This definition thus goes much further than even the new Electronic Communications Act.[38] It distinguishes not only between the services that are converging but also includes the carrier technologies, the content providers and the law-makers (and their laws) in the stream of convergence. Nonetheless, the authors refer to the three most important technologies in the South Africa context as follows: "Even though South Africa is still a developing country, it has well-developed information technology, telecommunications and broadcasting industries".[39] This means that even if the authors meant to confine themselves to the convergence of services, "publishing", which formed part of their wider definition of "convergence", has disappeared. All in all, one is probably justified in confining one's attention to the convergence of IT, telecommunications and broadcasting technologies.

The operative Act that tried most to make sense of all these converging technologies was the Telecommunications Act.[40] This Act also changed the name of the government department concerned from the "Department of Posts and Telecommunications" to the "Department of Communications". Section 3 specifically excluded broadcasting from the Act's ambit: "This Act shall not apply in relation to broadcasting, broadcasting signal distribution or broadcasting services frequency bands, except as provided for in sections 2(*r*) and 127 to 129". This exclusion simply refers to the amendment of certain sections in the Independent Broadcasting Authority Act.[41] Section 2(*r*), on the other hand, was quite fundamental to the promotion of convergence and stated that two of the objects of the Telecommunications Act were to "promote and facilitate convergence of telecommunication, broadcasting and information technology".

It seems clear therefore that South Africa has been placed firmly on a road of policy and legislation that will lead to increasing convergence. However, all new legislation relating to one of the three fields discussed above as "converging" should be monitored by parties interested in or affected by its implementation, however, to ensure adequate attention is given to the third area mentioned in section 2(*r*), namely "information technology".

2.4 The Internet

The Internet is a dynamic phenomenon, one of the most exciting and far-reaching developments in the (normally) fairly staid world of telecommunications. Not only has the Internet become an international publishing and research medium, it has also given rise to some fascinating legal problems for which no legal precedents have yet been set.

Originally developed by the United States Department of Defense as a highly decentralised "network of networks" that could not be knocked out by nuclear strikes, the Internet has become the meeting place of the world.[42] One should distinguish between the Internet as such, on the one hand, which describes the physical carrier

38 Act 36 of 2005.

39 Suping, Edmunson and Alberts "What is convergence?" 249.

40 Act 103 of 1996, repealed by the Electronic Communications Act 36 of 2005.

41 Act 153 of 1993.

42 See Van der Merwe *Computers and the Law* 2 ed xi ff.

network (the World Wide Web),[43] and electronic mail,[44] on the other, the latter being a messaging and storage system making use of the Internet as a carrier. This mail system involves the sending of messages from one computer to many by means of the Transfer Control Protocol/Internet Protocol.[45] The World Wide Web is made up of content programmed by means of the Hypertext Mark-up Language.[46] The web metaphor has also spawned related terms such as a "website", which may contain (few or many) "web pages", the whole of which is administered by a "web master".

The ECT Act[47] defines the Internet as "the interconnected system of networks that connects computers around the world using the TCP/IP and includes future versions thereof". Such a system of networks can be described as an "information system" or "a system for generating, sending, receiving, storing, displaying or otherwise processing data messages and includes the Internet".[48] "Information system services" are defined by the same section as including

> the provision of connections, the operation of facilities for information systems, the provision of access to information systems, the transmission or routing of data messages between or among points specified by a user and the processing and storage of data, at the individual request of the recipient of the service.

Aldaheff and Cohen[49] analyse the above definitions and concludes that Value-added Network Service (VANS) providers are, in fact, "information system service" providers and refers to them as such.

Technically it is of interest to note that the Internet makes use of a communications standard, which is also sometimes called a "protocol" or common language, known as the "transmission control protocol/Internet protocol", perhaps better known by its acronym as the "TCP/IP" protocol.

The Internet came to South Africa via the academic sector. Rhodes University in Grahamstown established the first overseas e-mail link,[50] which link was later expanded into the Internet.[51] At the same time, the South African Foundation for Research and Development[52] started a communications network between South African universities which was called "Uninet".

The present so-called "killer app"[53] of the Internet is probably e-mail, but "blogging"[54] and "surfing" from one flashy website to another are also very popular activities.

---

43 The brightly coloured interface on-screen, by means of which the network presents its content to the world.

44 E-mail.

45 TCP/IP.

46 HTML.

47 The Electronic Communications and Transactions Act 25 of 2002.

48 S 1 of the Electronic Communications and Transactions Act 25 of 2002.

49 "Functionality of value-added network service providers and their liability" 240.

50 This link was established in 1988 between the university and a private home in Portland, Oregon: see Buys (ed) *Cyberlaw@SA* 35.

51 Van der Merwe "South Africa" in Blanpain (ed) *Cyber Law* para. 10.

52 The FRD.

53 "Killer application", defined by one source as "an application that becomes so indispensable to the way people work that it creates a larger market for the operating systems and platforms for which it is available" (Pfaffenberger (ed) *Webster's New World Dictionary of Computer Terms* 308).

54 Writing a regular electronic opinion column to a volunteer audience.

To a lesser extent Internet users also make use of "mailing lists" (a type of subject-specific electronic debating society) and "Internet relay chat".[55] Recently excitement has been generated by the reality of voice telephony via the Internet which is regulated by the Voice Over Internet Protocol[56] dominated by a firm called Skype. Overseas Skype has been joined by a number of other VOIP providers, such as British Telecom, Vonage from the United States and Vanadoo of France. Locally iBurst is one of the latest service providers in this area,[57] competing with more established local services such as the local version of Skype and Broadband Talk, the latter service provided by MWEB.

Legislative notice has also been taken of the last-mentioned phenomenon by means of the ECT Act[58] which defines a "data message" so widely as to encompass the possibility of VOIP (as described above) in electronic commerce:

> "data message" means data generated, sent, received or stored by electronic means and includes:
> (*a*) voice, where the voice is used in an automated transaction; and
> (*b*) a stored record.

A lawyer can hardly write about the Internet without considering the legal position of Telkom and other Value-added Network Providers[59] in providing Internet services. Section 40 of the Telecommunications Act[60] gave Telkom the right to provide value-added network services which section 1 of the Act defined as follows:

> a telecommunication service provided by a person over a telecommunication facility, which facility has been obtained by that person in accordance with the provisions of section 40 (2) of the Act, to one or more customers of that person concurrently, during which value is added for the benefit of the customers, which may consist of –
> (*a*) any kind of technological intervention that would act on the content, format or protocol or similar aspects of the signals transmitted or received by the customer in order to provide those customers with additional, different or restructured information;
> (*b*) the provision of authorised access to, and interaction with, processes for storing and retrieval of text and data;
> (*c*) managed data network services.[61]

Even though Telkom had been a monopoly with regard to public switched telecommunications services,[62] the South African Telecommunications Regulatory Authority[63] decided in 1997 that the Internet is not such a service, but rather a VANS, and that therefore Telkom did not have a monopoly on the provision of Internet services. By means of the Independent Communications Authority of South Africa Act[64] the SATRA was amalgamated with the Independent Broadcasting Authority[65] to

55 IRC.
56 VOIP.
57 "Can iBurst compete with Skype?" www.itweb.co.za/sections (accessed 10 April 2007).
58 The Electronic Communications and Transactions Act 25 of 2002.
59 VANS.
60 Act 103 of 1996 (now repealed).
61 Definition of "value-added network service" was added by s 1(*p*) of Act 64 of 2001.
62 PSTS, by virtue of GN 768 in *Government Gazette* 17984 of 7 May 1997.
63 SATRA.
64 Act 13 of 2002.
65 IBA.

increase the degree of convergence with regard to media matters.[66] The ICASA, the newly formed amalgam, now controls the issue of electronic-communications licences with regard to the Internet. Owing to staffing problems at the time of writing[67], the ICASA has not yet fully carried out the leading role in telecommunications law it was supposed to have done. In fact, the telecommunications regulator has drawn severe criticism for failing to fulfil its mandate adequately, with 87% of respondents to an online poll rating its performance as "pathetic".[68] Whatever the reason, the Public Enterprises minister, Alec Irwin, has tried to fast-track the provision of broadband Internet access by means of a new company, Infraco.[69]

When dealing with the Electronic Communications Act later on[70] we will show exactly which services a licensee for electronic communications services may legally deliver. When dealing with the Electronic Communications and Transactions Act and the RIC Act,[71] the question of how far a licensee is restricted as far as content is concerned will be explored.

2.5 Telecommunications tools and standards

2.5.1 *Wired services*

Traditionally telecommunication has been carried out by means of the thousands of kilometres of telegraph wire mentioned previously.[72] Technological advancements have enabled telecommunications service providers to squeeze more and more data along the same wires, particularly the changing of the transmission signal from analogue to digital.

Thus Telkom has been offering digital data by means of an Integrated Services Digital Network[73] and by means of an Asymmetric Digital Subscriber Line.[74] Particularly the latter service is capable of impressive transmission speeds, which has led to heavy criticism of Telkom's still fairly monopolistic role in providing this type of service.[75] In this regard, the Internet Service Providers Association[76] has been very vocal. In its recent submission on this point to the Competition Commission, this organisation (which officially represents South African Internet service providers) asked the Commission to look into Telkom's "wholesale" ADSL pricing models and service provision.[77]

66 See para. 2.3 above.
67 February 2007.
68 "ICASA's performance pathetic" www.itweb.co.za/sections (accessed 1 February 2007).
69 By means of a Broadband Infraco Bill. See Ensor "Bid to bypass ICASA spurs legal morass" www.businessday.co.za (accessed 10 August 2007).
70 See para. 2.6 below.
71 The Regulation of Interception of Communications and Provision of Communication-Related Information Act 70 of 2002.
72 Para. 2.1 above.
73 ISDN.
74 ADSL.
75 See para. 2.2 above.
76 ISPA.
77 Credit for much of the material used in para. 2.5.1 must go to Bretton Vine's news service, which may be subscribed to at bretton@hivemind.net.