

NGN Network Planning According to Criterion of Provider's Maximum Profit

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Abstract - Maximum profit of telecommunication provider criteria usage is offered for multiservice telecommunication systems design. In the given paper described mathematical model and problem definition for telecommunication system structure and parametrical synthesis.

Key words - topology synthesis, parametrical synthesis, telecommunication system, provider, profit

I. INTRODUCTION

Rapid development of an information technology has led to necessity of creation of telecommunication system which provides possibility of transmission of any kind of the information, from any point of the world, at any time. Now the communication networks constructed according to NGN concept are considered as such network. NGN networks differ by architecture from earlier used and are not limited to quantity of given services and sorts of the transferred information. The enumerated properties of an introduced network make new demands to designing. In the given paper the NGN network's mathematical model and task setting for its synthesis according to criterion of provider's maximum profit is offered.

II. THE APPROACH TO TASK SOLUTION

Conception NGN is based on network structure segregation by three main levels: access network, transport network, control and service level. It allows to take out network's intelligence from its kernel to its edge, having left it, only functions of transmission of the information from one point of a network to another. Selection in separate level, access networks allows to solve more flexibly problems of "the last mile» providing access to all spectrum of a telecommunication service to subscribers connected on various access technologies.

The architecture of a network described above allows to build flexibly multiprovider networks, i.e. a network in which its various fragments belong to different providers [1,2] (access, network, a content, services). The architecture of a network oriented to the multiprovider environment, is offered in many standards in the field of multiservice telecommunication systems. One of the most perspective, is the architecture of a network offered in project MUSE within of 6th Framework Programme [2].

Competition presence between providers of info-telecommunication services has led to a state of the telecommunication market when in the same geographical area there is a choice of the service provider and net abonents

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easily enough change the supplier for another which offers, more the than best conditions of granted services or its list.

In the given conditions there is a necessity for approach upgrade to network designing. The approach used till now, in most cases, provides network structure synthesis in the following setting of the optimisation problem. At the known: set of subscribers- consumers of info-telecommunication services; volume accepted/transferred traffic and requirements to quality of services it is necessary to define such structure of a network and parametres of its units that at satisfaction of requirements of an information transfer and requirements to quality of the service, the resulted expenses for its organisation were minimum.

The given setting of the task links among themselves economic and technical characteristics. At task solution in the fixed parametres are: the set of network subscribers, volumes of services for each subscriber, are rigidly limited quality for granted services. Varied parametres are network structure and parametres of its units.

In practice, at network expansion, the communication statement usually has a wide choice of varied parametres, notably, can solve at the conclusion of the contract with the subscribers: to grant or not services to the given network subscriber, to grant the complete list of services requested by the abonent or partially.

In the specified conditions, at the organisation of commercial networks, in the author's opinion, the criterion of provider maximum profit is more rational. Usage of the given criterion will allow to expand the list of varied parametres and to approximate setting of the technical task to settings used in the economic theory.

III. CONCLUSION

In multiprovider environment and rivalry on the market of informational and telecommunication services, from the author's point of view, usage at designing of these networks criterion of provider's maximum profit is more rational. At usage of the given criterion in the course of designing in addition there is such varied parametre as the list of granted services and set of subscribers by which services are granted. As a result solved optimisation task is closer to the tasks solved at creation business plan a communication statement.

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