

# KETIV

Manufacturing Innovation.  
Together.



## SERVICE OFFERINGS

---

**The world is facing pressing challenges and you, the innovators, are here to help.**

Whether working to solve the challenges of population growth, coral restoration, choked supply chains, or increased carbon emissions, organizations like yours are seeking transformative solutions to advance more sustainable business models and a better world.

Is it time to assess your organizations workflows? As your organization starts out and begins to scale, new product introduction processes can become complex and lengthy. You can discover more efficient solutions as you mature that reduce costs and streamline your time-to-market.

# CONTENTS

<b>How is KETIV Different?</b>	<b>3</b>
<b>Key Specializations</b>	<b>4</b>
Data Management .....	4
Design Automation .....	5
Digital Simulation.....	6
Advanced Manufacturing.....	6
<b>Consulting, Training, and Services</b>	<b>7</b>
<b>Digital Manufacturing Success Stories</b>	<b>8</b>
Kheyti.....	8
Nexus 3.....	9

Manufacturing Innovation.  
Together.



KETIV brings a unique opportunity to innovators who are seeking support as they begin their missions as startups and non-profits. By teaming with partners such as Autodesk Foundation, Ansys Startup, and more to provide technical training and expertise, KETIV can help to bring early-stage organizations' transformative innovations to market and advance a more sustainable world.

We partner with anyone from lean to venture-capital-flush organizations, to provide full-service business solutions for design and manufacturing companies seeking to seamlessly integrate people, processes, and technology. From helping assess your organizations current workflows, to providing market overview, to assisting in product development—KETIV has delivered for manufacturers of every size, helping you drive profitability and innovation in this crucial stage.

## HOW IS KETIV DIFFERENT?

---

### Vision and Guidance

- ▶ Get help building robust strategies, processes, and solutions with clear end goals in mind
- ▶ Explore any aspect of manufacturing, from the initial product design, to the customer experience, to running the automated 5-axis CNC in the shop

### Enablement and Education

- ▶ Attend [KETIV Virtual Academy](#) to get the latest technical training on Autodesk and other manufacturing software
- ▶ Tap into the [KETIV Digital Manufacturing Series](#) to learn the best strategies for leading and operating a digital-first manufacturing organization



## KEY SPECIALIZATIONS

KETIV offers services that are designed to help drive your organization's outcomes. By focusing not only on the technology available, but business outcomes, we guide you to your goal of making a more resilient and efficient organization. Let's review our key capabilities:



### Data Management

Data is the thread that enables digital transformation. Services range from helping manage and host engineering files, migrating, and transforming data or developing digital twins.

#### KETIV Data Management Services

##### Vault

- ▶ New Installation and Upgrades
- ▶ Lifecycle Configuration
- ▶ Develop Engineering Processes
- ▶ Server Replication
- ▶ Vault ERP Connector
- ▶ Support
- ▶ Training

##### Data Migration

- ▶ Data loading
- ▶ Metadata Transfer of 3rd party CAD
- ▶ Metadata Transfer TIFF, PDF, Inc
- ▶ Vault Merge
- ▶ Vault Data Separation / Extraction

##### Custom Programming

- ▶ Vault Analytics
- ▶ Custom Job Processor Jobs
- ▶ PDF Bundling
- ▶ Watermarking in File Lifecycles
- ▶ Vault Data Separation / Extraction

##### Vault as a Service (VaaS)

- ▶ Hosting customers Vault in the cloud
- ▶ Hosting Job Processor
- ▶ DR solution for Customers Vaults
- ▶ 21 days of backups retention





## Design Automation

Design and engineering automation boosts productivity and frees your highly skilled engineers to achieve more fulfilling and valuable work by removing repetitive tasks.

### KETIV Design Automation Services

#### Drafting Automation

- ▶ 2D Drawings
  - » Drafting automation focuses on simplifying processes for two-dimensional drawing outputs.

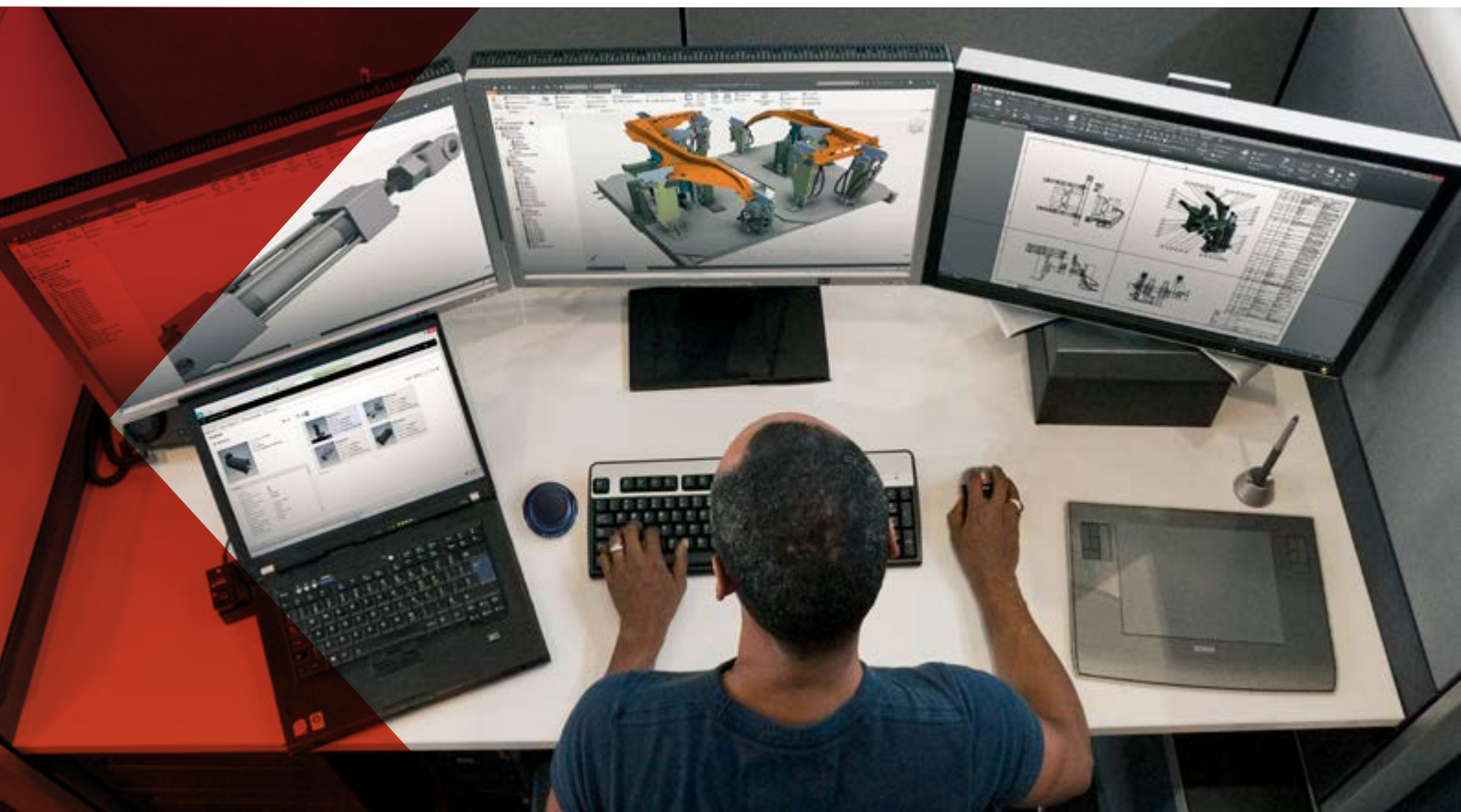
#### Design Automation

- ▶ 3D Modeling
  - » Identifying modeling repeatability to automate processes. Free up engineering cycles for value-add design and less repeat work.
- ▶ Sales Configuration
  - » Cut down time for engineering to design a model and create manufacturing drawing packages after sales has quoted a customer.

- ▶ Quality Automation
  - » Stay ahead of the competition by providing quality products with design rules.

#### Process Automation

- ▶ Factory
  - » Quickly configure the layout of your manufacturing facility.
- ▶ Simulation
  - » Understand how your products will react under certain conditions with simulation.
- ▶ Quality Automation
  - » Stay ahead of the competition by providing quality products with design rules.





## Digital Simulation

Simulation allows manufacturers to innovate and get to market faster, with the ability to test limitless possibilities for new or existing products. We also offer help in design optimization, ensuring that you're moving forward with the most optimal design among many alternatives.

### KETIV Digital Simulation Services

#### Structural Analysis

- ▶ Linear and nonlinear stress analysis
- ▶ Dynamic Analysis
- ▶ Durability
- ▶ Impact and Crash Analysis
- ▶ Thermal analysis
- ▶ Fluid Structure Interaction (FSI)
- ▶ Fracture Mechanics

#### Fluid Dynamics Analysis

- ▶ Conjugate Heat Transfer
- ▶ Turbulent Flows
- ▶ Multiphase Flows
- ▶ Discrete Phase Flows
- ▶ Noise Prediction
- ▶ Reactive Flows and Combustion
- ▶ DEM (Discrete Element Method) for particle dynamics

#### Electronics Analysis

- ▶ High Frequency Electromagnetics
  - » RF/wireless, antenna, microwave, EMI/EMC, signal/power integrity, 5G
- ▶ Low Frequency Electromagnetics
  - » Magnetics, motor design, eddy currents, transformers, battery, electrification, RLCG parasitics, electronic control circuit design
- ▶ Cooling / thermal design
- ▶ Electronics Reliability
- ▶ Automation of geometry construction, configurations, simulations
- ▶ Design of experiments, Monte Carlo simulation & optimization



## Advanced Manufacturing

Tap into innovative approaches to fabrication with new digital technologies. Whether you're manufacturing in house or outsourcing we have the expertise to help with additive/subtractive manufacturing and inspection and verification tools.

#### Subtractive Manufacturing

- ▶ Design for manufacturing (DFM)
- ▶ 2.5, 3, 5 Axis and Turning experience
- ▶ Tool library creation
- ▶ Setup CAM environment
- ▶ Toolpath template creation

#### Additive Manufacturing

- ▶ Design and import scanned models
- ▶ Create digital twin
- ▶ Advanced simulation and optimization on printed part
- ▶ Part fabrication

#### Manufacturing Automation

- ▶ Macro creation for Inventor CAM, FeatureCAM or PowerMill to reduce redundant tasks
- ▶ Template creation for tried and tested toolpaths
- ▶ Setup sheet automation that can send the job to the shop floor



# CONSULTING, TRAINING, AND SERVICES

---

## Technical Assessments

- ▶ Evaluate the organizations current workflows and products
- ▶ Assess the organizations business and end user problems
- ▶ Discuss the organizations goals and any future projects

## Technology Overview

- ▶ Create awareness of the Autodesk toolsets that are relevant to the organization
- ▶ Introduce workflows that integrate data, simulation, and manufacturing

## Training

- ▶ AutoCAD
  - » AutoCAD toolsets
- ▶ Autodesk Inventor
- ▶ Autodesk Fusion 360
- ▶ Autodesk Vault
- ▶ Fusion Manage
- ▶ Autodesk UpChain
- ▶ ANSYS Simulation

## Technical Support

- ▶ KETIV will provide support for the Autodesk product that the organization is using

## 3D Design Content Creation

- ▶ We offer in house modeling services
- ▶ An additional assessment must be conducted in order to understand current design standards and to better understand model intent

## Design Optimization

- ▶ Our engineers will leverage Generative Design and other simulation tools to analyze and optimize the final design

## Project Mentoring

- ▶ Office hours that your engineers can schedule with our team to walk through any project hurdles



# DIGITAL MANUFACTURING SUCCESS STORIES

---

## Kheyti

Kheyti designs low-cost technologies that help farmers in India increase their yields, predictability of produce, and overall income. Kheyti's team and partners provide end-to-end support for small farmers, working with them on-site and virtually to implement their technologies, while offering access to flexible financing and connections to retail buyers.

Kheyti's modular, affordable "Greenhouse-in-a-Box" uses 90% less water and grows seven times more food than conventional methods. Its design process places the needs and desires of farmers at the center, ensuring that solutions work for them and are responsive to their everyday challenges and long-term goals.

After more than 20 phases of testing, the revised greenhouse design successfully brought the required labor for installation down from 18 people to 10, and the installation time from three days to one and a half. It also brought down the total price

by 10%, despite major increases in cost of materials due to supply chain issues.

The team also helped Kheyti transfer its design files from an older, less efficient software to Fusion 360, and provided Fusion 360 training for Kheyti's design fellows via Autodesk training partner, KETIV. The added layer of training built vital capacity for Kheyti that will serve as a foundation for its future work.

“

“One of our key goals has been building the engineering capabilities of our own team,” says Seth. The pro bono project not only generated new possibilities for Kheyti, but led to concrete action and change.

**“With the added training from KETIV, we’re now able to execute on all the great ideas we developed with the pro bono team.”**



## Nexus 3

Nexus3 Manufacturing and Engineering is an additive manufacturing (AM) startup focused on providing engineering and manufacturing services for the aerospace, automotive, medical, industrial, and consumer markets. The company was created by 3 partners with a passion for additive manufacturing and the possibilities that lie within the future of the technology.

KETIV walked the Nexus3 team through their options, which included Autodesk Inventor and Fusion 360. The team considered Autodesk's flagship product, Inventor, but decided that Fusion 360's cloud file management, pricing and simulation and generative design tools were the best fit for their startup needs. Other benefits

included, the all-in-one Parametric, Direct and Freeform modeling capabilities of Fusion 360 and as Marc stated, "Learning about the partnership and local support that would be provided by KETIV, we knew it was the right fit."

Fusion 360 includes all the features and functionality needed to take products from concept through design to manufacturing. Within a couple weeks, Nexus3 was approved and began working within Fusion 360. Marc said, "Fusion 360 was simple to use and allowed us to model our first face shield in just 3 days."



# KETIV

If you're ready to take the next step with **KETIV** schedule a demo with our product experts.

