

HOW TO AVOID PRODUCT DEVELOPMENT BOTTLENECKS WITH LEAN PROCESSES



BY

TECHPACKER

Techpacker is a cloud-based, product lifecycle management (PLM) platform which is used for making professional tech packs in minutes, track product development data and keeping your manufacturers up to date.

Over 30,000 companies and fashion professionals in 86 countries have chosen Techpacker to organize their collections, work seamlessly with manufacturers and showcase their design specs accurately and beautifully. Why? Because it's intuitive, fun and incredibly easy to use. www.techpacker.com

On the Techpacker blog we regularly share top industry knowledge about the most important topics in garment product development, which include insights from industry experts, essential guides, industry news and Techpacker updates. <http://www.techpacker.com/blog>

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Our mission is to create a world where creating fashion products is effortless. By making the most complicated supply-chain tasks simple and personal, Techpacker is reimagining product development, production and quality control for modern companies.

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INTRODUCTION

Slow time-to-market is a common problem in the fashion industry, and it can have a significant impact on the success of a fashion brand.

To address [slow time-to-market](#) in design teams, it's important to establish clear project goals and requirements, streamline design processes, improve communication, and manage scope creep.

Additionally, investing in the right software, tools, and resources can help the design team work more efficiently and effectively.

In this Ebook, we'll go through the main product development bottlenecks that affect time-to-market and how to solve them using modern PLM technologies.

As a bonus, we will discuss several sustainable product development techniques that a clothing line may use to lessen its influence on the environment.



PART 1:

WHAT IS PRODUCT DEVELOPMENT IN FASHION?



1.1

FIVE STAGES OF PRODUCT DEVELOPMENT IN FASHION

Product development in fashion is the process of designing, planning, and developing saleable products for the target consumer. The purpose of product development is to certify that the manufacturer understands and follows the specifications established to build a specific product.

Every fashion company's goal is to provide its customers with the best product possible at the most competitive price. Product development exists to achieve this goal. Product development's ultimate goal is to ensure customer satisfaction while minimizing returns.

Product development in fashion consists of [multiple steps](#) that must be completed before finished goods are produced.

Below are the most common steps in the product development process:

- Visualizing an idea
- Developing a tech pack
- Sewing a physical sample
- Manufacturing
- Quality control



FASHION PRODUCT DEVELOPMENT STAGES

Step-by-step guide from visualizing an idea to manufacturing

STEP 1. IDEA

Developing a tech pack that includes technical sketches and Spec Sheet



STEP 2. TECH PACK

Developing a tech pack that includes technical sketches and Spec Sheet



STEP 3. SAMPLE

Sewing a physical sample for testing and fitting purposes



STEP 4. MANUFACTURING

Cutting , sewing and finishing the whole production run



STEP 5. QUALITY CONTROL

Assessing the quality of products upon completing manufacturing



VISUALIZING AN IDEA

Once the designer or the design team comes up with an idea it is time to visualize it. The two most common ways to visualize an idea are:

- Creating a mood board and getting inspiration from the existing designs.
- Drawing a few sketches for different versions of the design.

Very often both of these ways work in tandem. The design team creates a mood board, takes inspiration from some details of the existing design, adds new elements to it, and creates a brand-new product.

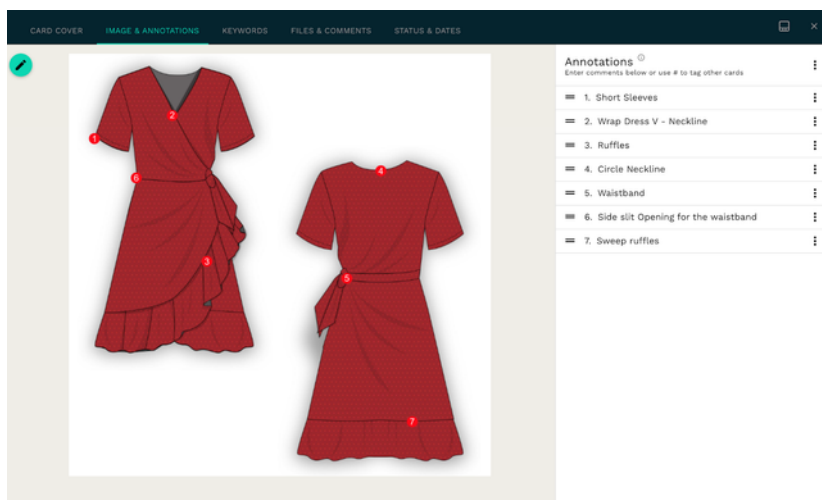


The very first design sketches usually are drawn on paper. All design team members brainstorm together and add their input.

After numerous rounds of approval, they have their final product design, including colorways, fabric swatches, other accessories, and trim details.

Based on that the technical designer creates [fashion flats or technical sketches](#).

The main purpose of the technical designer is to communicate their design idea to the manufacturer, including the technical aspects of it. Like seam lines, darts, accessories and trims placements, and other construction details. The result is a flat sketch of an actual manufactured garment.



Technical sketches with design details

Fashion flats are complex and need to be very detailed, otherwise, the garment might not come out as expected.

Check out our guide on [how to ace your technical flat sketches](#).

If you don't have the skills to create technical sketches from scratch, you can also create fashion flats by repurposing [Repsketch](#) pre-made vector sketches.

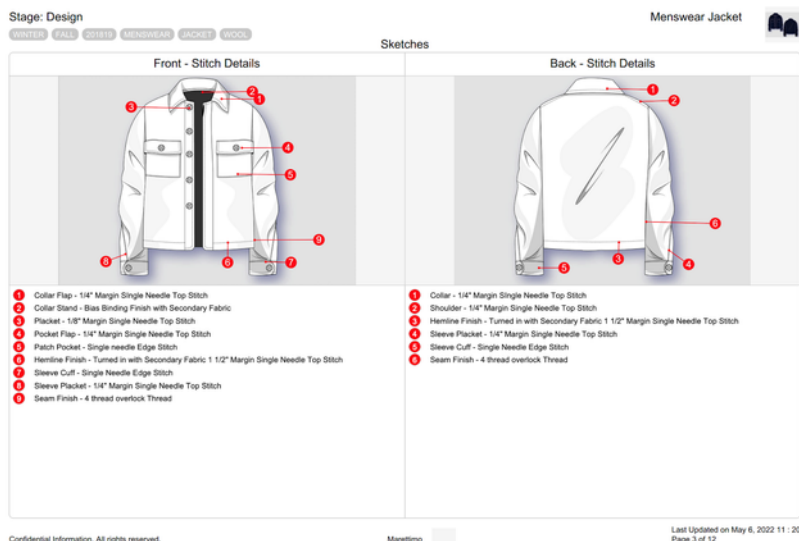
Once the concrete concept has been developed, you can move forward to the next product development step.

TECH PACK DEVELOPMENT

Consider the [tech pack](#) as a “blueprint” for the manufacturer on how to produce your garment.

It is a design document that includes sketches and specifications of the proposed clothing product. Including materials, accessories, and trims that will be used for its manufacturing.

The main purpose of the tech pack is to help suppliers assess if the fashion product is doable and ready for manufacturing.



Fragment of a tech pack

Developing a comprehensive and easy-to-read tech pack benefits every fashion business in many ways:

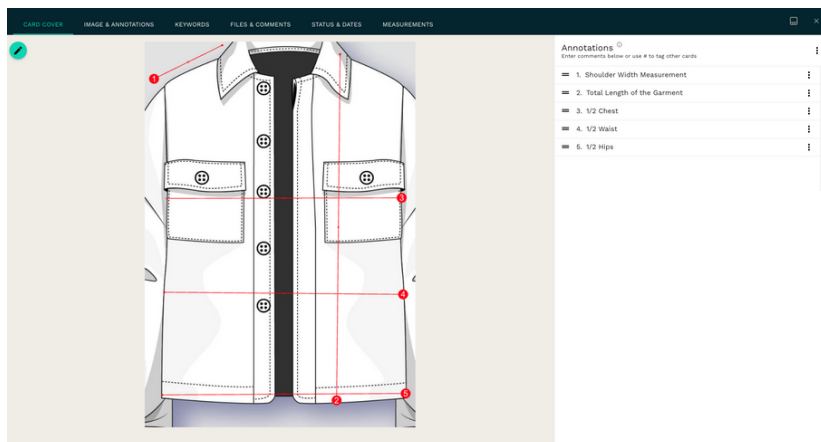
- It helps get an accurate price quote from your supplier.
- It helps get error-free samples.
- It helps improve fit quality.
- It works as a reference point for quality control.

Apart from that, a tech pack can be transformed from a mere document to a [collaborative environment](#) where designers, product developers, buyers, and quality control planners work together to create better products faster.

A [fashion specification sheet](#) or cut sheet is an important part of every tech pack. It contains all of the important measurements needed by your clothing manufacturer. For example, the length of the garment, chest, waist, and hips measurements. A typical spec sheet includes a variation of the measurements for different sizes (like S, M, L, XL, and so on).

Point of measurement (POM) diagrams are used to visually represent your garment's measurements. To create POMs, designers draw arrow call-outs to show exactly where each measurement is on the garment.

These are usually drawn in Adobe Illustrator along with the technical sketch of the garment. [Techpacker](#) lets you add [callout annotations](#) simply in one click while building your tech pack without jumping back and forth between the platforms.



Callout annotations

Next, we grade the garment for different sizes. Software that develops Tech packs, like Techpacker, completes this [auto-grading](#) for you based on the rule you provide. This helps speed up the process and avoid mistakes.

	Card Title	S	M	L	☰
= 	☐ Collar Width	1 3/4	1 3/4	1 3/4	⚙️
	Neckline Circumference	15	15 1/2	16	
	Placket Width	1 1/2	1 1/2	1 1/2	
= 	☐ Shoulder Width	6	6 1/4	6 1/2	⚙️
	Chest Circumference	46	48	50	
	Waist Circumference	45	47	49	
	Hip Circumference	44	46	48	
	Total Length of Garment	26	26 1/2	27	
= 	☐ Armhole Circumference	20	21	22	⚙️
	Sleeve Length	24	24 1/2	25	
	Sleeve Cuff Width	3	3	3	
	Sleeve Hem Circumference	5 1/2	5 3/4	6	
= 	☐ Sleeve Slit	5	5	5	⚙️
= 	☐ Pocket width	4 1/2	4 1/2	4 3/4	⚙️
	Pocket length	5 1/2	5 1/2	5 1/2	
	Pocket Flap Length	1 3/4	1 3/4	1 3/4	

Fashion Specification Sheet with size grading

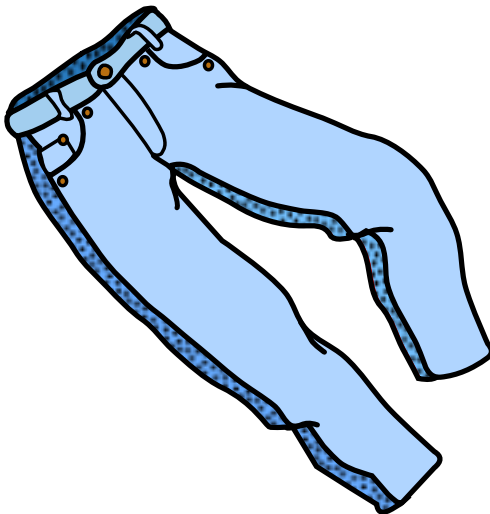
SAMPLE - MAKING

Design teams collaborate with the manufacturer to create the first version of the garment. The goal of making samples is to see how the garment will look in real life. It is also used for fitting purposes, to see how the garment fits on a target size model.

Normally it takes several rounds of sample-making until the final sample is approved. The design team might request minor tweaks like measurement adjustments or decide to change some design details like using different types of fabric for example.

After developing the first sample, the specification sheet may be revised. If any edits are needed the changes will be reflected in the initial spec sheet. Then all the edits and comments are incorporated to modify the sample. The final sample will become the basis for the final version of the garment.

Sample-making can be considered the pre-production stage of the manufacturing process. In total, there are [12 types of samples](#) in apparel production.



MANUFACTURING

[Clothing manufacturing](#) includes numerous operations necessary to make a garment. It includes processes like cutting, sewing, and finishing.

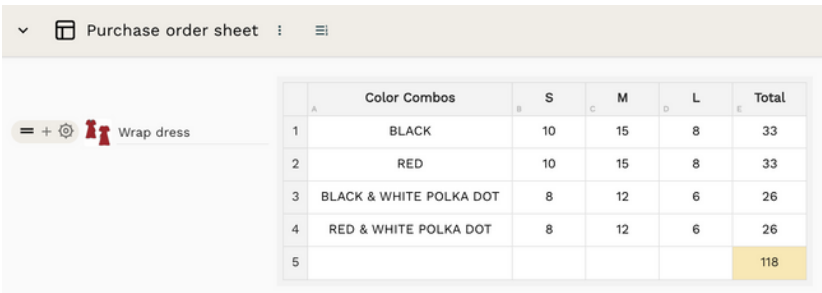
The whole manufacturing process breaks down into a number of sub-operations needed for constructing a particular garment.

Some of these operations vary depending on the type of equipment available, work methods used, and workers' skills.

After the final sample is approved and the materials are sourced the time has come to produce the whole run. Depending on the [type of factory](#) that you work with, they might offer a full production package and help with materials sourcing and packaging.

Clothing manufacturing consists of the following stages:

- The pre-production stage includes materials sourcing, pattern making, and sample-making as we discussed previously.
- The production planning stage makes sure that all manufacturing activities are completed on time.
- The cutting process uses the guidelines provided by the designer.
- Manufacturing of the whole run based on the [Purchase Order Sheet](#) provided by the design team.
- Delivery of the final order.



The screenshot shows a spreadsheet titled "Purchase order sheet" for a "Wrap dress". The table has columns for Color Combs, S, M, L, and Total. The data is as follows:

	A	B	C	D	E
	Color Combs	S	M	L	Total
1	BLACK	10	15	8	33
2	RED	10	15	8	33
3	BLACK & WHITE POLKA DOT	8	12	6	26
4	RED & WHITE POLKA DOT	8	12	6	26
5					118

QUALITY CONTROL

Quality Control is generally understood as assessing the quality of products upon completing manufacturing and after being classified into acceptable and unacceptable categories where checking of the actual results is done to ensure that things are as expected.

Apparel quality control is performed with the help of tests, checks, and inspections to ensure clothing products are made with the best standards and according to the intended design and correct specifications.

Some of the main factors when judging the quality of a garment are:

- The difference between color shades;
- Fabric defects like the quality of fiber;
- Construction defects like exposed notches, loose threads, or stains;
- Measurements differences.

In addition to that, quality control may include packaging and labeling inspection. The garment quality control checklist should be created before production begins. It will be then used on-site as a reference guide for the manufacturer throughout the production.

Tech Pack and Spec Sheet are the main reference points for quality control. The quality control inspector makes sure that all design details of the physical garment correspond to the specifications in the tech pack.



1.2

THE ROLE OF A PRODUCT DEVELOPER IN FASHION

Fashion product developer plans, develops, and presents fashion products for a target market within a company. They work closely with technical and design teams to develop seasonal collections.

The [main goal](#) of the fashion product developer is to focus on quality and to make sure the fashion house and the consumer are happy with the product.

Daily tasks of a fashion product developer include:

- Conducting seasonal research on fabrics and trends;
- Working closely alongside the design team to develop a design concept and offer insightful feedback, ideas, and solutions to make sure product development runs smoothly;
- Monitor current sales and keep a close eye on bestsellers;
- Developing tech packs with the help of technical designers;
- Material development and sourcing;
- Communicating with different factories locally or internationally;
- Overseeing the whole product development process from start to end.

Fashion product developers need to have a great understanding of the design process. As they need to work closely with designers to interpret their creative vision into a technical document (tech pack) that can explain the vision to manufacturers and suppliers.

Product developers have to be able to confidently communicate specifics from pattern cutting and construction to raw materials to suppliers.



Fashion product developers have great time management skills. They ensure collections are delivered on time and all product development stages stick to deadlines.

Fashion product developers oversee the entire production line, they have key operational knowledge of factories and excellent communication skills to share important information effectively and clearly across the production process. Product developers are proficient in all-important design software from Excel to Illustrator.

1.3

FASHION PRODUCT DEVELOPMENT SOFTWARE

Modern [fashion product development software](#) makes Product Lifecycle Management (PLM) more efficient and the whole supply chain more transparent.

PLM software is an information management system that manages data during the development of products from concept to manufacturing. The main purpose of the PLM solution is to provide a central place for managing the product lifecycle efficiently and cost-effectively.

PLM software was once a luxury that only big fashion brands could indulge in. Although, now even [small fashion brands are embracing PLM solutions](#) to optimize their supply chain.

There are [many different PLM software](#) to choose from depending on your fashion business size and goals. Some of them are more affordable than others, some work better for growing businesses while others focus on small teams, some are easier to use while others require special training, etc.

There are many benefits that PLM software provides to fashion businesses:

- Easy integration with Adobe Illustrator, Excel, and other [industry-leading software](#);
- Multi-channel communication between the design team and other members of the supply chain;
- Secure data storage that can be easily re-used;
- Unified collaborative environment;
- Tools to track, control and oversee the product development stages.

However, the implementation of the PLM software comes with [its own challenges](#). Many PLM software was not designed for the fashion industry so they are not visual enough when it comes to product development.

Some PLM solutions exclude manufacturers from the product development process. Which makes the sample-making and manufacturing process challenging and prone to mistakes.

Struggling to learn a new system is another challenge, training design teams takes time and money.

Despite the challenges, PLM systems improve visibility and data flow across the company and the entire supply chain. Fashion industry experts see the PLM software as a solution that makes the industry more relevant, smarter, and more adaptable.



PART 2:

PRODUCT DEVELOPMENT BOTTLENECKS IMPACTING TIME-TO-MARKET



2.1

LIMITED ACCESS TO DATA

In product development, secure asset management is critical to safeguarding a company's investments in research and development, and to ensure that the company maintains a competitive advantage.

This involves implementing security measures to prevent theft or unauthorized access to prototypes, technical data, or other design assets. As well as having a unified system for all members of the design team to collaborate in real time.

As the brand grows, so does the amount of data it saves and maintains on a daily basis. A fashion brand, for example, releases at least four new collections each year.

On a daily basis, a consulting fashion brand maintains dozens of clients. All design data must be efficiently kept and accessible at all times.

When using Excel or Ai, there is no secure storage for the design data to keep organized and ready to re-use. Copying and pasting from Excel takes a long time.

In order to be efficient and productive, a design team needs a fashion product development system where all team members can collaborate securely under one roof.



2.2

COMPLEX PLM SYSTEMS

There is no doubt that a [fashion PLM system](#) is a great strategic tool to manage product information from concept to manufacturing.

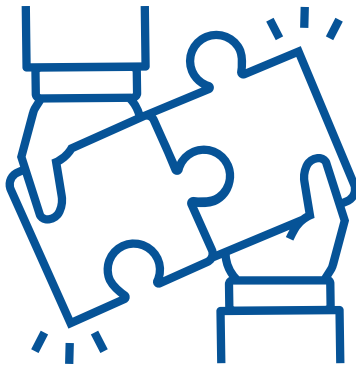
But adopting a new PLM software isn't so easy as they are complex, require special training and it's quite an investment, especially for medium to small size teams.

Below are the main challenges of adopting modern PLM systems.

INTEGRATION CHALLENGES

Most design teams use software like Excel and Adobe Illustrator for all their tech pack needs. Making the switch to PLM software from Excel or Adobe Illustrator can be a daunting task.

All existing product development info like measurement specs, costing sheets, bills of materials, and design data like technical sketches need to be transferred into a new system. That leads to lots of formatting and copy/pasting.



MANUFACTURING CHALLENGES

Despite the desire to create a seamless tool, many PLM solutions can prove to be a roadblock to product development and alignment with manufacturing. This is because most manufacturers have their own set of processes to create and manage information in their own formats. So, once the design information is transferred to the manufacturers, they have to go through a time-consuming process of data conversion while the communication is managed outside on a different channel. This often results in data loss and extra work, disrupting the product turnaround goals.

COMPLEXITY AND USER INTERFACE ISSUES

PLM systems were created with engineers in mind, not creatives like fashion designers. All the folders are spread out, and the whole product development picture is not visual enough. Simple tasks like opening, updating, and setting up a tech pack live take a number of steps. The more steps there are, the more chances for mistakes to happen, and locating an issue can take a while as well.

THE LEARNING CURVE AND INVESTMENT

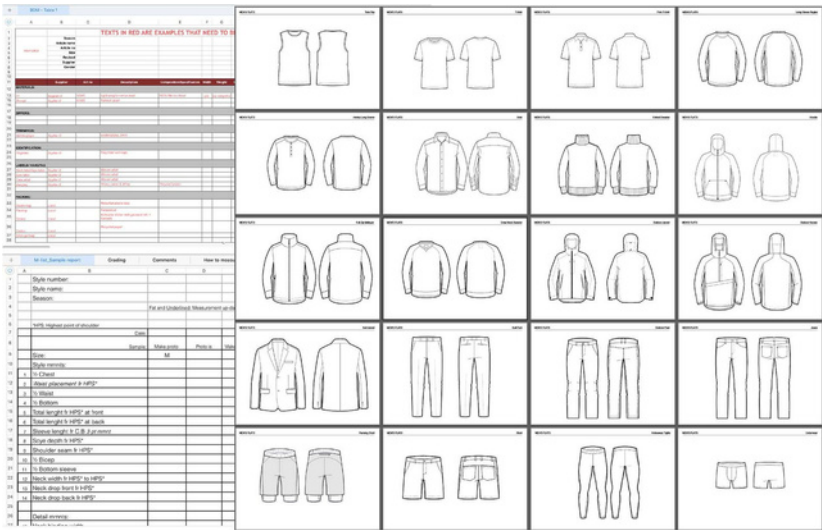
PLM systems are bloated with features. To make the most of PLM software, all departments, including designers, product developers, merchandisers, and accounting teams, will need special training to use it. As well as the resources that your company will spend on training and a high subscription fee for using the PLM software.

2.3

REPEATED DATA ENTRY

In Excel, product information is not only static but also [unconnected](#). In other words, your tech packs are fragmented, making it difficult to reuse design elements across tech packs. As a result, there is a lot of data entering.

How, for example, would you repurpose your design data using Excel spreadsheets? You would begin by duplicating complete tech packs. Then, one by one, alter them to recover what's needed. The monotonous repetition does not end there. You must copy and paste design specs for each tech pack, across numerous styles, season after season. And you must ensure that all of your measurements are consistent. You also need to double-check for typos, formatting, calculations, and so on.



Tech pack created in Excel

2.4

SLOW PROCESSES

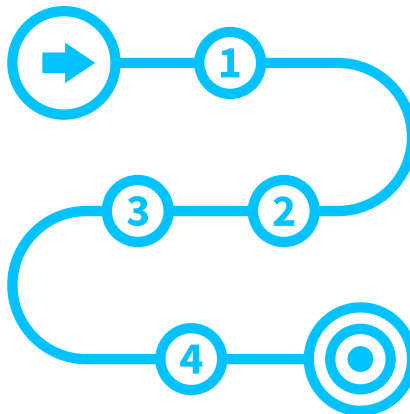
On a daily basis, a growing company stores and manages a massive amount of data. While it is critical to organize it efficiently, it is also critical to be able to [immediately update any details](#).

Manually updating a big amount of data is not an option. A tool that makes the entire data agile and easy to update in bulk is essential for a growing company.

Developing a fashion product involves a collaboration of multiple departments:

- Fashion designers developing concepts;
- Technical designers building [Spec Sheets](#);
- Sourcing agents gathering info for [Bill of Materials](#);
- Accounts calculating the [cost of a garment](#).

Without automation, every department's work slows dramatically. Many rounds of adjustments are required during the product development process. Unfortunately, Illustrator and Excel lack the capabilities required for quick data changes across several tech packs.



2.5

TIME CONSTRAINTS

Every fashion project goes through several [stages of product development](#). It begins with a concept and culminates in a finished physical product.

Fashion teams should track the progress of their product development to ensure that they complete each stage successfully and never miss one. It is more difficult to do so in the fashion industry because many project management tools are not designed specifically for fashion cycles or do not have these tools at all.

If the design team is using Excel and Adobe Illustrator for product development, they will need to use another app to track the progress of their product. Some teams make use of calendars or third-party project management software. While this may be a temporary solution, as the brand grows, it can become [nearly impossible to maintain all of the design data](#) that must be planned and released on time.



2.6

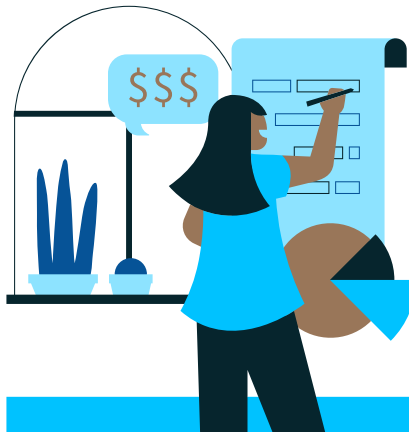
REPORTING ISSUES

Because fashion cycles are so strict, a lack of good planning tools is a major issue for the industry. Simply put, if you deliver your goods late, you lose the opportunity to sell them.

If design teams use Excel to develop their products, they will require additional Excel sheets to track the progress of their product development. It doesn't sound so bad until you realize that Excel sheets were never intended to store product development data.

Furthermore, it was not designed for [fashion project management](#). Your tech packs are basically kept separate from your time and action calendars. As a result, there is a lot of switching back and forth between the sheets.

When it comes to reporting, Excel and Illustrator lack the features needed for inventory planning and sourcing management. They do not, for example, have time and action calendars or Gantt chart reports, which are crucial for effective product development.



2.7

LACK OF COLLABORATION

Team communication is crucial in product development, as it allows team members to collaborate effectively, share information and ideas, and ensure that everyone is on the same page.

Effective team communication is essential for successful product development. It promotes collaboration, transparency, feedback, risk management, and motivation, all of which contribute to a successful project outcome.

Many design teams do not have an [established communication channel](#). They communicate via email or over the phone. Both of which are not very efficient. Emails get lost and it is hard to track them, phone calls have no history at all. With the amount of design data growing, it becomes impossible to gather all information and feedback before sharing it with the factory.

It becomes considerably more difficult during sample making and manufacturing. Because design teams submit fit comments and other feedback via third-party applications and communication channels. Many communications are lost in endless email threads. This dramatically increases manufacturing delays and mistakes.



PART 3:

HOW TO AVOID BOTTLENECKS WITH CLEAR PRODUCT DEVELOPMENT PROCESSES



3.1

SECURE ASSETS MANAGEMENT

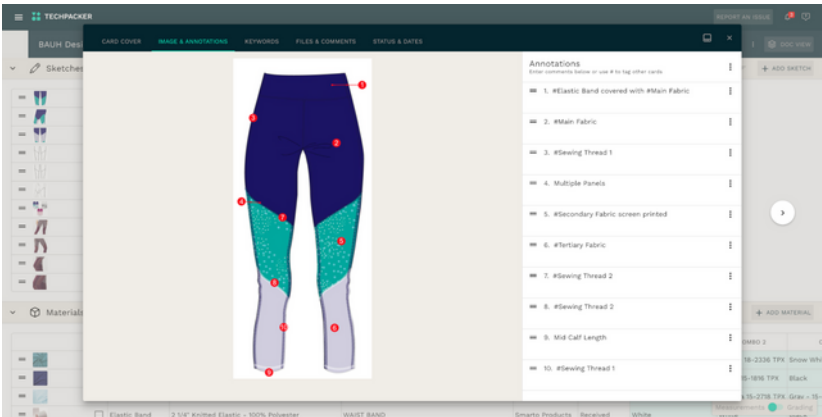
Excel has long been the industry standard for creating [tech packs](#). And with good reason. It's adaptable and packed with capabilities, but [it's not built to hold a lot of design data](#).

On spreadsheets, your product information is organized into tabs. Your tech packs are dispersed over multiple files and folders. Your communications and feedback are dispersed throughout numerous spreadsheets and emails.

When the product information is spread out across multiple spreadsheets and folders, it is simply hard to have a full view of the full product development progress.

PRODUCT DEVELOPMENT AT A GLANCE

Techpacker takes a different approach. It still has a tabular form with data set out in rows and columns, but it is significantly more [flexible](#).



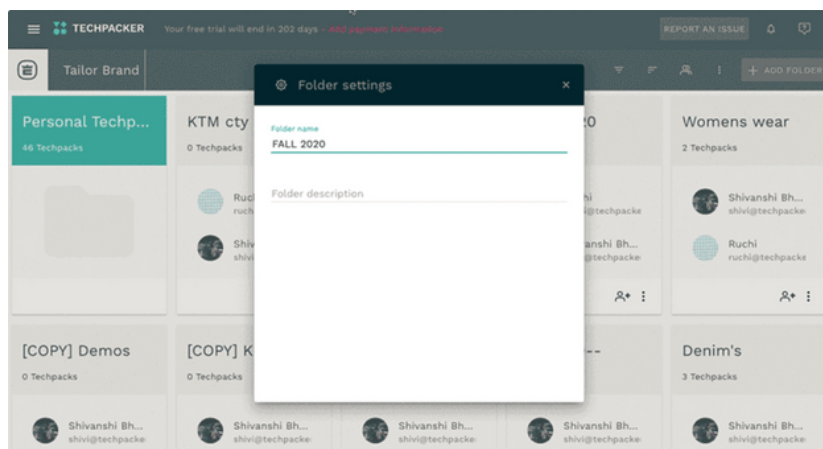
Unlike Excel, this visual approach provides a high-level overview of your [complete product development process](#) at a single glance. When double-checking or modifying different areas of your tech pack, you don't have to switch between tabs.

Sketches, [bills of materials](#), [measurement specs](#), [costing tables](#), and so on are all visible on a single page. That is not all. Cards allow you to focus on and alter each design aspect independently.

ORGANIZATION FOLDERS

Techpacker enables design teams to [manage numerous clients at the same time](#). They can have multiple folders for different clients and collections. When fabrics, trims, or a factory are chosen, they can be uploaded to a library created exclusively for that client.

Learn how consulting firm ARD is [using Techpacker](#) to maintain security and confidentiality for each client.



SECURE DATA STORAGE AND RECOVERY

Fashion businesses invest a significant amount of time and resources into creating unique designs that can give them a competitive edge in the market. Therefore, securing their design assets is crucial to protecting their intellectual property rights.

Whereas in case of any unforeseen events like hardware failure, data corruption, or natural disasters, they need to make sure their design assets are backed up and can be easily recovered.

Here are the three most important software security features that Techpacker adheres to ensure that every fashion business work is secure and accessible at all times:

- Data Security: Fashion businesses need to ensure that their design assets are protected from cyber threats like hacking, malware, and ransomware attacks. Techpacker data storage servers and recovery systems are designed with robust security measures like AES 256-bit encryption, firewalls, and access controls to protect against unauthorized access.
- Access Control: Fashion businesses need to ensure that only authorized personnel have access to their design assets at any time. On Techpacker, along with a 99/9% uptime guarantee, the organization's access controls feature enables access to design assets based on user roles and permissions.
- Data Privacy: Fashion businesses need to ensure that their design assets are stored in compliance with data privacy regulations like GDPR and CCPA. Techpacker's data storage and recovery systems are designed with privacy controls that allow fashion businesses to manage their data privacy obligations effectively.

3.2

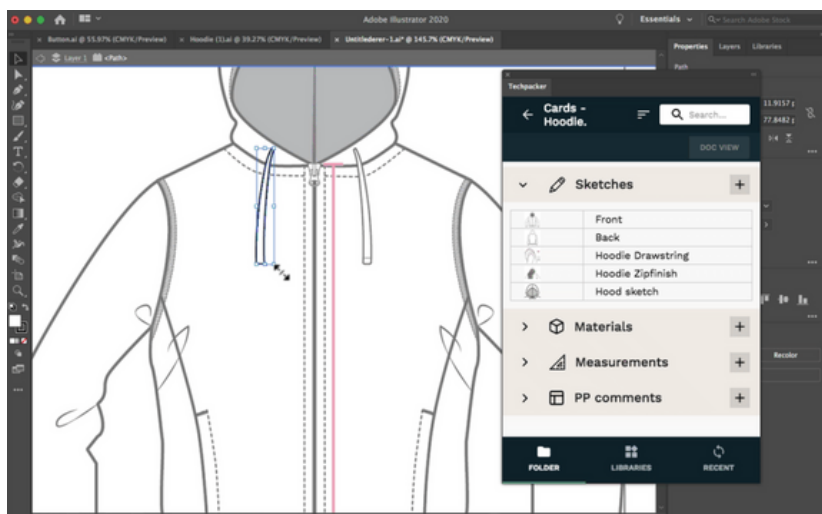
QUICK AND EASY DESIGN TOOLS

Fashion product developers play an important part in the changing world of the fashion business, yet they frequently spend the majority of their work time on boring redundant tasks.

Fortunately, the development of specialist technologies such as Techpacker has resulted in a transformational shift in the garment business. This robust PLM (Product Lifecycle Management) software platform has changed the design process, making it simpler for designers to focus on innovation.

ADOBE ILLUSTRATOR EXTENSION

If you're used to sketching fashion flats in Illustrator, [Techpacker's Adobe Illustrator extension](#) can help you save time on formatting. You may smoothly incorporate your design data into your product development program with this plugin.

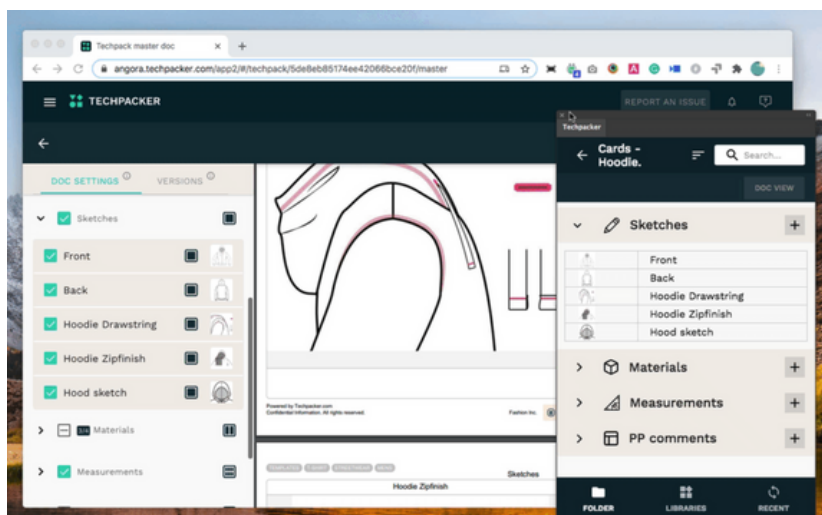


Auto-sync is undoubtedly the most useful function of Adobe Illustrator for any fashion designer. All of your Ai modifications are automatically synchronized with your Techpacker drawings.

This alone saves you a significant amount of time! Because, as you are aware, sketches are frequently revised during the product development process.

Simply make an edit in your Illustrator workspace and it will be automatically reflected in your Techpacker account.

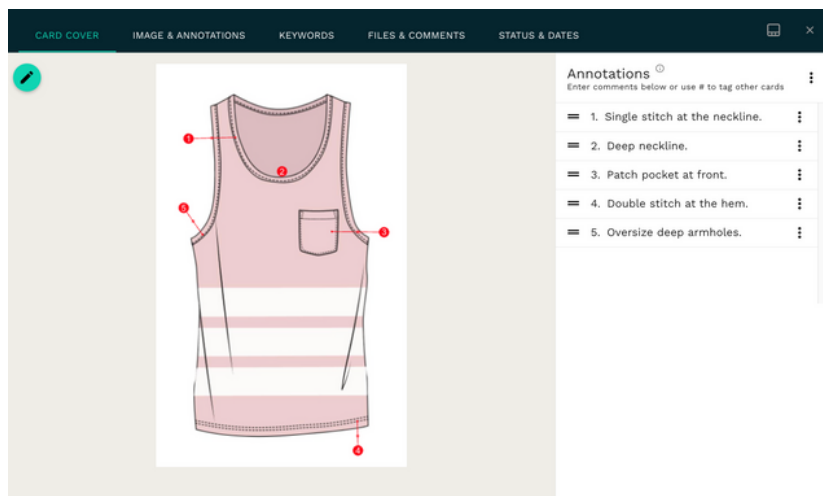
Techpacker's Adobe Illustrator extension allows you to create tech packs directly from Illustrator. And there's no need to build tables for your design data. Techpacker has everything set up for you. Simply design your drawing, import it into your Techpacker account using the Adobe Illustrator plugin, and synchronize as you modify.



ANNOTATION TOOL

Excel does not support callouts, and with Adobe Illustrator, you must make callouts by hand and format the sketches afterward. It also takes extra time to reorganize callouts if you need to reorder them later.

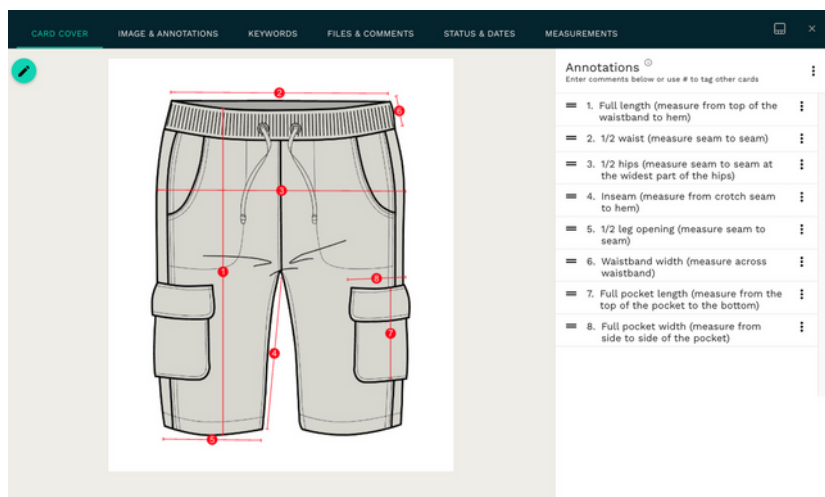
To eliminate all of this repetitive work, Techpacker developed its own annotation tool within its platform. Simply upload the sketch (or sync it with your Illustrator workspace) and begin drawing call-outs straight on it.



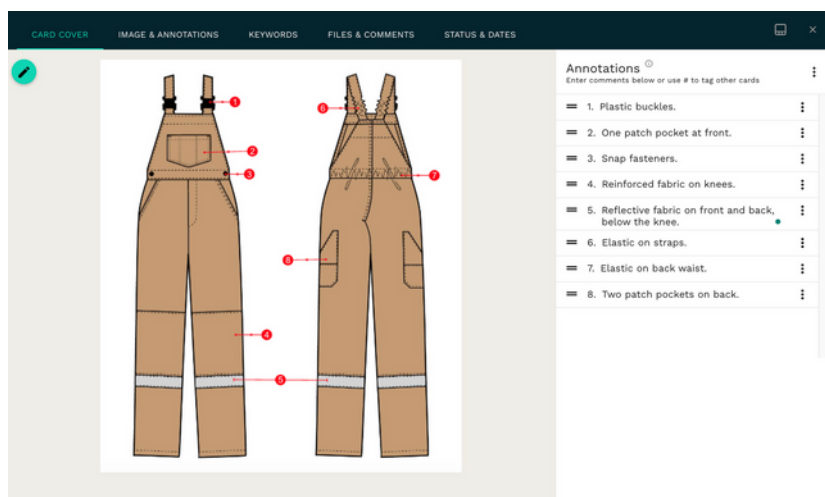
It simply takes one click to modify your call-outs, choose a type of call-out, or alter their color. When you create a call-out, an annotation row appears where you may enter any sort of design information, such as construction details, fabric placement, or measurements.

Re-ordering callouts is also quite simple with Techpacker and saves a lot of time!

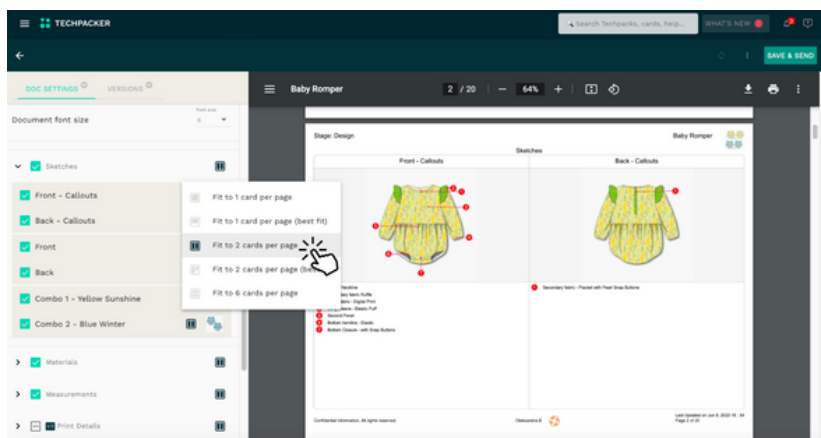
You can use the Techpacker annotation tool to create Points of Measurement (POM) and include notes to your manufacturer about how to take these measurements.



In addition to the points of measurement, you can use the Techpacker annotation tool to add construction details or fabric placement to your garment.

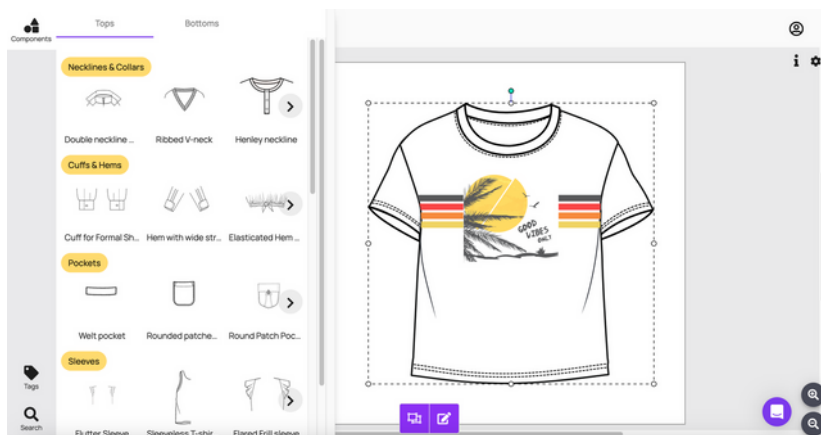


Once you add your call-outs and annotations, you can generate a PDF tech pack and pick the most comfortable layout for your sketches. You can pick from one to six cards per page.



IN-APP VECTOR EDITOR

When drawing a fashion sketch, it is very helpful to have a starting point. [Repsketch](#), for example, provides its users with a large collection of flat designs done by expert fashion designers. The drawings may be repurposed into anything. Colors, sleeve types, pockets, and even prints may be changed.



3.3

BOM, MEASUREMENT, AND CUSTOM LIBRARIES

Every designer knows that [working on seasonal tech packs can be a grind](#). Lots of time gets wasted on repetitive tasks. Like building Bills of Materials, Measurement Tables, and Costing Sheets from scratch again and again.

Imagine how much time could be saved if there was [a secure place](#) to store design assets and reuse them across seasonal tech packs!

BOM LIBRARIES

Throughout the collections, branding elements such as labels, tags, and packaging are consistent. Fabrics and notions are frequently reproducible.

On Techpacker, these assets can all be organized and stored in [libraries](#) for later use. When the time comes, they can be used to create new [Bills of Materials](#) in minutes with a drag of a mouse on Techpacker.

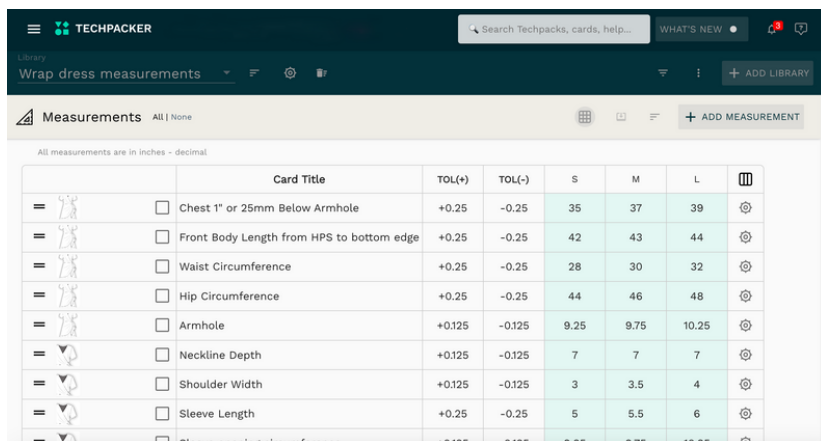
The screenshot displays the Techpacker interface. At the top, the navigation bar includes 'BAUH Designs', 'Personal Techpacks', and a dropdown for 'Denim pants'. Below this, a sidebar on the left shows 'Sketches' and 'Materials' sections. The main area is a table titled 'BOM' (Bill of Materials) for 'Denim pants'. The table has columns for 'Card Title', 'SUPPLIER', 'DESCRIPTION', and 'QUANTITY'. It lists various materials like denim fabric, pocket bag fabric, thread, topstitch thread, metal zipper, metal button, metal rivet, main label, wash care tag, and poly bag, each with a corresponding supplier and description. To the right of the table, there are image thumbnails for 'Denim fabric', 'Pocket bag fabric', 'Thread', and 'Poly bag'.

Card Title	SUPPLIER	DESCRIPTION	QUANTITY
☐ Denim fabric	fabric.com	4.8 oz Denim Blue Lightweight Fabric	1 1/2 yard
☐ Pocket bag fabric	fabricwholesaledirect.com	Cotton 80 gsm	1/2 Yard
☐ Thread	superiorthreads.com	COATS & CLARK dual duty plus denim thread	As per requireme
☐ Topstitch thread	superiorthreads.com	COATS & CLARK dual duty plus jeans thread	As per requireme
☐ Metal zipper	zipupzipper.net	8 Inch - DTM Metal Zipper	1
☐ Metal button	bucklebuguy.com	Flatback Round 17mm	1
☐ Metal rivet	bucklebuguy.com	Close-end, shank diameter 2.0-3.0mm, shank leng 8	1
☐ Main label	customlabels4u.com	Screen printed brand logo woven label	1 - 2.5" Length X
☐ Wash care tag	customlabels4u.com	Single sided satin weave swift tack through side sz 1 - 1.5" Width X 4	1
☐ Poly bag	clearbags.com	Packaging Plastic Bag	1 - 14" Length X 1

Each card or tech pack in your libraries can be tagged with keywords. This makes it easy to find at any time, whenever needed. Every style, collection, or piece can also be archived and then recovered at any time, whenever you need it.

MEASUREMENTS LIBRARIES

To maintain consistency in fit quality, design teams should use measurement libraries to record basic garment measurements that can be reused season after season. Remaking a wrap dress from last season but only wanting to add a new design detail? Repurpose saved measurements in your collection to create a new measurement table in minutes!



	Card Title	TOL(+)	TOL(-)	S	M	L	
	☐ Chest 1" or 25mm Below Armhole	+0.25	-0.25	35	37	39	
	☐ Front Body Length from HPS to bottom edge	+0.25	-0.25	42	43	44	
	☐ Waist Circumference	+0.25	-0.25	28	30	32	
	☐ Hip Circumference	+0.25	-0.25	44	46	48	
	☐ Armhole	+0.125	-0.125	9.25	9.75	10.25	
	☐ Neckline Depth	+0.125	-0.125	7	7	7	
	☐ Shoulder Width	+0.125	-0.125	3	3.5	4	
	☐ Sleeve Length	+0.25	-0.25	5	5.5	6	
	☐ Sleeve opening circumference	+0.125	-0.125	9.25	9.75	10.25	

CUSTOM LIBRARIES: COSTING, FIT, QA SIZE SETS, ETC.

Custom libraries can be created in the same way. For example, costing libraries that you can utilize in the future to create new costing tables quickly. Check how to use Techpacker costing template [here](#).

TECHPACKER

Library

Leggings costing

Custom Section

Costing Sheet

	Description	Consumption	Cost per unit	Total
1	Main Fabric	0.5	5	2.5
2	Secondary Fabric	0.25	5	1.25
3	Tertiary Fabric	0.25	2.5	0.625
4	Fabric Cost	2	3	6
5	Elastic Band	0.5	0.3	0.15
6	Sewing Thread	1	0.08	0.08
7	Sewing Thread	1	0.08	0.08
8	Main Label	1	0.08	0.08
9	Hang Tag	1	0.08	0.08
10	Wash Care Tag	1	0.08	0.08
11	Poly Bag	1	0.01	0.01
12	Trims and Packaging C	0.5	0.5	1
13	Screen Print	1	1.05	1.05
14	CMT	1	1.00	1
15	Commercial Cost	1	0.08	0.08
16	Total FOB per piece	1	3.13	3.13

You can use the sample fit template to monitor spec differences during sample fit rounds. When you use a template it automatically extracts [the essential information from your Measurements Table](#).

Another custom library that you can create is [QA size-set](#). You can use our size set template to make your quality analysis/Control (QA/QC) table and add the QA/QC measurements directly on the Techpacker in the same tech pack.

The screenshot shows the Techpacker interface with a sidebar on the left containing 'Sketches', 'Materials', and 'Measurements'. The main area displays a 'Size breakdown sheet' for 'Boys Denim Pants'. The table below represents the data shown in the screenshot.

Measurement	0-6M	6-12	12-18	18-24	2T	3T	4T	5T	XS	S	M	L
1 1/2 waist	9 1/4	9 1/2	9 3/4	10	10	10 1/2	10 3/4	11	11 1/4	11 1/2	11 3/4	12
2 1/2 hips	10	10 1/4	10 3/4	11 1/2	11 1/2	12	12 1/4	12 1/2	12 3/4	13	13 1/4	13 1/2
3 Full length	9	11	14	16	16	18	21	23	25	27	28	31
4 Front rise	4	5	5	5 1/2	5 1/2	6	6	7	7	8	9	9
5 Back rise	5 1/2	6 1/2	6 1/2	7 1/2	7 1/2	8 1/2	8 1/2	9 1/2	9 1/2	10 1/2	11 1/2	12 1/2
6 Back yoke length	1	1	1	1 1/2	1 1/2	1 1/2	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4	1 3/4
7 Leg opening	2 1/2	2 1/2	3	3	3 1/2	4	4 1/2	4 1/2	5	5	5 1/2	6
8 Waistband width	1	1	1	1	1	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4	1 1/4
9 Inseam	5	6	8	10	10	12	14	16	18	20	22	24
10 Back pocket length	2 1/2	2 1/2	2 1/2	3	3 1/2	3 1/2	4	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2
11 Back pocket width	2 1/2	2 1/2	2 1/2	3	3 1/2	3 1/2	4	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2

It contains all sizes, and POM (which will automatically copy from your measurement table) and will provide space for you to enter the QA/QC measurements.

Another idea for custom libraries is a [quantity breakdown template](#), that you can use to place an order with your factory. In this template, you can specify and the quantity of the garments to manufacture per size.

3.4

RAPID DATA UPDATES, AUTO-CALCULATIONS

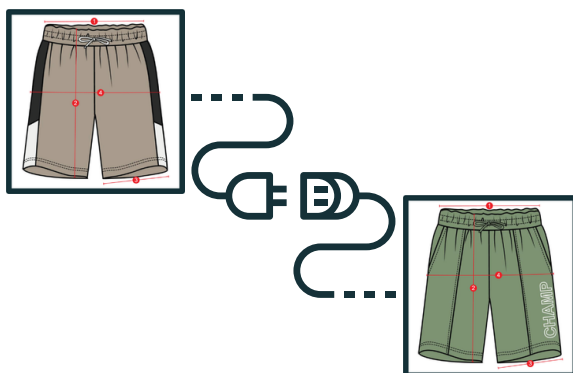
On a daily basis, a growing company stores and manages a massive amount of data. While it is critical to organize it efficiently, it is also critical to be able to [immediately update any details](#).

Manually updating a big amount of data is not an option. A tool that makes the entire data agile and easy to update in bulk is essential for a growing company.

CONNECT CARDS

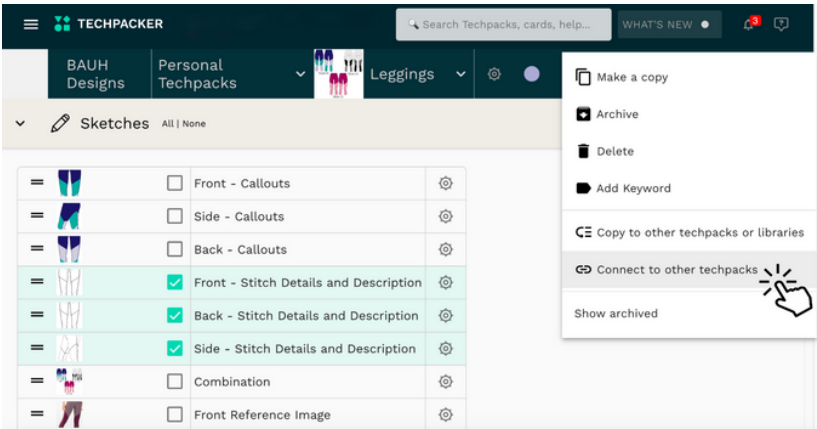
Many things for example the choice of materials can change after you finalized the entire collection. What if you need to change a single setting in dozens of tech packs? Change the metal buckle to brass, for example, or adjust one of the measurements on the spec sheet.

In Excel or Adobe Illustrator, you would have to go into each and every tech pack and manually edit every detail. That is a significant amount of labor, not to mention the possibility of several errors!



On Techpacker, design teams can use the connect cards feature to update information across numerous cards with a single entry.

All you need to do is update a single card and the system will automatically update it across all tech packs where you used it. This saves a significant amount of time, particularly for cards that are used repeatedly in various tech packs.



AUTO - CALCULATIONS

Automation can play a significant role in product development by streamlining processes, reducing errors, and improving efficiency.

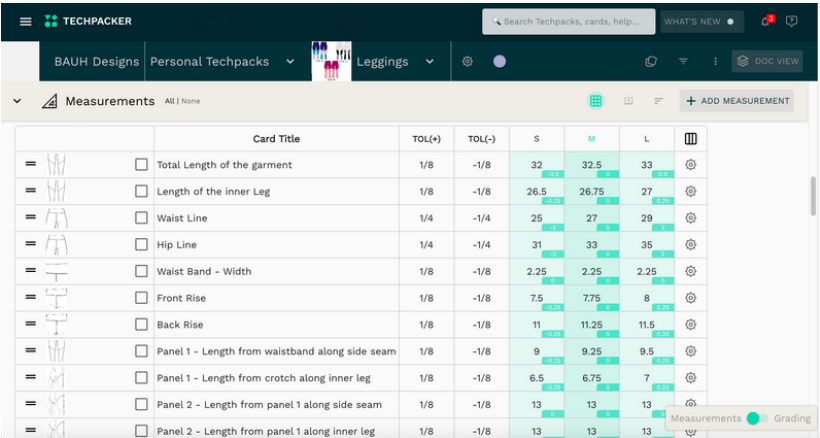
With automation tools, developers can create new products quickly, reducing the time it takes to get a product to market.

AUTO GRADING

Spreadsheets have been the most popular tool for creating [Spec Sheets](#). On spreadsheets, designers must manually include formulas and grade rules to calculate sizes based on sample size.

That takes time, but the problems multiply when designers have to reproduce these spec sheets for various tech packs. Formulas and grade sheets do not transfer properly, resulting in even more errors.

On Techpacker, the measurements table includes the built-in formulas that don't require any manual edits. And the Techpacker [auto-grading tool](#) will help you develop a full measurement table for a variety of sizes. All you need to do is enter your sample size measurements and grading rules.



The screenshot shows the Techpacker web application interface. The top navigation bar includes the Techpacker logo, a search bar, and a 'WHAT'S NEW' link. The main content area is titled 'BAUH Designs' and 'Personal Techpacks'. The 'Leggings' category is selected. The 'Measurements' tab is active, displaying a table with columns for Card Title, TOL(+), TOL(-), S, M, and L. The table lists various measurements for leggings, such as Total Length of the garment, Length of the inner Leg, Waist Line, Hip Line, Waist Band - Width, Front Rise, Back Rise, and Panel 1 - Length from waistband along side seam. Each row includes a checkbox and a gear icon for editing. The bottom right corner shows 'Measurements' and 'Grading' tabs.

	Card Title	TOL(+)	TOL(-)	S	M	L	
	☐ Total Length of the garment	1/8	-1/8	32	32.5	33	
	☐ Length of the inner Leg	1/8	-1/8	26.5	26.75	27	
	☐ Waist Line	1/4	-1/4	25	27	29	
	☐ Hip Line	1/4	-1/4	31	33	35	
	☐ Waist Band - Width	1/8	-1/8	2.25	2.25	2.25	
	☐ Front Rise	1/8	-1/8	7.5	7.75	8	
	☐ Back Rise	1/8	-1/8	11	11.25	11.5	
	☐ Panel 1 - Length from waistband along side seam	1/8	-1/8	9	9.25	9.5	
	☐ Panel 1 - Length from crotch along inner leg	1/8	-1/8	6.5	6.75	7	
	☐ Panel 2 - Length from panel 1 along side seam	1/8	-1/8	13	13	13	
	☐ Panel 2 - Length from panel 1 along inner leg	1/8	-1/8	13	13	13	

AUTO UNITS MEASUREMENT CONVERSION

Depending on the manufacturing country, tech packs can include measurements in inches or centimeters.

If your original tech pack was created in inches, you would need to construct a new measures table and re-calculate all measurements in centimeters on spreadsheets.

It will take the same amount of time as creating a completely new tech pack!

On Techpacker, to re-calculate the tech pack in centimeters, all you need to do is swap between units, in one click!

TECHPACK COVERSIZESCOLORSKEYWORDSCUSTOM FIELDSTIME TRACKING

1) Size-range selection

S+M+L+Add all

0+2+4+6+8+Add all

28+30+32+34+36+Add all

Custom sizeADD

2) Sample size

Sample size *
M

3) Units

Inchescm

Note: We are now auto-calculating your measurements when you switch the units. While switching, we'll round-off to 2 decimal places so there will be a minor adjustments. [Learn more](#)

Cover preview



Peplum Sleeve

Sizes selected

S-M-L-

46

3.5

PRODUCT TIMELINE

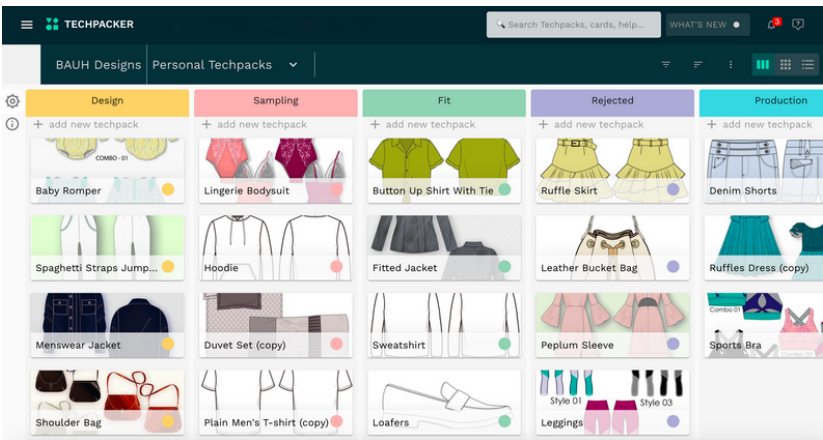
When a fashion brand grows, it is physically hard for design teams to track the progress of the massive amount of design data stored in various files and communications dispersed among spreadsheets, Illustrator, emails, and computer folders.

A product development platform can help in this situation. It includes all of the necessary capabilities, such as stage views, time and action reports, and Gantt charts. With its assistance, you may get a birds-eye perspective of all of your items in the works.

STAGE VIEW

Stages provide you and your team with an overview of how product development is going. You can designate stages to your tech packs and view them at a glance at any time, from design to approvals or sample rounds to production.

This allows you to rapidly identify bottlenecks and maintains your entire team on track. [Learn more](#) about how to use stages on Techpacker.



TIME & ACTION

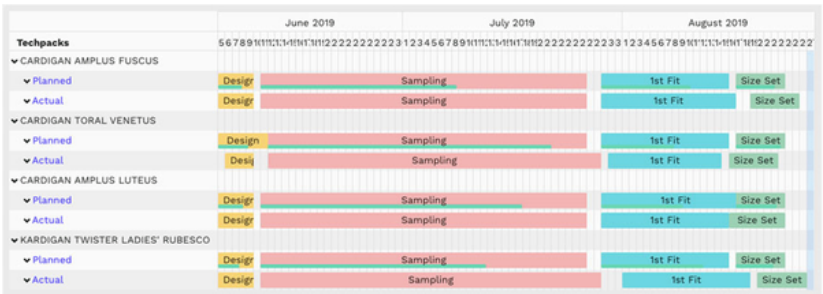
The critical path or [TNA](#) is a proper collaboration of time and action. It's a popular tool used in the apparel industry for tracking/monitoring planned milestones to ensure timely deliveries of a product.

A time and action (TNA or T&A) plan defines the ideal date/time period within which all major product development and production activities should occur to meet a scheduled delivery window.

Techpack Name	Planned/Actual	Fit Samples start	Fit Samples end	Fit Samples (%)	Production start	Production end	Production (%)	Design start	Design end
SWEATSHIRT TEPIDA AZUR	Planned	Sep 09, 2019	Sep 30, 2019		Oct 01, 2019	Oct 15, 2019		Aug 20, 2019	Aug 24, 2019
	Actual	-	-		-	-		Oct 05, 2019	Oct 05, 2019
SWEATSHIRT TEPIDA ODES	Planned	Aug 03, 2019	Sep 02, 2019		Sep 02, 2019	Sep 28, 2019		Jul 16, 2019	Jul 20, 2019
	Actual	Oct 05, 2019	Sep 02, 2019	95%	Oct 05, 2019	Oct 05, 2019	50%	Jul 16, 2019	Jul 22, 2019
REGINA APIUM FLEECE SWEATSHIRT	Planned	Jul 27, 2019	Sep 16, 2019		Sep 17, 2019	Sep 30, 2019		Jul 03, 2019	Jul 06, 2019
	Actual	Oct 05, 2019	Oct 05, 2019	20%	Oct 05, 2019	-	90%	Jul 05, 2019	Jul 09, 2019
TUNE FLEECE SWEATSHIRT ASH	Planned	Aug 03, 2019	Sep 02, 2019		Sep 02, 2019	Sep 28, 2019		Jul 03, 2019	Jul 06, 2019
	Actual	Aug 05, 2019	Aug 31, 2019	70%	Sep 02, 2019	Sep 28, 2019	90%	Oct 05, 2019	Nov 01, 2019

GANTT CHART REPORT

[Gantt chart](#) provides a graphical overview of the current state of your product development. This report beautifully illustrates the progress of your product development stages through the horizontal timeline bars representing your set planned dates vs the actual dates.



3.6

DECISION-MAKING AND RESOURCE PLANNING

Resource planning in fashion product development involves identifying and allocating the necessary resources, such as time, money, personnel, and materials, needed to successfully develop a new fashion product.

By effectively planning and allocating resources in fashion product development, teams can improve their efficiency, reduce costs, and deliver high-quality products on time and on budget. Very important points for a scaling business!

MATERIALS REPORTS

A [material report on Techpacker](#) is a summary of all materials mentioned in your product development tech packs. This keeps track of material lists and vendors, as well as milestone dates and phases of sourcing.

TECHPACK TITLE	MATERIAL CARDS	POLY NYLON LYCRA KNITTED FABRIC	POLY NYLON LYCRA RIBBING	POLYESTER RAYON ELASTANE FABRIC	CARE LABEL	FOAM LINING	ZIPLOCK BAG
STYLE #US0047	CONSTRUCTION	87% Nylon/ 10% Polyester/3% Spandex	Ribbing 2x2				
	PLACEMENT	1st handle	Cuff and Arch				
	SUPPLIER	White	White				
	WHITE/METALLIC GOLD	Meteorite	Meteorite				
	METEORITE/SILVER GREY	White	White				
	WHITE/METALLIC GREY	White	Navy 19-2833 TCX				
	NAVY/SILVER GREY	Navy 19-2833 TCX	Navy 19-2833 TCX				
STYLE #US0048	SCARLET/METALLIC GOLD	Scarlet 19-1660 TCX	Scarlet 19-1660 TCX				
	DESCRIPTION			Knitted Fabric with Jacquard	Tear-away Care Label	Padding Insert	Printed Ziplock Bag with Handle
	CONSTRUCTION			50% Polyester 22% Rayon 28% Elastic	Coated polyester material		70 Microns, Die Cut
	PLACEMENT			Shell Fabric	Top hem closure seam (inside)		Packaging
	WHITE			19-2811 TCX	White		See Print artwork

CUSTOM SECTION REPORTS

In a [custom section report](#), you pick the custom metrics and dimensions and decide how they should be viewed at a time. You can create, for example, a purchase order sheet.

TECHPACKER

SEARCH

Search Techpacks, Cards ...

WHAT'S NEW

REPORTS

RIP-IT

Reports

Custom Report

CUSTOM TEST - PURCHASE ORDER

3 days ago by Sharon Pardo

TECHPACK TITLE	CARD TITLE	P.O NUMBER	STYLE#	SKU	BARCODE	COST (FOB)	QUANTITY	TARIFF/ DUTY/TAX	HS CODE
SS22TR01 Straight Pant	30	MF20-22-002	SS22TR01	TR01-BG-30	0123450021	\$15	1600PCS	12%	10028000
	32	MF20-22-002	SS22TR01	TR01-BG-32	0123450022	\$15	1600PCS	12%	10028000
	34	MF20-22-002	SS22TR01	TR01-BG-34	0123450023	\$15	1600PCS	12%	10028000
	36	MF20-22-002	SS22TR01	TR01-BG-36	0123450024	\$15	1600PCS	12%	10028000
SS22TS01 T-shirt	S	MF20-22-001	SS22TS01	TS01-WH-0S	0123460011	\$8	2800PCS	12%	61091000
	M	MF20-22-001	SS22TS01	TS01-WH-0M	0123460012	\$8	5600PCS	12%	61091000
	L	MF20-22-001	SS22TS01	TR01-WH-0L	0123460013	\$8	5600PCS	12%	61091000
	XL	MF20-22-001	SS22TS01	TR01-WH-0XL	0123460014	\$8	2800PCS	12%	61091000
SS22SH01 Straight Cut Shirt	S	MF20-22-003	SS22SH01	SH01-GR-0S	0123450031	\$12	1600PCS	12%	62052000
	M	MF20-22-003	SS22SH01	SH01-GR-0M	0123450032	\$12	1600PCS	12%	62052000
	L	MF20-22-003	SS22SH01	TR01-GR-0L	0123450033	\$12	1600PCS	12%	62052000
	XL	MF20-22-003	SS22SH01	TR01-GR-0XL	0123450034	\$12	1600PCS	12%	62052000
SS22JK01 Denim Jacket	S	MF20-22-004	SS22JK01	JK01-BL-0S	0123450041	\$20	1600PCS	12%	6204223010
	M	MF20-22-004	SS22JK01	JK01-BL-0M	0123450042	\$20	1600PCS	12%	6204223010
	L	MF20-22-004	SS22JK01	JK01-BL-0L	0123450043	\$20	1600PCS	12%	6204223010
	XL	MF20-22-004	SS22JK01	JK01-BL-0XL	0123450044	\$20	1600PCS	12%	6204223010

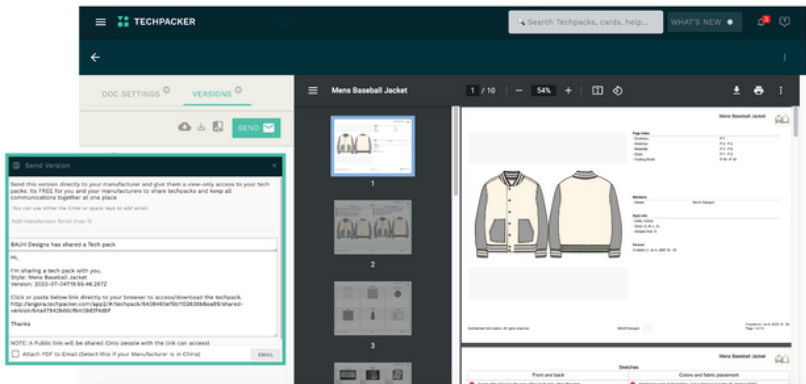
3.7

STREAMLINING SAMPLE- MAKING AND PRODUCTION

Communicating effectively with manufacturers is critical in fashion product development because it ensures that the product is manufactured to the desired quality and specifications, and delivered on time and on budget.

MANUFACTURERS HUB

On Techpacker, design teams have a [designated space](#) to keep all communication with the manufacturer. It is neatly organized and can be recovered at any time. All notes, updates, and feedback are available at your fingertips.



FIT SHEETS

Spreadsheets do not have designated tables for fit sheets. They have to be manually created and managed on a daily basis during the sample-making process. All changes have to be manually highlighted, notes added, and shared with the vendor again and again.

On Techpacker, once the sample is received, design teams can add the measurements to the [Fit Sheets](#) and request any changes if needed. It makes keeping track of each fit sample much easier and more efficient.

This is also a great way to make sure that each measurement is within the tolerances:

TECHPACKER

Your free trial will end in 56 days

BAUH Designs

Personal Techpacks

 Wrap Dress (copy) ⌵

Fit Session

Fit Session

	Measurement	TOL(+)	TOL(-)	M	FIT	DIFF
	A	B	C	D	E	F
1	Chest	+0.25	-0.25	37	39	2
2	Length of the Garmer	+0.25	-0.25	43	43	0
3	Waist	+0.25	-0.25	30	30	0
4	Hip	+0.25	-0.25	46	50	4
5	Armhole	+0.125	-0.125	9 3/4	9 3/4	0
6	Neck Depth	+0.125	-0.125	7	7	0
7	Shoulder Width	+0.125	-0.125	3 1/2	3 1/2	0
8	Sleeve Length	+0.25	-0.25	5 1/2	4	-1.5
9	Sleeve Curve	+0.125	-0.125	9 3/4	9	-0.75
10	Ruffle Width	+0.125	-0.125	5	5	0
11	Waistband Length	+0.125	-0.125	36	40	4
12	Waistband Width	+0.125	-0.125	2	2	0

In addition to that, design teams can also create a custom table called fit evaluation, where they can add their comments:

TECHPACKER

BAUH Designs

Personal Techpacks

Baby Romper

Sketches

Materials

Measurements

Print Details

Label and Handtag

Costing Sheet

Fit evaluation

New card...

	Measurement	TOL(+)	TOL(-)	NB	FIT	DIFF	New	Comments
1	Back Placket - Length	1/4	-1/4	4	5	1		Longer than needed
2	Back Placket - Width	1/4	-1/4	1/8	1/8	0		
3	Total Length of the Sleeve	1/2	-1/2	8	7	-1		Sleeve needs to be longer
4	Ruffle Length	1/4	-1/4	3	2 1/2	-1/2		Ruffles should be wider
5	Sleeve Hem Curve	1/4	-1/4	3	3	0		
6	Total Length of the Garment	1/2	-1/2	14	15	1		Total length should be longer
7	Chest Circ	1/2	-1/2	8 3/4	8 1/2	-1/4		Difference is acceptable
8	Waist Circ	1/2	-1/2	9 3/4	9 3/4	0		
9	Hip Circ	1/2	-1/2	20	19	-1		Should be wider
10	Bottom Closure Width	1/4	-1/4	3	3	0		

FIT COMMENTS

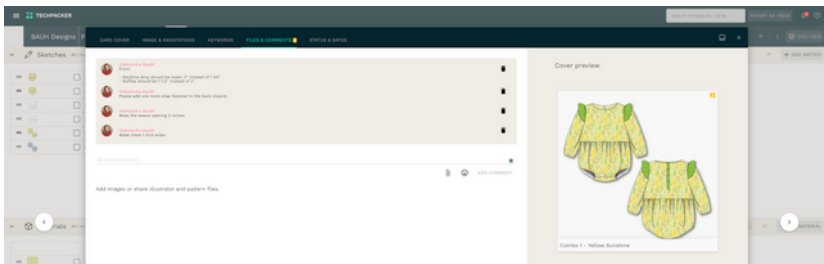
With every round of sample making your factory expects you to provide them with fit comments and updates if needed. Without a data management system, providing a clear list of fit comments is challenging. You would need to create a separate doc, attach it to the tech pack and share it via email.

On Techpacker, you can attach your fit comments to cards. As an example, [here](#) is how consulting firm ARD is handling sampling rounds using cards:

“On Techpacker, we communicate all of our design comments for each fit in addition to the fit comments. So on the card in the tech pack, we are able to record the design comments for fit.

That actually saves us a ton of time on back-and-forth emails with vendors. And it also keeps a very accurate record per style.

That is actually a new item that we added to how we utilize tech packs. And it has been fantastic because as soon as we get a second or a third fit or a PP sample, we can go into the tech pack, we can read our comments from the last fit, and then we can comment on the new sample," says Amanda from ARD.



3.8

DEVELOP PRODUCTS WITH THE HELP OF ARTIFICIAL INTELLIGENCE

Many fashion brands are utilizing AI technologies to develop their collections. Gucci, Zara, Adidas, and Prada were among the brands that launched virtual collections in 2022. Many fashion brands began using ChatGPT for [content creation and customer success](#) in early 2023.

What new possibilities can AI offer for fashion product development? And where does ChatGPT come into play?

Technical fashion designer, Oleksandra, will demonstrate [how she tested ChatGPT](#) while working on a new product for her brand.

"After several attempts, I realized that if you ask ChatGPT to deliver a complete product, it will fail. I came to a conclusion: if you know nothing about fashion product development and expect ChatGPT to build you something, it will fail." says Oleksandra.

ChatGPT excels at supporting someone who already knows how to design fashion products in building certain routines and completing specific tasks. Don't ask it to design a complete garment from scratch. But if you ask ChatGPT which software to use and where to find inspiration, it will be of great assistance.

So let's see how ChatGPT can help us in fashion product development.

HOW CAN CHATGPT HELP IN DEVELOPING NEW PRODUCTS?

Asking ChatGPT the right questions will definitely make the product development process more productive. Try to organize your questions around the main stages of product development. Visit our [Ultimate Guide to Fashion Product Development](#) to learn about some of the most important steps in fashion product development.

LEARN ABOUT THE LATEST FASHION TRENDS

ChatGPT is an excellent tool for gaining access to a wealth of fashion information from around the world. While it cannot predict the future, it can provide the most recent fashion trends from the world's leading fashion houses and runways.

AL

What are the latest fashion trends?



As an AI language model, I do not have real-time access to the latest fashion trends, as they are constantly evolving and changing. However, I can provide you with some general information on current fashion trends based on what has been popular in recent years.



In terms of clothing, oversized silhouettes, athleisure, and sustainable fashion are some of the current trends. For women's fashion, oversized blazers, puff sleeves, and wide-leg pants have been popular, while for men's fashion, oversized sweatshirts, joggers, and chunky sneakers have been in style. Accessories such as bucket hats, statement jewelry, and oversized sunglasses have also been popular.

It's important to keep in mind that fashion trends are subjective and what may be trendy in one region or social group may not be in another. Ultimately, it's up to individuals to decide what they feel comfortable and confident in, rather than feeling pressure to conform to the latest fashion trends.

Based on the chat GPT answers, [sustainable](#) men's sportswear will be trending. Next, I tried asking ChatGPT about how to incorporate sustainability into my design.

ENSURE THAT YOUR DESIGNS ARE SUSTAINABLE AND ECO-FRIENDLY

I was advised to select sustainable fabric, create a product that produces less waste and is safe, and partner with a facility that uses sustainable production procedures.

AL

How can I ensure that my designs are sustainable and eco-friendly?



Designing sustainably and eco-friendly requires a holistic approach, considering the entire lifecycle of the product. Here are some tips to ensure your designs are sustainable and eco-friendly:

1. **Material Selection:** Choose materials that are environmentally friendly and sustainable. Use recycled materials, biodegradable materials, and materials that can be reused or repurposed.
2. **Energy Efficiency:** Design products that are energy-efficient and use renewable energy sources. This includes designing products that consume less energy, use energy-efficient technology, and are powered by renewable energy sources.
3. **Reduce Waste:** Design products that produce less waste during production, use, and disposal. This includes designing products that are easy to disassemble and recycle at the end of their lifecycle.
4. **Consider the entire lifecycle:** Consider the entire lifecycle of the product from the manufacturing process to the end of its life. Consider the impact of the product on the environment during its use and disposal.
5. **Reduce Carbon Footprint:** Design products that have a low carbon footprint. This includes designing products that can be easily transported, use less packaging, and are made from materials that have a low carbon footprint.
6. **Human Health:** Ensure that your products are safe for human health and do not have any toxic materials that can harm the environment or human health.

Can ChatGPT help me find a sustainable sourcing company?

FIND SUSTAINABLE FABRIC FOR YOUR FASHION PRODUCTS

It selected three top sustainable fabric suppliers, as well as some of the most popular trade shows, based on its research.

AL

Where to find sustainable fabric for my fashion products?



There are several ways to find sustainable fabric for your fashion products. Here are some suggestions:  

1. Research sustainable fabric suppliers online: Many sustainable fabric suppliers have an online presence. You can start by searching for sustainable fabric suppliers in your area and looking for their website or social media accounts. Some popular sustainable fabric suppliers include Tencel, Organic Cotton Plus, and Hemp Traders.
2. Attend trade shows: There are many trade shows that focus on sustainable fashion and textiles. Attending these shows can help you connect with sustainable fabric suppliers and learn about new sustainable fabric options. Some popular trade shows include Texworld USA, Première Vision New York, and Sustainable Fashion Forum.
3. Connect with sustainable fashion communities: There are many sustainable fashion communities online that can provide information and resources for finding sustainable fabrics. Some popular communities include the Sustainable Fashion Forum, the Ethical Fashion Forum, and the Fashion Revolution.
4. Use sustainable sourcing platforms: There are also online platforms that connect sustainable fabric suppliers with fashion brands. These platforms include Common Objective, Source My Garment, and The Fabric Social.
5. Look for sustainable alternatives: Sometimes, it may be difficult to find sustainable fabric for your products. In these cases, consider using sustainable alternatives such as upcycled fabrics, deadstock fabrics, or natural fibers that are grown without pesticides or chemicals.

Since I've decided to make men's sportswear, let's check which sustainable sportswear material it recommends.



Sustainable sportswear fabric is an excellent choice for fitness enthusiasts who want to reduce their environmental impact. Here are some options for sustainable sportswear fabric:



1. Recycled polyester: Recycled polyester is made from recycled plastic bottles or other post-consumer waste. It has similar properties to traditional polyester, such as durability and moisture-wicking, but with a lower environmental impact.
2. Organic cotton: Organic cotton is grown without pesticides or synthetic fertilizers, making it a more sustainable option than traditional cotton. It is breathable, lightweight, and comfortable, making it suitable for sportswear.
3. Tencel: Tencel is a type of rayon made from sustainably sourced wood pulp. It is known for its moisture-wicking and breathability properties, making it suitable for sportswear.
4. Hemp: Hemp is a natural fiber that requires less water and fewer pesticides than traditional cotton. It is durable and moisture-wicking, making it suitable for sportswear.
5. Bamboo: Bamboo is a renewable resource that grows quickly and requires little water or pesticides. It is breathable, moisture-wicking, and has natural antimicrobial properties, making it a popular choice for sportswear.

When selecting sustainable sportswear fabric, look for certifications such as the Global Organic Textile Standard (GOTS), Oeko-Tex Standard 100, or Bluesign. These certifications ensure that the fabric meets strict environmental and social standards.

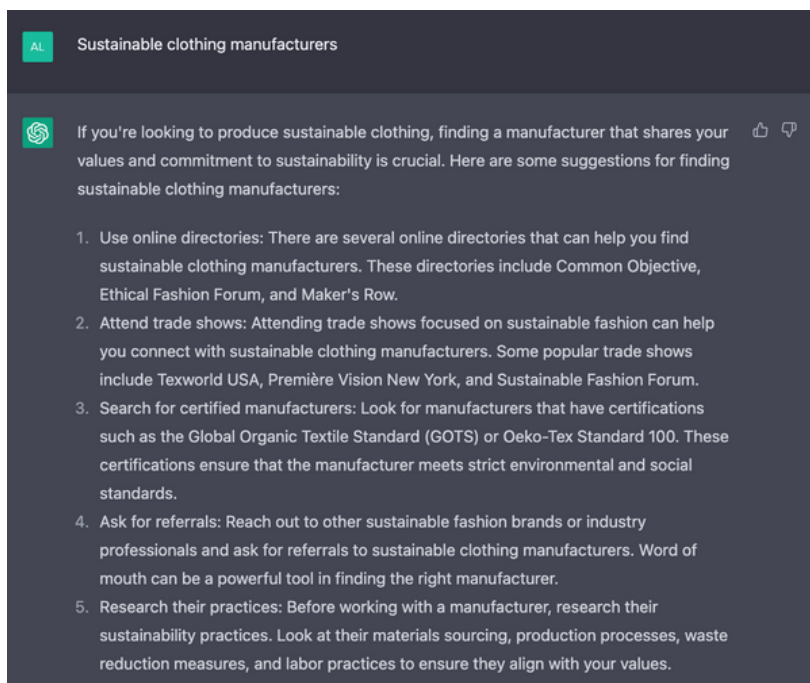
I like how, in addition to the fabric's composition, it suggests checking for sustainable certifications to guarantee that the fabric satisfies environmental criteria.

FIND SUSTAINABLE CLOTHING MANUFACTURERS

I've noticed that along the way ChatGPT also provided me with some tips on which questions to ask.

Remember to also ask questions about the sustainability of the fabrics you are considering, such as their production process, their environmental impact, and the labor conditions of the workers who produce them.

So I decided to check if it can suggest sustainable manufacturers to work with. Unfortunately, it didn't give me any direct contacts, only tips on how to look for them.



I also wondered if it can lead me to a sustainable activewear manufacturer since I will be developing sportswear. But it just gave me a number of US brands that sell sustainable sportswear.

FIND THE BEST SOFTWARE FOR TECH PACKS

The best feature of AI tools is their ability to perform intelligent extracts and summaries. It provided me with the latest software options for fashion **tech packs** and their brief description.



Tech pack software is a tool used in the fashion industry to create technical specifications for garments. These specifications include detailed information such as measurements, construction details, materials, colors, and finishes. Tech pack software streamlines the design and production process by allowing designers to create and share detailed technical drawings with manufacturers and suppliers.  

There are several tech pack software options available, including:

1. Adobe Illustrator: This is a popular software among designers that can be used to create technical drawings and fashion sketches. It allows for precise measurements and annotations to be added to designs.
2. Techpacker: This is a cloud-based software specifically designed for creating tech packs. It allows designers to create detailed sketches, add measurements and annotations, and collaborate with team members and manufacturers.
3. Clo: This is a 3D design software that allows designers to create virtual samples of garments. It also includes a tech pack feature that allows designers to add technical details and measurements to their designs.
4. Lectra: This is a software suite that includes a range of tools for the fashion industry, including design and pattern-making software, as well as a tech pack feature.
5. TUKAcad: This is a software that includes pattern-making, grading, and marker-making features, as well as a tech pack tool.

CHECK THE PRICE OF THE FABRIC AND THE YARDAGE THAT YOU NEED

One of the sustainable materials recommended was recycled polyester. I'll need to know the fabric cost to calculate the total cost of the garment for my [costing sheet](#). So I asked ChatGPT.

AL

How much does recycled polyester cost?



The cost of recycled polyester can vary depending on various factors such as the quality of the recycled material, the manufacturing process used, the supplier, and the quantity purchased. In general, recycled polyester is often slightly more expensive than conventional polyester, as the process of collecting, cleaning, and processing recycled materials can be more labor-intensive and time-consuming.



According to industry sources, the price of recycled polyester can range from \$0.80 to \$1.50 per pound, while conventional polyester can range from \$0.70 to \$1.20 per pound. However, these prices can fluctuate depending on market conditions and other factors.

It's also worth noting that the cost of recycled polyester may decrease as demand for sustainable materials increases and the supply chain for recycled materials becomes more efficient. Additionally, using recycled polyester can offer cost savings in other areas such as reduced waste disposal fees and lower energy consumption during manufacturing.

I was also curious if it can calculate how much of that fabric I need for one sweatsuit.



The amount of recycled polyester required to sew one men's sweatsuit can vary depending on the size of the sweatsuit and the specific design details. However, as a general estimate, a men's sweatsuit typically requires about 2-3 yards of fabric for the top and 2-3 yards of fabric for the bottom.

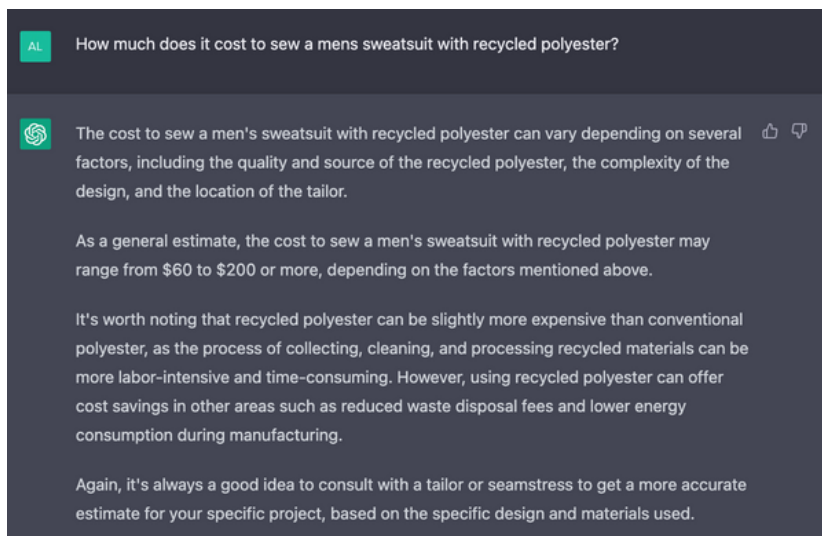


Assuming a fabric width of around 60 inches and a fabric weight of approximately 8-10 ounces per square yard, this translates to a total fabric requirement of around 4-6 yards or 12-18 square feet for the entire sweatsuit.

Keep in mind that this is just a rough estimate, and the actual amount of recycled polyester needed will depend on the specific design of the sweatsuit, the size of the wearer, and other factors. It's always a good idea to consult a pattern or fabric calculator for a more accurate estimate of how much fabric is needed for a specific project.

CHECK THE COST OF THE LABOR

I also asked ChatGPT how much it costs, in general, to sew a men's sweatsuit out of this type of fabric.



The screenshot shows a chat interface with a dark background. At the top, a user prompt (labeled 'AL') asks: "How much does it cost to sew a mens sweatsuit with recycled polyester?". Below this, the ChatGPT response (labeled with the OpenAI logo) provides a detailed answer. It states that the cost varies based on factors like material quality, design complexity, and the tailor's location. It gives a general estimate of \$60 to \$200 or more. It also notes that recycled polyester can be slightly more expensive than conventional polyester due to the collection and processing process, but offers cost savings in waste disposal and energy consumption. Finally, it advises consulting a tailor for a more accurate estimate.

AL How much does it cost to sew a mens sweatsuit with recycled polyester?

The cost to sew a men's sweatsuit with recycled polyester can vary depending on several factors, including the quality and source of the recycled polyester, the complexity of the design, and the location of the tailor.

As a general estimate, the cost to sew a men's sweatsuit with recycled polyester may range from \$60 to \$200 or more, depending on the factors mentioned above.

It's worth noting that recycled polyester can be slightly more expensive than conventional polyester, as the process of collecting, cleaning, and processing recycled materials can be more labor-intensive and time-consuming. However, using recycled polyester can offer cost savings in other areas such as reduced waste disposal fees and lower energy consumption during manufacturing.

Again, it's always a good idea to consult with a tailor or seamstress to get a more accurate estimate for your specific project, based on the specific design and materials used.

How cool is that? It provides me with enough information to determine whether creating this product for my business is cost-effective.

WHAT OTHER MATERIALS DO I NEED FOR MY DESIGN?

Next, I asked ChatGPT what other materials I need for my men's sweatsuit. It provided me with a list that will later go into my [Bill of Materials](#). I've noticed that various items, such as labels, tags, and packaging, were missing. But I assumed it was because I had not inquired about how to create a retail-ready outfit.

AL

What materials do I need to sew a mens sweatsuit?



To sew a men's sweatsuit, you will need the following materials:



1. Fabric: The most common fabrics used for making sweatsuits are cotton, polyester, or a blend of both. For a sustainable option, you can consider using recycled polyester, organic cotton, or bamboo fabric.
2. Thread: You will need matching thread to sew the fabric together. Make sure the thread is appropriate for the type of fabric you are using.
3. Elastic: You will need elastic to make the waistband and cuffs of the sweatshirt and sweatpants. Make sure the elastic is the appropriate width and length for the design of the sweatsuit.
4. Zippers (optional): If you are making a sweatshirt with a zipper, you will need a zipper of the appropriate length and color for your design.
5. Drawstring (optional): If you are making a sweatshirt or sweatpants with a drawstring, you will need a cord or shoelace of the appropriate length and thickness.
6. Interfacing (optional): If you want to add structure to the collar, cuffs, or waistband of the sweatshirt, you may need interfacing.
7. Pattern: You will need a pattern or template for the sweatshirt and sweatpants. You can purchase a pattern online or in a sewing store, or you can create your own by tracing a pre-existing garment.
8. Sewing machine: You will need a sewing machine to sew the fabric together. Make sure the machine is appropriate for the type of fabric you are using.
9. Scissors: You will need scissors to cut the fabric and elastic.
10. Pins: You will need pins to hold the fabric together while you sew.

Tip: In addition to that, you can try asking ChatGPT about which color to use for your fabric or which design elements to add to your design.

ASSIST WITH THE MEASUREMENTS TABLE

In order for my pattern maker to develop a pattern for my sweatsuit, I'll need to include some basic measurements in my [Measurement Table](#). Let ChatGPT assist us in determining these measurements so that we don't overlook any.



To create a pattern for a men's sweatsuit, you will need to take several key measurements of the person who will be wearing the garment. Here are some of the measurements you will need:

1. Chest: Measure around the fullest part of the chest.
2. Waist: Measure around the natural waistline, which is usually just above the belly button.
3. Hips: Measure around the fullest part of the hips, usually around 8-9 inches below the waistline.
4. Inseam: Measure from the crotch to the desired length of the pant leg.
5. Outseam: Measure from the waistline to the desired length of the pant leg.
6. Sleeve length: Measure from the shoulder seam to the desired length of the sleeve.
7. Shoulder width: Measure from the top of one shoulder to the top of the other shoulder, across the back.
8. Neck circumference: Measure around the base of the neck.
9. Armhole depth: Measure from the top of the shoulder to the armpit.

These measurements will help you create a basic pattern for the sweatshirt and sweatpants. You can adjust the pattern as needed to fit the wearer's specific proportions and preferences.

It's important to note that creating a well-fitting pattern can take practice and may require some trial and error. If you're new to pattern making, it can be helpful to start with a commercial pattern or to take a class or workshop to learn the basics.

I also wanted to see whether ChatGPT could recommend which men's sizes I should use for my [grading sheet](#). I was wondering if it could tell me which sizes sell most.

It provided me with some basic information about sizing and suggested doing market research. So it wasn't very helpful with this kind of task.

AL

What mens sweatsuit sizes shall I produce?



The sizes you should produce for men's sweatsuits will depend on your target market and the demand for different sizes. However, as a general guideline, you may consider producing the following sizes:



1. Small: Typically fits men with a chest size of 34-36 inches and a waist size of 28-30 inches.
2. Medium: Typically fits men with a chest size of 38-40 inches and a waist size of 32-34 inches.
3. Large: Typically fits men with a chest size of 42-44 inches and a waist size of 36-38 inches.
4. XL: Typically fits men with a chest size of 46-48 inches and a waist size of 40-42 inches.
5. XXL: Typically fits men with a chest size of 50-52 inches and a waist size of 44-46 inches.

It's important to note that these sizes are just a guideline, and you may need to adjust the sizing based on the fit and preferences of your target market. You can also consider offering different inseam lengths for the sweatpants to accommodate different heights.

Before deciding on the sizes to produce, it can be helpful to do some market research and gather information on the average sizes and preferences of your target customers. This can help you ensure that you are producing sizes that are in demand and will be well-received by your target market.

MARKET FASHION DESIGNS EFFECTIVELY AND REACH TARGET AUDIENCE

ChatGPT has proven its marketing effectiveness since its launch in late 2022. It is being used by design teams to automate simple tasks such as writing compelling product descriptions, understanding their customers' preferences, customer support, and social media content creation.

AL

How can I market my fashion designs effectively and reach my target audience?



Marketing your fashion designs effectively and reaching your target audience can be a challenging task, but here are some tips that can help:



1. Define your target audience: Understand who your ideal customer is and what they are looking for in a fashion product. This will help you create marketing messages and content that resonates with your target audience.
2. Use social media: Social media platforms such as Instagram, Facebook, and TikTok are powerful marketing tools for fashion brands. Use these platforms to showcase your designs, engage with your audience, and build a community.
3. Collaborate with influencers: Partner with influencers who align with your brand and target audience. This can help you reach a wider audience and build credibility with your target customers.
4. Attend fashion events: Attend fashion events and trade shows to network with industry professionals and showcase your designs. This can help you gain exposure and build relationships with potential customers and partners.
5. Utilize email marketing: Create a mailing list and use email marketing to promote your designs and engage with your customers. This can be a powerful tool to build loyalty and drive sales.
6. Offer promotions and discounts: Offering promotions and discounts can be a powerful incentive for customers to try your products and can help you build a loyal customer base.
7. Invest in high-quality visual content: High-quality visual content, such as professional product photography and videos, can help your designs stand out and attract attention on social media and other marketing channels.

The rise of AI has sparked debate, with many seeing it as a potential tool to replace human labor. We tested ChatGPT for fashion product development and found it useful for individuals with experience in fashion product design who just use it for faster access to the most recent information on the web.

PART 4:

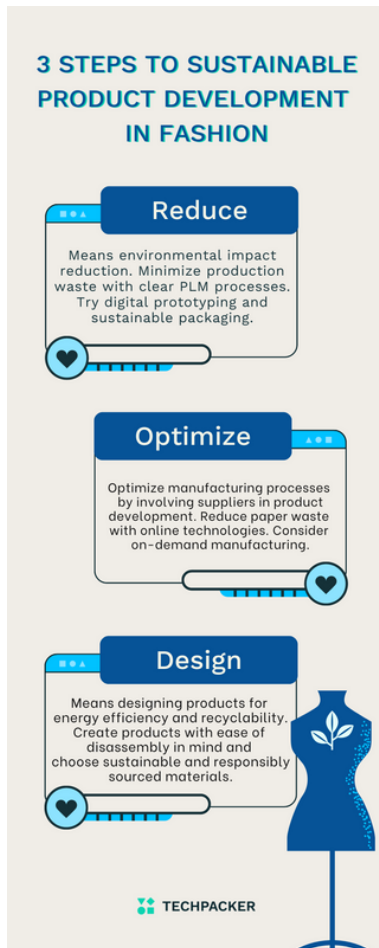
SUSTAINABILITY IN FASHION PRODUCT DEVELOPMENT



4.1

WHAT IS SUSTAINABLE FASHION PRODUCT DEVELOPMENT?

Sustainable product development in fashion refers to the process of designing and creating fashion products in a way that minimizes negative environmental and social impacts while maximizing positive contributions to sustainability.



4.2

ENVIRONMENTAL IMPACT REDUCTION

Environmental impact reduction in fashion refers to the efforts and strategies implemented to minimize the negative consequences of the fashion industry on the environment.

It involves addressing various aspects of the fashion supply chain, from raw material extraction to manufacturing, distribution, product use, and disposal. The goal is to mitigate environmental degradation, conserve resources, reduce pollution, and promote sustainable practices.

MINIMIZING SAMPLE-MAKING AND PRODUCTION WASTE WITH CLEAR PLM PROCESSES

Clear and effective product development methods can help to reduce sample-making and production waste. With the help of modern [PLM tools](#), you can connect all team members and suppliers under one roof, collaborate in real time and create a more sustainable product development process together.

With the help of PLM systems your design team can:

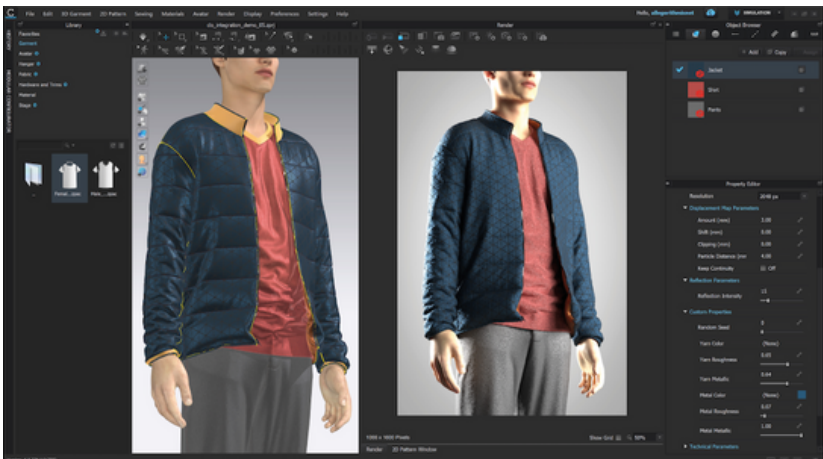
- Foster effective collaboration and communication among the product development team, including designers, engineers, and manufacturers. Clearly communicate design concepts, specifications, and any updates to minimize errors and reduce the need for multiple iterations.
- Involve suppliers early in the product development process to leverage their expertise. Collaborate closely with them to ensure that materials, components, and manufacturing processes are optimized for efficiency and waste reduction.

- Standardize sizing and fittings as much as possible to reduce the need for multiple iterations and samples. This approach streamlines the production process and minimizes waste associated with customizations or alterations.
- Establish a structured sample evaluation process to ensure clear and constructive feedback. Provide detailed feedback to manufacturers regarding any required modifications or adjustments, helping to minimize errors and rework.

3D PROTOTYPING

Before going to tangible samples, use digital tools such as [3D software](#) to develop virtual prototypes and iterate on concepts. This method provides for faster iterations, less material waste, and more efficient design refinement.

Implement 3D printing and rapid prototyping technologies to create physical prototypes quickly. These technologies enable the production of functional prototypes with reduced material waste, time, and cost. They also facilitate iterative design improvements.



SUSTAINABLE PACKAGING

In fashion, sustainable packaging refers to the use of eco-friendly supplies and procedures for the packaging of clothing, accessories, and other fashion items.

Brands are becoming more aware of the significance of reducing the environmental effect of their packaging across the full product life cycle as the fashion industry has become more and more concerned with sustainability.



[Tishwish](#) compostable mailer

Below are some ways that fashion brands can reduce the negative environmental impact with the help of packaging:

- The use of recycled, recyclable, or biodegradable materials is common in sustainable packaging. Options include recycled paper or cardboard, organic textiles, biodegradable polymers, and even novel materials such as mushroom-based packaging.

- Many fashion brands are attempting to decrease the number of packaging materials needed, with the goal of creating simple designs that sufficiently protect the product. Less waste is produced by removing superfluous packaging, inserts, or needless layers.
- Some fashion manufacturers are creating packaging that can be reused, such as boxes that can be used for storage or shopping bags that can be reused.
- Using environmentally friendly printing procedures, such as water-based or soy-based inks, eliminates the usage of toxic chemicals while also minimizing environmental effects.



4.3

OPTIMIZING MANUFACTURING PROCESSES

Optimizing fashion manufacturing processes is essential for improving efficiency, reducing waste, and minimizing the environmental impact of the industry. Here are some strategies to optimize fashion manufacturing processes:

CLEAR COLLABORATION WITH MANUFACTURERS

Incorporate lean manufacturing principles into your production processes. This involves identifying and eliminating waste at every stage, optimizing workflows, and continuously improving efficiency. Implement techniques such as value stream mapping, Kanban systems, and Just-in-Time (JIT) manufacturing.

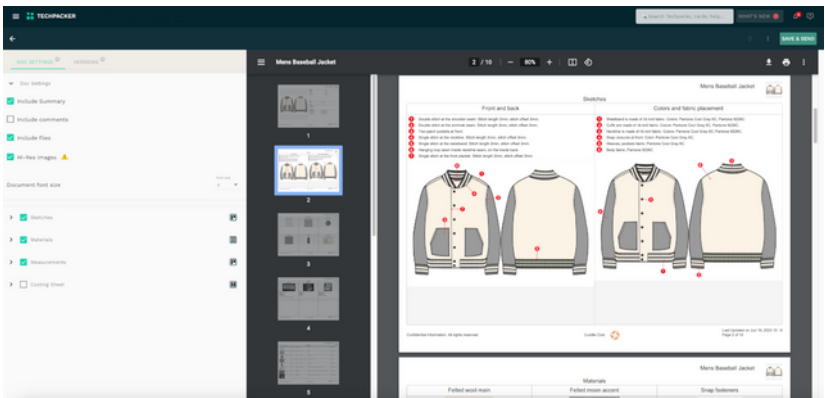
Involve suppliers early in the product development process to leverage their expertise. Collaborate closely with them to ensure that materials, components, and manufacturing processes are optimized for efficiency and waste reduction.

Use PLM systems to stay in touch with your suppliers and communicate in real time. On Techpacker you can keep your conversation with the manufacturer on hand and refer to it as needed. This illuminates miscommunication, and unnecessary rounds of sample-making and therefore reduces waste.

REDUCING PAPER WASTE BY UTILIZING ONLINE TECHNOLOGIES

With the help of PLM systems like [Techpacker](#), you can store digital versions of your tech packs on hand and share them with your factory. This significantly eliminates paper waste when it comes to printing out tech pack sheets.

Even if the factory is not part of your Techpacker account, they can see your tech pack in a PDF format without the need to print it out. Even after multiple rounds of sample reviews, the manufacturer will clearly see all updates and edits. This significantly reduces miscommunication issues.



ON-DEMAND MANUFACTURING

In contrast to traditional mass production, when things are built in large quantities ahead of time, on-demand manufacturing, sometimes referred to as made-to-order or bespoke manufacturing, is a production strategy in which products are only manufactured when an order is received.



[Benjamin Fox](#) made-to-order collection

There are several ways that [on-demand manufacturing](#) can support sustainable product development:

- Reduction in overproduction: Overproduction is a major problem in the fashion business, resulting in excess inventory and waste. On-demand manufacturing reduces the need to produce large numbers of clothing in advance, lowering the danger of overproduction and eliminating unsold inventory that might otherwise wind up in landfills.

- **Efficient use of resources:** On-demand manufacturing allows for more exact production planning, which leads to more efficient resource usage. Based on the precise amount of orders, manufacturers may optimize their material procurement, production processes, and energy usage, reducing waste and environmental effects.
- **Customization and personalization:** Fashion goods may be customized and personalized thanks to on-demand production. Customers may select certain designs, colors, and sizes, as well as customize their outfits. This method decreases the chance of customers purchasing many goods in order to get the right fit or style, hence lowering total consumption and waste.
- **Reduced transportation emissions:** With on-demand manufacturing, products are produced closer to the point of sale or delivery, reducing the need for long-distance transportation. This can result in lower carbon emissions associated with shipping, as well as decreased reliance on air freight, which is more carbon-intensive than other modes of transportation.
- **Extended product life cycle:** By producing garments on demand, brands can avoid the need for excessive markdowns or sales to clear out excess inventory. This helps maintain the value and desirability of the product, extending its life cycle and reducing the pressure to constantly introduce new collections.

4.4

DESIGNING PRODUCTS FOR ENERGY EFFICIENCY AND RECYCLABILITY

Designing products for energy efficiency and recyclability is a crucial aspect of sustainable product development. It involves materials selection, design optimization, and avoiding hazardous substances.

SUSTAINABLE PRODUCT DESIGN

Sustainable product design involves creating products with ease of disassembly in mind, allowing for efficient separation of components at the end of the product's life. Use fasteners, connectors, or adhesives that can be easily removed, and avoid irreversible bonding methods.



[Kenneth Ize](#) collection

Other practices include: selecting materials that are recyclable and have established recycling processes. Avoid using complex or mixed materials that are difficult to separate and recycle. Design with mono-materials or easily separable components to facilitate recycling.

SUSTAINABLE FABRICS

Choosing sustainable and responsibly sourced materials is crucial to reducing the environmental impact of fashion. This includes using organic, recycled, or regenerated fibers, such as organic cotton, recycled polyester, or Tencel®.

Additionally, avoiding materials associated with deforestation, excessive water usage, or hazardous chemical treatments helps protect ecosystems and conserve natural resources.



[Image source](#)

Some of the [top sustainable fabrics of 2023](#) are: recycled plastic bottles, cork leather, Pinatex, micro fibrillated cellulose from Spinnova, Econyl, Qmonos, Sateri's Lyocell, recyclable cotton, linen, Tencel.