

t 020 7613 1053  
f 020 7613 1953  
e [contact@exponetic.com](mailto:contact@exponetic.com)  
w [www.exponetic.com](http://www.exponetic.com)



# Wap/WML Article for Digital TV Strategies

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Exponetic White Paper

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Registered Office: 83 Cambridge Street, Pimlico, London SW1V 4PS

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## Introduction

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Wap, or Wireless Application Protocol, is commonly associated with the functionality intended to allow users to access internet-based services from a hand-held mobile device such as a phone or a PDA. This technology, or rather the services which have been created to utilise it, have generally not proved popular with consumers. The promise of internet-on-the-move is yet to materialise therefore the time invested by many developers in learning the new technology and the financial investment by businesses in infrastructure is largely going to waste.

With new developments in interactive television the skills and experience that have been built up may have a new application. Since mid 2001 it has been possible to develop interactive television services for the Sky Interactive digital television platform using programming languages based on Wap protocols and standards. There are differences between television and the original mobile standards and the new system has been named WapTV. After the lack of success of Wap in its original incarnation it is reasonable to be sceptical of the benefits that applying it to a new environment might bring. To be able to assess whether businesses should be producing WapTV services we need to examine the implications of working with the system, how this benefits businesses, and ways in which it can be used to create useful services for consumers. So, what does developing in WapTV involve and what are the advantages?

The principles behind WapTV are very similar to conventional Wap and mobile telephone technology. This includes the use of WML (Wireless Markup Language) language to construct and deliver content. Before WapTV was developed much of the work on interactive television was undertaken on proprietary systems which required specific developer training and involved steep learning curves. The significant costs incurred in setting up a development environment meant that many companies could not afford the investment required to get onto the first rung of the ladder. The software and hardware set-up required knowledge of low-level technical languages and meant that experienced developers were in short supply. As the new language, which has been christened WTVML, is based on existing markup

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conventions the time it takes to learn the basics of the platform is much reduced. Even if a developer has not used WML before but instead has familiarity with HTML they are able to start working in WTVML with little more than a brief introduction to the system and access to the reference documentation.

One of the main differences between WML and HTML is the transmission of data from provider to client (in this case satellite or server to set-top-box) in grouped packets of information compressed to minimise the bandwidth they require. In practice this means that groups of pages can be sent to the client device by a single request. With a small enough service it is possible to transmit all of the data required in one transmission which minimises subsequent response times. In a larger service with higher levels of interactivity it is possible to design the system so that downloads occur in a managed way based on predicted user journeys.

One of the shortfalls of Wap services on mobile phones is that information is either as lists of links or short paragraphs of text. WML itself does not offer extensive opportunities for presentation so WTVML has been developed to consist of a superset of WML – in effect nearstandard

WML with additional tags for formatting. A layer of XML controls high-level page layout. This allows services to be built which visually have more in common with the web than mobile devices. The separation of style and content and the concise nature of WML means the effect is achieved with significantly less data being transmitted than the equivalent web page would require.

The medium by which information is carried has also been developed to be compatible with web technologies. Content can be transmitted to a set-top box in two ways: either broadcast from a satellite or via a phone line into the built-in modem, a channel which is known as the return-path. In practice there are few differences in the WML code required for satellite or return path transmission and it is common for services to consist of a mixture of both. It also means that it is possible for a service to reside entirely in the return-path during development and relevant sections moved to the more expensive satellite broadcast space when the project is closer to being launched.

The medium of transmission from server to set-top box via the return path is the internet. This means that conventional web servers can be used to serve content both during development

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and for live services. This sharing of infrastructure between web and iDTV is an obvious advantage and removes a significant barrier to entry. This also extends to content itself: with server-side programming it is possible to access the same content, databases and even business processes. As well as sharing text and image content the internet-based nature of the technology means that developers are able to work on iDTV projects in much the same way as they would for the web.

This benefits the end user in various ways. Firstly, the greater ease of development and reuse of existing systems reduces the cost of entry and hence should promote development of a greater number of new services. Secondly, the ability to create integrated systems allows up-to-date information to be published onto the iDTV channel. This could be information requests, communication with service providers, ordering and booking facilities or real-time information. There is also the ability to develop systems that share log-in and user information across platforms giving the user a choice of channels with which to interact with the service provider.

The WapTV content delivery system is modelled on the same browser-based ideas which are used to access marked-up content on most other devices. The basis of this is the Microbrowser. This contrasts with it's predecessor which relied on each service being individually compiled into an application for delivery to the set-top client. Because of this output services were more of the form of prototypes with little scope for sharing development between projects or carrying over specific code from one project to the next.

The advantages for businesses are again related to speed of production. Since the essential functions of highlighting, moving from page to page etc are already provided, developers are able to concentrate on the content to be rendered without the worry of how the on-screen rendering itself will occur. For the end user this creates services which are faster to download, through the thin-client approach, and faster to use as only small WML packets need to be transmitted when moving between sections.

This also promotes consistency between content provider services. Although the formatting options provided by the browser are quite extensive the fundamental building blocks such as selectable buttons and pop-up navigation panes mean that there is a palette of mechanisms which users become accustomed to interacting with. In an analogous way to web pages and common metaphors of underlined links, graphical buttons and form fields, the opportunities

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for customisation and layout ensure that services can be designed to be visually distinctive without creating an over-proliferation of user interface concepts.

The similarity of the WapTV system to proven web technologies and methodologies means that, in general, developers, businesses and users are able to start working with and using the system in a very short space of time. The application of Wap technology to the digital television environment appears to be well chosen. The benefits of optimisation for wireless transmission coupled with established technology standards and platform-specific enhancements should ensure that a range of services which are of real benefit to end users can start to be developed. The first incarnation of Wap may not have offered sufficiently useful applications to justify the investment it absorbed but, given the advantages detailed here, it seems that WapTV may provide a suitable home.

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## Contact details

For more information on the contents of this document, contact:

Karl Bunyan  
Exponetic Ltd  
5/51 Derbyshire Street  
Bethnal Green  
London  
E2 6JQ

Tel: 020 7613 1053

e. [contact@exponetic.com](mailto:contact@exponetic.com)