Manufacturers face a variety of challenges on all fronts. Every machine, process, and resource within an organization has a direct impact on multiple other aspects of the business — and ultimately, on the bottom line. The need to grow revenue while cutting costs to remain competitive is top priority, particularly in light of agile competitors.

FICO® Manufacturing Solver helps businesses:

- Increase controllable operating margins
- Solve the toughest optimization problems to balance the trade-offs between costs, throughput, and timeliness
- Augment business user acumen by putting solutions directly into the hands of those who need them
- Leverage existing technology investments with complementary tailored solutions
Although many of the problems manufacturers need to solve are the same ones their predecessors struggled with decades ago, changes in global economics and buyer behaviors continually introduce significant amounts of new problems and complexities that manufacturing leaders are forced to address.

In order to find ways to do more with less, in less time, for the ideal balance of costs, throughput, and timeliness, innovative manufacturers have put increased focus on the ability to:

- Tailor solutions to meet specific business criteria unique from individual production lines all the way to global manufacturing systems
- Speed deployment of end-user applications
- Manage constant change

The ability to rapidly convert different types of data into insights and action is the key point of transformation for manufacturers trying to strike the right balance between inputs, outputs, business objectives, compliance, and ultimately customer demand and preferences.

### FICO® Manufacturing Solver Use Cases

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This list shows some of the key areas you can tackle with powerful manufacturing optimization. Depending on your specific industry and use cases, many more functions can be optimized.

### Information innovation

While many manufacturing experts have adopted advanced analytics and optimization to address specific business problems, there remain a number of obstacles that inhibit the ultimate success of these organizations when it comes to using out-of-the-box applications, including:

- Complex process, scheduling, and production assembly steps
- Siloed decisions that create suboptimal outcomes because other factors and constraints aren’t considered
- Spreadsheets and human judgment still reign supreme and employees often don’t trust what the software tells them — meaning solutions aren’t adopted
- Data from sensors and other devices overwhelms decision-making capacity and goes stale before it gets used

Successful manufacturers are looking beyond one-off analytics applications that only offer cookie-cutter options to find solutions that are much more powerful, flexible, and agile enough to evolve their decision-making capabilities at the same speed the business is changing.
The FICO® Xpress Insight Platform

FICO® Xpress Insight provides a customizable centralized development and deployment platform that allows for the rapid creation and launch of multiple advanced analytic solutions without interference from, or dependence on IT resources. Powered by the world-class FICO® Xpress Solver, Insight comes with out-of-the-box what-if analysis, user management, built-in data repository, load balancing, security and other critical enterprise-ready features.

FICO® Manufacturing Solver, one of several Xpress Insight solutions available, is a pre-configured framework that accelerates time to value. With the most comprehensive and tailored machine learning and optimization algorithms, users are able to navigate complex trade-offs, manage risk, and achieve complex business objectives for multi-modal, multi-echelon manufacturing and distribution networks.

Additional complementary Xpress Insight solutions include FICO® Supply Chain Solver, FICO® Forecaster, and FICO® Vehicle Routing Planner, as well as build-your-own.

Tailored to your requirements, not someone else’s

FICO® Manufacturing Solver is a customizable solution that solves for manufacturers’ specific objectives while accounting for conflicting constraints and balancing all related decision trade-offs. It delivers key insights to business experts and frontline staff — where and when they need them most — to maintain consistently optimal operations in constantly changing environments.

One centralized solution provides the ability to incorporate multiple streams of data, models, and scenario comparisons in order to strike the right balance between inputs, outputs, business objectives, compliance, and ultimately customer demand and preferences.

Make better decisions that directly impact the bottom line, faster

FICO Manufacturing Solver helps businesses:

- **Reduce costs and increase throughput and revenue**: Expand controllable margins by 5%–20% by discovering optimal strategies and tactics across all manufacturing operations.
- **Solve tough problems with conflicting objectives**: Leverage high-performance algorithms to find the optimal balance across many different objectives and consider myriad constraints in order to ensure operational efficiency.
- **Allow for business user input and control**: Provide domain experts with the ability to perform simulations and make adjustments to strategies with speed, precision, and ease.
- **Enable customizations**: Augment existing technology solutions by developing targeted solutions tailored to meet your unique business needs.
- **Future-proof**: Develop your own solution extensions or adjacent optimization solutions, using rapid application development features and the fastest solvers available. Stay in sync with market needs.
- **Avoid "rip and replace" of existing investments**: With a lightweight web-based platform, all manufacturing-related decision-making applications are created and deployed without additional IT resources or budget.

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Optimal decisions within any set of constraints — real-time, operational, tactical and strategic

At the heart of FICO® Manufacturing Solver is the world’s leading optimization modeling and solver platform: FICO® Xpress Insight, powered by Xpress Solver.

Xpress Insight allows operations researchers, data scientists, business analysts, and other key stakeholders to easily collaborate on the development, validation, and deployment of solutions based on scalable high-performance algorithms, a flexible modeling environment, robust optimization, rapid application and reporting capabilities.

Solutions are more accurately tailored to unique business constraints, without mandating a “one-size-fits-all” approach that groups you with your competitors. And end-users are able to readily input and explore hugely complex scenarios with software that can evaluate an almost infinite number of variables to produce insights and learnings that would have otherwise remained hidden.

Deploy solutions now, not later

With enhanced collaboration across teams and locations, adoption and usage rates increase far beyond those previously seen with traditional methods. Joint ownership from the start ensures final solutions meet both the needs and expectations of end-users.

Empowered with a modern web-based platform tailored for manufacturing operations and the ability to quickly develop advanced analytics “what if” scenarios, teams can create and deploy final applications for decision-making in 75% less time than previously possible.

To learn more about how FICO® Manufacturing Solver, an Xpress Insight solution, can help you improve your business decisions, go to www.fico.com/optimization.