

# **Master plan of the Technology of Information and Communication UNAN León**

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## I. –GENERAL PLAN TIC OF THE UNAN LEON

### I.1. - Introduction

The Autonomous National university of Nicaragua-León (UNAN León) has a registration of 8,900 students during the lective year 2002, 560 people used as academic personnel and 450 people like executive staff. In the organic aspect the University is formed by 7 faculties and 3 schools (with 1 Vice-rector of Research and development).

To complete their mission, the University will respond to the necessities of improving the quality of the teaching, and the productivity in the investigation, efficiency in the administration, integrating the units from the university community to the TIC.

The use of the communications is fundamental for the access and diffusion of the information at local, national and world level in all the fields of the university chore (education, investigation and administration), for it concluded with the elaboration, in December of the 2001, of the political TIC the UNAN León in which educational and administrative authorities of the institución were involved, the same ones served as base for the elaboration of the present plan.

### I.2. - Access to the Services and Applications of TIC

Will have access to the TIC:

- Pre-grade students and post-grade
- Academic personnel
- Investigators
- Executive staff

The UNAN-León will provide all the registered students the access to teams and necessary software to complete his learning tasks inside the available resources and appropriate.

The UNAN-León will provide the students the access without costs to the university net through the libraries (Internet or use of Software in general).

Each student will have access to the electronic mail and email address of the University will provide the students the access to the Internet through “Internet Coffee” (costs supported by the student).

The University will provide to its personal hardware or software adapted to carry out its duties.

The University will provide to its personal access to the university net through the campus and/or externally through a service of Dial-up.

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### I.3. - Use of the Services and Applications of TIC

The service of the network will be provided for the personnel and students of the University to undertake its duties and studies related to the operations and missions of the University. The use is restricted to the teaching, investigation and administrative management of the University. People can only make use of the Internet in the acting of tasks and responsibilities related to their own official positions in the University. The net should be used without ends of lucre.

All connection toward external nets, so much national or international, it should fulfil the use politicians defined by the supplier of the service.

### I.4. - Process of elaboration of the political TIC

It is indispensable to have in consideration that the political TIC will owe reformulate continually, for such a reason it is important to determine which will be the entities that will have this responsibility.

#### **Organizational Structures- centralized**

The only instance that can approve the political TIC is the University Council presided over by the Rector.

The politicians and the development and maintenance of computer systems and of communications they are defined and supervised by a Council TIC (Computer Council) clerk of the General Vice-parsonage of the University advised by a Technical Committee of consultation and planning, this committee coordinates it the unit operational General Direction of Computer science or Direction TIC that corresponds him to develop and to operate the systems of academic and administrative computer science of the University.

The headquarters of the General Direction corresponds Computer science's General Director, the one that will have the following functions:

- To supervise and to coordinate the operation of the offices and units that integrate this direction, proposing the Rector their development plans, and
- To coordinate the relationship of computer science's services with the academic, administrative units and general users.
- There is a Sub - Director of Computer science
- The Computer science's General Direction is integrated by such offices as:
- Technician support
- Service Nets and Telecommunications
- Service of Development and Maintenance of Software.
- Training and training to users
- Responsible for Computer Units in each Campus

**The office of technical support** is the in charge one of carrying out the operative maintenances and correctives of all the computer teams of the UNAN León (PC's, UPS, Printers, outlying, etc). It will also be the responsible of evaluating, to propose and to

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develop projects involving new computer technologies being able to facilitate the administrative work and management of the University, in a such way of assuring their competitiveness at international national and long term level. In this context, it also participates in substitution projects and maintenance of systems and their evaluation in the face of safe-deposit risks, yield, obsolescence and flaws.

**The office of Service Networks and Telecommunications** - it Contains the telephony areas, technical service, as well as projects and facilities of voice nets and data.

It is the in charge one of administering the voice net and data and the connected users to her, as well as to coordinate the design process, installation and/or amplification of the net UNAN-León.

**To the office of Service of Development and Maintenance of Software** corresponds to develop, to operate, to coordinate and to control the systems of information for the administration and administration of the University, as well as those of the academic area.

As main objectives it will have the development of the new systems for the administrative platform of the University and realization of the administration from the contracts of external suppliers of systems to measure. In this context it coordinates and it supports the relationship of the developers with the end user of the new system. Of equal forms it defines and it maintains the development standards that should complete the administrative systems of the university.

**The office of Training** and training to users are in charge of coordinating all the trainings and trainings in TIC to internal users, so much academic as administrative, fomenting the development of a computer culture in the institution.

**The unit of Services External TIC** will be the in charge of to generate and to administer the own revenues in concept of services to users external, this unit it will be governed according to the "REGULATION OF PRODUCTION OF BENEFITS AND SERVICES OF the UNAN-LEON." The revenues that it generates in concept of external services will be used in reinvestment of technology of information and communication.

**Responsible for Computer Units in each Campus-** For a quicker attention to the administrative and academic dependences exists a responsible for computer unit in each Campus and in the dependences accounting Direction, Direction of Libraries, Human resources, among their functions to be detect all the problems related with the TIC, to give immediate answer to the operative problems and to transfer to the Direction TIC those that need repairs correctives, their main areas of attention will be Hardware, Software, Nets and basic training to users. Administrative and technically the responsible computer specialist of Campus will depend on the Direction TIC, the responsible computer specialist of

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Accounting, Library and Human resources depend administratively on the corresponding dependences but they will present technical report to the computer Direction, as well as to attend all the meetings of the computer technical committee of consultation and planning.

**Especially the responsible computer specialist of Library will generate integral solutions for the development of:**

- Bibliographical information services, multimediales,
- Automation and administration of libraries,
- Desktop publishings,
- Maintenance of the institutional database,
- Training in service and administration of specialized information.

**The responsible computer specialist of Accounting will should:**

To coordinate the implementation of the application financial-accounting(SOROLLA),  
To offer maintenance to the system and amplifications to the same one,  
Advice to users.

**Other Responsible Computer specialist** will be able to be named according to the development, growth and necessities of the dependences that require it previous authorization of the Direction TIC and their functions defined in coordination with the Direction TIC and the corresponding dependence.

### **Organizational structures- decentralized**

The computer Direction or Direction TIC and centralized units of services will collaborate with Units of Campus in:

The development of plans, strategies and norms that take into account the necessities of information and communication of all the Units of the Campus and the opportunities for a balance among centralized focuses and decentralized of the information, their access, generation, diffusion and administration.

To investigate the viability of the rationalization of systems and services to reduce the administrative duplication and to enable the simplest access to the university community.

To motivate the use of standardized formats, when it is possible, to facilitate the transfer of information.

Technician support in those cases where the unit is not in capacity of solving them for its own means.

The Committee of Consultation and Planning is a team of specialist TIC that provides technical consultantship in matters of technologies of information and communication to the computer Council and other groups of the University to assure that the politicians and proposals are compatible with the requirements of infrastructure of the University and technically feasible and sustainable in relation to the available resources.

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### I.5. - Responsibility

Computer science's General Direction is responsible for drifting, to integrate, to maintain and to assure the following infrastructure that is not specific to the necessities of any Unit of Campus and it is for the general use of the community of the University. This includes:

- Net troncal of the campus (backbone), (voice net and data);
- Connection to the Internet;
- Corporate Systems of the information of the University
- System of students' registration,
- System of finances,
- System of human resources,
- System of physical resources (teams),
- Investigation System and consultations,
- System of libraries,
- Systems and databases of student information;
- Audiovisual teams, computer teams and teams of communications;
- Computer laboratories guided to the general use of the students.
- Technician Support of the computation teams and telecommunications
- Other systems of information characteristic of the university chore.

**Units of Campus** are responsible for the planning and the administration of the technology of information that they acquire and they maintain to sustain the activities that are specific to their necessities and compatible with the strategic direction of the University. Among the responsibilities of Unit of Campus they are included:

Technician support in hardware, software and net, to the administrative and medical dependences of the institution.

Academic laboratories of the unit;

Park working of the administrative and medical dependences;

Servants for storage of data to give support to the courses;

Specific software to give support to the teaching in the unit;

The University requires designated that for each Unit of Campus an Administrator of Net. That person is responsible for the Technology of Information of the Unit of Campus and is the official contact between the Unit of Campus and Computer science's General Direction for the Technology of Information in matters comunes.

### I.6. - Acquisition of teams and programs

The decisions of the Acquisition should be made with the knowledge of the strategic direction of the University and inside the standards summarized in Rules for the Administration of the Technology of Information for Units of Campus and of the Universities general.

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The technology of the Information should improve and/or to replace in a 3-4 year-old period to avoid the fall in disuse.

Compatibility with the campus net and other teams has to be kept in mind in the moment of the acquisition of new teams.

In the hardware acquisition and software, the Units of Campus should be considered the total costs of purchase inclusive the instruction, furniture and progressive conservation.

All Technology of the Information acquired by a dependence administrative or academic has to be supervised by the responsible campus computer specialist and should register like inventory of the University.

All installation of new teams takes an increment of the electric power use, for what is obligatory to make a previous check up of the distribution of this electric system.

### **I.7. - Telecommunications**

The primary purpose of the infrastructure of telecommunications is to facilitate the teaching, investigation and learning in the University and to provide to the personnel and students of support services, information and communication.

Transfer of data that includes temporary connections (Dial-up) and dedicated or permanent connections.

The telecommunications also include the administration of the net of Voice, ( plant digital and analogical).

### **I.8. - Online university**

Design and operation of the Page WEB of the university.

Online university is a collection of information and academic, administrative publications or the personal related to the university community.

A responsible person that coordinates the design and development of applications web that allow a better interaction between the users and the available information in the pages should exist. Mechanisms of upgrade of the same ones will exist which should be distributed between each one of the abilities and dependences. The educational departments will be in the obligation of putting in the net by means of the Library the works that are of interest for the whole university and the country.

### **Edition regulation**

The attaché of document will be subject to the readiness of storage space in the servants WEB.

The official information will be able to be modified with the authorization of the pertinent authority.

The editorial committee will solve in the event of discrepancies regarding the possibility of inserting information.

The editorial committee will be conformed by the General Vice-rector, the Responsible for Popularization, the Director TIC and others that the Parsonage designates.

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### **Norms to insert new pages**

All academic unit or organism of the University that wants to install an information service through the Online University will request it to the responsible authority.

All new service will stick to the standard design:

To have an initial page (index.html)

Heading followed by a chart of contents

The initial page will conclude with the indication of the name of the person responsible for the service.

### **Norms for pages web of students**

Each ability or Unit defines if it authorizes or not to its students/researches so that they install pages web.

Each student is responsible for the contents that it publishes in his computer bill and he commits to respect in them the principles and securities that guide to the University.

Bigger information on the publication of the pages is defined in those “Regulatory schemes for the design and publication of information via Internet” elaborated by the Direction TIC.

### **I.9. - Legislation, Rules and Regulation**

Legislation related with the access and use of the service of the technology of information. actors/owners of the information is consigned in the approved copyright Law by the National Assembly of Nicaragua and for the international regulations on each one of the Hardware and acquired Software.

The users of the net should respect the copyright.

The University will be responsible for having a copyright registration.

### **I.10. - Standard**

The university will define the standards in the hardware and software with the effective purpose the costs, to give good service to the users, to assure a good connection to the net and to assure the progressive support.

Cards of authorized communications

Authorized network

Electronic mail software

Software of systems

Text processing software

Software of calculation schedule

Back formats and file recovery

Software of centralized systems

Specialized software

### **I.11. - Files-electronic Registrations**

The executive staff will assure that the information related to the University is stored in sure form and be available. For they will exist it systems of Backups point for the servants

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of Internet like those of Intranet, the information of Internet will be stored with a rhythm of 24 hours, that of Intranet every 6-12 hours.

### **I.12. - Licenses**

The University will assure that the software that is used has the corresponding license, what will guarantee a cost saving and it will assure the distribution and use of the software. Special interest will be given to the software that will be distributed the personnel and students. The university commits to assure the use of licenses in a gradual way and ordinate due to the limitation of resources, for it is guided that all the recently acquired new teams will have its license of the software that will be used in the same one.

### **I.13. - Training**

Each unit of Campus is responsible for identifying the abilities and necessities of training of the personnel and students related with the technologies of information and communications.

Each Unit of Campus is responsible for planning the appropriate programs of training and knowledge for its personnel and students.

Each Unit of Campus can decide to use its own personnel as trainers, to send its personnel and students to courses offered by other Units of the University or to organize training programs with external institutes.

### **I.14. - Agreements of services**

The installation, maintenance and repair of services for hardware and software will be based on negotiated honorary in agreements of services if the computer Direction is not in the capacity to offer them.

## **II. - PROJECTS TO DEVELOP DURING THE PERIOD 2002-2004**

### Lists of Projects TIC

For the definition of the projects it was carried out a consultation process at the different levels coordinated by the Direction TIC, in the same ones they think about the development tendencies for next three years. At first instance all the projects of interest were written down without caring the source of finance, then we define the priorities and finally the possible donors where the dear budget is specified for each one. For each project a document was elaborated it bases where the same one is described.

To see Chart 1. Lists of Projects and Annex 1. Lists of Projects with possible donors and budget.

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Chart 1. Lists of Projects

Nº	AREA OF APPLICATION	PROJECT	SUBPROJECTS	PRIORITY
1	External services	Unit of external services	Training, Access to Internet, Software development, Maintenance and repair.	<b>6</b>
2	Software	Academic registration	- System of academic registration, - prematricula system, - it proves of entrance and on-line consultation.	7
3	Software	System of Human resources	- System of personal administration. - Payroll	7
4	Services Internal	Digital optic prosecution and Reproduction	- Publications and reproductions.	7
5	Software	To completes the one SIG Unite-León	- I inventory, Transport, Technical Support, Maintenance.	7
6	Service Interns	Amplification of access points	- To elaborate proposals, in function of 5 laboratories for class to the students. Two in the Medical Campus, one in the Annex of Right, Right and Agroecología	8
7	Library	Modernization of the Library	- To continue with automation catalográfica - To upgrade programs of acquisition prosecution, storage and recovery of information.	8
8	Formation and Training	Graduate in TIC	Implementation of Graduates, Bonus, investigation work.	<b>8</b>
9	Nets	Interconnection of abilities and buildings.	- Connection node-Prepa - Connection node-SIG, - Connection Common node-year, - Revision connection node-Sciences.	9
10	Nets	System of Publication Via Internet	- Development of pages Web for Internet. - Development of pages web for Intranet. - System for the support to the taking of decisions.	9
11	Nets	I design and Installation of local net	To use the procedure of design of a LAN. Installation of Backbone of optic fiber Connections of offices.	9

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Nº	AREA OF APPLICATION	PROJECT	SUBPROJECTS	PRIORITY
		authorizes Sciences	Configuration of teams.	
12	Internal services	Technician support	Maintenance and repair of PC's, Maintenance of nets,	9
13	Nets	Redraw of the one Backbone	Change of servants (www, mail, ftp, proxy) Racks installation System electricians and UPS Backups Tubed of cable of data Phone lines Access way PBX	10
14	Networks	Design and Installation of local net of the central building	To uses the procedure of design of to LAN. Installation of fiber optic Backbone Connections of offices Configuration of teams.	10
15	Formation and capacitating in TIC.	Training.	- Special, Technique, Investigation, educational, Administrative, Students, - Technological day, - Seminars, Shops, Exhibitions, presentations	10
16	Nets	To guarantee a Connection of quality with Managua.	To carry out studies of feasibility withsupplying ISP's on the alternative of conectividad León-Managua Optic fiber or radio, VSAT, etc.	10
17	Software	Setting in I work-tied of the inform system. Financial (SOROLLA)	Revision of net infrastructure, Configuration of VPN, analysis of operation of the software and to continued Improvements.	10
18	Organization al	Reorganization of the Division TIC	Positions, functions and requirements, operation, training.	10

### Determination of priorities

The priorities are defined in order from 0 to 10, being 10 the maximum priority and 0 the minimum one. The priorities are defined whereas clause the most urgent necessities as for demand and on time. In the different charts and annexes have put on in upward order.

To see Chart 1. lists of Projects and Annex 1. lists of Projects with possible donors and budget.

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### Proposed projects to ASDI and dear Budget per annum.

To see Chart 2. It lists from Proposed Projects to ASDI and Annex 2. It lists of Projects proposed per annum to ASDI and dear budget.

Chart 2. It lists from Proposed Projects to ASDI

Nº	AREA OF APPLICATION	PROJECT	PRIORITY
4	Internal services	Digital optic prosecution and Reproduction.	7
6	Service Interns	Amplification of access points	8
8	Formation and Training in TIC	Graduate TIC	<b>8</b>
10	Nets	System of Publication Via Internet	9
12	Internal services	Technician support	9
13	Nets	Redraw of Backbone	10
15	Formation and training in TIC.	Training.	10
16	Nets	To guarantee a Connection of quality with Managua.	10
18	Organizational	Reorganization of Computer science's Division	10

### Execution chronogram

Chart 3. Execution chronogram

Nº	AREA OF APPLICATION	PROJECT	2002	2003		2004		2005	
			II	I	II	I	II	I	II
1	External services	Unit of services externos(Creación)							
2	Software	Academic registration							
3	Software	System of Human resources							
4	Services Internal	Digital optic prosecution and Reproduction.							
5	Software	To completes the one SIG UNAN-León							
6	Service Interns	Amplification of access points							

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N°	AREA OF APPLICA TION	PROJECT	2002	2003		2004		2005	
			II	I	II	I	II	I	II
7	Library	Modernization of the Library							
8	Formation and Training	Graduate in TIC							
9	Nets	Interconnection of abilities and buildings.							
10	Nets	System of Publication Via Internet							
11	Nets	Design and Installation of local net authorizes Sciences							
12	Internal services	Technician support							
13	Nets	Redraw of Backbone							
14	Nets	Design and Installation of local net of the central building							
15	Formation and training TIC.	Training in TIC							
16	Networks	To guarantee a Connection of quality with Managua.							
17	Software	Improvements to the funcionamien-to of the IF Financial							
18	Organizatio nal	Reorganization of the direction TIC							

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