

Information Technology
in
Jamia Millia Islamia
(2000-2004)

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FOREWORD

Soon after my joining Jamia Millia Islamia in March 2000, I visited all the departments of the University and noticed that the few computer labs in the University were equipped with mostly obsolete PCs. The same was the situation with the University Computer Centre, which is confined to a few small rooms in an old building. When I inquired about the poor state of health of the IT infrastructure in the University, I was told that lack of funds was a constraint. Also the Jamia, like many other Indian Universities did not have a website of its own, which was unthinkable in the West in this era of advanced technology. The first thing I did was to convene a meeting of some senior faculty members to chalk out a plan for developing a website for Jamia. As I wanted to get a complete picture about computerization in the University, I asked the Hony. Director, Computer Centre to brief me about the same. The information was provided in the form of a seventy-five pages comprehensive report on "*Computerization in Jamia: The Present Scenario and Future Prospects.*" The document also briefly discussed various important issues of future development, such as:

- Extension of the campus-wide network,
- Office automation,
- Teaching of computers in all undergraduate courses,
- Strengthening of computer awareness programs in the University,
- Making computer knowledge an essential qualification for recruitment of office staff, and
- Computer-based education and e-learning.

Naturally, the next step was to work out the costing of carrying out the above tasks and, as a consequence, another forty-pages report on "*Computerization in Jamia Part-II: The Financial Details,*" was prepared which gave an idea about the requirement of funds for computerization

After making an overall assessment of the of the IT infrastructure in the University, initiative was taken to develop indigenously a Website for the University which was completed within a record time of four months. Subsequently, a one-day workshop on "IT for All" was organized. This was followed by Faculty-specific workshops to explore the possibility of introducing computer papers in the curricula of various courses and to assess the requirements for the same. The process gradually resulted in changing the mind-set, which is must in moving forward any such endeavour. With the keen interest taken by the departments, computer-related papers have been introduced in twenty one important courses of the University. Also, new courses of MCA and M.Sc. Bioinformatics have been started by the Department of Computer Science, and the Department of Computer Engineering started a B.Tech. programme in Computer Engineering.

Since 2000, remarkable progress has been made in the IT infrastructure in the University. The campus-wide network covers all buildings in the University, connecting its academic departments and offices, girls hostels and boys hostels, banks, and Maktaba Jamia etc. Just a year back, the University Grants Commission selected Jamia as one of the potential universities under its Infonet programme for networking the Indian Universities and provided Jamia a 2-Mbps Leased-line Internet connection. This facility is available to the students and the staff of the University round-the-clock. Currently, at any point during working hours about four hundred users are simultaneously logged on to

the Internet. During the last four years, the number of PCs in the University has grown from 302 to an impressive figure of 1,144, showing an increase of 279%.

With the availability of the IT infrastructure, the responsibility and accountability of the University departments has increased manifold and now it is for the faculty to make the optimum use of the facility in teaching and research. The teachers may now develop their lectures and put it on the Intranet to facilitate their availability to students. *The next step would be to make use of multimedia techniques for developing course material and to promote E-Learning in the best possible manner.* The existing facilities should be increasingly used for teaching, learning and research. These should be utilized by the newly started Centre for Distance and Open Learning. The next milestone should be the establishment of a software park.

During the last three years, another significant achievement has been the development of "JMI-Management Information System" (MIS) comprising of twenty modules, covering the entire functioning of the University. The Students Information System is one of the most sophisticated modules, which starts from admissions and ends in examinations and printing of marks sheets. The Finance and Accounts section of the University is also fully computerized where the two MIS modules for *General Financial Accounting System* and *Payroll System* have become operational from the current financial year. The implementation of the JMI-MIS, will modernize and streamline the university management and bring efficiency in the entire functioning of the University. The responsibility for the effective use of MIS now lies upon the shoulders of the University offices and departments.

Apart from the above developments, significant progress has been made during the last three years in the computerization of the University Library. Retro-conversion of 100,000 English titles has already been completed and the work is still continuing. Through the UGC Infonet programme, which was initiated by Dr. Arun Nigavekar, Chairman, University Grants Commission and of which the Jamia is one of the beneficiaries, thousands of e-journals will soon become available to the students and faculty in the University which will be of great help to them.

Our goal would not have been achieved without liberal financial support from the University Grants Commission. For this, I would specially like to thank Dr. Arun Nigavekar for his keen interest and help throughout. The financial support from the Ministry of Communications and Information Technology for campus networking is also greatly acknowledged. In particular, I am very much thankful to Shri Rajiv Ratan Shah, former Secretary, Department of Information Technology, and Shri K.K. Jaswal, current Secretary, Department of Information Technology and his team particularly Shri Pankaj Agrawala and Shri Gulshan Rai for their help and guidance in networking the University.

Our task would not have been completed without the cooperation of the Deans, Directors of Centres, Heads of Departments and other officials of Jamia to whom I should like to express my deep appreciation.

Syed Shahid Mahdi

Vice Chancellor

Jamia Millia Islamia, New Delhi

New Delhi, 12th May 2004

PREFACE

The new era of Information Technology (IT) in Jamia Millia Islamia started with the dawn of the new Millennium when Syed Shahid Mahdi took over as the Vice Chancellor of the University in March 2000. He started with a mission to make Jamia a modern university, emphasizing on its multidimensional development, having efficient management and functioning. He had a very clear vision about the pivotal role of Information Technology in education and research and in streamlining the university management, which included

- Developing a Website for the University,
- Starting new computer courses,
- Introducing IT-related papers in courses wherever relevant,
- Promotion of E-Learning,

The Vice Chancellor also emphasized on starting regular computer awareness/ familiarization programmes for officials of the University down to the clerical staff.

The highlights of the achievements in Information Technology (IT) in Jamia during the last four years are documented in this report. The Jamia Website that started with 900 pages in November 2000 has risen to 4800 pages in April 2004. The campus-wide network that covered only a section of the University Campus till 2002 with 2.5 km of optical fiber cables has now proliferated to each and every building of the University with a length of 14.9 km. During the same period, the length of the UTP cables used within the buildings has increased from 2 km to 61 km. In addition to 64 kbps IPA-VSAT Internet connection, the University now has a 2 Mbps Leased-line Internet facility. The JMI-Management Information System (MIS), which started 2½ year back, has now become operational with its 20 modules. Its development involved regular and close interaction of the MIS team with faculty members and office staff. During the last one year, about three dozens of training programmes on MIS have been organized by the Centre for Information Technology which have now become a regular feature.

The above achievements would not have been possible without the keen interest and involvement and overall guidance of the visionary Vice Chancellor, Syed Shahid Mahdi who closely monitored all the above-mentioned projects till their implementation. He chaired more than a dozen meetings with the Deans, Directors of Centres, and Heads of Departments and participated in several demonstration sessions on the MIS modules during the course of their development and testing. The suggestions of the Vice Chancellor had always been very insightful. Moreover, during the last one year, the JMI-MIS and campus-wide networking were always on the agenda of the monthly meetings of the Deans with the Vice Chancellor. Such deep involvement and continuous encouragement of the Vice Chancellor has been the driving force behind the successful completion of the above projects. For this, I would like to place on record my sincere thanks and deepest appreciation to the Vice Chancellor whose keen interest and diligence contributed enormously in modernizing the University.

I am also thankful to all the Deans, Directors, Heads of Departments, Members of the IT Core Group, faculty members, and the administrative staff for extending their full cooperation in the process of implementation of the administrative projects.

While working on the 2nd phase of the campus-wide networking, our regular interaction with Mr. Gulshan Rai, Executive Director, ERNET India, and Mr. Meharban Singh, Senior Manager, ERNET India, contributed to speeding up the project. Their help and cooperation is greatly acknowledged.

During the implementation of the MIS project, we needed expert advice on the purchase of Sun Cluster. On our request, Dr. N. Vijayaditya, Director General, National Informatics Centre (NIC), very kindly deputed Mr. Ramesh Singh, Technical Director & Head, System Software Division, NIC, with whom the MIS Technical Coordinators had several fruitful meetings. They also had informal discussions with the Technical Directors, Mr. A. S. Sastry and Mrs. Padmawati. We were also greatly benefited from the general discussion and advice that we had with Mr. T.A. Khan, Senior Technical Director, NIC. For this, I would like to express my gratefulness to the Director General, NIC and his team.

In this four years journey of IT in Jamia Millia Islamia, the sincerity and devotion with which the following members of the IT Implementation Team: Mr. S.K. Naqvi, Mr. A.U. Khan, Mr. Muzaffar Azim, Mr. Jamal Akhtar Khan, and Mr. Wasiful Hasan Ansari worked, is highly commendable and their services are greatly appreciated. The administrative support of Mr. I.U. Khan, Dy. Registrar (Administration), Mr. S.M. Taj, Development Officer, Dr. A. Malik, Dy. Registrar (HRD) and Nodal Officer, and Mr. Israr Ahmad, Programmer, is also acknowledged. The cooperation of Dr. Khurram Mustafa, Coordinator, Mr. Nusrat Husain, PA, and other office staff of the Centre for Information Technology is appreciated.

Now that the entire responsibility of improving and updating the Jamia Website, maintaining the Internet and E-Mail facility, monitoring the efficient functioning of the Campus-wide Network, and implementing the JMI-Management Information System has been entrusted upon the Centre for Information Technology, its responsibilities have increased manifold. Moreover, after creating such vast IT infrastructure in the University, the best utilization of such facilities should be our next milestone. Our future vision is:

- Developing a *Multimedia Lab* for training university teachers in graphics and animation so that they may develop their course material or other educational material using multimedia techniques.
- Setting up a dedicated *Educational Server* where teachers may post their educational material, which may be made available on the Intranet round the clock so as to facilitate students.
- Promoting education and learning through videoconferencing.
- To develop a *Web-based Urdu Learning Program*, especially for Indians living in foreign countries.
- Setting up a *Software Technology Park*.

With this vision, we will move ahead, realizing our dreams of making Jamia technologically one of the most advanced universities in the country.

Prof. Zahid H. Khan

Hony. Director

Centre for Information Technology &

Offg. Registrar

Jamia Millia Islamia, New Delhi

New Delhi, 15th May 2004

INTRODUCTION

Computerization in Jamia started with the establishment of a Computer Centre in 1984 with 286 processor based Minicomputer and some terminals. The system became obsolete by 1990 and it was strongly felt to fill up this vacuum by acquiring a better computing facility. In 1995-96, the University Grants Commission upgraded the Computer Centre to level-B and provided some technical staff as well as a grant for establishing local area network. Thus a network with 10 mbps optical fiber backbone and about 50 nodes was established connecting some of the departments and offices of the University through a fiber network switch. At the same time, the ERNET India, provided e-mail facility to the University. Three Alpha servers were also acquired by the Centre and a computer lab was developed for the use of faculty members and research scholars for computational work as well as for e-mail purposes. In 1996, the Department of Physics developed its own computer lab and Dr. Zakir Husain Library also took steps to computerize its functioning using the LIBSYS software. Internet facility in Jamia, started with the setting up a 64 kbps IPA VSAT facility provided by the National Informatics Centre (NIC) which is now being upgraded to 128 kbps DVB-VSAT.

The major achievements in Information Technology in Jamia were, however, made during 2000-2004. This has been possible due to keen interest and support of Mr. Syed Shahid Mahdi, Vice Chancellor, Jamia Millia Islamia who wanted to make Jamia as one of the most modern Indian Universities with the state of the art IT infrastructure and modernize and streamline the university management.

INITIATIVES 2000

Two Important Reports on Computerization in Jamia

To get an overall scenario of computerization in Jamia Millia Islamia and the future possible developments of IT infrastructure in the University, a report on “*Computerization in Jamia: Part I - The Present Scenario and Future Prospects*” was prepared. The various themes discussed in the report can be found in its contents.

**Computerization in Jamia
Part-I
The Present Scenario and
Future Prospects**

**by
Zahid H. Khan
Hony. Director**

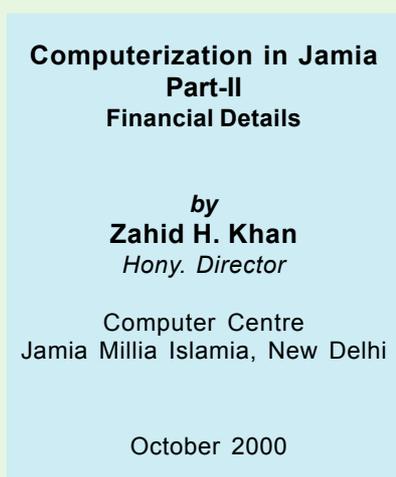
Computer Centre
Jamia Millia Islamia, New Delhi

June 2000

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A natural follow up was to work out the financial details of the individual proposals mentioned in the first report. For this, another report entitled “*Computerization in Jamia: Part II – Financial Details*” was prepared whose contents are reproduced below:



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These two reports provided a framework for future development of Information Technology in the University.

Development of the Jamia Website

In May 2000, a very important initiative was taken by Mr. Syed Shahid Mahdi, Vice Chancellor, JMI to develop a Website for the University. For this a committee was constituted comprising of members from Mass Communication Research Centre (MCRC), Department of Fine Arts & Art Education, Department of English, Department of Hindi, and Computer Centre. The first meeting on “*Website Development*” was held on May 24, 2000 under the chairmanship of the Vice Chancellor in which broad outlines about the homepage, contents of the website, and time frame for completing the website were discussed.

Artists from MCRC and Fine Arts helped in developing the Homepage and selecting suitable color code for the WebPages. Experts from the Department of English went through the entire material submitted by various faculties and departments and did the fine tuning of the language of the text. Web experts from the Computer Centre designed the WebPages. The website was ready in all respect by mid-October 2000 and was formally launched on 2nd November 2000 by Shri M.K. Kaw, Secretary, Department of Education, Ministry of Human Resource Development.



Launching Ceremony of the Jamia Website (November 2, 2000)

Syed Shahid Mahdi
Vice-Chancellor, JMI delivering the Presidential Address.

(From left):

Shri M N A Chaudhary

Registrar, JMI;

Prof. Zahid H Khan

Hony. Director, Computer Centre, JMI;

Shri M.K. Kaw

Secretary, Department of Education, MHRD

(Chief Guest).

MHRD Meeting on “Networking of Delhi based Higher Education Institutions” (September 15, 2000)

On the initiative of the Joint Secretary, Ministry of Human Resource Development (MHRD), a meeting was organized by the Ministry in Shastri Bhavan on September 15, 2000 in which representatives of all major institutions of higher learning, viz., Delhi University, Jamia Millia Islamia (JMI), Jawaharlal Nehru University (JNU), Indira Gandhi National Open University (IGNOU), G.G.S. Indraprastha University, Jamia Hamdard, AIIMS and NPL were invited. The Jamia Millia Islamia was represented by the Hony. Director, Computer Centre. The basic purpose of the meeting was to sensitize the institutions to develop a network among them and, to start with, to develop their own websites and put all relevant information therein. The universities, were, in particular, advised to put admission related information on the website and provide necessary facilities to all admission seeking candidates. It was brought to the notice of the participants in the meeting that Jamia Millia Islamia was already in the process of development of its website with complete information about the course details and admission related information. In the meeting itself, a bold decision was taken by Jamia not only to permit candidates to download application forms for admission from its website, but also to announce the results of the candidates selected for interview and to post the final list of selected candidates on the web. This Jamia became one of the premier institutions to implement the fruitful suggestions made by MHRD.

Workshop on IT for All – An Important Milestone for IT Sensitization (November 11, 2000)

A workshop on “IT For All – Emerging Challenges” was organized by the Faculty of Engineering & Technology, Jamia Millia Islamia on November 11, 2000 in which the following important decisions were taken:

- Providing PCs to all faculty members,
- Imparting short-term computer training to staff,
- Computerization of Library,
- Providing internet and e-mail facility to staff and students,
- Connecting all departments through LAN,
- Providing IT in infrastructure support to departments and offices,



Workshop on "IT for All: Emerging Challenges"

(From left):

Prof. I H Khan, JMI;

Prof. N.C. Nigam, Chairman AICTE;

Syed Shahid Mahdi, Vice-Chancellor, JMI;

Prof. Mini Thomas, JMI;

**Mr. Akhileshwar Prasad, Secretary,
Department of Communications, Ministry of
Communications and IT.**

Most of the above proposals were already part of the first report on computerization in Jamia and barring, provisioning of PCs to all faculty members, these have been executed and implemented in the University.

On the suggestion of the Vice Chancellor, IT Workshops in each Faculty were separately organized during January - March 2001 so as to develop computer awareness among the staff and include IT in the curricula of various courses as per their specific needs of the course. As a result, courses with IT component were introduced in a number of subjects and some new IT based courses were introduced in the following years.

Automation of Dr. Zakir Husain Library

Dr. Zakir Husain Library has the distinction of being one of the Central University Libraries to computerize its collection in English and to provide OPAC (Online Public Access Catalogue) to the users with network access across the campus-wide LAN.

With the keen interest taken by the Vice Chancellor, database creation was initially started in 2001 on Virtua software through VTLS. But due to some technical problems, the library had to shift to LIBSYS software. The Library now has a computerized catalogue of all the books in English pertaining to Stacks, Reference, Textbooks, Rare Books & a centralized PhD Theses database. Till now retro conversion of 100,000 English books has been completed and the work is still continuing. The computerization of Hindi database (6000 documents) is almost complete and that of Urdu books (3000 documents) has been started.

The Library has developed a Digital Library, which is widely used. It provides electronic access to thousands of e-journals through 14 major databases in various areas of Science, Social Sciences, Arts & Humanities, Engineering & Technology, and Law. The Internet area was set up a year ago, where researchers & students are encouraged to make use of e-journals, with regular orientation programmes.

Jamia has also been involved to promote and get input about library IT application in other universities and organized very fruitful training programmes & conventions, including a five-day UGC sponsored Regional Training Programme on Automation & Networking. The recently held 2nd International CALIBER-2004 (Convention on Automation of Libraries in Education) was graced and inaugurated by Prof. Arun Nigavekar, Chairman, UGC. In this convention about 300 delegates and eminent guests from India & abroad participated.

JAMIA WEBSITE

Shri M.K. Kaw, Secretary, Department of Education, Ministry of Human Resource Development (MHRD), Govt. of India formally launched the Jamia Website on November 2, 2000. The website can be accessed at the following addresses:



<http://jmi.nic.in>
<http://www.jmi.ac.in>

The Jamia Website contains detailed information about its Founders, Life Members, Chancellors and Vice-chancellors along. The website also gives a brief history of the right from its establishment in 1920 and contains information about its various faculties, centers, departments and other institutions. Details about the courses offered by the University, brief resume of the faculty members, student-related information, such as hostels, sport facilities, extra curricular activities etc. are given in the website. To retain the linkage with the passed out graduates of the University, the website has the provision of online Alumni registration also.

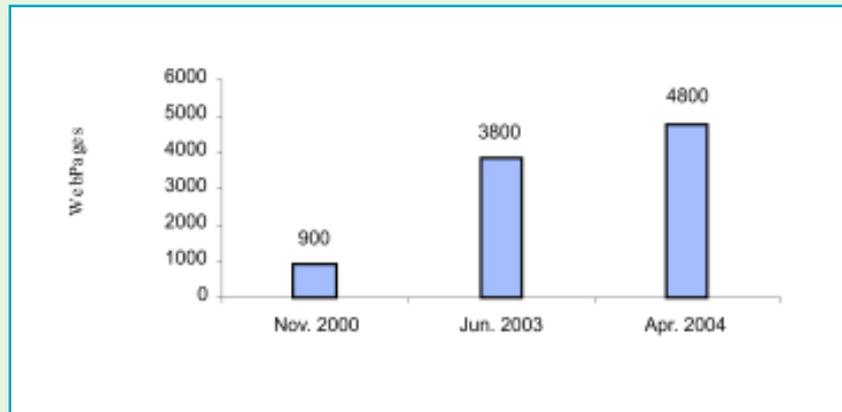
All admission-related information are posted on the website, which include

- * Prospectus of all Faculties and MCRC,
- * Application forms for admission to all courses,
- * Display of list of candidates selected for Admission.

Since 2003-2004, facility for *online admission* has also been provided.

In addition to the above features, the website gives information about research, including the list of Ph.D. awardees, abstracts of their Ph.D. Theses, and research publications of faculty members and research students. The University Ordinances are also posted on the website for reference purposes.

From 900 web pages in November 2000, the number of pages has now gone up to 4800 in April 2004.



INTERNET

For the first time, Jamia got a 64 kbps IPA-VSAT Internet facility through the National Informatics Centre (NIC). This was established with partial support from the All India Council for Technical Education (AICTE). The facility became operational since January 2000. However due to small bandwidth, this facility could be utilized only for uploading the WebPages to the NIC Server. This connectivity is now being upgraded to 128 kbps DVB-VSAT.



Under the Infonet Programme, the University Grants Commission has provided to Jamia a 2 Mbps *Leased Line Internet connection*, which became operational on April 7, 2003. Under this scheme, the machines and the connectivity charges of Rs. 25 lakhs (90% of the total cost) have been provided by the UGC, whereas the remaining 10% of the cost has been borne out by the University. The UGC will also provide Rs. 19 lakhs per annum as recurring expenses towards the Internet connection. The UGC-Infonet Programme will provide a link between the UGC and various

universities in the country that are connected to the network and also among the universities themselves. Its great advantage will be the availability of thousands of e-journals to the universities-through twenty six mirror sites being established by the University Grants Commission



Network Control Lab

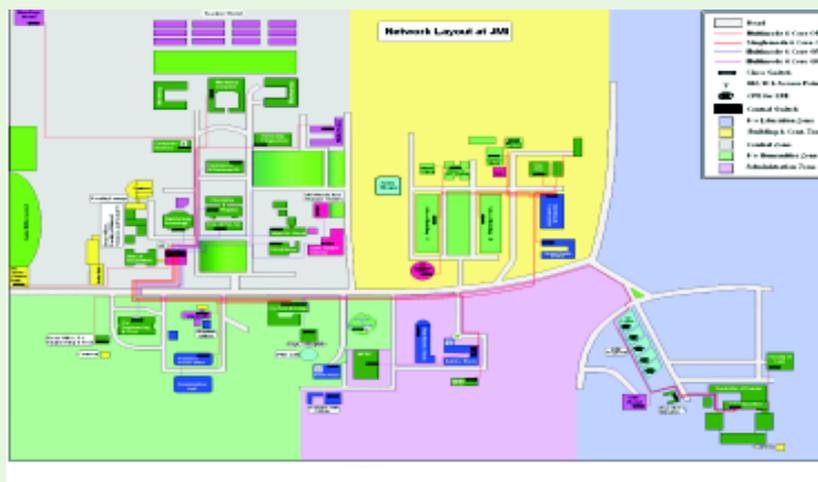
From 16th February 2004, round the clock (24hours a day, 7 days a week) Internet facility is being provided to all departments and offices of the University connected to the central network in the FTK Centre for Information Technology of Jamia.

CAMPUS-WIDE NETWORK

In 1996 a Local Area Network with 10 Mbps OFC backbone connecting nine buildings was established. The network provided connectivity to about 50 nodes through DEC 90TS repeaters and offered rudimentary e-mail services through DEC Alpha system. This network offered no other services except for general computing facility. Moreover, the size of network was too small to cater to the need of the University.

To overcome the above shortcoming, a proposal was submitted to the University Grants Commission in 1999 for expansion and up gradation of the campus network. Later in 2002-2003 the UGC sanctioned a one time special grant of Rs. 1.16 crore for computerization, including networking. With the amount available, the network backbone was upgraded to 100Mbps using CISCO Active components and Avaya structured cabling. More buildings in the campus were brought on the network map of the University and 512 additional nodes were added to the network. On 5th April, 2003 the network was made fully functional, which offered important services including Internet and MIS – a software for university management. However, a large sector of the University still remained unconnected.

To explore the possibility for further funding so as to network the remaining university campus had a meeting of Mr. Syed Shahid Mahdi, Vice Chancellor, JMI and Prof. Zahid H Khan, Registrar with Shri Rajeev Ratan Shah, Secretary, Department of Information Technology (DIT), Ministry of Communications & IT, and other senior officials of the Ministry on August 22, 2002. Subsequently, a proposal was submitted to DIT in September 2002 and the Ministry very kindly sanctioned Rs. 1.10 crores for networking the campus. This allowed the University to be networked completely covering its each and every sector. The existing network not only covers all faculties and offices but also sectors such as schools, hostels and banks. The total number of nodes provided through switches on the network is 1289. In addition, cascading the network connectivity through hubs and unmanaged switches has provided about 312 more nodes. The total number of nodes as on date in the campus is 1601.

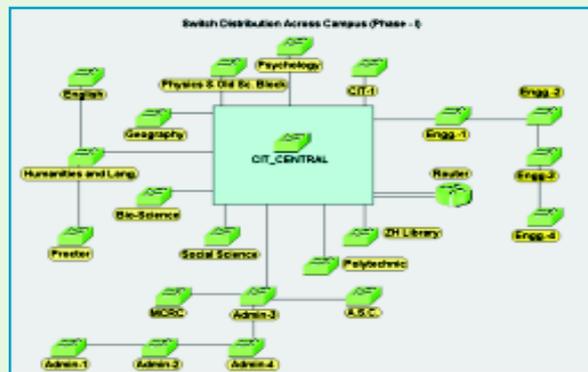


Network layout in JMI Campus

The generosity of the UGC and the DIT thus allowed the university not only to expand the network but also strengthen the network backbone to Gbps. Other features of the network are as follows:

- Zonal switches have been provided to implement 3-tier architecture.
- The backbone provides support not only to data but also voice communication.
- LRE Technology was implemented to connect remote locations with small traffic need.
- Wireless LANs have been implemented at Conference Hall, Ansari Auditorium, University Guest House, and Center for Information Technology.
- RAS connectivity has also been made functional.
- Cisco NMS software is being used for Network management

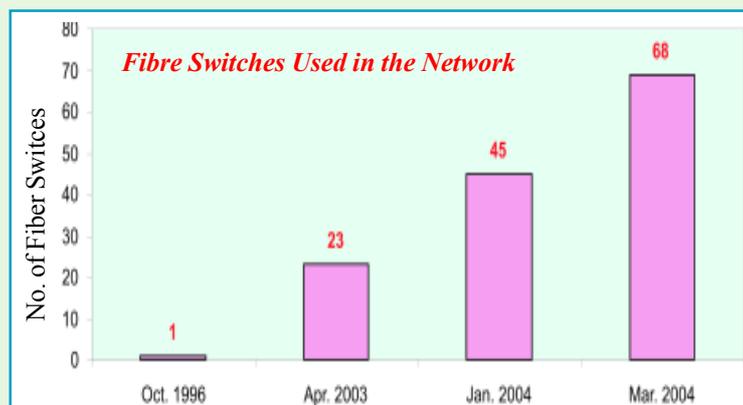
The following is a diagram generated through CISCO NMS showing Switch distribution across the campus after phase - I:

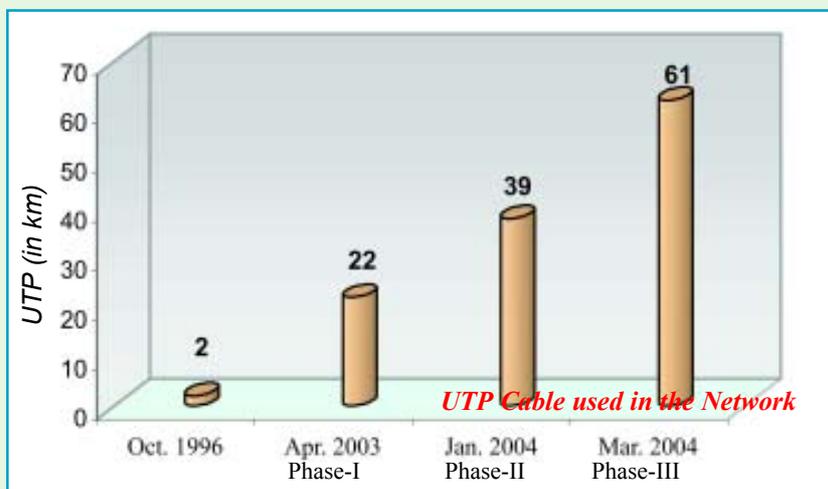
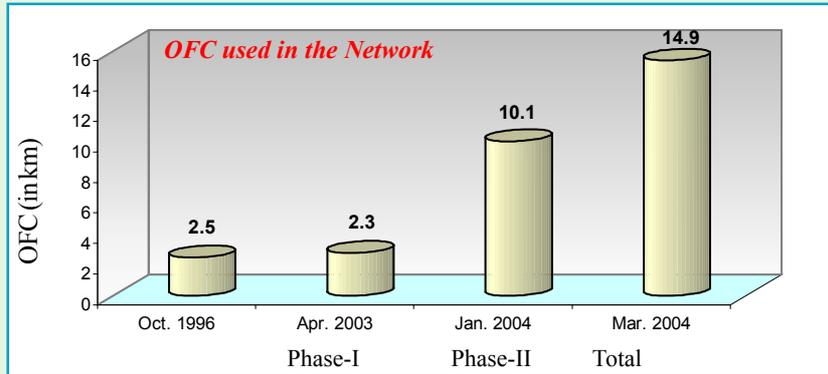


Switch Distribution across the Campus as Generated through CISCO NMS

Network Components

Growth of important Active and Passive Network Components (Fibre Switches, Optical Fibre Cables (OFC) and Unshielded Twisted Pair Cables (UTP) over the years are given in the following graphs.





JMI-MANAGEMENT INFORMATION SYSTEM (MIS)

Since long it has been the vision of Mr. Syed Shahid Mahdi, Vice Chancellor, Jamia Millia Islamia to the entire functioning of the University may be automated so as to bring efficiency and transparency in the system. After long deliberations by the IT Core Committee of Jamia, the project “JMI-MIS” was conceptualized as a tool to visualize the dream. The responsibility for implementation of the MIS Project was then handed over to the Centre for Information Technology of Jamia. The project started on October 3, 2001 with the following broad objectives:

- To make the system efficient and transparent.
- To provide support for decision-making.
- To speed up the information dissemination process.
- To reduce data redundancy and achieve high-level integrity and consistency in the data.
- To achieve optimal use of human and other resources.

The JMI-MIS comprises of the following modules:

1. Administration Information System
2. Faculty and Staff Information System
3. Examination Information System
4. Student Information System
5. Store Management System
6. Curriculum Information System
7. Project Information System
8. Hostel Information System
9. Estate Maintenance Info. System
10. Legal Information System
11. Ansari Health Information System
12. Continuing Education Programme
13. Students Placement Info System
14. Coaching and Training Info. System
15. Alumni Information System
16. Mass Communication Research Centre
17. Social Service Information
18. Document Management System
19. Payroll System
20. General Financial Accounting System

Now a stage has arrived when the MIS is gradually becoming operational. A database of staff members, students and courses has been created and curricula of courses are being entered. In some departments, where it was started as part of testing, it has already found its place. The envisaged dream has thus started getting realized. It is no more necessary for teachers to search clerks for finding attendance sheets as it can be quickly generated by pressing few buttons on the keyboard. Similarly, the office staff is no more required to type the attendance reports. Any available data can be viewed from different perspectives for aiding analysis and understanding. Statistics generation is becoming easier.

Payroll System and General Financial Accounting Systems have also become functional with effect from April 1, 2004. For the past few months, salary of employees is being processed through the newly implemented system. The bills are being submitted with the aid of MIS that has enabled people to watch the progress of bill movement from their respective desks.

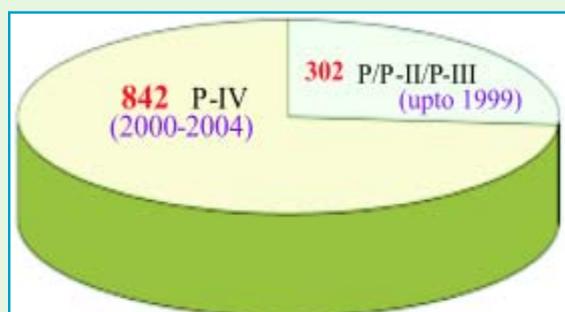
Successful implementation of MIS requires extensive training of the staff. Since July 2003 till Feb 2004 as many as thirty four Training Sessions were held for office staff and faculty members of all faculties, centers departments and offices of the University.



Review of Students' Module

COMPUTER FACILITIES : THE CURRENT STATUS

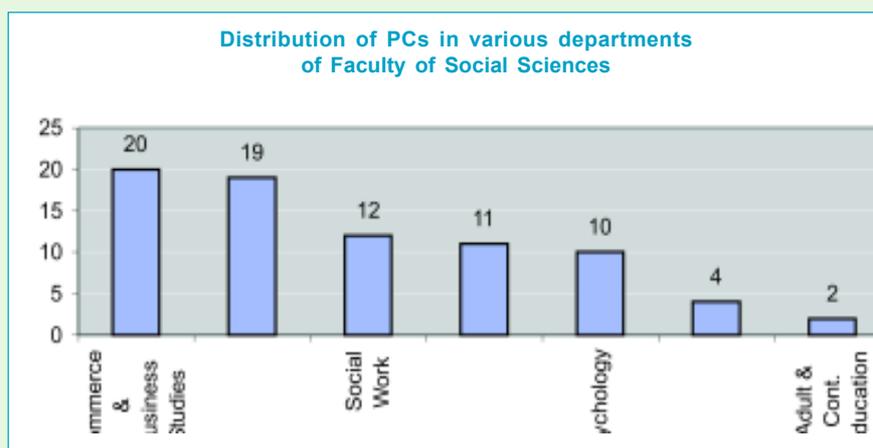
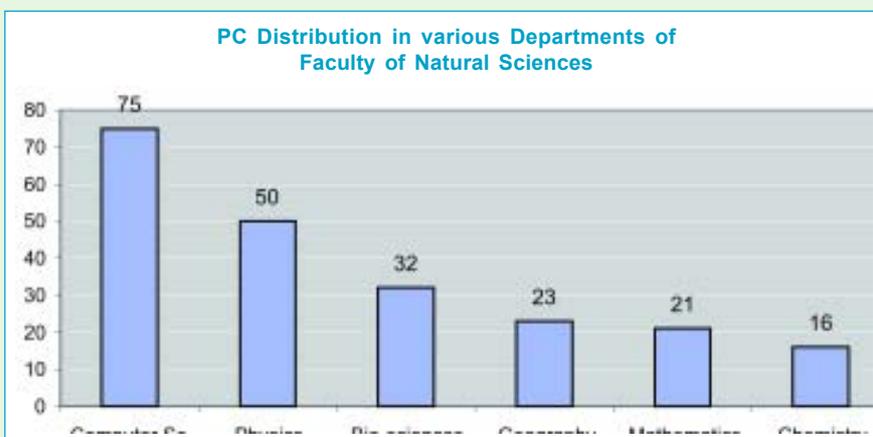
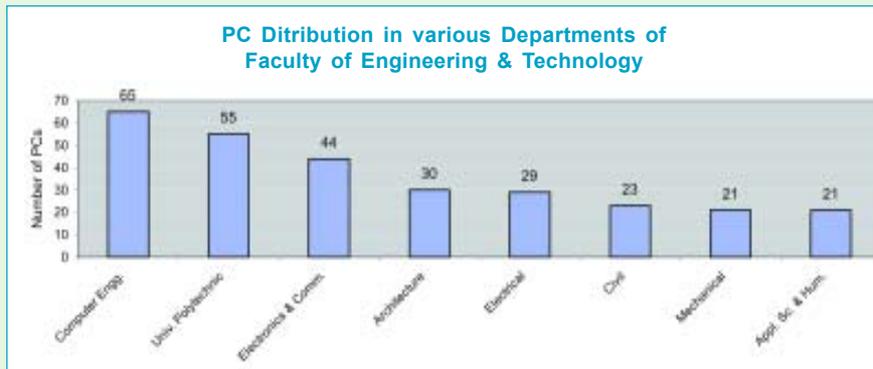
Till 1999 the various departments and offices of Jamia were using PC 386, 486 and Pentium machines in spite of the fact that PC 386 had already become obsolete. Replacement of the old machines had become a necessity. In the subsequent years, not only the old PCs were substituted by new ones (Pentium-III & Pentium-IV), but also a large number of new computers were purchased. At present there are 1,144 PCs in the University, out of which 302 are Pentium/Pentium-II/Pentium-III machines and 842 Pentium-IV, the latter having been acquired during the period 200-2004 only. This is shown in the following graph:

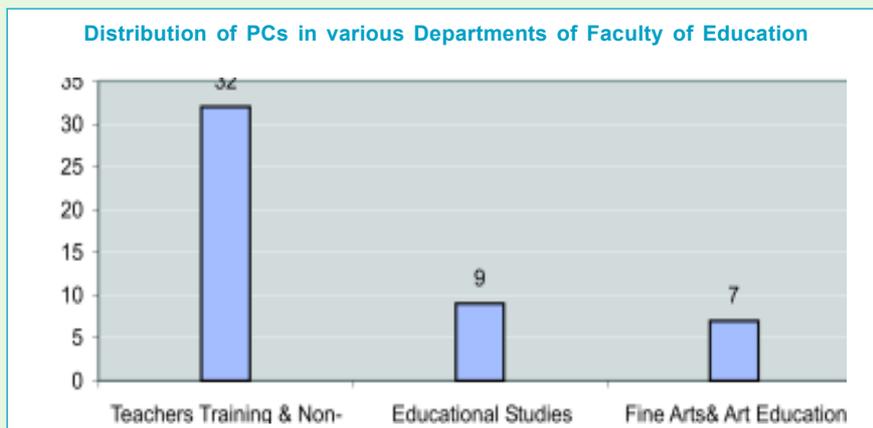
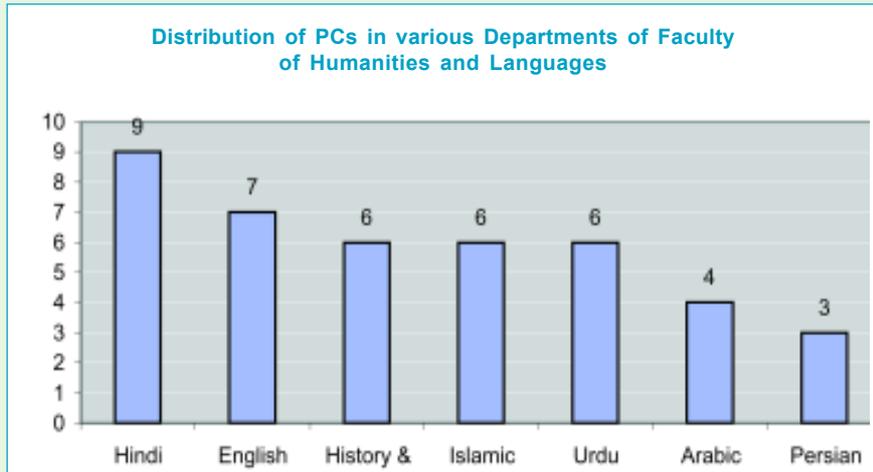


This growth of PCs in Jamia has helped in generating computer awareness among the staff and developing PC culture in the University.

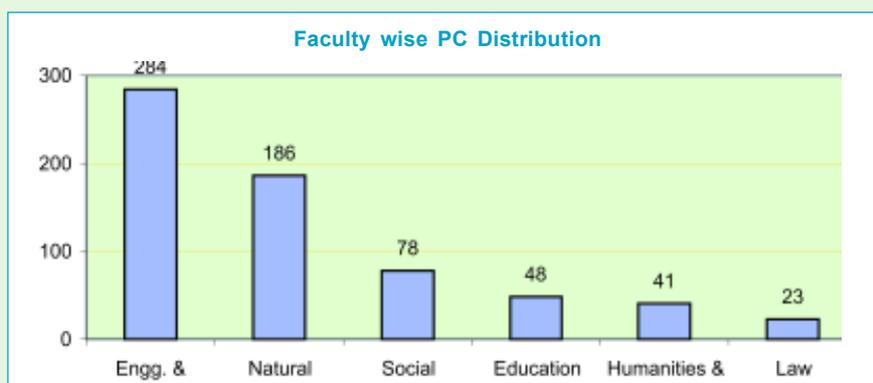
PC Distribution in Faculties and Departments

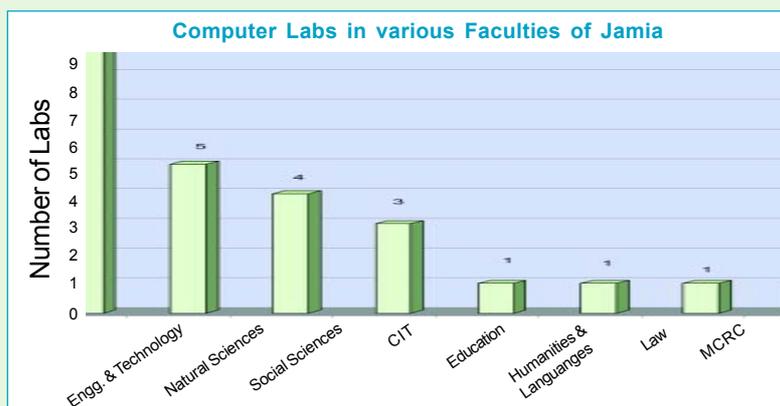
The following graphs show the PC distribution in various departments of Jamia:





The following graphs show the PC distribution in various faculties of Jamia:





Computer Labs

At present there are 25 Computer Labs in Jamia spread over different faculties, centers and departments. The faculty wise break up of number of labs is depicted in the following chart:

Apart from this, there are also two computer labs in the Jamia schools. Academic Staff College and some departments are in process of establishing their own labs to cater to the needs of the staff and students.

IT COURSES AND COURSES WITH IT COMPONENT

Upto 1999, all computer courses (MSS, PGDCA, BCA, BIT) in Jamia were run by the Computer Centre. After creation of the Department of Computer Science, the above courses were transferred to the department, which, in the following years, were re-structured replaced by new courses. The Master of Software Systems (MSS) Course of two years duration was upgraded to a three year MCA Course. The BCA and BIT Courses were abolished and, instead, computer papers were introduced in the B.Sc. Course. The department also started a new course, P.G. Diploma in Bio-informatics, which has been upgraded to M.Sc. Bio-informatics from the academic session 2004-2005. Also, in 2001, a new Department of Computer Engineering was created which offers B. Tech. Computer Engineering course. Simultaneously, the University Polytechnic started a course in Diploma in Computer Engineering.

A summary of the IT Courses in the Department of Computer Science and Department of Computer Engineering are given in the following table:

Name of Department	Course Name	Duration
Faculty of Natural Sciences		
Computer Science	● Master of Computer Applications (MCA)	6 Semesters
	● M. Sc. Bio-informatics	4 Semesters
	● P.G. Diploma in Computer Applications (PGDCA)	3 Semesters

Faculty of Engineering & Technology		
Computer Engineering	<ul style="list-style-type: none"> • B. Tech. Computer Engg. 	8 Semesters
University Polytechnic	<ul style="list-style-type: none"> • Diploma in Computer Engg. 	3 years

Courses with IT Component

Apart from the above IT Courses, most of the departments of the university have introduced IT components in their courses. These are summarized below:

<i>Course Name</i>	<i>Paper (s)</i>
Faculty of Engg. & Technology	
Department of Civil Engg.	
B.Tech. Civil Engg.	<ul style="list-style-type: none"> • Lab Practice in CAD
Department of Mech. Engg.	
B.Tech. Mech. Engg.	<ul style="list-style-type: none"> • CAD/CAM
Department of Electrical Engg.	
B.Tech. Electrical Engg.	<ul style="list-style-type: none"> • System & Computer Mapping • E.M.S. (SCADA) • Computer Fundamental • Computer Architecture • Microprocessor & Its Applications • Data Communication • Computer Programming with C & FOR • Digital Signal Processing • Soft Computing
Department of Electronics & Communication Engg.	
B. Tech. Electronics & Communication Engg.	<ul style="list-style-type: none"> • Computer Fundamentals & Programming Languages • Computer Architecture • Neural Networks & Artificial Intelligence • Fundamentals of Information Technology
Department of Applied Sciences & Humanities	
M.Sc. Electronics	<ul style="list-style-type: none"> • Computer Programming with C++ • Computer Architecture • Computer Communication & Networking • VLSI CAD/CAM Design
Department of Architecture	
B. Arch.	<ul style="list-style-type: none"> • Lab Practice in CAD
MBA (Part Time/Evening)	
MBA (PT/Eve)	<ul style="list-style-type: none"> • Computer Applications in Management
Faculty of Natural Sciences	
B.Sc. with Computer	<ul style="list-style-type: none"> • Computer Fundamentals

Applications	<ul style="list-style-type: none"> ● Programming and Algorithm ● Business Data Processing ● Applied Operating Systems ● Data Structures and Programme Design ● Introduction to DBMS and Oracle ● Objects Oriented Programming and Design ● Network Techniques and Internet Applications ● Multimedia Technologies ● Software Lab-I, II & III
Department of Mathematics	
M. Sc. Mathematics with Computer Science	<ul style="list-style-type: none"> ● Computer Organization & Architecture ● Programming Fundamentals & Data Structure ● Computer Oriented Numerical Analysis ● Database Management System ● Operating System & Object-Oriented Programming ● Software Engineering ● Computer Graphics ● Modeling & Simulation Technologies ● Data Communication & Network ● Artificial Intelligence & Expert System
M.Sc. Mathematics (Evening)	<ul style="list-style-type: none"> ● Introduction to Computer and Programming Fundamentals ● Operating Systems & Object Oriented Programming
Department of Chemistry	
M. Sc. Chemistry	<ul style="list-style-type: none"> ● Computers for Chemistry
Department of Physics	
M.Sc. Physics	<ul style="list-style-type: none"> ● Computer Lab in Physics
Department of Biosciences	
M.Sc. Biosciences	<ul style="list-style-type: none"> ● Computer and Biostatistics ● Overview of Bioinformatics
M. Sc. Biotechnology	<ul style="list-style-type: none"> ● Computer Applications-I ● Computer Applications-II
B. Sc. Biotechnology	<ul style="list-style-type: none"> ● Computer Applications
Department of Geography	
M.A./M.Sc. Geography	<ul style="list-style-type: none"> ● Geographical Information System ● Remote Sensing & Image Interpretation
Advanced Diploma in Remote Sensing & GIS	<ul style="list-style-type: none"> ● Geographic Information System ● Remote Sensing & Image Interpretation
Advanced Diploma in Computer-Assisted Cartography	<ul style="list-style-type: none"> ● Computer Assisted Cartography

Faculty of Social Sciences	
Department of Commerce & Business Studies	
M. Com.	<ul style="list-style-type: none"> ● Computer Applications in Business ● E-Commerce
B. Com. (Hon.)	<ul style="list-style-type: none"> ● Information Technology in Business-I ● Information Technology in Business-II ● Information Technology and Its Applications in Business
B.B.S. (<i>Bachelor of Business Studies</i>)	<ul style="list-style-type: none"> ● Introduction to Computers and Programming ● System and Information Concepts in Organization
B.I.B.F. (<i>Bachelor of International Business & Finance</i>)	<ul style="list-style-type: none"> ● Introduction to Computers and Programming ● System and Information Concepts in Organization.
Department of Economics	
M.A. (Economics)	<ul style="list-style-type: none"> ● Computer Applications in Economics
B.A. (Hons.)	<ul style="list-style-type: none"> ● Computer application in Economics
B.A. with Computer Applications	<ul style="list-style-type: none"> ● Computer Fundamentals and Programming ● Business Data Processing & Data Structures ● Introduction to DBMS and Oracle ● Systems and Information Concepts in Organization ● Multimedia Applications ● Computer and Its Applications
Library & Information Science	
B. Lib. Information Science	<ul style="list-style-type: none"> ● Information Technology
Faculty of Humanities & Languages	
Department of Hindi	
PG Dip. in TV Journalism	<ul style="list-style-type: none"> ● Practice in IT/Multimedia
PG Dip. in Mass Media	<ul style="list-style-type: none"> ● Practice in IT/Multimedia
Faculty of Law	
B.A. LL.B. (Hons.)	<ul style="list-style-type: none"> ● Four papers on Computers
University Centres	
Mass Communication Research Centre (MCRC)	
P.G. Diploma in Development Communication	<ul style="list-style-type: none"> ● IT Application for Communication of Development Messages
Centre for Management Studies	
M.B.A.	<ul style="list-style-type: none"> ● Computer Applications in Management ● Papers containing IT components: Accounting for Management Decision Making, Financial Management, Management Science, Quantitative Methods, Methodology of Business Research ● Information Technology and Operations.

FTK CENTRE FOR INFORMATION TECHNOLOGY: HUB OF IT ACTIVITIES

The Computer Centre was established in 1984 to provide computational facility to the faculty members and research scholars. The Centre continued to provide support till its Mini-computer system became obsolete. It was after a decade that the Centre was upgraded to level-B by the University Grants Commission (UGC), which provided funds for setting up LAN in the University and for replacing the old system. Some additional staff was also provided to the Centre. Email facilities also started in 1994-95. At the same time, the centre was also given the responsibility to run computer courses, viz. MSS, PGDCA, PGDCA (Evening) and BCA. This naturally affected the main responsibility of the Centre, i.e. imparting computer training to the staff and students and to provide them computational support. In view of this, a decision was taken by the University to create a Department of Computer Science and transfer all the computer courses to the department. Consequently, after the creation of Department of Computer Science in January 2000, the above-mentioned courses were transferred to the department.

In view of increasing number of users in the Computer Centre, its lab facilities had become quite inadequate and there was a need to further strengthening the Centre. In 1999 the University came to its rescue by providing additional funds in order to acquire new computers. In the same year, the Centre also got a 64 kbps VSAT Internet connectivity from NIC, which became operational in January 2000. Thus the Computer Centre entered in the new era of development with the start of the new Millennium and since then the Centre is marching ahead with its new challenging responsibilities. Realizing the new role and responsibility of the Centre, the Jamia decided to rename it as “*Centre for Information Technology*” in 2001. Since November 2003, it is known as *Fakhruddin T. Khorakiwala (FTK) Centre for Information Technology*.

Apart from its usual responsibilities and functions to providing to computational, email and Internet facilities to the staff and students, conducting computer awareness/literacy courses for the staff, organizing seminars and workshops on current topics in IT and its applications in education, the Centre has been carrying out the following important tasks as well:

- Maintaining and administering the Jamia Website,
- Coordinating the overall development of the JMI-Management
- Information System (MIS) and implementing its various modules,
- Organizing intensive training programmes for the faculty and staff of all Faculties, Centres, Departments and Offices of the University,
- Controlling and maintaining the Campus-wide Network,
- Developing a Web based Email System for the University.

During the last one year, dozens of training programmes on MIS modules have been organized by the Centre, covering each and every department and office of the University. The Jamia Website is not only updated regularly but new features are being added to it from time to time. On-line Alumni Registration System has been indigenously developed and hundreds of former Jamia graduates have got themselves registered as Alumni of the University.

Workshops and Conferences organized

The Centre for Information Technology organized the following workshops and conferences during the last three years:

June 18-19, 2001

Workshop on “***Digital Interactivity in Graphic Multimedia and its Application for Visual Communication***”, conducted by Mr. A Sharafy, Washburn University, USA; held at Computer Centre, Jamia Millia Islamia.



Workshop on “*Digital Interactivity in Graphic Multimedia and Its Application for Visual Communication*”,

Participants attending one of the technical sessions Sessions of the Workshop

October 16-20, 2001

Workshop on “***Role of Information Technology in University Management***”, Organized by Computer Centre, Jamia Millia Islamia in collaboration with the Association of Indian Universities (AIU).

(Conveners: Prof. Z H Khan, *JMI*, and Prof. B B Dhar, *AIU*).



Workshop on “Role of Information Technology in University Management”

Administrators of Universities and other participants attending one of the Technical Sessions of the Workshop

Feb 27-28, 2003

National Workshop on “*IT Services and Applications,*” organized by Centre for Information Technology & Department of Computer Science, Jamia Millia Islamia.

(Chairman: Prof. Z H Khan; Convener: Dr. K Mustafa)



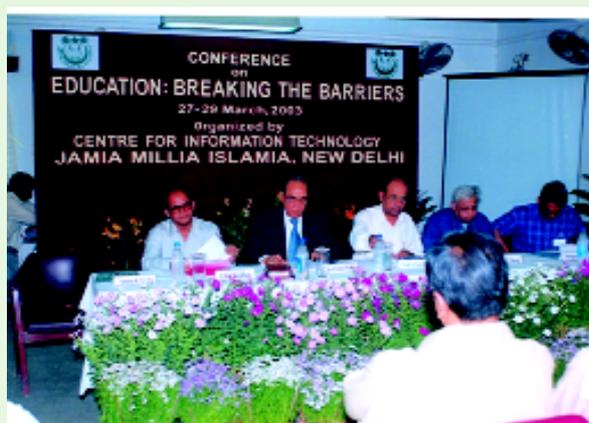
(From Left)

Prof. Zahid H Khan,
*Offg. Registrar &
Hony. Director, CIT, JMI*
Syed Shaid Mahdi,
Vice Chancellor, JMI
Mr. S. Ramakrishnan,
Director, DIT.

March 27-29, 2003

Conference on “*Education: Breaking the Barriers*”, Organized by Centre for Information Technology, Jamia Millia Islamia,

(Convener: Prof. Z H Khan; Co-convener: Prof. Furqan Qamar; Coordinator: Dr. K Mustafa).



(From Left)

Prof. Zahid H Khan,
*Offg. Registrar &
Hony. Director, CIT, JMI.*
Syed Shaid Mahdi,
Vice Chancellor, JMI.
Prof. Arun Nigavekar,
Chairman, UGC.
Prof. K B Powar,
Former Secretary General, AIU.
Prof. Furqan Qamar,
JMI.

MILESTONES

May 3, 1999	: The All India Council for Technical Education (AICTE) provided partial funding for setting up a 56 kbps IPA-VSAT Internet Connectivity through National Informatics Centre (NIC).
July 1999	: A proposal on “ <i>Upgradation of the Computer Centre and Extension of the Campus-wide Network in Jamia</i> ” submitted to the University Grants Commission, New Delhi.
January 2000	: 64 kbps IPA-VSAT Internet Connectivity through NIC Installed.
May 24, 2000	: The first meeting of the <i>Website Development Committee</i> held under the chairmanship of Mr. Syed Shahid Mahdi, Vice Chancellor, JMI.
June 2000	: Report on “ <i>Computerization in Jamia: Part I – The Present Scenario and Future Prospects.</i> ”
September 15, 2000	: MHRD Meeting on “ <i>Networking of Delhi based Higher Education Institutions.</i> ”
October 2000	: Report on “ <i>Computerization in Jamia: Part II–Financial Details.</i> ”
November 2, 2000	: Launching of the Jamia Website by Shri M.K. Kaw, Secretary, Department of Education, Ministry of Human Resource Development, Government of India.
November 11, 2000	: Workshop on “ <i>IT for All – Emerging Challenges</i> ” held at the Faculty of Engineering & Technology, JMI.
December 18, 2000	: Revised proposal on “ <i>Upgradation of the Computer Centre and Extension of the Campus-wide Network in Jamia</i> ” submitted to the University Grants Commission.
January 16, 2001	: The UGC sanctioned Rs. 15 lakhs for setting up an Internet lab.
March 2001	: Final revised proposal on “ <i>Upgradation of the Computer Centre and Extension of the Campus-wide Network in Jamia</i> ” submitted to the University Grants Commission.
June 18-19, 2001	: Workshop on “ <i>Digital Interactivity in Graphic Multimedia and Its Application for Visual Communication</i> ” organized by the Computer Centre, JMI.
October 3, 2001	: JMI-Management Information System (MIS) project started.
October 16-20, 2001	: Workshop on “ <i>Role of Information Technology in University Management</i> ” jointly organized by the Centre for Information Technology, Jamia Millia Islamia and the Association of Indian Universities (AIU).
March 22, 2002	: The Executive Council, Jamia Millia Islamia approved to renaming the “ <i>Computer Centre</i> ” as “ <i>Centre for Information Technology.</i> ”
April 2002	: Submitted to the University Grants Commission, New Delhi “ <i>Information about the University, IT Infrastructure Available, and Requirements over the Next Five-Year Plan (2002-2007)</i> ” under the scheme, “ <i>UGC Network: An Information Network for Indian Universities.</i> ”
September 2002	: A proposal on “ <i>Extension of the Campus-wide Network in Jamia Millia Islamia</i> ” submitted to the Ministry of Communications & Information Technology, Government of India.

- February 27-28, 2003 : National Workshop on “*IT Services and Applications*” organized by the Centre for Information Technology, JMI.
- March 20, 2003 : The Ministry of Communications and IT sanctioned Rs. 110 lakhs for Extension of the Campus-wide Network.
- March 27-29, 2003 : Conference on “*Education: Breaking the Barriers,*” organized by the Centre for Information Technology, JMI.
- April 5, 2003 : The first phase of the Campus-wide Network completed.
- April 7, 2003 : The 2 Mbps Leased line Internet Connection installed.
- November 25, 2003 : The Executive Council, Jamia Millia Islamia approved for naming the “*Centre for Information Technology*” building as “*Fakhruddin T. Khorakiwala Centre for Information Technology.*”
- February 16, 2004 : Round the clock Internet facility started in the entire University.
- March 15, 2004 : The second phase of the Campus-wide Network became fully operational.
- April 20, 2004 : The Campus-wide Network launched by Shri K.K. Jaswal, Secretary, Department of Information Technology, Ministry of Communications & IT (Government of India).
The 2-Mbps Leased-line Internet Connection and JMI-Management Information System (MIS) inaugurated by Dr. Arun Nigavekar, Chairman, University Grants Commission, New Delhi.



(From left)

Prof. Arun Negavekar
Chairman, UGC

Prof. Zahid H Khan
Hony. Director, CIT & Offg.
Registrar, JMI

Shri K.K. Jaswal
Secretary, Department of
Information Technology,
Ministry of Communications &
IT (Govt. of India)

Syed Shaid Mahdi
Vice Chancellor, JMI

FUTURE VISION

Multimedia Lab

Multimedia is a powerful tool in designing curricula and making lectures more powerful and presentable through Audio Visual Programmes. For this, it is planned to develop a multimedia lab in the CIT where the emphasis will be to make use of computers in the filed of education for creating a highly conducive and cost effective learning environment. The Centre already has the basic infrastructure for this purpose and a few faculty members are utilizing this facility. The purpose is to develop expertise in teachers so that they can make their own multimedia programmes. This has to start as a movement were more and more teachers have to be trained continuously in the use of ICT in education. Naturally, this will supplement the conventional classroom teaching, with teachers assuming the role of facilitator.

Software Technology Park

With the expertise available in CIT and other computer departments of the University, It is planned to develop a Software Technology Park. It will first focus its attention to develop software especially required by institutions of high learning in the country and elsewhere. At the same time, through collaboration with the industry, development of specific software for industrial houses will also be taken up.

Computer and Web-based Urdu Learning

The Centre for Information Technology, in collaboration with the Urdu Correspondence Course of Jamia, is developing a *Computer-based Urdu Learning Programme* through Hindi medium. As the next step, Web-based Urdu Learning Programme through English medium (or without any medium) is proposed to be developed. It will not only provide the facility of on line Urdu learning to persons interested in the language, but also to serve as a source of resource generation.

Education through Videoconferencing

In future, we plan to show multimedia programmes through *videoconferencing* on the intranet of the University. This will not only be cost effective, but the programmes, including lectures, would be available to the students without any limitation of time. For this, we would also like to have an *Education Server* dedicated for this purpose.

New Building for the Centre for Information Technology

With the diverse and increasing activities of the FTK Centre for Information Technology, since long it was being planned to construct a state of the art building to accommodate the various sections of the centre. This has now been realized. The proposed plan of the building is shown below:



APPENDICES

APPENDIX – I

Jamia Website Development Committee and Members of the Web Team

For development of the Jamia Website, Mr. Syed Shahid Mahdi, Vice Chancellor, constituted a high-level “*Website Development Committee*,” to prepare general outlines for the Website. Later on, some more members were included in the committee as special invitees. The Website was developed under the overall guidance of the Vice Chancellor and under the supervision of Prof. Zahid H. Khan, Hony. Director, Computer Centre, JMI.

Members of the Website Development Committee

- Prof. H.R. Kidwai, Director, Mass Communication Research Centre
- Prof. Zahid H. Khan, Hony. Director, Computer Centre
- Prof. Asghar Wajahat, Head, Department of Hindi
- Prof. Ashok Chakradhar, Department of Hindi
- Mr. M.N. Doja, Department of Electrical Engineering
- Mr. S. K. Naqvi, Computer Centre

Special Invitees to the Website Development Committee

- Mr. Ghazanfar Zaidi, Department of Fine Arts & Art Education
- Dr. K.J. Joseph, Department of English
- Mr. Farhat Basir Khan, Mass Communication Research Centre
- Mr. Roomi Naqvi, Department of English
- Mr. S.N.A. Rizvi, Computer Centre
- Mr. Azizullah Khan, Computer Centre

Members of the Web Team

History

- Prof. Anisur Rahman, Department of English
- Prof. Mushirul Hasan, Director, Academy of the Third World Studies

Text Review

- Dr. K.J. Joseph, Department of English
- Mr. Roomi Naqvi, Department of English

Homepage Design

- Mr. Ghazanfar Zaidi, Department of Fine Arts & Art Education
- Mr. Farhat Basir Khan, Lecturer, Mass Communication Research Centre
- Mr. S.K. Naqvi, Computer Centre

Designing of Web pages

- Mr. S. K. Naqvi, Computer Centre
- Mr. Azizullah Khan, Computer Centre

Since 2001, the Jamia website is being updated and maintained by Mr. Azizullah Khan, System Analyst, Centre for Information Technology, JMI. He is also looking after the E-Mail and Internet facility in the Centre.

APPENDIX – II

The Campus-wide Network and the Teams associated with the Project

The campus-wide networking project in Jamia was carried out in two phases.

The Phase-I covered the following sectors:

Sector-1: Administrative Block, Mass Communication Research Centre, Faculty of Humanities & Languages, and the Faculty of Engineering. & Technology.

Sector-2: Faculty of Natural Sciences, Faculty of Social Sciences, Dr. Zakir Husain Library and other buildings in the complex.

The Phase-II covered the following sectors:

Sector-3: Faculty of Education, Faculty of Law, Examinations Office, ATWS, SRC, Girls Hostel etc.

Sector-4: Department of Fine Arts, School Complex, Ansari Health Centre, Building & Construction Department, Boys Hostels etc.

The entire project was carried out under the guidance and overall supervision of Prof. Zahid H. Khan, Hony. Director, Centre for Information Technology, JMI.

Member of the Campus Network Team

Network : Phase-I

- Prof. S. I. Ahson, Head, Department of Computer Science : Technical Coordinator
- Mr. S. K. Naqvi, Department of Computer Science : Technical Coordinator
- Mr. Al-Saad, Aligarh Muslim University, Aligarh : Technical Coordinator
- Mr. Mohd. Ahmad, Asstt. Registrar (SPO) : Administrative Support
- Mr. S.M. Taj, Development Officer (IT-SP) : Administrative Support
- Mr. Liyaquat A. Zaidi, Asstt. Executive Engineer (Electrical) : Site Planning
- Mr. Jamal Akhtar Khan, Computer Operator, CIT : Network Testing
- Mr Israr Ahmad, Computer Programmer (Administration) : Liaisoning

Network: Phase-II

- Mr. S. K. Naqvi, Department of Computer Science : Technical Coordinator
- Mr. I. U. Khan, Dy. Registrar (Administration) : Nodal Officer
- Dr. A. Malik, Dy. Registrar (HRD) : Administrative Support
- Mr. Liyaquat A. Zaidi, Asstt. Executive Engineer (Electrical) : Site Planning
- Mr. Jamal Akhtar Khan, Computer Operator, CIT : Network Testing
- Mr Israr Ahmad, Computer Programmer (Administration) : Liaisoning

APPENDIX - III

JMI-Management Information System (MIS) and Members associated in its Planning & Implementation

The entire period of the JMI-Management Information System, from its conceptualization to implementation, can be divided into the following three phases:

Phase-1: From Visualization of the MIS to Requirement Analysis.

(This involved the following items of work: (i) Inviting Tenders, (ii) Discussion with vendors and final selection of the vendor for developing MIS Software, (iii) Selection of Nodal Officer and Technical Coordinator for the Project, and (iv) Approval of "Requirement Specification Document" (RSD)).

Phase-2: Coding, Documentation, and User Acceptance Testing (UAT).

Phase-3: Training on MIS Modules, and Operationalization and Implementation of the MIS.

The responsibility of Phase-1 of the MIS project was given to the “IT Core Committee” comprising of the following members:

Members of the I.T. Core Committee

- Prof. M. R. Khan, *Faculty of Engg. & Technology*
- Prof. Iqbal H. Khan, *Deptt. of Civil Engg.*
- Prof. Zahid Husain Khan, *Hony. Director, Centre for Information Technology*
- Prof. Mohd Zahid, *Department of Physics.*
- Prof. S. I. Ahson, *Head, Deptt. of Computer Science*
- Mr. N. U. Siddiqui, *Finance Officer*
- Dr. M.N. Doja, *Deptt. of Electrical Engineering*
- Dr. Khurram Mustafa, *Deptt. of Computer Science*
- Mr. I. U. Khan, *Dy. Registrar (Administration)*
- Dr. Abdul Malik, *Dy. Registrar (HRD)*
- Mr. S.K. Naqvi, *Deptt. of Computer Science*
- Mr. M. Azim, *Centre for Information Technology*

Nodal Officer

- Shri I. U. Khan, *Dy. Registrar (Administration)*

Technical Coordinators

- Mr. S.K. Naqvi, *Deptt. of Computer Science*
- Mr. M. Azim, *Centre for Information Technology*

Other Technical Support

- Mr. Wasiful Hasan Ansari, *Centre for Information Technology*

Liaisoning

- Mr Israr Ahmad, *Computer Programmer (Administration)*

After the first phase of the project was over, the responsibility for carrying out the rest of the MIS work, as mentioned in Phase-2 and Phase-3 above, was given to the Centre for Information Technology. This was the most crucial part of the project that involved continuous interaction with the company developing the MIS, testing of the MIS modules, their operationalization and implementation, and imparting regular training to the office staff. The following members were actively involved in conducting the training:

MIS Training Group

- Mr. Shane Kazim Naqvi, *Deptt. of Computer Science*
- Mr. M. Azim, *Centre for Information Technology*
- Mr. Wasiful Hasan Ansari, *Centre for Information Technology*

Apart from the above, the services of the Data Entry Operators engaged in the MIS project were also extensively utilized in training the staff and installation of the relevant software in various offices and departments for enabling them to use the MIS.