Research on the solution for the multi-media integrated system

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ABSTRACT

The integrated essence of multi-media application system is the optimized comprehensive coordination design, namely a synthetically large-scale computer network system, and the systematical integration consists of computer software, hardware, operating system technology, database technology and network communication technology as well as the integration of selection and collocation for different manufacturers' product, which ultimate objective is the optimization of integrated performance, the functional operation after resembling all components as well as ingredient, and a system of low cost, high efficiency, symmetric performance, augment ability as well as maintainability. The current research for multi-media technology still focuses on surmounting numerous critical technologies of computer processing multimedia, such as compression as well as the multi-media information decompression technology, the multi-media information network transmission technology, the multi-media technology standardization, the multi-media storage, input as well as output, system software and developing instruments as well as platforms. This performance provided an analysis for the solution of designing network as well as hardware in the synthetically multi-media integration and provided a particular design scheme.

Key words: Multimedia, computer integration, system integration, design scheme

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INTRODUCTION

In the late 1980s, the occurrence of multi-media computers contributes to the essentially change of the multi-media technology connotation, which was owing to three aspects. At first, people developed a desire for integrated processing multiple medium with an interactive controlling ability; what's more, with the development of large-scale integrated circuit as well as its computer technology, various medium can digitally process rapid collection, processing as well as transmission inside the computers; thirdly, due to the development as well as mercerization of CD memory technology, multi-media digital information of large capacity possesses a supporter for transmission as well as application. The three reasons above realized the transformation from multimedia into an integrated technology. Nowadays, multimedia frequently refers to multi-media technology [1]. The application of multi-media technology brings about tremendous as well as significant revolution of information management, office automation, education and learning. Multi-media technology provides a brand-new information exchange method as well as multiple information manifestation between people and computers, which processes enormous attraction to educators as well as learners. The education application of multi-media technology symbolizes that the computer assisted education has achieved a brand-new moment, which vigorously promotes a further development of the computer assisted education. The human thinking pattern is associative, and with the information organization also processing associative salutatorian structure, it will be beneficial for people to improve the efficiency of acquiring information as well as knowledge. Meanwhile, all kinds of information can be more sufficiently utilized, which is the significance of the hypertext technology [2]. Therefore, the hypertext information organization is nonlinear, associative and salutatorian; the routing selection for information acquisition is flexible and free.

In this way, users of different objectives or demand can efficiently grasp complicated information to accomplish their own mission. It is supposed that hypermedia, as the introduction of multimedia, brought enormous change on

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hypertext technology, which not only enhanced the interactive degree of information as well as the accuracy of thinking expression, but also made interactive interface full of variety, lively and friendlier [3]. Additionally, hypermedia is similar to network database according to the organization, management and retrieval methods of information, but it improves storage as well as the types, models and performance of data.

BASIC CONCEPTS
In human society, information form is varied, we call these forms media. In the field of computer, the meaning has two aspects: one is entity stored information, such as disk and tape, CD, and semiconductor memory [4], etc. Another is the carrier of information, such as numbers, words, sound, graphics, images, animation and activities. In multimedia computer description, the media is mainly the latter meaning.

Multimedia
Multimedia is with the development of science and technology and people to the media as a result of the wide application of a compound term. With the improvement of science and technology, the connotation of the multimedia is deepening [5]. From the early teaching of multimedia technology optimized combination to understand multimedia, multimedia refers to the language, characters, etc. The traditional teaching media and various electronic modern teaching media organic combination. This combination makes the corresponding single teaching media function complement each other, but all kinds of media information is not unified as a whole processing and management.

Multimedia technology
The multimedia technology's meaning is widely, it is generally thought that the multimedia technology refers to the text, audio, video, graphics, images, animation and so on the many kinds of media information through the computer digital collection, acquisition, compression, unzip, editing, storage and processing a variety of information, establishing a logical connection, then alone or synthetic form out of the integrated technology [6].

Hypermedia
Hypermedia is hyper text and the outcome of the combination of computer multimedia. Computer multimedia technology brings human value, reflected in the multimedia application system. A multimedia application system must have interactive integrated processing a variety of media information ability, make multimedia information between a logical connection, and integrated in an interactive system [7].

MULTIMEDIA COMPUTER SYSTEM
Multimedia computer system's basic structure
Multimedia computer systems are similar with general computer systems, formed by multimedia hardware system and multimedia software system structure.
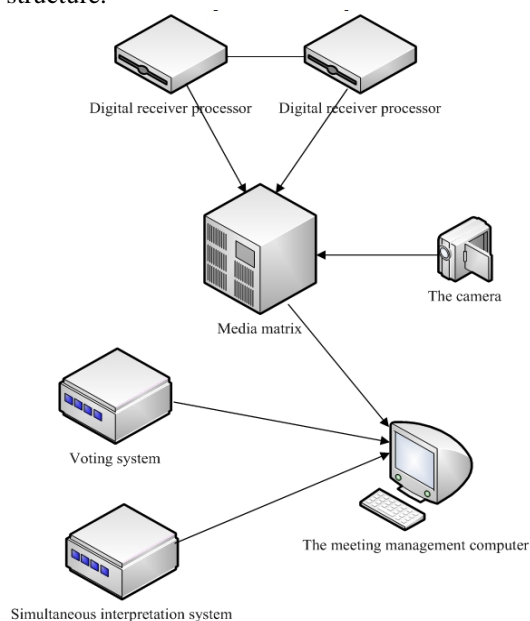

Figure 1: Multimedia computer integrated system elements

(1) The hardware of multimedia computer system. Multimedia computer hardware system in addition to higher

configuration mainframe computer hardware, but usually include audio, video processing equipment, CD-ROMs, all kinds of media input/output devices [8], etc. Due to the multimedia computer system need computer interactively comprehensive treatment video, audio, text, graph sexual image information, therefore, the multimedia computer system hardware requirements than ordinary computer system to high.

(2) The software of multimedia computer system. Multimedia computer system software mainly includes: multimedia operating system, multimedia hardware operating procedures and various applications. Multimedia computer is referring to conform to the multimedia market association formulated by the MPC standard multimedia PC. The multimedia technology in the teaching application, which is based on the application of multimedia computer system, usually in the multimedia computer hardware and software environment corresponding teaching development, application of hypermedia technique to form a multimedia teaching system, and then used for teaching or individualized learning [9]. So, if we want to develop the multimedia teaching application, must first understand the multimedia computer system and its characteristics, in order to have a clear view of the multimedia teaching characteristics and potential.

Basic characteristics of multimedia computer system
Multimedia computer system is a computer technology and multimedia techniques, it makes the computer as the information source (including text, graphics, photos, images, sounds, etc information) as an information management tool, as information display and information transfer equipment the three aspects of the function of organic unifies in together, therefore, multimedia computer system shows the following several main characteristics:

(1) Integration of multimedia computer system. Integration mainly manifested in two aspects: one is the integration of information carrier, i.e., to a variety of information media integration in structured program, organic, and to form a unified whole processing, processing, and then integrated that out.

(2) Interactive. Multimedia computer system using graphical menus, ICONS, window of the beautiful image of the graphic interface as the man-machine interactive interface, the user can optionally control, any operation of media (shown in figure 1).

(3) Controlling [10]. The multimedia computer system is not a simple combination of all kinds of equipment, but on the computer for the control center, from the peripheral equipment for multimedia data are unified processing and management, and can according to need, convenient use these equipment, let them finish the task in different process appeared.

MULTIMEDIA COMPUTER NETWORK SYSTEM
The computer network system is to use communication equipment and line will be the different geographical position, the function of multiple independent computer systems interconnected up to the perfect function network software to realize the network resource sharing and information transfer system, shown in Figure 2. Through the Internet, to realize the communication between the computer, so as to realize the computer system of information, software and equipment resource sharing and collaborative work, and other functions, its essence is to provide all kinds of resources between computer high shares, realize conveniently communication information and exchange of ideas [11].

Constitute the computer network system elements:

(1) Computer system: the workstation (terminal equipment, or call the client, usually PC machine), the web server (usually is a high performance computer).

(2) Network communication equipment (network switching equipment, interconnection equipment and transmission equipment), including network interface CARDS, line, HUB (HUB), switches, routers, etc.

(3) Network peripheral equipment, such as high performance printer, large capacity hard disk, etc.

(4) Network software, including network operating system, such as Unix, NetWare, Windows NT, etc.; Client connection software (including based on DOS, Windows, Unix operating system, etc.), Network management software, etc.
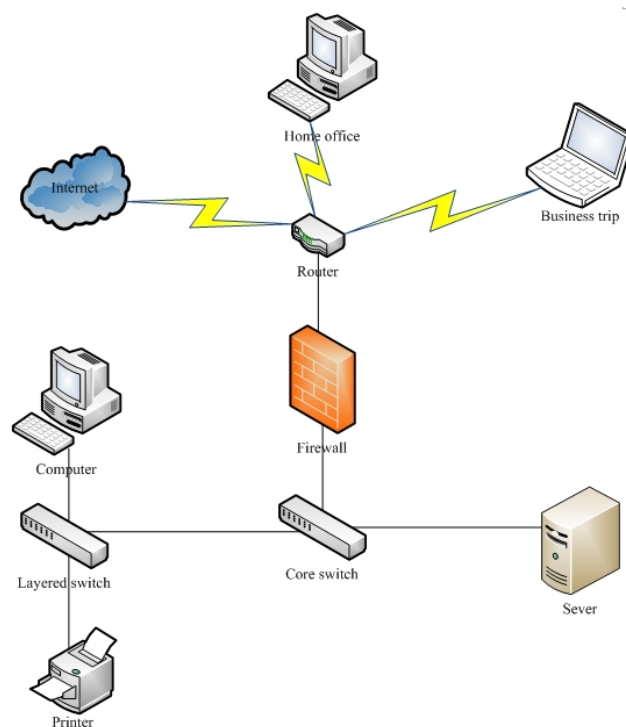
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Figure 2: Multimedia computer network integration system

MULTIMEDIA COMPUTER INFORMATION PROCESSING SYSTEM
Computer information processing system refers to computer based processing system. The input, output, processing of three parts (as shown in Figure 2), or by the hardware (including CPU, memory, input/output devices, etc.), the system software (including operating systems, utilities, database management system, etc.), the application and the database of. An information processing system is an information conversion mechanism; there are a group of conversion rules [11]. System according to the input content and database content decided to output content, or modify the content according to the input content database. The system must be able to identify input information. In the computer as the core of the information processing system, if the input information is numerical data, the system can be directly receive, does not need any conversion; if the input information is the numerical information, it must be converted into numerical data to be processing. Corresponding to the system output, it is a corresponding inverse process. Information processing system is a very complicated system. System design, construction, operation and maintenance of all need large cost, so we need to start from the point of view of system engineering analysis and research. System software block and database two parts, their information processing system are equally important. A good information processing system must have a good man-machine communication interface. The development of information processing systems technology is still in the development has been used in information processing system also need to constantly update, shown in Figure 3.
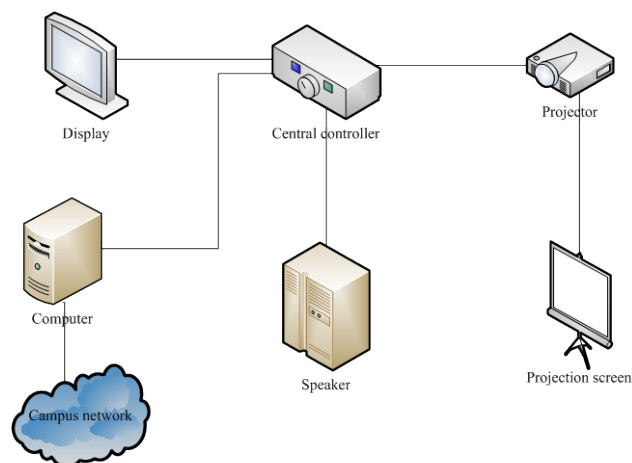

Figure 3: Multimedia computer information processing system

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MULTIMEDIA COMPUTER INTEGRATED SYSTEM SOLUTIONS

With the needs of the modernization drive, more and more units have to establish an advanced computer information system. As a result of each unit has its own industry characteristics, so the computer system kaleidoscope. From the factory production management system to the stock market securities management system, from the government office system to the medical unit management system management system, different system is a big difference between. For different units different application of the computer system will make a detailed design scheme of the system, this is the computer system integration solutions [12]. The current structure basically are bus structure and star structure combination of typical structure, can be divided into as below the topological structure. From the transmission technology point of view, it is actually took a call to MAC frame switching technology, make full use of the large capacity for dynamic bandwidth. At the same time in more than one node established between multiple communication links, minimize network data frame forwarding delay. Based on the virtual network technology and dynamic adjustment of network structure, improve the utilization of network resources. Based on the special product network management system more network real-time service provides a powerful tool. Although the system structure is simple, but it does make full use of the switching network technology to solve the problem of communication obstruction, so as to avoid the Ethernet and FDDI communication competition. In addition, due to the performance of the whole network after meshing basically be to the server, so in the future on the network upgrade, the add server processing capacity can (including server upgrade or add server quantity), shown in Figure 4.
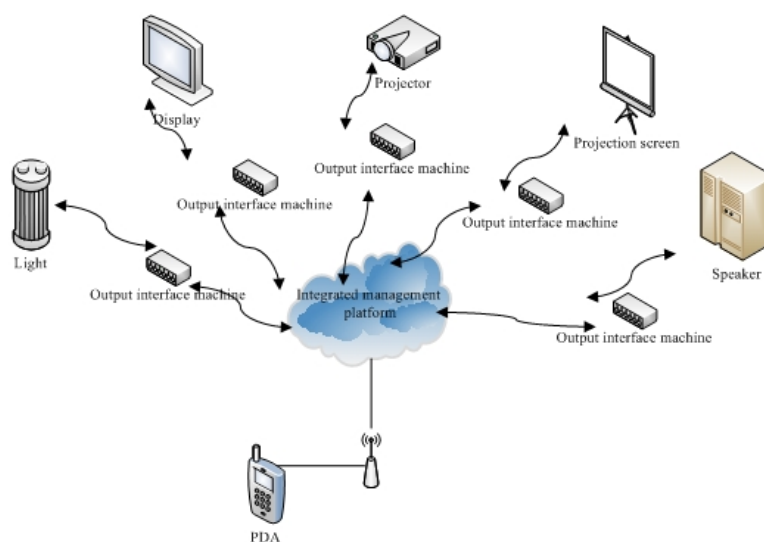

Figure 4: Multimedia computer integrated system solutions

CONCLUSION

The systemically multi-media computer integration requires its teams to comprehending as well as analyzing according to demand proposed by clients, and processing relevant experience as well as ability of computer and network technologies, which make them qualified for the job. By means of the analysis above, we realized that informationalized construction programming should be focused on programming as well as guided implementation, which is the constructive blueprint for informationalized development of the organization, and also is the orientation as well as the guiding principle; meanwhile it consists of a specific and elaborate implementation plan as well as measures. It fundamentally guarantees the performance of informationalized construction for the organization, and not only avoids its aimless, which makes it practically sustain organizational strategy, business operation and information security, but also to some extend rationalizes organizational investment for informationalized construction and obtains a favorable cost performance. Moreover, information system integration emphasize on implementation and realization. It should be the successor processing stage of informationalized construction programming, namely implementation stage. Consequently, it is extremely unprofessional and dangerous to consider information system integration as informationalized construction programming, or to choose an information system integrator to accomplish organizational informationalized programming, or to perform information system integration without informationalized construction programming. The larger the scale of organization, the more complicated management as well as dangerousness will be.

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