

## Tecnomatix

# Procter & Gamble

Designing and optimizing efficiency in consumer packaged goods manufacturing

### Industry

Consumer products

### Business challenges

Faster design of more efficient factories

### Keys to success

3D factory layouts everyone can understand

Fast, easy-to-prepare logistics simulations

In-house reliability algorithms integrated with plant simulation

Standards-based, lightweight CAD (JT) files

### Results

Millions of dollars in global cost savings

33 percent increase in utilization of factory space and material handling resources

20-25 percent savings in costs of moving materials

Greater confidence in new facility designs

Optimized material handling, logistics and indirect labor across the organization

Increased planning accuracy and efficiency

**Tecnomatix supports efficient design and delivers cost savings by boosting productivity at new and existing plants**

### Faster design of more efficient factories

The Procter & Gamble Company (P&G) has one of the strongest portfolios of trusted brands, including the following trademarked products: Pampers, Tide, Ariel, Always, Whisper, Pantene, Mach3, Bounty, Dawn, Gain, Pringles, Charmin, Downy, Lenor, Iams, Crest, Oral-B, Actonel, Duracell, Olay, Head & Shoulders, Wella, Gillette, Braun and Fusion. The P&G community includes approximately 138,000 employees working in more than 80 countries worldwide.

P&G is taking advantage of the Tecnomatix® plant design and optimization solution from Siemens PLM Software in its efforts to minimize production losses, and improve the efficiency of manufacturing operations. Engineers use the Tecnomatix FactoryCAD, FactoryFLOW and Plant Simulation applications to improve manufacturing processes at both new and existing facilities.



"We have used these tools to improve different aspects of our manufacturing operations throughout P&G," says Brad Whitmore, technology section head in P&G Global Computer Aided Engineering.

**“Tecnomatix lets us apply the concepts used in equipment design to optimize factories and facilities.”**

Brad Whitmore  
Technology Section  
Head Global Computer  
Aided Engineering  
Procter & Gamble



“The Tecnomatix applications work well together and let you visualize proposed factory layouts and determine quantitatively how they will perform.”

#### **Efficient from scratch**

Prior to building new facilities, Whitmore and his colleagues use Tecnomatix FactoryCAD to create optimized layouts. “FactoryCAD allows us to design and visualize different concepts for a proposed facility,” says Whitmore. “The difference with FactoryCAD is concepts are now presented in 3D – a huge improvement over conveying ideas on drawings.”

“Seeing a layout in 3D brings it to life, especially for people who have trouble interpreting 2D drawings,” Whitmore says. “We now get input from people who might not have given their input in the past.” He estimates that as many as 20 design review meetings can be held to fine-tune a plant layout. This doesn’t slow the project schedule because it is easy to update the FactoryCAD layout with people’s input before we’ve started project execution. Whitmore estimates review cycles happen much faster compared to earlier projects where FactoryCAD wasn’t used.

The FactoryCAD layouts are converted into lightweight JT™ files that people can review at their desks. The use of JT files brings a number of advantages, including a smaller size compared to the original

CAD model. JT files can be 10 to 20 percent smaller than the CAD files and engineers no longer need CAD software to view the files. JT files also help in the layout of manufacturing equipment in FactoryCAD. Objects such as walls, windows, doors and building supports can be modeled in FactoryCAD, but 3D models of manufacturing equipment designed in other CAD systems can be imported as JT files into the FactoryCAD layout.

The result of using FactoryCAD to help develop a new facility or revise an existing one is greater confidence in the design. “We have a better idea what the final plan will look like because we have already seen it and flown through it in the computer,” Whitmore notes. “Our teams have a lot more confidence in what will be built, what it will look like, and how it will operate before we’ve broken ground. That’s a real success story.

The use of FactoryCAD supports P&G’s organizational performance goals for new facilities in a number of ways. One aspect involves making the construction of the facility more efficient by doing things right the first time and avoiding scrap and rework. Building the plant virtually and working out problems in the computer is proving to be helpful in achieving this goal.

## Solutions/Services

Tecnomatix  
[www.siemens.com/tecnomatix](http://www.siemens.com/tecnomatix)

## Customer's primary business

Procter & Gamble Company is one of the world's largest consumer products companies, with approximately 300 brands in more than 160 countries around the world.  
[www.pg.com](http://www.pg.com)

## Customer location

Cincinnati, Ohio  
United States

*"Tecnomatix applications work together well to let you visualize different factory layouts and determine quantitatively how they will perform."*

*"We got a lot more confidence in what the real plant will look like [using Tecnomatix], because we had already seen it and flown around it virtually."*

Brad Whitmore  
Technology Section  
Head Global Computer Aided Engineering  
Procter & Gamble

## Improving logistics

P&G uses other Tecnomatix solutions, such as FactoryFLOW and Plant Simulation as well. "We use Tecnomatix FactoryFLOW to directly compare plant and equipment layouts, to understand how our people, fork trucks, and materials flow to and from manufacturing lines," he explains. "Without software such as this, the teams can talk through different layouts, but FactoryFLOW lets us match them up quantitatively."

Whitmore explains that P&G uses FactoryFLOW as a screening tool to identify and select layouts that have the greatest potential before performing a detailed analysis with Plant Simulation. "FactoryFLOW provides a good first pass because it doesn't require a lot of effort or data to evaluate proposed layouts," he adds.

P&G uses Tecnomatix Plant Simulation to optimize material flow, resource utilization and logistics. Users create computer models of production systems, then run experiments and what-if scenarios to optimize them – quickly and without disturbing ongoing operations. "Plant Simulation is very fast in how it does the calculations," says Whitmore. "There are a lot of benefits in how easy it is to implement and how models can be built and re-used."

P&G has coupled Plant Simulation with its own expertise in computer experimentation, a comprehensive approach that identifies the factors most likely to cause losses through simulation of manufacturing operations. The openness of the Tecnomatix software supports this kind of computer experimentation, which "adds another layer to the simulation, so we have a



better understanding of productivity," Whitmore notes. For further information about P&G's capabilities in computer experimentation, contact Mary Ralles ([ralles.ml@pg.com](mailto:ralles.ml@pg.com)) in P&G External Relations.

Whitmore estimates the use of Tecnomatix software has resulted in millions of dollars in cost savings across the global organization. He also reports one project saw a 33-percent increase in the utilization of factory space and 20 to 25-percent savings in the cost of moving materials. Overall for P&G, Tecnomatix means faster design of more efficient factories with optimized logistics and productivity in their manufacturing organization. With Tecnomatix, P&G has powerful tools for focusing the company's engineering and manufacturing talents effectively.



## Siemens Industry Software

Americas +1 800 498 5351  
Europe +44 (0) 1276 702000  
Asia-Pacific +852 2230 3333

[www.siemens.com/plm](http://www.siemens.com/plm)

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