**Mobile Agents**

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**Abstract:**

Ravi is a Doctor and wants to buy a house in the heart of the city. He approaches a broker. The broker, finds an available house, cross checks with Ravi's budget, approaches the builder and sets Ravi's appointment for the deal.

Imagine if it was a mobile doing all that for Ravi. Is this possible, yes with the advent of Semantic web and advancement of mobile devices it is possible.

**Keywords:** Semantic web

**Introduction:**

In this paper, the reader will be able to understand how semantic web can be used to make people’s life easy with mobile agents. Mobile agents along with semantic web provide an interactive interface to the user. This application can be used as a personal agent. Mobile agents use the data from the semantic web to perform user tasks.

**Why mobiles..???**

In 20th century mobile phones have become an integral part of our lives. Nowadays people have started carrying more than one mobile phone, such as one for business, and the other for personal use. Other than keeping in touch with family and friends, mobile phone are used for many purposes like sharing videos, games, movies, songs, etc and banking, payments, tracking people, etc. Hence we can say that mobile phones have become today’s lifeline.

In the twenty years from 1990 to 2011, worldwide mobile phone subscriptions grew from 12.4 million to over 5.6 billion, penetrating the developing countries.

Fig.1- Number of Mobile Phone Users.

In this fast moving world where time constraint is an important factor, it is necessary that every job is required to be done in minimum amount of time.

A best solution to this is to combine the digital world in mobile phones with the physical world around us. This is possible if a mobile phone is made to work like a human being. An approach to this is explained below:

**Overview:**

We have the internet which helps us to talk to each other, we have the web which helps us to store and retrieve any document on the internet and we have the search engines which can find about anything. The problem today is that internet blindly retrieves data from the web and display using html syntax .The search engines today, only do string matching. They don’t understand the meaning behind the web pages they are showing us. But if the computers can recognise what is in the web page, they can learn what we are interested in, and thereby help us get what we want. This is the basis on which SEMANTIC WEB is developed. Using Semantic web as platform with mobile agents, personal agents can be implemented.

**Mobile Agents:**

Agents which easily migrate from one computer to another in the network, by maintaining the state in which they were earlier are called mobile agents. It uses resources from the host computer and consists of program code and program execution state.

**Semantic Web:**

It is an advanced form of web where data can be shared. It simplifies human work as this web is understandable to the mobile device.

The mobile can actually give you an exact solution rather than you choosing the best solution among the lot. RDFA, wolfram alpha and formats are some of the semantic webs used in mobile phones.

**Web on mobiles (Normal scenario)**

Query: I love computer

Result: 1.I love chicken, 2.I love computer, 3.I love Maths and so on...

Fig.2: Existing search engines.

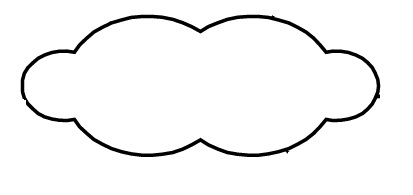
In the normal search engines like Google, yahoo, ask.com etc the query given by the user is matched as a string, the meaning or semantics of the query is not checked. This is shown in the above figure. Here user types the query as-“I love computer”, the web browser sends this query to the server. The server sends all the matching substrings of the given string in response to the query.

**Working of Personal Agent:**

User on client machine (mobile agent)

SERVER

Query



SEMANTIC WEB

Fig.3- Working Model of personal agent.

The client using mobile agent requests the query (to find the nearest doctor, to prepare a to-do list, etc) to the semantic web. Semantic web analyses the query semantically and sends the refined query to the server. The server sends the matched strings to the semantic web, which in turn passes it to the client.

Using mobile agents and semantic web we plan to perform most of the human activities using mobile phones. For instance, if we want to find a person, we can just type his name and how he is related to us or what work we expect him to do, on our mobile phones. The semantic web will understand our problem, search the wide number of files in the internet, find the exact person and display it on our mobile. We could also send this information to our computer or to others in the network, using mobile agents.

**Personal assistant v/s personal agent in mobiles:**

Personal Assistant Personal Agent

>will surely take more time. >less time consuming.

>assistant understands the job. >electronic device will understand the job.

>may or may not require a search engine. >a search engine is a must.

**Conclusion:**

In this fast moving world everyone has to be in pace with one-others. As the

evolution of mobile phones has made significant change to the way people think and

live, adding more and more features to this miniaturist electronic device holds key

to the future world. People now-a-days like everything to be done by just giving

commands to devices, and in the future all this will be done without any commands.

This is where mobile agents using semantic web will be very useful.

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This is where mobile agents

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