GUROBI OPTIMIZATION | The World's Fastest Solver

Industry Solution Sheet: Telecommunications

Challenges and Capabilities

As we enter into the era of 5G, the telecommunications industry is undergoing profound and rapid change. Companies and organizations across the telecommunications value chain – from telecom services providers to telecom equipment manufacturers to government regulators and other key players such as vendors and consultants – must be able to transform their businesses to cope with the changes, overcome the challenges, and capitalize on the opportunities created by the emergence of 5G.

To survive and thrive in the era of 5G, telecom industry players must be able to answer critical and complex questions such as:

- How can we plan, configure, and operate our network to accommodate and monetize the enhanced bandwidth and connectivity of 5G?
- How can we adapt to shifting market conditions, satisfy changing customer preferences, and create new revenue streams?
- How can we leverage 5G to unleash the full potential of cutting-edge technologies such as augmented and virtual reality, Smart Cities, and IoT?
- How can we deploy our resources and manage our supply chains to ensure we are able to satisfy demand for our products and services?
- How can governments allocate spectrum across their networks in the best possible way to various telecom services providers?

To answer these questions, organizations across the telecommunications value chain need the most sophisticated and powerful advanced analytics tools – and mathematical optimization is one of these tools.

With mathematical optimization, telecom industry players can unlock new revenue growth and chart a path to profitability in the era of 5G by optimizing their planning, decision making, and operations.

Leading telecom organizations today use mathematical optimization technologies across a wide variety of business areas including network configuration, spectrum auctions and allocation, sales and marketing campaign optimization, customer management, cybersecurity, capacity planning, manufacturing, logistics, and maintenance operations, and many more.

Mathematical optimization empowers telecom companies and regulators to make data-driven, optimal decisions on how to manage their operational networks and supply chains and utilize their resources – so that they can satisfy demand, drive revenue growth, and capitalize on the opportunities of the 5G era.

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Opportunities for Optimization

Mathematical optimization is used by major telecommunications organizations around the world today to optimize many different strategic, tactical, and operational planning and decision-making processes including:

Sales and Operations

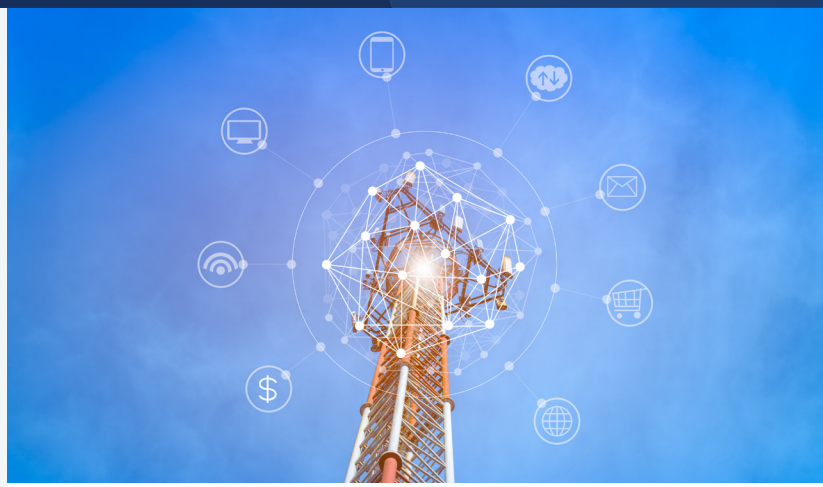
- Marketing Campaign Optimization
- Customer Management
- Cybersecurity
- Production Planning
- Logistics Planning
- Supply Planning
- Demand Planning
- Capacity Planning
- Workforce Planning
- Technician Routing and Scheduling
- Loss Forecasting
- Product Pricing
- Inventory Planning

Network and Resources

- Network Planning, Design, and Configuration
- Facility Location Planning
- CAPEX and OPEX Optimization
- Network Capacity, Flow, and Distribution
- Maintenance Planning and Predictive Maintenance
- Field Service Management
- Network Routing

Regulatory

- Spectrum Pricing, Auctions and Allocation
- Resource Optimization
- Spectrum Management



Business Benefits

Telecommunications organizations utilizing mathematical optimization technologies are able to realize numerous business benefits including:

- Increased profitability
- Better resource utilization
- Reduced operational costs
- CAPEX and OPEX optimization
- Increased operational efficiency
- Better customer acquisition, satisfaction, and retention
- Improved product offering
- Reduced customer churn rate
- Enhanced end-to-end supply chain visibility, agility, and alignment
- Increased revenue growth
- Optimal spectrum pricing and allocation
- Improved compliance with government regulations and strategy
- Optimal digital migration scenarios

Example Customers

Here is a selection of Gurobi customers from the telecommunications industry that use mathematical optimization to revolutionize their operations:

vodafone, kpn, AT&T, swisscom, orange™, NOKIA, CenturyLink, Coriant, HUAWEI, Federal Communications Commission, Viasat, RTR