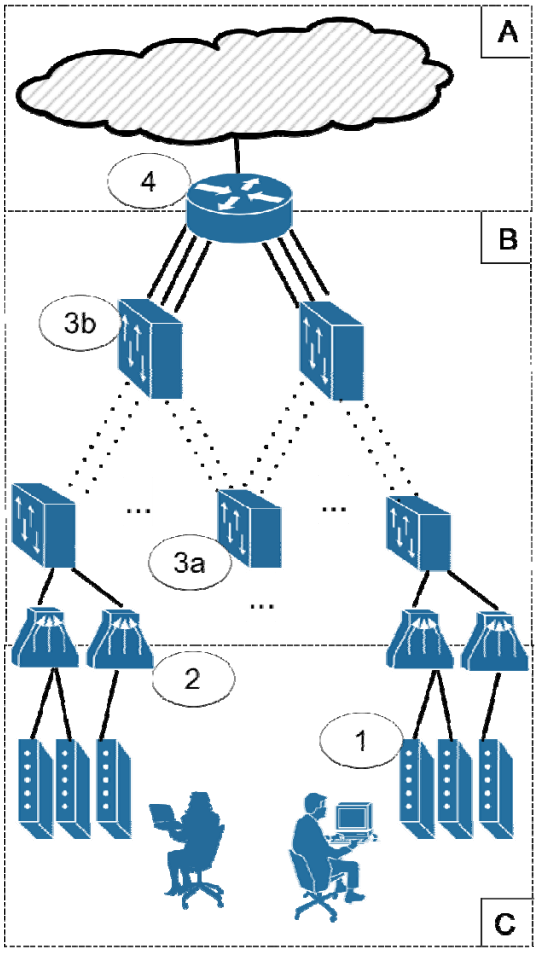
Performance Management Network Optimization (PMNO)

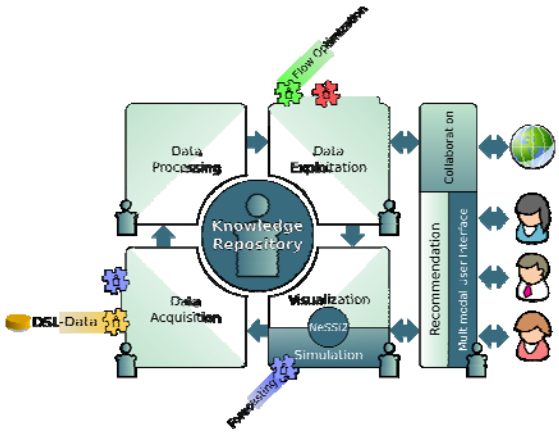
Increasing traffic demands for services like IPTV or Voice over IP require end-to-end connections with a high band- width. Most traffic optimization approaches focus on the IP layer; these approaches ignore the DSL access area between the customer and its entry point to the Internet. To ensure a desired quality of service, traffic optimization needs already be applied on the link layer in DSL access networks.

PMNO realized a multiagent system that aids network operators to find the optimal customer traffic path assignment for the current network state and traffic demands. In addition the system predicts future possible demands and allows reconfigurations of a DSL access network before congestions may occur.



Most traffic optimization approaches focus on the IP layer, but these approaches ignore the DSL access area between the customer and its entry point to the Internet. To ensure a desired quality of service, traffic optimization needs already be applied on the link layer in DSL access networks. Current challenges are in particular, that traffic path assignments in the DSL access network are static and the network infrastructure itself is exposed to frequent changes due to net- work extensions. In this regard, one challenge is to update and optimize traffic path assignments. Next, the imposed congestions by varying number of customers and increasing traffic amounts are hard to predict.

In ***PMNO***, we have developed a Decision Support framework (DSF) for a network provider capable of solving these challenges. This framework is realized by means of a multiagent system and the agent-based Network Security Simulator NeSSi^2. This system is capable of processing network inventory as well as performance data such as link loads. Based on optimization and simulation, warnings related to the operation of networks and recommendations for future network planning are created.



Contact:
DAI-Labor, Technische Universität Berlin
Prof. Dr. Sahin Albayrak
Phone: +49 (0) 30 - 314 74000
Fax: +49 (0) 30 - 314 74003
sahin.albayrak@dai-labor.de

CC SEC Manager at DAI-Labor:
Seyit Ahmet Camtepe, Ph.D.
Phone: +49 (0) 30 - 314 74117
Email: ahmet.camtepe@dai-labor.de

CC SEC Security