Proceedings of the Meeting & workshop on
Development of a National IT Strategy
Focusing on Indigenous Content Development

Iran-Tehran
October, 2\textsuperscript{nd} & 3\textsuperscript{rd}

Octobr, 2004
The Electronic Organization of Education and Training

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Abstracts
Ministry of Education possesses the potential and very valuable infrastructures for developing the information technology. Its policy towards automation and informatics has positioned it well in E-Government initiative. The present paper discusses conceptual model of information technology development adopted by the ministry. Information technology development from two perspectives: computer-mediated education and HRD/HRM. The paper discusses the strategic IT plan devised for the ministry, and touches upon its impact in the area of educational content development

Keywords: paperless organization, Strategic IT plan, Ministry of Education, human resource management, content development

1. Introduction
The qualitative and quantitative vastness of the ministry activities and resolving the problems rising from them requires wise application of the information modern tools for planning, execution and supervision. And since the information tech. has got most compatibility with the ministry compared with other technologies, it has already prepared the strategic instrument and the conceptual model for developing the info. Tech. And based on this notion it has adopted the motto of the inquiring student and the learning organization as the scope for info. Tech. development, which has regarded the info. Tech. From two perspectives: education by computer and aided by computer which will be carried out by the planning and policy-making sections of the ministry helped by the project manager of the Info. and communication development plan and the electronic organization and electronic services have been taken into consideration which will be handled by the Info. Tech office of the planning and human resources department of the ministry. These issues will be discussed in this paper.
2. History
The ministry of education and training inline with deployment of the modern technologies took action to devise the informatics master plan with the features below:

General features of the informatics master plan
Vastness, variety and complexity of the informatics master plan of the ministry, has called for utilizing a set of software packages as the designing and constructing the application systems which can meet the organizational needs in accordance with the ministry dimensions as the largest execution and administrational organization in the country. Thus,

The plan specialists have devised and developed a set of packages relying on the capabilities and technology available, which has been constantly getting improved and modified through the expansion of the systems.

The considerations mentioned below have dealt with as the designing principles for developing and compiling the components of the master plan:

A. The need for the minimum equipment
Regarding the fact the computer equipment have been mainly of foreign origins and is dependent on currency, the ministry has been waiting for currency allocation so as to obtain the required equipment and quite consciously has found the proper solution and by making the best of the minimum capabilities and currency at its disposal. Thus, the package can be run on smallest computers used in the country. Moreover, the stronger equipment can enhance the speed of master plan systems.

B. Compiling instead of translation
The ministry is proud that for designing and production of the master plan soft wares no foreign element (either expert or software) was invited for assistance and the relevant soft wares have been all compiled (instead of translating the foreign soft wares) by the local human resources.

This enables the plan to get designed and developed in accordance with the local conditions and requirements and any possible modification needed can be applied in an independent manner. Moreover, making use of the knowledge of the local specialists has reduced the total costs of the plan substantially.

C. Cost reduction
In designing the informatics master plan, reducing the execution costs along with the efficiency promotion and planning ability and supervision have been always taken into consideration. For example, using the modern laser tech. from a cost-effective perspective for making documents has led to about one billion Rials of saving only in the area of paper consumption. It is obvious that such saving measures will be more conspicuous in terms of issuing the students documents (such as score-lists, certificates and etc.)

D. Easy execution
In designing the plan it has been always heeded that the using the systems are easy at the price more complexity of the internal parts. Now that the informatics master plan is shaped and the mechanized systems are utilized in the remotest area of the country, the experts and officials working in various sections like finance, training, employment and ... can make contact with the mechanized systems and data bases
without needing any specialized knowledge about computer and this way the carry out the operations themselves.

E. Easy access to info.
By automation of the operations, easy accomplishment of the current tasks and formation of data bases the information needs of the organization has increased and the need for preparation of the unpredicted reports is felt. Therefore, the possibility of designing and producing the reports by the users of the systems is taken care of which ensures the extraction, classification and combination of the data on the basis of the experts comments. This ability is one of the main supervising, decision-making and controlling function with computer.

F. Uniformity of the application systems environment
Separation of the main functions of each system is one of the parameters and performance adjustment of each system with the current affairs taking place in the uniform environment of the software ensures the easy and fast communication with the mechanized systems. Training the experts will be done faster and much better this way.

Execution of this plan with such features in the ministry has led to deployment of over 35 systems in the various section of the ministry resulting in automation of the main functions of the device including formation of very rich data bases of up to date information based on operation focusing on four key elements, student, human resources, space and lesson which have paved the ground for materialization of the electronic organization.

Electronic organization essential for establishment of the learning organization
The Ministry of Education in line with establishment of the learning organization and regarding the experiences of using info tech during the last decade is working on the programs below for materializing the electronic organization:

- Redesigning the informatics master plan systems of the ministry
- Launching the web sites network of the ministry at the levels of the headquarter, province, region and school
- Developing the master plan for statistics information
- Studying the activities and process of their accomplishment for deploying the office automation system with job flow management approach

Launching the web sites network of the ministry at the levels of headquarter, province, region and school

Another program followed up by the ministry is to launch web sites network in various sections of this ministry and for this purpose web sites with concrete, targeted, organized, easy to access and management support from higher levels in the automated system bedding are getting designed and executed.

All the departments, organizations, offices and administration sections, as well as all the sections in the regions and districts will benefit from independent and unique sites which will be able cover specific demands of the entity using them. Even the appearance of each certain web site will be wholly different from that of others. Such measures will lead to communications and interactions between all education levels getting done in an electronic manner. This in turn will result in:
G. Paving the ground for creativity

The environment around us and the limitations imposed by it usually is one of the obstacles on the way of creativity of the individuals. If this obstacle is removed then the path is paved for fulfillment of the people creativity for sure. The virtual world getting vaster and vaster day by day due to the growth of the internet is void of lots of such limitations. Thus, this world which is the fruit of thought and innovation and leads to creativity and also braking through the environment limitations has been accounted for in this plan. Among those points incorporated in this plan which can help actualization of creativity and innovation among teachers and students some are mentioned below:

1- teaching models
in this plan the teachers can offer their innovative ideas regarding the teaching models without any limitations and after the appraisal and examination by the educational groups, scientific associations and… which are the teachers formations such ideas can be published in the school, region, province or educational center site. Moreover, the best teachings of the week, month, season or the year will be introduced through proper sorting as a kind of appreciating the hardworking personnel. This is done to introduce the successful teaching models and help to get the teachers creativity flourish.

2- Books published by the teachers
by carrying out this plan it will be possible to publish the books of the teachers after the quality of each is evaluated at various levels of school, region, province or the country. Such encouraging measures like introducing the best works of the teacher for each week, month, season or year through proper sorting other than information dissemination, a good situation will be provided for further participation and creativity of the teachers.

3- Electronic services
By carrying out the electronic education and training plan the attention and concerns of the officials, managers and teachers will be directed towards offering electronic services and the way will be paved for creativity in terms of presenting electronic services. This development can result in advancement of the existing electronic services or offering new ones.

3- Scientific and educational
This plan will provide the possibility of getting the teachers and students articles and works in research areas published which will lead to their creativity fulfillment.

3. Development in the educational system

The various grounds provided in the electronic system of the ministry will lead to practical breakthroughs in the system and the ideals like the inquiring student and teacher, vented creativity and learning organization formed, data base establishment, interactive system devised, deeper participation and active presence of the teachers in their own formations will all contribute to this cause.

The possibility of organizing and offering teaching models, lesson preparation and room for interaction between teachers and students will be all conducive to a more dynamic educational system and positive break troughs in this system as well. The outcome of such developments, other than crucial effects on the system, will pave the way for redesigning the educational process.
3.1. The knowledge production movement for powerful arrival at the knowledge production era
Organizing the research works, surveys and articles will be the knowledge production and its mechanism elements of this system and the actions taken in this regard are as below:

3.1.1. Institutionalize the Ministry of Education structure
Due to the importance of the issue, several formations at the ministry are active in this line. Thus, examining and getting to know these formations is of special importance and they are listed below:

1. Research center for education and training
2. Research council of the departments
3. Office affairs section for research and publications
4. The provinces researches council and the specialized committee affiliated to them
5. The region researches council for organizing the researches done by the researching teachers
6. Student research center

By carrying out this plan the activities of all the sections mentioned can be organized and put into the knowledge production services. Specialized dealing with the issue of research, surveys and papers offered by the students and teachers done by these sections will result in activation of the knowledge movement. Regarding the importance of knowledge production quality and content management together with preventing the presentation of the information which is not useful or void of structure, utilizing this mechanism is of significant vitality. Since the knowledge production will be achieved by students and teachers such factors and the ways of accomplishment of the content management will be discussed separately below.

3.1.2. Knowledge producing student
The first level of quality control and content management for the students research jobs will be done by their teachers and if the research, survey or article of any student is of good quality, that work will be published in the school site and if the paper is of an acceptable quality regarding the region standards then it will be sent to the region center by the teacher and the person in charge of the region research works will evaluate it and after its confirmation at that level it will be presented in the web site. This procedure is followed at higher levels as well and the content management is done through at least four steps.

3.1.3. The researching and compiling teacher
The research and survey works of the teachers will be examined and evaluated by the qualified entities including members of the teaching groups, scientific associations or the region research council and if the papers offered are of quality accepted by the region then they will be published at the region level in electronic format. If the quality can be acceptable to the province then after getting them dispatched to the education and training center for research of the province (in an electronic manner) the relevant scientific authorities will evaluate them as well and they will be published at the province level too. The same procedure will be followed for higher levels as well.

Thus, all the works including the student’ and the teachers’ both are evaluated at several levels the content management is realized. It is worth mentioning that this
kind of entering into the information tech era will be an informed entrance and it is essential that the relevant headquarter section exert all their power and spend the main portion of the resources allocated to them on paying for the experts wages active in the field of control and management of the content.

A. Motivational actions
The motivation is the motor for progress in any task and paying attention to the motivational issues is important. Some of the motivational drives attended to in this plan are explained below:

1- The motive resulted from the feedback of presenting the individual efforts outcomes
the feedback gained from presenting the researching tasks and papers of the students and teachers at the web sites of the educational units of the regions, provinces and central site of the ministry mentioning full details about them will be a strong motivational factor leading to more efforts provided by them and betterment of the affairs.

2- Competition motive
The possibility of presenting what the individuals have accomplished at various levels mentioning their specifications will pave the way for their healthy and clear competition and they will pay more attention to the jobs at their hands.

3- Activation of the responsible section of the system
Activation of the sections in charge of research at the ministry and introducing the selected works of the week, month, season and the year at various levels of school, region, province and country including the discipline and gender in this regard together with granting letters of appreciation, certificates and prizes- if possible affecting the salary of the teachers to increase what they get- will all lead to strongest motivations among the teachers and students both.

4- accounting for the social status
Regarding allocation of the web site to all educational centers in this system and introducing the superior students and teachers in the areas of research, papers and surveying works at the centers where they are active will have a significant impact on their progress since introducing them to others in the areas where are well known is respecting their social status resulting in their further motivation.

B. Specific, meaningful and classified structure
The existence of a specific structure for any of the research, papers and works sections will result in production and presentation information with a full and meaningful structure. Also their evaluation and examination will be easy and the needed data will be accessible and of no problem to explore. All the mentioned merits will lead to an organized frame work in producing knowledge.

This assumption that knowledge production is done through a special and isolated mechanism is wrong. In fact by activation the existing structures and getting them organized the movement can be started and it is not possible to enter the knowledge and information tech era except going through this approach.

And issues like participation and interaction, comprehensiveness, establishing national databases, expansion of the culture for using info. tech., achieving the goals of the ministry with respect to training sociable students who are creative as well and… improving the access to the information, transferring the teachers
experiences, developing the consulting culture and… are among the achievements of this plan and further explanation on them is evaded due to practical limitations.

Actions

Designing and production of the first phase of the educational units web sites which is presently under testing process can be accessed by the address below:

www.sch.medu.ir

The designing of the first phase of the regions web site which is going through its final stage will be ready for test execution as of Mehr.

Designing and production and execution of the first phase of the ministry organizations site accessible through the address mentioned above, the central site of the ministry is available by the address below:

www.medu.ir

The designing and production of the first phase of the teachers scientific and educational site for supporting the NGOs is right now at testing stage and accessible by the address below:

www.anjoman.medu.ir

The designing and production of the first phase of the ministry central site and some of the sites belonging to the departments, headquarter offices and headquarter chief offices

3.2. Redesigning the ministry informatics master plan systems

In designing the systems in DOS environment, regarding the existing tools and the prepared samples the procedure adopted for deployment of the new system and all its steps were all clear but for carrying out such projects in the new environments we were merely faced with targeting and definite questions and there was no totally designed and step by step method available to us.

So after completion of researching jobs and adequate studies together with using other experiences a process is developed by a team of experts enjoying administration experiences in the previous systems of the ministry which is firstly of the required execution-oriented capabilities and secondly able the fulfill the tasks requested regarding the existing demands.

This process includes the issues of structuring the office procedures, theoretical aspects and by-laws of the project in some sections and the methods of deployment and making the procedures operational in a computerized system in other sections. The purpose of this session is the explained below:

A- Getting to know the path and future way of designing soft wares at the ministry level
B- Explaining this process to the plan accomplishing people, the executing and supporter of the system for getting them familiar with the job details
C- Benefiting from the useful experiences and comments of other experts for improving the offered methods
D- Helping the facilitation of the future support for the systems produced

This process is not related to preparing special kind of systems in the field of student systems for example. But due to making it operational it has become one the presently areas entitled as the desired school and has been deployed in accordance
with the rules of this process. Thus offering some explanation about is just as a sort of sample.

Sample targeting in designing a desired school:
A- A desired school is a set of systems capable of operating in an integral and compatible manner and almost meet all the needs of an educational environment like office affairs, library, financial affairs, accounting,…and having a central part can easily developed and upgraded.
B- The central part of this system should be designed in a way that can handle all the common issues at various educational stages of the ministry system including the elementary, intermediate, high school and pre-university levels.
C- This package should be designed in a way that any kind of modification or development can be easily done to it and regarding the changes in the rules and by-laws of AVEP such measures can be taken on time so that no problem is faced like what was experienced with DOS systems.
D- It should have complexities of a system designed for AVEP with the vastness of its users and dispersion of the regions covered by it and the ability to explore the whole records of the students at the country level as a unified entity and the design vision of it should not be limited to one specific school. In fact, it should meet all the requirements of AVEP.
E- Debugging or Documentation on the basis of the current standards should be feasible.
F- Deployment of this project should get realized through using the most modern technologies for developing soft wares in the world.
G- The designed package should be able to turn into a web site system without needing the structure change or any extra ordinary operations in terms of the time or human resource spent on.

But these were only responding to the present demands and there was no definite plan for carrying them out. Thus, in designing this project a proper process had to be foreseen so that it could be used in designing other soft wares. This way the dispersion of methods and extra costs would be eliminated. For this purpose the measures below were thought of. The first step was to choose the proper environment and effective tools.

The execution environment:
As you know there are lots of environment in the domain of computer systems, which get improved and upgraded constantly, and in each one of them several ways can be experienced. Regarding the above targeting we had to choose the best execution environment. This one should be of the features below:
1- Preparation and installment should be easy for the users.
2- As far as it is possible it should be familiar to the users and most of them should have experienced it at least briefly.
3- The environment should be standard and compatible with other systems even out of the educational environment.

After examining the above points WINDOWS XP was chosen as the operating system and SQL SERVER as the DATA BASE. For this phase of the project.

The execution technique:
Sheer preparation of a soft ware under WINDOWS could not be acceptable. Actually a new approach should be applied for the design so as to evade the problems faced in the past. For reaching the highest efficiency with the strongest technical support the concepts of OBJECT ORIENTED were used for the execution purposes. Object oriented programming or objectivist programming is a new outlook toward programming its methods are nor really something new and even in our daily life we deal with them. In fact, it can be said that all the things around us are kinds of objects such as a pen or monitor. Regardless the points related to their production there are certain points about their features and functions. From a user standpoint we are concerned with the way they are produced but we only care about their specifications and functions. For contacting any object we should pay attention to the functions that the producer has assigned for them. For example, a monitor has got a feature related to its screen and means specific keys on the casing can adjust the sharpness of the picture. Some simple objects can make a complicated device when combined but all the parts still follow certain simple mechanisms. In other words, there is a sort of hierarchal order, which sets the small objects in a way that finally a complicated instrument is produced which can offer more utilities. The same thing goes with the object-oriented programming.

According to the definition, object oriented programming is programming abstract data type the relation between is abstraction. In short it is to eliminate the redundant details of a vague problem and establishing a simplified structure of it through which the specifications of the problem are divided into a set of data and the operation on them. Abstraction finally leads to the formation of a data structure about a definite issue that has collected data inside itself and we call it object. Actually a program consists of a series of objects, which contact each other during execution of the program. An object has got the data and the procedures of allocation and releasing the memory and other relevant points inside itself. Any task carried out by O.O.P methods can be structured, written and executed in other programming languages without using these methods. Using O.O.P in small and simple programs is not cost-effective but in designing large and complicated programs it offers a great deal of merits explained below:

- Simple and fast for developing large programs
- Simpler and cheaper support
- Suitable for group project
- Suitable for solving the designing and deployment problems

For programming with O.O.P method we had to choose a tool by which the concepts of programming could be realized. For this purpose we resorted to the most modern technology offered from the Microsoft company called NET. We used Visual Studio.Net and the programming language C# in that environment since NET is new environment and Microsoft has started investing on it seriously and it has recommended the usage of new packages and we have increased the life time of our soft ware by choosing this environment since apparently the path adopted for developing Net is going to take a long time.Net other than visuality, offers an integrated environment and acts totally on object oriented concepts and the language C# is more familiar to the team than VB because it is very much like the language C.

Visual source safe is a tool making team work possible.
Establishing statistics information master plan

1- Examining the existing state

A. The capabilities of the operational systems and the ministry data bases

The ministry as the largest administration organization of the country has deployed its informatics master plan as the 1991 which aims at establishing the kind of management procedure based on information through automation of the execution operations. This plan consists of 35 information-operation systems which have mechanized a substantial portion of the office-related and educational activities of the ministry all across the country having connection with each other.

These systems have covered the four components of the education: human resource, teaching center, lesson and the student.

Regarding the HR right now the office-related operations of 1,100,000 employees of the ministry working in various sections are currently getting trained by computer systems.

Regarding the teaching centers right now the planning and education process control over 130,000 nits is carried out by computer systems.

Regarding the lesson, registration and updating the standards of the lessons at various levels and stages and making the high school lessons (technical and occupational and work-knowledge) are all done by the computer systems.

Regarding the student tasks like registration, credit choosing, holding exams, educational guidance, issuing certificated and lots of other activities of the same nature are done automated and by computer systems.

Also the financial systems like credits and payments and the like have covered the financial aspects of the ministry activities.

Deployment the operational systems in a space as vast as he ministry which covers the remotest area of the country is the result of extensive efforts of thousands of the ministry employees at all levels and presently over 40,000 employees working in the execution departments are using the mechanized systems directly. Deployment of such systems have brought in two fundamental achievements for the ministry:

1- Facilitating, quickening and regulating the execution affairs
2- Establishment of the accurate and updated data bases

The ministry data bases

The ministry data bases are based on the execution operations and this means that the data of such bases are extracted from the operation content and when the task is going on and production of the data needs not a separate operation like seeking statistics. For such reason the produced data has got the desired features below:

1- the data is accurate since there is no need to rewrite or record the for a second time and because they are used while the operation is going on the errors are detected soon and rectified.
2- The data is updated since they are recorded while the task is getting done (for example the data about the school where a teacher teaches is recorded at same time as the decree is issued)
3- The data can be processed since the data are recorded in the smallest and simplest form possible (atomic) and due to that they can get combined, merged, summarized, classified and put into new forms.
4- The data is continuous since the execution operations producing the data are continuous and because of that the users can rely on their being constant and accessible so as to base their methods on them.

B. Inadequacies of the ministry information system
The information system of the ministry can be examined from two viewpoint: production and consumption of the information.

What so far has been said mainly dealt with the information production aspect of the ministry which be considered to be based on the most advanced theories of information production but in terms of the information consumption (informing) there are some shortcoming regarding the modern tech. The existence of accurate data in the information network of the ministry does not mean that such data is available to the user fast and easily.

The data storages of the ministry which are the outcome of thousands of the employees are like the water accumulated behind the dam and due to lack of proper distribution networks only a small portion of it is utilized. At the moment two main shortcomings have caused the reduction of the information system of the ministry efficiency.

1- Lack of proper network for information transfer
The data existing in the local bases like the school bases are totally updated but receiving information from them for updating the upper levels is delayed due to the fact that the modern methods of data transfer are used and there are not the essential telecommunication sub-structures either. At the moment the data transfer is done on the diskettes due to the volume or modems are used and this leads to a delay of one month for transfer of the HR data and some months for student data transfer. In other words, the data which is updated in the local bases are like that in the headquarter bases.

Fortunately, the nature of the headquarter activities are such that such delays have not devastating impact on the data application at those levels. For example, a delay of one month regarding the HR data leaves no destructive effect on the HR planning tasks. Thus, application of the new ways of data transfer will show its impact on the number of operations done by the experts of the machine services field.

2- Lack of proper network of data dissemination
Right now offering data is passive at the ministry meaning that nothing considerable takes place in this regard except for publishing statistical or geographical booklets on CD done by the information Tech. office every now and then. And in other cases it is only done when requested. Such method of presenting data will lead to:

Firstly, since there is a delay between the request time and the delivery time most of the applicants who need instant data can not receive it on time so they have make their decisions with delay or forget all about it and base their decisions on a non-data basis.

Presently, one of the solutions for reducing this delay is to transfer the data in a raw form to the users environment aiming at helping them to extract the data they seek themselves. Of course this solution further complicate the matter itself since the users are familiar with the definitions and information structures which leads to lack of harmony in what they extract as the figure and information sought.
usually for considering a simple point like the number of teachers various figures are offered by various centers and despite the fact they all use the same raw data but what is finally extracted by one office shows the teaching ones and the other office takes all the employees at that working space all together.

Secondly, the office in charge of extracting the data (the Info. Tech. Office) is always faced with too many requests usually asked by the managers and policy-makers of the ministry and the data they need inevitably has to be produced exclusively or some of them can be processed because the applicant has not properly put it forward. Whereas the requested data may be accessible in another data base in a different format and even more perfect. Such cases have resulted to numerous negative or wrong responses to the demands which are constantly brought up in a wrong manner. This is the case despite all the efforts made by the data extraction unit of the information Tech. office.

Thirdly, lots of the potential applicants of the data are outside the ministry domain (inside the country or abroad) and right now they receive no services whatsoever. This group is mainly representing the education researchers or the country policy-making individuals. The facts mentioned above call for designing a master plan for information dissemination based on the modern technologies for using the ministry data bases.

3- The ministry information dissemination master plan

A- Goal
The goal of the ministry information dissemination master plan is to utilize the existing data at the data bases for offering information to the applicants inside and outside the ministry through the Internet.

B- Method of data providing
The master plan for this purpose is designed in away that it can accomplish the execution scenario explained below:

1- Registering the users
All the users inside and outside the ministry are registered once and the permitted domain for getting access to data is defined.

2- Access to data
The users by entering the information web site of the ministry (by the Internet) and introducing the data titles they want as key words to the system. A search engine will explore the data titles among all the statistical tables and journals existing in the database and list all the tables and reports related to the data titles requested by the users in any way. For instance, if the user needs some information about the years of service that certain employees of the ministry it will be sufficient to search the key word of years-of-service only. The publishing data base may present the statistical tables covering the years of service related to the employees years of service in accordance with the academic degree, the education level, the province and etc which will be listed for the user.

The user will choose what he has been looking for out of the lists and get them transferred to his own PC and then in that environment he can merge the chosen reports or possibly arrange his own tables and if needed get them printed or prepare diagrams out of them.

The user can limit the search to certain periods of time or specific geographical areas. For example, the limitation can be the non-interest schools of Tehran
province in the educational years from 1997-8 to 2001-2 and this way the list provided will contain the statistical reports related to the non-interest schools of Tehran province in the requested duration of time.

3- The request for production of reports and new data tables
if none of the listed reports does not satisfy the user needs then the user will send what he is after through proper means like E-mail to the information center of the ministry and this center by the tools at its disposal for making the statistical tables, will publish the requested report based on the titles mentioned by the user on the ministry data offering web site. It will inform the user about its publication through proper means including E-mail.

In the data base the published items of each table and report will have ID meaning that together with offering the table all the essential explanation about the definitions of the data titles, the preparation time, the user name and… will be provided to the users in a way that the remote users need for vocal explanation is satisfied.

By employing this method of information presentation by the ministry the following services are provided:
1- All the users all over the world who have access to the Internet can get access to the data they need if permitted (The data is offered in two languages)
2- The disparity between the various statistics will be removed by the existence of a specific mechanism for dissemination of information at the ministry information center.
3- Since the statistics and data reports which are published periodically or upon the users requests are all organized and saved in a data base ( the disseminating items base ) gradually the base gets richer and richer. This will lead the steady reduction of the users case requests and consequently the power of the information center will increase and this presently passive state of merely responding to the case demands will be over.
4- The access to the ministry data can be supervised.
5- The users application in person for getting data will decrease to the lowest level possible.

4. Actions
The information presentation master plan has been designed, produced and executed and it is available through the central web site of the ministry addressed as www.medu.ir.

Studying the activities and their accomplishment process for deployment of the office-related automation system by the work flow management approach
Introducing the plan
This plan is part of a series of actions taken for reaching the desired electronic zone and logically the electronic organization and government which will meet materialize the causes and goals of the plan devised for respecting the applicants and bureaucratic development.

Designing the soft ware systems for changing the office-related procedures and methods and application of the Info. Tech. aimed at automated accomplishment of the tasks will be achieved when there is an exact and authentic knowledge about the bureaucratic activities in terms of the number, title, targets, the administrator,
density, regulations, the relationship between them and the method of carrying them out (their fulfillment process).

The office-related duties and activities and logically the processes of getting them done results from the rules and instructions which have been formed gradually in the bureaucratic system of the country that consists a very massive and varied set of tasks in numerous issues and sections.

Naturally identifying any office-related task which is constantly changing in accordance with the rules and regulations (past or future) and also discovering the points or events affecting or affected by other tasks is a difficult and complicated job. Though some researchers or public entities including the private ones have trying to introduce them but such efforts have been all topic-wise or positional and often published in the form of booklets or books that can be read by all and their validity expires too soon due to the changes done to them. Thus, so far a perfect set which is comprehensive and employing a mechanism handling the changes as well has been offered yet. That is why the plan for identifying the tasks is not a periodical study and besides the fact that it examines thoroughly all the bureaucratic sections of the ministry it will try to organize all the office-related tasks with complete features of theirs by using the latest technical tools including the packages and research-oriented ones.

The plan goals
As it was mentioned already in the introduction part the basis and foundation of the producing function of the bureaucratic systems and application of the Info. Tech. for bureaucratic development (or an educational one) is getting to know and study the presently state so that based on the existing data it is possible to analyze and design the methods and systems of the future. But if such data or information about the bureaucratic state of the ministry is prepared the goals mentioned below will be attained for sure.

1- Information dissemination (through the web sites)
2- Analyzing the bureaucratic system for improving the methods and modification of the bureaucratic structure
3- Devising the office-related mechanized systems
4- Deployment of the bureaucratic automation based on the work flow management

Naturally deployment of the integrated mechanized systems and bureaucratic automation particularly with the work flow management approach which will be the outcome of this plan will bring about changes in the bureaucratic system of the ministry departments leading to attainment of all the objectives like user-oriented information offering, transparency of the operations, provision of rules (documentation), and easy access to requested items. Moreover, since the applicants and users will get to their rights by familiarizing with the rules, the stages of the certificated and accomplishment conditions, making the fulfillment of tasks faster, reducing the inequalities and expansion justice, and finally respecting the applicants will be all materialized in a practical and concrete manner.
The measures taken
By forming a specialized team familiar with the bureaucratic systems (manual and software wise) and also using a combination of studying and researching methods along with employing lots of managers, experts and administrators at the region level, the results below are gained.

1- Identifying 1400 activities and bureaucratic services
2- Considering 500 methods and the process of doing a job
3- Identifying the documents, forms, evidence, conditions and the working relation between the tasks

The results gained are gradually analyzed and revised by using various soft wares while entering data.

Conclusion
The most important components of an information-oriented society is the substructures of information and communication. The main portion of the substructures related to the information have been established by execution of the informatics master plan during the past 13 years at the ministry of education and training. In this respect and based on the various factors of the education and training the information substructures mentioned below have been formed:

1- Information substructure related to the human resources
In a series of the informatics master plan systems with allocating an exclusive code for each employee working at the ministry over 100 information items mainly the outcome of the automated operations of the systems have formed round this factor and such information is updated in a monthly manner.

2- The substructure related to the student
In the student systems of the ministry with a unique code allocated to each student, comprehensive information is gathered around this factor and they are updated at specific intervals.

3- The information substructure related to the school (organizational units)
Comprehensive data has been gathered around this factor as well which is updated at specific intervals.

4- The information substructure related to other elements of the ministry
About the factors like the lessons, disciplines, organizational posts, organizational structure and other factors also thoroughly structured and orchestrated information is formed. By merging the information gained by practical execution of the master plan systems very rich data banks have been arranged which cab be quite effective in terms of offering electronics services in various sections and areas of the ministry including training, office-related, financial and welfare domains. On this very basis what seems to be essential and should be taken into consideration is the communication substructures which have been almost provided fortunately by designing the ministry electronic organization during the past one and half years. The actions taken in this regard are mentioned below:
1- The communication substructures for the students and their parents communicating with the school (with designing Site Maker of the capability to establish 140,000 sites for the country schools)

2- The communication substructures for the schools communicating with the ministry departments as the bureaucratic units close to the school (with designing the Site maker of the capability to arrange sites for all the ministry departments in the regions, provinces and headquarter domain)

3- The communication substructures for contact between the ministry bureaucratic levels ranging from region to upper ones.

4- The communication substructures for contact between the teachers, associations and scientific groups (by designing the Site maker of the capability to make sites for all the scientific societies of the teachers and the scientific groups)

Of course, other substructures like the legal, human, management and technology ones are effective as well but there is no room for discussing them here.

Notes
1. the general director of the information technology office; Hadi Yadegari the deputy of information technology office; Ministry of Education

References
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