# IBM Product Lifecycle Management Express Advantage for generative tooling fixtures

### Reduce costs by reusing and easily modifying design

The IBM Generative Tooling Fixtures Solution speeds up tooling design through a generative design approach. Take advantage of enhanced collaboration, data exchange and reusable design templates with embedded rules. Whether you are an OEM or supplier, experience increased quality, while helping to reduce the costly and time-intensive creation and modification of jigs and fixtures.

### Leverage our PLM track record

As the global market leader in providing product lifecycle management (PLM) to the automotive, aerospace and other industries, IBM and Dassault Systèmes introduce new solutions to meet the industries' current and future requirements with each release of application software.

- For nearly 25 years, automotive and aerospace OEMs and suppliers, and industrial products and consumer goods manufacturers alike have successfully implemented Product Lifecycle Management for tooling design, with each receiving value-added benefits and measurable results.
- With our new generative tooling approach, mid-sized companies are poised to gain a more competitive edge in the marketplace. Our Product Lifecycle Management systems have proven instrumental in capturing, managing and sharing company intellectual capital.
- The IBM Product Lifecycle Management Express Advantage removes the traditional barriers of expense and complexity to make Product Lifecycle Management solutions accessible to mid-sized companies around the world.

### Retooling design to remain agile

What do welding, checking, machining and handling fixtures and tooling all have in common? For each of them, most of the design process is extremely time-intensive and, many times, manual. That's because many CAD design systems fail to enable quick design modifications to the tooling when the product designs change—expending valuable cycle time, quality, cost and innovation.

Bundling advanced and collaborative jig and fixture development applications, the IBM Product Lifecycle Management Express Advantage can help you to improve design processes, while delivering higher quality products in less time. Here's what we can help you achieve by implementing the Generative Tooling Fixtures Solution supported by the Product Lifecycle Management Express Advantage.

- Reduced product development times—accelerate, automate and optimize the entire tooling design process to speed the delivery of new products to the marketplace.
- Reduced tooling rework costs—nearly eliminate design iterations through the use of advanced simulation, and built-in associability rules between part and tool designs.
- Enhanced collaboration—cultivate greater communication, cooperation and continuity between design and manufacturing teams with a unified view of every stage of product development.
- Maximized intellectual capital—reuse validated tooling designs from previous projects to improve productivity and eliminate reinventing the wheel.

### The payoff

The IBM Product Lifecycle Management Express Advantage is a low risk means to help reduce your design and manufacturing costs. Potential business results can include:

- Facilitate cost reductions by having 15-20% fewer engineering change requests by allowing designers to investigate more tooling design options and eliminate the most costly changes—those discovered late in the design cycle.
- Contribute 10-25% in material costs to bottom line savings through the restriction of design options to pre-defined standard components that limit the number of customized parts.
- Increase worker productivity by 20-30% through the use of standard parts templates rather than starting each design from scratch.

**Reduce costs by reusing and easily modifying design**

Larger manufacturers and suppliers have been moving from 2-D techniques to full 3-D digital design and manufacturing. As a medium-sized company, now you can also be equipped to deal with the rising complexities of jigs and fixtures for automobile, aircraft, fabrication and assembly. With the IBM Product Lifecycle Management (PLM) Express Advantage, you can take advantage of industry best practices and collaboration tools to rapidly and affordably automate jig and fixture design processes.

**Leverage our PLM track record**

IBM and Dassault Systèmes have enjoyed a successful partnership for almost 25 years, delivering PLM solutions to manufacturing companies with complex product development processes. IBM, along with our nearly 200 PLM Business Partners firms based in 50 countries around the world is one of the few companies that can provide small and medium businesses with an end-to-end PLM solution.

- We have more than 150,000 services professionals in 160 countries, with over 1,000 professionals dedicated to PLM. Our business partner firms bring another 2000 PLM professionals to help you successfully implement PLM solutions to solve your business problems.
- With more than 10,000 successful PLM implementations, and a comprehensive and integrated solution portfolio, IBM has the capability to implement the right PLM solution for both OEMs and their tooling and assembly suppliers.
- Unlike most CAD systems, our solution's primary focus is to prevent designers from doing any manual design. The objective is to capitalize on designers' experience by eliminating non-value-added design tasks through automation.

**Retooling design to remain agile**

Large numbers of standard parts and huge assemblies. Generation of numerous drafting, upstream and downstream iterations. Simulation. Compliance with design rules. With the IBM PLM Express Advantage, now even mid-sized OEMs and suppliers affordably can equip their infrastructures to handle these pressures now and in the future.

Using a generative approach, your sub process design engineers can take advantage of reusable templates with imbedded rules and configurations.

- Surfacers
- Tooling designers
- Tooling builders

Then commonly used designs can be defined as standards and easily adapted to new contexts. As a result, rework costs are dramatically reduced through the association of the tool design to the original part design. This, in turn, results in an automatic update to the tool design when a change is made to the original part.

As a tooling manufacturer, it means your company can better respond to change and the demand for more complex assemblies.

- Gain knowledge-based engineering capabilities—obtain the ability to instantiate an existing, already validated toolset model into a product and process context. Once instantiated, these tooling models can be adjusted quickly and comply with design rules, automatically taking into account the actual context.
- Obtain a collaborative data management system—use best practice methodologies and collaborative tools to share and improve design tasks across the tooling design office, between departments and throughout the supply chain.

**Sanyo moves faster with PLM from IBM**

A world leader in the design, development and production of automatic assembly and welding line systems for automotive and household electronics manufacturers, Sanyo Machine Works Ltd., recently chose IBM for a comprehensive PLM solution.

Sanyo found itself having difficulty meeting client demands for reduced time-to-market. In fact, the company's product cycle time had been nearly halved during the last 10 years. Difficulty detecting potential pre-production problems due to their 2-D CAD environment didn't help matters either. Other business challenges included poor internal and customer communication.

In order to deploy a generative tooling methodology, Sanyo looked to IBM and Dassault Systèmes to integrate CATIA V5, EnoviaSmarTeam and DELMIA applications.

Their results speak for themselves.

- 30 to 40% fewer errors:
  - Provides early design quality validation.
  - Re-deploys corporate best practices from previous projects.
  - Reduces rework time during set up.
- Collaboration increased:
  - Increases communication by allowing collaborative design review with customers using 3-D data—making it more efficient and easier to understand.

According to Sanyo, the IBM PLM solution is helping distinguish their company in a competitive

marketplace. As a result, Sanyo can innovate faster than competitors by employing the most advanced design technologies available.

**The ROI is clear**

By providing concurrent design processes, you can eliminate expensive jig and fixture redesigns and costly mistakes that delay ramp-up and delivery times. The IBM PLM Express Advantage can help you to improve time-to-market, as well as your bottom line.

- Many companies can experience design time reductions ranging from 50% (when compared to traditional 3-D design) to 70% (when compared to mainstream 2-D design).
- Manufacturers using the solution can experience up to 70% fewer errors since knowledge rules guide product design.
- Experience with clients indicates that 60% of jigs and fixtures can be derived from a minimal set of generative tool templates, which minimizes the need for one-off or customized designs.