



# McDougalls Foods

## MATCHING PRODUCTION TO DEMAND

**THE FLOUR MARKET** is among the most unpredictable. It fluctuates with the seasons and the holidays, never letting producers project production figures far into the future.

To better match production to demand in order to reduce costs and inventories, McDougalls Foods Ltd., a leading flour miller in the United Kingdom, has adopted a real-time advanced planning and scheduling (APS) system backed by two top ILOG optimization components: ILOG Solver and ILOG Scheduler. Built by World Class Manufacturing Systems Ltd., a growing force in equipping industry with state-of-the-art management systems, the APS system has cut stock levels at McDougalls from 4,500 pallets in 1996 to 1,500 in 1999, while at the same time more than doubling stock turns per product from an average of 12 a year to 32.

By using the power and versatility of ILOG optimization, McDougalls has been able to maintain its lead and boost profits in the home baking market.

*"The WorldCLASS Planner and Scheduler – using ILOG Solver and ILOG Scheduler – has dramatically cut the planning cycle, allowing McDougalls Foods to operate with 75% less stock, and as a result, this APS (advanced planning and scheduling) system delivers a world-class stock turn combined with an impeccable level of customer service."*

• **Martin Hollingworth**  
Operations Planning Manager  
McDougalls Foods Ltd.





Screen shots from McDougalls APS system

### McDOUGALLS FOOD LTD.

McDougalls Foods Ltd are a leading player in the home-baking market, supplying UK retailers and wholesalers with a range of flours, suet, baking mixes and yeasts. Major brands include McDougalls Flour, the No.1 branded prepackaged flour, and Atora, the market leader in suet.

### WORLD CLASS MANUFACTURING SYSTEMS LTD.

World Class is a British company specifically dedicated to assisting manufacturers in their quest to become industry leaders by applying both Japanese production methodologies, including the Toyota Production System, and high-tech information systems to real-world manufacturing situations.

### ABOUT ILOG

ILOG is a leading provider of advanced C++ and Java® software components for graphics and resource optimization. ILOG products deliver high-performance data visualization for 2D and 3D user interfaces; integer, linear and constraint solvers for resource optimization, scheduling, logistics and planning applications; dynamic rule systems for intelligent agents and real-time data flow control, and components for integrating modules with real-time and relational data sources. Founded in 1987, ILOG now employs more than 470 people in seven countries. Visit [www.ilog.com](http://www.ilog.com) for additional information.

## CONTROLLING STOCK WITH CONSTRAINT PROGRAMMING

McDougalls supplies food retailers and wholesalers with prepackaged flour. Because it works in a fast-moving market, the company operates with a minimum lead time of 24 hours. The erratic demand for flour makes it difficult for the company to manage stocks and plan production. Furthermore, anticipating demand can lead to high inventories—and low profits.

To reduce stocks and increase stock turns, McDougalls needed a system that could be run often with market and purchasing information to generate a variety of optimized production plans and schedules. To handle this problem, World Class built an APS system with ILOG Solver and ILOG Scheduler. The system uses information such as customer requirements, delivery deadlines and the plant's configuration to generate plans and schedules that optimally assign lines to meet demand without creating high inventories.

## PROJECT

World Class started working the system in August 1997. It was deployed in March 1998, after 18 man-months of work by three developers. The application runs on a PC with Windows NT, and all the data is entered with a materials requirement planning (MRP) system, though the APS package can be run alone. The MRP system is currently being upgraded, and McDougalls is considering adopting a vendor-managed inventory system that could lead to "stockless depots" for packaging goods with just-on-time delivery.

## BENEFITS

### For the entire McDougalls company:

- Stocks have been cut by two-thirds and the stock turn rate has nearly tripled
- Safety stock levels can be changed on the fly, with immediate effect
- Valuable resources are released for maintenance

### Benefits to the system operators:

- Several planning and scheduling scenarios can be generated in just hours
- Scenarios are based on real-time, not historical, data
- Implementation of scenarios takes as little as 10 to 20 minutes
- The system can be easily upgraded while running because of the modular design of the components and their powerful application program interface

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