Ansys

# Unlocking the Value of Digital Twins with Ansys Twin Builder

A digital twin is a connected, virtual replica of an in-service physical asset. Sensors mounted on the asset gather and relay data to a simulated model, allowing the digital twin to mirror the real-world experience of that product.

More than providing the ability to monitor the performance of assets, digital twins provide an opportunity for manufacturers to **transform their businesses.**

## INCREASE REVENUE

A digital twin enables the creation of new revenue streams, in the form of high-value service offerings. Rather than just selling a piece of machinery, manufacturers can sell the uptime associated with that piece of machinery.

**One McKinsey analysis across 30 industries showed:**

**25%** AVERAGE MARGIN FOR AFTERMARKET SERVICES

**10%** AVERAGE MARGIN FOR NEW EQUIPMENT

## REDUCE COSTS

A digital twin enables true predictive maintenance for expensive assets. This enables manufacturers to save on warranty and insurance costs and proactively optimize a product's operations.

**Some mobile machine manufacturers experience:**

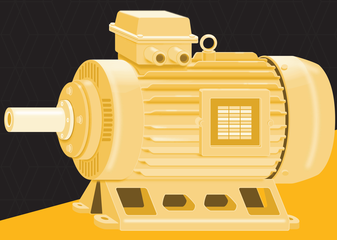
**800M** PER YEAR WARRANTY COSTS — AN AMOUNT EQUAL TO AS MUCH AS **3%** OF PRODUCT REVENUES

## FROM BOTH THE TOP LINE & THE BOTTOM LINE,

digital twins have the potential to revolutionize how manufacturers do business in industries from oil and gas, to automotive, aerospace and defense, and more.

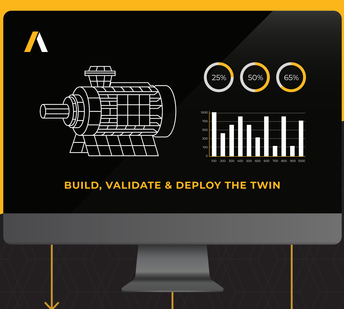
**Gartner predicts:** **50%** OF LARGE INDUSTRIAL COMPANIES WILL BE USING DIGITAL TWINS BY 2021

## An Easy and Accessible Approach to Digital Twins



**Ansys** – an industry leader in simulation technology – offers a comprehensive simulation based tool that allows manufacturers to quickly and easily **build, validate and deploy** digital twins.

**With Ansys Twin Builder, you can:**




### / 1. BUILD THE TWIN

Reuse engineering know-how to build accurate virtual product replicas.

**Ansys Twin Builder, the typical company can expect up to:**

**2X** REDUCTION IN THE TIME INVOLVED IN CREATING AN ACCURATE PRODUCT MODEL COMPARED TO MANUAL METHODS.

### / 2. VALIDATE THE TWIN

Validate and optimize twin model.

**As engineers utilize Ansys Twin Builder to verify and optimize their product model, they can expect up to:**

**25%** IMPROVEMENT IN PRODUCT PERFORMANCE.

### / 3. DEPLOY THE TWIN

Connect and deploy to supported Industrial Internet of Things (IIoT) platforms. Ansys Twin Builder is the first software solution to automate the connection of a digital twin to a working product.

**Once the connection is made, maintenance costs can be reduced up to:**

**20%** OVER THE PRODUCT'S LIFETIME

## What Are People Saying About Ansys Twin Builder?

"Ansys Twin Builder and other Ansys products perform circuit quality pre-verification and electromagnetic interference simulations of our home appliances' power electronics, electrical motors and controllers. With the help of Twin Builder, we're developing innovative products by implementing digital twins to create virtual prototypes at the component level and share IoT information among products — supporting research to boost product reliability, reduce the time to market, decrease the need for physical testing and improve product development."

**GWIGEUN PARK | Research fellow, LG Home Appliance & Air Solution Company**

"Using Ansys Twin Builder, Volkswagen Motorsport conducted a six-step multiphysics simulation involving electrical and thermal parameters to design and validate the battery model...The Twin Builder simulation of the ECM was super-fast, requiring only seconds to simulate one full drive cycle of the race car through the entire race course."

**BENJAMIN AHRENHOLZ | Head of CAE Department, Volkswagen Motorsport GmbH, Hannover, Germany**

GE engineers have developed a digital twin of the Haliade 150-6 wind turbine's yaw motors, which enable the 6-megawatt turbine to rotate and position itself into the wind. This digital twin simulates, through virtual sensors, the temperature at various parts of the motors. Why is that so important? "The better you monitor the temperature, the better you know the impact of the way you are using it," says Hervé Sabot, engineering director at GE's Digital Foundry in Paris. "The challenge here is to boost the capacity of our customer's assets to avoid outages and have them perform as fast as possible."

**GE REPORTS | www.ge.com/news/reports/french-connection-digital-twins-paris-will-protect-wind-turbines-battering-north-atlantic-gales**

For a variety of manufacturers, simulation-based digital twins unlock significant value through both cost savings and new revenue streams – and **Ansys Twin Builder** makes it easy for companies to start realizing the benefits.

**TO LEARN HOW YOU CAN BUILD, VALIDATE AND DEPLOY DIGITAL TWINS THAT CAN HELP TRANSFORM YOUR BUSINESS, VISIT**

**ANSYS.COM/TWIN-BUILDER**