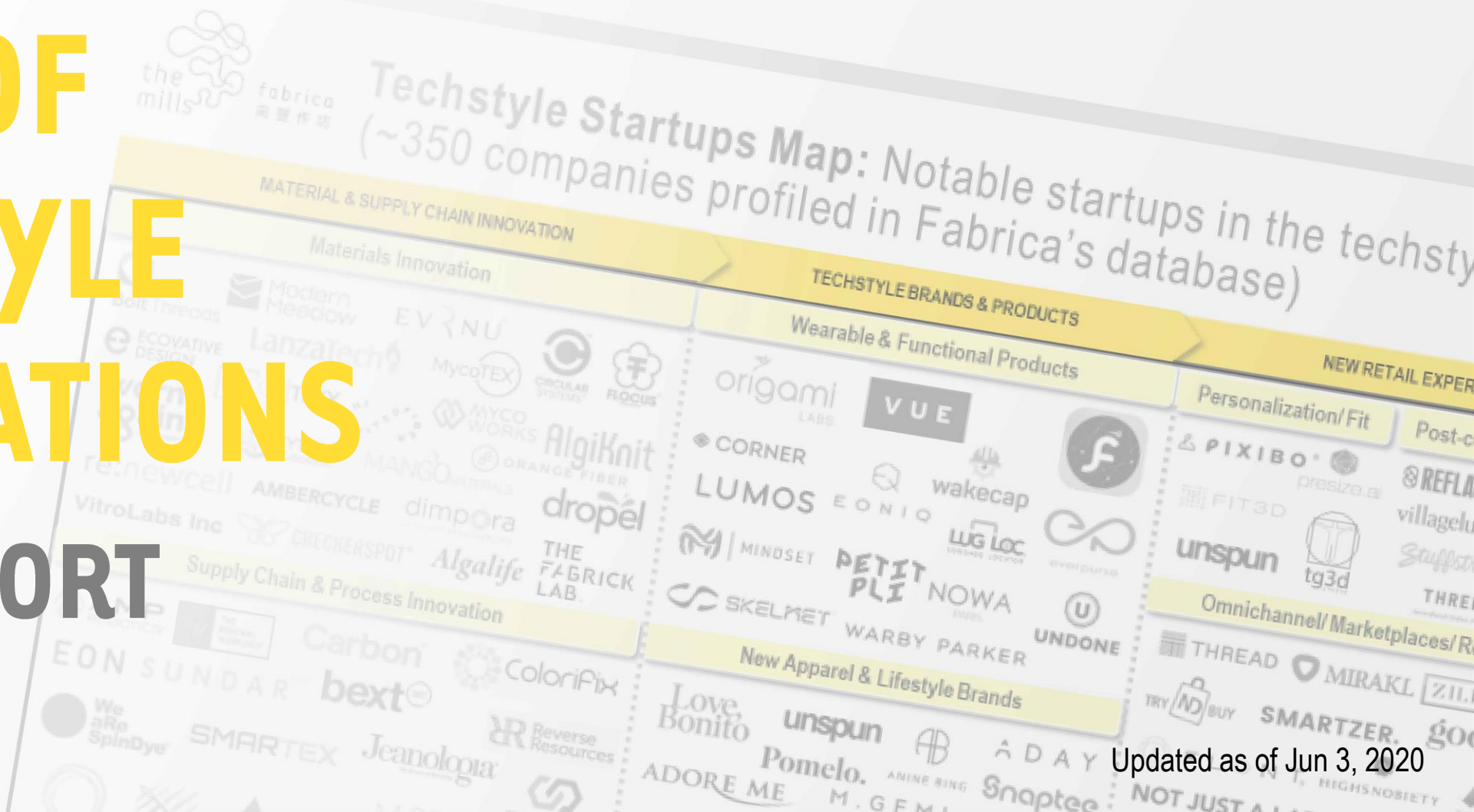


THE MILLS FABRICA'S

# STATE OF TECHSTYLE INNOVATIONS

2020 REPORT



# State of Techstyle Innovations – Executive Summary

## Objectives

The fashion industry has been rapidly transformed by innovations across the value chain be it in better materials/ processes, up-and-coming brands or new retail technologies.

This report aims to provide an overview into innovation trends in the field of techstyle (intersection of technology and style) detailing innovation areas, startup innovators and industry news in the fashion/ textiles space.

The data/ graphs are compiled from Fabrica's startup database which tracks all techstyle-related startups invested in by our partners as well as latest innovations/ investment activities in the sector. We hope that this report can serve as an introduction into the innovation landscape in techstyle. For more information, feel free to reach out to us at [contact@themillsfabrica.com](mailto:contact@themillsfabrica.com)

## Three Key Insights from this report



**Growth of techstyle as new innovation sector –**  
across Material & Supply Chain, Techstyle Brands/ products and New Retail Experience

**Number of startups invested by partners tripled** (~20 deals to ~75 deals) from 2015 to 2019\*



**Early but growing investment scene –**  
well supported by emerging wider ecosystem of corporates & investors

Growing support from financial investors as well as corporate participation via **platform, investment, market & supply chain initiatives**



**Early winners have emerged –**  
New retail is a sector known for producing many unicorns, followed closely by techstyle brands and supply chain

**~70% of techstyle unicorns** belong to “**New Retail Experience**” – Unicorns have an **average valuation of \$3.2B USD**

# State of Techstyle Innovations

- Introduction

- Teaser Report

# Highlight on Report Focus and Methodology

## Read more about

- **Definition of Techstyle & 3 key areas of techstyle startups**
  - The “intersection of technology and style” in areas of Material & Supply Chain, Techstyle brands/ products and New Retail Experience
- **3 Drivers of growth in the techstyle space**
  - Key statistics on market overview and trends that drive the growth in the techstyle space
- **Support from an emerging wider ecosystem**
  - An overview of different types of support from a wider emerging ecosystem
- **Lessons from early winners**
  - Maps of unicorns by 3 key thesis areas, early exits and future opportunities

## Methodology



Fabrica's proprietary startup database of global techstyle startups invested in/ incubated by leading partners



Unicorns in techstyle space profiled by Fabrica



Primary interviews/calls with select startups/partners



Secondary Research  
i.e. Crunchbase, Pitchbook, CB Insights etc.

# What is included in our database

## The Mills Fabrica's techstyle database 2020

15

Profiled portfolio companies from 15 partners/  
leading global techstyle VCs/ investment  
funds/ incubators/ accelerators

350+

350+ techstyle startups globally are analyzed

30+

30+ techstyle startups that are supported/  
invested in by at least 2 partners

60+

Techstyle industry boasts 60+ unicorns,  
beating other industries in this regard

70%

70% of the 60+ unicorns from the database are  
related to new retail experiences

90%

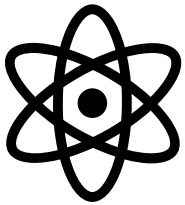
Asia and USA are the breeding grounds for  
techstyle unicorns, the two regions take up a  
total of 90% share of unicorn startups

# Techstyle Definition and Overview

Disruption to the “Textiles/ Fashion/ Retail” industry was historically slower compared to other industries like technology, electronics etc. However, in the past few years, technology has gradually come into play in the traditional manufacturing/ consumer space.

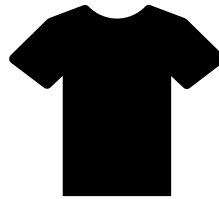
Against the backdrop of this trend, we define techstyle as the “Intersection of Technology and Style”, which plays out in 3 thesis areas:

## NEW MATERIALS & SUPPLY CHAIN INNOVATION



Fashion/ textiles supply chains face increasing pressure to be sustainable due to consumer demand & cost/ regulatory impact. This leads to a growing number of innovations for sustainable production in new materials/ recycling, process innovation (e.g. automation) or other supply chain tools & enablers (on education or transparency).

## TECHSTYLE BRANDS & PRODUCTS



New Techstyle brands are building products for millennial consumers targeted brand story-telling, elevated product offerings complemented by technologies that enhance product (e.g. personalized/ functional apparel) and the customer journey (e.g. omnichannel experiences).

## NEW RETAIL EXPERIENCES



Digital disruption in e-commerce leads to the rise of omnichannel retail experiences including plug-in technologies (e.g. SAAS solutions like sizing / video tagging for online ecommerce; hardware/ software suites for better offline store digitization) and technologies that encourage circular business models (e.g. post-consumer garment resale/ recycling).

Techstyle Introduction – the intersection of technology and style – has seen a proliferation of innovations across textiles/ fashion/ retail



# Market Trend – Growing apparel market driven by increasing sustainability focus, shifting purchasing habits from millennials and digitization of retail experiences

## GLOBAL APPAREL MARKET (2020 – 2023)

**> \$2  
Trillion**

Revenue in the apparel market is estimated to exceed \$2T USD in 2023

**4.5%**

Apparel market is expected to grow at an annual rate of 4.5% from 2020 to 2023

**\$290**

Worldwide average revenue per capita is likely to hit \$290 USD in 2023, 16% growth from \$250 USD in 2019

**5 Billion**

Fashion e-commerce will count approximately 5B active users

**~30%**

Online sales will exceed a quarter of the apparel market

**> \$360  
Billion**

USA is expected to generate the most revenue >\$360B USD in 2020, followed closely by China with ~\$340B USD

### Key Market Trends

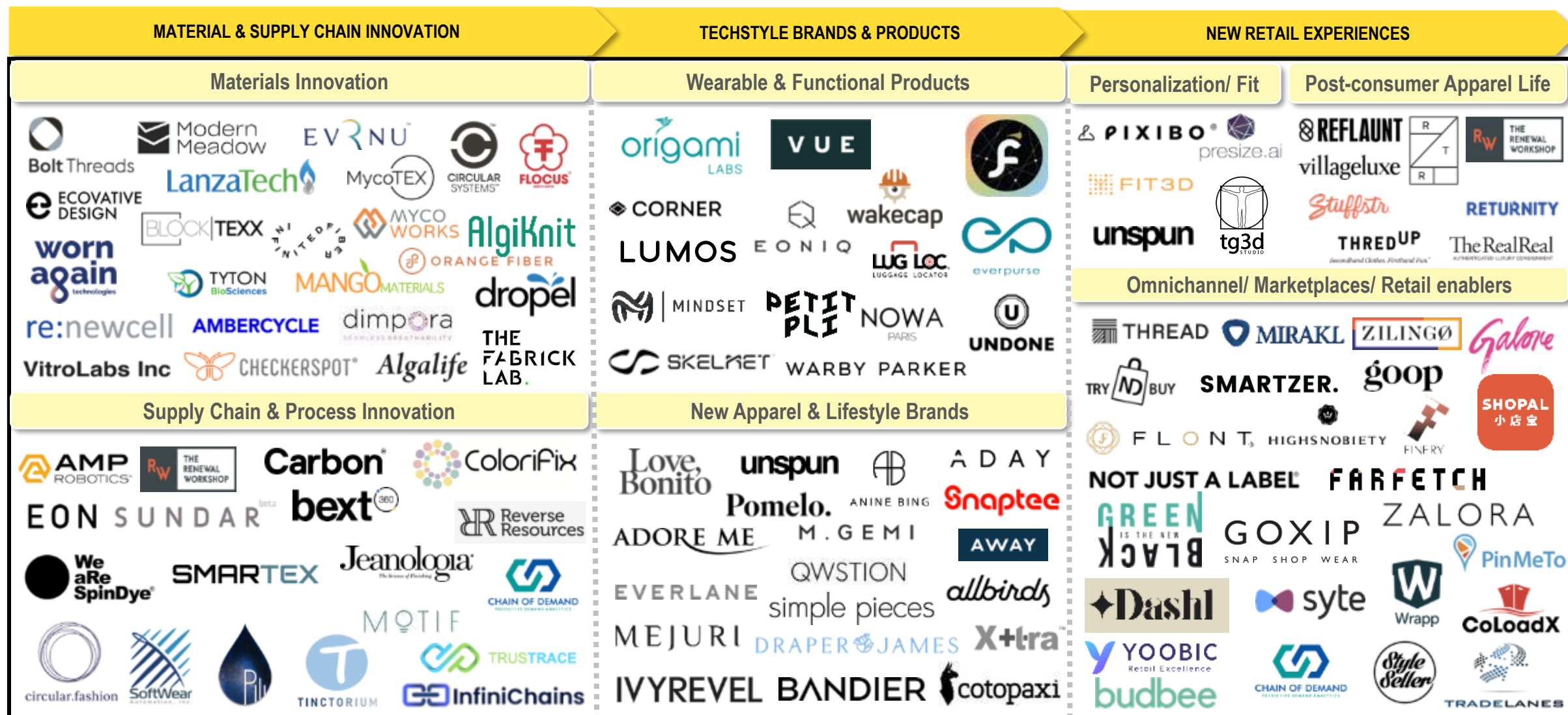
- **Pressures from supply and demand side drive sustainability**
  - Supply side: Cost and regulation from sustainability measures
  - Demand side: Increasing consumer consciousness on being sustainable
- **Millennial population seeking for more aspirational brands**
  - Millennials are one of the largest generations in history (>70M vs. 65M for Gen X in US), estimated to make up of three-quarters of the global workforce by 2025
  - Shifting millennial spending habits in the apparel market, as they seek more flexible and accessible lifestyle brands – contributing to the growth in D2C brands and retail enablers
- **Digitization changing retail and consumer experiences**
  - Continuous rise of e-commerce (20% annual growth), changing consumer tastes/ behaviours and increasing competition drive the growth of utilizing retail enablers to optimize marketing strategies, predict consumer preferences and implement an omnichannel solution
  - The retail technologies disrupt the industry by delivering a seamless and personalized shopping experience to customers





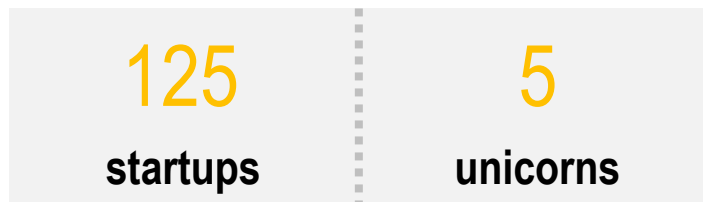
# 3 trends & thesis areas driving the growth of the techstyle market

# Techstyle Startups Map: Notable startups in the techstyle space (~350 companies profiled in Fabrica's database)

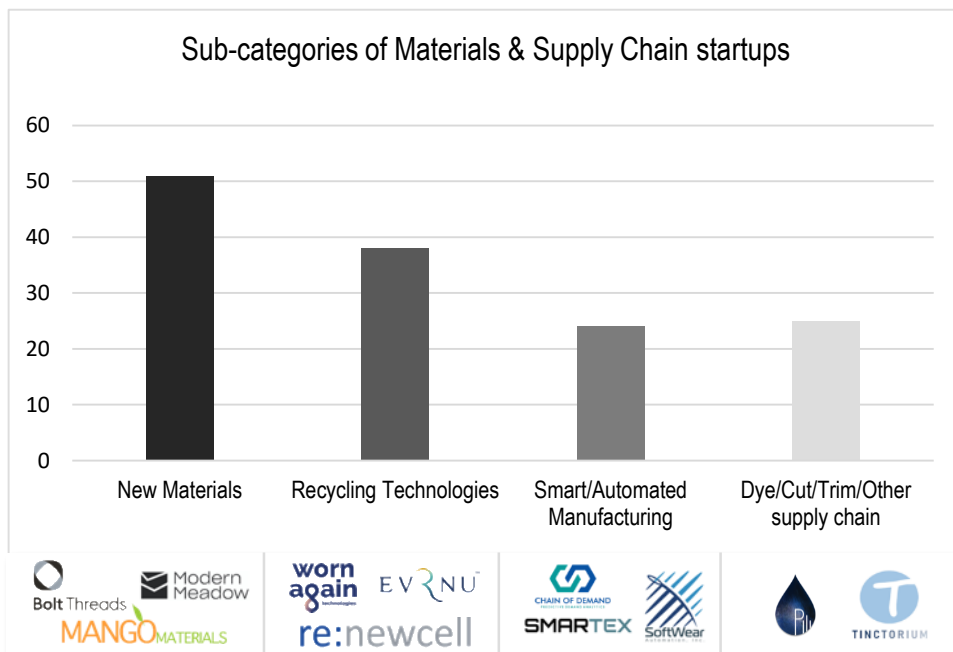


# Materials & Supply Chain: Innovations driven by pressures to go sustainable from consumers and more regulations

## Material & Supply Chain companies in the database



## Sub-categories of Materials & Supply Chain startups



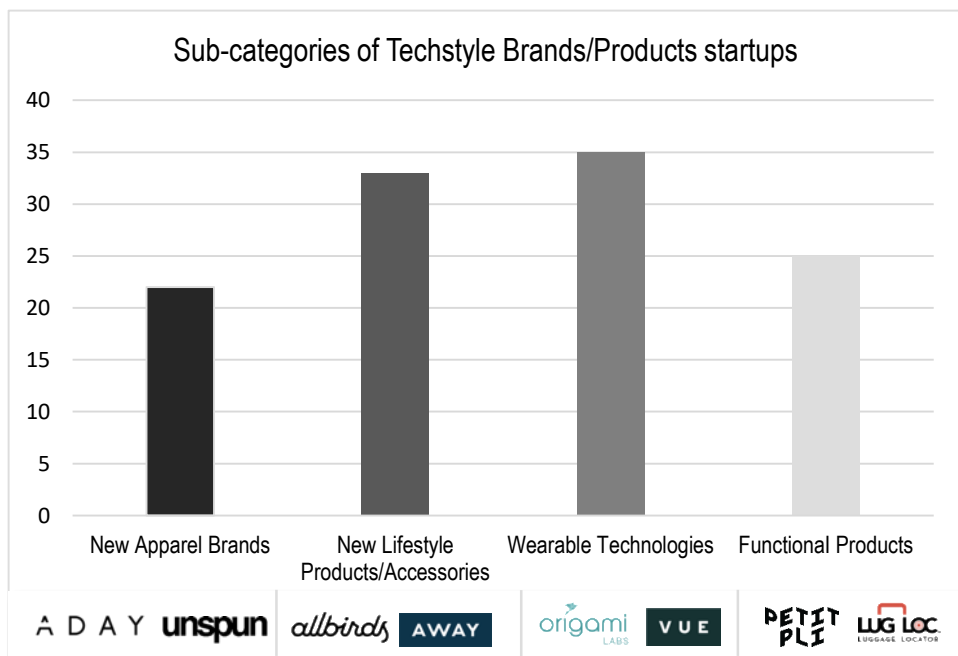
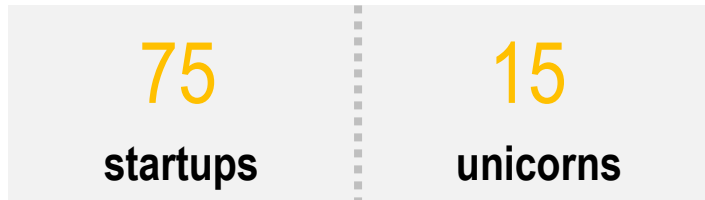
Remarks: some companies are categorized into more than one sub-category

## Key Market Trends

- Consumers are putting pressure on businesses to be sustainable and transparent
  - Millennials are more willing to spend on sustainable products, sustainability market expected to reach \$150B USD in 2021
  - 50+ companies raising close to \$1B USD to disrupt the apparel manufacturing chain and change the materials/ the ways companies used to design and produce their products in 2018
  - 25+ companies leverage technology for traceability and content for transparency to share information about their product lifecycle in 2018
- Increasing environmental concerns and stringent regulation are catalysts for substantial growth of materials and supply chain innovation
  - More regulations come into play with fashion being one of the highest polluting industries
  - For example, ESG, the Fashion Pact, etc. have been set up to encourage the industry leaders to be more sustainable
  - Grand View Research estimates that the Global eco-fiber market size reached \$37B USD in 2018 with a CAGR of 9.2% until 2025

# Techstyle Brands/ Products: Millennials seek new aspirational brands and products

## Techstyle Brands/ Products companies in the database



Remarks: some companies are categorized into more than one sub-category

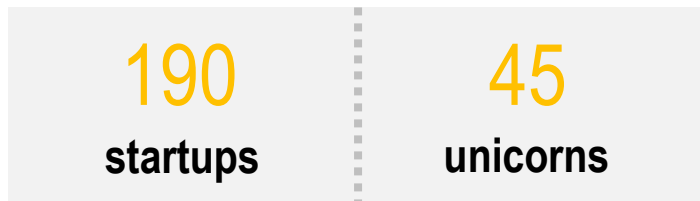
## Key Market Trends

- Growing millennial spending power and changing spending habits
  - Expected increase in millennials' spending power, with estimated wealth of \$30T USD from baby boomers and Gen X
  - Different consumption habits focusing on products and services that are more sustainable with better affordability and flexibility
- Millennials' focus on lifestyle increases new aspirational brands and products
  - 44% of millennials are aspirational customers who crave exclusivity and life-enhancing experiences, which gives rise to innovative new brands and products
  - D2C brands' marketing strategy has shifted from solely promoting product features on social media to creating stories about the product and building a clear brand identity, aiming to resonate and make connections with young customers
- Health concerns and desire for aesthetically appealing advanced products contribute to the success of techstyle wearable products
  - The Wearable Technology market size topped \$28B USD in 2019 with an expected CAGR at 17.65% for the upcoming 5 years, whereas global functional products market size stood at ~\$285B USD in 2018 and is expected to hit ~\$400B USD by 2024
  - China and India are estimated to be the major focus of wearable technologies in the future, 28% techstyle brands/ products unicorns are located in APAC

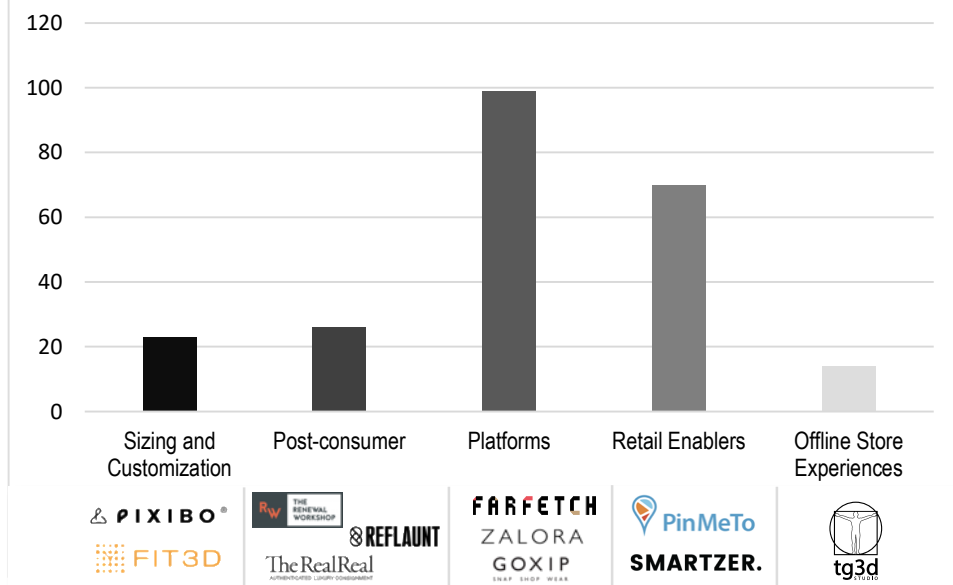


# New Retail Experience: Rise in e-commerce brings more retail enabler technologies and encourages circular business model

## New Retail Experience companies in the database



## Sub-categories of New Retail Experience startups



Remarks: some companies are categorized into more than one sub-category

## Key Market Trends

- Direct-to-consumer/ private-label selling and retail enabler technologies that are more experienced-focused are driven by global e-commerce boom
  - Global e-commerce sales topped ~\$3.5T USD in 2019 (~18% increase from 2018) and is expected to nearly double to more than ~\$6.5T USD by 2023
  - The e-commerce share of total global retail sales in 2019 was 14% (~16% increase from 2018) and is expected to reach 22% in 2023
- Personalization/ sizing/ fit are the key differentiations for retail enablers
  - Millennials' focus on consumer journey and the growth in e-commerce give rise to more personalization and fitting innovations
- Greater demand for a more circular economy encourages companies to create solutions to extend the apparel lifecycle
  - The demand for brands to reuse material/ old clothes paves the way for a new upcycling business model allowing people to consume better and less frequently/ in smaller quantities
  - The Ellen MacArthur Foundation estimates that an industry-wide move to adopt circular economy principles could add ~\$170B USD in value by 2030
  - e.g. The Renewal Workshop, The RealReal, For Days and ThredUP



**Techstyle innovation growth supported by  
a wider emerging ecosystem of corporates & investors**

# The growth of techstyle innovations has gained interest from a variety of investors

## CORPORATE INVESTORS



Tin Shed Ventures

Invested in:



H&M Co:Lab

Invested in:



FARFETCH

Acquired:



Adidas Ventures

Invested in:



## FASHION/ SUSTAINABILITY FOCUSED INVESTORS



Invested in:



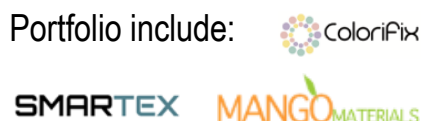
Invested in:



Invested in:



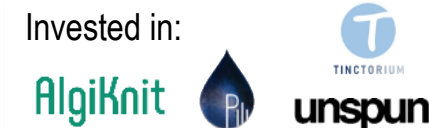
Portfolio include:



## FINANCIAL INVESTORS



Invested in:



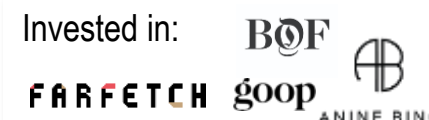
Invested in:



Invested in:



Invested in:



# With the growth of more innovations, industry has been supporting innovators through various approaches

## PLATFORM APPROACH

### INNOVATION AWARDS/ CORPORATE INNOVATION

Innovation awards and accelerator program to support techstyle innovations

**H&M FOUNDATION**



~30 winners since 2016

**LVMH**  
MOËT HENNESSY • LOUIS VUITTON  
LVMH Station F Accelerator

Startups include:  
3DFOOK  
AB Tasty biowatch

**C&A Foundation**

**FASHION FOR** Members:  
KERING zaland  
STELLA MCCARTNEY PVH

## INVESTMENT

### CORPORATE VENTURE INVESTING

Investment into techstyle startups to help scale up the business



Tin Shed Ventures

Invested in:  
MANGO MATERIALS  
bureo  
TROVE



H&M Co:Lab

Invested in:  
A DAY budbee  
Colorifix  
worn again

**FARFETCH**

**adidas**  
Adidas Ventures

Acquired:  
STADIUM GOODS™  
NGG-NEWGUARDSGROUP  
CURIOSITYCHINA  
DigitalActivation

Invested in:  
Stuffstr Carbon

## MARKET & SUPPLY CHAIN INITIATIVES

### INTERNAL R&D TEAM / LAB

In-house lab / development of new technologies and materials



Nike Valiant Labs  
Valiant



The Laboratory innovation hub

**K E R I N G**

Materials Innovation Lab since 2013 – with access to >3,000 fabric samples

### SUSTAINABILITY BRANDING AND PRODUCTS

Collaborations with startups on studio collections focusing on sustainability

STELLA MCCARTNEY

Pilots with startups like:



### OTHER SUPPLY CHAIN INITIATIVES

Other initiatives like green financing and innovations providing transparency that support the supply chain



\$100M USD supply chain financing initiative

**INDITEX**

Technological innovation of supply chain in traceability and transparency



*allbirds*

WARBY PARKER

**Glossier.**



AUTOMATION  
ANYWHERE

Etsy

FARFETCH

YOOX





















































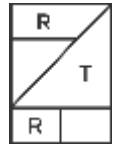







**Early techstyle winners have emerged,  
with more expected to come**

Carbon








GINKGO BIOWORKS™  
THE ORGANISM COMPANY

# Leading techstyle unicorns have emerged in past few years











Valuation	Material & Supply Chain	Techstyle Brands/ Products	New Retail Experience
5B+ USD			  
1-5B USD	  	      	                      
	<p>2019 entrants</p>   	     	            

# Early winners have emerged; exit landscape still in early stages with some realized exits through IPO and M&A
















## EARLY WINNERS (Techstyle Unicorns)

Startups	Thesis Area	Latest Valuation (USD)
	New Retail Experience	~8.4B
	New Retail Experience	~5.9B
	New Retail Experience	~5.7B
	New Retail Experience	~4.5B
	Material & Supply Chain	~4.2B

## ACTUAL EXITS

Startups	Thesis Area	Deal Size (USD)	Deal Year	Acquirers/IPO
	New Retail Experience	~3B	2016	
	New Retail Experience	~300M	2019	IPO
	New Retail Experience	~250M	2018	
	New Retail Experience	~145M	2019	IPO
	Techstyle Brands/Products	~500M	2017	
	Material & Supply Chain Innovation	~70M	2019	

# Future trends of sustainability, personalization and digitization to continue to drive innovations across the value chain

Thesis Area	Future Opportunities & Trends	Key Challenges	Notable Exits
<b>New Materials &amp; Supply Chain Innovation</b>	<ul style="list-style-type: none"> <li>Growing demands/ concerns about sustainability-related products</li> <li>Increasing ethical/ eco-friendly awareness among consumers</li> <li>Technology breakthrough in synthetic biology, AI, blockchain</li> </ul>	<ul style="list-style-type: none"> <li>Longer time is needed to market</li> <li>No outsized exits have been generated yet</li> <li>Capital intensive for materials or technologies hinder faster growth</li> <li>High production costs to compete with existing alternatives</li> </ul>	  
<b>Techstyle Brands &amp; Products</b>	<ul style="list-style-type: none"> <li>Shift in millennial preferences to new brands due to changing aspirations, e-commerce boom, mobile commerce and new retail trends</li> <li>Arising D2C opportunities</li> <li>Popularity of wearable technology among new generation</li> </ul>	<ul style="list-style-type: none"> <li>Difficulty in differentiating brands which tend to offer similar products and experiences</li> <li>Signs of crowding out as well as brands raising more capital than required at tech valuations without focusing on profitability/ sound business fundamentals</li> </ul>	   
<b>New Retail Experiences</b>	<ul style="list-style-type: none"> <li>Increasing sustainability awareness drives growth of post-consumer category</li> <li>E-commerce (with return service) drives innovations in sizing/ fit for on demand production/ personalization</li> <li>Increasing e-commerce competition drives demand to enhance customer experiences/ omnichannel integration</li> </ul>	<ul style="list-style-type: none"> <li>Platforms/ marketplaces now consolidated by a few dominant market leaders</li> <li>For retail enablers, SAAS business exit options remain limited as of now due to low exit valuation and low differentiation amongst SAAS/ B2B solutions</li> </ul>	       

# Concluding Thoughts

## Key findings from the report

- Boom of techstyle innovation in **3 key thesis areas** mainly due to change in habits of the new generation be it in demands for sustainability or digitization of consumer channels/ experiences
- Investment scene early but growing; well supported by variety of ecosystem players
- Emergence of early winners – anticipating more unicorns and actual exits to come

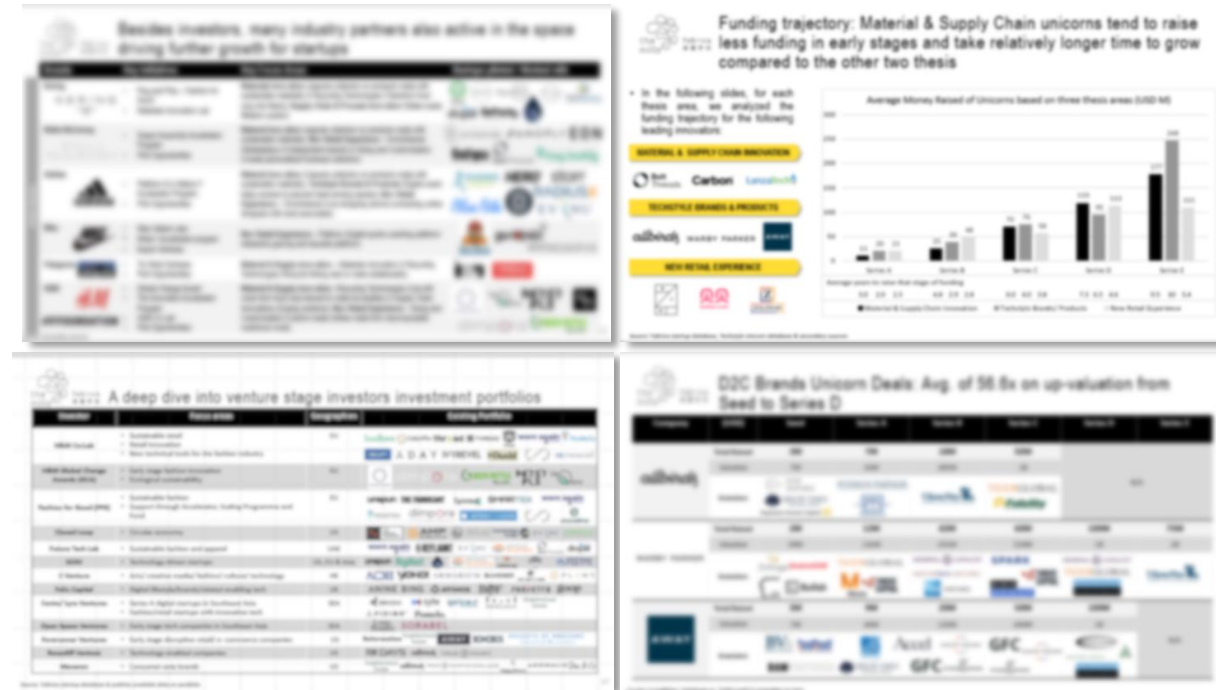
## If you are interested to learn more

- Interested **investors/ brands/ retailers/ manufacturers** can reach out to us to discuss more on opportunities/risks and Fabrica's innovation support for industry partners
- **Techstyle startups** can also reach out to us if of interest to learn more on Fabrica's incubation/ investments
- If you are interested in finding out more from “**State of Techstyle Innovations**” **Full Report**, please email us at [contact@themillsfabrica.com](mailto:contact@themillsfabrica.com)

# State of Techstyle Innovations full report will cover

- **Techstyle Scene**
  - Overview of techstyle startups, key opportunities and challenges in Material and supply chain, Techstyle brands and New Retail Experiences
- **Startups and investment landscape**
  - In-depth analysis on techstyle startups by funding size, geographies, investors investment appetite, notable M&A deals and exit landscape
- **Lessons from unicorns**
  - List of unicorns in the 3 key thesis areas, analysis of unicorns by geographies, financial investors and comparison with unicorns in other industries
- **Trends ahead**
  - Anticipated growth scene and playbooks of the three thesis areas

Report is generated from extensive database with findings



*If you are interested in finding out more from the full report, please email us at [contact@themillsfabrica.com](mailto:contact@themillsfabrica.com)*



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