

## **Network Optimization and Design Tools:**

**SONET Ring Planning:** Network service providers and equipment vendors can use NetAdvantage's RingPlanner™ tool to optimize the cost of deploying both next-generation and legacy telecommunications equipment within metropolitan and regional ring topology networks. RingPlanner allows users to quickly analyze and compare vendor-specific equipment against competitive ATM and SONET equipment in terms of cost, central office floor space and power consumption. RingPlanner integrates proprietary forecasting and optimization algorithms with economic decision-making tools for access and interoffice TDM and data services. Its user-friendly graphical user interfaces map network ring builds and also identify equipment that can reduce or replace SONET add/drop multiplexers and reduce fiber and regeneration costs. With this software tool, users can quickly identify the economic and operational impacts of various network architecture choices.

**Optical Layer Mesh Topology Planning:** The NetAdvantage MeshPlanner™ tool can be used by both network operators and network equipment vendors to demonstrate the significant cost advantages of optical mesh networking. MeshPlanner integrates proprietary industry-specific forecasting and optimization techniques into dynamic economic decision support tools to allow users to rapidly design, configure and deploy optical switches, fiber and DWDM equipment in telecommunications and data networks. MeshPlanner provides user friendly graphical user interfaces with the ability to map optical switch nodes and placement of DWDM systems. With this proprietary software tool, users can identify the economic and operational impact of network architecture choices, and better determine where to place facilities and equipment to simultaneously optimize demand, service and protection routes in terms of either cost, equipment floor space or power consumption.

**Wireless Backhaul Network Planning:** The NetAdvantage AccessPlanner™ tool helps network planning engineers to rapidly plan, evaluate, and optimize the design of backhaul networks to carry cellular or PCS traffic from base stations to mobile switching offices (MSOs). It is offered as a customized product, i.e., it is configured to meet your needs and to take into account the challenges and technologies specific to your backhaul network design problem - e.g., availability of SONET facilities, RAD-RASP technology, microwave links, and so forth. A demonstration version of the software is designed to reduce the costs of leasing facilities (T1s, DS3s, and SONET facilities if available) and equipment (channel termination equipment, MUXs, access ports) from Local Exchange Carriers (LECs) or their competitors. It does so by using mathematical optimization techniques to identify optimal hubbing and interconnect strategies.

See our discussion of [cellular backhaul network optimization](#) for a discussion of minimizing the cost of a traffic network.

**Dark Fiber Network Planning:** The NetAdvantage DarkFiberPlanner™ software is a network optimization tool that helps metropolitan area fiber network operators optimally allocate demands to Local Exchange Carrier (LEC) facilities or dark fiber resources that are available in the ground by adding electronics equipment at the ends. DarkFiberPlanner helps network planning engineers to rapidly plan, evaluate, and optimize the routing of CPE to CPE and CPE to POP network traffic such to minimize the total facilities cost. DarkFiberPlanner uses NetAdvantage's advanced mathematical optimization engine to identify optimal strategies for purchasing dark fiber resources, LEC facilities and DWDM equipment.