



Innovative Scheduling

OPTIMIZATION
IN ACTION

TRANSFORMING TRANSPORTATION



Transportation is the life-blood of our economy.

With increasing globalization, costs are rising, networks are becoming congested, and transportation and logistics problems are becoming more complex. Tremendous opportunities exist to improve efficiencies and reduce costs through better modeling and optimization.

At Innovative Scheduling, we build optimization-based decision support systems that empower transportation executives to make better decisions for planning and scheduling problems they face in their day-to-day operations.

AN INDIVIDUAL PLAN FOR YOU AND YOUR PROJECT

At Innovative Scheduling, we understand that every client is unique. Therefore, we approach each project individually to meet your specific needs and requirements. We are guided by three core principles in our business relationship with you:

- Minimize your risk
- Maximize the return on your investment
- Create quick value for you to garner management support

LICENSING OUR SYSTEMS

Built through years of research and development, Innovative Scheduling's software products have created value for our clients.

A proof-of-concept study of our product helps us learn more about your business, your priorities, and the potential return on your investment. In this study, we apply our decision support system to your business data to demonstrate significant value and make a business case to your executives to secure funding.

After a successful proof-of-concept study, should you decide to license the software product, we can customize it to meet your unique business needs. We then integrate it with your information systems, and provide annual maintenance services. For detailed product information, please visit www.InnovativeScheduling.com.

➤ We combine cutting-edge optimization and simulation techniques with information technology tools to build interactive, web-based decision support systems.





➔ Our expertise lies in developing implementable solutions to very large-scale and complex decision problems, and rapidly packaging our solution techniques into commercial-grade software products.


CUSTOM SOFTWARE DEVELOPMENT

If you need a custom decision support system and do not have in-house expertise, Innovative Scheduling is an ideal partner for you. Our team becomes an extension of your organization, bringing you decades of modeling, operations research, programming, and information technology skills. We provide access to our proprietary models and engines and then build custom software to meet your specific business needs. We follow standard industry practices for custom software development – design, build, user acceptance, deploy, and maintain. The project is driven by your deadlines, your priorities, your preferences, and your budget.

CONSULTING SERVICES

Using our decision support systems, we provide consulting services to improve plans, operations, and determine optimal operating practices. Our models use science to support intuition and quantify the impact of managerial decisions. We sometimes modify our existing systems or build completely new systems for specific consulting engagements. We build these systems rapidly; thus, if you have a consulting engagement requiring a major investment, we can build models to help you make better decisions.



 We believe in early value creation for clients so we can generate support for the project within the organization. In every large project, we recommend the project be broken into multiple phases – each phase builds upon the previous phase, creates a value of its own, and generates enough benefits to fund the next phase.



ABOUT INNOVATIVE SCHEDULING

Innovative Scheduling was founded in 2000 by Dr. Ravindra K. Ahuja, a world-renowned researcher and academician, who has taught at the Indian Institute of Technology, Kanpur; the Massachusetts Institute of Technology, Cambridge; and the University of Florida, Gainesville. Dr. Ahuja founded the company to bring cutting-edge operations research techniques to the field of transportation and bridge the gap between theory and practice. In his academic career, he developed innovative models and algorithms for several airline scheduling, railroad scheduling, and logistics problems that were previously considered intractable. These algorithms have now been packaged into web-based, interactive decision support systems.

The company's team is comprised of highly skilled professionals with strong backgrounds in operations research, computer science, and information technology. Our team members have been honored with coveted awards for their contributions including: 1993 *Lanchester Prize*, 2003 *Pierskalla Award*, 2006 *Wagner Prize*, 2007 *Koopman Prize*, 2008 *INFORMS Fellow*, and several Railroad Applications awards.

Innovative Scheduling provides a one-stop shop to build optimization or simulation engines and package them into interactive, user-friendly interfaces with maps. Our goal is to create success stories for our clients by putting optimization in action.

TEAM EXPERTISE

- Optimization
- Simulation
- Visual animations
- Building desktop-based decision support systems
- Building web-based decision support systems
- Building interactive map-based applications

OUR CLIENTS

CSX TRANSPORTATION

- Developed a new operating plan to create significant cost savings
- Used simulation to create a layout for a large intermodal yard
- Licensed Innovative Locomotive Planning Optimizer (ILPO)
- Deployed a decision support system to direct locomotives to shops for quarterly maintenances

BNSF TRANSPORTATION

- Licensed Innovative Railroad Blocking Optimizer (IRBO)
- Licensed Innovative Train Scheduling Optimizer (ITSO)

NORFOLK SOUTHERN CORPORATION

- Licensed Innovative Railroad Blocking Optimizer (IRBO)

UNITED AIRLINES

- Developed algorithms for combined through-fleet assignment model
- Developed algorithms for multi-criteria through-fleet assignment models

PACER

- Developed a network planning model for repositioning of empty containers

TOYOTA MOTORS

- Developed models for equitable distribution of vehicles from manufacturing plants to retailers

ENGINEERING FIRMS

- Forecasted and analyzed future capacity requirements
- Merger and acquisition of port facilities



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