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About Dassault Systèmes
As a world leader in 3D and Product Lifecycle Management (PLM) solutions, Dassault Systèmes brings value to more than 130,000 customers in 80 countries. A pioneer in the 3D software market since 1981, Dassault Systèmes applications provide a 3D vision of the entire lifecycle of products from conception to maintenance to recycling. The Dassault Systèmes portfolio consists of CATIA for designing the virtual product – DELMIA for virtual production – SIMULIA for virtual testing – ENOVIA for global collaborative lifecycle management – EXALEAD for search-based applications – SolidWorks for 3D mechanical design and 3DVIA for online 3D lifelike experiences.

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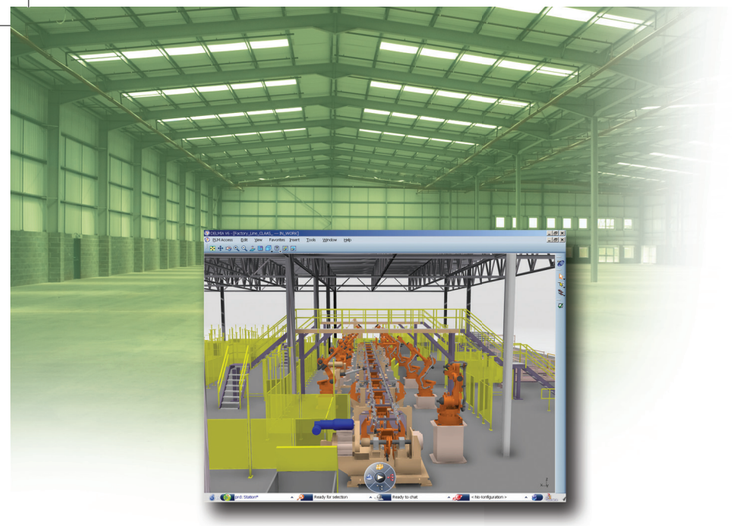
No Need to Start from Scratch:

Making "Old" Factories State-of-the-Art for Less Using Digital Retrofitting

DELMIA



Digital Retrofitting Lets You Visualize The Potential

As machinists and industrial equipment manufacturers look to increase efficiency and profit margins, ultimately some luxuries must be sacrificed. We're in an economic transition period, embracing sustainable technologies, making do with fewer personnel resources and expecting greater productivity with limited risk. To continue to innovate and develop better-quality products faster, manufacturers need proper equipment and a facility conducive to success. The question is: how does a company struggling to stay afloat suddenly create a new factory where its employees can shine?

The answer is digital retrofitting – taking an old, outdated and even abandoned factory space and using digital simulation to modify the structure ergonomically, functionally and environmentally. Bricks, mortar, labor and land don't come cheap, and digital retrofitting allows companies to make another company's previous residence their own.

Digital retrofitting involves building a new factory in a virtual world using an old factory's exterior structure and measurements. Companies retrofit the factory by simulating the transition to new tooling and equipment, then simulating the new production processes that occur once the update is completed. The factory design is virtual, so engineers and designers can collaborate easily to determine the most practical ergonomic tweaks the factory will support, assess the viability of a project, flag potential problems and fix them before anyone does so much as lay down a tarp.

Like digital prototyping, digital retrofitting lets manufacturers adjust and interact with a factory long before physical structures are altered. It's a lot easier to edit a simulation program than it is to put up a new concrete wall in the middle of a factory.

There are plenty of potential risks in taking a building designed for one specific purpose and transforming it to support another. Some companies are reluctant to undertake the process of digital retrofitting, however retrofitting a factory digitally isn't a haphazard endeavor; before starting any work in the real-world, machinists can ensure that equipment can be moved and replaced, and guarantee that the factory can handle the new production processes.

Digitally retrofitting a factory before actual work begins provides a manufacturer with a strategic and competitive advantage. Manufacturers can apply digital retrofitting to improve the efficiency of their existing facilities, but most importantly, to make a previously-owned factory reflect the design and composition of their choosing.

Acquisition and Alteration

Machine shops and plants are continually coming "offline" and facilities are retired as companies change locations, consolidate operations or as the wave of baby boomer machinists leave the workforce. When these situations occur, they create opportunities for other manufacturers to invest in an existing building and begin production quickly. Taking control of a pre-existing facility eliminates the need to build a factory from scratch and saves time that would otherwise be spent procuring permits, dealing with politics and planning. Digital retrofitting can reduce costs and accelerate time to production not only from a facilities perspective, but also from a human resources perspective. As one company leaves a community, it also leaves an eager workforce that can be trained or re-educated to support a new company's needs.

When transitioning a factory from one company to another, it makes the most sense for both companies to be in the same sector. For example, the risks are inherently lower when an industrial equipment supplier moves into a factory where another once operated, rather than a manufacturer of injection molding machines taking over a candy factory. As the differences increase between what a factory once produced and what it will produce in the future, so do the risks involved.

Digital retrofitting can mitigate those risks while providing all of the same benefits to companies that are willing to put in additional time and effort. If a traditional automotive manufacturer vacates a facility and an electric vehicle manufacturer moves in, the tooling and equipment may change, but many of the processes related to how the product moves through the line may require a similar layout. On the other hand, if that same factory will be used for an entirely different industry – perhaps to manufacture jewelry or toys – changes will be significant. Either way, the changes can first be made digitally to prove viability, identify potential issues in the retooling process and create ways to solve any issues that may arise.

Enhancing Existing Assets

In today's economic environment where flexibility is critical, there are many scenarios where it makes sense for machinists to retrofit their existing factories. A company may want to retire a product and retool a factory to create a new one, or it may simply want to improve production by making operations run smoother. Ergonomic improvements, for instance, can have a very positive impact on worker productivity, especially for assembly lines.

Over the past few years, many companies have reduced staff and idled facilities by force. As the global economy slowly adjusts to a new era, these companies will retain a much stronger competitive advantage by adhering to lean principles (reducing process bottlenecks and maximizing the value in each stage of the product lifecycle). As industrial equipment demand increases, manufacturers should look for ways to make the most of existing resources. A time may come when expanding into a new facility – or retrofitting someone else's facility – makes sense, but meeting demand with current resources is a safer and more affordable way to stay afloat.

For instance, instead of dedicating a factory to manufacture a single component, a business could alter an existing factory to produce multiple models. A factory that produces impact riveting machines as well as orbital and radial riveting machines is much more cost-efficient than if it supported two separate facilities and, as a result, it can more accurately meet production demand.

When time is money and deadlines are non-negotiable, retrofitting an old factory is a relatively quick way to meet process-intensive goals. Digitally retrofitting a factory makes corporate transitions less painful and ameliorates risk at a time when unexpected downtime could cost millions.