

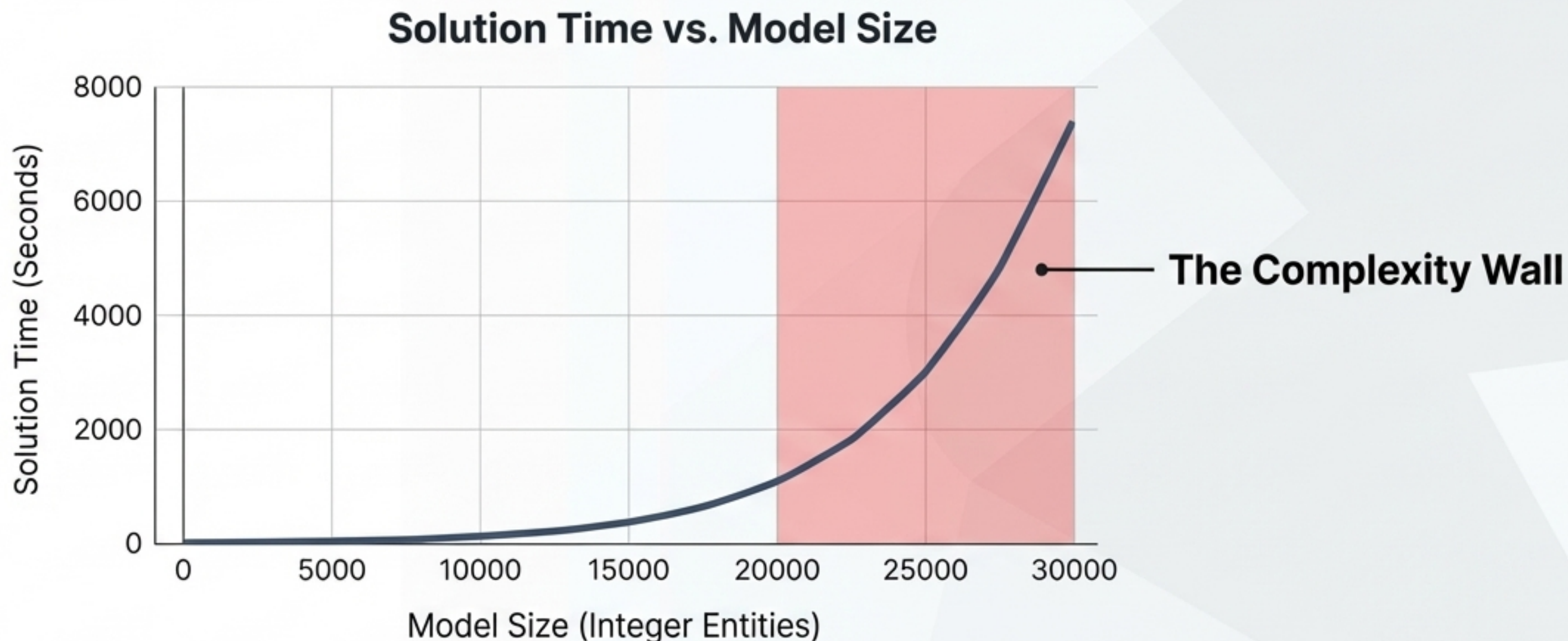
Your Most Critical Decisions Are Hitting a Wall.

As businesses evolve, optimization models grow in size and complexity. The tools that once delivered clear answers now struggle to keep pace, pushing the limits of standard optimization technology.



Welcome to the Complexity Wall.

For Mixed-Integer Programming (MIP), the relationship between model size and solution time isn't linear. It's exponential. This means waiting hours for suboptimal results, or worse, getting no feasible solution at all.



The Minds Who Built the Engine Now Offer the Supercharger.

Optimization Direct was founded by the same experts who created and built FICO® Xpress, the industry-standard solver you rely on. We understand its power—and its limits.



Robert Ashford

Co-founder and co-author
of Xpress-MP.



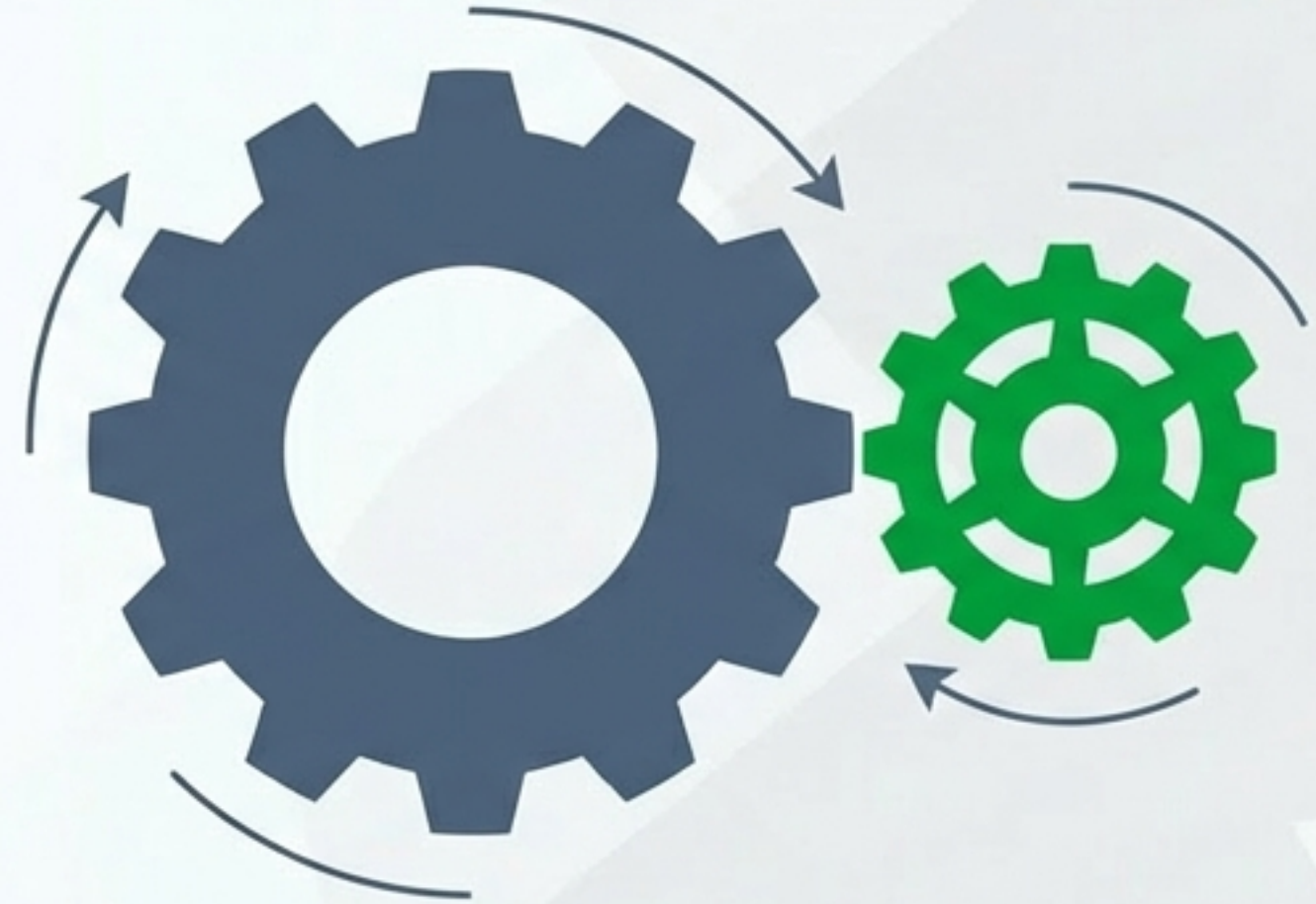
Alkis Vazacopoulos

Built the Xpress business
in the Americas.

Founded Optimization Direct in 2014 to solve the problems standard solvers can't.

Introducing ODH: The Co-Optimizer for Hard MIPs.

ODH (Optimization Direct Heuristics) is a powerful tool designed to extend the capabilities of FICO® Xpress. It co-runs with the Xpress optimizer, specifically engineered to find high-quality solutions for the largest and most difficult Mixed-Integer Programming models.



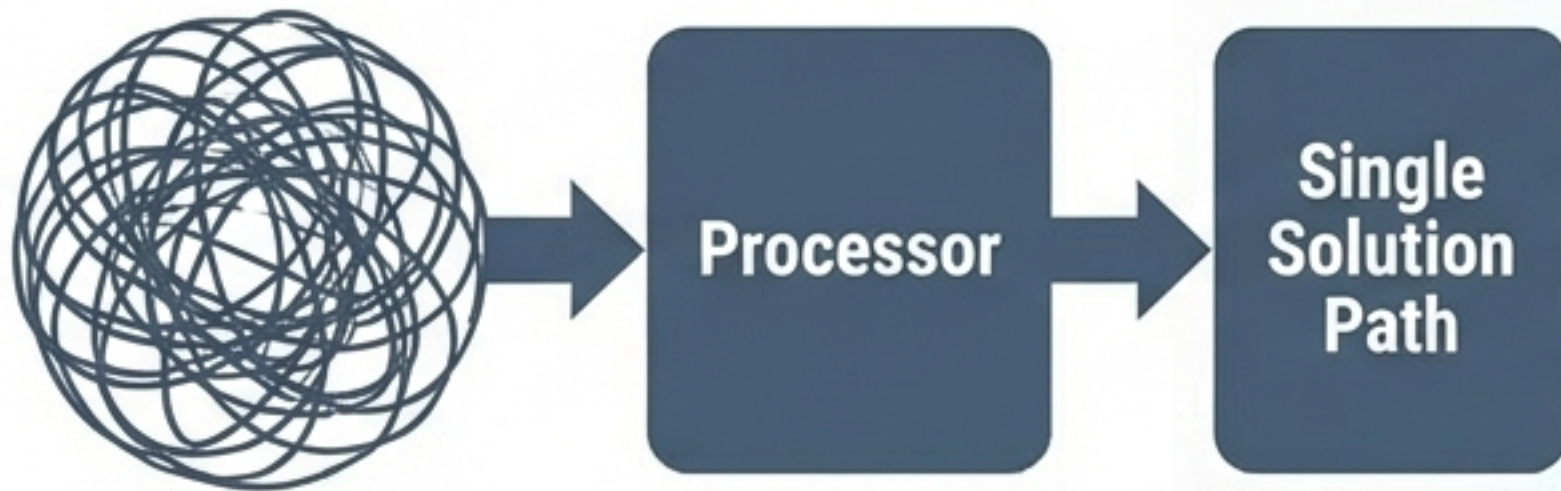
**ODH exploits parallel hardware to conquer complexity,
delivering better solutions, faster.**



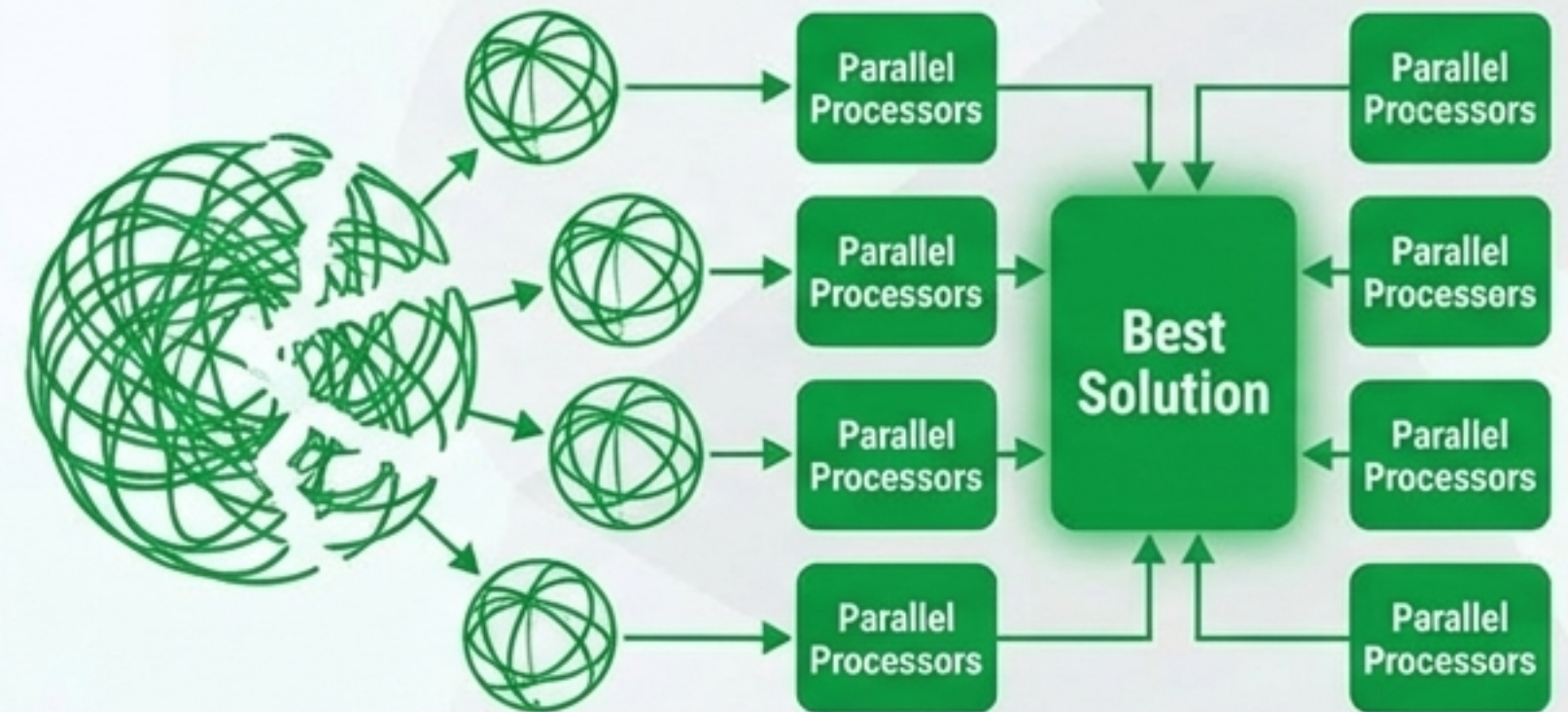
A Smarter Approach: Divide and Conquer.

Instead of treating a massive model as one monolithic problem, ODH intelligently decomposes it into smaller, more manageable sub-models. These are solved in parallel across multiple threads, with solutions continuously shared and combined to improve the overall result.

Standard Solver

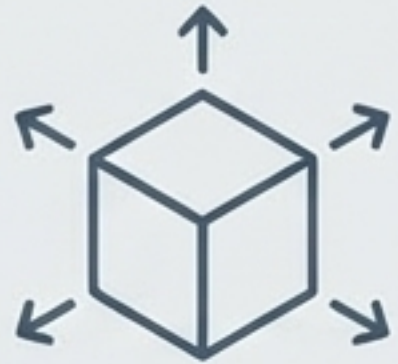


ODH + Xpress



When Should You Use ODH?

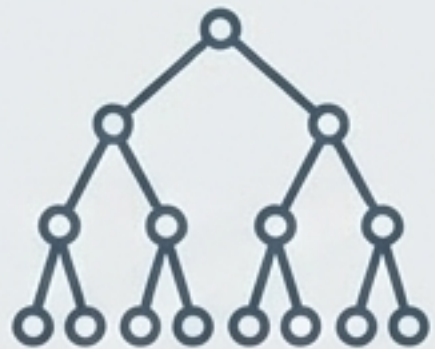
ODH for FICO® Xpress delivers a decisive advantage for models that:



Are too large for Xpress to process quickly.



Are hard for Xpress to find an initial feasible solution.



Have many integer feasible solutions, making the search space vast.



Require a high-quality solution quickly, where proven optimality is secondary.



The Proof: Dominating the Industry's Toughest Benchmarks.

We tested ODH on MIPLIB Open-v7, a public collection of 286 models for which an optimal solution has not been proven. The results demonstrate a fundamental performance leap.

39%

Better Solutions Found

Found better solutions than the "best known" for 101 models within 2 hours.

5

Previously Unsolvable

Found feasible solutions for 5 models where no solution had ever been found before.

13

Optimality Proven

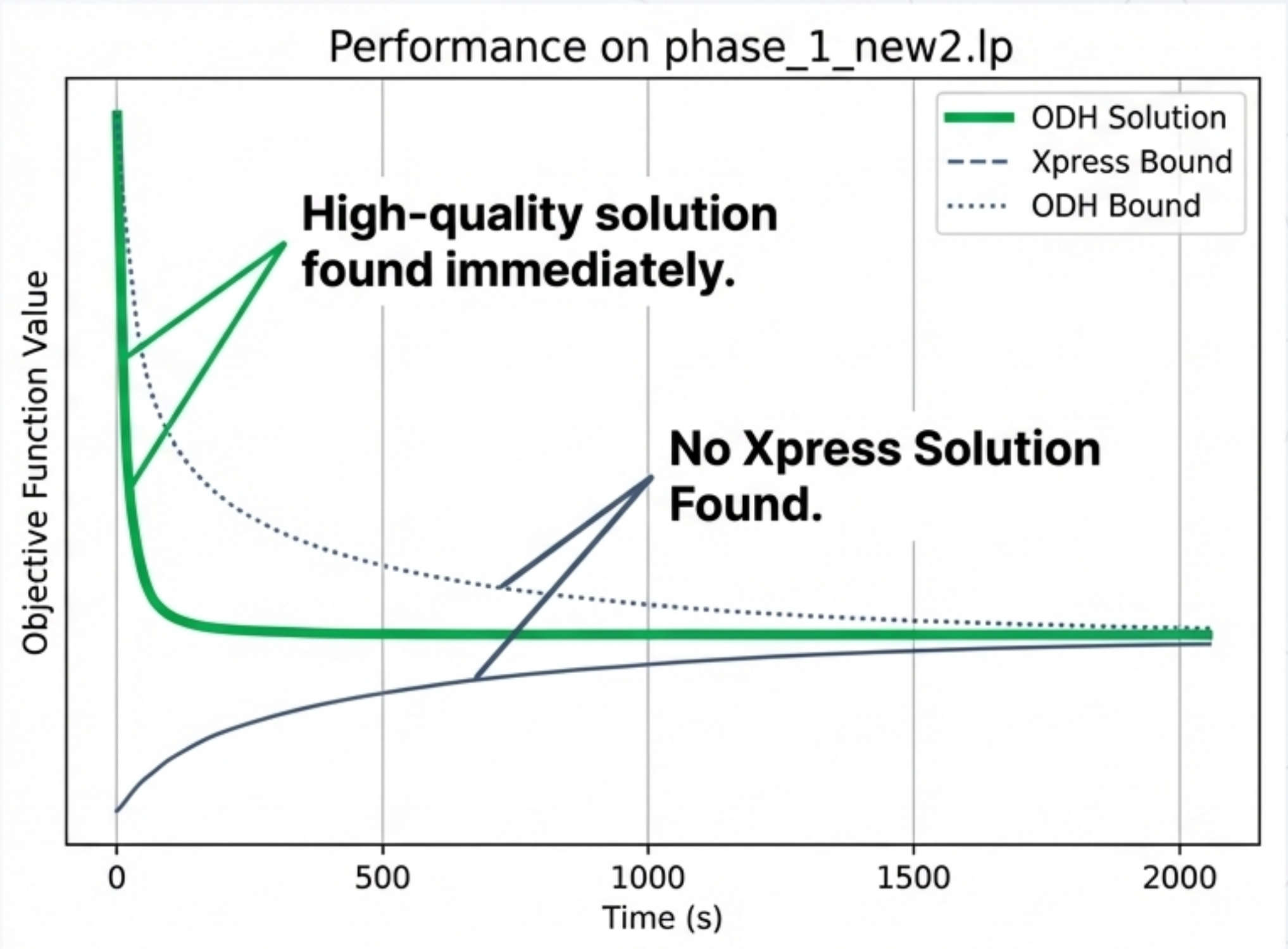
Proved optimality for 13 previously unsolved models.



Real-World Impact I: Satellite Scheduling

For a complex satellite scheduling model with 150,000 integer entities, finding even a single feasible solution is a major challenge.

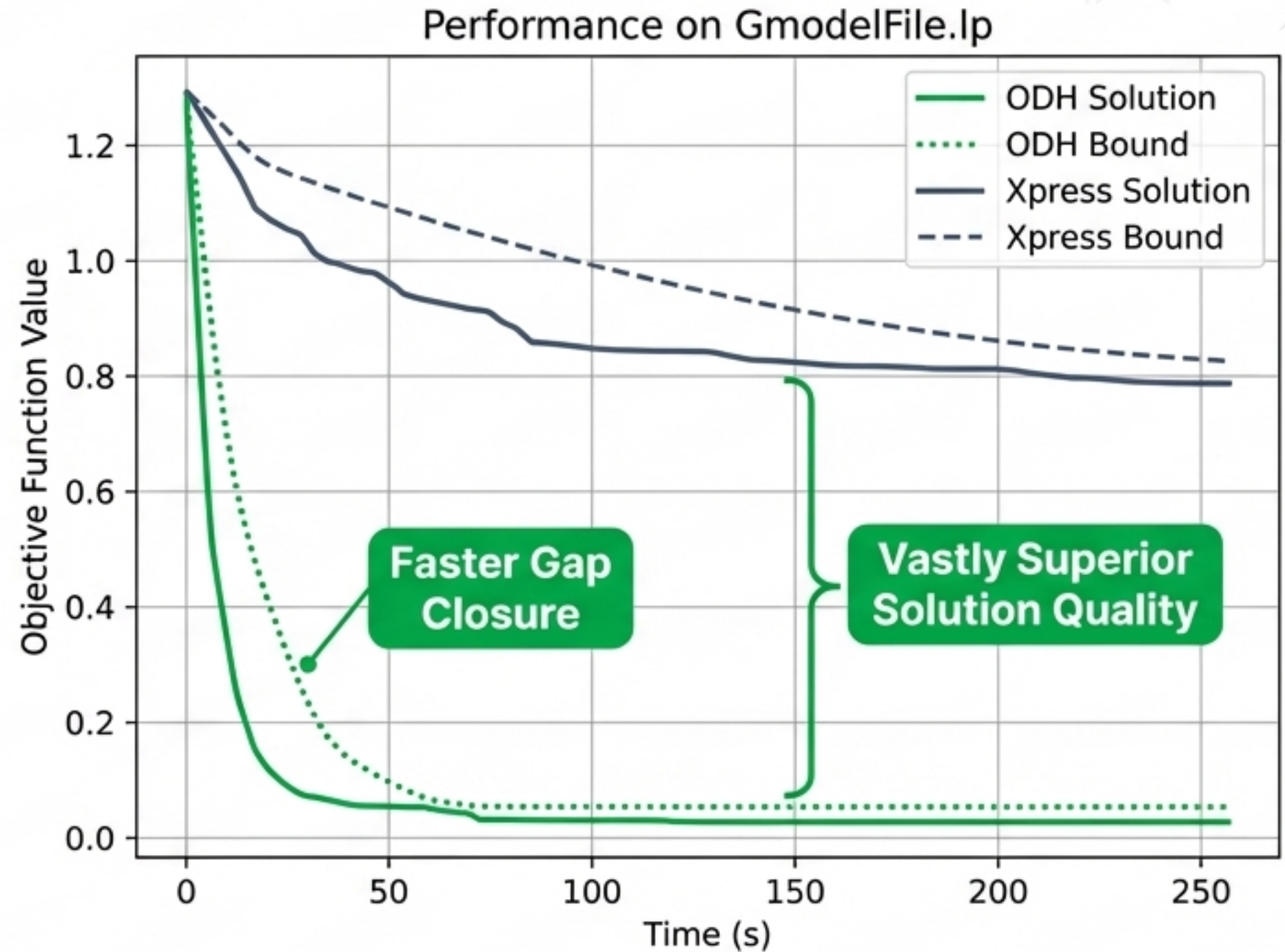
ODH finds a high-quality solution in minutes, while the standard solver fails to produce any solution at all within the time limit.





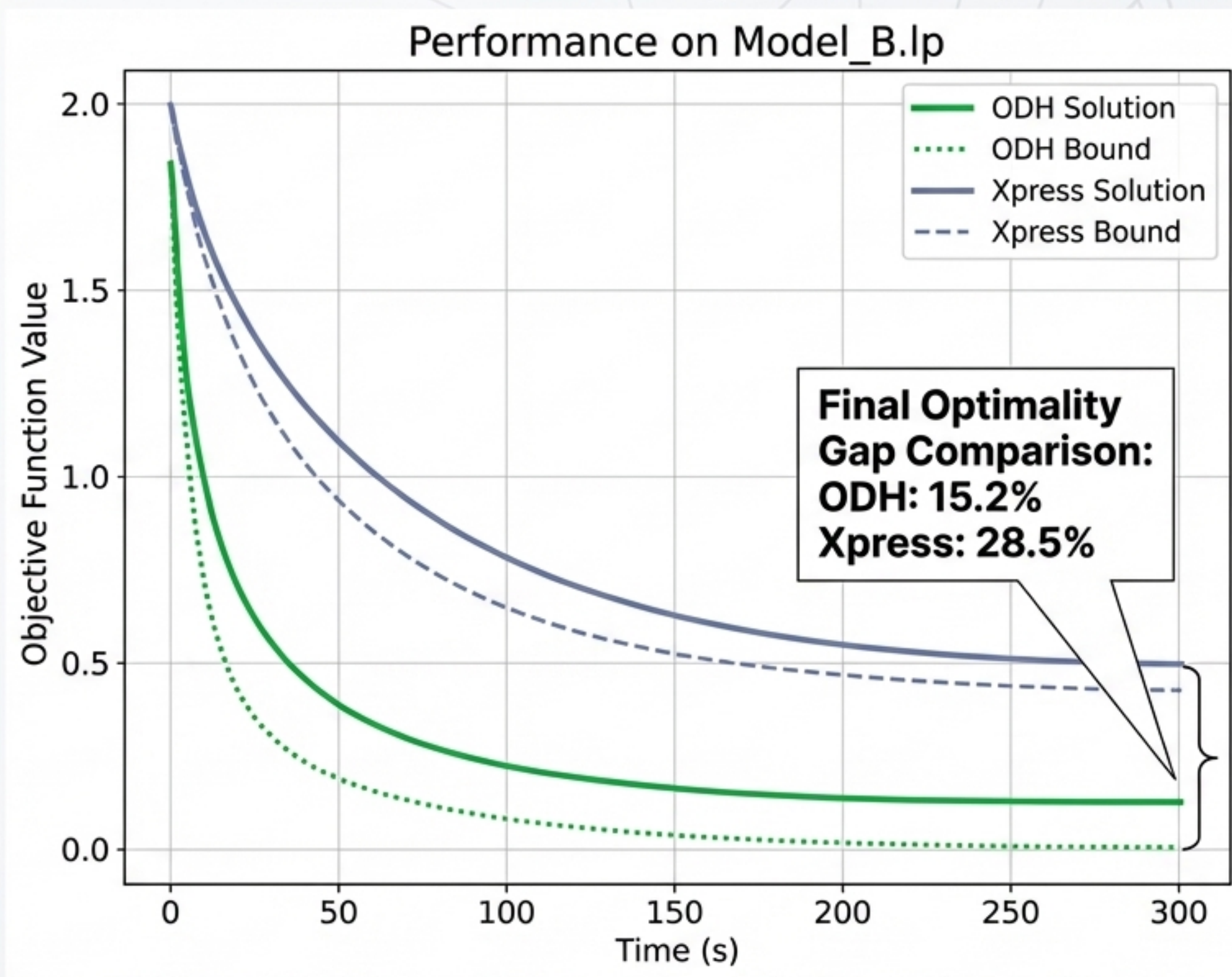
Real-World Impact II: Fiber Optic Network Design

In a large-scale network design model (310,000 integer entities), ODH not only finds a better solution than the standard solver, but it does so faster and significantly closes **the optimality gap**.



Real-World Impact III: Energy Sector Planning

This large energy model (550,000 integer entities) highlights the difference in solution quality. While both solvers find feasible solutions, ODH consistently maintains a better solution and achieves a tighter final optimality gap within the time limit.



Trusted by Leaders Across Demanding Industries.

Professionals tackling the hardest optimization challenges in their fields rely on ODH to gain a competitive edge.



Retail



Energy



Process Industries



Pharmaceuticals



Telecommunications



Health

Solving the Problems That Matter Most.

From global logistics to intricate scheduling, ODH is the essential tool for mission-critical optimization applications.

- **Supply Chain Network Design**
- **Satellite Scheduling**
- **Workforce Scheduling**
- **Distribution & Vehicle Routing**
- **Sales & Operations Planning (S&OP)**
- **Political Redistricting**



Stop Hitting the Wall. Start Solving.

As models continue to grow, the limits of standard solvers become hard barriers to progress. ODH is the proven way to break through, leveraging modern parallel hardware to find better solutions to your most complex MIPs, faster than ever before.

- ✓ **Solve Larger Models:** Tackle problems that were previously unsolvable.
- ✓ **Find Better Solutions:** Achieve lower costs and higher profits with superior results.
- ✓ **Reduce Wait Times:** Go from hours or days to minutes.



Solve Your Toughest Models with ODH

Ready to see how ODH can break through your complexity wall? Take the next step.

Request an Evaluation

Test ODH on your own models.

See a Live Demo

Schedule a personalized walkthrough with our experts.

Contact Us

Discuss your specific challenges.