

## **AUTOMATION OF PROCESSING OF THE INFORMATION BY MEANS OF AGENT TECHNOLOGIES**

© *Lukyanets D, 2006*

In the autumn of 1990 employees CERN have received the first web-server and a web-browser written with own hand by Berners-whether for computers NeXT in using. And in the summer of 1991 the project "WWW", the subdued scientific world of the Europe, has crossed ocean and has joined the American project "Internet". As a basis for a modern language of a marking of hypertext documents HTML (Hyper Text Markup Language) language SGML (Standard Generalized Markup Language), developed in 1986 in ISO (International Standard Organization) has been chosen. Report HTTP has been developed for transfer of documents (Hyper Text Transfer Protocol). It is necessary to note, that the concept of the hypertext has arisen long before occurrence World Wide Web, but WWW became the system first introduced and received a wide circulation using this concept.

For 15 years of existence World Wide Web from a small scientific network has turned to the global information environment used practically in all spheres of activity of the person. At the moment in the World wide web there are billions the pages containing the information, created and published both professional authors and editors, and usual users within the limits of portals, sites, forums, wiki-projects and other types of resources.

Modern web-technologies allow developers to realize the Internet-appendix, possessing flexible, convenient and dynamic interfaces, lifting their level up to traditional appendices and by that providing convenience of work in the Network. But, as before, there is actual a problem of effective access to the information for end users, and in process of growth www it only becomes complicated. Agent technologies considered in given clause are intended for the decision of this problem and for maintenance of a convenient way of reception, fast processing and an intellectual filtration of the information. World Wide Web environment has been developed by Timom Berners-whether in 1990 during its work in CERN - the European laboratory of physics of elementary particles in Geneva.

The main difference semantic web'a from WWW environment consists that pages contain the information in it in two languages: usual, clear to the person both shown by a browser, and special (described онтологиями), the information on which is hidden from people, contains a semantic component and is intended for various programs, agents and robots.

The intellectual agent is the program, independently carrying out the task set by the user of a computer, during long time intervals. The problem of constant search and gathering of the necessary information can serve in the Internet to one of examples of such tasks. Computer viruses also can be carried to intellectual agents. Enhanced attention to agent technologies have started to give about 10 years ago, but also for such rather short time interest to them has already moved from area of the academic researches to sphere of commercial and industrial appendices. Thus of idea and the methods laying in their basis, quickly migrated from the theory of an artificial intellect in practice of development of the software. Agents as a matter of fact are not absolutely new direction in a science and technics.

It is possible to consider as their predecessors adaptive systems, that is systems which are able to be arranged under a situation or circumstances and in the basic image to change the behaviour or characteristics to provide the decision of problems facing to them. Really, sometimes the agent and the elementary adaptive system can be very close to each other, but when the agent functions in a complex environment, cooperating thus with other agents, the Fig. essentially varies.

So than all the same usual systems and the systems constructed with use of agents differ? First of all it is necessary to note, that agents are absolutely other paradigm, therefore and the approach to the decision of problems, and distinctions between these systems are so significant, as, for example, distinctions between development of the software and application of object-oriented and structural approaches.

The simple program differs from the agent also that does not trouble itself with target behaviour and the analysis of the reached results. Whereas the agent, representing interests of the user, "is interested" in that the task

has been executed. In case of failure or any failure it should repeat attempt later or have for emergency an alternative variant of the decision of a problem.

Basically, agents can carry out many problems and without use of methods of an artificial intellect, however a number of problems without them be simple cannot be solved. At present there is a number of technologies, such as neural networks and genetic algorithms, indistinct logic and others which are successfully applied in various specialized systems, agents and multi agent systems.

The intellectual agent is understood as the agent who possesses a number of knowledge of and world around and which behaviour is defined by this knowledge. If the simple object is defined as " given + methods " the intellectual agent is already " given + methods + knowledge ", and methods in the latter case include functions of work with data, with knowledge, and also methods of interaction with an environment and with other agents.

The stationary agent is carried out only on that system on which it has been started. If the information from the outside it can use mechanism RPC (Remote Procedure Call) or other methods of an exchange and the receptions of the information accessible to it in the environment in which it functions is required to it.

The mobile agent, unlike stationary, is not adhered to system on which it has been started. It possesses ability to move from one system in another, completely keeping the condition and transferring the code. Its work in different systems should be supported by the special environment which including provides safety.

To problems which it is possible to charge to agents, concern: search on the Internet, selection and a filtration of information streams, management of e-mail, scheduling of meetings, recommendations at the choice of books and films.

Agents can be the authorized representatives of the user at dialogue with other users or their agents, at the decision of the problems charged by it: from trade on the Internet-auction up to an answering machine providing performance of complex nonlinear scripts at work with e-mail, the Internet-pagers and various means of the voice communications.

The main feature of the interface, the form and ways of representation of the information which agents can give, consists that they appear personified. It is reached because intellectual agents are capable to training. In one case they can purposefully question the user, in other - the agent receives the information on habits of the user by supervision over its actions.

It is possible to approve, that intellectual agents and semantic web are rather perspective direction, capable to help people to get out of an existing information hole. Certainly, visiting some web-pages in day and few times in a month using search system, the user can make erroneous opinion, that no especial problem actually exists.

The certain mistrust also is connected with it to use of agency technologies. One approve, that they and consult with the "" volume of data, others are afraid, that agents all the same cannot solve their "information" problems.

Nevertheless complex systems on the basis of agents already have found wide application in the industry. So, for example, IBM uses agents for manufacture of semi-conductor microcircuits, the Danish ship-building company - for tea leaves of apertures in the ships, and in Japan system on the basis of agents carries out functions of the interface of the operator of a superfast train. It is necessary to consider, that transition to use of agency technologies in the software will be gradual so, changes and the improvements made on each step, will appear not so appreciable. For example, the problem of recognition of the printed text initially was considered rather as a challenge from area of an artificial intellect. Now with it most advantageously consults, for example, ABBYY Fine Reader, providing high quality of recognition even when the text is badly printed or settles down atop of the background image. In fact, as a matter of fact, it is a question of the personal intellectual agent solving the important problems of users, but the majority will consider it no more than the additional module, let even отягощенным as some complex mathematics.

When the person faces a problem which not in a condition to solve independently, it or finds to itself(himself) the assistant, or creates the tool necessary for work. So was during all history of mankind, and our days do not make exception. For a role of personal assistants during an information epoch intellectual agents approach as well as possible but when they finally will enter into our daily life we, most likely, at all shall not notice it and we shall simply name their clever programs.