

# fashion BRAIN project

## Factsheet

### Data Challenges in the Fashion Industry:

A core business in the fashion industry is understanding and predicting customer needs and trends. However, retailers often do not own enough data (as collected by search engines and social media networks) to predict customers' next trends; data is not integrated in a way that can create valuable insights (due to storage and formatting issues); and fashion bloggers directly influence customer choices leading to limited understanding of bottom-up changes in fashion.

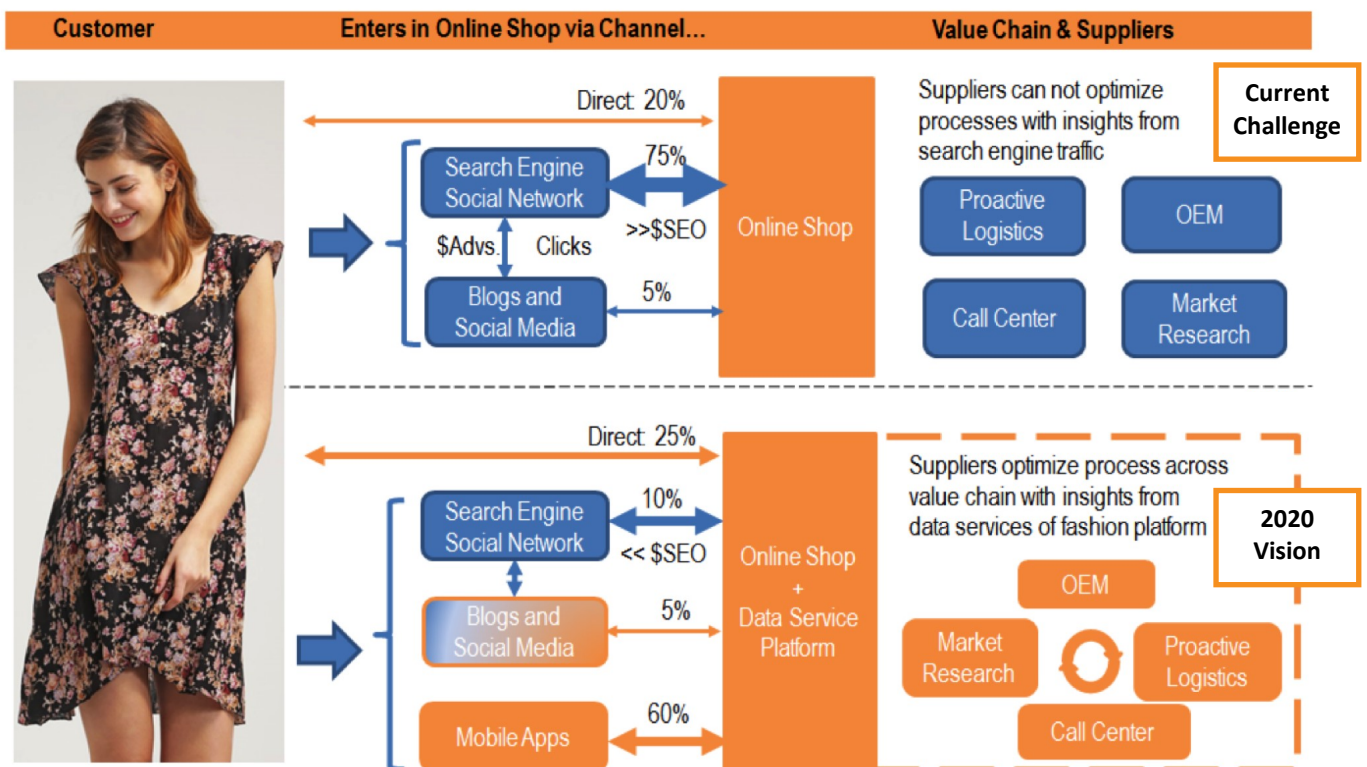
In order to reinforce Europe's position in the fashion industry, it has to reduce its dependency on search engines. Instead, effectively extracting and analysing information from unstructured content like twitter, blogs and multi-media sources such as Instagram (including posts by individual fashion bloggers), will enable businesses to directly mine fashion trends, seasonalities, and unusual events. Efficiency and gains in the logistics of suppliers, shipping, and handling are minor compared the benefits obtained (including financial) from better understanding customers' personalities and habits.

### Understanding Europe's Fashion Data Universe:

The FashionBrain project aims at combining data from different sources to support different fashion industry players by predicting upcoming fashion trends from social media as well as providing personalized recommendations and advanced fashion item search to customers.

The main objective of the FashionBrain project is to consolidate and extend existing European technologies in the area of database management, data mining, machine learning, image processing, information retrieval and crowdsourcing to strengthen the position of European fashion retailers among their world-wide competitors. We intend to:

- Shift traffic away from Web search engines to retailer's mobile applications and domains.
- Create a novel shopping experience by making images searchable.
- Detect influencers to predict fashion trends.
- Share insights within Cross Industry Partner Network to create a Data Integration infrastructure .



## Target Beneficiaries:

The FashionBrain project targets the two main actors of the fashion industry: European retailers and customers. We propose to gather and combine the sheer amount of data generated by (emanating from) different fashion industry multisectorial players.

The gathered data will be curated, analysed and used as input for machine learning algorithms. The outcome of the project will benefit retailers by reducing the financial efforts for Search Engine Optimisation (SEO) paid to the Web search engine. It will benefit both the retailer and customer by providing novel services to customers in order to improve their shopping experience thereby boosting their brand/company loyalty. For example, a customer will be able to receive personalized recommendations and perform advanced fashion items search by things like image and complex textual description. Retailers will also be able to compose a marketing story about a product that fits the customer's taste, instead of merely showing an item and its price.

These improvements along with better exploitation of the European fashion industry's distinctive characteristics such as multiple languages, fashion and cultural differences, will reinforce its position within the global market.

## Project Achievements towards Objectives:

### *Novel Shopping Experience: Make Images Searchable*

A multimodal corpus of fashion images was [released](#) which will help to progress various text-image tasks. A first version of the FashionBrain text-to-product image search system has been developed together with the release of a [public demo](#) along with a state-of-the-art general NLP framework called [FLAIR](#). Several articles have also been published on the handling of multilingual fashion data which will contribute to further development of advanced search capabilities.

### *Shift Traffic away from Web Search Engines to Retailer's Mobile Apps*

A set of guidelines and solutions, called [ModOp](#), to improve the quality of crowdsourcing interfaces has been produced.

A [library of trained deep-learning models](#) for enriching images with meta-data and a [demo](#) of the automatic image recognition technology has been published. A [demo](#) of the FashionBrain Taxonomy (FBT) to support cross-domain data integration across multiple sources of data has also been created.

### *Detect Influencers and Predict Next Trends*

[Software](#) for Probabilistic Recurrent Neural Networks (RNNs) for sequential data with missing values and a tool (RecovDB) for the recovery of missing values implemented in-database were developed. A method ([TimeSVDvc](#)) for the prediction of user preferences in fashion data has also been made publicly available. A dataset of influencers and bloggers and a [demo of fashion images](#) from fashion blogs and Instagram profiles that are automatically extracted and classified has also been produced.

### *Share Insights with Cross Industry Partner Network*

The project has networked with multiple industry partners (e.g., ASOS.com, Qualifiction.com, Beezdata.de, projectstarling.com, schwarzkopf) and attended many [industrial workshops and conferences](#) (e.g., European Big Data Value Forum 2017, FashionTech, AI Expo Europe 2018, Brussels TechSummit 2018, Shoptalk 2018, SAP Conference on Machine Learning), with opportunities to exchange knowledge and insights with players in the fashion industry and with B2B Zalando partners.

## Additional Information:



The FashionBrain project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 732328.

The project involves several partners from across Europe, including the University of Sheffield, Beuth University of Applied Sciences, Universite de Fribourg, Zalando SE, Fashwell AG and MonetDB Solutions B.V.

Further information about the project team, deliverables and achievements can be found on the project website at: <https://fashionbrain-project.eu/>

