The move to Next Generation Networks (NGNs) brings a new set of challenges for Communication Service Providers (CSPs). Already dealing with a highly competitive market and constrained by pressures on capital and operational expenses, CSPs now need to plan and execute on their NGN strategies or risk being left behind.

The Challenge

For NGNs, as for traditional networks, it is critical for CSPs to be able to predict how increasing demands will impact on their network, and to plan network capacity accordingly. But for NGNs, the impact of both traditional connectivity services and complex next-generation multi-play offerings on the network resources is much more complex – varying across network areas and technology domains. To meet these challenges it is essential to be able to model the complex relationships between the service demands and the underlying network resources and to be able to leverage that model to produce costed, actionable network configuration and build plans.

The Solution—Oracle Communications Network Intelligence

As part of the Oracle Communications OSS (Operational Support Systems) application suite, Oracle Communications Network Intelligence and other OSS applications are designed to work together seamlessly on a common technology platform – Oracle Communications OSS Foundation Stack based on Oracle Fusion Middleware. The other applications in the suite are Oracle Communications Unified Inventory Management, Oracle Communications Network Integrity, Oracle Communications Order and Service Management, and Oracle Communications Design Studio. Oracle Communications Network Intelligence brings an innovative and practical solution to NGN planning. With a rich service-driven network model and a policy-based analysis engine, Network Intelligence can effectively model, forecast, plan and generate configurations for a wide range of scenarios:

- **Plan new network capacity**: Build just ahead of the demand curve and reduce capital and operational expenditures. Plan against existing network capacity and determine the minimum new capacity required, where it is needed, and how much it will cost to deploy. Create forecasts based on data from marketing units automatically generate forecasts based on prior service usage. Plan and cost enterprise services and wholesale capacity sales bids.

- **Predict network resource exhaustion in a timely manner**: Identify likely capacity stress points in advance, minimizing customer service disruption, and helping to eliminate capacity blind spots.

- **Optimize capacity utilization**: Reroute all or part of a network so that it has
adequate but not excessive stretch capacity. Free up capacity, reduce leased line dependency, and optimize use of all existing assets. Minimize investment in legacy platforms, plan next-generation rollouts in an orderly and cost-effective manner, and minimize the number of physical locations required in the network.

Service-Driven Policy-Based Planning for NGNs

Oracle Communications Network Intelligence contains several key features to enable CSPs to effectively plan their networks – whether next-generation, traditional or a mix.

- **Flexible modeling**: based on an abstract framework of resource dependencies and capacity consumption.
- **Policies and weightings**: that allow planners to specify rules and priorities in as much detail as they wish, or alternatively to model at a high level of abstraction (see Figure 1).
- **Advanced analysis engine**: that brings together the network model, service demands, and existing network usage patterns and computes optimal route solutions based on bulk demand sets or individual bespoke network demands.
- **Telecom Domain Packs**: that provide out-of-the box support for the telecom technologies in use today, including Carrier Ethernet, MPLS, LTE and 3G, SONET/SDH, TDM/PDH and more.

This feature set allows CSPs to plan – from a single application – across a wide range of scenarios – fixed and mobile, new and mature technologies, packet and connection oriented flows, and combinations of all of these.

![Figure 1. Carrier Ethernet Network Topology with Rules and Weightings Applied](image)
Network Intelligence Solution Modules

Oracle Communications Network Intelligence is comprised of a number of individual solutions, listed as follows:

**Network Intelligence Core Platform**

The Oracle Communications Network Intelligence Core Platform has been designed specifically for network planners. Users can quickly navigate all aspects of a network and analyze network performance so that capacity can be efficiently managed. Users can quickly drill down to low-level information, saving valuable time in resolving issues. A sophisticated modeling framework allows flexible and customizable network modeling and the powerful analysis engine uses a policy-based approach to create optimal routing solutions and optimize capacity.

**Network Intelligence Forecast Manager**

The Forecast Manager ties future sales forecast requirements to network capacity, enabling service operators to predict and minimize network investment requirements. Sales forecasts can be imported from business systems or created automatically by Forecast Manager, based on historical use and trends. The Forecast Manager routes as much demand as possible – within defined policies – over the existing network and calculates the amount of new network build required to carry the remaining service demands (see Figure 2). The result is a network investment blueprint for the business.

All planned entities created as part of the plan appear in the cost/budget report. This gives a planner a comprehensive cost report by including detailed tasks and costs for the new build of these entities. A planner using Forecast Manager can also choose to do one of the following:

- Carry out deep cost-modeling based on definition costs and the costs of building new planned objects referenced by the definitions.
- Apply instance average costs to each entity.

**Network Intelligence Circuit Routing Manager**

The Oracle Communications Network Intelligence Circuit Routing Manager, in conjunction with the Network Intelligence Core Platform, offers the most sophisticated circuit routing solution available today (see Figure 3). Lists of comprehensive routing rules are also
provided to deliver the optimal solutions.

**Figure 3. Network Intelligence Circuit Routing Manager shows optimal circuit paths with detail information**

**Network Intelligence Monitor Report Manager**
The Monitor Report Manager is a Web-based analysis and reporting tool that provides senior managers with vital information when they need it. It analyses network data to identify trends in the network and predict exhaustion dates for all network nodes and circuits.

**Network Intelligence Outage Manager**
The Outage Manager, in conjunction with the Core Platform and Forecast Manager, allows users to analyze critical network outages when they occur. In the case of planned outages, users can prepare for seamless project management and service offload. In the case of unplanned outages, the solution helps users rapidly identify restoration circuits. Outage Manager can identify unprotected circuits and automatically collates them into a traffic demand matrix that is created as an outage restoration plan in Forecast Manager.

**Network Intelligence Migration Manager**
The Migration Manager, in conjunction with the Core Platform, allows planning engineers to quickly create a complete migration study and routing plan. A planner can carry out migration planning for networks, topologies, sites, nodes, links and one or more sub-equipment items such as shelves or cards accommodated by a fully persisted reports.

**Contact Us**
For more information about Oracle Communications Network Intelligence, please visit [www.oracle.com/communications](http://www.oracle.com/communications) or via Email: comms-oss_ww@oracle.com

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