fashion BRAIN project

Understanding Europe's Fashion Data Universe

Draft Business Plan

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Deliverable Description

This deliverable will contain a draft version of the project business plan. It will develop a complete study in order to market the outcomes of the project as described in Task T7.3.

Abstract

This deliverable contains a draft version of the project business plan which is aligned with the exploitation and go-to-market strategy. The purpose of the draft business plan is to demonstrate the commercial potential of the product and/or service (offering) and describe how this potential will be realised. It will serve as guidance to the final business plan (D7.7) which will contain an update to D 7.5 - extending convenient areas according to previous findings.

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List of Acronyms and Abbreviations

ACV	Annual Contract Value
AI	Artificial Intelligence
API	Application Programming Interface
ARPU	Average Revenue Per User
B2B	Business to Business
CA	Consortium Agreement
CAC	Customer Acquisition Cost
CAGR	Compound Annual Growth Rate
GPU	Graphics Processing Unit
IaaS	Infrasctructure as a Service
IPR	Intellectual Property Rights
IT	Information Technology
LTV	Lifetime Value
MRR	Monthly Recurring Revenue
NLP	Natural Language Processing
R&D	Research and Development
SaaS	Software as a Service
UI	User Interface

1 Introduction

This deliverable contains a draft version of the project business plan which is aligned with the exploitation and go-to-market strategy. The purpose of the draft business plan is to demonstrate the commercial potential of the product and/or service (offering) and describe how this potential will be realised.

Section 2 summarises the project from the exploitation point of view, Section 3 describes the planned exploitable results and the areas of applications, Section 4 presents the exploitation team and IPR protection, Section 5 describes the market and end user composition, Section 6 introduces the exploitation timeline, Section 7 focuses on the expected financial outcomes, Section 8 presents a commercialisation roadmap, Section 9 assess the risks related to the go to market strategy, and Section 10 plans the evolution of this draft for the duration of the project.

1.1 Scope of This Deliverable

This deliverable will serve as guidance for the final business plan (D7.7), that will contain an update to D7.5 – expanding upon relevant strategies according to ongoing market assessments.

2 FashionBrain Project Summary and Objectives

In the world of fashion, retailers often either do not own enough data to predict customers' next trends or these data are not integrated in a way that can create valuable insights. In order to alleviate the existing dependence from social networks and search engines, fashion retailers should be able to use their own tools and data to predict emerging trends, and to acquire fashion related data by other means, for example by crowdsourced activities or by tailored user interactions.

The FashionBrain project (https://fashionbrain-project.eu/) is a €2.8 million three-year project funded by the European Commission's Horizon 2020 programme (Grant Agreement No. 732328) that aims to investigate the use of new technologies within the fashion industry. The main objective of the project is developing an integrated approach to aggregating and managing fashion data that will provide an infrastructure able to support stakeholders, including both retailers and end users.

From McKinsey&Company's The State of Fashion 2018[1]:

> "Leading innovators will reveal the possibilities of artificial intelligence across all parts of the fashion value chain, exploring new ways of creating value for those employed in the fashion industry. AI enhancements will go beyond the traditional areas of machine tasks into creative and customer interaction processes, blurring the line between technology and creativity: 75% of fashion retailers plan to invest in AI in 2018/2019. [...] 55% of US consumers begin their online product search on Amazon."

In order to answer these needs, the FashionBrain consortium proposes a novel data integration infrastructure that enables to collect, organize and analyze fashion data. We gather and combine data generated by (emanating from) different fashion industry multisectoral players, starting from manufacturers and distribution networks, to online shops, large retailers, and value-added services companies (e.g., social media analysis, market observers, call centers, press/magazines etc.). The gathered data will be curated, analyzed and used as input for machines learning algorithms. The outcome of the project will benefit retailers by providing novel services to their customers in order to improve their shopping experience and boost their loyalty. For example, a customer will be able to receive personalized recommendations and perform advanced fashion items search by image, complex textual description, etc. Also, a retailer will be able to compose a marketing story about a product that fits the customer' s taste, instead of merely showing an item and

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[1] https://cdn.businessoffashion.com/reports/The_State_of_Fashion_2018_v2.pdf

its price. At a technical level, we propose 'Big Data' techniques to i) automatically process text and image data and extract key features such as fashion items, ii) capture customers' preferences, iii) build a fast database infrastructure iv) predict new fashion trends as they emerge on social media and the blogosphere.

In order to achieve these technical objectives, we propose to investigate deep learning methods and their execution on GPU-based hardware. Our research portfolio also covers interactive data sampling and curating methods, such as crowdsourcing or in-database-text mining, to deliver the fashion industry with large-scale curated data. Additionally, we will investigate the trend prediction by analyzing the similarity between fashion time series data, e.g., purchase quantity of a specific item, social media activity, etc.

2.1 Business Plan in a Nutshell

To summarise the FashionBrain project business plan, we will use the business model canvas depicted in Figure 2.1. In this section we will briefly go through each building block of the canvas. The remainder of the document gives a more detailed analysis.

KEY PARTNERS	KEY ACTIVITIES	VALUE PROPOSITION	CUSTOMER RELATIONSHIPS	CUSTOMER SEGMENTS
- USFD - UNIFR - Beuth - Zalando Research - MDBS - Fashwell	- Algorithm design - Marketing - Cloud service design	- Data Integration Tools - Trend prediction - Novel UIs (Image and end-to-end search)	- Consultation meetings - Technical meeting - Reporting	- Online fashion retails - E-commerce Technology Solution Providers - Fashion brands
	KEY RESOURCES - Product data - Social media data - Academic research resources (algorithms) - MonetDB know-how		**CHANNELS** - Website marketing - Industrial events - Publish research	

COST STRUCTURE	REVENUE STRUCTURE / GROWTH
- Personnel - IT cloud resources - Marketing	- SaaS for trends prediction and for image search (monthly) - IaaS for data integration (annual contracts) - Consultant contracts on brand trend predictions (one off) - White licensing for e-commerce tech solution providers - Positive net profit for SaaS models after 11th month

Figure 2.1: FashionBrain business plan summary.

2.1.1 Customer Segments

The FashionBrain project will focus on three different customer segments: **online fashion retailes**, **e-commerce technology solution providers**, and **fashion brands**.

Online Fashion Retailers

Online retailers obtain data from multiple sources:

- They buy products from brands. These products come with unstructured data (e.g. brand A renames the colours different than others) and need to be structured so that they can use it internally and also display it to the users.
- They collect data about their users (sales, click-data, etc.). This information needs to be used, together with social media data, to perform trend predictions.
- They also get global data from marketing and other third parties.

All this data needs to be combined, analysed and used in different areas, to understand what new products need to be bought, what users should be targeted for each product, and so on.

To summarise, Online Fashion Retailers need to continuously keep their inventory updated, with an ever-growing number of brands and products. Understanding the fashion evolution and future trends is fundamental: failing to do so could prove fatal, as discussed in detail in Section 5.3.

What this customer segment needs is the provision of a reliable **trend prediction** tool, that can constantly analyse social media and sales.

Moreover, online fashion retailers are interacting constantly with heterogeneous catalogs from a myriad of sources and so the need for agile and reliable **data integration** tools is apparent.

E-commerce Technology Solution Providers

E-commerce technology solution providers are currently focused on providing generalised tools for online sales, inventory building and search. Unfortunately, the needs of fashion e-commerce are very niche, where end-to-end search and image-based search are fundamental, and at the moment there are no commercial solutions to satisfy this need.

Fashion Brands

Fashion brands have similar needs to the other two customer segments, but with a slightly different paradigm. Their needs are usually: (i) the building of an in-house end-to-end search mechanism; (ii) the provision of customised trend predictions as a period consultancy interaction (rather than as a Software as a Service (SaaS) system); and (iii) novel User Interfaces (UIs) for their customers based on image search.

Another problem for small fashion brands is satisfying the requirements of the data format provided for different online retailers to which they sell their products, which again, could be solved with one-off consultancy interactions.

We refer to Section 5 for a more detailed analysis of the customer segments.

2.1.2 Value Proposition

The value proposition of the FashionBrain project can be divided into three parts: **trend predictions**, **data integration tools**, and **novel UIs**.

Trends Prediction

The FashionBrain project will be able to provide a series of tools, in the form of Software as a Service (SaaS), on-premise software, oth both, that can help fashion retailers and brands to monitor specific group of products on social media and to discover new trends.

Data Integration Tools

The need for agile and reliable data integration tools is mainly present in the customer segment of online fashion retailers who are constantly interacting with heterogeneous catalogs from a myriad of sources.

The data flow between Retailer, Brands and Users is not standardised. As an example: a user expresses the need, through a search engine and in their own language, to purchase a summery black t-shirt. Retailer's technologies then need to understand what 'summery' and 'black' mean and where they can access the products suitable for that specific user. This problem can become very difficult when the user queries are more complex, and in a situations where catalogs are obtained from a myriad of different sources, with incomplete information (so in this example, many summery items lack the tag 'summer' in their metadata), a fact that is becoming increasingly more common in the current fashion market.

Novel UIs - Image and end-to-end search

To reinforce Europe's position in the fashion industry, it is pivotal to reduce its dependence on search engines. Traffic that is currently coming from North American search engines could instead be reclaimed back if a more powerful end-to-end search technology was available.

We refer to Section 3 for a more detailed analysis of the value proposition.

2.1.3 Channels

The main way to reach customers (as proven in the first two years of dissemination and networking in the FashionBrain project) is through **industrial events** which have already led to contacts with potential future customers (e.g., ASOS, http:

//projectstarling.com). Some of the most important industrial events targeted by FashionBrain are ShopTalk Vegas and Decoded Fashion.

The second way to reach customers is through social media and the project website which have already led to some connections (e.g. a Schwarzkopf consultant). The publication of online demos (resulting from research within the project) will allow potential customers to immediately understand what our solutions can provide.

The third way is through academic conferences and other university spin-offs.

We refer to Section 8 for a more detailed analysis of these channels.

2.1.4 Customer Relationships

The interaction with already acquired customers will be different depending on the kind of contract. For SaaS and Infrasctructure as a Service (IaaS) (data integration and other tools), it will be mainly based on initial consultation meetings followed by technical meetings for the duration of the business relationship.

The interaction with fashion brands for one-off consultant contracts on custom trends prediction will also have a different kind of interaction: reporting through easy to understand summary documents that can provide a layman version of the intelligence obtained from the trends predictions tools.

We refer to Section 8 for a more detailed analysis of the customer relationships.

2.1.5 Key Resources

The key resources of the FashionBrain project are:

Product data the data sets on fashion catalogs (compiled with the aid of crowdsourcing and machine learning) and the knowledge built around that.

Social media data the data sets on social media and the knowledge built around that.

Academic research resources the set of know-hows, algorithms and models developed during the FashionBrain project, in particular:

- The set of know-hows and algorithms on time series analysis.
- The expertise on image recognition, important for the analysis of social media data and for product catalog categorisation.
- The expertise on in-database machine learning, fundamental to ensure scalable and efficient solutions of data integration.
- The expertise on crowdsourcing, needed to annotate datasets to train machine learning solutions.

Data management and analysis know-how the deep and extensive knowledge of project research and industrial partners in managing and processing large

scale heterogeneous data sets (including relational, text and image data), and efficient integration of advanced analytical tools with the database systems.

2.1.6 Key Activities

The key activities will be

Algorithm and Infrastructure Design personalised to satisfy the customer needs and always in evolution to keep a competitive edge.

Marketing and Networking to reach new customers.

Consultancy and Solutions Design to keep up-to-date the data integration solutions put in place for the customers.

2.1.7 Key Partners

The main industrial participants are i) Zalando SE - Europe's largest online retailer who collects data from 135 million customer transactions per month from 17 European countries; ii) Fashwell AG - provides insight gathered from social web images and also provides the attribute recognition tools necessary in the data integration pipeline; and iii) MonetDB Solutions - a leading database company in analytical columnar data processing techniques who will provide the infrastructure to store and query the data.

The academic partners are i) UNIFR with semantic data integration and time series expertise; ii) USFD with hybrid human-machine computation experience; and iii) Beuth-HS Berlin specializing in in-database text mining. The academic partners are transferring knowledge and innovation to the industry, disseminating results at international conferences and training Europe's next generation of data scientists.

2.1.8 Cost Structure and Revenue Stream

The main cost will be on personnel, IT cloud resources and marketing.

The revenue structure is based on different type of contracts:

SaaS for trends prediction and image search These are usually monthly or even per-item solutions. We will offer an API to allow customers to be billed by single action. The long-term objective is to increase revenue by up-selling to Infrasctructure as a Service (IaaS).

Technical consultancy Through annual or prepaid contracts we provide technical consultancy on data management and analytics issues, including integration on different data resources (e.g., structured and unstructured data) and advanced analytical tools (e.g., machine learning tools through Python integration).

White licensing E-commence tech solution providers will be able to re-sell our technologies to their customers.

We refer to Section 7 for a more detailed analysis of the cost structure and the revenue stream.

3 Planned Exploitable Results and Application Areas

The value proposition of the FashionBrain project can be divided into three parts: **trends prediction**, **data integration tools**, and **novel UIs**.

Trends Prediction

The FashionBrain project will be able to provide a series of tools, in the form of Software as a Service (SaaS), that can help Fashion Retailers and Brands monitor specific group of products on social media, and discover new trends. What is important with regards to these techniques is how easy they are to configure and customise to the needs of the specific online retailer.

Moreover, fashion brands will have the opportunity to receive a personalised analysis focused on a single brand.

These techniques help to solve typical problems of fashion retailers, such as the ability to predict a "hot summer", which is a sort of "black swan" event when customers stop buying fashion items en masse (see Section 5.3 for more information). Moreover, the ability to understand fashion trends can help the strategic planning of the B2B partnerships. For fashion brands, trend predictions will be fundamental to steer their product offering to intercept new customer needs.

Data Integration Tools

The need for agile and reliable data integration tools is mainly applicable in the customer segment of online fashion retailers who are constantly interacting with heterogeneous catalogs from a myriad of sources. Currently, the lack of this type of technology is negatively affecting sales, as catalogs are often integrated semi-manually, resulting in imperfect matching or incomplete metadata for products which result in failure to completely satisfy the customers' search needs.

Novel UIs - Image and end-to-end search

To reinforce Europe's position in the fashion industry, it is pivotal to reduce its dependence on search engines. Traffic that is currently coming from North American search engines could instead be reclaimed back Europe, if a more powerful end-to-end search technology was available.

Moreover, this would allow fashion retailers to better position themselves in the complex European market and better exploit its distinctive characteristics e.g.,

multiple languages, fashion and cultural differences.

Another important way to steer traffic away from generalist search engines is to provide a richer search experience, like the ones offered by image tool searches.

3.1 Offered Services

To summarise, FashionBrain will provide different services, each targeted to a different customer segment:

SaaS for trends prediction and image search SaaS solutions will target fashion retailers and fashion brands. We will offer an API allowing customers to be billed by single action.

Technical consultancy Fashion brands and online fashion retailers will be the prospected targets of technical consultancy on data management and analytics issues, including integration on different data resources (e.g., structured and unstructured data) and advanced analytical tools (e.g., machine learning tools through Python integration).

White licensing E-commence technology solution providers will be able to re-sell our technologies to their customers.

IaaS for data integration (long-term goal) IaaS solutions will target only the customer segment of online fashion retailers. We will provide custom data integration solutions that will create a longer and more stable interaction with the customer.

4 The Exploitation Team

4.1 Key Partners and Role

The industrial partners are:

Zalando Research Europe's largest online retailer who collects data from 135 million customer transactions per month from 17 European countries. They bring their expertise on end-to-end search and Natural Language Processing (NLP). The FashionBrain project has a direct impact on Zalando search engine, that will contribute to the 20% increase by 2020 by European data companies. After the end of the project, Zalando will continue to interact with the FashionBrain project as a potential online retailer customer.

Fashwell AG It provides insight gathered from social web images and also provides the attribute recognition tools from images, necessary in the data integration pipeline. Fashwell will increase its revenue thanks to the added exposure obtained during the FashionBrain project, and because of the innovations introduced by the project's partners.

MonetDB Solutions Europe's pioneer in column store database techniques that will provide the infrastructure to store and query the data. MonetDB Solutions will increase its revenue thanks to the added exposure obtained during the FashionBrain project, and because of the innovations introduced by the project's partners.

The academic partners are:

The University of Fribourg providing the set of know-hows and algorithms on time series analysis, and the expertise on fashion taxonomies. After the project, members of the University might join a spin-off company.

Beuth University providing the expertise on in-database machine learning, fundamental to ensure scalable and efficient solutions of data integration. After the project, members of Beuth might join a spin-off company.

The University of Sheffield with expertise on crowdsourcing, needed to annotate datasets to train machine learning solutions. After the project, members of this team might join a spin-off company.

4.2 Key Activities

The key activities will be

Algorithm and Infrastructure Design personalised to satisfy the customer needs and always in evolution to keep a competitive edge.

Marketing and Networking to reach new customers.

Consultancy and Solutions Design to keep up-to-date the data integration solutions put in place for the customers.

In the final version of the business plan we plan to expand and detail the key activities, after analysing the results obtained during the project.

5 The Market and End Users

In this section, we present an analysis of the fashion market as well as the needs and economic status of online fashion retailers and fashion brands.

5.1 Opportunities

Over the next decade, the fashion and apparel industry is expected to be marked by double-digit sales growth driven by an expanding global market[1].

Cumulative data compiled within The Shopify Fashion and Apparel Industry Report[2] paints a bright portrait with worldwide revenue expected to rise from $481.2 billion in 2018 to $712.9 billion by 2022, as shown in Figure 5.1.
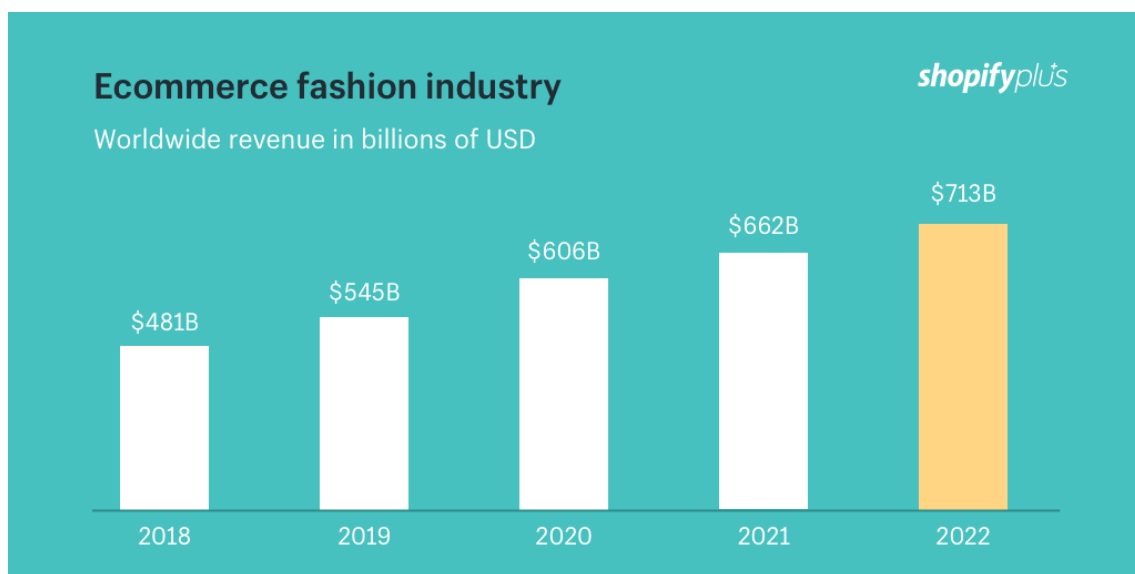

Figure 5.1: Worldwide revenue of e-commerce fashion industry. Data via Statista and accessible in The Fashion and Apparel Industry Report.

Fashion consumers will also have more buying power, as the number of potential customers is projected to grow to more than 1.2 billion by 2020. The majority of these new consumers will be within the 16 to 24 and 25 to 34 age groups.

Driving this growth are four notable opportunities:

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[1]http://www.mckinseyonmarketingandsales.com/succeeding-in-tomorrows-global-fashion-market

[2]https://www.shopify.com/plus/industry-reports/fashion-and-apparel

- Expanding global markets outside the West.
- Increasing online access and smartphone penetration.
- Emerging worldwide middle-classes with disposable income.
- Innovating technologies to create experiential e-commerce.

Lower digital barriers to entry for all clothing merchants offers the opportunity to market, sell, and fulfill orders globally and automatically.

As a result, worldwide revenue and revenue per user (ARPU) are both projected to grow, as shown in Figures 5.2 and 5.3.
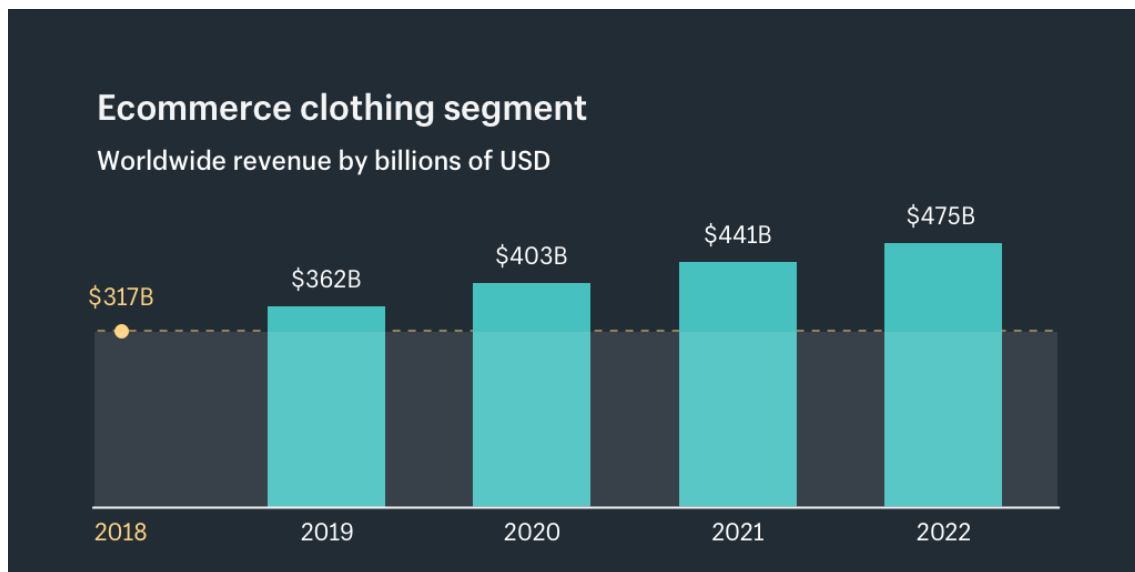

Figure 5.2: E-commerce clothing segment. Data via Statista and accessible in The Fashion and Apparel Industry Report.

In developed markets, merchants will increasingly drive growth with machine learning, artificial intelligence, and e-commerce automation tools that offer highly relevant and personalized customer experiences[3]. Innovative brands will likely take a share as fit technology, virtual fitting rooms, and AI-powered virtual shopping assistants help consumers tailor or select the size and look most closely aligned with their tastes and preferences.
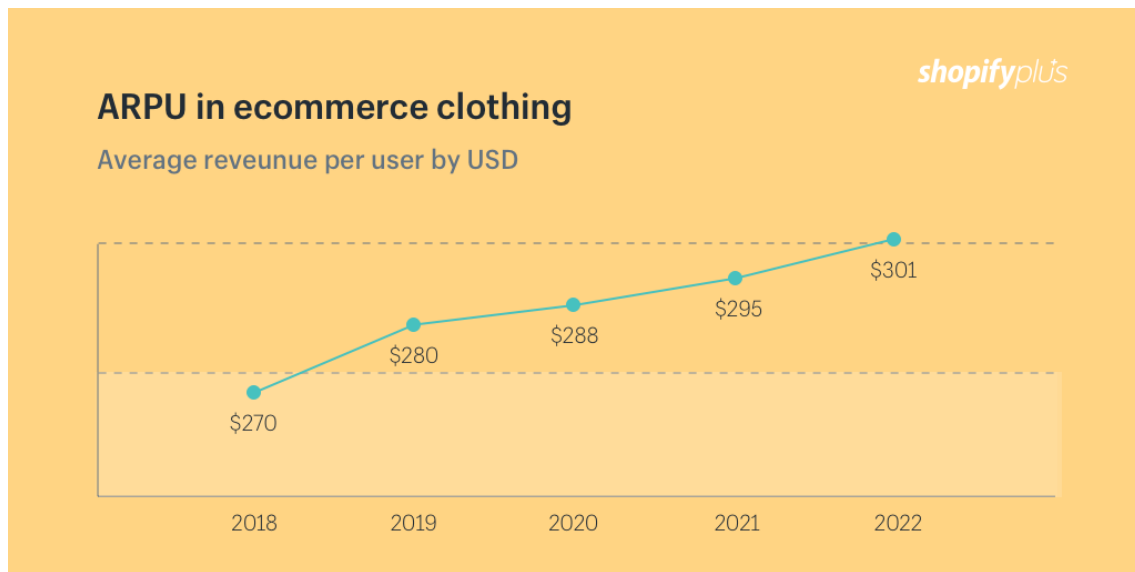
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[3]http://fortune.com/2016/07/06/keaton-row-business-model/

Figure 5.3: Average revenue per user in clothing segment. Data via Statista and accessible in The Fashion and Apparel Industry Report.

5.2 Threats

Declining barriers to entry[4] have made the ultra-competitive fashion and apparel industry even more complicated to navigate on a global scale.

The "death" of brand loyalty[5] combined with fast-fashion's ability to manufacture on-demand and dropship from anywhere, pose real threats to established brands that lack an embedded social cause and aren't as agile as necessary due to legacy assets, costs, and bureaucracies[6]. These threats significantly increase the risk of holding an inventory position, especially in an age characterized by near instant changes in consumer taste and preference.

Hence why **data-integration** and **trends prediction** are fundamental precursors for the success of fashion retail: together, they allow fast inventory change that would provide a competitive position in the market. Figure 5.4 corroborates this position, showing the average time to shelf in weeks of online retailer vs. traditional fashion retailers.

The Shopify Fashion and Apparel Industry Report includes **end-to-end integration** and **synchronized product information and inventory** in their fashion and apparel platform checklist as essential points for building a successful platform. FashionBrain will consider and incorporate both of these important points within their go-to-market strategy.

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[4]https://www.huffingtonpost.com/entry/why-the-fashion-industry-brought-vertical-commerce_us_5894a783e4b061551b3dfdb8

[5]http://adage.com/article/aarp-media/brand-loyalty-dead/310846/

[6]https://www.macquarie.com/au/about/newsroom/2017/fast-fashion-disrupt-retail

Average time to shelf in weeks

12

6

5

2

1
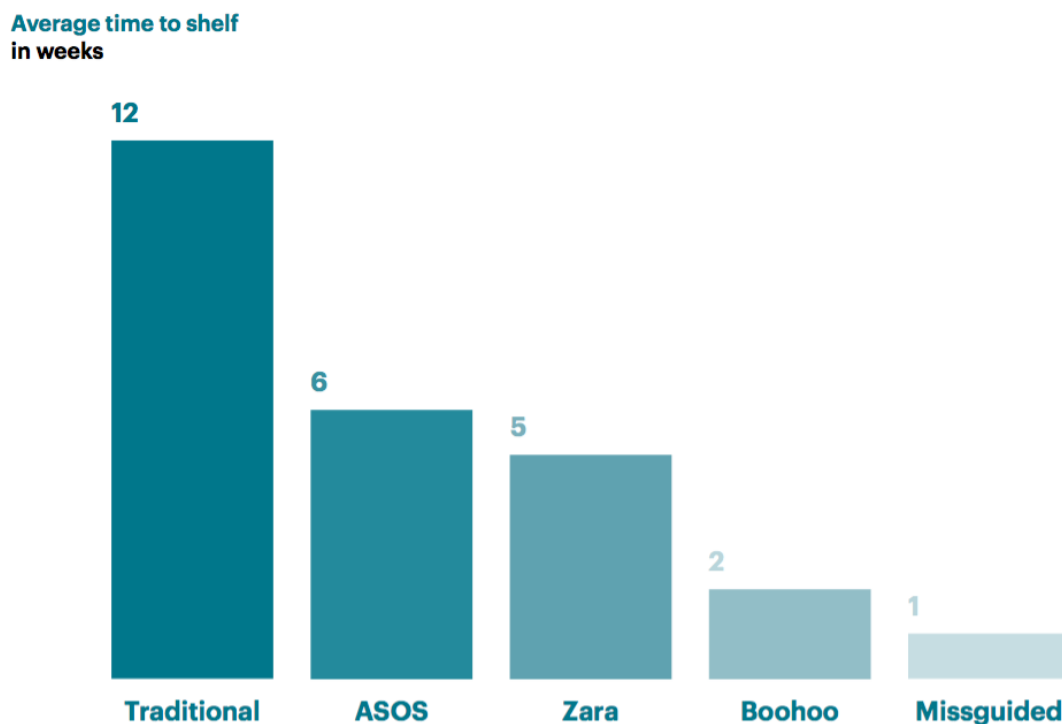
Traditional   ASOS   Zara   Boohoo   Missguided

Figure 5.4: Average time to shelf of online vs. traditional fashion retailers.

5.3 Current State of Fashion Retailers

While clothing's absolute numbers are steadily climbing, worldwide revenue growth — as represented by the Compound Annual Growth Rate (CAGR) — is slowing, as shown in Figure 5.5.

Western-market saturation is the most likely source of this trend. When growth rates are compared between the US, Europe, and China, that reality becomes even starker.

Between 2017 and 2022, the CAGR is expected to settle in at 8.8% in the US, 8.7% in Europe, and 14.1% in China.

Moreover, the fashion retailer industry is facing a credit crisis, both in Europe and USA. At the beginning of October 2018, insurance provider Atradius cut its cover to Debenhams' suppliers. In September, Arcadia Group had its credit insurance reduced by provider Euler Hermes, and earlier this year, retailers, including The Original Factory Shop, New Look and House of Fraser, had cover reduced or withdrawn altogether as they battled slumping sales and profits.

The number of high-profile retail administrations and company voluntary arrangements in 2018 have caused trade credit insurers to take a more cautious approach. Insurers have noted a rise in bad debt – the Association of British Insurers (ABI) says trade credit insurers have paid out a record £1m a day to help UK firms
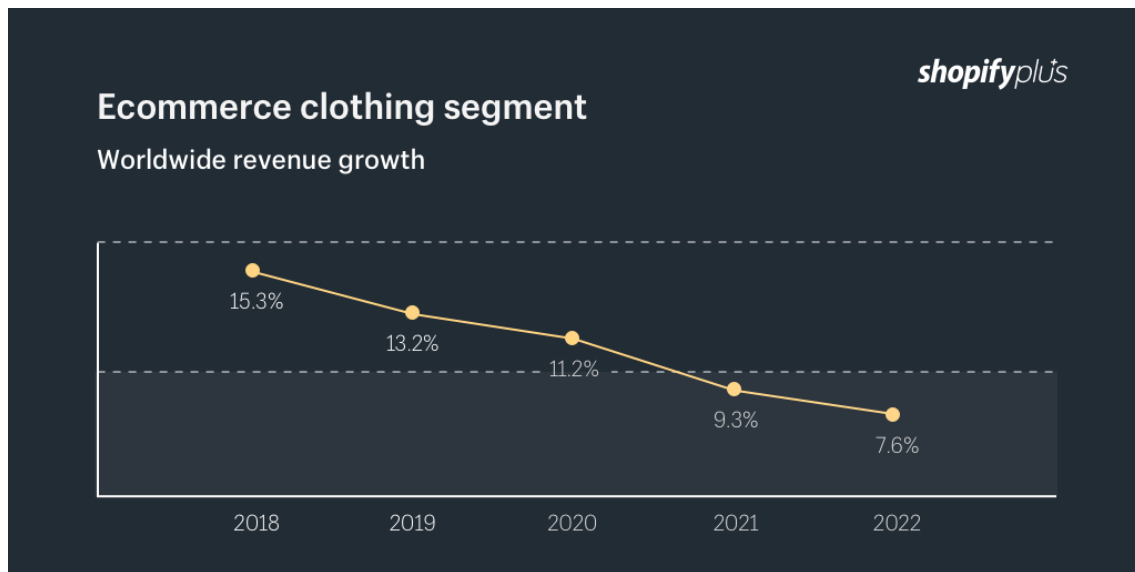
Figure 5.5: Worldwide revenue growth in clothing segment. Data via Statista and accessible in The Fashion and Apparel Industry Report.

stay afloat in the second quarter of 2018 – the highest quarterly figure since 2007.

In April of 2018, defaults by retailers reached a record high. The outlook for 2019 is not much better. "We are forecasting a 7% retail default rate, which would be above the 4.7% mark reached at the end of 2018 but below the peak 8.7% level seen in April 2018," says Eric Rosenthal, senior director at the credit ratings firm Fitch Ratings[7]. As the retail industry publication Chainstore Age reports, this forecast is well above Fitch's 1.5% estimated default rate for the leveraged loan market overall.

In December, retailers led Fitch's monthly list of the "top loans of concern." The factors that can land a company on the list include low ratings, loans that trade at a discount to par, events that signal trouble such as the hiring of a restructuring attorney, and input from Fitch analysts. Of the total volume of outstanding debt on the December list, retail accounted for 18.6%, more than any other industry (Neiman Marcus, has a $2.8 billion loan coming due in 2020).

5.3.1 Stock Market Crisis

In Figure 5.6, the stock price of 4 major fashion retailers is shown. All major European and US fashion retailers lost significant value in 2018.

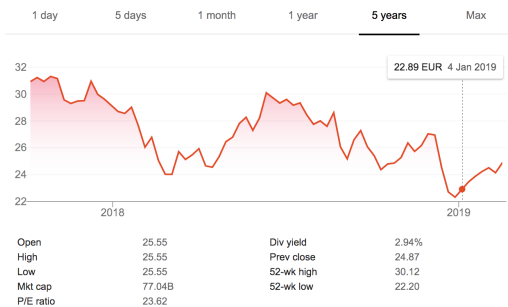[7]Marc Bain: https://qz.com/1520579/the-retail-industry-is-loaded-with-risky-debt

(a) GAP

(b) Zara
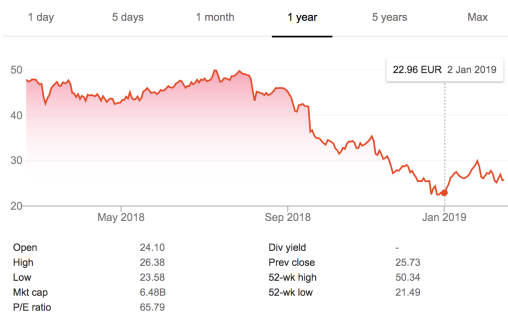
(c) Zalando
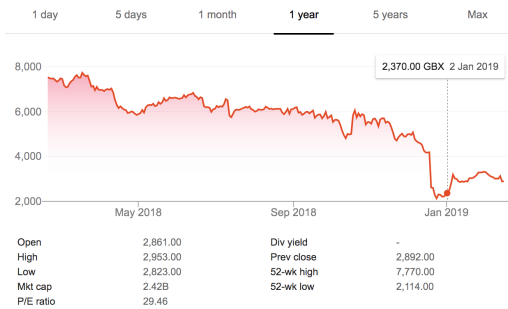
(d) ASOS

Figure 5.6: Yearly stock prices of four leading fashion retailers.

5.3.2 European and German market

Struggling European economies, Brexit and weak performances by some big European-based retailers in recent years, including the grocery sector, caused Europe's share of Top 250 revenues to drop from 39.4% to 33.8% in just 10 years. Retailers from China, Japan and the rest of Asia Pacific are gaining ground, along with some players from emerging markets in Africa and the Middle East, as shown in Figure 5.7.

A recent article[8] stated that the fashion retail industry in Germany is suffering:

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[8] fashionunited.uk/news/business/fashion-crisis-more-and-more-popular-brands-are-struggling
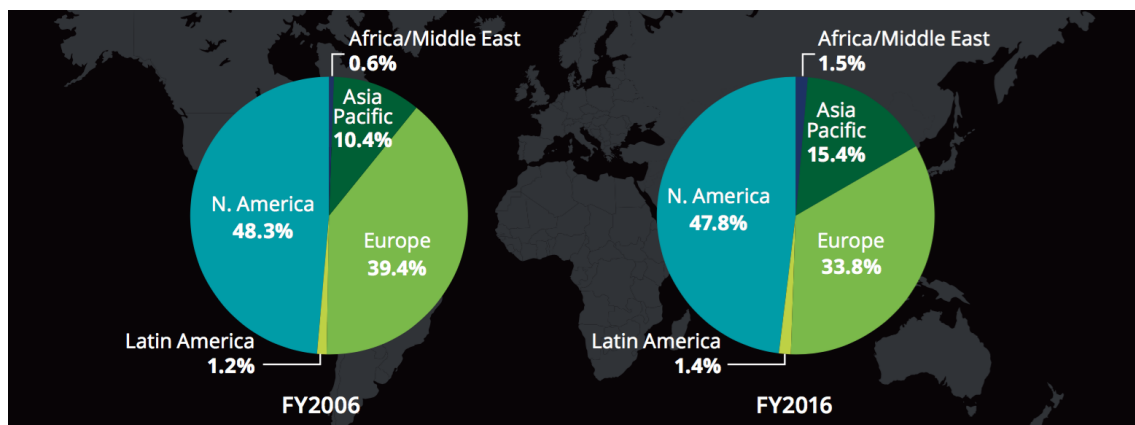
Figure 5.7: Changing share of Top 250 retail revenue, 2006 to 2016. Source: Deloitte Touche Tohmatsu Limited. Global Powers of Retailing 2003 (for FY2001 data), 2008 (FY2006 data), 2013 (FY2011 data) and 2018 (FY2016 data).

> "The German textile industry is awash with bad news: well-known manufacturers like Gerry Weber, Tom Tailor and Esprit seem to fail to attract enough customers. And that's not just because of the record breakingly hot summer of 2018. A famous name is no longer enough in the fashion world to guarantee a secure future. More and more established fashion labels - no matter if Gerry Weber, Tom Tailor or Esprit - are painfully aware of this. 'Established brands are under pressure', observes trade journal 'Textilwirtschaft'."

Moreover, the same source states that:

> "Almost all companies mentioned one reason for the current developments: **the super summer of 2018**, which spoiled the consumer's desire to shop. But that's only one part of the challenges many fashion companies are currently facing as Thomas Lange from the German fashion industry's association German fashion emphasises."

And finally, the interpretation given is that:

> "The situation gets aggravated for many struggling manufacturers because of strategic mistakes of the past. Gerry Weber, Esprit and Tom Tailor **overshot the mark by far**, trying to set up their own store network and had to pay dearly for it in the end trying to get rid of loss-making stores. Simultaneously, **many manufacturers neglected to build an attractive online portfolio** and need to catch up in this area now."

5.4 Conclusions – Market Needs

To summarise, the threats described above significantly increase the risk of holding an inventory position, especially in an age characterized by near instant changes in consumer taste and preference.

This is why **data-integration** and **trends prediction** are fundamental precursors for the success of a fashion retailer: together, they allow fast inventory change that will provide a competitive position in the market.

Moreover, **end-to-end integration** and **synchronized product information and inventory** are essential points for building a successful platform. FashionBrain will consider and incorporate both of these important points within their go-to-market strategy.

Finally, the lesson learned from the current European stagnation in the fashion market clearly points to the need for:

1. better trend prediction tools.
2. a stronger online presence.
3. improved operational efficiency.

FashionBrain is able to provide the expertise and the tools necessary to address these problems.

6 Exploitation Timeline

6.1 Grant Period

Table 6.1: Milestones on FashionBrain project.

Milestone	Description	WPs	Due date	Means of verification
MS1	Inception check	WP1, WP7, WP8	M3	**RTD**: Early architecture specified & preliminary version of meta data model available **Dissemination and Exploitation**: Website established **Requirements**: Initial Requirements captured **Use cases**: Initial data provided **Project Management**: Project satisfactorily commenced, all partners fully resourcing project
MS2	Project establishment	WP1-WP8	M12	**RTD**: Initial components available for text/image extraction, first data pipeline functional on top of MonetDB **Dissemination and Exploitation**: Initial presentation material, analysis of current parallel research projects to leverage synergies **Use cases**: Initialized cross-lingual, crossmedia Image search, trend analysis, supplier dash boards. First data evaluations finished **Project Management**: Deliver initial progress report

MS3	Project re-finement	WP2-WP8	M24	**RTD**: Demonstrator components available, published and documented, Pipeline refined and open for external development **Use cases**: Experience from initial feedback round fully incorporated, demonstrator version evaluated **Project Management**: Carry out risk assessment
MS4	Project validation	WP3-WP8	M30	**RTD**: Final version of image/text analysis components completed **Use cases**: Use case experiences fed back into component and use case development
MS5	Project impact	WP3-WP8	M36	**Dissemination and Exploitation**: Exploitation plans from all industrial partners in place, definition of new service and business models, initiatives started incorporating value from FashionBrain **Use cases**: Evaluation finished and reported **Project Management**: Completion of all project objectives, technical, commercial, and dissemination activities

6.2 Go-to-market Period

We refer to D7.7 for the final version of the business plan for a timeline and activities in the go-to-market period.

7 Financial Projections

7.1 End-to-end search Revenue for Zalando

Zalando Expects to Grow Revenues 20-25% in Fourth Quarter of 2018[1].

The number of mobile accesses for Zalando increased from 71.8% in 2017 to 80.0% in 2018, and the number of sessions[2] increased from 615.6 million in Q3 of 2017 to 728.7 million in Q3 of 2018.

An important contributor to this success is the novel end-to-end search system developed during within the FashionBrain project[3].

7.2 SaaS Revenue stream

As a first step we analyse the projected revenue stream for the SaaS described in the previous sections based on monthly subscription. Business model viability will come down to balancing two variables: the Customer Acquisition Cost (CAC) and the ability to monetize those customers: the customer Lifetime Value (LTV).

In order to evaluate the balance of these two variables, we built a finance business model for the SaaS part of FashionBrain, with the following assumptions:

Annual Contract Value (ACV) We assume a target ACV of €300 000.

Average Deal Size We assume an average deal size of €80 000, combined with the next parameters, which comes to 0.3 deals per month at a marketing cost of €1562.50 per month.

Personnel and IT cost We assume a fixed personnel cost of €10 000 per month at the beginning of the project.

Sales and Networking Sales compensation is assumed to have a variable compensation of €10 000, that has a draw in the first three months of 100%, 70%, and 30% respectively. We also assume an additional overhead of €30 000, with 15% sales attrition factor.

Online Marketing We assume a 1% visitors convert to raw leads, and a 1% number of raw leads that turn into qualified leads.

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[1] https://corporate.zalando.com/en/investor-relations/en/press-releases/zalando-expects-grow-revenues-20-25-fourth-quarter

[2] Number of series of page views from the same device and the same source (via websites, mobile sites, tablet sites or apps). The series is considered ended when a page view is not recorded for longer than 30 minutes.

[3] https://jobs.zalando.com/tech/blog/search-deep-neural-network/?gh_src=4n3gxh1

Sales Efficacy Ramp We assume a ramp of efficacy of the marketing in the first four months to sweep linearly from 10% to 100% of the monthly target quota.

Churn We assume a churn rate of 1.5 %.

From these assumption, we can obtain a total LTV of €213 333 and a total CAC of €18 333.
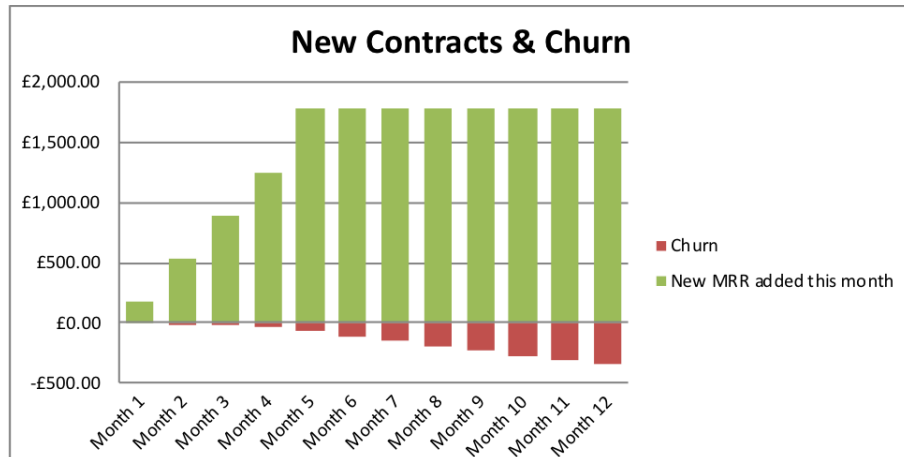

Figure 7.1: New Contracts and Churn

In Figure 7.1 the effect of the churn on the new contracts is shown: the churn is clearly not negligible in our model.
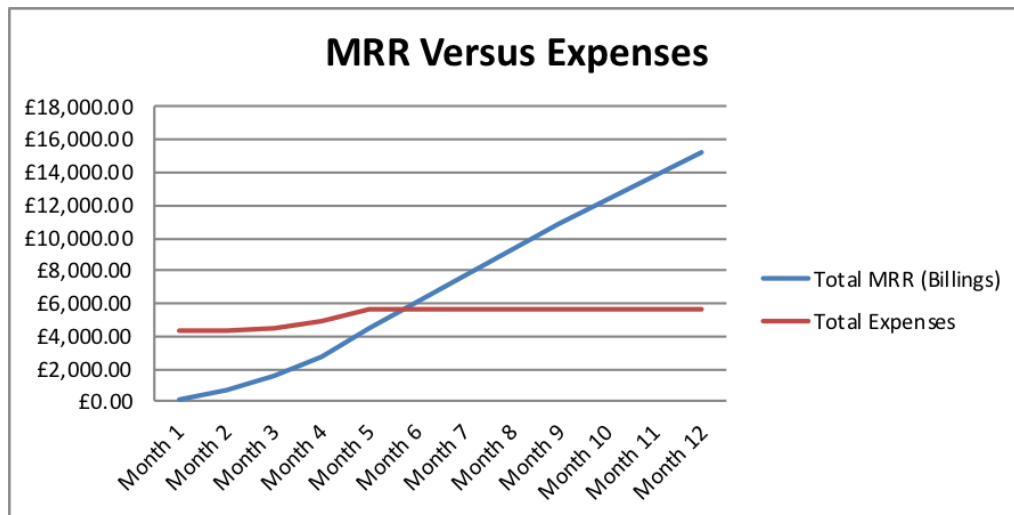

Figure 7.2: Monthly Recurring Revenue (MRR) versus expenses.

In Figure 7.2, the MRR versus expenses is shown: only after 6 months the total expenses are equalised by the MRR.

More importantly, in Figure 7.3 the cumulative net profit shows that the first 11 months will be at a loss.
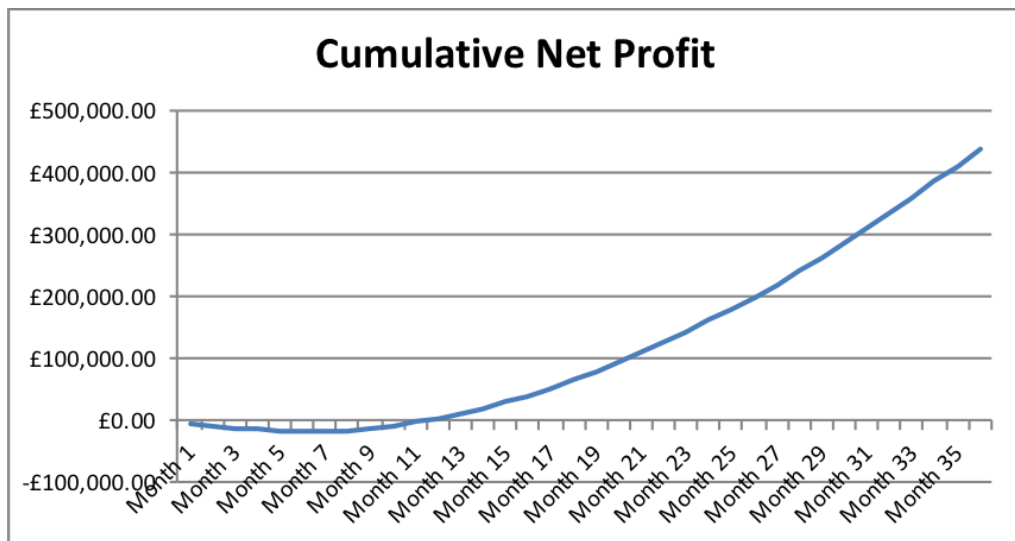
Figure 7.3: Cumulative net profit.

7.2.1 Cashflow Comparison

From our projection, the ability to obtain annual contracts would be fundamental to ensure a healthy start to the business plan in the first critical months.
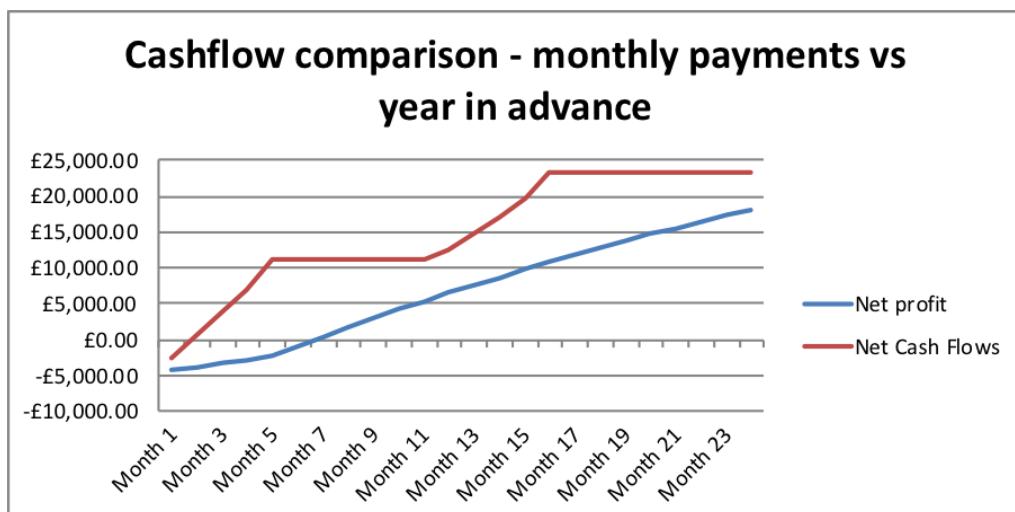

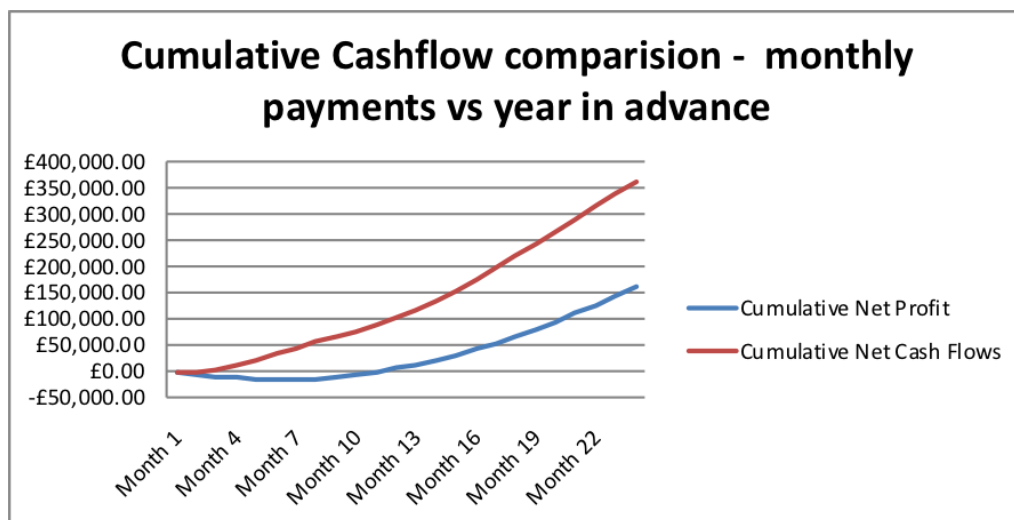**Figure 7.4:** Cashflow comparison between monthly and annual contracts.

Figure 7.5: Cumulative cashflow comparison between monthly and annual contracts.

7.3 Other revenue streams

While the main source of revenue will be the monthly subscription (and in some cases, annual subscriptions), we will explore additional sources of revenue such as

Up-selling Up-selling existing customers from a Software as a Service (SaaS) to a Infrasctructure as a Service (IaaS) model will be imperative to improve revenue and reduce churn. This is a long-term goal.

White label licensing In some cases we might allow our customers to sell FashionBrain solutions to their customers. This will require a proper set up of the license agreement to avoid any future pitfalls.

Customer Service Charging for additional customer service will be a innovative way to provide additional revenue streams from big customers.

Technical consultancy Through annual or prepaid contracts we provide technical consultancy on data management and analytics issues, including integration on different data resources (e.g., structured and unstructured data) and advanced analytical tools (e.g., machine learning tools through Python integration).

Figures 7.4 and 7.5 show the cashflow comparison between monthly and annual contracts.

7.4 Cost Structure

The main cost will be on research, personnel, IT cloud resources and marketing. Research costs before the go-to-market period are being partially covered by the European Commission's Horizon 2020 programme (Grant Agreement No. 732328) for the first three years. As shown in the previous section, marketing costs will trump all other costs at the beginning of the go-to-market period. After the first year, fixed IT costs and personnel will be the main cost.

8 Strategy and Commercialization

8.1 Channels – Pre-market Period

Actively communicating the project's achievements through peer-networking and public-user engagement ensures that technically sound research is being carried out to provide economical benefits. These benefits support the business case and commercialisation of FashionBrain outputs following the end of the project.

8.1.1 Academic Publications

These peer-reviewed and scholarly periodicals are aimed at specialist experts and researchers. Such publications contain original research and developments or conclusions based on collected data, which are written using technical language. The goal is to reach academic peers to ensure a constant state-of-the-art technology offer, and to establish a rich network that will allow to mitigate personnel risks in such a high turnover market.

8.1.2 Website and Social Media

The second way to reach customers is through social media and the project website which have already led to some connections (e.g. a Schwarzkopf consultant).

8.1.3 Press Releases

Press releases (e.g. printed, online, video or radio) which are sent to the media by FashionBrain team members, serve to inform a wider-range of collaborators, as well as the general public, about newsworthy and exciting project achievements.

8.1.4 Academic and Industrial Conferences and Events

Attending conferences is integral to the success of the FashionBrain project as it provides an opportunity to gain new knowledge in the field and present the project's technical research. Also, by meeting with like-minded peers, in both academia and industry, the project is exposed to invaluable referrals, products and best-practices. Some of the most important industrial events targeted by FashionBrain are ShopTalk Vegas and Decoded Fashion. These events already have been proved useful in the first part of the project, estabilishing contant with potential future customers like an online retailer (ASOS) and a tech provider (http://projectstarling.com).

8.1.5 Other Events

The Collective Intelligence Conference Series is an interdisciplinary event that brings together researchers from academia, business, nonprofits, governments and the interested public to share insights and ideas relevant to understanding and designing and fostering the use of collective intelligence in its many forms.

The FashionBrain Project was a sponsor of Collective Intelligence 2018 and showcased a promotional booth as part of the exhibition. It has also proven useful to attend other events (outside of academic and industrial conferences) that bring together people who share a common interest in the field, as it increases the project's professional network and resources.

Finally, the academic partners are transferring knowledge and innovation to the industry, disseminating results at international conferences and training Europe's next generation of data scientists.

8.1.6 Prototypes and Technologies

Ongoing developments, demonstrations and technologies developed by the FashionBrain Projects are listed and linked on the project website. All open source components published are extensively documented by means of textual documents and screencasts of professional quality illustrating how to download, install and operate the components in question using readily available and commonly used software (refer to D7.4 - Showcase Specification).

The publication of online demos (resulting from research within the project) will allow potential customers to immediately understand what our solutions can provide.

The key activities will be: algorithm design - personalised to satisfy the customer needs and always in evolution to keep a competitive edge with the competitors; marketing - to reach new customers; and cloud service design - to keep up-to-date the data integration solutions put in place for the customers.

The interaction with already acquired customers will be different depending on the kind of contract. For SaaS and IaaS (data integration and other tools), it will be mainly based on initial consultation meetings followed by technical meetings during the duration of the contract.

The interaction with fashion brands for one-off consultant contracts on custom trends prediction will also have a different kind of interaction: reporting through easy to understand summary documents that can provide a clear digested version of the intelligence obtained from the trends predictions tools.

8.2 Channels – Go-to-market Period

We will keep our connections with the academia and the industry as explained in the previous section. Additionally, we will use part of our budget to begin a marketing process, as explained in Section 7. The portfolio developed for the showcase (we refer to its spefication in D7.4) will be also used for marketing.

8.3 Customer Relationships

The interaction with already acquired customers will be different depending on the kind of contract. For SaaS and IaaS (data integration and other tools), it will be mainly based on initial consultation meetings followed by technical meetings for the duration of the business relationship.

The interaction with fashion brands for one-off consultant contracts on custom trends prediction will also have a different kind of interaction: reporting through easy to understand summary documents that can provide a layman version of the intelligence obtained from the trends predictions tools.

9 Risk Assessment

9.1 Grant Period

9.1.1 Technical Interdependencies

Technical interdependencies may lead to duplication or incompatibility of work. This risk has been mitigated by the definition of the Project Steering Committee and appointment of a Technical Coordinator.

9.1.2 Recruiting

Required recruiting may delay effective start-up of project. To mitigate this risk, organisations have planned many key activities with permanent staff so that conceptual work can begin immediately.

9.1.3 Fashwell Funding

Fashwell did not receive funding from the EU. Fashwell is a young startup, the company is financed by VCs and there is always a risk that the company does not find new capital or get acquired.

Fashwell is going to update the consortium about potential liquidation problems on a regular basis.

9.1.4 Management of Intellectual Property

Explicit rules on how to access Background and Foreground intellectual property, and how to ensure the protection of Intellectual Property Rights (IPR) have been established and addressed within the Consortium Agreement (CA) which has been agreed and signed by all project partners (and their respective institutions). Project partners shall grant royalty-free access to Background and Foreground intellectual property where it is technically essential for carrying out the tasks of the project. Intellectual property which is explicitly excluded from the project, will be identified in the CA. However, any and all IPR in any Background and/or Foreground intellectual property made available by a project partner in the course of the project shall remain vested exclusively in that project partner. Foreground intellectual property shall be owned by the project partner carrying out said work. If any Foreground intellectual property (or resulting invention) is created jointly by at least two project partners such that the contribution of each of the project partners

cannot be distinguished from that of the other, such work (and patent applications filed) will be jointly owned by the contributing project partners.

9.1.5 Conflict Resolution

The potential for conflict within a multidisciplinary project is assumed and expected to be high as it involves individuals from different backgrounds and organisational cultures working together to complete a complex set of tasks. Day-to-day conflicts may relate to differences in priorities, resource allocation, methodology choices, ways of working, or expectations of results. The conflict resolution mechanism described below aims to minimize the impact of any disagreement by ensuring a timely resolution.

- The primary mechanism for decision-making within the project will be by consensus.
- Conflicts within a WP shall, in the first instance, be mediated by the Project Coordinator and if necessary, by the Steering Committee.
- Conflicts between the Project Coordinator and a Consortium Member, or between Consortium Members, shall be referred directly to the Steering Committee for mediation (although the Coordinator may first be invited to mediate disputes between Consortium Members).
- In case of non-performance of any of the partners, the Steering Committee shall have the power to remove the offending partner from the project consortium by a vote of unanimity minus one.[1]

9.2 Go-to-market Risks

Many different risks need to be considered: the process of identifying, mitigating, sharing or transferring risks will be constantly assessed. Summarised below are the most relevant to the FashionBrain project.

Marketing Risk

There is a potential for losses and failures of marketing. This includes risks related to pricing and promotion. For the SaaS segment of the FashionBrain offer, the initial phase of the go-to-market process, where marketing costs will be the most relevant cost, is a risk in and of itself.

To mitigate this risk, an investment phase will be undertaken before the go-to-market phase, in order to raise enough capital to cover a potential longer start-up phase.

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[1]In such circumstances the provisions of Grant Agreement guidelines will apply, as well as relevant non-conflicting provisions made in the CA.

Demand Risk

This is where the demand for fashion data integration services falls or fails to materialize. This could occur due to shifts in customer needs and preferences, or because of an outside innovation that makes the marketed service / product obsolete.

To mitigate this risk, monitoring external innovations and incorporating new technologies where appropriate will be a continual priority of the business model.

Concentration Risk

Dependence on a small number of customers for FashionBrain revenue. This risk is not negligible, as the project will depend of a small number of customers in the first year of business following R&D.

A way to mitigate this risk is to seek additional external funding from investors and public grants.

Channel Conflict

The white licensing of FashionBrain technologies could lead to channel conflict with potential customers. Moreover, many retailers might seek to switch to a full in-house solution.

To mitigate this risk we will diversify on three different customer segments, as shown in the previous sections.

Resource Risk

A resource risk would be where FashionBrain fails to meet a goal due to a lack of resources, in particular, talented personnel. Our well connected academic network will mitigate this risk, ensuring appropriate and timely replacement of key personnel when necessary.

Information Security Risk

Information security risk is the potential for unauthorized use, disruption, modification or destruction of information. Such incidents could violate privacy, and facilitate other crimes such as fraud.

To mitigate this risk we will model vulnerabilities and threats of our infrastructure. Our expertise[2] in cyber security will ensure that the best practices in this field are followed.

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[2]Alessandro Checco - member of the Europol expert group on cyber security

Budget Risk

There is the potential for estimates or assumptions built into the planned budget to be inaccurate. All budgets are based on future looking forecasts that typically involve some degree of uncertainty.

We will manage this uncertainly by constantly assessing and updating it with the most recent information on the fashion market as a whole.

9.3 Intellectual Property Protection

Explicit rules on how to access Background and Foreground intellectual property, and how to ensure the protection of IPR have been established and addressed within the CA which has been agreed and signed by all project partners (and their respective institutions). Project partners shall grant royalty-free access to Background and Foreground intellectual property where it is technically essential for carrying out the tasks of the project. Intellectual property which is explicitly excluded from the project, will be identified in the CA. However, any and all IPR in any Background and/or Foreground intellectual property made available by a project partner in the course of the project shall remain vested exclusively in that project partner. Foreground intellectual property shall be owned by the project partner carrying out said work. If any Foreground intellectual property (or resulting invention) is created jointly by at least two project partners such that the contribution of each of the project partners cannot be distinguished from that of the other, such work (and patent applications filed) will be jointly owned by the contributing project partners.

10 Future Development

This document is a first draft of the business plan for the FashionBrain project, that will be finalised in M36. We plan to re-evaluate the user segments and market following the fast changing scenario of the fashion world. In particular, in the remainder of the project we will investigate with more details the smaller customer segments of Fashion Brands and E-commerce Technology Solution Providers.

Moreover, the methodology will be updated according to the results of the research process of M30, and the marketing plan will integrate what the consortium will learn in the rest of the year with participation to industrial events and conversation with potential future customers.

Finally, the financial plan will be updated to contain a wider range of scenarios, to better understand how different churn rates and marketing strategy would affect the model: this will allow to select the most robust strategy.