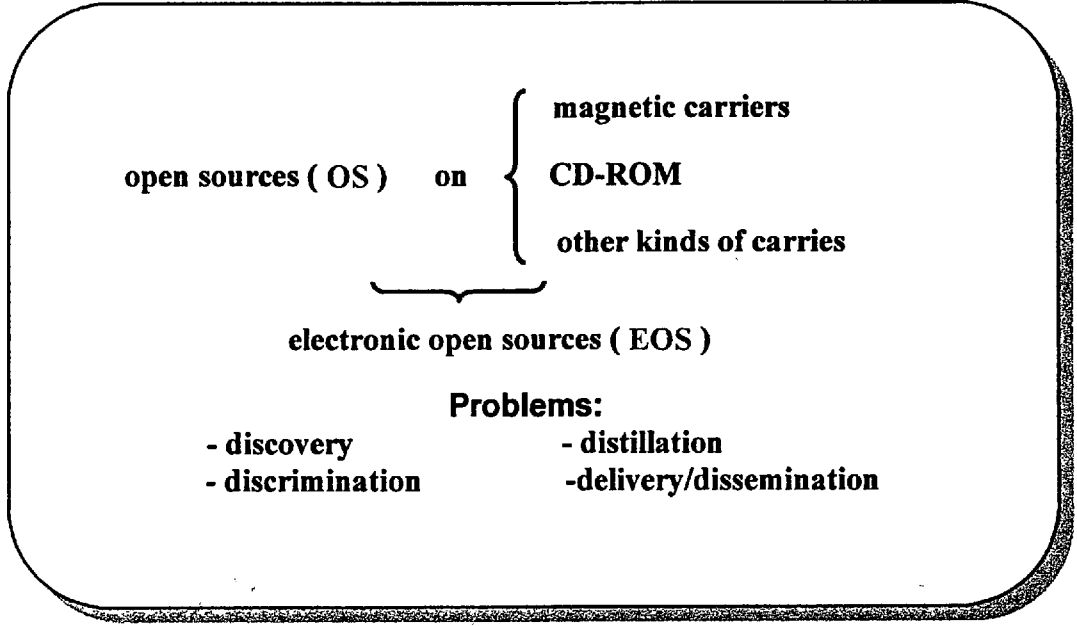


### Electronic open sources Technology of application



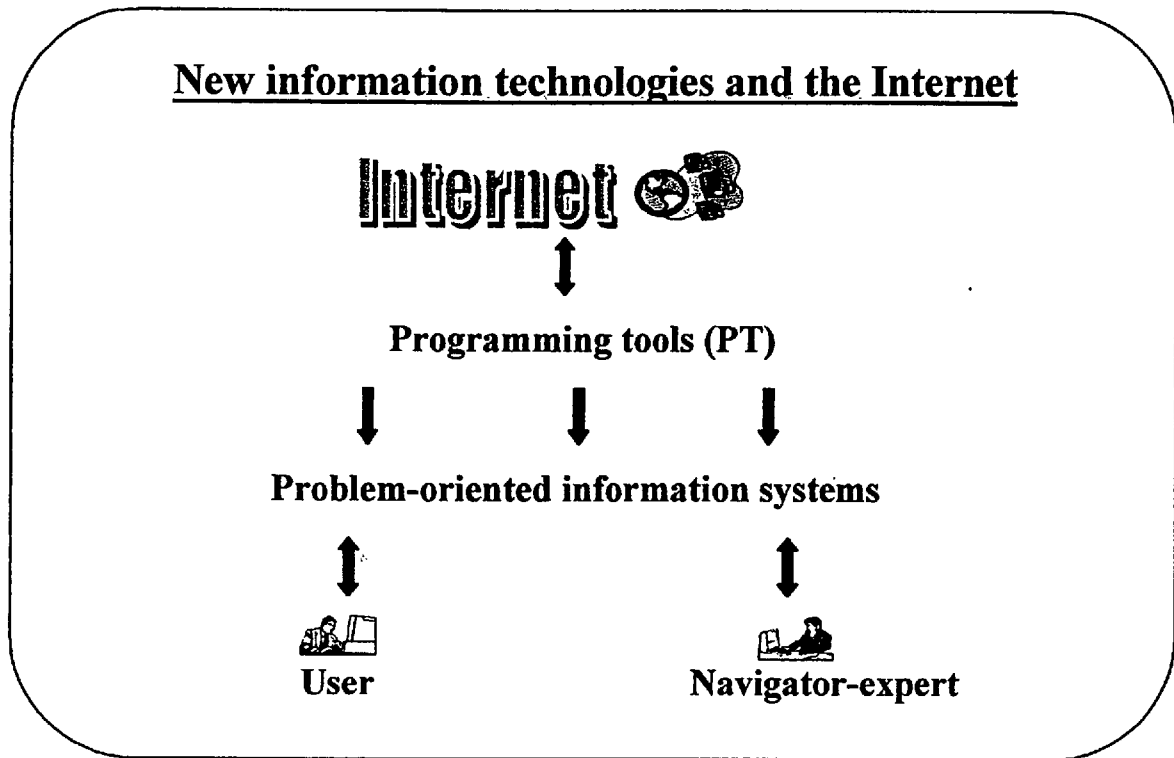
Information analytical production of a special service (further analytical product) distinguishes use of the classified information. To produce a final analytical product all accessible information items from open sources were taken into account and are taken into account. It is an axiom. Use of open sources is much cheaper and safer than other forms of the information assemblage.

Accommodation of open sources (OS) on magnetic carriers and then on CD-ROM and other kinds of carriers has required the development and implementation of new technologies of processing and application of electronic OS (EOS). Explosion of the electronic open information accessible through computer networks, first of all from mass media, has required the further development of this technology and organization of processing. In our activity we have faced with a well-known problem of work organization and efforts distribution between four "D's":

- discovery,
- discrimination,
- distillation,
- delivery/dissemination.

The problems have universal character. First of all, they are related with creation of rational "human-technical" system of EOS use, including information, technological and organizational components. The principles and mechanisms of that system construction are enounced exhaustingly by Robert Steele and in materials of OSS corporation and annual OSS conferences.

## New information technologies and the Internet



The Internet plays a pivotal role in EOS processing. The amount of EOS accessible through the Internet and their share from common number of EOS constantly grow. To take the needed information through this network, the new professional skills and special methods of human-technical process are necessary. To apply the appropriate program toolkit the significant temporary and human resources can be saved in case of producing an analytical product. It is especially important, when the tracking development of the certain events in rate of change of attributes, describing them, is required when the actualite of the certain information decreases quickly with the current of time. In the last case only duly granting to the consumer of the required information items "just enough, just in time" can support a specific decision.

Thus, the effective application of the Internet is impossible without new information technologies. The special program tools (PT) should lay in a basis of such technologies. They should permit to create the problem-oriented automated information systems (AIS) for monitoring the Internet and for supporting information activity of:

- the usual user, which incidentally addresses with standard typical inquiries to external and internal information resources;
- the expert, which actualize constant monitoring a status of his guided problem and owns adequate knowledge and skills of search work.

The practice of our activity allows to specificate the basic PT functions. They are the following.

## **PT functions:**

- 1. Creation and maintenance of the problem-oriented databases.**
- 2. Problem Structuring and the Internet Space cataloguing on the given subjects.**
- 3. Automatic selection of necessary information.**

### ***1. Creation and maintenance of the problem-oriented databases.***

This is the infeasible component of any information system. As a result of monitoring the various unstructured data should be collected: HTML-pages, textual documents, audio-, videomaterials etc. Updating of a database should be carried out in various modes:

- automatically - with the help of the special programs scanning certain resources of the Internet and selecting information items of a given thematic profile;
- manually - directly by the users, who keep themselves the documents prepared or found in free search through the Internet.

The subsequent search should be supported by automatic indexing of all acting information materials and by generating the formalized descriptions of the stored information items (for convenience of work).

The data thus accumulated can form the basis for the further analysis for revealing of the tendencies, definition of the occurrence reasons of the certain events, formation of new notions and knowledges.

### ***2. A problem structuring and the Internet address spaces subject cataloguing.***

Any analyst deals with the certain dynamic model which allows him to estimate the problem current status and to build the forecasts on the further development of a situation. The hierarchical thesauruses of any enclosure and features of their maintenance are required for formalization and description of various information resources according to the expert notions.

### ***3. Automatic selection of the necessary items of information.***

To emancipate an expert's time for direct analytical exploring the main work on the required information finding needs to be performed by the specialized programs - agents. The agents should be adjustable to various retrieval systems and information resources of the Internet and automatically select the information on the given logic combinations of keywords. The results of search should be kept in databases for viewing and probably for further processing. Moreover, the statistical analysis features intended for optimization of the agent work with information sources are necessary.

## **PT functions:**

**4. Automatic information delivery to users .**

**5. Search.**

**6. Actualization of new sources.**

***4. Delivery of the information items from the newly appeared problem-oriented servers and application of push-channel technology.***

The set of the problem-oriented servers - portals is connected to the Internet. They represent to the users specially picked up and previously processed information on the certain problematics (in a number of cases). As a rule, they are served by organizations with the highly skilled staff being engaged in a certain problem long time. The important analytical materials, reviews, results of researches are published on such servers. The accumulated and furnished information items are well organized. That's why features realizing automatic information delivery to the analyst from these portals (technology of push-channels) are necessary.

***5. Search.***

There are two components:

- search in the Internet space,
- search in an internal database of the shell.

So-called metasearch among Internet resources should be stipulated - simultaneous access through the uniform interface to well-known search services and specialized catalogues of a network. These features should provide the analysis of crossing/coincidence of data received from various servers, their integration and sorting. The comprehensive opportunities should be given for reception of the relevant information items from the internal problem-oriented database, including search in the free text and formatted parts, various kinds of the data sorting and presentation etc.

***6. Actualization of new sources.***

The Internet is dynamically varied structure. Various information resources disappear and arise again. The specialized program robots are necessary. They should select new information resources relevant to given problem and also check availability earlier used resources.

## **PT functions:**

- 7. Securing information and audit.**
- 8. Creation of user thematic profiles.**
- 9. Administration.**

### ***7. Protection of the information and information audit.***

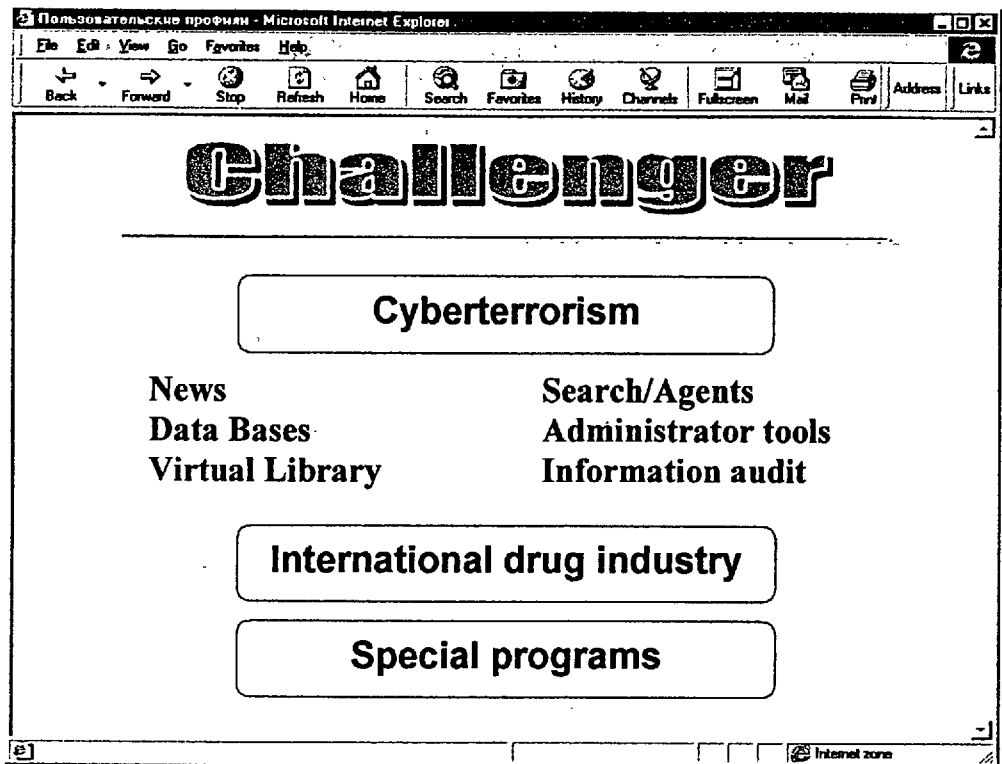
The maintenance of AIS reliable functioning is necessary. PT should ensure safety of own software and information. There should be provided identification of the users, differentiation of authorities, control on access, anti-virus control, firewall features etc. The information audit features should collect data for efficiency monitoring of user satisfaction and of the own server work, and for structuring information and adjustment of various services. The data, received as a result of audit, should enable to make a rating of an overall PT performance both as the whole and as separate components.

### ***8. Creation individual thematic selection.***

As a rule, the automated systems created on a basis PT are focused on group of the users, and the data accumulated with such system can cover interests of all group. For the separate analyst such database can appear superfluous and bulky. Therefore there should be a device of virtual databases formation (information selection) on the background of the basic database according to profiles of the certain user information interests.

### ***9. Administration.***

For maintenance of all used processes in PT there should be administration features.



PT should be organized in company so that in case of its use the new technology and new style of work are formed. The new realities and new opportunities given by the Internet should be recognized by all personnel.

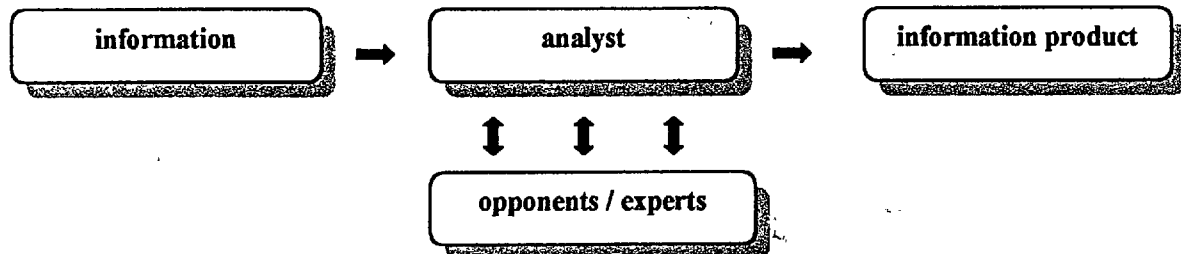
PT example, including the listed opportunity, so-called « the Internet resources monitoring shell» CHALLENGER have been created by one of Russian commercial organizations.

## Technical problems:

- filtering large dataflows
- automatic translation



## Non-technical problems:



There are, at least, two serious problems which require the adequate scientific and technical decision:

- creation of program-linguistic features of effective filtering the large information flows, first of all from mass media, according to information interests of the end users,
- maintenance of qualitative machine translation keeping sense of the source text at a sufficient level.

On the basis of the acquired experience it is possible to make the following conclusion. Creation of rational system of EOS processing, without speaking about an effective system, uneasy task. That is not clear both for end user and even for experts in computer science earlier not colliding with EOS. The formation of collectives with the different experts on computer science is required.

In summary I would like to consider one not technical problem. EOS potential, topicality of the EOS information allow to create analytical products affecting the various parties of activity more and more. The OS-media availability at its constant expansion and technical perfection creates conditions of increasing analytical outputs and their quality. As a rule, such product is a result of activity of the certain analyst or expert, result of individual work. The decision on its realization may be individual also. However, if the conclusion happens incorrect, for the subjective reasons, the actions accepted by results of realization can have negative consequences and put under doubt of an expense on reception of the analytical result itself.

Practice of a pass examination in the scientific degrees was generated long ago. The result of any dissertation represents an analytical product. The contents and the results of the dissertation are exposed to a rigid independent expert appraisal by several analysts and even organizations specializing in the developed problem field before the dissertation advocacy. The similar technology of the independent qualified examination should be spent in relation to analytical result of OS processing. This problem, in my opinion, requires serious consideration, including this audience.

Thank you for attention.

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