ITU Vision on Network Planning

Background

Telecommunication networks architectures are changing to meet new requirements for a number of services/applications (Broadband, IP, Multimedia, mobile, etc.).

New generation equipment (soft switches, databases, service controllers, new protocols and interfaces, etc.) and new call/mix traffic cases are going to be introduced in the networks.

Different solutions/network architectures can be taken into account for a smooth transition from existing network infrastructures (PSTN/PLMN) towards New Generation Network (NGN) as a result of the convergence process leading to different applications/services sharing network infrastructures.

PLANITU, capable of dealing with some new traffic cases, can be considered a tool to introduce people to the Network Planning. However, any real Network Planning case should be dealt with using other powerful and modern tools available on the market.

Planning Strategy

Considering the different solutions/network architectures that exist, each Network Planning case has to be analysed and dealt with by using more than just one planning tool.

It means that maintaining and updating a unique tool is not the correct strategy to be applied for Network Planning.

The major concerned telecommunication Companies normally use different tools (or different packages integrated on a unique platform) for network Planning. They usually rely on the services of software companies who are in a position to provide quick updates as soon as required.

Therefore, countries' requests for assistance on Network Planning should be dealt with as follows:

a) First, to analyse the Network Planning case, taking into account the different technical aspects of the issue.
b) Second, after reaching the best solution in terms of cost and technical validity, to look for the appropriate partnership with whom to define a Project for the specific Network Planning case.
c) Implementation of the Project under the coordination and/or supervision of ITU-BDT.

To render the Countries aware of the Scenario described above, Training Workshops have been planned for years 2005/2006.

Contact with potential Partners have been established. Companies willing to act as Partners for Network Planning projects will be involved in the Seminars.

They expressed their interest and availability in participating in such activity. This strategy has been endorsed by last **World Telecommunication Development Conference - WTDC-02 (Istanbul, March 2002) in Program 2, point 1.3 and reaffirmed during the last WTDC-06 (Doha March 2006)**

WTDC-06 PROGRAMME 2: Information and communication infrastructure and technology development – Point 1.3

1.3 Network planning

The selection of new technology hinges on projected needs and consequent network development planning. In developing countries, the needs may be substantially different in urban and rural areas, and infrastructure and technology requirements will differ. In choosing technologies for a new or existing telecommunication network, a very wide range of factors needs to be considered.

The most difficult component of the network to build, and the least cost-effective to maintain, has proved to be the local access network. One of the main problems facing the developing countries is precisely the lack of access to broadband services, and low teledensity. Adaptation of power-line communications and cable-television networks to provide telephony and internet services has converted them into broadband networks. The technology shall be of low cost, easy to maintain and adapted to the local environment.

The rural population will need to be connected to the information society. Choosing efficient and cost-effective and fast-deployment technologies such as wired and wireless networks will improve accessibility.

The architecture of the information and communication infrastructure is changing to accommodate the requirements of a growing number of ICT-enabled services/applications (broadband, IP, mobile, multimedia, streaming, multicasting, etc.) and evolving to next generation networks (NGN).

New-generation technology is being introduced in the networks, speeding up the convergence process, and obliging planners to apply different specialized up-to-date planning tools.

Network planning is a critical issue for network operators and network service providers in a time of globalization and intense competition. The current telecommunication market requires flexible and adaptive network planning methodologies for evolving network architectures to NGN. Practical guidelines, readily and easily applicable, should continue to be provided to be of use to operators and decision-makers. Moreover, there will be a need for powerful software tools to assist operators in developing their networks. ITU should continue entering into formal partnership agreements with outside partners, positioned to provide the Union with appropriate planning tools suitable for specific network planning requests. Taking into account the above considerations, and in order to contribute to bridging the digital divide, this programme should apply the following measures:

a)   providing advice on the design, deployment and maximization of digital networks at an increased pace, including the roll-out of wireline broadband technologies such as, but not limited to, optical-fibre, xDSL, CATV, power-line and wireless broadband technologies, and the establishment of satellite earth stations;

b)   facilitating the introduction of digital technology;

c)   facilitating the design, production and availability of digital terminal equipment;

d)   enhancing technical skills and management know-how;

e)   promoting digitization of analogue networks and applying affordable wireline and wireless technologies to facilitate people's access to ICT, thereby also improving quality of service;

f)   encouraging research on the information society, extensive networking, interoperability of ICT infrastructure, tools and services/applications to facilitate accessibility of ICTs for all;

g)   optimizing connectivity among major information networks via regional ICT backbones in order to reduce interconnection costs and optimize the routing of traffic.

Guidelines for Network Planning Tools for Developing Countries and Countries with economies in transition

Planning Domains