Wireless Application Protocol is the de facto worldwide standard for providing Internet communications and advanced services on digital mobile phones, pagers, personal digital assistants and other wireless devices.

WAP means freedom to the end user

WAP offers an easy-to-use and highly portable communications and information tool. Devices using WAP-based microbrowsers can access an array of innovative, value-added services including:

Enterprise Solutions	email	database access	inventory checking	
Entertainment	interactive gaming	gambling	multi-player events	
Financial Services	bill paying	funds transfer	stock trading	mortgage quotes
Location-Smart Services	directions	traffic reports	dining/event suggestions	
M-Care	customer service	payment status	feature changes	
M-Commerce	shopping	reservations	event tickets	e-wallet functions
Messaging	collaborative document management	chat	message boards	
Personal Info Mgmt.	view and update contact lists	tasks	events	appointments
Travel Services	reservations	ticket purchases	flight rescheduling	

About WAP

The Wireless Application Protocol (WAP) is an open, global specification that empowers users of digital mobile phones, pagers, personal digital assistants and other wireless devices to securely access and interact with Internet/intranet/extranet content, applications and services.

WAP delivers revenue opportunities for carriers
WAP opens a host of opportunities for carriers to generate on-going revenue streams, secure customer loyalty and develop unique services that will allow differentiation from the competition.

WAP offers a broad market for developers
One worldwide standard that is device-independent and bearer-independent assures developers of a broad, ever expanding market for content and applications.
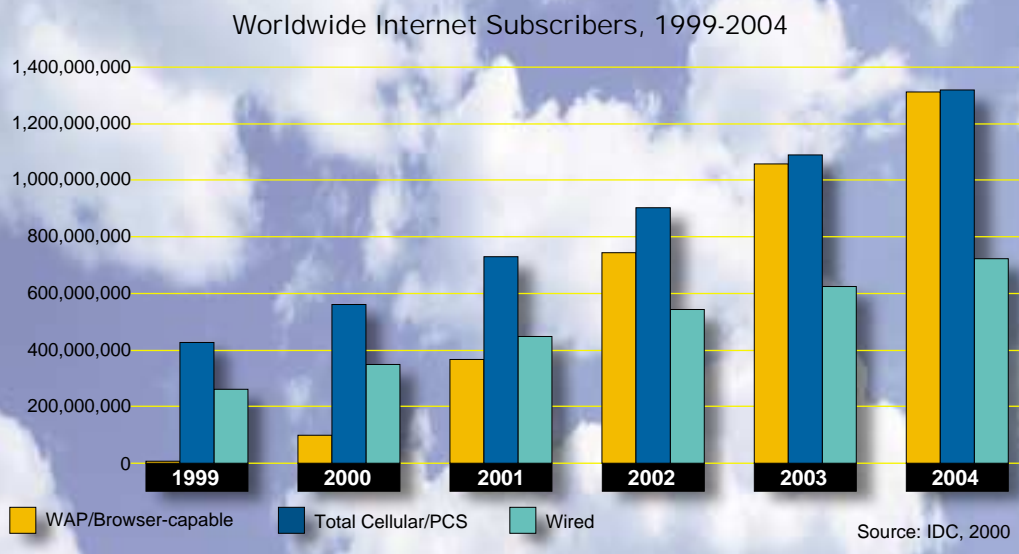
WAP means increased sales for device, infrastructure and gateway manufacturers
The increasing popularity of WAP will generate tremendous demand for new devices to accommodate WAP's capabilities, new infrastructure to handle the increased demands on operators' systems and more gateways to handle the information flow between Internet and wireless operator networks.

Worldwide Internet Subscribers, 1999-2004

Legend: WAP/Browser-capable | Total Cellular/PCS | Wired

Source: IDC, 2000

Industry Support

WAP is supported by the vast majority of network operators, Internet service providers, infrastructure manufacturers, wireless device vendors, and thousands of developers and content providers.

The WAP Forum™ works with other industry associations and standards bodies, including:

Internet/WWW:	**Telephony:**
IETF	ETSI
W3C	TIA
	UWCC
Telematics:	3GPP
AMIC	3GPP2

"The growth of the WAP Forum reflects the strength and momentum behind the Wireless Application Protocol itself. After just a short existence it already has the support of hundreds of the wireless and Internet industries' top companies—and thousands of the world's most talented developers.

WAP has quickly become the de facto standard for accessing the Internet through wireless devices, thanks to unique and useful applications and content, creative and attractive WAP-enabled wireless devices and robust, powerful infrastructure capabilities.

I invite you to learn more about the future of WAP and the WAP Forum by visiting our web site at www.wapforum.org."

Scott Goldman
CEO - WAP Forum Ltd.

The Future of WAP
WAP is poised to take advantage of future evolutions in wireless devices and networks. Increases in bandwidth, data speeds, processing power, screen sizes and other segments of wireless technology enable WAP to expand the richness of content it delivers. And by taking advantage of Internet standards such as XHTML and TCP/IP the WAP specification provides a long-term, durable platform for developers to build compelling applications for consumers and enterprise applications alike.
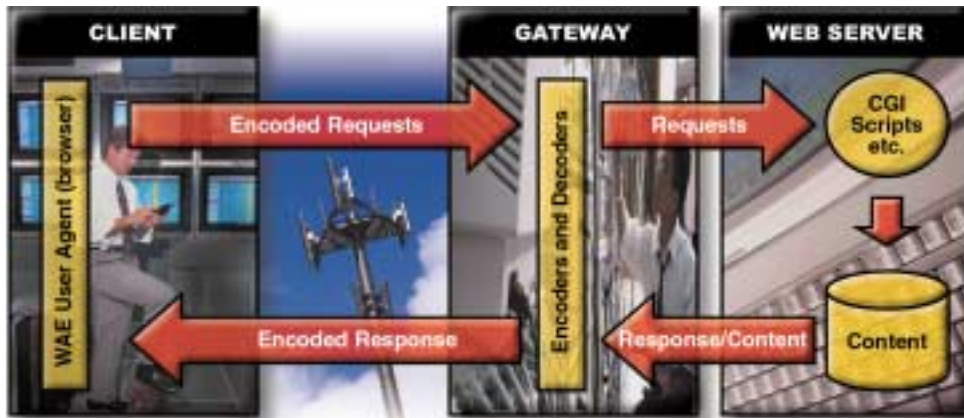
WAP Architecture

WAP is rapidly evolving to stay ahead of the market's demands. New features that capitalize on the latest devices and the most advanced network capabilities are incorporated into the specification well before they are commercially available.

The unique characteristics of wireless devices—one-finger navigation, smaller screens, limited RAM/ROM and the usefulness of location-based information—all demand a unique type of browser. Wireless Markup Language (WML)—the core markup language of WAP—is the foundation of a microbrowser specifically designed to capitalize on these unique factors.

The WAP system architecture is based on the WWW programming model, yet optimized to suit the characteristics of a mobile network. The figure below shows the WAP programming model.

In the WAP model, a facility called Gateway is placed at an access point to the Internet for a WAP Client. This Client typically has low CPU power, and a limited text display capability. Communication is enabled between the WAP-compliant protocol sets in the Gateway, and the existing Internet standard protocol sets in the fixed network Origin server. The Gateway converts the protocols and data formats between the Client and the Origin server.

WAP Programming Model

Furthermore, WML is based on the next-generation meta language of the Internet—XML. This assures WML—and WAP—of a place in the Internet going forward.

Spectrum is not now, nor will it ever be, free. As the expense of purchasing spectrum increases, and the need to manage it more efficiently rises accordingly, WAP will remain the premiere mechanism for extracting the most from the available spectrum.

WAP communication can be implemented practically over any data transport deployed in the operator's networks including TCP/IP, UDP/IP, GUTS (IS-135/6), SMS, or USSD.
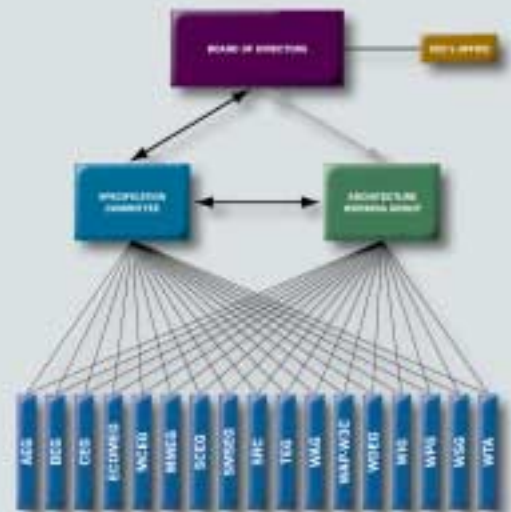
The Wireless Application Protocol has become the worldwide de facto standard, which facilitates the development of compelling applications while ensuring interoperability among a wide range of wireless devices, microbrowsers, and infrastructure.

WAP Certification

In March 2000 the WAP Forum launched the first independent, objective and confidential certification testing program for all components in the WAP chain. The testing, done in coordination with a third party testing facility, helps assure future interoperability of WAP-enabled products. Only those products that pass the certification testing process are permitted to use the official certification logo of the WAP Forum.

About the WAP Forum

The WAP Forum Ltd. was formed in December 1997. It is an industry association that continuously develops and promotes the de facto world standard for wireless information and telephony services on wireless devices. The charter of the WAP Forum is to bring together service providers, device and infrastructure manufacturers, Internet content providers and application developers in order to ensure interoperability and growth of wireless Internet-based services.

With active industry participation, the WAP Forum has delivered the continuously evolving Wireless Application Protocol, a set of standard specifications designed to run on top of the Internet protocol (IP) and other wireless network bearers. This vendor-neutral and network-independent open specification is the unified worldwide standard for providing Internet communications and advanced services on digital mobile phones, pagers, personal digital assistants and other wireless devices.

WAP Organization

The WAP Forum Board of Directors is an elected body consisting of a maximum of thirteen member company representatives. The current list of Board members is available at www.wapforum.org.

The CEO's office is comprised of the WAP Forum staff, including CEO, Director of Marketing Communications and Director of Operations. The list of WAP Forum staff members can be found at www.wapforum.org.

www.wapforum.org

About The WAP Forum (continued)

The WAP Forum is organized into specific teams responsible for various WAP-related issues.

■ **AEG** - Asian Expert Group contributes to the expansion of WAP in Asia and coordinates Asian-related activities including localization.

■ **ARCH** - Architecture Working Group oversees the architecture of the WAP specification, including evolution and consistency of the architecture.

■ **BEG** - Billing Expert Group addresses billing issues and contexts, charging data required, call models and relations to WAP-based e-commerce functions and interactions.

■ **CEG** - Carrier Expert Group brings to the WAP Forum operators' and carriers' contributions and requirements focused on market needs, and acts as a liaison with carrier groups in other industry initiatives.

■ **ECOMEG** - Electronic Commerce Expert Group addresses electronic commerce issues as they relate to WAP.

■ **MCEG** - Marketing and Communications Expert Group promotes WAP as a world standard, and discusses branding, promotion, PR and trademark elements and regional needs.

■ **MMEG** - Multimedia Expert Group focuses on defining requirements as an expert group and then works with the other groups to create solutions.

■ **SCEG** - Smart Card Expert Group works on smart card-related activities.

■ **SMSEG** - Short Message Service Expert Group offers discussion, oversight and guidance for groups developing WAP specifications or applications that use Short Message Service.

■ **SPEC** - Specification Committee manages the specification development process and day-to-day operations of the working groups.

■ **SRC** - Specification Requirements Committee is a discussion forum for new specification requests.

■ **TEG** - Telematics Expert Group defines, derives and analyzes use cases and requirements for telematics that place new requirements on WAP.

■ **WAG** - Wireless Applications Group, consisting of many drafting committees, is responsible for all specification work relating to the application space in WAP.

■ **WAP-W3C** - WAP-W3C Coordination Committee facilitates cooperation between the W3C and the WAP Forum.

■ **WDEG** - WAP Developers Expert Group provides information about the technical and business priorities, requirements and concerns of the WAP developer community.

■ **WIG** - WAP Interoperability Group deals with the technical aspects of the WAP certification program.

■ **WPG** - Wireless Protocols Group defines protocols related to unreliable and reliable data transfer between network entities. It consists of a number of subgroups and drafting committees.

■ **WSG** - WAP Security Working Group is responsible for drafting the WAP security specifications (WTLS, WIM, etc.) and reviewing the security aspects of other specifications.

■ **WTA** - Wireless Telephony Applications Working Group oversees discussion of architecture and interface specifications for the support of telephony services in WAP-enabled devices.

New working groups are added as necessary.

WAP Forum Membership

The WAP Forum is comprised of hundreds of members worldwide (visit www.wapforum.org for an up-to-date list of members), including the vast majority of device manufacturers, leading infrastructure providers, wireless and Internet service providers, software developers and other organizations providing solutions to the wireless industry. Membership in two categories - Full and Associate - is open to all industry participants.

Members of the WAP Forum can actively participate in developing and promoting the WAP specification by joining various Working Groups and by attending internal meetings of the WAP Forum. A variety of other membership benefits include access to the Members Only web site and mailing lists, opportunity to participate in trade shows, conferences and other events coordinated by the WAP Forum, access to discounted conference fees and free-of-charge WAP marketing materials, posting of WAP-related press releases on the WAP Forum's web site, and ample opportunity to network with other leading wireless and Internet companies globally.

For further details on the WAP Forum, its members and how to apply for membership, please visit the WAP Forum's web site at www.wapforum.org. The web site also includes a downloadable version of WAP specifications as well as other information on WAP.

www.wapforum.org