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Wireless Application Protocol (WAP)

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The convergence of Internet and wireless data technology has led to one of the most exciting Web developments of 2000: mobile Internet. On the end of the bandwidth spectrum opposite to broadband video/DVD, wireless application technology has an immense appeal in South Africa where bandwidth and network access pose a problem and the ratio of mobile phones to PCs is roughly 5:1. Given existing mobile phone networks and an estimated base of 5 million cellphone users, mobile Internet through cellphone access appears to be a growing option for corporate and casual Web users.

WAP is a set of application communication protocols that allows wireless and handheld communication devices (like cell phones, pagers and handheld PCs) to access Internet services and information, and Web sites to format content so that it can be read on these devices. WAP is designed to optimize Internet text data for delivery over limited-bandwidth wireless networks and onto small device screens. WAP clients are microbrowsers in mobile devices using a client/server protocol based on Internet protocols. WML (Wireless Markup Language) and WMLScript are application level protocols derived from HTML and Javascript. Transport layer protocols WSP, WTP WTLS and WDP specify telephonic session, transaction and security. WAP further specifies a WAP gateway or proxy server, which converts WAP requests into HTTP, forwards the request to the specified Web server and converts the response.

The gateway chosen will depend on the application. WAP protocol includes support for encryption to allow secure communications. However, security may be compromised within the actual gateway. Transactions requiring maximum security and control are achieved using a private gateway and encryption, as this appears to be the best option for banking and other confidential information, providing that the handset offers the option of multiple gateway configurations. Casual users accessing public non-confidential information may use the mobile phone operator's WAP gateway or portal sites' gateways with or without the option of encryption.

The applications of WAP are as varied as the imagination allows. The primary market targeted is the distributed workforce. WAP provides the option of accessing a corporation's own intranet, in particular constantly updated databases, from any location regardless of power or land-line phone availability. Mobile devices are particularly useful to business travelers or 'corporate road warriors' for mobile access to location-dependent applications such as direction software, dictionaries and weather reports, travel-focused information such as accommodation and on-line ticket reservations, and on-line trading information. Social and casual WAP applications range across e-mail, chat, games, gambling, entertainment reservations and news, with new services constantly being introduced.

The result has been a surge of WAP and WAP-related sites on the Web. WAP pages differ

from HTML pages in size - WAP pages are formatted to fit small screens and contain information in small cards which only display properly in a browser that can read them, and that cannot be displayed using an HTML browser. WAP pages also require search engines that have been designed for WAP format and that direct users to WAP pages only. However most WAP sites and search engines have companion Web pages that provide information and services. A number of Web sites are dedicated to WAP. Since new services are being introduced daily, we have attempted to select some key pages with particular interest to South African information managers.

A WAP demonstration of how WAP pages appear in a cellphone is available at Refnesdata (http://www.refnesdata.no/wap/wap_demo.asp). Quiz-demo is a simulation of WAP application at WAPnet (http://wapnet.com/). Phone simulators, which allow developers to view WAP pages using HTML browsers, are available on a number of sites, including Nokia (http://www.forum.nokia.com/developers/wap/wap/html) and Phone.com (http://www.phone.com/products/upsdk.html)

The Wireless Application Protocol (WAP) Forum (http://www.wapforum.org) is an open industry initiative founded in 1997 and consisting of leading telecommunications, IT and software companies that developed WAP protocol specifications. The site includes FAQs about WAP, as well as WAP White Papers and technical specifications.

Nokia South Africa (http://www.nokia.co.za/networks/wap)
Nokia WAP Developers forum in South Africa is a programme targeted at IT entrepreneurs interested in developing content for mobile terminals. The programme provides the Nokia WAP toolkit and training on successful registration.

African Cellular: Online Technology Guide (http://www.cellular.co.za)
WAP pages include an introduction to WAP tutorial, WAP software, technical details, directory of WAP sites and WAP portals, on-line WAP browser and news.

WAPHome (http://www.waphome.co.za)
is the South African WAP portal directory of South African WAP sites, listing categories and services for each site, as well as FAQs.

Anywhereyougo.com (http://anywhereyougo.com/ayg/ayg/wap)
gives information on WAP development tools, tutorial, news, developer directory, WAP sites and WAP resources.

RefnesData (http://www.refnesdata.no/wap)
is the site for WAP introduction, tutorial, links to WAP sites and resources and developer news.

Palo Pacific Technology WAP Resource Centre
(http://www.palopt.com/au/wap/portals.html)
gives an alphabetical listing of WAP portals, search engines and gateways. There is also a listing of WAP sites and parallel Web sites with brief descriptions.

Search Engine Watch WAP search Engines (http://searchenginewatch.com/links/Specialty_Search_Engines/WAP_Search_Engines)
lists WAP search engines and directories.

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