

## MOBILE BROWSING - Get Online with WAP, XHTML, or HTML

A mobile browser is simply any program that lets you access and read content on a network from a mobile device - usually the Internet or some other mobile network service. As more phones on the market boast high network connection speeds and color screens, mobile browsing is becoming more common (and a lot better-looking!)

Many new Nokia models come with an integrated XHTML or even HTML mobile browser, giving you the chance to surf without being chained to a desktop computer. Today's mobile browsers give you richer colors and faster browsing than the original mobile browsers, and most importantly, a way to access the Web at your fingertips. Considering the no-frills WAP sites that started off mobile browsing, the technology has come a long way.

### WAP and WML

**With the simplest (WAP) browser, you can:**

- check train timetables
- check in for a flight
- look up sports results
- purchase tickets online
- do your banking by mobile phone

Those are just a few examples. However, browsing with WAP gives you very small, simple pages that are written expressly for mobile devices.

### **WML: Wireless Markup Language**

WML (Wireless Markup Language) is what WAP pages are written in. It's based on XML (Extensible Markup Language) but, as the name suggests, it's designed with basic mobile devices in mind. Smaller screens, more limited colors, and slower connection speeds were all taken into account. All WAP pages are written in WML, and they look, well, pretty spartan. But that doesn't mean they're not useful, as millions of people prove every day by using WAP services.

### XHTML

**With an XHTML browser, you can:**

- Browse pages that are much closer to the look and feel of the traditional Internet, but optimized for mobile devices
- Check tonight's schedule at your local movie theater, and perhaps even reserve tickets
- Shop online, download games and video clips, post in forums, or just surf on compatible web pages.

## **XHTML: A Better All-Around Markup Language**

There are many reasons why XHTML (Extensible Hypertext Markup Language) is gaining ground: it incorporates HTML but is actually based on XML, so it's more flexible and it's still relatively easy to learn. But the most important thing is that it helps make pages look consistent on a maximum number of browsers and devices - like a PC and mobile phone. This is why standards bodies such as W3C (World Wide Web Consortium) and OMA (Open Mobile Alliance) have chosen XHTML as the next standard markup language for both fixed Internet development as well as for mobile service pages.

There's even a version that's optimized for mobile devices: XHTML MP (Mobile Profile), which is basically the same as XHTML, but it leaves out the tags that wouldn't make sense on a device with a smaller screen.

## **HTML**

### **The Internet as You Already Know It**

Today many Nokia handsets come with a browser that is not only able to read WAP and XHTML pages, but also standard Web pages written in HTML. You've probably at least heard of HTML (Hypertext Markup Language) - it's what traditional web pages are written in.

Of course, there are ups and downs to mobile browsing. The small screen can limit the browsing experience, and mobile data connection speeds aren't yet comparable to browsing in fixed data networks. The speed of the network really comes in to play when the page you're requesting is large (i.e. it has a lot of images or other files). The upside is the fantastic convenience of mobility: when your phone's equipped with an HTML browser, you can access most Web pages.

### **Changing the Protocol**

With the introduction of XHTML browsers on mobile phones, it was necessary to change the data transfer protocol. "Protocol" simply means a communication language; if two devices use the same protocol, they can send commands to each other. WAP uses a specific protocol called WAP Stack, whereas XHTML and HTML browsers use TCP/IP (Transmission Control Protocol/Internet Protocol). You may have heard of TCP/IP before: it's the same protocol that your PC uses to access the Internet, and that's one reason why your mobile phone and PC can read the same web pages.

## What a Good Mobile Browser Should Do?

The capability is there, so mobile browsers should live up to the possibilities. HTTP, CSS (Cascading Style Sheets, used to define the look and feel of a site), SSL (Secure Sockets Layer, for more secure browsing including shopping), and JavaScript are some of the commonly supported technologies.

In addition, the following may make mobile browsers more useful:

- Multiple Content Types: browsers should read current (and sometimes legacy) versions of HTML, XHTML MP, WAP CSS, WML, WMLScript, and ECMAScript MP
- Plug-In support: download plug-ins for viewing different content types
- HTTP File Upload: upload images from your phone's local file directory to a web server, for example.
- Multiple Content Rendering Options: a good browser will render pages nicely for the small screen, using incremental page rendering (so you don't have to wait for the whole page to load before you see anything), and allow the options of narrow or wide layout (so you can choose if you scroll sideways or not).

Many other features may be added to mobile browsers to make them more like standard Internet interfaces: bookmarks, download progress indicators, URL auto complete... the list goes on. As 3G technologies make data transfer faster, as an increasing number of websites write their pages in XHTML and take mobile Internet access into account, and as mobile screens get more sophisticated, maybe you won't be surprised to find yourself one day using your phone to access the Internet, and not thinking twice about it.

## How Mobile Browsing Works

In order to browse with a mobile phone, you need to have a phone with a browser (either one that's built in or downloaded), a subscription from your network operator to a data service (GSM data, GPRS, EDGE, WCDMA, etc), and the correct settings on your phone. Then it's up to other companies and individuals to build the sites and services you can browse.