



# A Research Paper on “WIRELESS APPLICATION PROTOCOL”

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## ABSTRACT

In this study, the entire discussion is regarding Wireless Application Protocol” (WAP). It has evaluated significance of WAP in terms of improving communication procedure through messages, email or text. It has developed a comparative analysis by outlining key features and functions of IP and WAP. The study created key themes based on theoretical data, gathered from secondary research method. The report concluded by analyzing data through highlighting advantages and disadvantages, as well as practical implementing of WAP.

**Key words:** *Wireless Application Protocol, communication protocol, Internet Protocol, Mark-up Language*

## Introduction

“*Wireless Application Protocol*” (WAP) enables wireless devices like mobile phones for accessing the internet or data, and it is accessible for micro-browsers. WAP uses “Wireless Mark-up Language (WML)”, and it was founded by Motorola, Nokia, Ericson and other “Unwired planet” for enhancing wireless technologies in 1998. This study introduces the process of working of WAP and its advantages-disadvantages in regular life. This report also highlights application areas of WAP

and compares it with Internet protocol. This study conducts secondary methodologies by going through research papers. This study evaluates several techniques, which are used in WAP and features of WAP.

## Literature review

### Concepts of Wireless Application Protocol

Wireless Application Protocol based on the Worldwide Web with similar functioning that uses “Mark-up Language” (WML)” defined as “XML 1.0 application”. This model consists of three

levels such as "Client, Gateway and Origin server" [2]. This protocol includes five different layers like "Application Layer, Session Layer, Transaction layer, Security layer and Transport Layer" to specify proper data transmission.

### **Advantages and drawbacks of Wireless Application Protocol**

WAP is "fast-paced technology" and easy to use as business processes do not stifle in a limited area because of wireless routers' connectivity. In this way, several devices can be accessed in same area without facing any problems of connectivity. It reduces cost, as cabling does not need to connect every device separately [1]. Project installation cost is also not so expensive due to less use of cables. However, it allows more computers, printers, mobiles and laptops to connect in one device, and it welcomes visitors by providing opportunities for accessing internet or Email to connect with any devices without any physical connection.

In contrast, sometimes WAP connection speed is slow, and it creates problems like delay to user. It is not perfectly secured, and collection ability is sparse due to the unavailability of the internet. Initial cost of WAP with perfect keyboard and decent display is expensive [2]. This model is not familiar to users as it lacks patience while typing, connecting, or downloading.

### **Implication areas of WAP**

WAP is used in mobile commerce applications while transferring funds for goods and services. Other mobile applications like games or ringtones use WAP for better experiencing and downloading it to customers. WAP is also accessible in Unified Messaging App that shows a short message

including types of indication of new messages. WAP provides information to customers about personal account information that is beneficial for avoiding voice calls [3]. WAP is implemented in Email services to notify users about new incoming Email, including sender's details and subject field. WAP can be used in all kinds of information and reminder applications like appointment reminders to notify users.

### **Methodology**

Secondary research methodology has been conducted in this study to gather theoretical data about WAP [8]. This methodology helped this study to gather adequate information like advantages and drawbacks of WAP to show theoretical evidence for supporting literature review. Collected data will be analyzed by using thematic analysis methods. This research study evaluates "Cluster-based routing protocol in wireless sensor networks" and "Audio-Video testing" fundamentals. This study gathers different information like "An interoperability testing approach to wireless application protocols" and "micro-computed methodology" to support data on literature review. By going through secondary research, multiple techniques of WAP are highlighted, such as it handles "High Latency", "Small Displays", "limited input facilities", and "Less stable connection" [4]. This methodology helped to compare Wireless application Protocol with Internet Protocol and identify WAP Architecture. This data is gathered from several websites and WebPages to conduct this study. The selected methodology enables this study to understand fundamental principles of "Wireless

Application Protocol" by highlighting suitable areas.

## Data Analysis

Thematic data analysis has been conducted to support relevant data gathered in secondary research methods. The following themes are based on best knowledge and understanding of WAP, as well as its components and Internet Protocol, which highlighted in literature review or theoretical data:

### *Theme 1: WAP is different from IP in terms of accessing relevant data*

WAP possesses significant aspects for accessing simple yet effective advanced communication processes. By going through this study, it evaluates that WAP uses mini browsers applications such as opera mini, whereas IP uses significant file browsers like Internet Explorer [5]. WAP can be accessed without an Internet connection from any place, while IP cannot be accessed without an Internet connection. This study determines IP settings that have to change in case of change in place, while it is not required in WAP. Some IP using protocols are UDP or TCP, and WAP using protocols are "WP-HTTP". IP is used to connect modems and computers whereas; WAP is used on smart phones to show web pages [6]. This study determined that IP devices are more powerful, have more memory capacity and a larger display than WAP devices, while latency of WAP is more than IP devices.

### *Theme 2: WAP Gateway is significant to convert IP or TCP protocols*

This research report highlights that WAP enables translation of data "HTML to WML". WAP acts as client and server to make requests for other clients.

It allows to "handle incoming requests from WAP" mobile phones, and it helps to understand transaction security [7]. It is evident that WAP is unable to link "directly from WAP devices to web servers". WAP uses "Wireless Mark-up Language" (WML), called DECKS that are built as a "set of CARDS". WML Script is derived from JavaScript, and this language includes procedural loops, logic, and small memory optimization [9]. The secondary research method identified that this script combined with WML for reducing network traffic and extension powerful mechanisms.

## Conclusion

The study concludes that WAP becomes a solid and effective communication protocol during this advanced technological world. It has evaluated impacts of "Wireless Application Protocol" in regular life as well as its importance. This study discussed advantages and drawbacks of WAP and its application areas. By going through secondary research, this study also states light on comparison of WAP and IP and significance of WAP Gateway to convert IP protocols to reduce traffic and make it practical for users. This study is also beneficial for avoiding voice calls to collect user's information and effective Email services.

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