

CONSUMER PACKAGED GOODS

# HOW TO DESIGN LAYERED PRODUCTS FASTER

Speed up innovation of complex layered products while optimizing for weight and manufacturing cost.



## WE TOUCH LAYERED PRODUCTS NEARLY EVERYDAY



- Baby diapers
- Adult diapers



- Feminine hygiene products (pads and tampons)



- Paper towels
- Protective dressings

### Other applications include:

#### 1 Home & Lifestyle

- Geotextiles
- Footwear
- Home products
- Antimicrobial films

#### 2 Life Sciences & Healthcare

- Chemical/adhesives
- Protective dressings

#### 3 Construction

- Flame retardants
- Filtration

#### 4 Transportation & Mobility

- Filtration



## GROWTH IN LAYERED PRODUCT SEGMENTS

The **diapers market** is expected to increase from US \$63.2 billion in 2023 to US \$110.0 billion in 2033. The market is likely to capture a **5.7% CAGR** during the forecast period.



The **paper towels market** was valued at US\$14.5 billion in 2024 and is anticipated to reach US \$20.3 billion by 2032, witnessing a **CAGR of 4.8%** during the forecast period 2024-2032.



The **global feminine hygiene products market** is anticipated to grow from \$43.2 billion in 2024 to \$73.1 billion by 2032, at a **CAGR of 7.8%**.







## MAIN CHALLENGES IN LAYERED PRODUCT DESIGN

### COMPLEX ASSEMBLY

Managing the development process of **complex assembled layered products** composed of several **materials** in which the **net, gross** and **trim weights** are **key drivers**

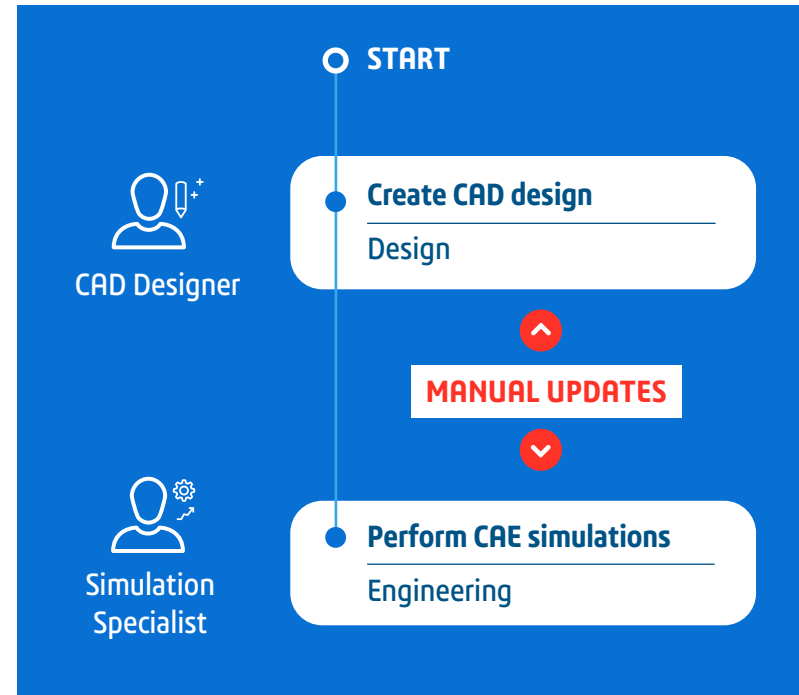
### UNIQUE MANUFACTURING PROCESS

Managing products that are **manufactured and transformed** with **mechanical operations** in a **flat** and **continuous process**

## TRADITIONAL METHOD OF DEVELOPING LAYERED PRODUCTS

### WATCHOUTS

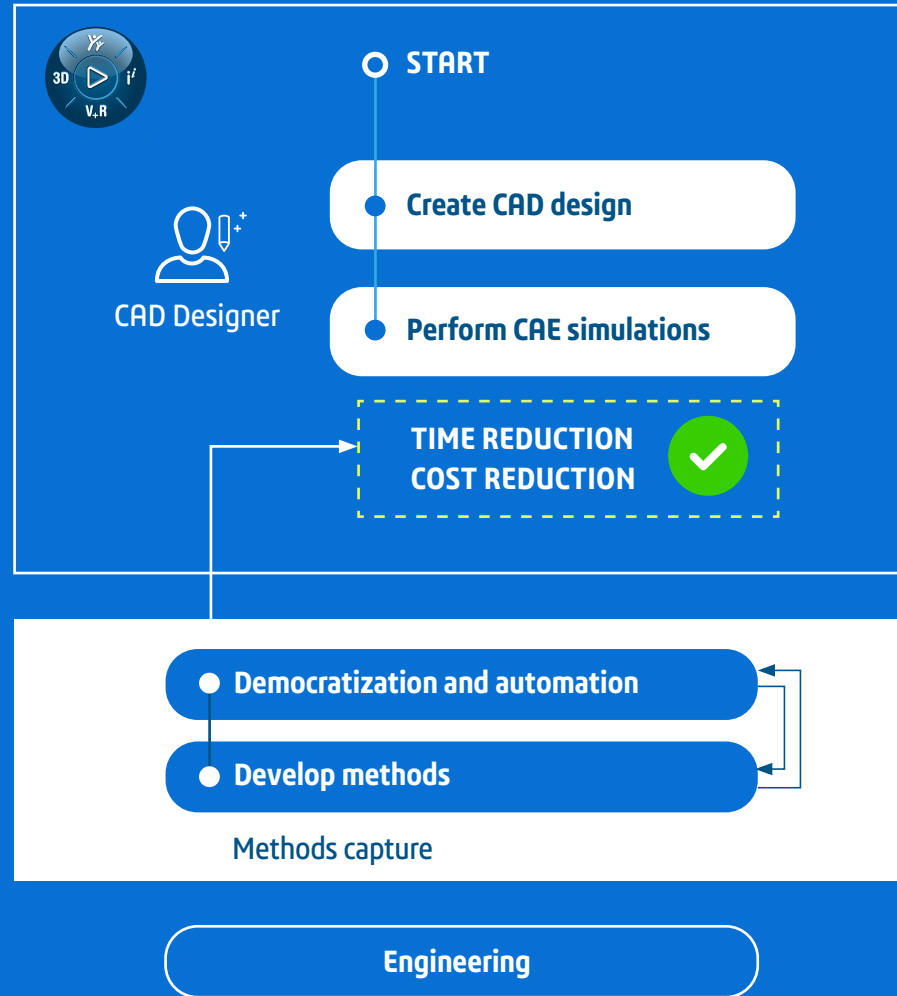
- ! Many manual file transfers between designer and simulation specialist
- ! With up to hundreds of simulations per product, this is time consuming and costly



How can we streamline this process ?

## UNIFIED MODELING AND SIMULATION

- ✓ Eliminate the need for time-consuming manual transfers
- ✓ Unifying modeling and simulation enables faster optimization
- ✓ Engineering support can be applied to methods capture to reduce time and costs





## LAYERED PRODUCT DESIGN ON THE 3DEXPERIENCE® PLATFORM

A unified design workflow built specifically for layered products. Use virtual modeling and simulation capabilities to design innovative layered products that can be manufactured right the first time.

### COMPLETE END-TO-END SOLUTION

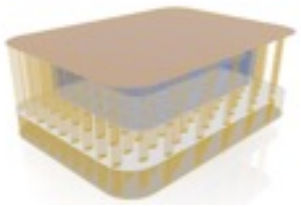
▶ **The solution** provides a powerful and easy-to-use set of capabilities to design products assembled by several layers and materials. It is addressing mainly products that are manufactured through production lines capturing different transformations such as folds, cut, perforation and bonding actions.

### COLLABORATION ACROSS DISCIPLINES

▶ Thanks to the complete integration within the **3DEXPERIENCE** platform, all data created can be shared and matured by all collaborators and disciplines.

### ACCURATE WEIGHT ASSESSMENT

▶ Users are able to create innovative designs with an immediate assessment of the weight computation based on net, trim and gross formulas. Having the capability to compute accurate product weight is the key factor in reducing production cost.



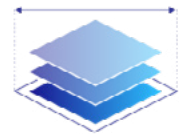
## Dassault Systèmes Layered Product Designer

### MAIN CAPABILITIES



Define a **stacking with specific layer type** definition and geometry based on a new **material domain** that contains

- Roll goods
- Adhesives
- Bonds
- Absorbents



**Measure accurate area and weight values:**

- Net area and net weight
- Gross area and gross weight
- Trim area and trim weight
- Numerical analysis on a specific area



**Capture manufacturing transformation such as:**

- Bonding
- Die cutting
- Folding sequence
- Sequences

And store them in **Smart Views**



**Parametrize** and create **templates** in an easy manner — and model with a full knowledge exposition to manage thousands of design possibilities.

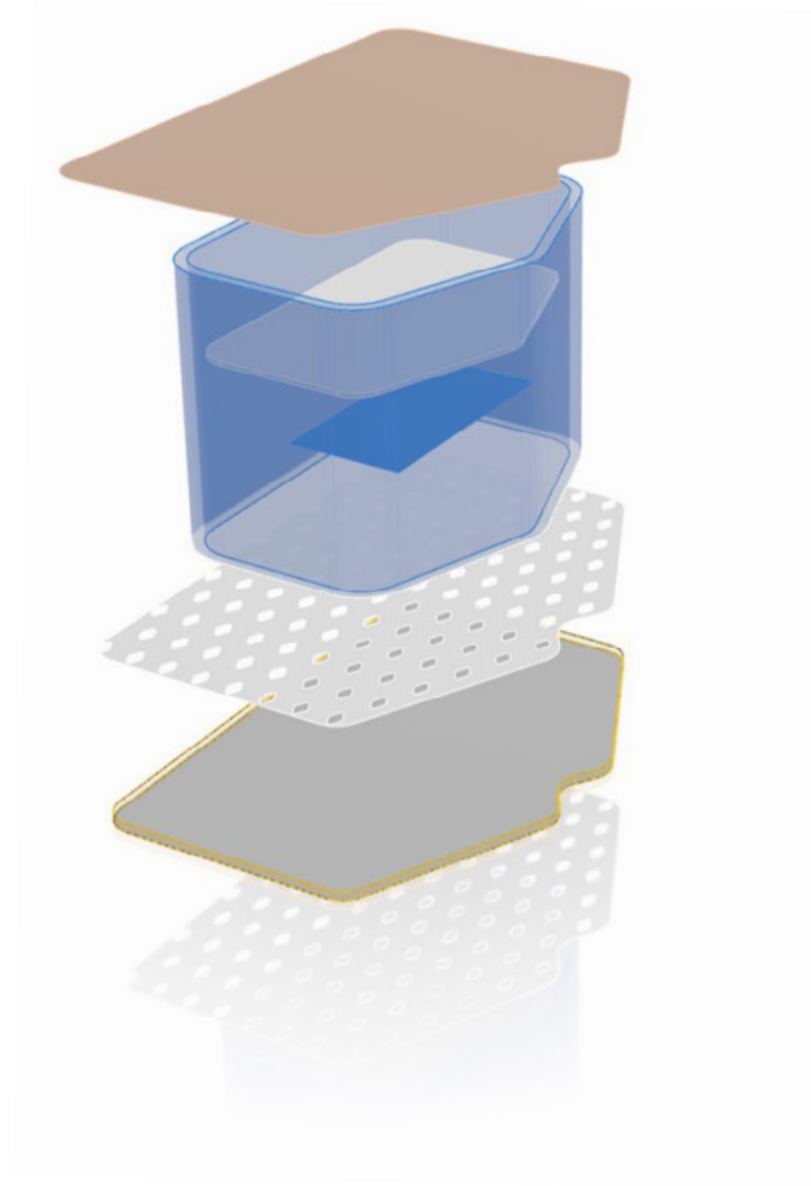


Manage several representations of your design **with elevated, flat and draped representations.**

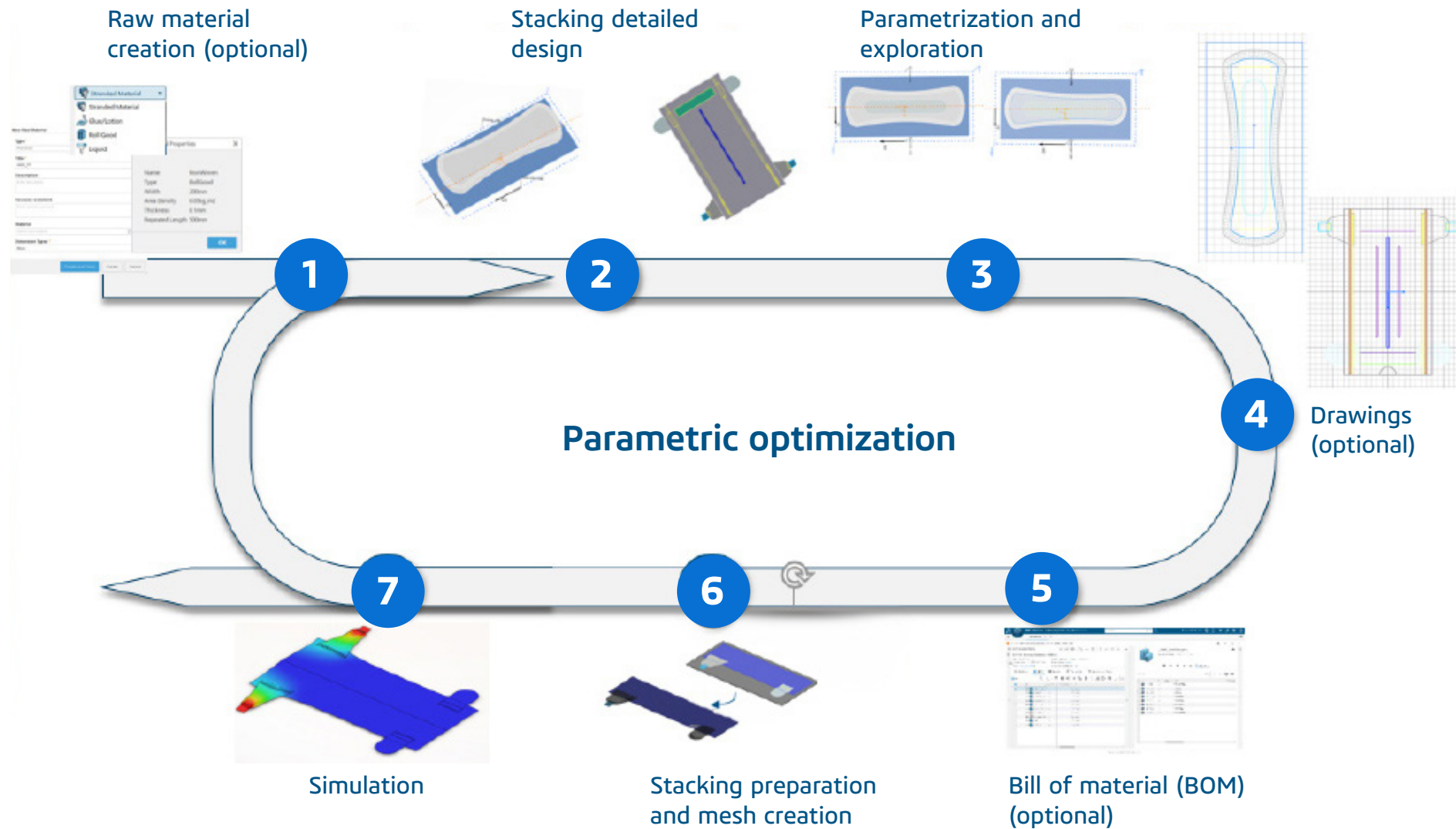


## 6 WAYS LAYERED PRODUCT DESIGNER HELPS YOU ACHIEVE PRODUCT SUPERIORITY

- 1 MULTIPLE DESIGN REPRESENTATIONS
- 2 ACCURATE WEIGHT CONSUMPTION COMPUTATIONS
- 3 FULL PARAMETRIC OPENNESS
- 4 CAPTURE MANUFACTURING TRANSFORMATIONS
- 5 ASSOCIATIVE DRAWINGS WITH SPECIFIC LINE REPRESENTATIONS
- 6 AUTOMATE WORKFLOW WITH TEMPLATES AND KNOWLEDGEWARE



# END-TO-END WORKFLOW



# FEATURES

## TEMPLATES

Parametrize and easily create templates in a model with a full knowledge exposition to manage thousands of design variant possibilities.

## MANUFACTURING TRANSFORMATION

Utilize Smart Views for storage and capture manufacturing transformation such as:

- Bonding
- Die cutting
- Folding sequence
- Sequences

## REPRESENTATION MANAGEMENT

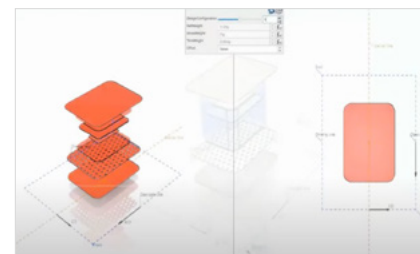
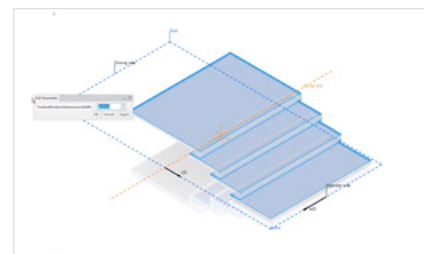
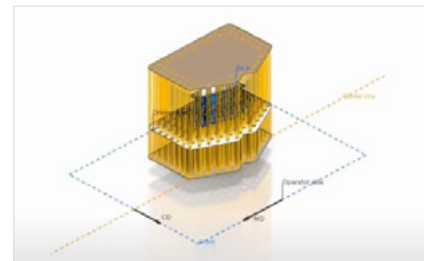
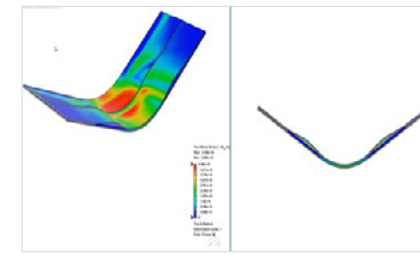
Manage several representations of your design with elevated, flat and draped representations.

## LAYER TYPE DEFINITION

Define the stacking with specific layer type definition and geometry based on a new material domain that contains:

- Roll goods
- Adhesives
- Bonds
- Absorbents

### Software Screenshots:





## LAYERED PRODUCT DESIGN

A unified industrial design workflow, addressing layered products

- 1 Enhance product performance and reliability** thanks to several design representations and specialized features
- 2 Reduce development costs and recalls** through seamless interaction with simulation
- 3 Control production and material costs** with highly accurate consumption measures
- 4 Reduce material waste to increase sustainability** with weight-optimized designs

[Click here](#) for more information.



Our **3DEXPERIENCE**® platform powers our brand applications, serving 12 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes is a catalyst for human progress. We provide business and people with collaborative virtual environments to imagine sustainable innovations. By creating virtual twin experiences of the real world with our **3DEXPERIENCE** platform and applications, our customers can redefine the creation, production and life-cycle-management processes of their offer and thus have a meaningful impact to make the world more sustainable. The beauty of the Experience Economy is that it is a human-centered economy for the benefit of all – consumers, patients and citizens.

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