TIAV MULTIMEDIA SYSTEM

Beknazarova S.S., Mukhamadiev A.Sh., Jaumitbayeva M.K.

Tashkent University of Information Technologies named after Muhammad Al-Khwarizmi, Tashkent, Uzbekistan,
saida.beknazarova@gmail.com

Abstract. This article discusses the features and trends of development of the process of implementation of multimedia systems in various fields, research substantiates the basic concepts of multimedia systems, information flow, describes the classification and characterization of information flows and systems.

The final result of the procedure for synthesizing the functional structure of the TIAV system is its structural and functional scheme – the scheme of information and information flows, indicating the points of their transformation, summarizing the preliminary results of the spatial organization of the multimedia process in the unity of its components, as well as a set of specifications for the scheme containing the qualitative characteristics of the main, Auxiliary and serving processes in the space-time dimension.

The development of such a scheme will allow to describe in detail the operation of the TIAV system, to study its behavior in various modes and multimedia situations, to determine with great certainty the composition of the technical facilities and workstations of the TIAV personnel, and will serve as the basis for selecting the optimal composition, the number of TIAV containers in the TIAV system.

Rational use of information resources required for the TIAV-multimedia system is an intensive factor, since with the same and the volume and composition of the information resources used, the expansion of the development of new TIAV containers or its development will be the greater, the greater the «return» to each unit of these resources. The main components of the intensive factor are:

1. Increase the technical level of the development of multimedia content: the creation of centralized systems for visual monitoring and analysis of the progress of the multimedia process by the administrator-operator of the TIAV multimedia programmer; Administration of the TIAV-multimedia system; Automation of the multimedia process, due to the development of a software package; Improvement and modification of the program part of the TIAV-multimedia system; Modification of multimedia processing schemes for TIAV objects taking into account the characteristics of the initial information resources, improving the quality of TIAV containers; The modernization of the used multimedia technology; Increase the reliability and security of both individual technologies and multimedia schemes in general [1].

2. Change in the volume and structure of the multimedia process: change in the specific weight of individual TIAV objects; Relative decrease in the number of staff due to the increase in the volume of development of multimedia content.

Approach the multimedia process to the user of multimedia content to sources of TIAV objects. One of the central and topical problems in creating the TIAV-multimedia system is the definition of existing and on this basis - the necessary relationships of intensive and extensive development factors. This can be done with the help of factor analysis, the theoretical basis of which are mathematical models of various kinds. The subject of the analysis is the determination of the influence of the volume and dynamics of the factors of the multimedia process on the volume and dynamics of multimedia content, as well as on the interaction of the factors themselves.

The task of factor analysis of the functioning of the TIAV-multimedia system is to determine the degree of joint and private influence of individual factors on the level of development of multimedia content. The considered methods of analyzing the functioning of the TIAV-multimedia system allow us to determine the quantitative value of the isolated influence of individual factors. Meanwhile, the factors that determine the effectiveness of the functioning of the system are interrelated and exert a complex influence, which can't be regarded as a simple sum of isolated influences. Therefore, when analyzing the functioning of the TIAV-multimedia system, it is necessary to determine the quantitative value of the particular influence of each factor taking into account the influence of the entire population under consideration. The method of solving this problem is a multifactor analysis that allows deeper to reveal the essence of the ongoing multimedia processes, to clarify their role and peculiarities of manifestation in time and space.

One of the most important problems in creating the TIAV-multimedia system is connected with the study of natural processes and their influence on the functioning of the system. The investigation of these processes in each concrete case presupposes the establishment of the fact of their existence, the determination of the intensity direction, the elucidation of the specific features of their manifestation in time and space, and the determination of the processes that accompany them. The complexity of the solution of this problem is aggravated by the fact that the indicators available to the observations are only the final results of the joint activity of the factors that have an effect, as a rule, not on any one indicator, but on a whole complex of indicators characterizing the object under study, Indicators are, in a certain way, related to each other. In addition, the same indicator gets its quantitative expression under the influence of various factors, and the share contributed by each of the acting factors, in general, is not the same [2]. Obviously, the factors influencing the same indicators with the same intensity and directivity should be considered.

Interaction of visual and audio information under the control of interactive software using the latest hardware and software, integrates and contains both text, graphics, audio and video information in the digital domain, in one container object.

The possibility of presenting information flows across multiple information environments – interfaces that pro-

vide I/O data of different types of computer, creation, processing and display of information at different levels and structures for the perception of the various organs of the human senses are realized by means of multimedia systems.

Multimedia systems are a set of information environments – channels, each of which has its own specific form appropriate to its level and purpose.

The main environmental sorted by ascending levels are as follows:

– binary medium comprising instructions for the processor, binary files and data;

– contact medium is a tactile, strain gauge, electrical, and other capacitive touch media employees to enter the mechanical code and a space-time information;

– text environment, which are text data to the user program texts for interpreters, other textual information;

– audio streams representing audio files, digital audio series, sets of musical audio and other types of digital audio;

– graphical environment, which are drawing files, photos, and other two-dimensional graphic information;

– video streams representing video, dynamic series of graphic information;

– virtual reality, is an interactive 3D-video stream.

The use of multimedia systems provides human lightness perception information as the person has significantly different from the computer means and information processing means having a shape perception convenient for humans.

If your computer is characterized by discrete binary-form information with electric transmission of information signals (1/0), then the person – multi modal- analog form primarily non-electrical nature (light, sound, pressure, etc.) [3].

Without the creation of such media perception of computer information man is extremely difficult, and even more difficult to transfer multimodal information from one person to another via computer tools.

Therefore, technology and multimedia equipment includes a wide range of different interfaces as input interfaces (sensors – camcorder microphone, touch screen, etc., Converters – ADC, special processors for converting external information) and output interfaces (displays, sound sources and so forth.).

Multimedia systems may be divided into linear (without feedback) and an interactive environment. Analogue of the linear method of presentation can be a movie. The person viewing the document can in no way affect its output. Interactive (nonlinear) mode allows a person presenting information, programs, networks involved in displaying information interacting in any way with the means of displaying the multimedia data. Participation in this process two or more parties called «interactivity». This way of human-computer interaction to the fullest extent presented in the categories of computer games. Interactive way of presenting multimedia data is sometimes called «hypermedia».

As an example of linear and interactive way to present information, we can consider a situation like holding a presentation. If the presentation was recorded on film or video, and shows the audience, then browsing this presentation are not able to influence its course. In the case of the live presen-tation, the audience has the opportunity to ask questions Reporter and interact with other manner that allows Reporter deviate from the topic presentation, for example, explaining some of the terms or more elaborate, the controversial part of the report. Thus, live presentation can be presented as an interactive (nonlinear) way of presenting information [1].

Various forms of information make it possible to interactive user interaction with information. Online media is increasingly becoming an object-oriented, allowing the user to work on the information without having specific knowledge. Multimedia resource – is an information resource for the basic information presented in the form of multimedia. This modern and extremely convenient mechanism, which does not replace the performance of classical functions, and complements and extends the range of services and news for visitors.

Efficiency of using the TIAV system as a whole is determined by the extent to which during its creation were identified and specific features, limitations and functional capabilities of all its links. Significant dependence of the parameters systems from the adopted structure that determines their mutual influence, led to the emergence of such an approach as optimization synthesis, based on mathematical modeling of the most important interactions in the system. Study models taking into account system-wide requirements are essential multimedia process efficiency. In these conditions, the main goal is to develop optimal design methods, which should provide a coherent solution to mathematical models of the organizational and multimedia complex tasks that allow you to analyze the totality of the main factors and get a lot of feasible solutions when multivariate design using computer technicians. Only on this basis can targeted designing optimal technical solutions capable of ensure the effective operation of the TIAV system.

Both internal and external communications of the multimedia system characterized by the composition of flows, addressing; TIAV communication systems by direction are divided into input and output [1].

The operating mode of the TIAV system, as a rule, depends on from the combined effect of a multitude of both internal and external factors determining technological, organizational and other conditions.

Critical role in the synthesis of the functional structure of TIAV system plays organization in space and time information and information system flows like internal, implementing targeted interaction structural elements, as well as external, realizing the interaction TIAV systems with other structural elements of the system.

References

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