics and network management. VANS are most typically provided as private networks for particular organisations, industry groups, etc. VANS providers typically lease all or most of their network capacity from the incumbent telecom operator or other providers of network facilities as a key resource input in constructing their VANS offerings. VANS represent a wholesale business for incumbent operators.

The classification of telecom services called VANS was established to differentiate between the provision of the basic public voice services and specialised services that are not offered to the general public, and which frequently include data and other non-voice specifications. In every case, including South Africa, the purpose has been to create special conditions that will define a step in the direction of liberalising markets for all services in the telecom industry. At the beginning of the process, there is typically a national telecom monopoly (e.g., Telkom). At the end of the process, full market liberalisation is foreseen, in the sense that no monopoly markets will be reserved by law, and legal barriers to entry that restrict competition will have been removed. The interim period is one of gradual market liberalisation. For example, South Africa established a policy of "managed liberalisation" in the sector in 1997, anticipating that after completion of five years of limited legal protection for Telkom in the provision of certain facilities and services, this period of protection would end, and greatly increased competition would be permitted from May 2002.

In many countries, VANS providers have been able to manage the communication capacity they lease from the incumbent telecom operator in any way they choose, in order to provide any form of communication service, including voice. In other countries, the provision of all voice communication has been reserved to the incumbent operator for a period, and VANS have been restricted to the provision of data services and value-added network management functions. In the most restrictive cases, a few countries, such as South Africa, have required that, in addition, VANS must lease their network facilities from the incumbent operator for a period.

But as the convergence of information and communication technologies has progressed, these restrictions on VANS have proven to be self-defeating, as they prevent the provision of converged voice and non-voice communication signals in the same service. Given that converged services are essential for the provision of e-services of all kinds, such restrictions have been major barriers to the development of essential VANS and the general e-economy.

4. VANS in South Africa in 2003

4.1 Information Society Policy Support

The effective application of information and communication technologies (ICT) is by now widely recognised as the foundation for 21st Century e-economies. South African President Thabo Mbeki identified this as early as 1995 when, as Deputy-President, he hosted the first G7 meeting in the South on the "Information Society and Development." Subsequently, President Mbeki has established both a Presidential National Commission, and an International Advisory Council, on the Information Society and Development, and has made ICT a key element in the continental platform of the New Partnership for Africa's Development (NEPAD). In his 2002 State of the Nation Address, President Mbeki emphasised that "a critical and pervasive element in economic development in the current age is the optimum utilisation of information and communications technology."

Several government departments have established ICT initiatives, including e-commerce and e-government promotion programmes, and the Department of Communications is currently leading

a process to develop new convergence legislation encompassing telecom, broadcasting and information technology.

The scope for application of e-economy services is determined in the first instance by the extent of the coverage of the telecom network. This is the information infrastructure. Obviously, the benefits from the e-economy can only be realised by those connected to the network. In most developed countries, the telecom network provides a virtually universal basic service, and the policy concern is focussed on extending broadband capacity universally. In developing countries, basic telephone network connections do not extend to the majority of the population.

South Africa is much better off than most developing countries in this respect, but still provides only about 10 lines per 100 people, and connects only about 30% of households on its fixed network. Large areas of the country, and many small and medium-sized businesses, remain vastly underserved. Mobile phone penetration is about triple that of fixed-line penetration, but most of it is pre-paid voice, and the nature of this mobile cellular technology -- and the costs associated with high-bandwidth usage of it -- inhibit its use for e-economy development in a significant way. For the immediate future, the great majority of South Africans will not be able to participate in the e-economy simply because they are not connected to the fixed telecom network. The government is currently engaged in a process of licensing a Second National Operator (SNO), as well a number of regional operators (Under-Serviced Area Licencees, or USALs), which have the potential to increase the currently diminishing number of subscribers on fixed networks, but this is likely to occur only incrementally as new entrants build their own networks and move off Telkom's. This dimension, however, is not the subject of this article, which is focussing on the development of the VANS sector -- the essential sector for e-services once organisations and individuals are connected to the network.

4.2 VANS Technological Development

Although Telkom's network may exclude most South Africans, for those it connects, it provides a technologically modern network, including the latest digital technologies. Its network is now entirely digitalised, and it is increasingly using Internet Protocol (IP) for its voice services. IP is generally regarded as the final step in the digitalisation of telecom networks and the provision of full-services convergence. It permits telecom operators to fully integrate their voice and non-voice services, and permits the transmission of voice services over the Internet.

In the United States, some new VANS are providing public voice telephony over the Internet using IP (Economist, 2003). In South Africa, Internet Service Providers (ISPs) are technologically capable of providing telephone calls over the Internet now. From a technological standpoint, full convergence has been achieved, and Telkom is at the forefront in implementing it. In fact, technologically, the classification of VANS is no longer relevant. On fully converged telecom networks, there are only services of different types. Any provider is capable of providing any combination of service characteristics in response to consumer demand.

4.3 South African Policy & Regulation of VANS

4.3.1 Early Policy Development

Unfortunately, the history of policy and regulation with respect to VANS development in South Africa has been characterised by ongoing disputes about the legal definition of VANS, and the extent of the restrictions on VANS development put in place in order to protect Telkom during the

period of transition to a fully liberalised market. The White Paper on Telecommunications Policy of 1996 sets out the policy framework for the telecom sector, within the context of the Reconstruction and Development Programme (RDP). It notes:

> "A new market structure is necessary for the telecommunications sector to orientate the sector towards accelerated development and universal service as well as take into account technological and international trends. The new market structure entails a period of exclusivity for Telkom, after which various telecommunications market segments will be liberalised in a phased process put into motion by the Regulator" (RSA, 1996a, pp 14-15).

The policy paradigm for South Africa's telecom reform involved three elements:

- Privatisation the incumbent monopoly public telecom operator (Telkom);
- Introduction of new entrants to compete in fixed and mobile services as well as value-added services (VANS); and
- Establishment of a regulator to oversee the introduction of competition.

The White Paper set up a balance between the exclusivity of Telkom and the phased liberalisation of the sector. Telkom had two conflicting requirements: to roll out the network and keep usage affordable, and to re-balance its tariffs in order to prepare for competition. To do this, bypass of Telkom's network and the re-sale of capacity were to be controlled, to prevent large-scale migration away from Telkom. Bypass of Telkom's networks by private networks was prohibited, and re-sale was to be permitted only in year four of Telkom's exclusivity period.

The White Paper recognised that the steps taken to protect Telkom against competition while it rolled out its advanced network could backfire:

> "For the most part this chapter on market structure displays a concern to protect Telkom's ability to carry out these central tasks. It is impossible at this time to know the extent and strength of competition Telkom will face after the period of exclusivity. If new entrants are likely to be cash-rich global operators like AT&T and BT, Telkom will indeed benefit from the time it is given to prepare for competition. However, we must articulate a concern on the other side, as well. There is a danger, ironically, that the plan succeeds too well, and Telkom during the period of exclusivity is able to position itself in such a way that it can impede competitive ventures. This has indeed been the case in many other countries, where a strong incumbent operator so dominates a liberalised market that the benefits of competition are few" (RSA, 1996a, s2.20, p 31).

Due to political concerns about maintaining flexibility in negotiating the sale of a privatisation stake in Telkom with prospective strategic equity partners, the Telecommunications Act was finalised without the proposed phased liberalisation timetable contained in the White Paper. All such prospective dates were left in the Act as subject to the discretion of the Minister. Public hearings were held and Telkom's PSTS, VANS and Frequency Spectrum licences were issued on 7 May 1997. At the same time, Telkom was partially privatised, with the sale of a 30% shareholding to the Thintana consortium -- made up of American firm SBC (18%) and Telekom Malaysia (12%) – and the incumbent was granted a five-year period of exclusivity, to end on 7 May 2002. The South African Telecommunications Regulatory Authority (SATRA) was established in February 1997, but it had no direct role in the finalisation of the Telkom licences, even though it was SATRA that would be required to regulate Telkom.

The key legal instruments for dealing with the disputes that subsequently arose were the

Telecommunications Act and Telkom's PSTS and VANS licences. No specific definitions of the different telecom services are offered in the Act. Telkom's PSTS and VANS licences, on the other hand, do offer definitions of PSTS and VANS, although both definitions are more of the nature of lists of types of services falling under each licence category, rather than generic definitions.

Telkom's PSTS licence does contain a number of conditions giving Telkom the right to contractually bind VANS providers -- under circumstances which are not identical to those set out in the Act. These conditions include a requirement for VANS to obtain telecom facilities from Telkom exclusively, and to not re-sell that capacity. The licence also stipulates that VANS may not offer voice services, because VANS services must have value-added components and must not in any way prompt or assist users to bypass the PSTS.

Similarly, Telkom's licence sets out a number of circumstances in which Telkom is not obliged to provide telecommunication services, and these particular provisions appear to contradict Telkom's obligations in the Act with respect to facilities leasing.

SATRA published interim guidelines for licensing VANS and private networks, but failed to complete its VANS regulation-making process.

Clearly, by international comparison, the South African exclusivity protections for Telkom, and the restrictions on VANS development, were at the extreme end of protectionism. The five-year transition period of protection was a common period adopted by many countries establishing their telecom reform programmes in the late 1990s. With experience on implementation, some later shortened the period, to take into account the rapidly changing technologies and growing integration of regional and global markets. None have extended the transition period.

4.3.2 Telkom's Interpretation of the Act

In May 1999, Telkom complained to SATRA, expressing concern that some VANS providers were offering services in violation of Telkom's exclusivity rights. SATRA, in its response, drew Telkom's attention to certain provisions of the White Paper. The relevant portion of s2.3 reads:

> "This means that in implementing the provisions of the new market structure, the Regulator should, when possible, try to move with the technology rather than against it. If the Regulator moves too far out of step with the opportunities created by technology, it may be difficult to enforce rules and may indirectly encourage extra-legal actions by parties within the sector. And without a combination of enforcement and voluntary compliance, the consensus will break down" (RSA 1996a, s2.3, p 22)

SATRA was in effect saying that perhaps the balance between exclusivity and liberalisation should be reviewed and adjusted, and that in a context of changing technology, voluntary compliance was likely to be more effective than enforcement. Telkom did not agree.

In July 1999, Telkom began sending letters to VANS providers insisting that they confirm that they were not using the facility capacity leased from Telkom for certain purposes that, in Telkom's view, would violate Telkom's exclusivity. Telkom set out several elements to its exclusivity claim, including:

- "no person may provide any telecommunication facility for conveyance of signals for itself or any other person except if the telecommunication facilities are for the exclusive use of the provider of the facilities on a single property";

- "facilities obtained from Telkom are to be for the exclusive use of the legal person who obtains those facilities";

- Telkom facilities may not be used "to provide a private network or private network facilities to any of your customers, whether to a single customer or in shared mode to more than one customer";

- Telkom facilities may not be used "for the conveyance of data signals between different premises of any single customer or to connect different customers to each other, other than through Telkom's public switched telecommunication network"; and

- Telkom facilities may not be used "to bypass Telkom's PSTN, i.e., to receive a data signal from a customer and allow that signal to break out of your private network at any place or point other than at the first point of entry to your private network";

Acceptance of these terms would virtually deny VANS operators any real opportunity to develop the VANS that are essential for e-economy services. The terms literally confine VANS operators to a small and insignificant portion of the market.

4.3.3 VANS Providers' Interpretation of the Act

VANS providers' interpretations of the Telecommunications Act were initially captured in a complaint against Telkom to SATRA in August 1999. In support of its charges that Telkom was acting anti-competitively by telling VANS customers that non-Telkom VANS providers were offering services illegally, and that Telkom was refusing to provide facilities to VANS providers unless they confirmed Telkom's interpretations of the Act regarding its exclusive rights to provide certain services, the South African VANS Association (SAVA) responded essentially as follows:

Clause 2.5 of Telkom's licence gives Telkom the right to contractually bind any VANS provider not to obtain facilities from anyone other than Telkom during its exclusivity period, not to resell capacity, and not to convey voice. Clause 3.1(e) contains Telkom's exclusive right to provide telecom facilities to VANS providers during the five-year exclusivity period. S40 of the Act contains the conditions under which VANS licensees may provide services. SAVA argues that "these clauses of Telkom's license are only enforceable to the extent that they are not ultra vires the Act. Clause 2.5 is ultra vires the Act to the extent that it permits Telkom to bind VANS licensees to restrictions beyond those found in the Act" (SAVA 1999a, p 4) "Clause 3.1(e) is ultra vires to the extent that it purports to fetter the discretion provided to the Minister in section 40(2) of the Act to set a date beyond which telecommunications facilities no longer have to be provided or made available by Telkom to VANS licensees" (SAVA 1999a, p 3). In other words, VANS providers can't bind themselves contractually to commit to obtain facilities from Telkom indefinitely, when the Act envisages a time to be specified by the Minister when this will no longer be the case.

In addition, SAVA argued that "the provisions in Telkom's licence do not provide Telkom with the requisite authority to refuse facilities for failure on the part of VANS licensees to submit to Telkom's interpretation." SAVA also wrote up a set of terms to which VANS providers would agree to bind themselves contractually in facilities leasing agreements (SAVA, 1999b, pp 15-16), and argued that requests for facilities could only be held to be unreasonable by the regulator (SATRA) if they were not technically feasible, or would not promote the increased public use of telecommunication services or the more efficient use of facilities. SAVA went on to provide a detailed deconstruction of each of the points Telkom requires in its letters to VANS providers, concluding that Telkom's

interpretations of the Act place restrictions on VANS licensees far greater than those provided in the Act (SAVA, 1999b).

4.3.4 SATRA's Interpretation of the Act

In its SAVA/Telkom s53 Determination, issued on 10 September 1999, SATRA found that Telkom had been intimidating VANS customers by telling them that VANS providers were acting illegally and that their future operations were uncertain. This created an undue preference for Telkom as a VANS provider, and an undue discrimination against other VANS providers. SATRA directed Telkom to refrain from intimidating VANS customers and to refrain from threatening to terminate the existing facilities of VANS providers.

In its judgement of 26 June 2000, SATRA ruled that section 44(2) of the Act provides for SATRA to be the only body that can consider whether a request for facilities is reasonable or not. Telkom cannot refuse to provide facilities simply on its own suspicion of illegality. SATRA wrote that such refusal would create a situation where Telkom as a competitor in the VANS industry "is given an unfettered discretion to assess and decide whether a request submitted by one of its own competitors is reasonable or not."

Unfortunately this did not settle the matter. Telkom took SATRA's judgment to court on review.

4.3.5 Following Notices & Guidelines, Rulings & Judgments

Among the guidelines that became subject to dispute were the interconnection and facilities leasing guidelines - including leasing fees and charges, quality of service, and delivery times - that SATRA was required to draw up as regulations in terms of section 43(3) of the Act. SATRA finalised the guidelines in 1999, and sent them to the Communications Minister for approval, as required by the Act. The Minister approved and published the guidelines in March 2000, but then arbitrarily withdrew them a month later by notice in the Government Gazette. During the course of 2000, the new regulator, ICASA, made certain decisions on a dispute over an interconnection agreement between mobile data provider Wireless Business Services (WBS) and Telkom, but Telkom took ICASA's decisions on judicial review. As part of the review, the Pretoria High Court ruled that the Minister did not have the power to make or un-make regulations in terms of the Act, and held that the regulator's facilities leasing guidelines were valid.

A related dispute concerned the boundary between Telkom's PSTS rights and the provision of Internet access. In 1997, Telkom made claims that its exclusivity gave it the sole right to provide access to the Internet, and that large first-tier Internet Service Providers (ISPs) were encroaching on its exclusive rights by providing Internet access to small second-tier ISPs. In October 1997, SATRA supported the ISPs' rights, making a pronouncement to the effect that "IP [Internet Protocol] is to be provided under a VANS licence under section 40 of the Act." Telkom challenged the legal validity of this pronouncement in court. The judge agreed that there were procedural problems with the way in which the pronouncement had been made. But, instead of simply setting the pronouncement aside, the judge wanted to hear the merits of the argument.

This case has subsequently not gone any further in the court. Internet service provision continues to be regulated as a VANS offering -- even though Telkom would like Internet access to fall within the boundaries of its PSTS, and the Internet Service Providers Association (ISPA) would prefer Internet service provision to be deregulated, with only Internet access providers needing to be licensed.

When the Independent Broadcasting Authority (IBA) and SATRA merged to form ICASA in July 2000, ICASA continued with the VANS regulation-making process begun by SATRA. On 1 June 2001, ICASA released it findings on the VANS Regulatory Framework, and forwarded a new VANS definition to the Minister for inclusion in the proposed Telecommunications Amendment Bill. ICASA also sent a set of VANS licensing regulations to the Minister, which were finally approved in 2003.

With respect to a debate about a new sub-classification of service, Virtual Private Networks (VPNs), ICASA found that a VPN is "manifested as desirable service characteristics resulting from software-based technological intervention in the management, configuration and operation of a VANS, which is a legal service in terms of section 40 of the Act" (ICASA, 2001). In other words, a VPN represents an advance in technology made possible by the introduction of digital packet-switching, which makes use of computers to configure and organise traffic over a telecom network and adds value in various ways, such as providing increased privacy, security, redundancy and reliability to data travelling over a complex array of electronic networks. This has value for a range of businesses in the national and global economy, such as banks, airlines, hotels and any commercial enterprise operating across cities and countries in the global market.

When the Telecommunications Amendment Bill was released for comment later in 2001, it contained Telkom's definition of a VPN, which clearly stated it was not a VANS offering. So the stage was set for a battle in Parliament, before the Portfolio Committee on Communications, over the provisions of the Telecommunications Amendment Bill affecting the VANS industry. Representatives of the VANS industry reached a conclusion that cumulatively the combination of amendments contained in the Bill regarding the VANS industry would amount to the expropriation of their property, in violation both of the South African Constitution and the South African Government's World Trade Organisation (WTO) obligations. The VANS industry further indicated that it would take the Bill on review to the Constitutional Court if the Bill were passed without changes to the disputed provisions. It was in this context that concessions were made to the Bill. Truncated versions of ICASA's VANS definition were included.

But the controversy over interpretation of the boundaries of a VANS licence continued. Telkom withheld facilities from US operator AT&T for provision of VANS services in South Africa. In June 2002, ICASA ruled that Telkom had acted illegally by unilaterally withholding facilities from AT&T. This Telkom/AT&T ruling by ICASA is now subject to judicial review, on appeal by Telkom.

In its pronouncement on the Internet and its VPN enquiry findings, ICASA also found that new technological developments, which were not fully crystallised at the time of the introduction of the Act in 1996 -- such as Internet Protocol and Virtual Private Networks -- are to be regulated as VANS.

4.3.6 Analysis

Telkom has sought, during the period of transition to a liberalised market, to interpret the boundary of its exclusivity as broadly as possible. This was most evident in its attempt to extend its PSTS rights to include Internet access provision. If SATRA had agreed to Telkom's interpretation of its exclusive rights regarding the Internet, competition in the Internet component of the VANS sector would have been substantially reduced. If ICASA had agreed with Telkom's views on VPNs, competition in the VANS sector would have been eliminated.

However, the architecture of the Telecommunications Act, and the telecommunications policy underlying it, provided both for the regulation of a monopoly PSTS provider and for the regulation

of a competitive VANS industry. This architecture recognised that technological development in telecom was in a dynamic phase of innovation, and that boundaries could not be set in stone at an arbitrary point in time. The list of VANS activities permitted under the Act in section 40 was not a closed set – it could be added to as technological developments required. Both the White Paper and the Act specified that the regulator should perform this updating role, as an impartial arbiter. Innovation was recognised as an important factor for growth in the telecom sector, and this is what Telkom, as a monopoly, has attempted to stifle at every turn.

VPNs are an innovation brought about by sophisticated utilisation of digitalisation and packet-switched technology. They enable certain data functions crucial to business efficiency to be undertaken at enhanced levels of privacy, security, redundancy and reliability. This form of innovation adds value to business in an era of globalisation, by enabling enterprises to manipulate data flows more effectively and more quickly. This set of processes, in turn, adds value to the South African economy, by making the economy as a whole better able to compete in the global economy. By using its monopoly power illegally, Telkom has sought to retard the growth of the VANS and Internet sector, and to interfere with the effectiveness of South African business, which requires the best value-added electronic data services, nationally and across the world.

Various reasons can be advanced for the failure of the regulator or the Government to rein Telkom in and curb its illegal withholding of facilities from VANS providers. One can point to the inexperience of a new regulator in a sector that had previously been regulated by Telkom. One can point to a conflict of interest at the level of Government, where the Minister of Communications was simultaneously responsible for Government's shareholding in Telkom and for the policy and legislation governing the sector as a whole. One can point to the shortcomings of the dual regulatory system -- in which the Minister must approve the regulator's regulations -- as a factor disrupting the regulation of the sector, as evidenced by the case of SATRA's facilities leasing guidelines. Whatever the reasons, it appears that Telkom has been able to exercise its dominance of the market unchecked.

4.4 South African VANS Market Structure

4.4.1 Competition Commission Disputes

More recently, the disputes between the VANS sector and Telkom have been extended to the South African Competition Commission. Unable to get effective redress through the sector regulator, SAVA has taken its concerns about Telkom's anti-competitive behaviour to the Commission, in essence claiming that competition, innovation and market development are being uneconomically and unfairly constrained by Telkom's monopoly power.

The SAVA complaint with the Commission was filed on 7 May 2002, to coincide with the expiration of Telkom's five-year exclusivity period. The complaint relates to Telkom's alleged refusal to provide telecommunications facilities to VANS providers; to provide access facilities to VANS customers; and to peer with those offering Internet services. SAVA also alleges that Telkom has discriminated against certain VANS providers in the pricing of leased lines, and has both bundled and cross-subsidised its competitive and monopoly services. Telkom has denied these allegations and contested the relief measures sought by SAVA, which include the unbundling of Telkom's competitive services and even Telkom divestiture of its VANS services.

SAVA argues that the alleged anti-competitive acts emanate from Telkom's position as both a monopoly supplier of PSTS and a competitive supplier of VANS. Telkom has a monopoly in the

upstream network facilities market and is a competitor in the downstream VANS market, allowing it to use its monopoly power in the one market to restrict opportunities for independent VANS operators to provide service in the other.

4.4.2 Analysis

In competition law terms, the relevant markets in which Telkom and the VANS providers operate are somewhat unique, in that they are defined primarily by telecommunication law and government policy. The ongoing disputes of the past five years have been, in significant part, over how the market is to be defined. The VANS providers see a large market; Telkom sees a much smaller one.

Up until now, in the absence of a Second National Operator (SNO), Telkom has been the only operator licenced to provide the network facilities that must be used for the communication component (i.e., the conveyance of communication) of all services -- basic voice services on the public switched network and all VANS. Telkom has also been the only licensed provider of basic public voice services, while at the same time having a VANS licence. The essential primary resource input for the provision of VANS is the basic communication facilities that must be obtained from Telkom, and this input typically represents more than half the total cost of a VANS offering. The supply of telecom network facilities to provide communication capacity is the upstream market. There is no dispute about the fact that Telkom has had a monopoly over facilities that are essential for the provision of VANS. Licences to operate VANS must be obtained from the regulator, and they cover the provision of VANS in the national market. There are several hundred firms with VANS licenses, including Telkom. They compete for the national business of providing large and small organisations with managed data networks and related e-economy services; providing organisations and individuals with Internet services; and providing other value-added network services. This is the downstream market.

Section 40(3a) of the Telecommunications Act prohibits the carrying of voice through VANS: “No person who provides a value-added network service shall permit that service to be used for the carrying of voice until a date to be fixed by the Minister by notice in the Gazette.” This prohibition is extended to Telkom’s VANS subsidiaries. The disputes between the VANS providers and Telkom relate principally to the boundaries of the VANS market, the classification of VANS business, and Telkom’s exercise of monopoly power in the upstream essential facilities market to foreclose market opportunities from competitors in the downstream VANS market. This makes the measurement of the size of the VANS market, and of market shares, a matter of dispute. The question then arises as to whether Telkom has a dominant share of the market. If the data-service revenues that Telkom classifies among its monopoly PSTS offerings (which would be classified as VANS if provided by other operators) are included in the total, then Telkom’s VANS market share constitutes around 60%. The entire VANS market is actually a wholesale market for Telkom, though Telkom clearly does not see it as a market to be cultivated.

The disputes are aggravated by the fact that, with modern telecommunication technologies, Telkom is able to provide VANS data services through either its VANS offerings or as part of its monopoly public network services. Similarly, the technologies (mostly software) used by VANS providers to create the “value-added” components of their services could also be used to include basic communication capability, and even voice services. The technologies associated with digital networks and converged telecommunication services have made the distinction between PSTS and VANS entirely artificial, imposing technologically obsolete and economically inefficient restrictions on all service providers and customers.

5. Conclusions

It does not really matter where one stands on all of the disputes that have plagued South African VANS development over the last five years. South African e-economy and information society development have suffered immensely, and the ongoing disputes are now entirely pointless. Technological advances have obliterated the technical distinctions on which the VANS definition was established. The period for policy and regulatory application of the VANS distinctions was completed on 7 May 2002. Consumers, and any economic definition of the market, draw no distinctions between VANS and other kinds of communication services.

This paper should be about a sad history that is now thankfully behind South Africa. But it isn’t. The aggressive application of the monopoly power of Telkom was not terminated on 7 May 2002. Telkom continues to dispute attempts by ICASA to regulate it, attempts by the VANS sector to exploit the sector’s dynamic innovative potential, and attempts by policy makers to restrain Telkom’s immense economic and political power. This pathology of conflict has put the sector in gridlock with respect to the long-term goals of e-economy and information society development.

The solution to the vicious cycle created by the ongoing disputes between Telkom and the VANS industry is one that can only be addressed at the level of policy. The solution must include a clarified telecom policy for a converged communication environment that strengthens the powers of the regulator significantly, and/or action by the Competition Tribunal to neutralise Telkom’s anti-competitive activities. For a start, now that Telkom’s period of exclusivity has expired, it is appropriate that the following restrictions on the VANS market – as structured in section 40 of the Telecommunications Act -- be removed:

- The section 40(2) provision that VANS must obtain their telecommunications facilities from Telkom -- and the Second National Operator (SNO) -- until a date to be fixed by the Minister by notice in the Government Gazette;
- The section 40(3) provision that no person who provides a VANS shall permit that service to be used for the carrying of voice until a date to be set by the Minister by notice in the Government Gazette;
- The section 40(4) provision that VANS providers may not re-sell leased facilities to third parties until a date to be fixed by the Minister by notice in the Government Gazette.

These restrictions can all be lifted immediately by the stroke of the Minister’s pen.

In a converged communication environment, a dynamic VANS market will be stimulated if a clear distinction is drawn between the provision of facilities and services. Telkom must be forced to make this separation in a transparent manner that can be monitored by an effective regulator. This separation could be included in the forthcoming convergence legislation, or it could be mandated by the Competition Tribunal, or both. Surely now is the time for South Africa to create a significantly expanded VANS sector -- a sector that can innovate the foundation services needed for South Africa’s e-economy and information society.

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