WAP
Wireless Application Protocol

HISTORY

The wireless industry came up with the idea of WAP. The point of this standard was to show internet contents on wireless clients, like mobile phones.

WAP- Wireless Application Protocol

➢ Wireless Application Protocol commonly known as WAP is used to enable the access of internet in the mobile phones or PDAs.

➢ An open, global specification that empowers mobile users with wireless devices to easily access and interact with internet information and services instantly.

ABOUT WAP………

WAP stands for Wireless Application Protocol

➢ WAP is an application communication protocol
➢ WAP is used to access services and information
➢ WAP is for handheld devices such as mobile phones
➢ WAP enables the creating of web applications for mobile devices.
➢ WAP uses the mark-up language WML (not HTML) WML is defined as an XML 1.0 application

GOALS-

The basic *AIM* of WAP is to provide a web-like experience on small portable devices - like mobile phones and PDAs.
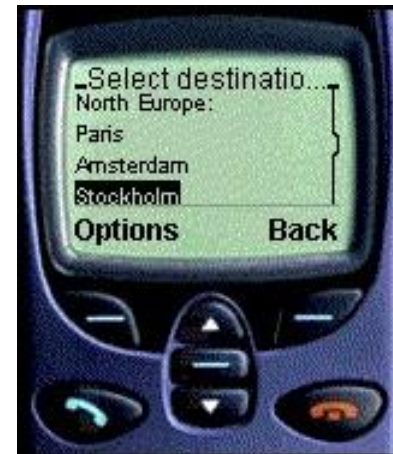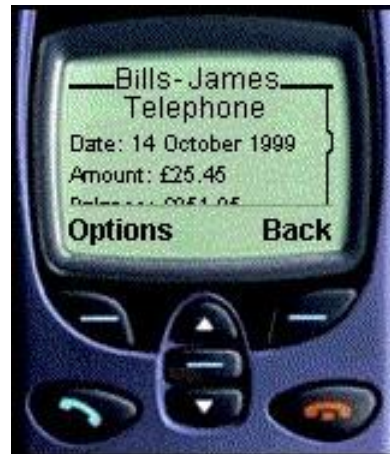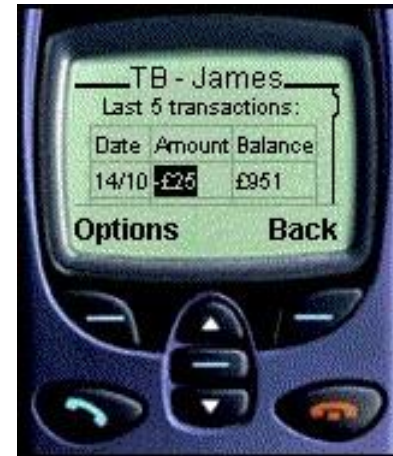
PURPOSE OF WAP

To enable easy, fast delivery of relevant information and services to mobile users.

TYPE OF DEVICES THAT USE WAP

Handheld digital wireless devices such as mobile phones, pagers, two-way radios, smart phones and communicators.
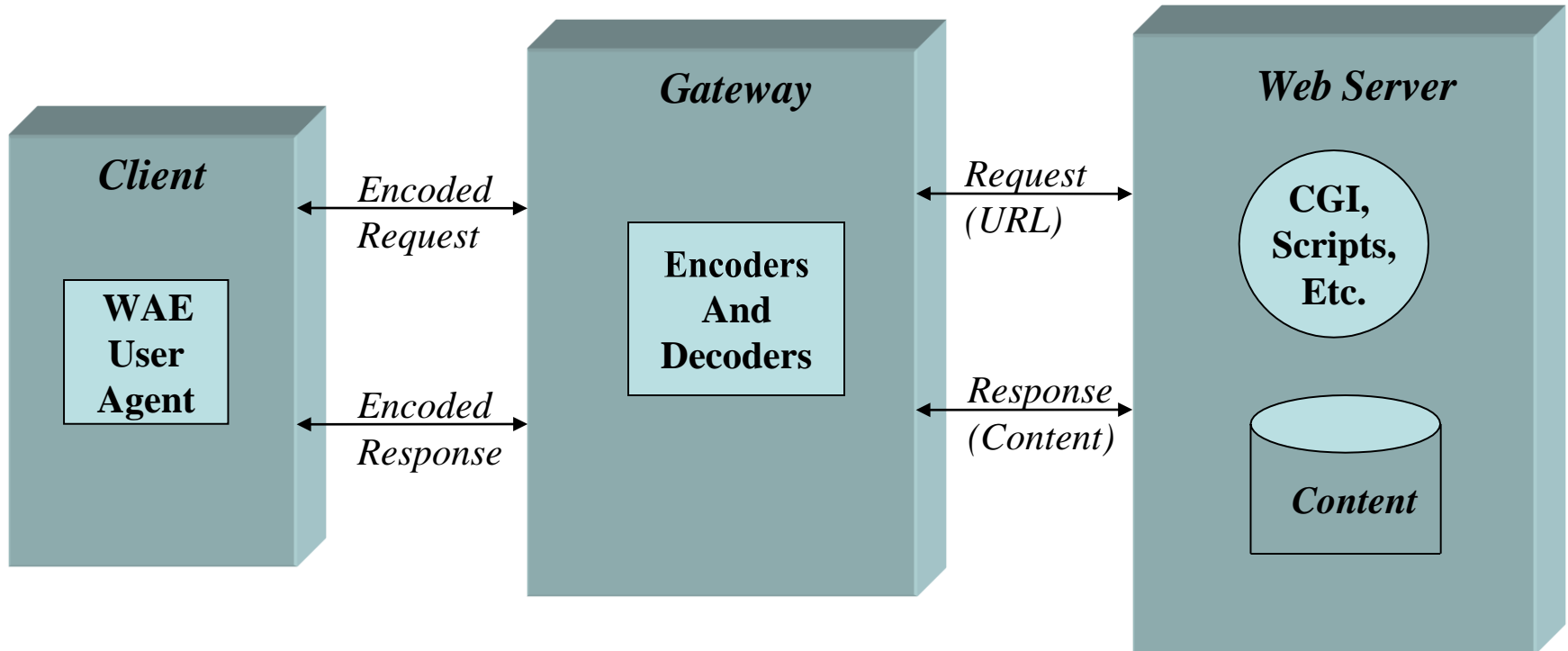
WAP WORKS WITH MOST WIRELESS NETWORKS SUCH AS:

CDPD(Cellular Digital Packet Data), CDMA(Code-division multiple access), GSM(Global System for

Mobile communication
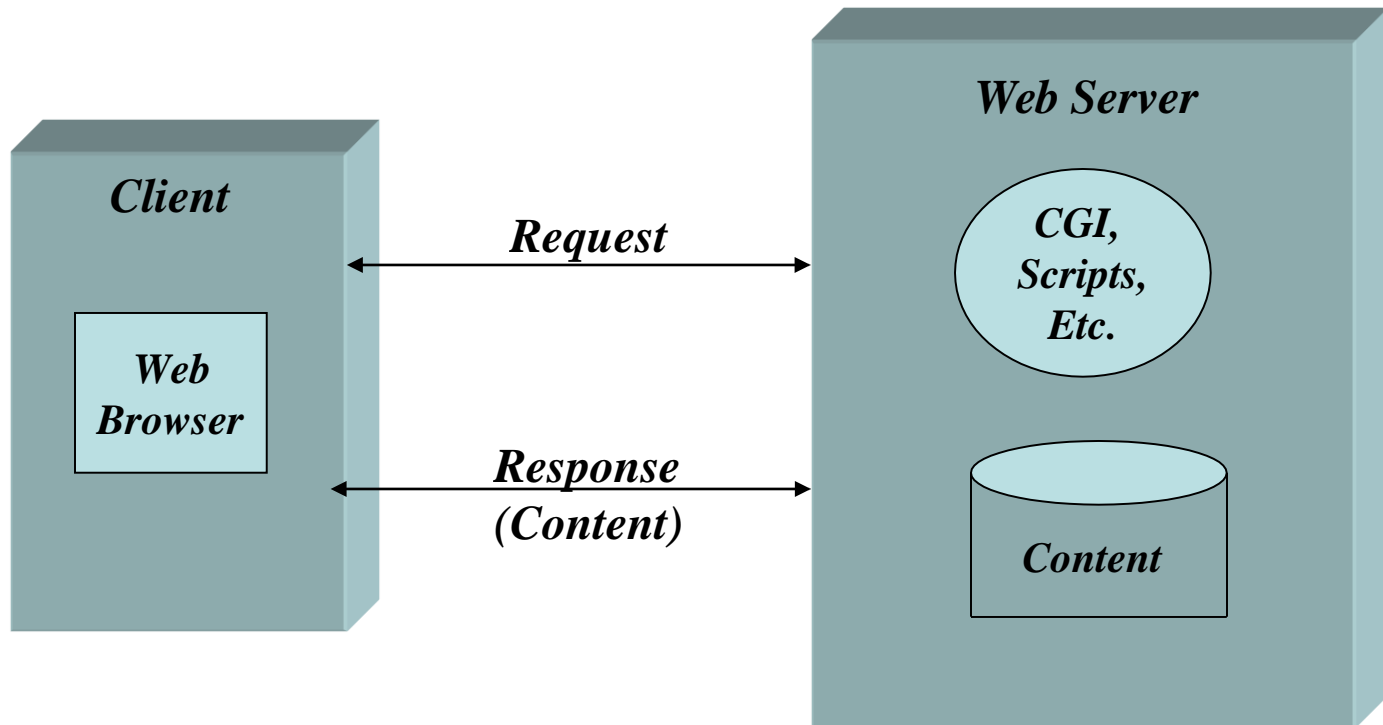##) ETC.

OPERATING SYSTEMS THAT ARE COMPATIBLE WITH WAP:-

➢ WAP is a communications protocol and an application environment.

➢ WAP is independent of OS that means WAP can be implemented on any OS.

➢ It can be built on any operating system including Palm OS, EPOC 32, Windows CE, FLEXOS, OS/9, Java OS, etc. It provides service interoperability even between different device families.

WAP ARCHITECTURE

Gateway

Web Server

Client

Encoded Request

WAE User Agent

Encoders And Decoders

Request (URL)

CGI, Scripts, Etc.

Encoded Response

Response (Content)

Content

WORLD-WIDE WEB MODEL

Client

Web Browser

Web Server

CGI, Scripts, Etc.

Content

Request

Response
(Content)

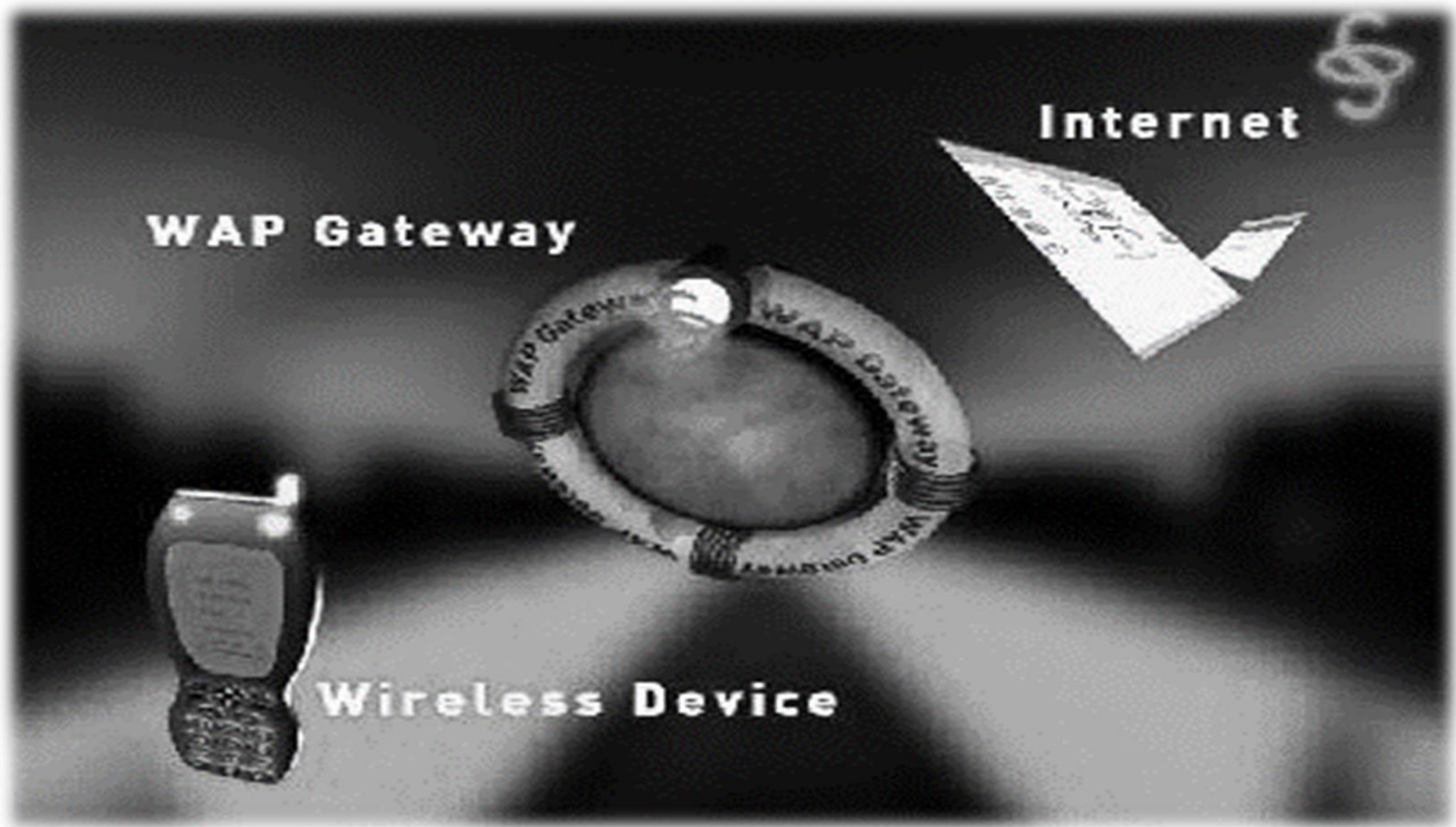# *WAP ARCHITECTURE REQUIREMENTS*

➢ Leverage existing standards whenever possible

➢ Define a layered and extensible architecture

➢ Support as many wireless networks as possible

➢ Provide support for secure applications and communication

➢ Optimize for efficient use of device resources

WAP   DEVICES

➤ ***WAP DEVICE***

 - Is used to access WAP applications and content. It might be a PDA, handheld computer.

➤ ***WAP CLIENT***

 - Entity that receives content from Internet via a WAP Gateway. This is usually the WAP Browser.

➤ ***WAP CONTENT/ORIGIN/APPLICATION SERVER***

 - Element in the network where the information or web/WAP applications resides.

WAP PROXY:-

➢ Acts both as a client and as a server in the network. Typically has

- Protocol gateway : translates requests from the WAP protocol stack to WWW protocol stack

- Content encoders and decoders : translate WAP content into compact encoded formats to reduce the size of data over the network

➢ It allows content and applications to be hosted on standard WWW servers

➢ *WAP GATEWAY*

- Intermediary element used to connect two different types of network. It receives request directly from the clients as if it actually were the origin server that clients want to receive the information form. The clients are usually unaware that they are speaking to the Gateway.

➢ *WAP BROWSER*

Software running on the WAP device that interprets the WAP content arriving from the internet and decides how to display it on WAP device.

WML

- ➢ WML – Wireless Markup Language formerly called HDML (Handheld Devices Markup Language)

- ➢ Is a tag language that allows the text portions of Web Pages to be presented on cellular phones and Personal Digital Assistants (PDAs) via wireless access.

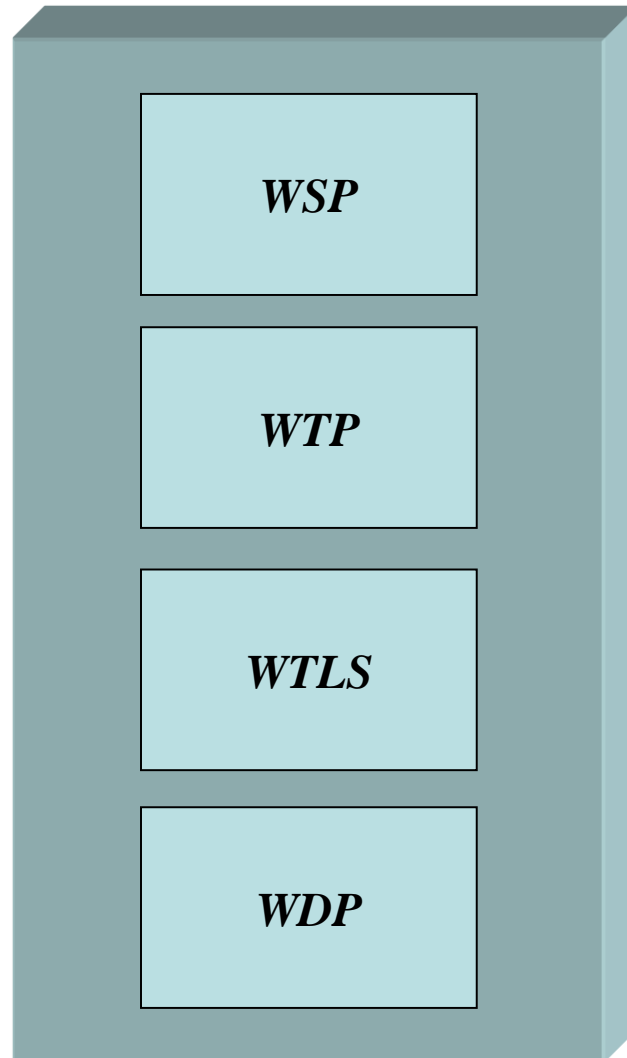- ➢ WML is used for delivering data to WAPdevices, and is HTML- like in its appearance.
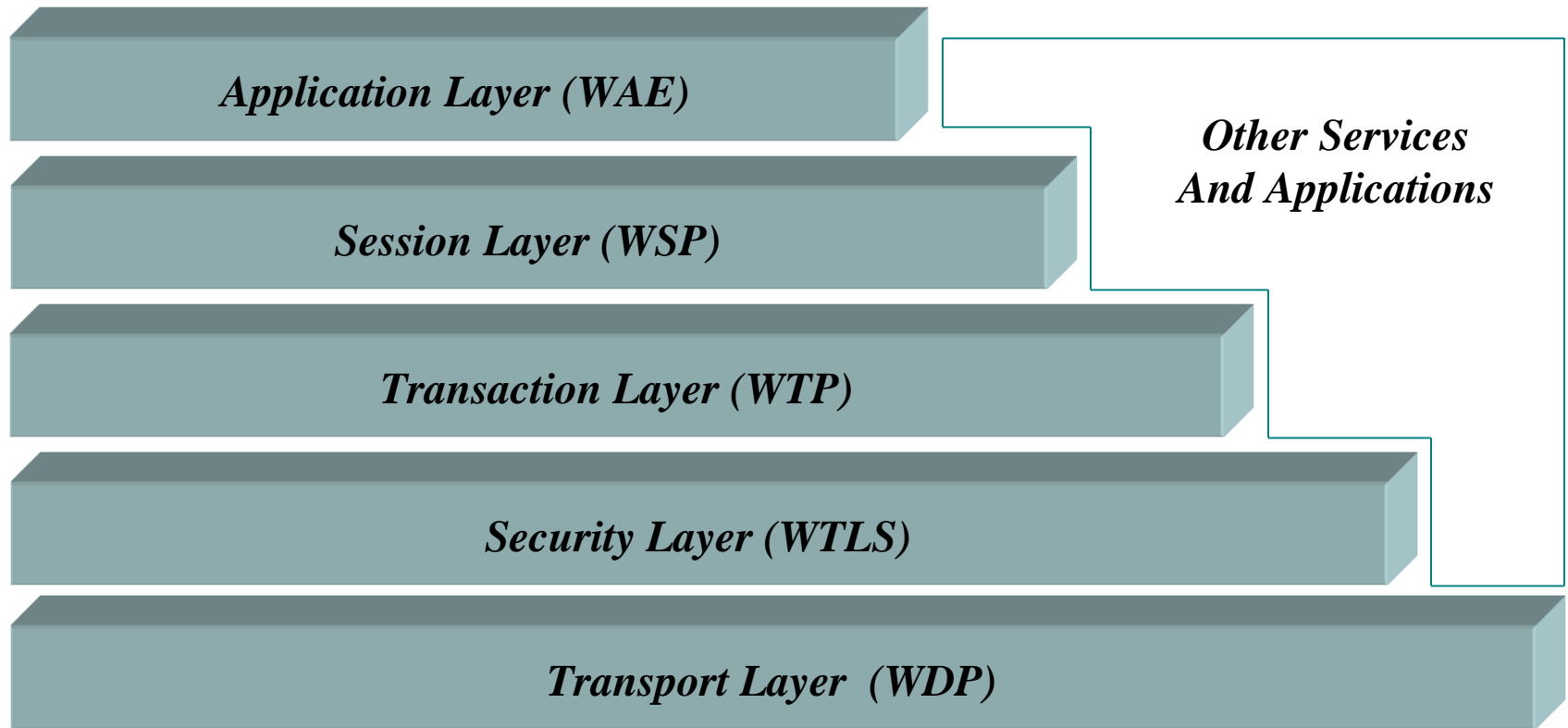
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WAP PROTOCOL STACK

The protocol for WAP is broken down into different parts which is known as the wap protocol stack..

1. WDP
2. WTP
3. WSP
4. WTLS

WAP PROTOCOL STACK

COMPONENTS OF WAP ARCHITECTURE

Application Layer (WAE)

Session Layer (WSP)

Transaction Layer (WTP)

Security Layer (WTLS)

Transport Layer (WDP)

Other Services And Applications

Wireless Datagram Protocol (WDP)

➢ The WAP datagram protocol (WDP) is the Transport layer that sends and receives messages via any available bearer network.

➢ It is the most bottom layer and responsible for moving WAP data from sender to receiver & back again.

➢ Provides a common interface to the upper layer protocols and hence they function independent of the underlying wireless network.

Wireless Session Protocol (WSP)

➢ The WAP session protocol (WSP) layer provides a lightweight session layer to allow efficient exchange of data between applications.

➢ It creates a session between the WAP client & the WAP Gateways. Each session has an unique id & must be started, stop, resume or disconnected.

Wireless Transaction Protocol (WTP)

➢ The WAP transaction protocol (WTP) layer provides transaction support, adding reliability to the datagram service provided by WDP.

➢ It make sure that packets sent via WDP actually arrive at their destination by waiting acknowledgement.

Wireless Transport Layer Security (WTLS)

➢ WTLS checks the security level of data which is sent through wireless.

➢ Features:

– Data integrity

– Privacy

– Authentication

WIRELESS APPLICATION ENVIRONMENT (WAE)

➤ General-purpose application environment based on a combination of WWW and mobile telephony technologies.

➤ It defines the user interface on the phone. It contains WML and WTA (Wireless Telephony Application).

➤ Primary objective – interoperable environment.

➤ WAE includes a micro-browser.

ADVANTAGES-

➢Simplicity of use.

➢Mobility.

➢Personalized.

➢Easy to carry.

➢Increased sales for devices ,infrastructure & gateway manufacturer.

➢Time saving.

DISADVANTAGES OF WAP

➢Battery life

➢Small display screens

➢Speed of access

➢Limited availability

➢Price

➢Lack of user habit

➢Limited memory

➢Limited bandwidth

USAGE/APPLICATIONS

➢ **Corporate Applications:** Sales force automation where sales people use their WAP enabled handsets to get instant, direct access to the latest pricing, latest news, competitive information any time, anywhere.

➢ **Online Services:**

　　-Banking: Users can get their current balance, transfer funds between accounts and receive fax of a mini-statement.

　　-Electronic Commerce: Subscribers can use their handset just like their PC to purchase products and services over the Web.

➤ Tele services

-*Prepaid Services:* With a WAP-enabled phone, prepaid subscribers can see their current balance with the press of a button. By pressing another button, they can also recharge their account by entering a credit card or voucher number into the handset.

➤ Personal Productivity

-*Email:* Using WAP users can keep track of their email right from their handset.

➤ Others include:

- Interactive Chat
- Auctions
- Games

SUMMARY…..

➢ As the bottom line, it is to be said that the use of WAP has made the access to web very easy. The access to the internet has become very easy when you are on the move and the use of mobile phones have become much more worthy.

➢ WAP provides a markup language and a transport protocol that open the possibilities of the wireless environment and give players from all levels of the industry the opportunity to access an untapped market that is still in its infancy.