

TEXSTRA | Textile Strategy for Innovative Higher Education  
2017-1-RO01-KA203-037289



## **Book of Lectures**

“Innovative and Creative thinking in the  
Textile & Clothing manufacturing sector”

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# Introduction

In the framework of the project TEXSTRA, the “Book of lectures - Innovative and Creative thinking in the Textile & Clothing manufacturing sector” is the result of Intellectual Output 5 (IO5). Main learning objectives of the IO5 is to provide knowledge on relevant topics, skills and competences addressing a creative and innovative approach in the T&C sector, offering broad and extensive information about tools and resources available in open-access modality to all stakeholders of the sector. During project execution, the “Book of lectures” served as the supporting tool for the project’s learning activity (C1: intensive summer course).

The Intellectual Outputs produced in TEXSTRA are made available online and can be used by external organisations in training activities for textile and clothing manufacturing professionals, high technicians, managers, students and entrepreneurs.

## Lecture 1

# **Products - Advanced Textile Materials**

Content curated by:

KTU – Kaunas University of Technology

MCX – Material ConneXon Italia

# 1. Products

Textile products are present in a very broad range of applications, varying from being the main material a product is made of, such as a garment or furniture upholstery, to be used only as a minor component of a complex product, for instance acting as filter, screen, protective material and packaging. In general, textile materials are divided into two main groups: conventional textiles, identified as “traditional” materials responding to the primary needs of humans, thus related to protective, physiological and social aspects, and “untraditional” textile materials where technical performance overweighs decorative requirements and satisfy specific functional demands.

## Overview on textile products

Textile products can be divided in **2 main categories**:

- “traditional” textile materials produced within the *conventional textile industry* (i.e. Textile & Clothing sector): textile products where **aesthetics** overweighs functionality
- “untraditional” textile materials produced within the *technical textile industry* (mostly technical applications): textile products in which **functionality** is as much or more important than aesthetics.

## 1. Products

The most common classification of technical textiles is the one defined by the trade fair Techtextil, organised by Messe Frankfurt in its first edition in 1986, and which is being used since 1997.

# Classification of technical textiles

**Agrotech:** Agriculture and fishing

**Buildtech:** Building and textile architecture

**Geotech:** Civil engineering

**Homotech:** High-tech home textiles and high-tech clothing

**Indutech:** Industrial uses

**Medtech:** Medical-hygienic-sanitary uses

**Mobiltech:** Automobile and public transportation

**Oekotech:** Environmental protection

**Packtech:** Packaging and transportation

**Protech:** Personal protection

**Sportech:** Sports and leisure

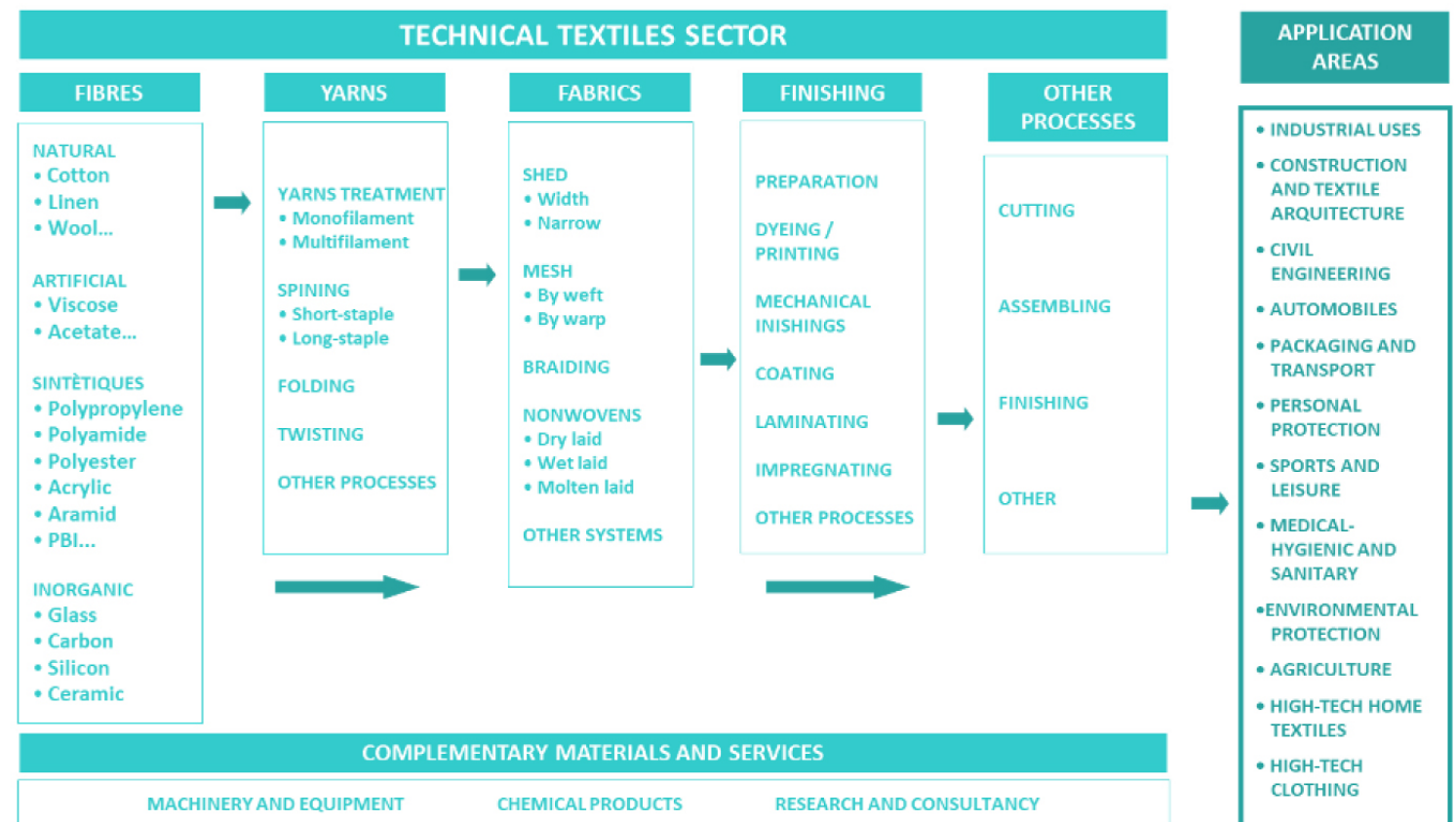
# 1. Products

The figure shows the technical textiles' value chain, which essentially follows the conventional textile production steps: starting with natural fibres or the production of artificial fibres by extrusion, spinning and yarn transformation in order to produce the fabric with yarns or directly from fibres or the elaboration of plaited structures, webs, tapes or other types of laminar or even tridimensional textile structures that can be finished in order to give them new functional properties for specific applications.

## Value chain of technical textiles

Technical textiles' value chain, essentially follows the conventional textile production steps:

1. natural fibres or the production of artificial fibres by extrusion, spinning and yarn transformation
2. fabric production with yarns or directly from fibres or the elaboration of plaited structures, webs, tapes or other types of laminar or even tridimensional textile structures
3. finishing for new functional properties for specific applications.



Technical textiles value chain (Source: AEI TÈXTILS)



# 1. Products

All fibres can be divided into two groups: organic fibres and inorganic fibres. Until the last century, well known organic natural fibres, such as cotton, wool, flax, silk, etc, were used not only as clothing, upholstery, carpets and/or other fabrics, but also as technical or industrial textiles. In the first half of the 20th century manufactured synthetic fibres (acetate (AC), polyester (PES), nylon (PA), rayon (CV), polyacrylonitrile (PAN) and others) had superior technical properties that met the needs of mentioned period.

## High Performance Fibres

2 groups of fibres:

- **organic** fibres
- **inorganic** fibres

Organic:

- natural fibres (cotton, wool, flax, silk etc.)
- synthetic fibres (polyester, poliamide etc.)

Inorganic fibres - carbon, glass, metal, ceramic etc.



## 1. Products

Depending on modification and properties, high performance fibres, including their composite, are used in the listed application areas.

# High Performance Fibres

## Application areas:

- Protective material
- Thermal Protective Apparel
- Marine and aerospace construction
- Civil engineering
- Ground transportation
- Engineering plastics
- Sporting goods

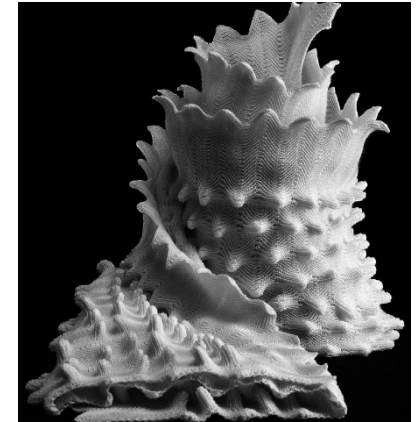
# 1. Products

This classification is based on what directions are significant for their specific geometry. Fibres and yarns are considered 1D materials because their length is defining their geometry. Textile fabrics (woven, knitted, non-woven, braided) are called 2D textiles because they defined along 2 axes - length and width. 3D textile materials are with fully integrated continuous fibre assemblies, multi-axial in-plane and out-of-plane, in other words, the fabric structure is built along all three axes. All types of technologies (weaving, knitting and braiding) can be used to produce such materials.

## Textile Structures with 3D Architecture

Classification: 1D, 2D or 3D textiles

The three-dimensional (3D) textile materials structure is built along all three axes.



Advantages of 3D textiles:

- complexity of the shapes that can be obtained without any assembly, eliminating the cutting and assembly operations and the waste.
- strict control of the material behaviour along all 3 axes through fabric architecture and yarn characteristics.
- in the case of composites, there is no risks of delamination.
- possibility to develop hybrid structures that combine textile fibres with other materials with specific properties.

# 1. Products

Medical textile products may be classified into four main sectors: implantable materials, non-implantable materials, extracorporeal devices, and hygiene and healthcare products. According to the classification, a variety of medical and preventive supports and compression garments are assigned to the non-implantable medical textile group.

The main attention is given to compression properties of these products, however, aesthetic, comfort and end-use properties are not less important for consumers.

## Orthopaedic knitted materials

Medical textile products:

- implantable materials
- non-implantable materials
- extracorporeal devices
- hygiene and healthcare products



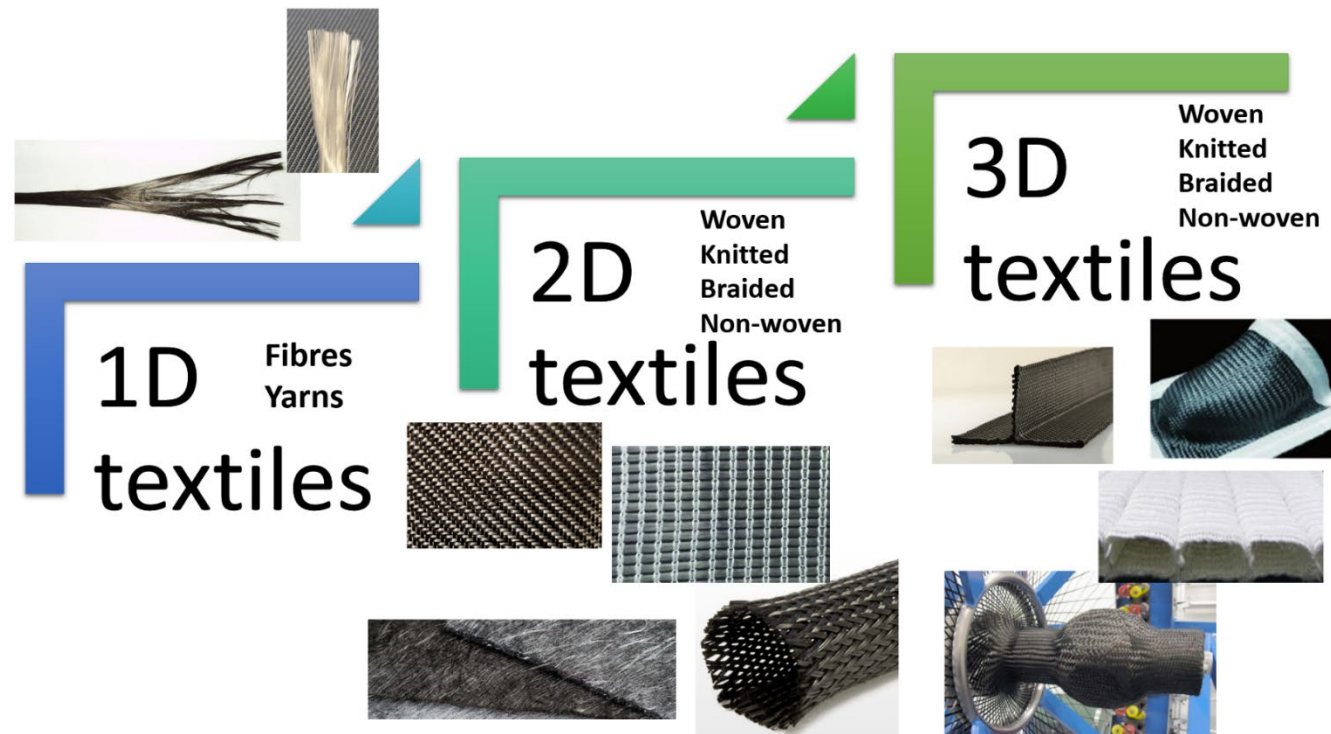
*Sigvaris (Switzerland), Orliman (Spain), Otto Bock (Germany), Bauerfeind (Germany), etc.*

# 1. Products

General classification of the textile reinforcement - the reinforcement is divided according to the significant dimensions of their geometry.

## Textile reinforced composites

- 1D - fibres and yarns
- 2D - textile flat materials
- 3D - materials with three-dimensional architecture





# 1. Products

e-Textile materials are defined as the combination of electronics and textiles. The electronic part could be simple, as interconnection, or more complex, as electronic card. An e-Textile is not necessarily a smart textile or smart textile system but could be a functional textile or a textile system.

Electrically conductive materials are the basis for any e-Textile implementation.

## e-Textile materials

Electrically conductive materials are the basis for any e-Textile implementation.

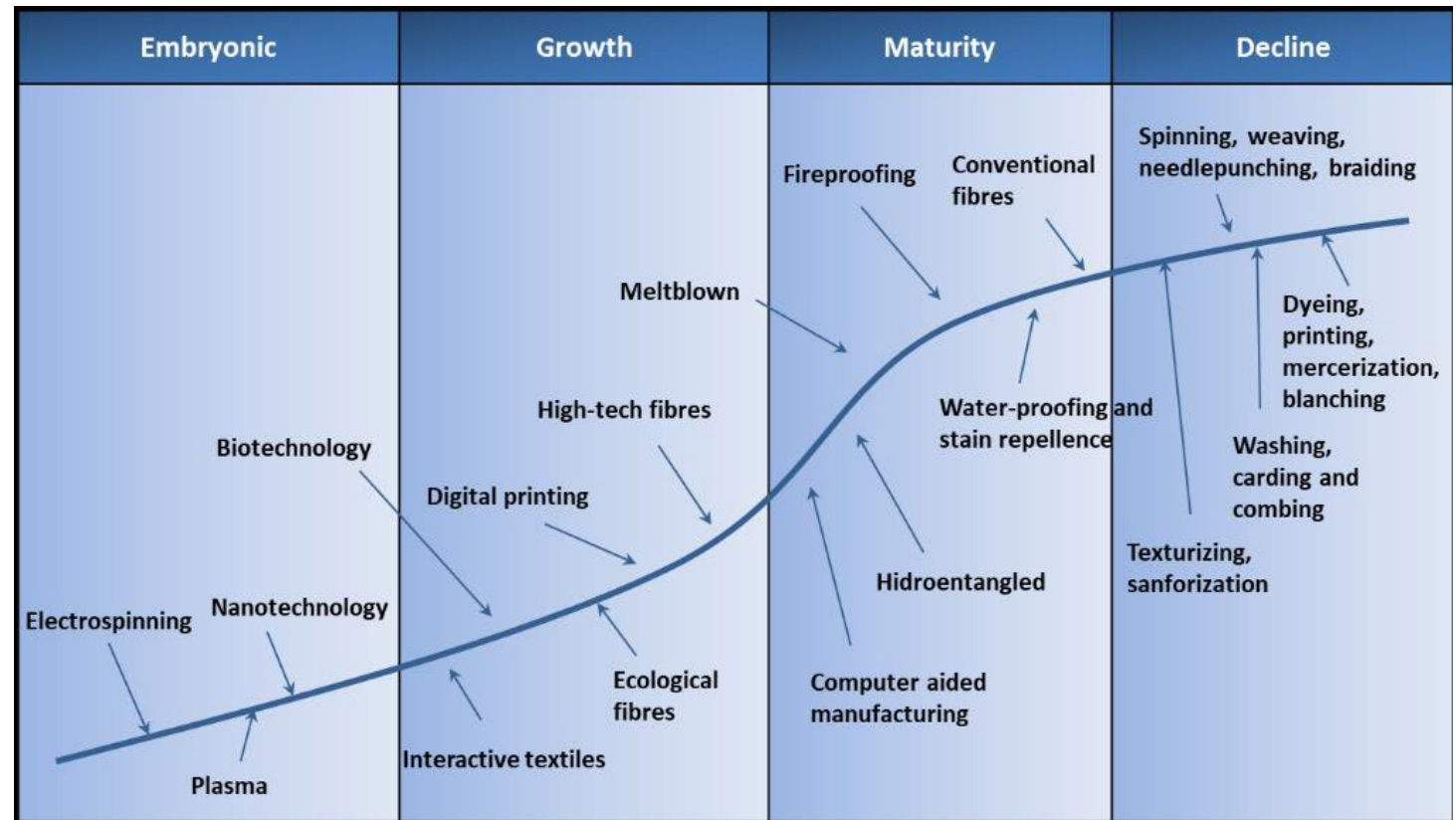
Conductive materials for e-Textiles can be divided into the following categories:

- Metal fibers
- Fibers coated with metals, metal oxides or metal salts
- Conductive polymer composites (CPCs)
- Inherently conductive polymers (ICPs)
- Conductive inks

# 1. Products

Textile technology is an enabling technology for numerous fields and can make important contributions to new solutions for effective and affordable health care, highly functional sportswear and goods, as well as for smart personal protective equipments. All these are rapidly growing markets and targeted by the European societal challenges of active ageing and safety and security. The figure shows that the so-called high tech fibres are already in the maturity phase (aramides, polyketetones, PBI, etc.) while others (PBO) are in growth, along with the ecological ones, derived from the increasing collective sensitivity towards the issues of conservation of energy and ecology.

## Life cycle stages of materials and manufacturing systems in the textile industry



Evolution of textile technologies (Source: Tecnitex Ingenieros)

## Lecture 2

# **Processes - Advanced Textile Technology**

Content curated by:

TUIASI – “Gheorghe Asachi” Technical University of Iasi

INCDTP – National R&D Institute for Textiles and Leather of Bucharest

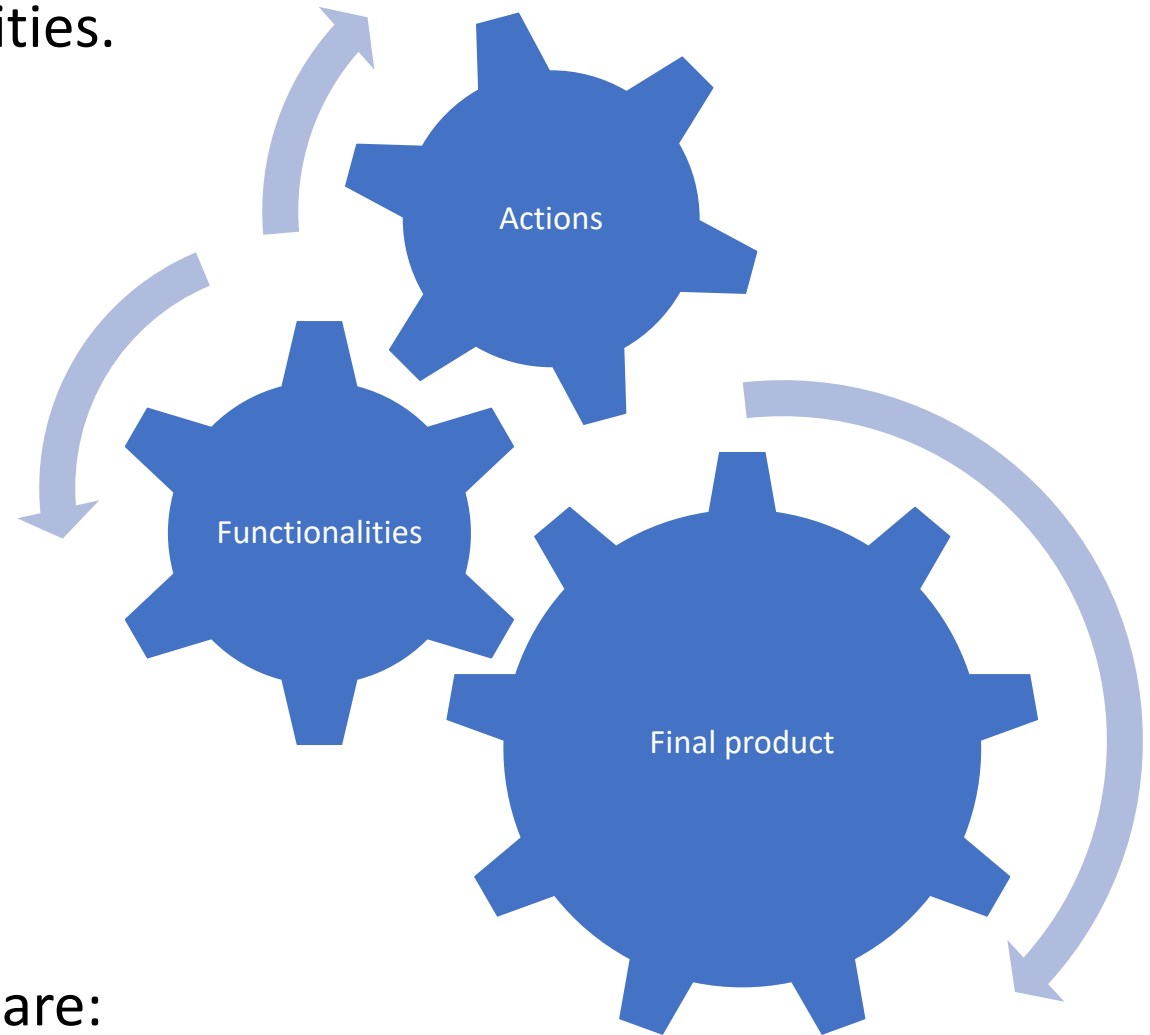


## 2. Processes



## 2. Processes

Processes = series of actions or actions taken in order to achieve a particular end product such as fiber, filament, yarn, woven, knit, nonwoven, garment with specific functionalities.



Processes are:

- manufacturing processes (including all classic processes);
- advanced manufacturing processes;
- disruptive manufacturing processes.

# Manufacturing Processes

## Textile manufacturing processes

### Yarns manufacturing

- Blow room
- Carding
- Drawing
- Combining
- Roving
- Spinning
- Winding

### Fabric manufacturing

- Warping
- Sizing
- Weaving
- Knitting
- Singeing
- Desizing
- Scouring
- Bleaching
- Mercerizing
- Dyeing
- Printing
- Shrinking
- Santorizing
- Calendering
- Raising

### Garment manufacturing

- Cutting
- Sewing
- Printing
- Dyeing

# Manufacturing Processes

- ➔ Development of new processes, tools and equipment allow manufacturing companies to produce products more efficiently.
- ➔ Advanced manufacturing processes involves the use of innovative technology to improved products and/or manufacturing processes.
- ➔ The four main types of manufacturing are casting and molding, machining, joining, and shearing and forming.

# Disruptive manufacturing processes

used in the industries of design and technology, and is referring to the movement of global technological and economical advancements that are revolutionizing the manufacturing industry.

This involves to used classic processes and 3D printing, digital manufacturing or robotics that allow rapid manufacturing of the sustainable products.

# Emerging disruptive technologies

such as **3D printing, advanced robotics**, used in manufacturing and assembly, digital manufacturing for production optimization, generate the reduction of the time and waste and sustainability of the manufacturing industry.

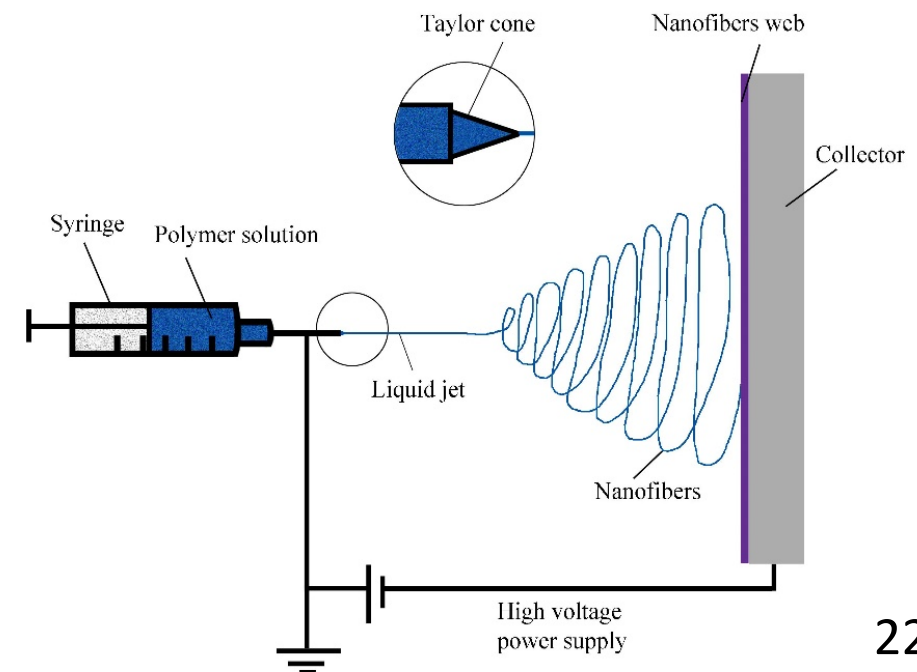


# Electrospinning

is a process when due to electrostatic forces fine polymeric fibres are forming. Formation of electrospun fibres is possible as well as from polymer solution as well as from polymer melt. Usually are forming fibres in the range from 20 nanometres till 2 microns.

Electrospinning process:

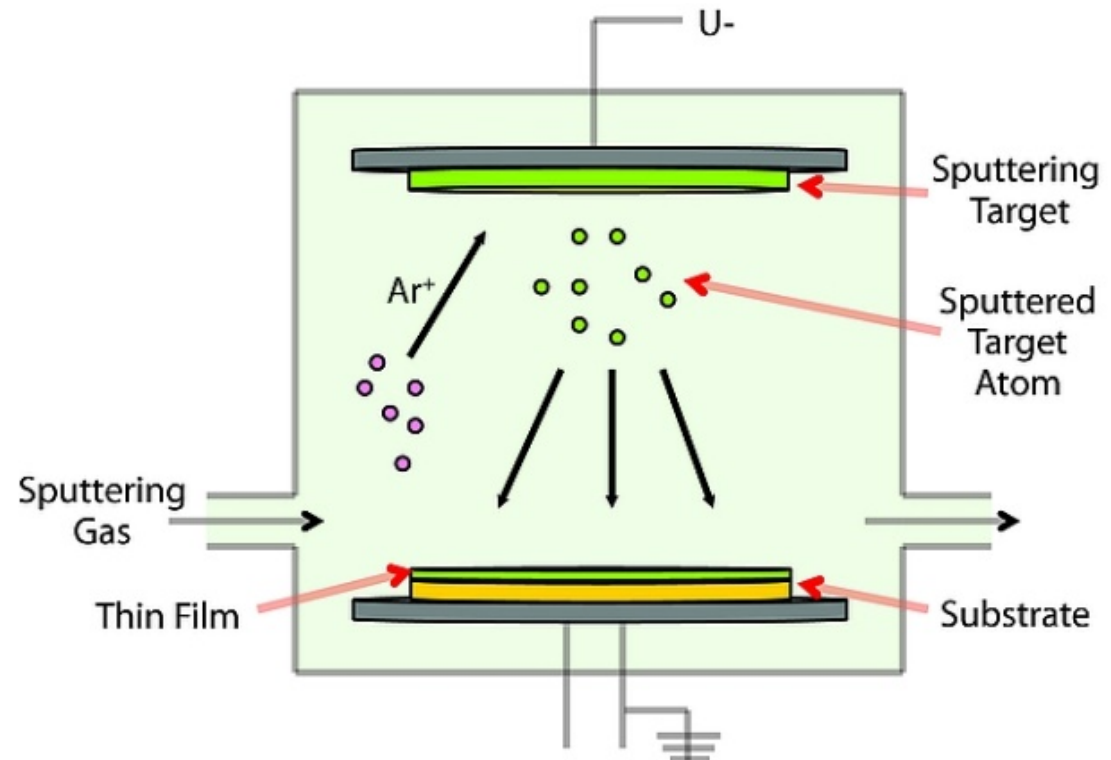
- ➔ nanofibres with a very low mass;
- ➔ used functional properties creation.





# Physical vapour deposition (PVD)

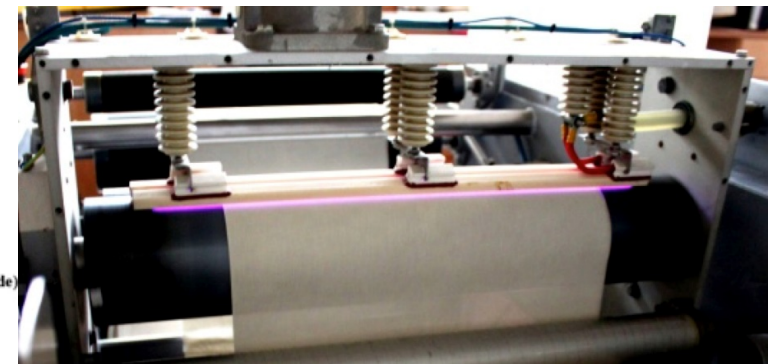
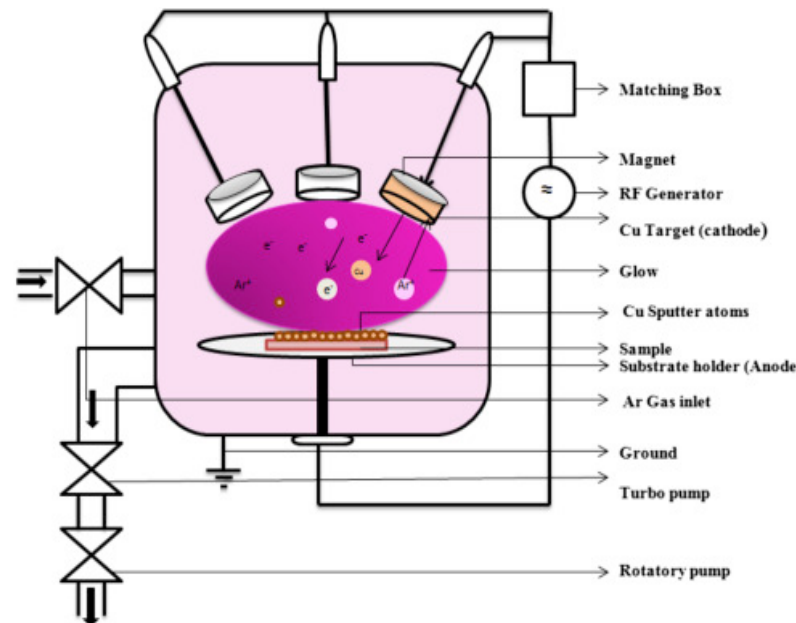
is a process used for functionalization of the surface of materials with thin layers, typically in the range of few nanometers to several micrometers and can be applied in electronics, biomedicine (thin-film drug delivery systems).



# Plasma technology

offers an attractive way to add new functionalities to textiles, due to the major chemical and physical transformations, that are brought:

- Changes in the chemical properties of the surface layers
- Changes into the structure of the surface layer
- Changes in the physical properties of the surface layers.
- Coating textile materials with metals (Cu, Ag)

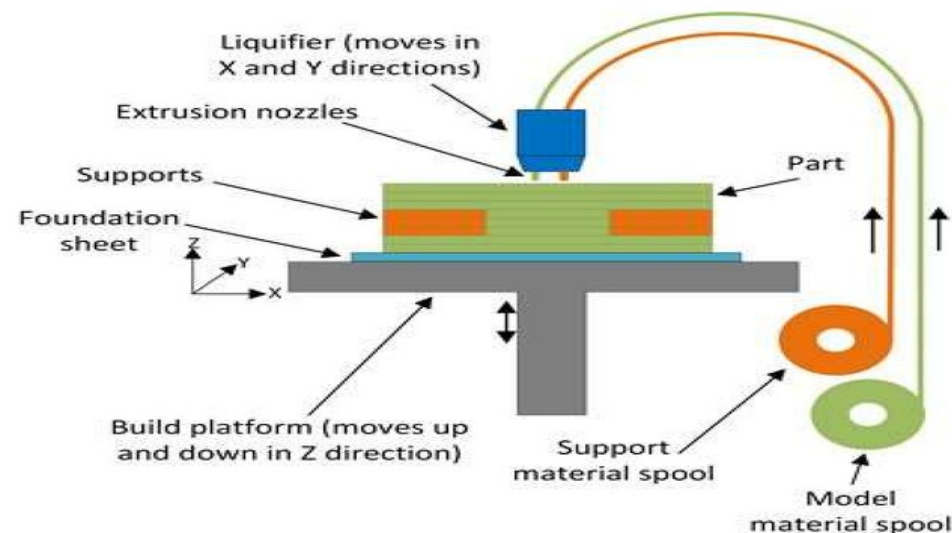


## 2. Processes

### 3D printing conductive technology

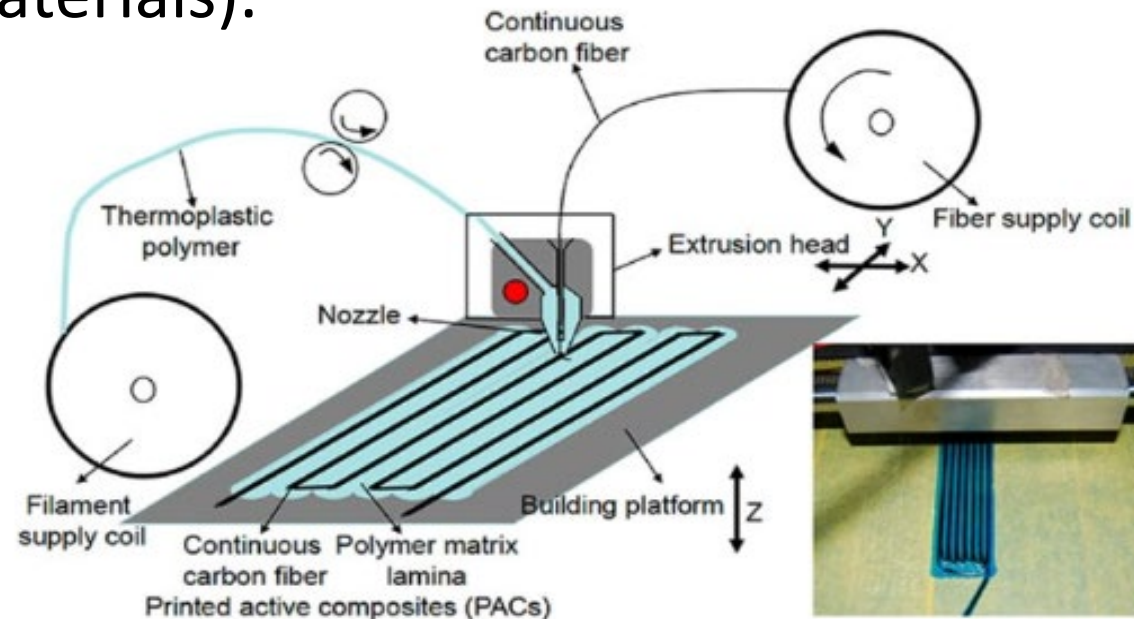
involves additive manufacturing used to fabricate conductive components (circuitry, sensors, EMI and RF shields) using different processes:

- ➔ FDM process involve a layer-by-layer extrusion of heated filament materials;
- ➔ LDM process for the fabrication of conductive 3D nanocomposite
- ➔ SC3DP process for the fabrication of the conductive CNT/PLA nanocomposites used for EMI shielding applications.



### 4D printing technology

is used for composite materials and represents a combination of 3D printing technology and the dimension of transformation over time (smart materials).





### Spin-knit technology

can spin the yarn from rovings that are mounted close to the machine and knit the fabric from the spun yarn on the same machine. In this way, the production process is shortened, leading to lower production costs, less energy consumption than the conventional process, lower CO<sub>2</sub> emission level.



## Lecture 3

# **Sustainability – Textiles in a circular economy**

Content curated by:

AEI TEXTILS – Associacio Agrupacio d'Empreses Innovadores Textils

CRE.THI.DEV – Creative Thinking Development

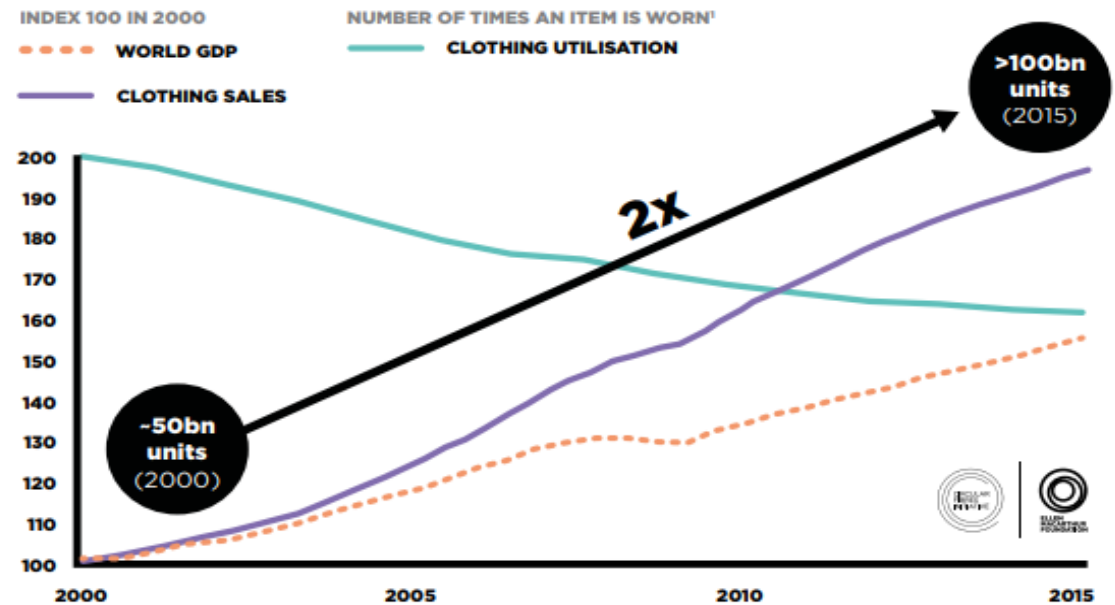
### 3. Sustainability

In the last 15 years, clothing production has approximately doubled, driven by a growing middle-class population across the globe and increased per capita sales in mature economies. The latter rise is mainly due to the 'fast fashion' phenomenon, with quicker turnaround of new styles, increased number of collections offered per year, and – often – lower prices.

## Textile & Clothing sector

Textiles and clothing are a fundamental part of everyday life and an important sector in the global economy. Globally, the **USD 1.3 trillion** clothing industry employs more than **300 million** people along the value chain.

**FIGURE 1: GROWTH OF CLOTHING SALES AND DECLINE IN CLOTHING UTILISATION SINCE 2000**



1 Average number of times a garment is worn before it ceases to be used

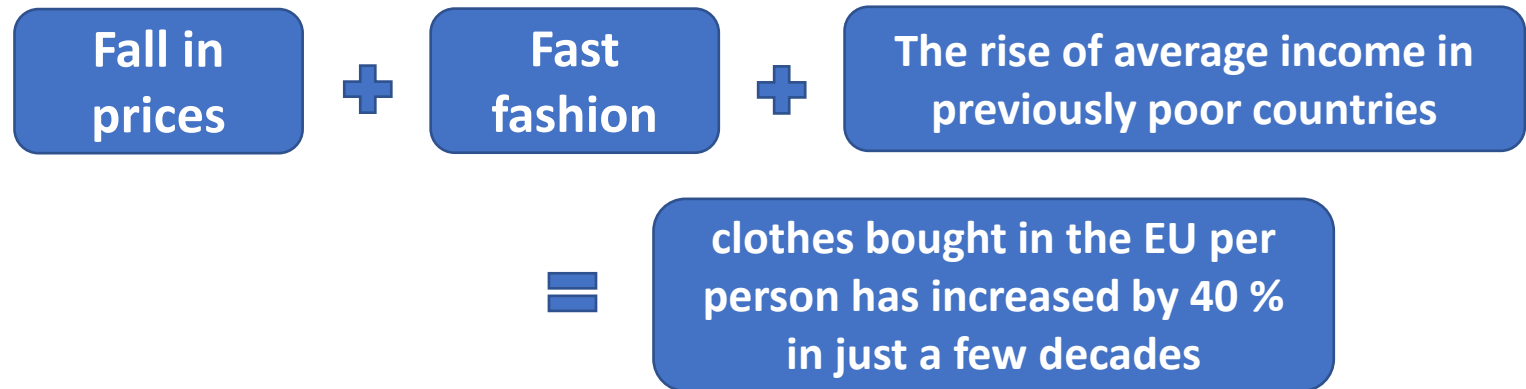


### 3. Sustainability

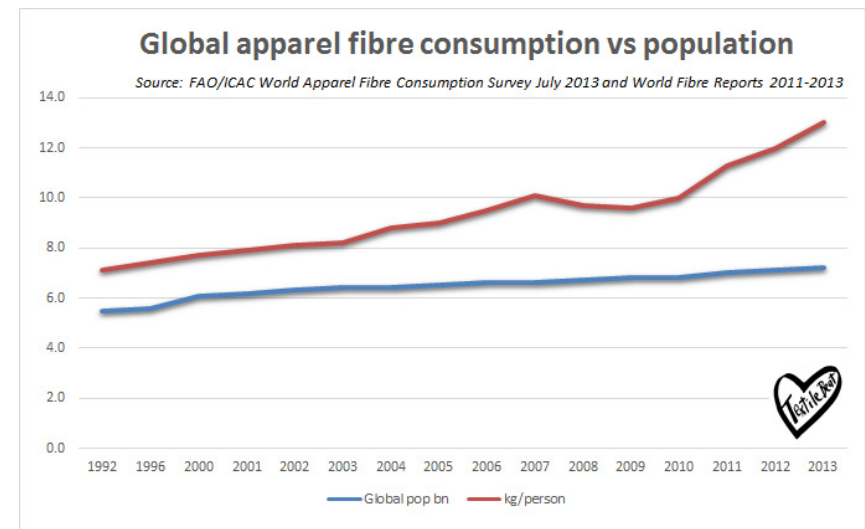
The amount of clothes bought in the EU per person has increased by 40 % in just a few decades, driven by a fall in prices and the increased speed with which fashion is delivered to consumers. We are now around a yearly textiles consumption of 13kg per capita, compared to 5 of 1960 and 8 of 2000.

Factors contributing to this increase: the rise of average income in previously poor countries (resulting in more people accessing a “westernized” lifestyle with its patterns of consumption), and a general higher expenditure in fashion; the booming of the so-called “fast fashion”, impressing a much higher speed in the linear model production-consumption-disposal also for garments.

## We need to move away from a ‘linear’ model towards a ‘circular’ one



- Now: yearly textiles' consumption approx. 13kg per capita
- 5kg in 1960 and 8kg in 2000



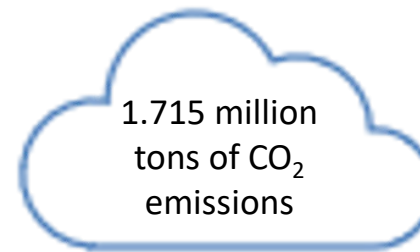
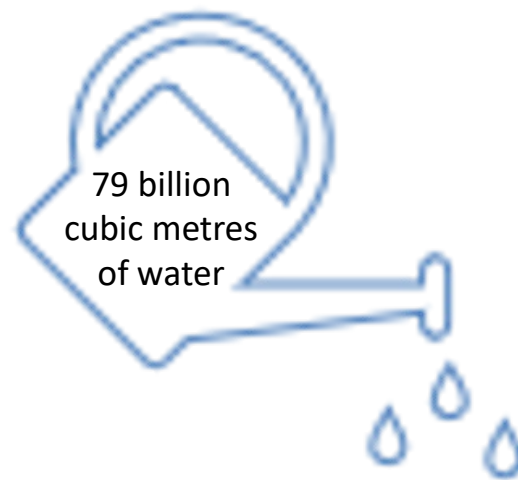
### 3. Sustainability

The 2017 Pulse of the Fashion Industry report, estimated that in 2015, the global textiles and clothing industry was responsible for the consumption of 79 billion cubic metres of water, 1 715 million tons of CO<sub>2</sub> emissions and 92 million tons of waste. It also estimated that by 2030, under a business-as-usual scenario, these numbers would increase by at least 50 %.

It is a trend that is seriously stressing the production system in its whole supply chain: from raw material to the use of energy and water during the various manufacturing steps to the products' end of life.

## Environmental impact of EU consumption of textiles and clothing

In 2015, the global textiles and clothing industry was responsible for the consumption of:



92 million tons of waste

By 2030 these numbers could increase by at least 50 %.

Serious stress on the production system in its whole supply chain:

- raw matter,
- use of energy and water (fibres, yarns, textiles, garments),
- products' end of life.



<1% is recycled into new clothes

### 3. Sustainability

Consumer use also has a large environmental footprint due to the water, energy and chemicals used in washing, tumble drying and ironing, as well as to microplastics shed into the environment.

Large amounts of nonrenewable resources are extracted from the earth to produce clothes that are often used for only a short time, after which they are discarded.

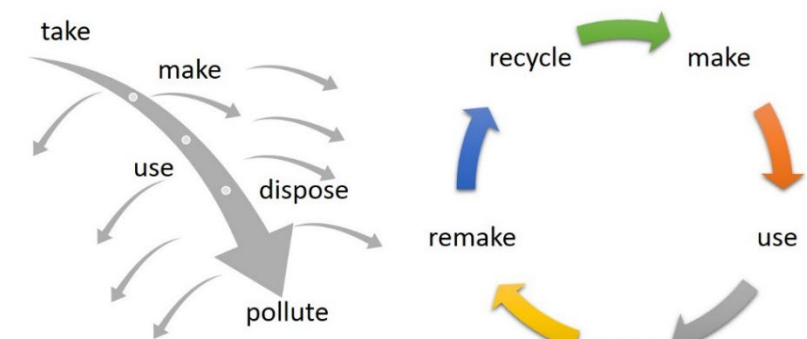
Less than half of used clothes are collected for reuse or recycling when they are no longer needed, and only 1% are recycled into new clothes, since technologies that would enable recycling clothes into virgin fibres are only starting to emerge.

## We need to move away from a 'linear' model towards a 'circular' one

In the last 15 years:

- the average number of times a garment is worn before end of use has dropped by 20%
- Clothing sales almost doubled

➡ *Shift to circular economy*  
➡ *Policy actions: EU circular economy package to ensure that textiles are collected separately in all Member States, by 2025 at the latest.*



CC 3.0 Catherine Weetman 2016

### 3. Sustainability

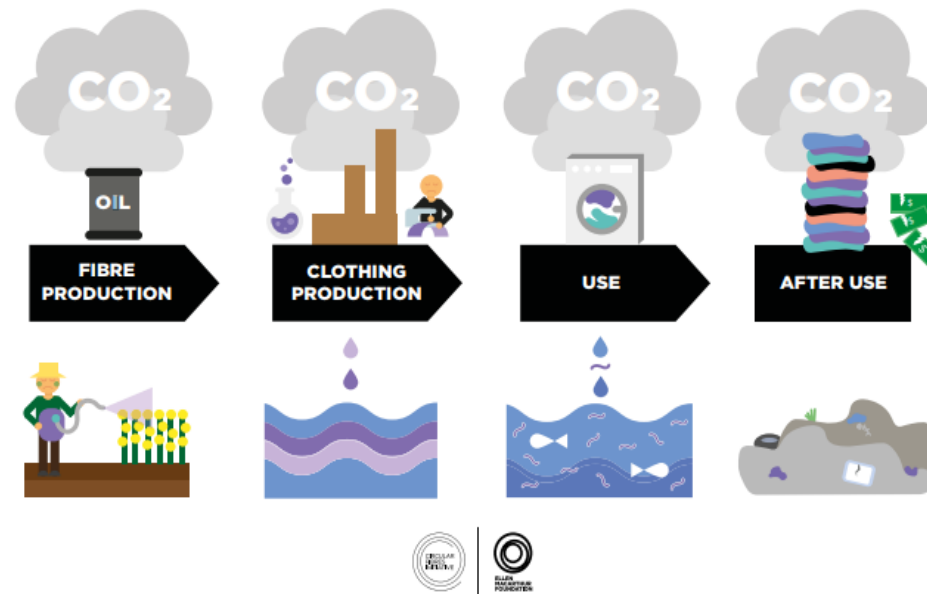
The current system for producing, distributing, and using clothing operates in an almost completely linear way.

Large amounts of nonrenewable resources are extracted to produce clothes that are often used for only a short period, after which the materials are largely lost to landfill or incineration. It is estimated that more than half of fast fashion produced is disposed of in under a year. This linear system leaves economic opportunities untapped, puts pressure on resources, pollutes and degrades the natural environment and its ecosystems, and creates significant negative societal impacts at local, regional, and global scales.

## Current clothing system is extremely wasteful and polluting

The current system for producing, distributing, and using clothing operates in an almost completely linear way.

**FIGURE 2:** TODAY'S CLOTHING SYSTEM PUTS PRESSURE ON RESOURCES, POLLUTES THE ENVIRONMENT, AND CREATES NEGATIVE SOCIETAL IMPACTS



The recent *Pulse of the fashion industry report* estimated that the overall benefit to the world economy could be about EUR 160 billion (USD 192 billion) in 2030 if the fashion industry were to address the environmental and societal fallout of the current status quo.

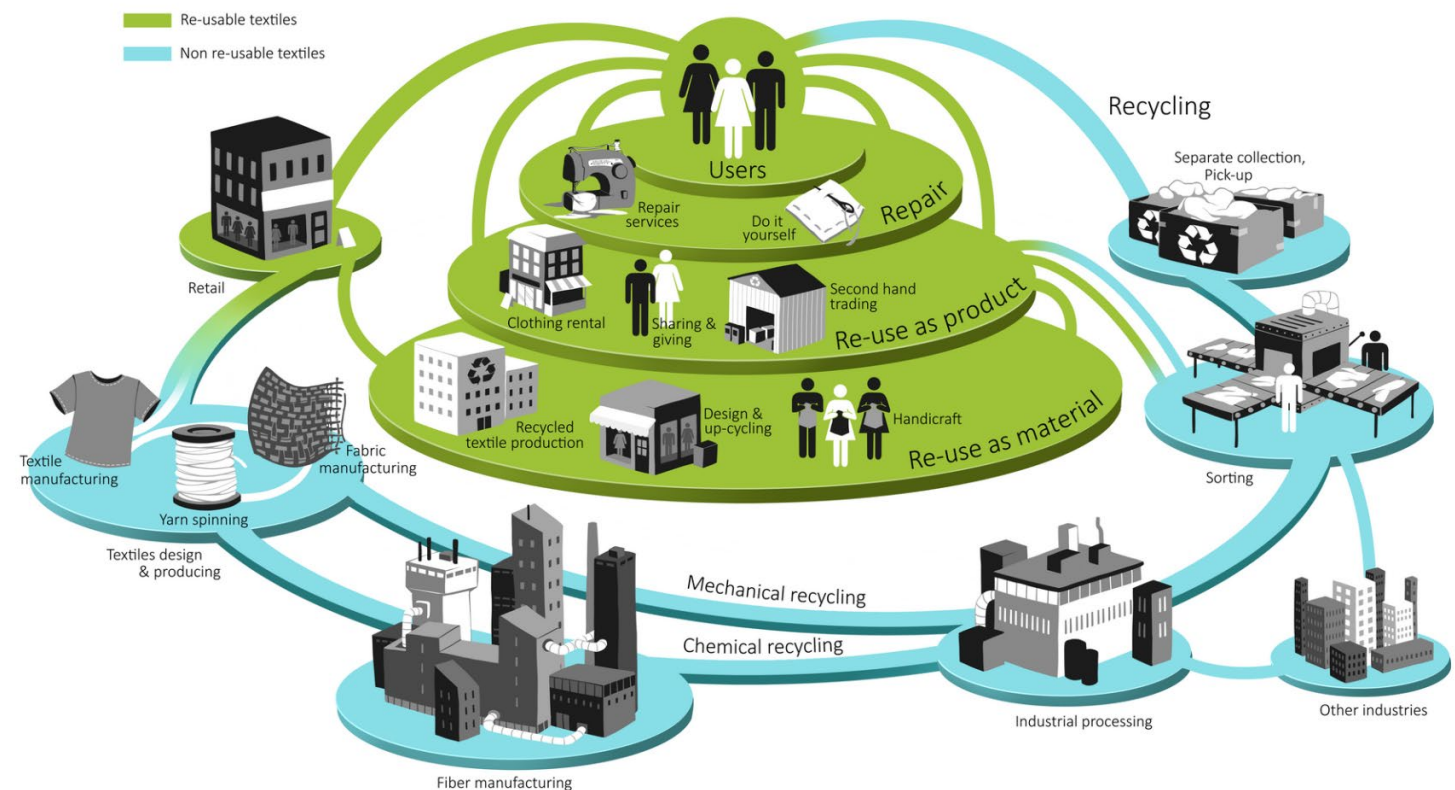


### 3. Sustainability

Products and materials flow through a closed loop system by way of repair and maintenance, sharing and rental, re-use of materials and products, collection after use, separation, sorting, industrial processing, design and upcycling, and recycling into fashion products or into other industries (or from other industries). The system only uses safe material inputs, regenerates ecosystems and does not pollute the environment; processes run on renewable resources and energy, and recycled materials streams are clean. Competition from cheap, low-quality products is eliminated.

## Circular fashion economy

In a 'circular' or 'flow' fashion economy, clothes, textiles and fibres are kept at their highest value during use, and re-enter the economy to avoid becoming waste, benefitting business, society and the environment.



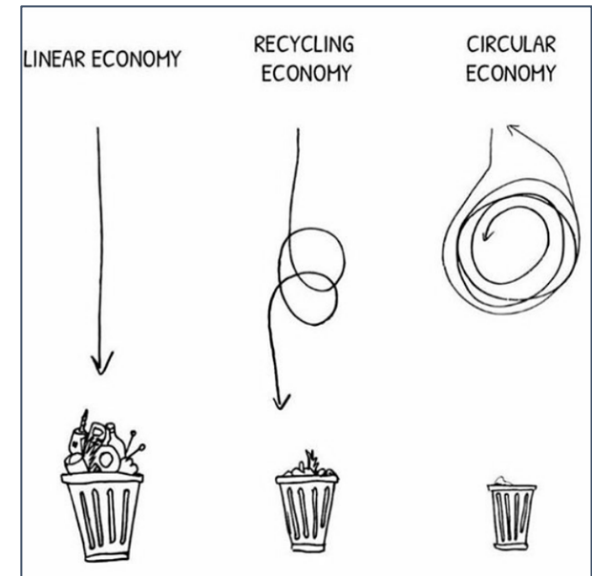
### 3. Sustainability

The transition towards a circular economy represents a fundamental paradigm shift and transformation of industrial operations in which waste is understood as a valuable resource – or, in fact, the concept of waste is entirely eliminated by designing products for defined application scenarios, disassembly and recycling in either biological or technical cycles. Additional strategies of circular economy include the setting of a circular supply chain; the extensions of a product's life; the development of sharing platforms; and the shift from products to services.

## Circular Economy

Intervening in all the product's life cycle:

- design,
- manufacturing,
- logistics,
- retail,
- use,
- after use, such as:
  - reuse,
  - repair,
  - recycle.



Linear	Circular
Raw materials and wastes	Raw materials only
competition	Collaboration
individuals	Ecosystem
Do less bad	Do good and positive
Added value	Shared value
Standardized production	Local and adapted production
down cycling	Upcycling

### 3. Sustainability

Sustainable Fashion can be defined as “An emerging set of design philosophies and business practices for managing triple bottom line impacts (economic, social and environmental) linked to the lifecycle of apparel, footwear, accessories and other fashion goods”.

At the same time, Sustainable Fashion Consumption is: “The use of clothing for purposes beyond utilitarian needs, for purposes that include “identity making,” and which is achieved without jeopardizing the ability of future generations to meet their needs”.

## The value chain: sustainability issues

The current ‘take-make-dispose’ clothing system is extremely wasteful and very polluting. Beyond ongoing efforts, a new system for the textiles economy is needed. In such a model, clothes, fabric, and fibres re-enter the economy after use and never end up as waste. This vision relies on four ambitions: phase out substances of concern and microfibre release; transform the way clothes are designed, sold and used; radically improve recycling; make effective use of resources and move to renewable inputs.





### 3. Sustainability

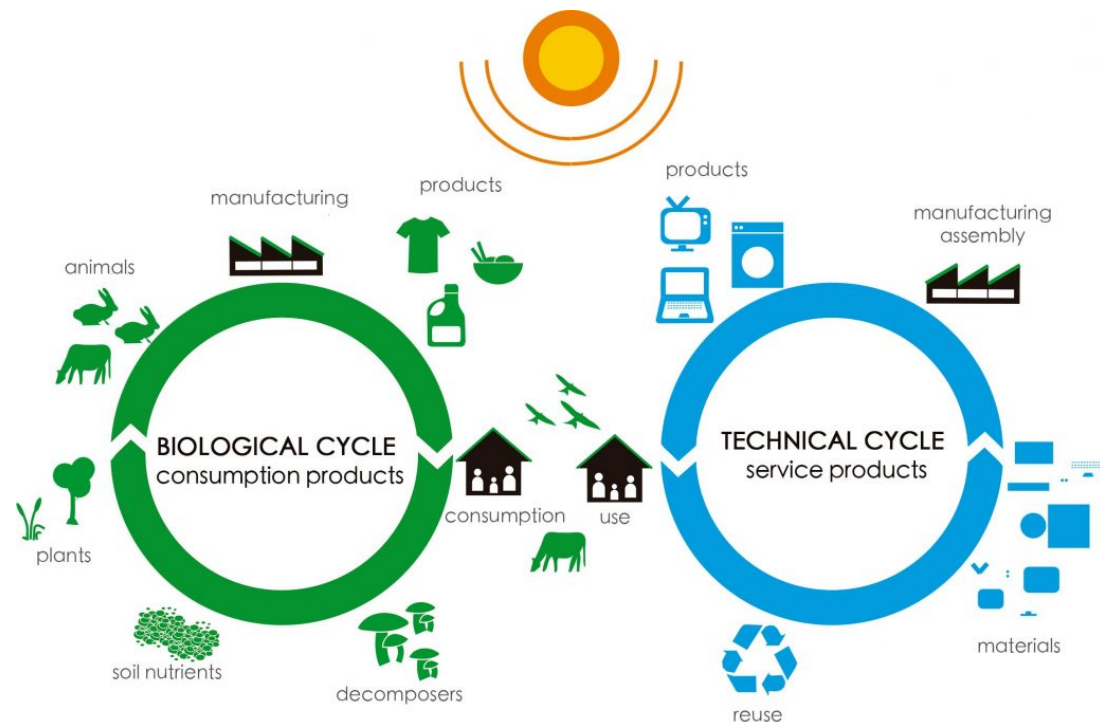
The circular economy is described as restorative and regenerative by design, fostering system-wide innovation and redefining products and services to eliminate the concept of waste whilst minimising negative impacts and creating positively defined (i.e. material health) products for specific circular application scenarios.

Technical cycles are based on: setting of a circular supply chain; the extensions of a product's life; the development of sharing platforms; and the shift from products to services. Accordingly, biological cycles comprise materials that are beneficial to human health and the environment, thus enabling new organic growth as a biological nutrient once they reach the end of use.

## Circular Economy: Technical & Biological circles

### Waste is understood as a valuable resource

The concept of **waste** is **eliminated** by designing products for defined application scenarios, disassembly and recycling in **either biological or technical cycles**

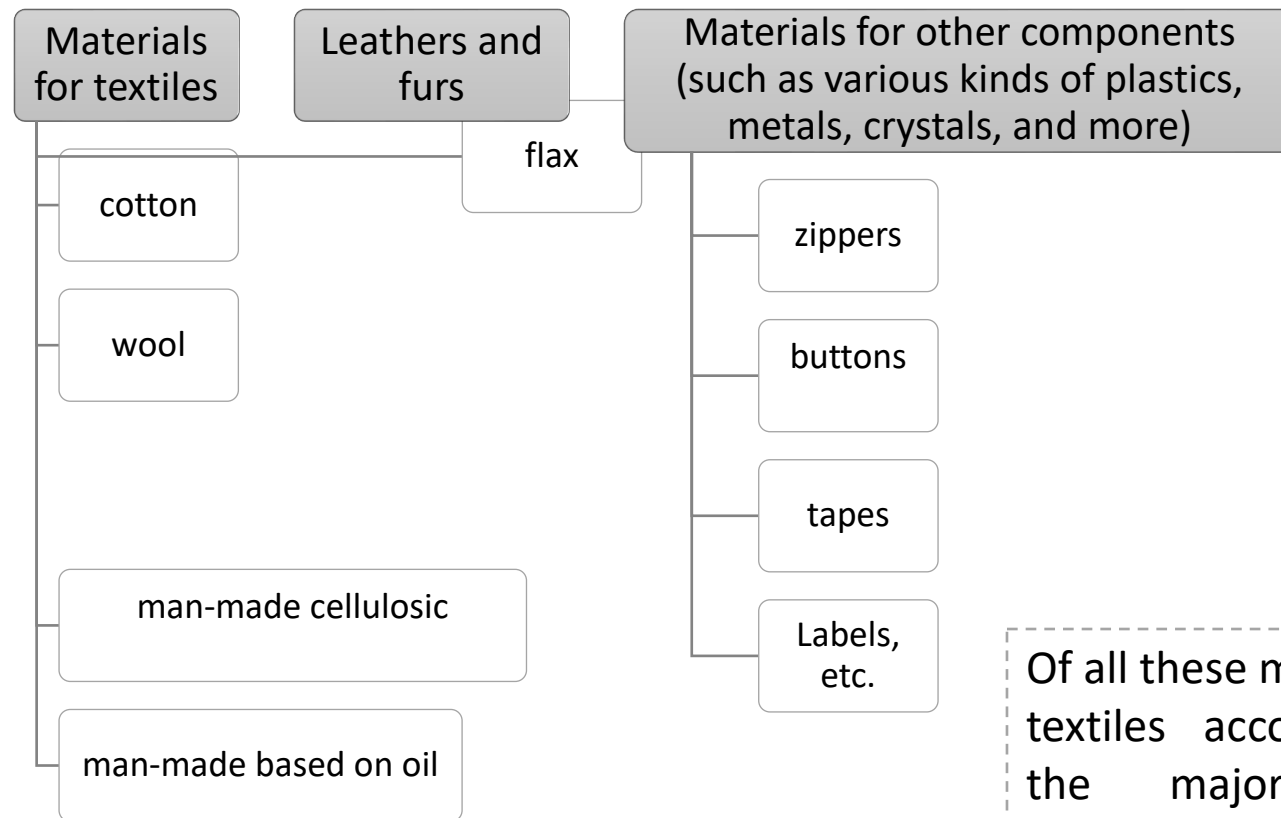


### 3. Sustainability

Materials for textiles, usually grouped into 5 main categories (cotton, wool, flax, man-made cellulosic, man-made based on oil); leathers and furs; materials for other components (zippers, buttons, tapes, labels, etc.), such as various kinds of plastics, metals, crystals, and more. Of all these materials, textiles account for the majority of consumption.

## New materials for a circular fashion

Fashion industry is a complex system based on the single materials of which garments are made.



Of all these materials, textiles account for the majority of consumption.

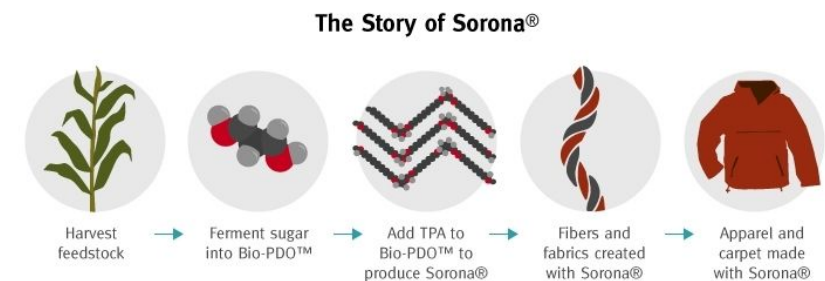
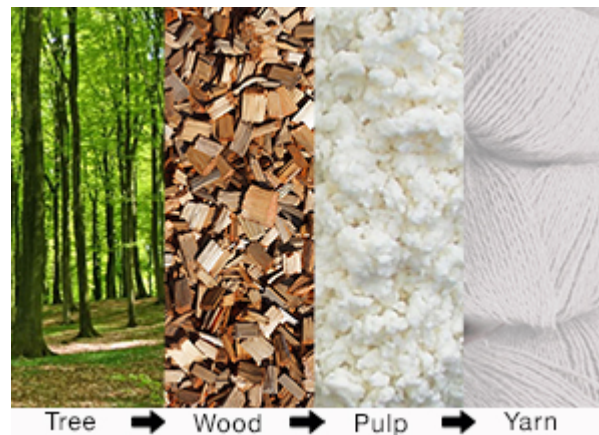
### 3. Sustainability

Despite the percentage of “circular materials” is still very low, the new materials are not just experimental, niche products, but are often proposed by international corporations and major players in the polymer, fibre, yarn, and textile markets, and can provide performances that are similar, and in some cases even superior, to standard ones.

## New materials for a circular fashion

Available materials to support a circular approach to the fashion industry by:

- developing yarns from bio-based sources other than cotton, which has proved to have a significant environmental impact
- replacing harmful chemicals with bio-based, biodegradable alternatives
- introducing recycled materials and new recycling processes
- using biodegradable and compostable resins (be them bio-based or not) both to create filament yarns, and to manufacture accessories



Sorona® is made, in part, with annually renewable plant-based ingredients.

### 3. Sustainability

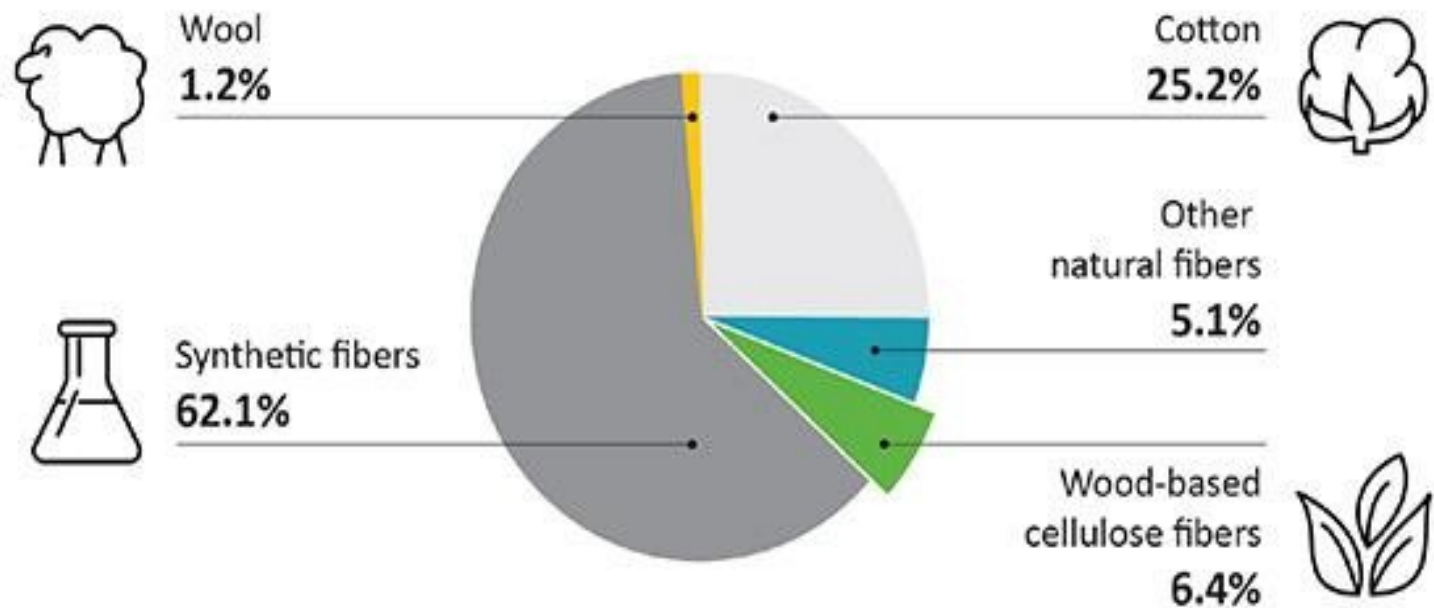
Global fiber consumption was estimated at 95.6 million tons in 2015. The majority of which are polyester fibers – comprise the largest share at 62.1%, followed by cotton with a 25.2% share.

The fabric material landscape has been transformed over the past couple of decades with ongoing innovations in new or enhanced fabric materials. Innovations such as heat insulating, water-proof fabrics, create new possibilities in apparel design and production.

## World Fiber consumption

Innovations in fabric materials such as heat insulating, water-proof fabrics, create new possibilities in apparel design and production

**Figure 1. Global Fiber Consumption in 2015**



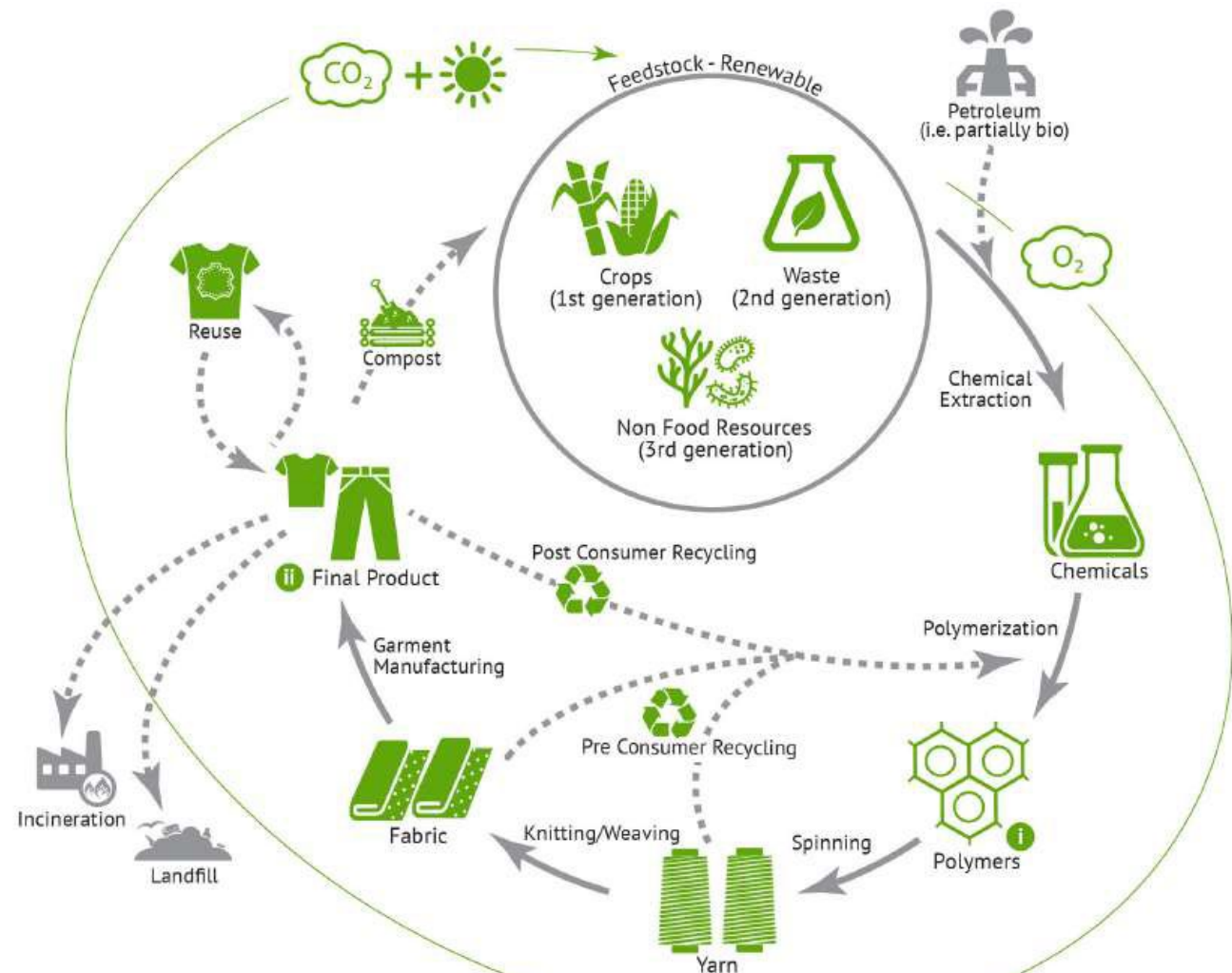
Source: Lenzing AG



### 3. Sustainability

A biosynthetic fiber consists of polymers made from renewable resources, either in whole or partly. Biosynthetics are emerging as a potential alternative to conventional synthetic products. The main difference between biosynthetic fibers and conventional synthetic fibers lies in the raw materials used. Conventional synthetics, such as polyester, nylon and acrylic, use raw materials derived from fossil fuels, such as petroleum, natural gas and coal. Biosynthetic fibers can be made from 100 percent biobased as well as partially biobased resources.

### What are biosynthetics



Overview of the Biosynthetic Life Cycle

- i Processed using (i) drop in or (ii) new processing route. The method used will impact the cost, scale up and sustainability impact.
- ii End of life impact depends on feedstock & bio content



## Lecture 4

# **Marketing – Practices and digital solutions**

Content curated by:

UNIWA – University of West Attica

UMINHO – University of Minho

## 4. Marketing

What do you think about it?

In my opinion, marketing is...

## Marketing can be...

**Table 1.1** Definitions of marketing

Defining institution/author	Definition
The Chartered Institute of Marketing (CIM)	'The management process of anticipating, identifying and satisfying customer requirements profitably' (CIM, 2001)
The American Marketing Association (AMA)	'Marketing is the activity, set of institutions, and processes for creating communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large' (AMA, 2007)
A French perspective	<i>'Le marketing est l'effort d'adaptation des organisations à des marchés concurrentiels, pour influencer en leur faveur le comportement de leurs publics, par une offre dont la valeur perçue est durablement supérieure à celle des concurrents'</i> [broadly, 'Marketing is the endeavour of adapting organizations to their competitive markets in order to influence, in their favour, the behaviour of their publics, with an offer the perceived value of which is durably superior to that of the competition'] (Lendrevie et al., 2006)

## 4. Marketing

Can you see marketing around us?

A fashion topic to discussion:

#Zara

#Gap

## Marketing, a guru definition...Kotler.

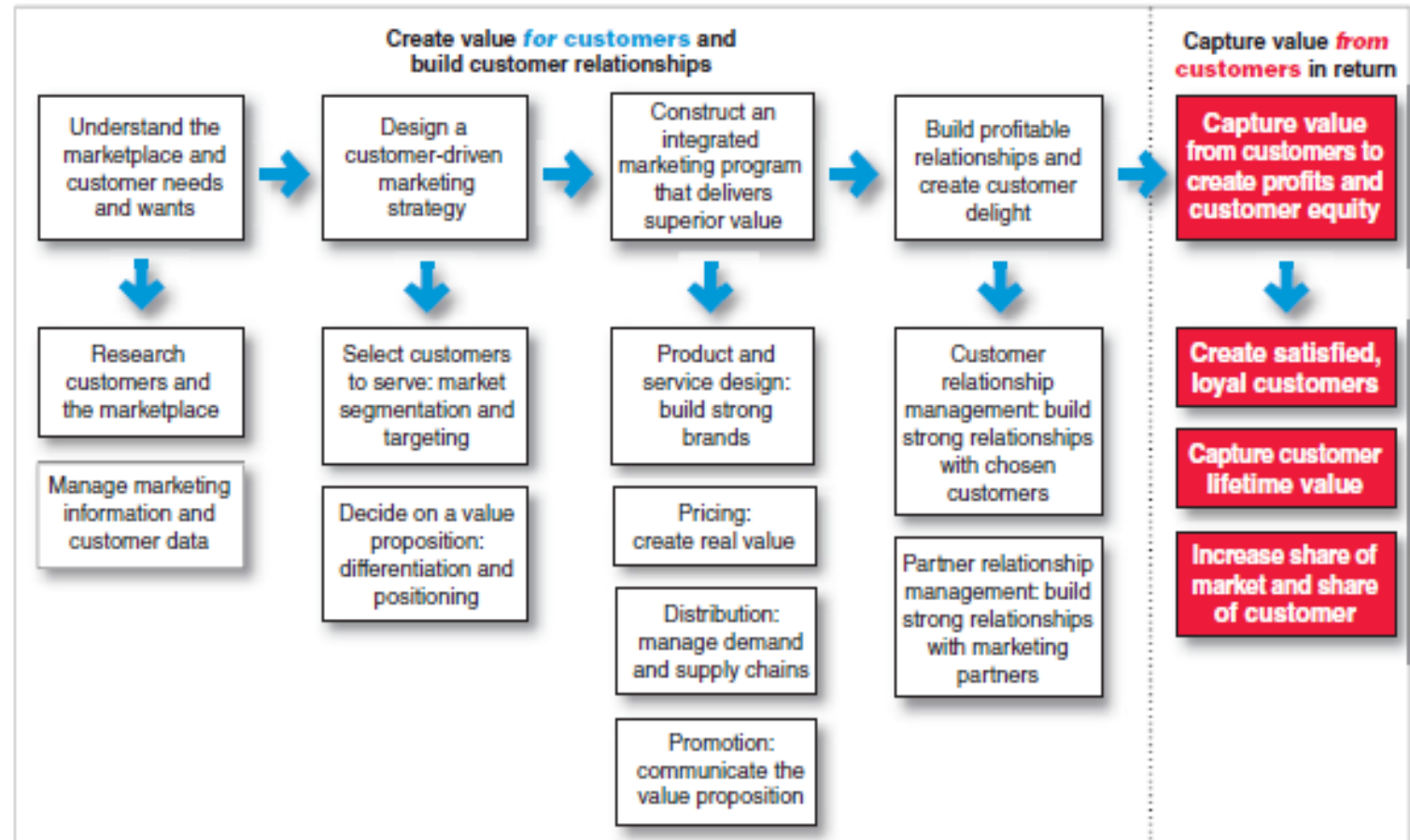
*“The marketing concept holds that achieving organisational goals depends on determining the needs and wants of target markets and delivering the desired satisfactions more effectively and efficiently than competitors do.”*  
Kotler et al (1996)

## 4. Marketing

1st block:  
create value for customers and  
build customer relationship

2nd block:  
capture value from customers  
in return

## Marketing process



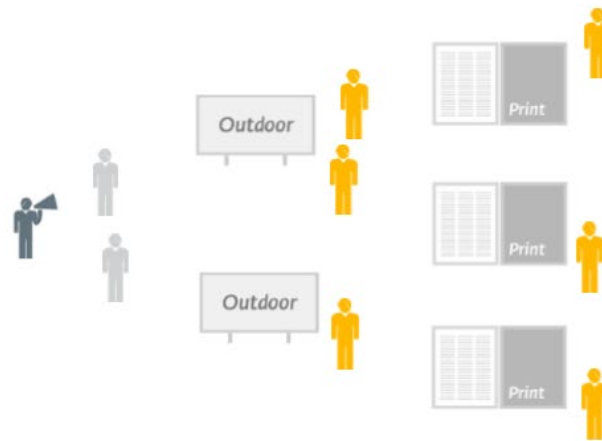
## 4. Marketing

# Digital marketing

Traditional marketing

VS

Digital marketing



TRADITIONAL      DIGITAL





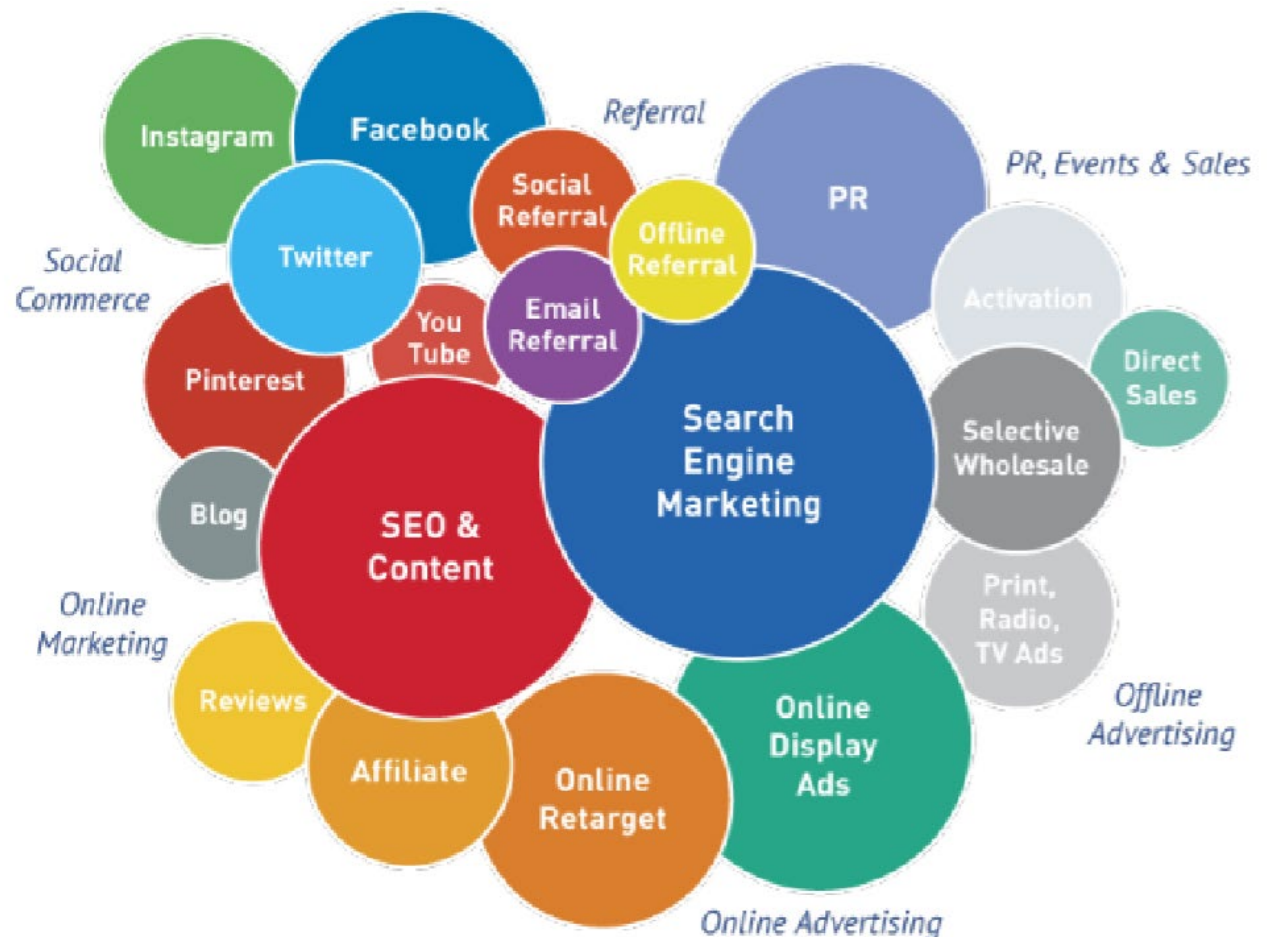
## 4. Marketing

SEO:  
Search Engine Optimization

SEM:  
Search Engine Marketing

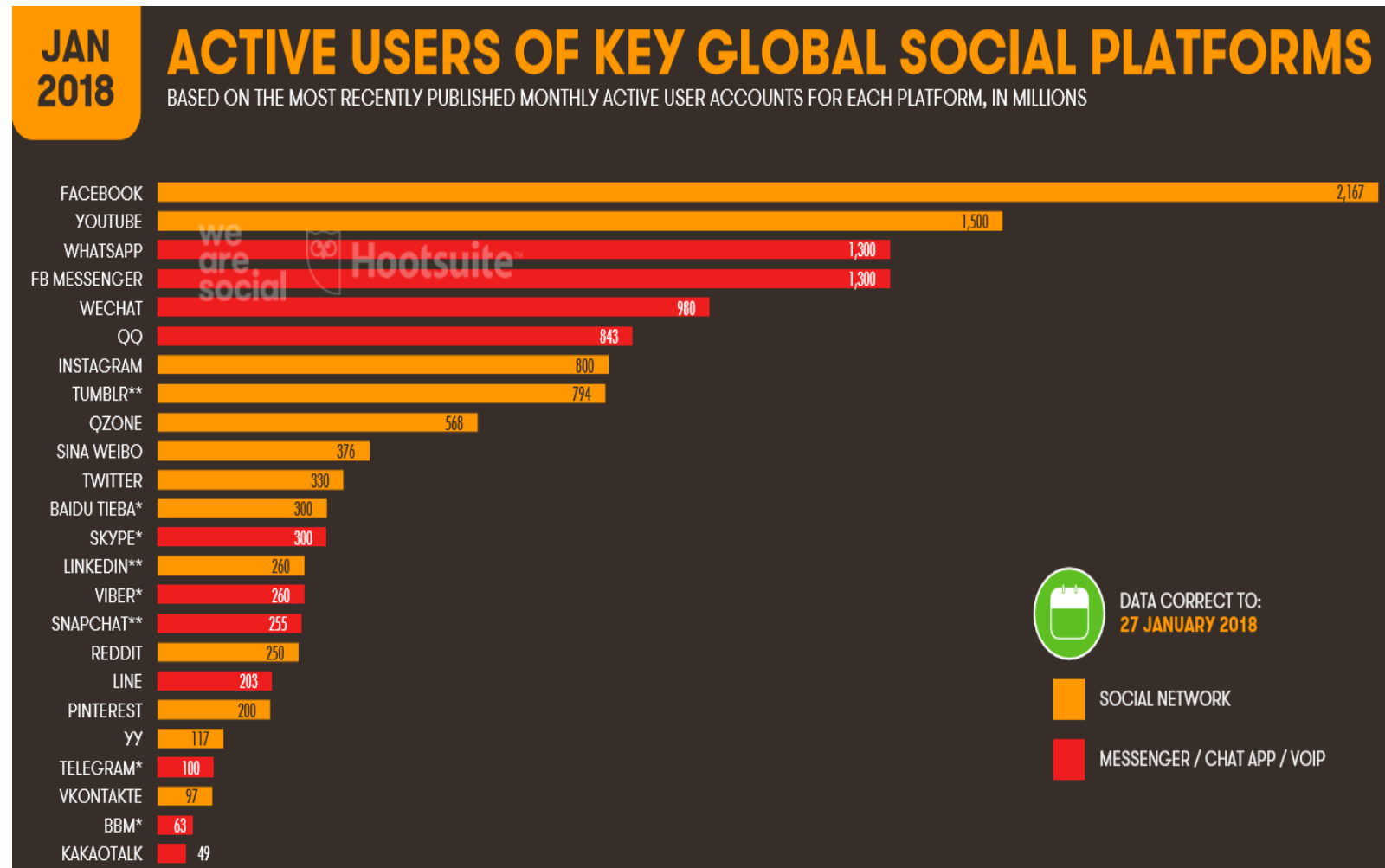
Social Media:  
FB  
Youtube  
Instagram  
Twitter

## Digital marketing: how to improve your performance?



## 4. Marketing

# Social media

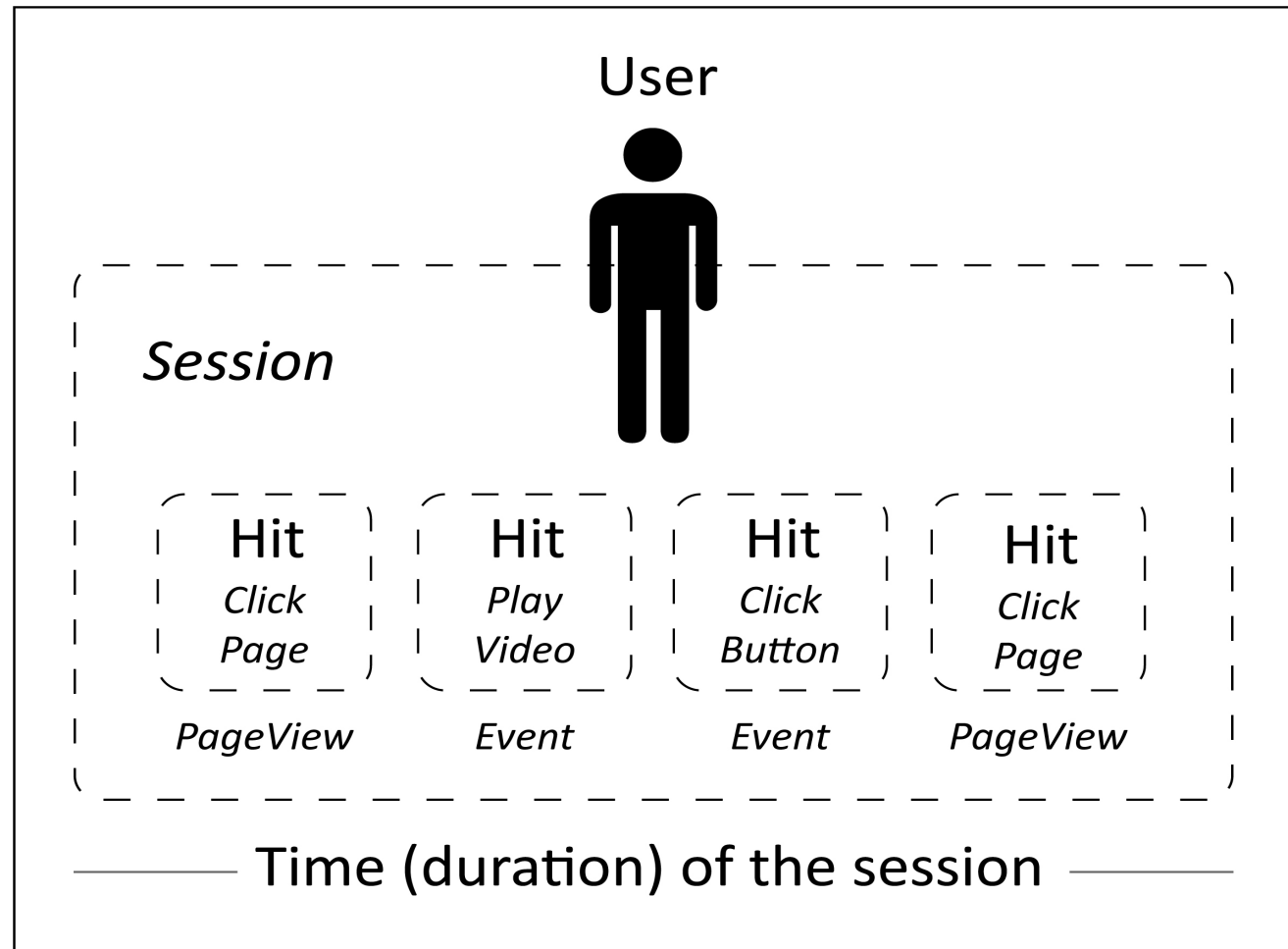


## 4. Marketing

Users  
Followers  
Session  
View  
Hit

Time & Money

# Measuring web activity (in fashion websites)



(User) >> (Session) >> (Hit)

## 4. Marketing

#Organic Search  
words in search engines (Google,  
Yahoo!, Bing, etc)

#Social  
ads or posts placed in the various  
social networks (Facebook,  
LinkedIn, Instagram, etc).

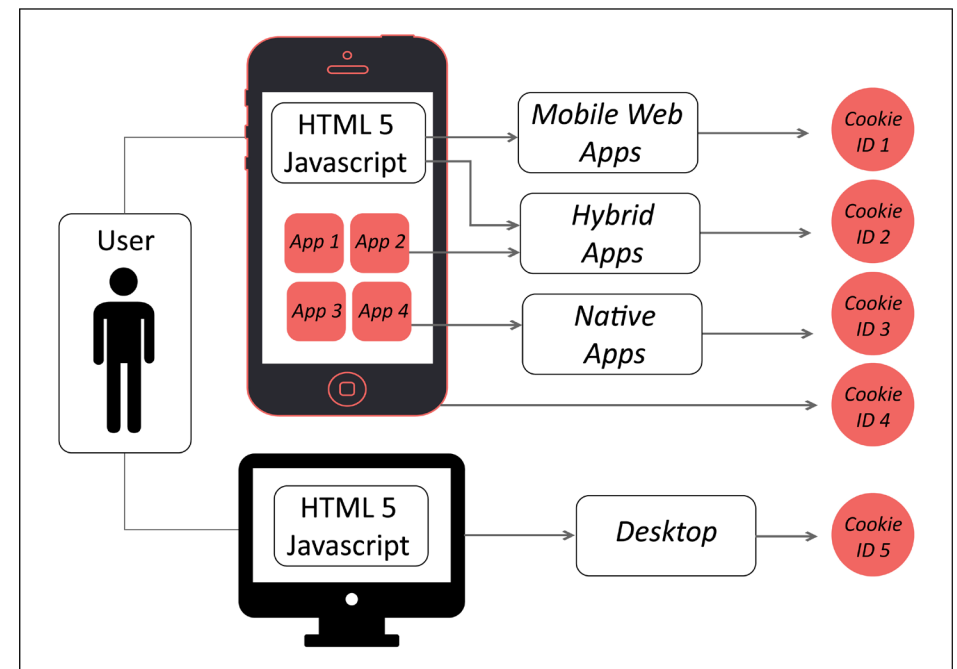
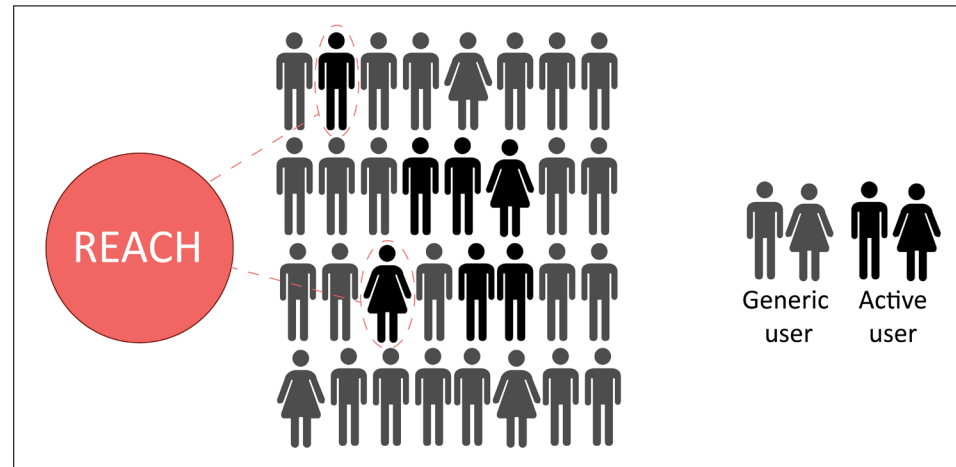
#Email  
marketing emails or newsletters.

#Direct  
direct URL, brand or organization  
website in the browser (browser).

#References  
visitors who arrived at the site of  
the brand through another site  
(direct link).

#Paid Search

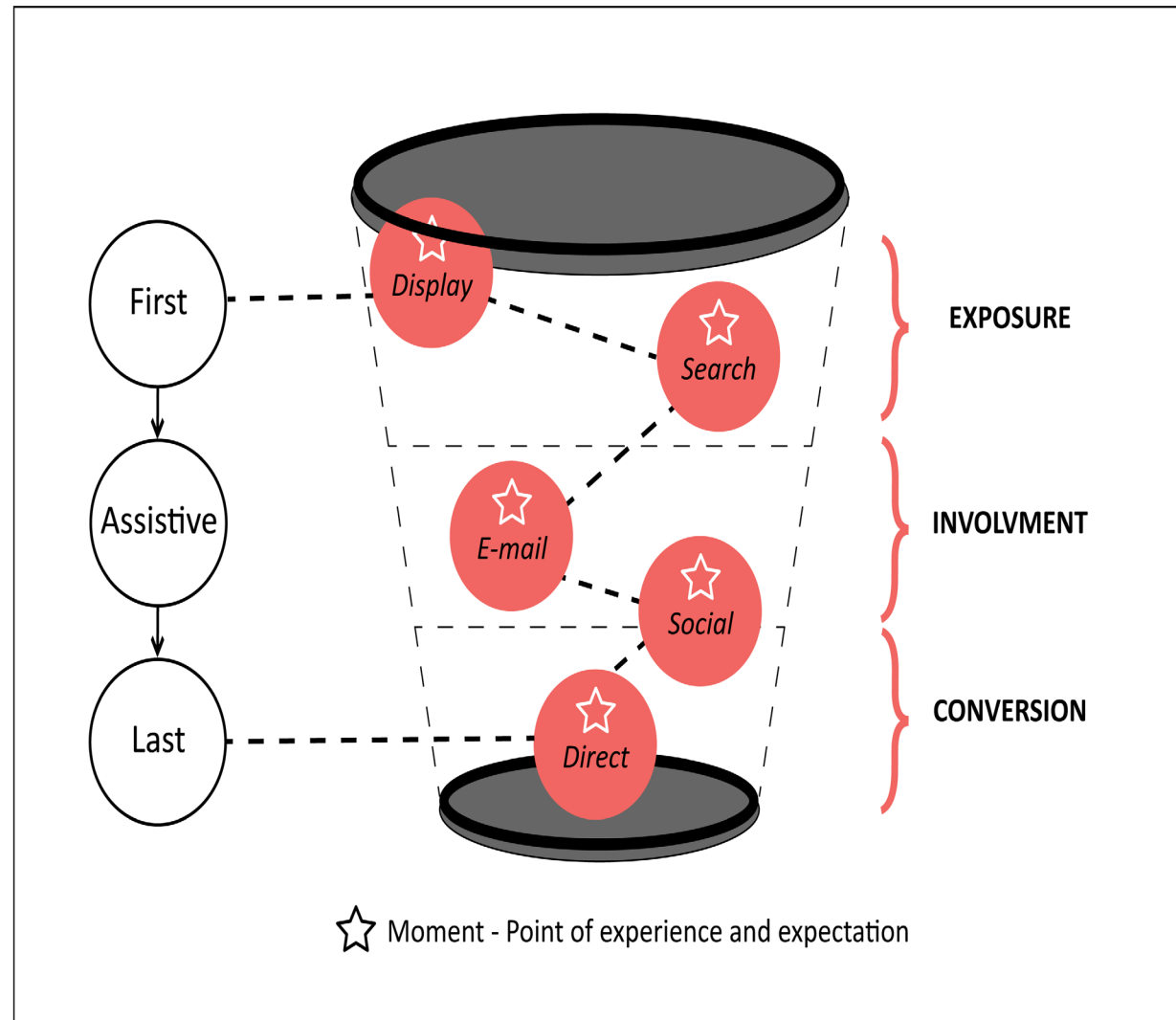
## User measurement in cross-device (mobile + desktop)



## 4. Marketing

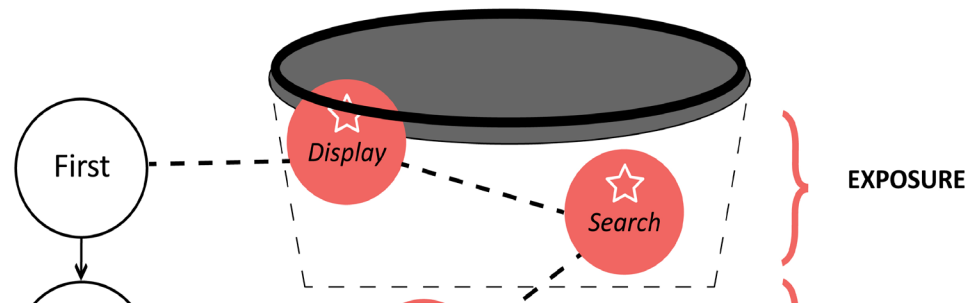
Can you see this glass when you are surfing in the web?

## Journey from display (see) to action (buy).





# CONSTRUCTION > EXPOSURE



Page views

Post Reach (paid, organic)

Audience (demography)

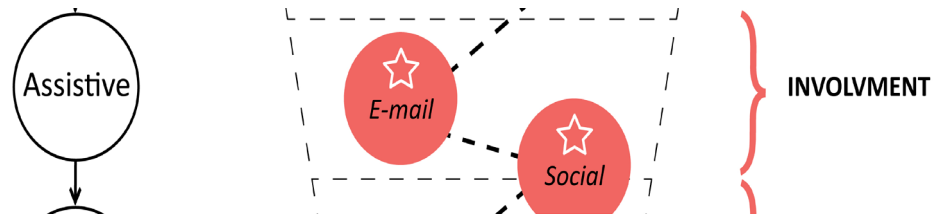
Page viewers (total visitors)

Influencers

Ad Impressions

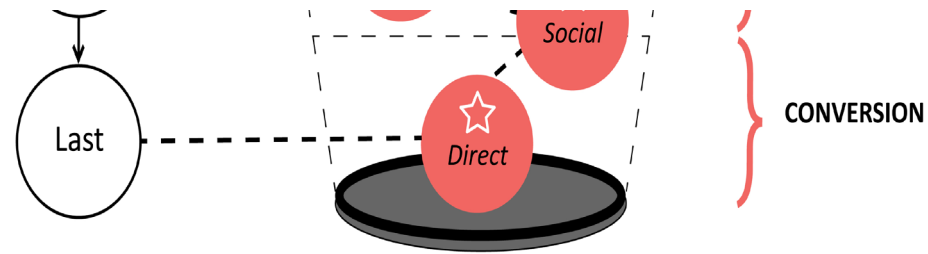
## 4. Marketing

# TRUST > INVOLVEMENT



Page likes
Video views
Seconds video views
Post clicks
Post engagement (reactions, comments, shares)
Engagement rate (total likes, comments, shares, clicks)
Likes and Net likes
Comments
Shares
Reactions
Clicks
Event reach
Event page views
Total conversations (messages)
Ad reach
Ad frequency

# ACTION > CONVERSION



Actions on page

Website tracking pixel

App tracking pixel

URL clicks

Ad click through rate

## Lecture 5

# **Business – Tools for the T&C sector**

Content curated by:

CIAPE – Centro Italiano per l'Apprendimento Permanente

ITTI – Institute for Technology Transfer and Innovations

## 5. Business

In today's business environment, sustaining growth and profitability is never a guarantee. Technological and scientific advances shorten life cycles of products and services, business models change and new competitors appear from outside the industry. This constant instability makes it necessary to seek new business opportunities.

# Opportunities for Business Growth

## 1. CONSUMER SEGMENTATION

To understand your demand, you must identify consumer segments that share common characteristics. These characteristics can be “hard” variables such as age, gender, place of residence, educational level, occupation and level of income or “soft” variables such as lifestyle, attitude, values and purchasing motivations.

Hard variables can help estimate the number of potential customers a business can have. For example, a nappies/diapers producer should know how many children under 3 years live in a certain country as well as the birth rate. Soft variables can help identify motivations that lead to purchasing decisions including price, prestige, convenience, durability and design.



# Opportunities for Business Growth

## 2 . PURCHASE SITUATION ANALYSIS

Purchase situations must also be examined to uncover expansion opportunities. Questions to ask when reviewing purchase analysis are:

- When do people buy our product or service?
- Is it when they need it?
- Where do people make the purchase?
- How do they pay?

## 3 . DIRECT COMPETITION ANALYSIS

In addition to analysing demand and purchasing situations, it is important to analyse supply. Knowing the existing players in the market where you are competing or going to compete is important when evaluating opportunities. Relevant questions in this case are:

- What are the products and brands of our industry that are growing more significantly and why?
- What is their value proposition?
- What competitive advantage do we have over them?

# Opportunities for Business Growth

## 4 . INDIRECT COMPETITIO ANALYSIS

Opportunities can also be found by analysing substitute industries. This type of analysis helps establish competitive advantages against indirect competitors and provide insight on additional opportunities for growth.

## 5 . ANALYSIS OF COMPLEMENTARY PRODUCTS AND SERVICES

Companies should monitor the performance of other companies' products, which are complementary to their own.

# Opportunities for Business Growth

## 6 . ANALYSIS OF OTHER INDUSTRIES

In some cases the objective of companies is not to continue operating within an industrial sector but to expand a certain business model or philosophy.

## 7 . FOREIGN MARKET ANALYSIS

When a company operates in a mature or saturated market, exploring other countries may lead to additional opportunities. Markets in different countries grow at different paces for several reasons, including disparities in the level of economic development and local habits. Knowing the evolution of per capita consumption of a given product in a given country can serve as an indicator of the maturity of the product's life cycle.

# Opportunities for Business Growth

## 8 . ENVIRONMENT ANALYSIS

Market opportunities can also be identified by analysing changes in the environment with technological and scientific developments generating new business opportunities. Changes in a country's regulatory framework can also create opportunities.

## Further Reading

This document presents an overview of the contents presented during C1. The full sets of slides is made available online on the project TEXSTRA website and contains more in-depth notions, as well as references and a list of resources for further studies.

In addition, TEXSTRA project capitalises on the experiences obtained through previously implemented work involving research and development in the field of textiles and clothing manufacturing, most notably the TECLO project. Results from the TECLO project are used as a basis for the improvement and deepening of knowledge transfer methodologies, in particular the TECLO MOOCs available on UDEMY platform:

<https://www.udemy.com/user/teclo-partnership/>



# Conclusions

In the framework of the TEXSTRA project, an intensive training summer course (C1) has been held where students of the 4 universities involved in the project attended training sessions, combining e-learning introductory sessions and physical presence, using a mix of different learning tools and methodologies, such as flipped classrooms and company visits.

The feedback gained while testing the “Book of lectures” during the C1 activity, highlighted that the provided materials were helpful and most of the participants stated that the training will be useful to them for their professional growth, as well as that the training met their expectations. Furthermore, the majority of the students indicated that the training was relevant and targeted to their needs.

# www.texstra.eu

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