Reduce Supply Time to Market in a Luxury Digital Marketplace

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Master's Dissertation

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Integrated Master in Mechanical Engineering

2019-07-01

Abstract

One of the challenges faced by a marketplace is the lack of control over its selling products. From the moment items are produced until the moment the final customer receives the product, there are several steps performed by external partners that influence the products' life cycle and customer's experience. In the luxury segment clients expect the best shopping experience. They see it as a social experience and want to feel exclusive buying premium products. Therefore, all parts in the supply chain must collaborate to correspond to the needs of their costumers. This relations evolve in an iterative way as, with time, become stronger and the services provided improve, making customers' demand increase.

The problem addressed in this thesis dissertation is to understand how some of those steps really work and how improvements can be made to shorten the time to provide products to the market. The moment a player arrives to the market impacts on its relationship with the clients, its market share, its margins and the number of sales *per* season. Before this project, Farfetch did not had visibility of the full process that a product had to pass through until being at sale on its website. However, a project had been done trying to reduce the time to market for one particular brand in a specific season to test the potential impact of arriving earlier to the market. The results of that project are used as a starting point.

A project team was set up with the main stakeholders and with it were defined the different timings of the project. Brands present their products in showrooms and from there until a product goes online, it passes through several stages and distinct stakeholders. All of that was mapped and presented to the team, which gave valuable inputs to identify the biggest gaps to explore. The identified gaps required some hypothesis to be tested. The behavior of different partners, methods of production and product's categories were studied to validate the hypothesis raised. With all the knowledge acquired, it was asked to identify new metrics to measure time to market performance. To track Farfetch's performance it were defined three new KPIs that allow to see how fast products are arriving to the market, comparing with its competitors and with the previous season. The KPIs are: percentage of stock upload before sale season, average days behind competitors on the top items for a season and time taken to reach 70% of the stock units produced for the season. Finally, initiatives were proposed to reduce the supply time to market. These were prioritized considering their impact and implementation effort.

Although until the end of this project there were not sufficient historical data to measure the KPIs suggested, it were presented the values for Spring Summer seasons of 2018 and 2019 and explained how to interpret the information obtained. At the end of this work it was concluded that accessing information of the partners purchases for each season was the initiative with best ratio impact/effort to reduce the time to market and that improving relationships and contracts with brands would be the second one that could bring better results. All the proposed initiatives were presented to the project's team. The project was closed and new projects appeared due to the result of this thesis work.

Resumo

A falta de controlo sobre os produtos vendidos é um dos maiores desafios de um *marketplace*. Desde o momento que os produtos são produzidos até que o cliente final os receba, há várias etapas da responsabilidade de intervenientes externos à empresa que influenciam o ciclo de vida do produto e a experiência do cliente. No segmento de luxo os clientes experam ter a melhor experiência possível. Veem uma compra como uma experiência social e pretendem sentir exclusividade ao comprar artigos *premium*. Por tanto, todas as partes da cadeia de abastecimento devem colaborar para corresponder com as expectativas e necessidades dos clientes. As relações nesta cadeia evoluem através do tempo, ficando mais fortes, melhorando o serviço prestado, fazendo com que os clientes esperem cada vez mais da mesma.

O problema trabalhado nesta dissertação foi perceber como é que as diferentes fases que um produto passava até ir *online* funcionavam e como podiam ser melhoradas para reduzir o seu tempo de execução. O momento de chegada ao mercado impacta a relação com os clientes, a cota de mercado, as margens de lucro e o número de vendas por estação. Antes da realização deste projeto, não havia visibilidade sobre o processo de colocar um item à venda na Farfetch. No entanto, tinha já sido desenvolvido um projeto com o intuito de reduzir o tempo de chegada ao mercado para uma marca em específico, numa estação em particular, e avaliar o impacto do mesmo. Os resultados desse projeto serviram de ponto de partida para este projeto.

Foi definida uma equipa, da qual faziam parte os principais interessados, e foram definidos os objetivos e etapas do projeto. As marcas apresentam os seus produtos em exposições e desde aí até que ficam disponíveis *online*, passam por diferentes fases e intervenientes. Todo o processo foi mapeado e apresentado à equipa de trabalho, que deu importantes informações para identificar as maiores oportunidades a explorar. Para cada uma das oportunidades levantaram-se algumas hipóteses a testar para perceber como melhor atacar o problema. Hipóteses estas que incidiram sobre o comportamento de diferentes parceiros, métodos de produção e categorias de produtos. Com todo o conhecimento retirado das análises feitas identificaram-se novas métricas para medir a performance de tempo de chegada ao mercado. Para isso definiram-se três *KPIs* que permitirão controlar essas mesmas métricas. Os *KPIs* são: percentagem de *stock* carregado antes da época de saldos, média de dias de atraso em relação aos concorrentes para os produtos mais desejados para a estação e tempo que leva a ter 70% do *stock* carregado para a estação. No final, foram propostas algumas iniciativas para reduzir o tempo de chegada ao mercado e foram priorizadas pesando o impacto que teriam face ao esforço de implementação requerido.

Apesar de até à data do projeto não haver registos históricos suficientes para calcular os corretos valores para os *KPIs*, procedeu-se ao seu calculo para as estações Primavera-Verão de 2018 e 2019 para explicar a forma de interpretar os mesmos no futuro. No final do trabalho, concluí-se que aceder à informação de quais as compras feitas pelos parceiros para a estação seria a iniciativa com o melhor rácio impacto/esforço para acelerar a chegada de produtos ao mercado e que a melhoria de relações e contratos com as marcas seria a segunda alternativa a implementar. Todas as iniciativas propostas foram apresentadas à equipa de trabalho. O projeto foi encerrado e novos projetos surgiram com as informações retiradas deste projeto.

Acknowledgements

First of all, I would like to thank Farfetch for the opportunity of developing this project. To Daniel Fernandes, my supervisor at this company for all the advises and feedback provided during these months. To Martinho Brito for his continuous help guiding me in analytical and critical thinking. To all the team in Operations Strategy that made these months not only a learning experience, but also a time to develop friendships. To everyone else at Farfetch who, somehow, helped me during my work. Finally, my sincere thanks to Mariana Guerreiro for her guidance from the first moment, for sharing all her knowledge, and for making me do better every time.

I would also like to appreciate my dissertation supervisor, Prof. Maria João Pires whose insights and feedback were invaluable for the completion of this document, for her availability and help through all the process. A special thanks to Prof. Armando Leitão for helping with his knowledge at a moment of this dissertation.

Finally, I would like to thank the most important people through all the path and not only during this work. To my parents who were everything I needed at each moment of my life. To my sister for her companionship all these years. To all my friends for making me enjoy each moment of the journey. And to all the people who I have crossed and made me the person I am today.

"Maybe we need to look at this world less like a square and more like a circle."

SOJA

Contents

Acronyms and Symbols

3PL	Third-Party Logistics
AWB	Air Waybill
BET	Break-Even-Time
BU	Business Units
ETA	Estimated Time of Arrival
GMV	Gross Merchandise Value
GTV	Gross Transaction Value
KPI	Key Performance Indicator
MAPE	Mean Absolute Percent Error
NPS	Net Promoter Score
SLA	Service Level Agreement
SMED	Single Minute Exchange of Dies
SoS	Speed of Sending
VMS	Value Stream Map

List of Figures

List of Tables

Chapter 1

Introduction

This work was developed at Farfetch, a company founded by the economist José Neves in 2008. Since then, it has been evolving, being defined at the present moment as a platform. This platform agglomerates five different business units (BU): Farfetch, Browns, Store of The Future, Black & White and Fashion Concierge. The work produced was directly related to the first business unit presented. Yet, it took advantage of this business portfolio. Farfetch works with their partners, brands and boutiques from the luxury industry all over the world, to sell their products on its website that was being visited by more than 21 million people *per* month, in 2017, as presented by Williams-Grut (2017). In 2015 the company was valued at 1 billion dollar as it is shown by Fraser (2016), after that, the next logical step for the company was an initial public offering (IPO), Ghosh (2017) states. At the end of 2018 Farfetch went public at the New York Stock Exchange, having its shares priced at $20 *per* share, according to Jiang (2018). At that moment the company is valuated as a $6,2 billion business as referred by Danziger (2018b).

As said by Danziger (2018a) and Kansara (2015) the percentage of the online sales in the luxury market still represents only 9% of market share, but it is expected to grow 20 to 25% over the next years compared to only 3 to 4% for the luxury industry as a whole. By looking at this evaluation it is expected that Farfetch will perform better than the previous years as long as it continues to bet on developing its services. Farfetch works as a marketplace with their partners, as previously said, which allows Farfetch to operate without buying stock (Armstrong (2017)). Not holding stock, as also indicated by Price (2015), allows to keep their stock risk close to zero. This represents an advantage to its competitors, specially in the high luxury industry. Farfetch's value proposition allows their partners to enter in the online market without bearing the costs of it. This way, independent retailers keep their identity, while boosting their position in the market as presented by Armstrong (2017). Furthermore the service that is offered to the partners includes taking care of the logistics procedures on their behalf. The partner is responsible for uploading stock on Farfetch system and to prepare the product, which will be picked up by a carrier who delivers to the final customer.

Considering all of this, Farfetch is in a strategic position to become the number one worldwide as it stands out by the number of products as well as their diversity. Selling partners' products

on its website allows Farfetch to have the biggest number of different brands comparing to its competitors as represented in Figure 1.1.

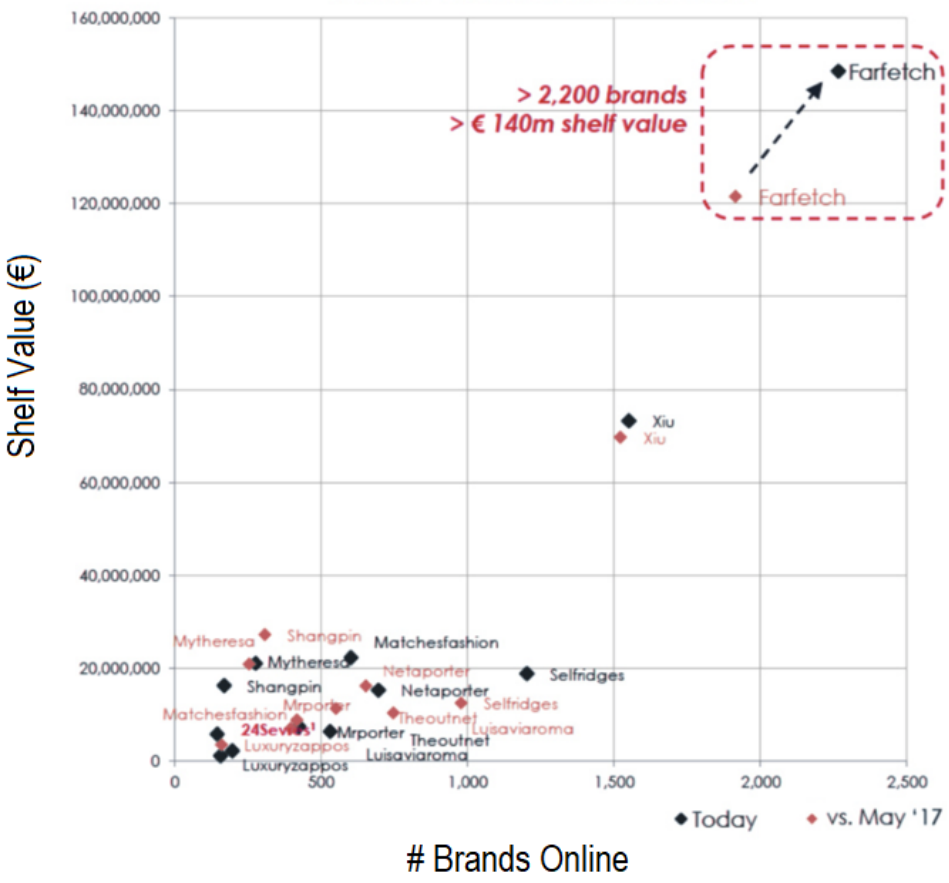


Figure 1.1: Farfetch position compared to other competitors.

1.1 Project

After an introduction of the company where the project took place, it is important to refer that a project does not perpetuate in time. The Project Management Institute (2017) states that a project's impact must be measured and evaluated in order to prove that it has created a change in the business. That change must be a new and improved way for the company to operate.

As the project takes place it is crucial to define what is the timeline, who are the main stakeholders, what is expected to achieve with it and how to measure final results. A project must appear when a need or an opportunity is identified so that its conclusion takes time at the right moment.

1.1.1 Problem

In an industry where unpredictability and uncertainty are highly connected to the product or served service it is important to react rapidly to the consumers behaviour. This happens, specially in the high luxury fashion industry, because there is not a formula that shows how people are going to shop for that season and there are a lot of factors that influence them, for example an influencer[1] showing a new bag on their social media channels.

Considering the fact that Farfetch operates differently from its competitors, being a marketplace and not possessing stock, the time it takes a product to be placed on Farfetch's website can have a significant impact on its competitiveness. In general, to have a new product uploaded into the website, it has to be created by the boutiques or brands Farfetch works with. A sample has to be sent to shooting (Farfetch's production centers), the images and descriptions of the product are created and if a partner associates stock to that item, it goes online. This means that some of the phases of the process to an item being online for sale, are partner's responsibility, adding complexity to the process.

"Nowadays competition occurs between networks rather than stand-alone companies" (Sadic et al. (2018)) and considering Farfetch's business model, its network is put to proof everyday. This, together with its customers' characteristics, are the drivers for the challenge that it is time to market. Farfetch wants to keep up with the market's demands and in the luxury segment, where the clients require being treated exquisitely, bringing new products to the market fast is a key aspect of that.

1.1.2 Motivation

The problem tackled in this thesis comes from the Farfetch's will to stand as a "global technology platform for luxury fashion, connecting creators, curators and consumers", as said by Wendt (2018) in her work. Products' availability at the right moment plays a key role for that positioning due to the luxury costumers' need for uniqueness and exclusivity.

Knowing that Farfetch's business model makes it not having control over the products and be dependent on its partners to have visibility on them, the company decided to explore the time to market theme. In Figure 1.2 are presented the main drivers of this project. Summing up, the real motivation is to find a way to become the first player in the market selling the products and to increase full-price sales.

To assess the full potential of this project, estimations were made of the impact that reducing the supply time to market would have on Farfetch's sales. Assuming that all the products at Farfetch could be for sale one day earlier would have an increase on sales at full-price of 0,75%. These estimations will be further explained in chapter 4. One of the main goals of this project was to understand where in the process was Farfetch underperforming so the process could be improved to bring their products earlier to the platform.

[1] person with the ability to influence potential buyers of a product or a service by promoting or recommending the items on social media.

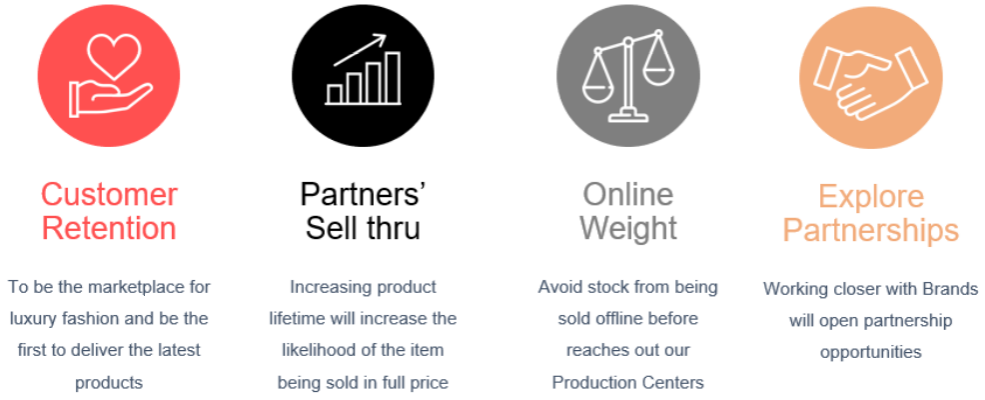


Figure 1.2: Motivations to reduce supply time to market.

1.1.3 Project goals

Having presented the project's overview, it is possible to define the main goals that this project is expected to achieve.

- Map all processes relating all the stages for an item to go online;
- Understand the *as is* situation on Farfetch and to benchmark with its competitors;
- Evaluate the impact that time to market can have on Farfetch;
- Define KPIs concerning the time to market performance;
- Identify opportunities of improvement.

It is important to notice that these objectives are common for projects that are in an exploratory phase, which is the situation of time to market at Farfetch.

1.1.4 Project owner and stakeholders

One of the steps of the initial phase of a project is to define the main stakeholders and the teams involved directly and indirectly with the project.

This project has been proposed to the Operation Strategy team by the digital production director as the team acts across all the department of operations, being mainly composed by project managers with analytical skills. As Farfetch's activity is increasing, the number of products sent to production centers rises as well, making production reaching its maximum capacity during peak season. Thus, the request initially made, was to find what products should bypass in the production planning. Having the Operations Strategy a more high level and cross-functional view, the team decided to create this project of reducing supply time to market.

To illustrate how Farfetch is organized, in a summarised way, is presented Figure 1.3.

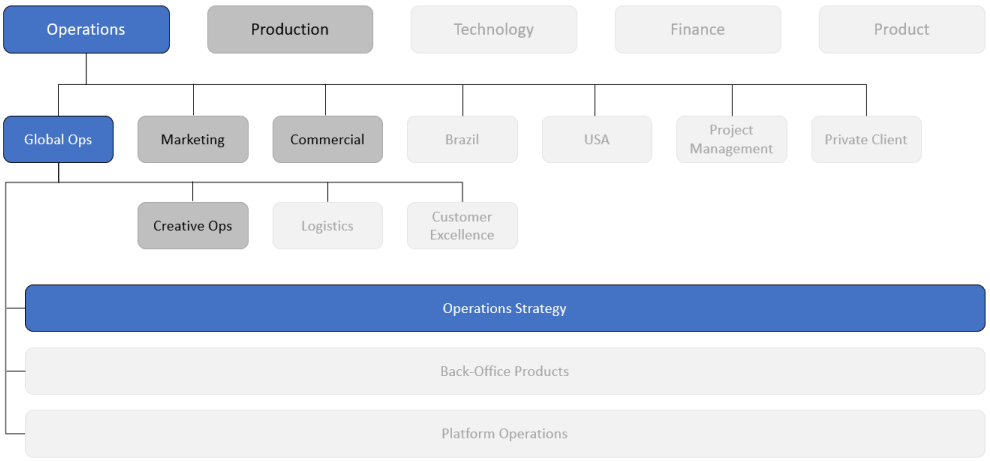


Figure 1.3: Summarised company's organisation chart with highlighted project members.

1.2 Methodologies

The approach and methodology followed in this project was based on the one proposed in the Project Management Body of Knowledge (PMBOK). The Project Management Institute (PMI), responsible for the elaboration of this book, refers that project management is accomplished through the use of processes such as: initiating, planning, executing, controlling and closing (Project Management Institute (2017)). Therefore, this project is considered a project within a project. This because during the four months during this master thesis dissertation are defined deliverables and processes to be achieved, but looking at it in the company's perspective this is only the start phase of a bigger project of reducing the supply time to market, an illustration of this project life cycle can be observed in Figure 1.4.

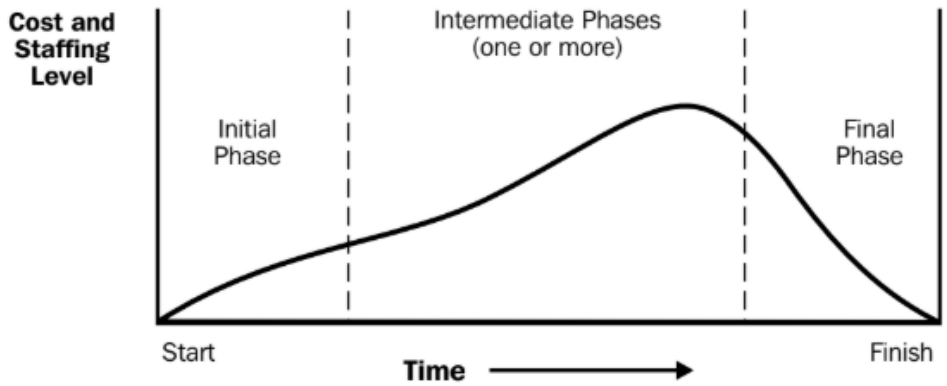


Figure 1.4: Sample generic life cycle of a project. Source: Project Management Institute, 2017

Considering that the initiating process preceded this work, it are only explained the activities of the next four process:

- Planning: define the objectives of the project, explained in this chapter. In this process was used a Gantt chart that was elaborated with the project team;

- Executing: coordinate the work being made in order to accomplish the established goals. This part of the project focused mainly on the process mapping, identifying opportunities and explore hypothesis;
- Controlling: with the creation of KPIs it will be possible to assess how well is the company performing in process related to the scope of this project;
- Closing: formalizing acceptance of the KPIs and the eventually proposed measures to improve Farfetch's performance.

1.3 Thesis outline

This dissertation is organised in six chapters. Its outline is as follows:

Chapter 1 - Introduction of the present work, starting with the scope of this dissertation, going through its motivation, goals and how is the high-level structure used to achieve them.

Chapter 2 - Theoretical background to scientifically support the decisions and assumptions made during this work. This chapter will be divided into four different frameworks: luxury environment, project management, process mapping and time to market. Luxury environment will cover the customers characteristics and identify the moment society is at regarding e-commerce; Inside project management, will cover the methodology and guidelines used to manage the present work; Process mapping section will briefly cover the important concepts to support what will be developed in understanding the as-is situation; Time to market will present the scientific work done in this area and show how different industries tackled the problem.

Chapter 3 - Detailed description of important concepts for better comprehension of the work, what has been already regarding time to market at Farfetch and process mapping of the end to end process to bring an item online.

Chapter 4 - Detailed description of project's plan and biggest gaps to explore in products life cycle. Initiating on what motivated the development of the project and justifying how time to market would impact the company financially. Afterwords, some hypothesis are presented with the goal to tackle some initial ideas and understand, based on data, the *as is* situation. Finally KPIs to control time to market performance and suggested initiatives will be presented in this chapter.

Chapter 5 - Final results to give an overview of the conclusions of the analysis performed, as well as, the obtained performances Farfetch had on time to market, based on the defined KPI. The prioritization of the proposed initiatives to improve the process is also detailed.

Chapter 6 - Conclusions of the project are presented, summarising the main knowledge acquired and the main improvements achieved which opened doors to new projects.

Chapter 2

Literature Review

This chapter is dedicated to summarise the most important concepts relating this project to both understand the reality where it takes place and to give an overview of the most relevant literature related to the subjects used to support the developed work.

2.1 Environment

2.1.1 Luxury Fashion

Luxury is a concept hard to define, therefore is better to start deconstructing it with its definition according to Oxford English Dictionary that says that luxury is "a state of great comfort or elegance, especially when involving great expense". Although there is a definition, luxury is a relative concept and it has fluctuated over time as Ko et al. (2017) state. As it is shown by Parent et al. (2009), there are two spheres out of three, the subjective (individual) and the collective (social), that are more subjective and do not depend entirely on the quality, but on a personal opinion regarding to luxury. This indicates that luxury can mean different things to different people, bringing complexity to the equation.

Okonkwo (2013) says that a brand is the sum of all the feelings, perceptions and experiences a person has as a result of contact with a company and its products and services. Considering her work and to make it be more simple to understand how the luxury environment works, a luxury brand has ten core characteristics (Okonkwo (2013)):

1. Innovative, creative, unique and appealing products;
2. Consistent delivery of premium quality;
3. Exclusivity in goods production;
4. Tightly controlled distribution;
5. A heritage of craftsmanship;
6. A distinct brand identity;

7. A global reputation;

8. Emotional appeal;

9. Premium pricing;

10. High visibility.

Summing up, brands have a key role on their position in the luxury market, but there will always be some factors out of their control to decide if they come apart of the luxury industry, such as the individual and collective opinion of the customers.

2.1.2 Luxury customers

Being explained the characteristics of the luxury brands, services and products in a general way it is necessary to now focus on its costumers. The expansion of wealthy clients over the world is causing a change in their mindset as it is shown by Okonkwo (2009). Clients are driving the shift in a way that they are becoming as important as the product as it says in the same article.

Deloitte (2019) says in its article that a new type of consumer is appearing and defines it as the HENRYs (High-Earners-Not-Rich-Yet). Besides that, companies are still making significant investments in order to capture the customers of the future: the Millennials[1] and Gen Z[2]. The HENRYs are likely to become the main consumers of the luxury industry in the future and therefore it is of the most importance that luxury brands drive their strategy to meet their needs and expectations. Future customers expect from brands to have their values sustained by authenticity, relatability, commitment to do the right thing and willing to follow sustainable practices, according to Deloitte's same report. These generations are also digital savvy, love online shopping, are big spenders and their buying decisions are influenced by the social media.

Atwal and Williams (2017) suggest that marketing to this type of clients has to be different from the traditional marketing, proposing an approach of experimental marketing. This proposal focuses on customer experiences and lifestyles, providing a sensory, emotional and cognitive experience to the consumer. Ideas and proposals like this appear specially because of the particularities of this type of costumers. Dubois and Duquesne (1993) say that luxury customers are "motivated by a desire to impress others, with the ability to pay particularly high prices, this form of consumption is primarily concerned with the ostentatious display of wealth". These kind of statements show that the luxury customers see the all experience of purchasing luxury goods as a social experience. For this it is important that brands perform in the most adequate manner to make their customers feel important.

[1] people reaching young adulthood in the early 21st century, born between 1980 and 1995.
[2] people born from 1996 to now

2.1.3 Luxury in digital era

In all industries technology is having a disrupting role and the luxury industry is also being affected by it and its greatest impact is because of the rise of e-commerce (Deloitte (2019)). McKinsey&Company (2018) even states that 'regardless of size and segment, players now need to be nimble, think digital-first and achieve ever-faster speed to market'. Therefore, the luxury industry is facing a moment of dichotomy. By one side it is necessary to adapt to this market eager for the online and digital, while on the other hand exclusivity, emotions and desire are not easily replicated using a technological interface.

Although there are some down sides of embracing technology in the world of luxury the advantages overcome these drawbacks. McKinsey&Company (2018) says that players who relay solely on retail margins and on their current position will see their competitors, that are investing on becoming a platform, or developing their e-commerce strategy, or just by focusing on new technologies, strengthen their lead.

In Deloitte (2018) report is stated that augmented reality, artificial intelligence are starting to be more and more studied so that shoppers can get a more personalised shopping experience, as is Farfetch doing with Store of The Future. Some smaller players in this sector do not have the means to, by themselves, compete in the online market, so it is expected to see them exploit synergies with technological companies to thrive in this digital era.

2.2 Project management

Through the work performed by the Project Management Institute - a nonprofit organization - "*A Guide to Project Management Book of Knowledge* (PMBOK)" guidelines were defined to help managing projects.

As there are present variables, in a project, that bring complexity to the equation such as the time, budget and quality, the PMBOK pretends to guide trough each of the phases of the project. The document states that the planning stage should be correctly performed and in an iterative way as the project's life cycle evolves.

All project's process, according with the Project Management Institute (2017), can be divided into five different process groups: initiating, planning, executing, controlling and closing. This process groups are overlapping activities that occur at each phase of the project as proven by Figure 2.1

Initiating process At the beginning of each project it is required to get the authorization to proceed with it. It is in the first stage of a project that is important to guarantee that stakeholders' expectations meet the project objectives. This process takes place when a need or an eventual opportunity in the business appears and it is necessary to evaluate the possibility to either create a project or not. In this stage a project manager is assigned and the constraints are identified, such as budget for example, that are likely to limit the project.

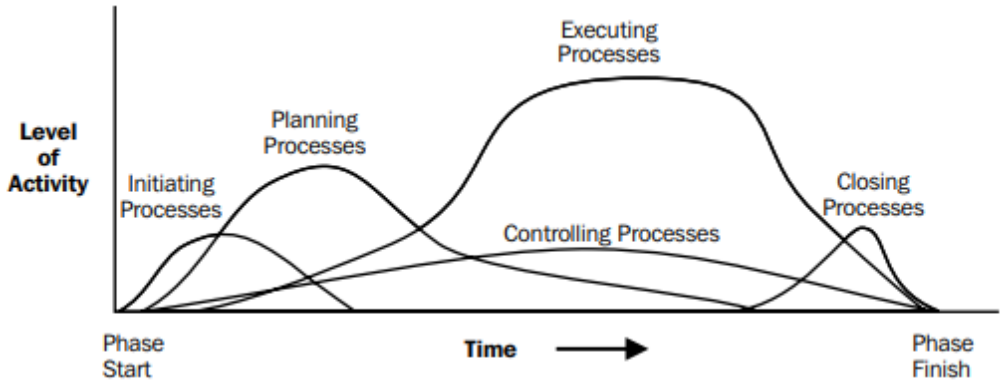


Figure 2.1: Overlap of Process Groups in a Phase. Source: Project Management Institute, 2017

Planning process The planning process is of high importance in a project. Yet, the amount of planning performed should be commensurate with the scope of the project, bearing in mind that it is an ongoing effort throughout the life of it. From this process it should come out a plan that guides everyone, following a strategy for the course of the project.

The plan must be based on the scope, duration, budget of the project to define the baselines, that allows to assess the current situation of the project. It is usual to attach to this plan a Gantt Chart that allows to have a more visual gist of the project.

Execution process After the planning process is when actions are carried out. From these actions it is expected to come out deliverables that are defined previously. Once most of the activities will occur during the execution process, it is when the majority of the project's budget will spent.

A kick-off meeting usually marks the start of this process. Throughout time regular meetings are held so that the project keeps being monitored to check the need of a replan, continuing the iterative loop of planning, executing and monitoring.

Controlling process This lasts through almost the entire project. It is necessary to monitor and measure with regularity project's performance. The project's work flow indicates that, the controlling process comes after the executing one and can lead to three different processes (planning, executing and closing). This, once again, shows that a project flows in an iterative way.

During any project there are factors that can create changes in the course of it and thus is when the controlling process acts. To monitor the project performance Key Performance Indicators (KPI) can be used. As it is said by Domínguez et al. (2019), a KPI provides a way to see whether the followed strategic plan is working or not. A KPI can be used for both evaluation and prediction. In this case, the evaluation is the best suiting measure that can come from a KPI. At the controlling process it should be evaluated whether the deliverables of the project are being accomplished at the right time, with the expected quality and if the project's objectives are being achieved. The predictive measure that can come from a KPI is, for example, if the project will be terminated on time and within the budget.

Closing process A project does not perpetuate endlessly in time, therefore an end should be defined. The closure of the project can take place either for the achievement of objectives or for other reasons, in both of them it is required a formal closure. This consists in evaluating the project, documenting the results and formalizing the acceptance of them by the sponsor, or customer. For the documenting procedure, the project manager should be responsible to gather all the documents and deliverables and store them together with a document that contains the lessons learned and main conclusions of the project.

2.3 Process mapping models

As the theme of this project is at an early stage inside of the company, it is expected that the outcome of this project helps to understand the as-is situation. For that purpose process mapping will be detailed in this section.

The usage of tools such as cross-functional process maps, also known as swimlane diagrams and flowcharts gives a more visual perspective of the process and the workflow, enabling to identify non-value added processes and steps. It often happens that, in an organization, people are so accustomed to the processes and to follow every step that has been defined that do not realize that they are not adding value to the product, service or costumer. As Rother and Shook (2013) say in their work, mapping process allows to have a high level view of the process and simultaneously, an individual perspective of each task.

Furthermore, it can happen that resources are being spent, such for example time, money or raw material, without being necessary. Process mapping helps to reduce variability and wast on the process (Von Rosing et al. (2014)). For this it was applied value stream mapping (VSM). The decision of applying VSM was based on De Steur et al. (2016) work. On their project is proven that this approach is useful in finding wast in processes and supply chain, that in their work is focused on the food segment, but the principles supporting cross different industries and areas of study.

Damelio (2011) explains that the swimlane diagram gives the context of the stakeholders that hold or perform the working activities, while shows the workflow that is "a set of interrelated activities and resources deployed in a unique manner and presents the supplier-customer relationships. In his book, Damelio defines a flowchart as a graphic representation of the sequence of work activities that have the objective to create a unique output.

With a swimlane diagram it is pretended to answer the following questions:

- Where is the start and end of the workflow;
- In what order should activities be performed;
- What are the triggers that start the workflow;
- Who are the stakeholders responsible for performing each activity.

Although creating these diagrams is not complex, there are some rules that must be followed. Activities within a workflow process have to be inside a box that is connected with other activities by arrows, indicating the input and output of each one of them. The sequence of left to right is advised for the activities' representation and the decision points are represented with diamonds. Parallel activities may happen during the project and they should be aligned in the diagram.

Chowdhury et al. (2016) indicate that to generate a VSM it is necessary to first collect information about the product and its way of processing. For that, they say, is necessary to contact with the stakeholders involved on the process and get their insights, as well as visit the places where the process occurs. This allows to try and find out different problems effectively.

2.4 Time to Market

At the present moment the global market is facing new challenges due to a combination of factors such as globalization, development of technologies, population growth, easy access to information and so forth. Companies need to keep up with this trend so they can maintain competitiveness and not lose market share. Consumers are now expecting more and more from companies relating their products and operational efficiency, so they are constantly looking for players who fill their needs better. The time that a company reaches the market is an important indicator of their operational performance and has impact on their sales and market share. On the work presented by Robertson (1993) are presented some studies' conclusions that say that "the second firm to enter a market could expect to do only 71 percent as well in market share as the pioneer and that the third firm to enter could expect to do only 58 percent as well". These conclusions are illustrative of the importance of reaching the market earlier than competitors. This need to arrive first at the market is crucial in technological-based products, but products with short life cycles, such as the case of the high fashion items, follow a similar pattern.

In their work, House and Price (1991), defend that collaborative work of cross-functional development teams is one of the most effective ways to shorten development cycles, reducing the time it takes to bring a product to the market. They introduce metrics to the time to market problem that combine the time it takes to develop a product, break-even-time (BET), break-even-after-release (BEAR). In Figure 2.2 it is possible to see the evolution of each through the product's life cycle. Cohen et al. (1996) used these metrics on his work and concluded that it is preferable to concentrate efforts on the most productive stage and that determining the optimal time to market depends on the cost structure and the market characteristics. Replacing existing products, also analyzed by them, always delays the time to market performance target on new products, but on the other hand when the time window to introduce products on the market is short or the firm has fast development capability, products should be introduced faster. Making the connection to the high fashion, where products rotate rapidly, if brands have the capacity of launching their products earlier, according to Cohen et al., products should be introduced as early as possible.

Some authors have studied how to reduce the supply time to market for several industries and to transform the supply chain into a more robust design. Yet, as Pan and Nagi (2010) described in

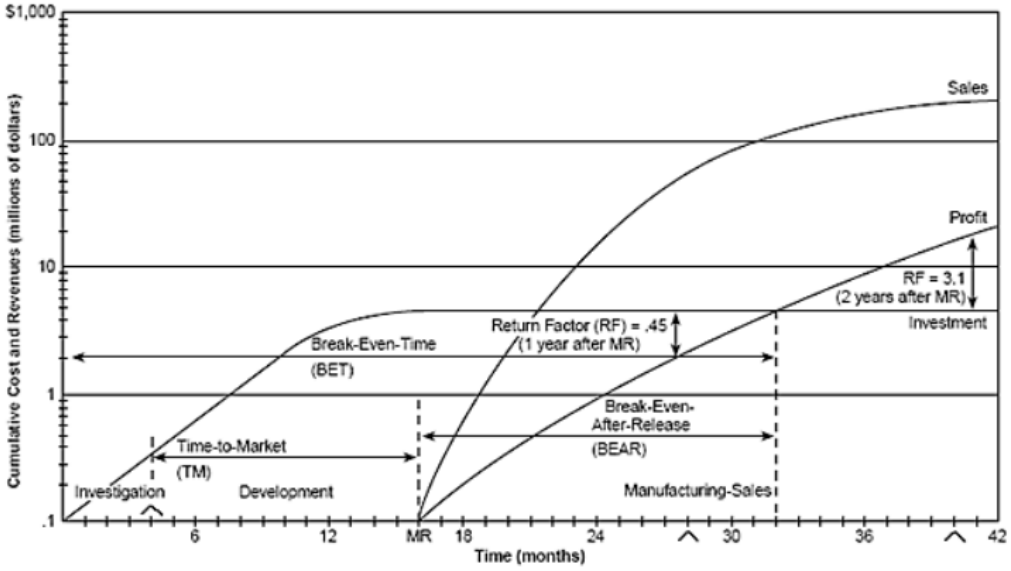


Figure 2.2: Time to market metrics during product's life cycle. Source: House and Price (1991)

their work, there are "parameters such as customer demand, price, and manufacturing capacity that are not known with certainty" that if considered wrongly in the redesign of the supply chain can be devastating for the organization. Based on their work and achievements, was concluded that this thesis' problem could not be tackled the same way as previous works on different industries. As it is inserted in the luxury segment and producers want a controlled distribution over their products, as the business model is supported by suppliers spread worldwide, and as the customer demand, products' prices and manufacturing are uncertain, the assumptions of previous projects cannot be applicable to this work. However, the mindset of those projects is useful to be followed. Acting on the different areas of the supply chain impacts on time to market.

Distinct work has been done to identify a suitable way to reduce lead-time variability in supply chain. Lin (2016) investigated a collaborative vendor-buyer supply chain model with stochastic lead time and how to reduce its variability. Although, the assumptions used in his work could not be replicated entirely to this project as a marketplace does not consider, for example, a single-vendor and single-buyer for a single product.

Chapter 3

Problem description

To fully comprehend the scope of this project it is required to understand its environment. As previously mentioned in chapter 2, section 2.1, luxury customers see shopping and purchasing products as a social experience. The digital era where society is at, is also affecting the luxury world, giving a sense of urgency in arriving faster to the market. Besides that, having the idea of how is the product's life cycle, until it goes online, and how Farfetch operates, in some of its phases, are insights that will give a more accurate perception of how the business runs and how reducing the time to market can impact it.

In next sections, some important concepts and procedures will be presented and will be introduced product's life cycle and the key processes in the organisation to place a product online. It will also be presented the current situation at Farfetch relating to time to market.

3.1 Fashion calendar

Fashion is not a science, therefore there is some unpredictability and uncertainty when defining some of its concepts and moments. Yet, there is a baseline that allows the stakeholders to communicate and interact in a proper way.

In a year there are two main seasons, the Spring/Summer and Fall/Winter, on this work they will be referred also as SS and AW seasons, respectively. As defended by Dhillon (2018) brands can no longer depend entirely on only these two seasons. For this reason fashion is divided now in four seasons. According to Simmons (2018), SS season starts in January and goes until June, while AW lasts from July to December. The two remaining seasons are the Resort and Pre-Fall. The first of these is offered to the market around late October/mid November through December, while Pre-Fall products appear on stores between the two main seasons, not being easy to define this season's timing as is explained by Sardone (2017).

3.2 Products categorization

Each product has its own specification. Therefore, it is necessary to categorize them so they can be grouped depending on their characteristics. On Farfetch databases there are several

groups and subgroups of products. For the analysis on this work not all of those were considered. The main groups are gender, brands, family and category (GBFC). Gender and brands are self-explanatory, family is a higher level of categorization as category. In this work only gender, brands and family were used. Family is divided into: clothing, shoes, accessories, bags, active wear, jewellery, lifestyle, watches, teen and baby. The last group used in this work was the season, that was presented in the previous section. Although there were referred four seasons in section 3.1 there is also a products' characteristic for season, which is being a carryover or original season. Carryovers are products launched in a season, but that perpetuate during a longer period than a season.

3.3 *Geopricing*

Geopricing is the term better known as geographical pricing. Casagrande (2018) states that geographical pricing is a marketing strategy to control global distributed products' prices. As presented in subsection 2.1.1 two of the characteristics of a luxury brand are having a tightly controlled distribution and premium pricing. Having this into consideration and once there are some external factors to the brands that have an impact on products' prices, such as governments' regulations that reduce them, as Casagrande exemplifies on her work with the Chinese regulation, brands implemented the *geopricing*. In simple terms the brand defines what is the minimum price that a item must be sold on each region. This allows them to decide whether they want to increase the price of its products in some regions or not, even if governments or other external factors reduce the prices.

At Farfetch it is not defined the exact moment when brands send their *geoprice* lists nor the percentage of items that are included. Nevertheless, it is common to receive from some brands these lists near October for the SS season and near May for the AW season.

3.4 Profit & Loss Overview

There are some concepts that are used in the company, on a day to day basis, that need to be introduced for a more easy comprehension of this work.

At Farfetch there are two equations important to stand out as they correlate variables that are used frequently in this project. Those are the calculation of the *Order Contribution*, described in Equation 3.2, and *Gross Merchandise Value* (GMV) calculated on Equation 3.4. It is also explained in Equation 3.1 how it is obtained the *Gross Profit*, that will be used to determine *Order Contribution*.

$$Gross\ Profit = Revenue - Cost\ of\ Sales \tag{3.1}$$

Where *Revenue* is the platform revenue and the fulfilment revenue, that is the same as saying it is the sum of all the sales, commissions and shipping costs charged to the costumers. The *Cost of Sales* are the expenses that need to be paid such as packaging, duties and shipping costs.

$$Order\ Contribution = Gross\ Profit - Demand\ Generation \tag{3.2}$$

The *Demand Generation* are the expenses of targeted marketing programs to drive awareness and interest in a company's products or services.

The GMV is preceded by the Equation 3.3, where the *GTV* stands for Gross Transaction Value that corresponds to the entire value charged *per* order to the final customer and the *Cancellations* is the value of the orders cancelled by reasons as payment refused, no stock and item swap.

$$GTV\ delivered = GTV - Cancellations \tag{3.3}$$

$$GMV = GTV\ delivered - Returns - Sales\ taxes \tag{3.4}$$

Where *Returns* is the value of all the return's expenses for each product that the customer did not want to keep.

3.5 Incentive plan

Farfetch's customers are used to a certain level of excellence when shopping on the physical stores. By operating with this market tier, Farfetch is expected to have high-quality standards. Being dependent on their partners' performances, an incentive plan was developed to reward or penalize partners whether they perform according the high-end customers needs or not. There are some metrics that evaluate partners on a monthly basis. At the present moment metrics with the biggest impact on partner's score are the No Stock and Speed of Sending (SoS). The first one measures the percentage of items ordered that the partner did not had stock available, and the second is the time it takes for a partner to have an order ready to dispatch. Although these are the metrics with the biggest impact on partners' score for the incentive plan, there a few more that are applicable, such as:

- Percentage of items sent in less than one day;
- Packaging rate, is based on the package used compared to the packaging recommended by Farfetch;
- Net Promoter Score (NPS), is the classification given by the client to the package received.

The incentive strategy has the objective to make both boutiques and Farfetch thrive once this business model requires a collaborative approach to succeed.

3.6 Vendor funding project

The vendor funding project was an initiative started by Farfetch to help partners to acquire their products. It consists in lending money to some boutiques so they could have sufficient funds to

purchase the products for the season. Luxury segment requires that its players have high working capital to support their purchases due to the prices of the products. In the case a boutique cannot afford the products for that season, it could be difficult to borrow money from banks and support the interests practised by it, as well as deal with the bureaucracy it involves. Farfetch decided to give support to those partners and lend them money, simplifying the bureaucratic process so they can do their purchases in time for the beginning of season.

Currently, there is no control on the boutiques' purchase orders and the contract between the boutique and Farfetch only defines the interest rates and the moments of refund.

3.7 Life cycle of a product

Farfetch sells on its website a set of its partners (boutiques or brands) luxury products, working as a marketplace. The items sold on its platform are not owned by Farfetch, as first presented in chapter 1, which on one side acts as a competitive advantage, but on the other hand does not allow to have control on the stock. Adding to this, until a product is available on Farfetch's website it passes through different stages, being some of them controlled by external stakeholders, as it can be observed in Figure 3.1.

A detailed description of each stage will be presented in following subsections. It can be found in Appendix A the process mapping, in a more visual perspective, for a product to go online at farfetch.com from its creation moment by the brand.

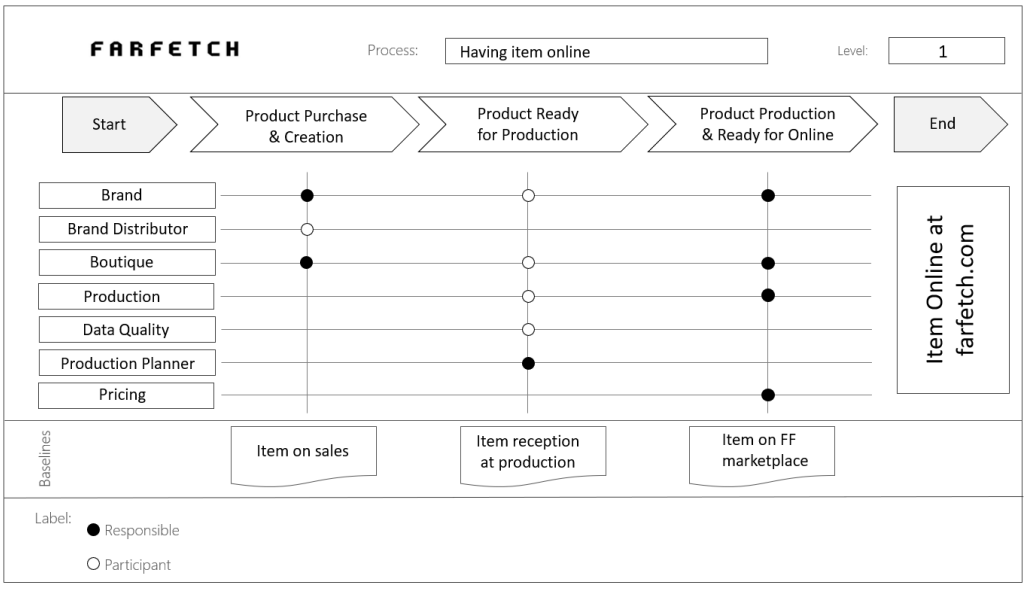


Figure 3.1: 1st level model of the process to place an item online in Farftech's website.

The stakeholders can be divided into two groups, external and internal. Brands, boutiques and brand's distributors are external stakeholders, whereas the internal stakeholders are teams inside Farfetch that work in some stages of the process. The final deliverable of this process is having a product online. For that, images of the product, descriptions of it and, at least, one stock unit

are required, otherwise the company cannot sell a product on its platform. In Figure 3.1 is also represented a high level of the workflow of the project. Each arrow represents a distinct phase of the process and the deliverable of each phase is presented in the baseline. There are moments when different stakeholders intervene in the same phase, depending on their level of engagement. They can be either responsible for the phase or just participate on it.

3.7.1 Product purchase and creation

This first phase of the process is the one where Farfetch has the least control and visibility of it, at the present moment. The main reason for this is that it does not take any kind of action or responsibility for any action. Figure 3.2 represents the first phase of the process.

Each brand (e.g. Gucci, Prada, etc.), creates samples of the products designed for the season and they are presented in a showroom or fashion show. A showroom is, as Ayoade and Eneh (2015) say in their work, a place where the brands exhibit their products enabling their costumers, mainly boutiques, to test, try and evaluate their products. It is in the showroom that most orders are placed to the brand. If the brand has a considerable dimension it is usual to have its own showroom, but there are also some cases where the showroom is hold by a brand distributor that presents several brands' products to the boutiques and receives a commission for each order placed. A showroom can occur one year prior to the season that is intended to cover. A collection for the AW19 season can be presented in November of 2018, while this season is expected to start in May 2019.

After receiving the boutiques' orders the brands will decide whether they have enough orders that justify production and will inform the boutiques about the delivery window. In some cases the brands will send products directly to Farfetch's production centers so it can be produced and created on its systems, but the most common situation is the brand only sending the products to the boutiques. The boutiques (fashion stores that buy stock from the brands and sell it on their physical and online spaces) are considered Farfetch's partners and are responsible to create the products on a platform, from Farfetch, called Sales.

The product creation on Sales platform can be done via system integration or manually by the boutiques' employees. For a product to be created there are mandatory fields: products' season, gender, collection, designer ID, category, color, price and size range. For the case of boutiques that have integrated systems the item is only created when the product is on their system and they are willing to give visibility to Farfetch. Then a file is automatically sent to Farfetch with all the information. However, as the manual process is becoming outdated and time consuming, most of the boutiques create products through this process. Boutiques can create manually a single product directly on Sales or create several at the same time by filling an excel template, that is not very flexible and prone to mistakes that can have an impact on the next phases, as it is going to be presented.

3.7.2 Product ready for production

From having the item created on Sales to having a sample in a production center, there are some important tasks to be completed. Figure 3.3 illustrates the steps that a product has to go

through, in this second phase.

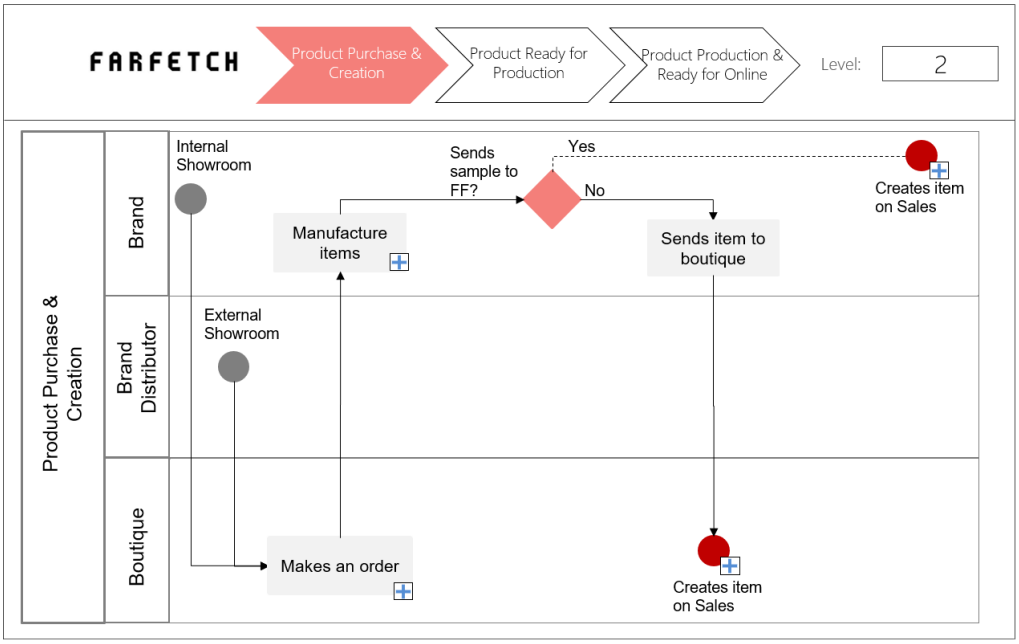


Figure 3.2: Product purchase and creation - 1st phase of the process on the 2nd level mode.

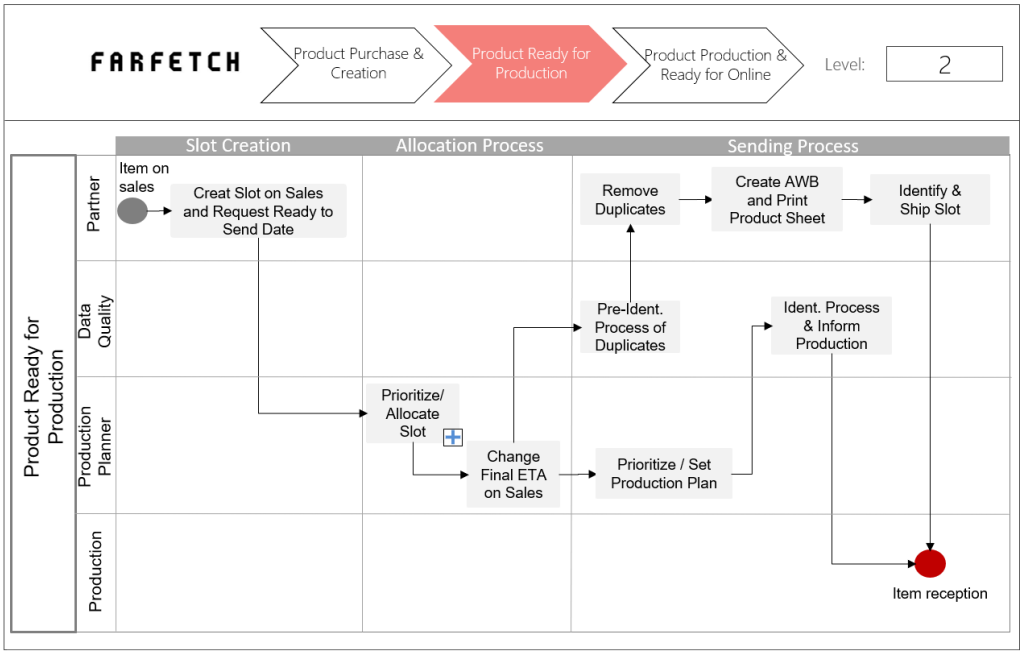


Figure 3.3: Product ready for production - 2nd phase of the process on the 2nd level mode.

When the partner has its products created on Sales it is able to create a slot. A slot is a group of up to fifty different products that later on will be sent to production. As soon as the partner wants to dispatch its slots, indicates that is ready to send them and then Farfetch schedules the pickup and the third party logistics (3PL) collects them at their store or warehouse.

With the list of slots and the knowledge of its constitution, the production planning team prioritizes and allocates the slots taking into consideration the production capacity for the future. The production capacity is mainly affected by the availability both for men and women models, photographers and stock hold. The prioritization rules for slots, at the present moment, are:

1. Slot that include top 500 brands;

2. Day when it became ready to send;

3. Slot composition (e.g. number of men/women items).

After this step the production planning team indicates the estimated time of arrival (ETA) and the data quality team works to find if in the slots there is any product that has been already produced - duplicates - and informs the partner of that so the item can be removed before being sent. The partner is then responsible to create the air waybill (AWB) and ship the slot, being the production responsible for its reception. From the moment the data quality team starts its work, until the slot arrives there is still a large percentage of duplicates identified, as it can be seen in Figure 3.4, forcing the production planning team to update the production plan. The high percentage of duplicates is due to several reasons, being the incorrect filling of the templates mentioned in subsection 3.7.1 one of them. The other main factors for these numbers are the partners not removing the duplicates identified by the data quality team from the slots and the same item being sent to production from distinct partners, on request of production planning team.

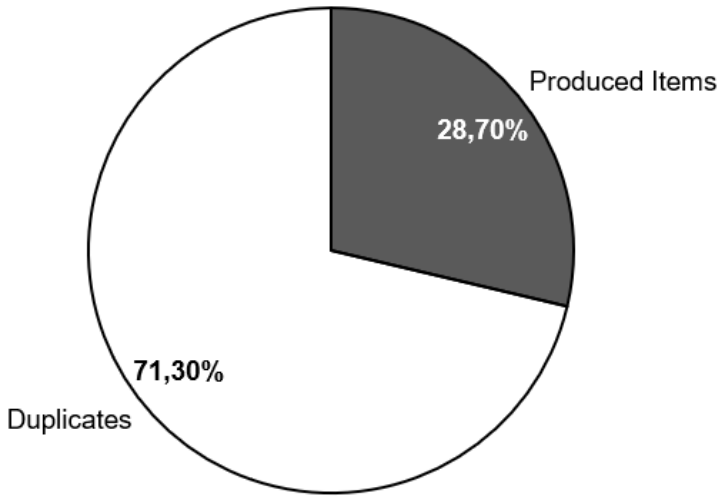


Figure 3.4: Distribution of items arrival at Farfetch's production center in *Guimarães* for the year of 2018.

3.7.3 Product production and ready for online

As soon as an item arrives three stakeholders work in parallel. At this moment partners, production and pricing teams are responsible for at least one step of the process and only when all of them finalize their tasks the item becomes online. For easier comprehension address Figure 3.5 that represents this 3rd phase and shows the stakeholders involved.

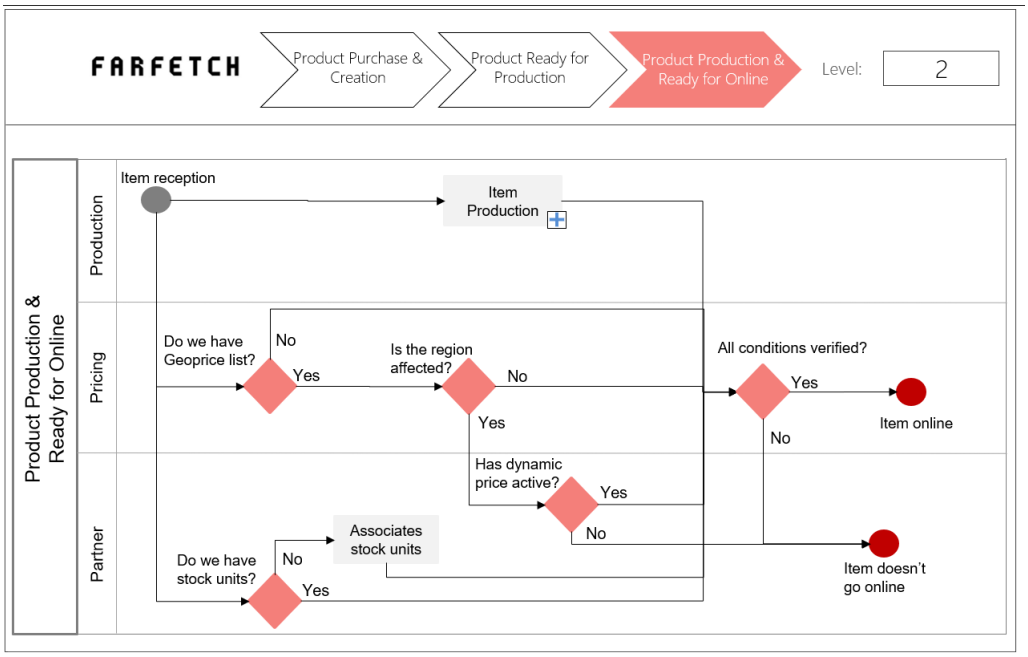


Figure 3.5: Product production and ready for online - 3rd phase of the process on the 2nd level mode.

The production team receives the slot, scans-in the products and according to production plan and items' characteristics, the item goes to live model shooting. After this stage products might go to either the jewellery section, stills[1] or flat[2]. If the products' family is kids Farfetch does not produces them in live model and has specific stations for them for either flat or still. After the shooting sessions it is made a quality control to evaluate the outcome. If the quality standards are achieved the photos are edited and descriptions for the products are produced after data is collected from the products (e.g. washing instructions, composition), otherwise re-shoots are made. The products are then put into packages, sealed with duct tape (defined as packing in the production centers) and returned to the store of origin. Figure 3.6 summarizes this procedure.

The pricing team works directly with the brands. For this process they receive the *geoprice* lists from them and have to process all that information. The team analyzes if the products listed by brands are being sold in a region where brands want to control the selling price. In case this is confirmed, the product can only go online if sold at an equal or higher price than the recommended by the brand. If the price is lower than the proposed by the brand and the partner has dynamic price active, the product goes automatically online with the price that the brand demanded. Dynamic

[1] an ordinary static photograph as opposed to a motion picture, especially for items such as bags and ties.
[2] an upright section of stage scenery assembled on a movable frame.

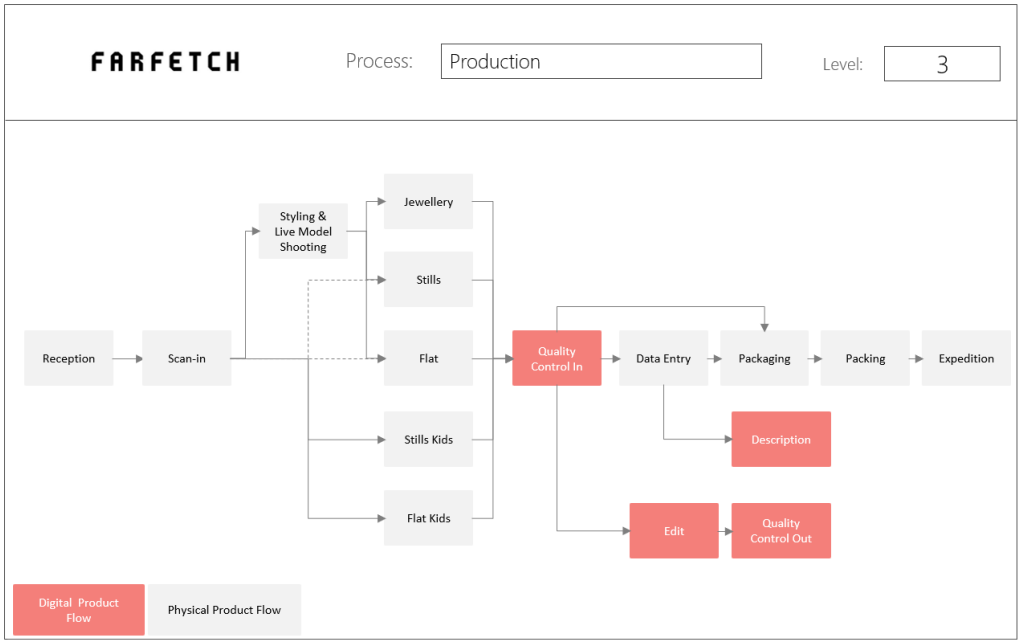


Figure 3.6: Process of producing items to go online.

price is an option that the boutiques can activate or deactivate. In case this option is active they will accept automatically the minimum price defined by the brand, otherwise the product will not go online until they change manually the price of sale. It matters to refer that this work is only applicable when brands send the *geopricing* list before the item is online. When the product is already online and the list prevent the product from it, the pricing team acts reactively by removing the item from the website.

Regarding the partner's actions at this stage, although responsible for few tasks those are fundamental for a product to be available in Farfetch's website. Both boutiques and brands can associate stock before the product is produced and therefore, if the dynamic pricing is active, the product is in conditions to go online. Furthermore, in the case the product has no stock unit associated, until a partner uploads stock on Farfetch's system, it will not be available. Only after that moment, and only if all conditions from the other stakeholders are verified, a product is available for clients' purchases.

Farfetch also works with some partners via file transfer protocol (FTP). FTP consist in receiving products' images directly from some brands and boutiques and edit them. If descriptions of the products are completed and the partners have uploaded stock, the product goes online. It was decided not to include this way of working on the flow charts because only 3% of the items are produced this way and it was decided by the company that this was not the way Farfetch was going to work in the future. Ahead in this work a small analysis will be done for the products online via FTP to see its impact on reducing supply time to market.

3.8 Time to market in Farfetch

At the moment that this work started, the company had already focused on the topic and had a few initiatives. The two main points of focus for time to market were a production's KPI and a project called mobile production.

Farfetch has a service level agreement (SLA) with its partners to return the products sent to the production centers. Products must be returned in a short time period so that it is not penalizing boutiques by not having the products for sale in store. Using this SLA as a starting point, it was developed a KPI that is supposed to evaluate if 80% of the items go online four nights after being received at production.

Mobile production was an initiative held in 2017 for the SS18 season of one particular brand. A team of stylists, models and photographers travelled to the brand's studios in Italy and produced their full catalogue for that season. The project allowed to have that season's products photographed faster once the second phase of the life cycle was suppressed and the third phase had some points removed as well. The results of this are evident by looking at Figure 3.7. Although the stock upload was not only responsibility of this brand's project, the fact that the pictures were taken earlier allowed the partners to associate stock faster. At some moments, for the same amount of products uploaded, Farfetch had them for sale 15 days earlier. The purpose of having the items earlier was to prove that having the items online faster would increase the probability of selling them at full-price and that the same value of GTV could be achieved earlier.

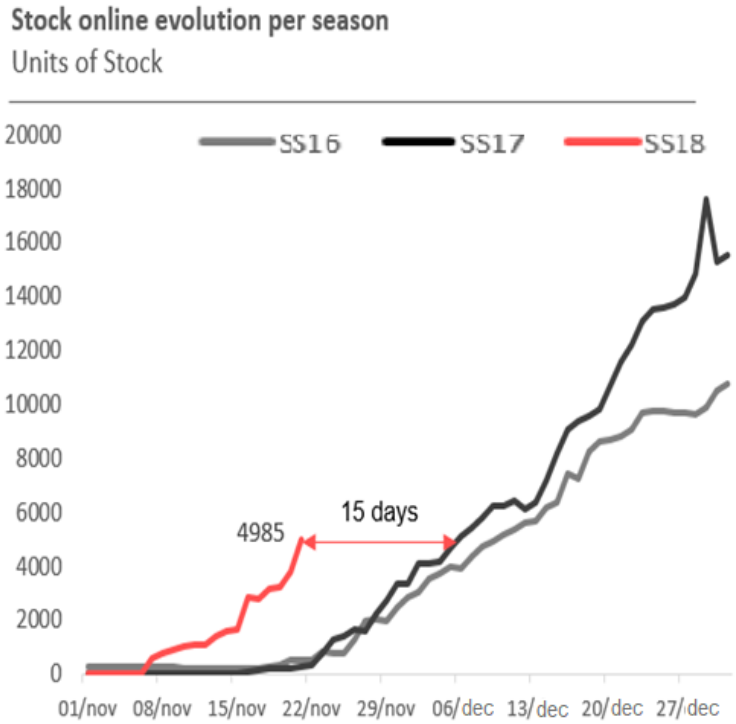


Figure 3.7: Stock upload distribution for the mobile production brand in SS16, SS17 and SS118 seasons.

In Figure 3.8 is shown that this project had an impact on the full-price sale for this brand. While from 2017 to 2018 all the other brands sold proportionally more products in markdown prices, the mobile production brand sales evolved on the opposite direction. Full-price sales had an increase of 5 percentage points. Figure 3.9 shows a left shift of the GTV originated by that brand sales in the season where mobile production had impact. This project did not have further developments due to the rapidly growth of Farfetch and different priorities appeared, as well as it was not scalable because of the high costs of sending a team to the brands and boutiques' studios. In mobile production the cost of a photo was the double of one took in the production centers.

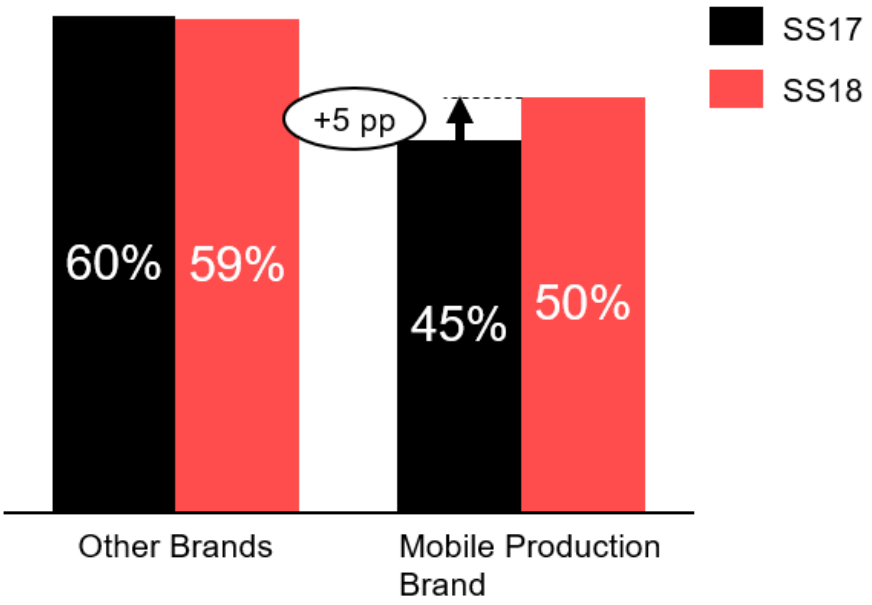


Figure 3.8: Percentage of GTV achieved in full-price for SS17 and SS18 seasons by the brand worked in mobile production and all the other brands.

There was also a project, non related with time to market, that claimed that selling on markdown price would affect negatively order contribution. Even though the main focus was not time to market, what this project concluded allowed to increase the importance that time to market has. The most relevant result was that selling on markdown would decrease the order contribution per order on 40%.

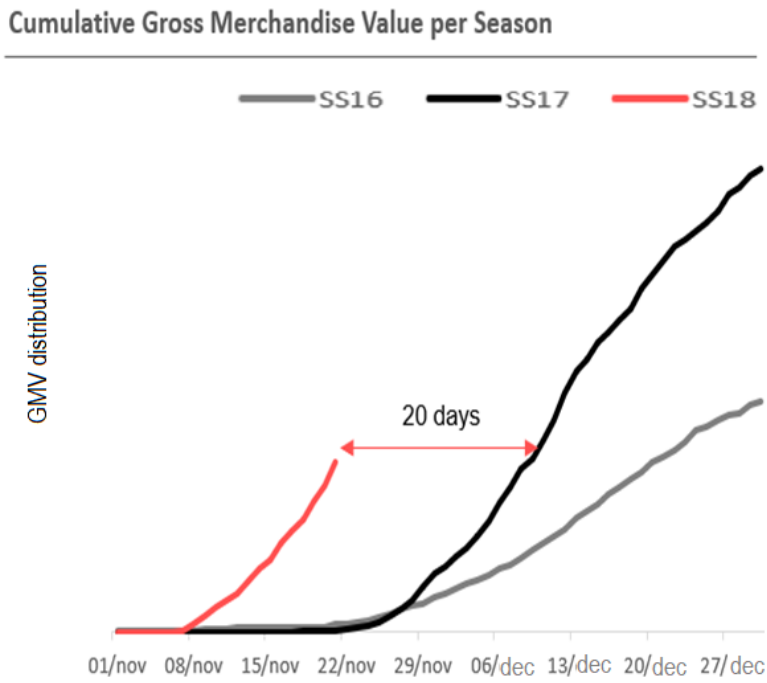


Figure 3.9: GMV distribution for different seasons for mobile production brand in homologous period

Chapter 4

Methodology

In this chapter is presented the methodology used in approaching the supply time to market topic. Until now, there was not a comprehensive analysis to quantify the possible opportunity of reducing supply time to market. Thus, several analysis will be explored which support the identification of opportunities as well as their prioritization.

It matters to refer that the process followed the PMBOK methodology. In Figure 4.1 is shown an illustration of how the project was guided.

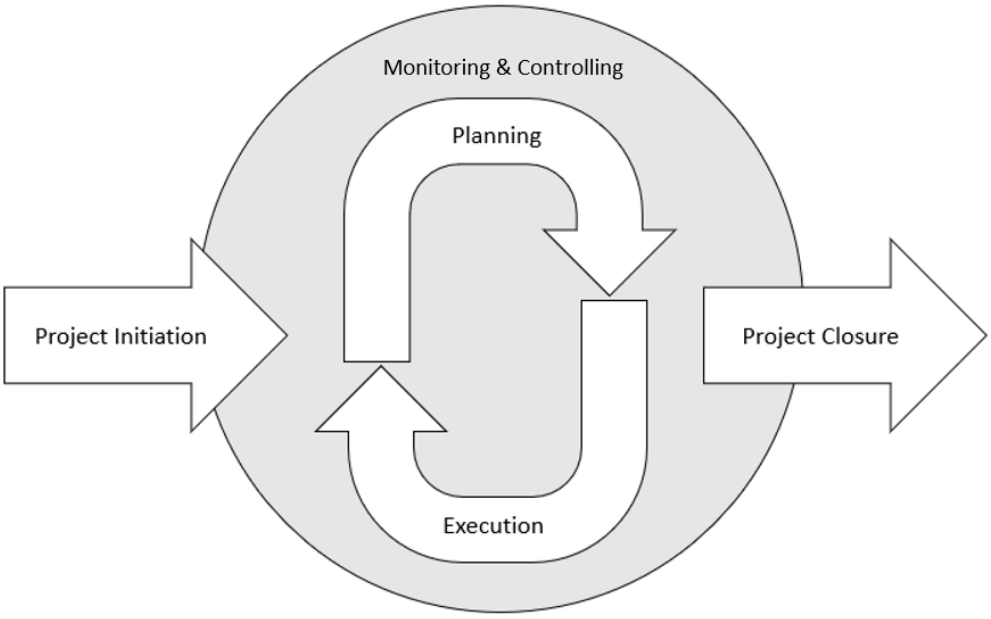


Figure 4.1: Project pipeline inspired on the PMBOK guidelines.

4.1 Goals and stakeholders definition

The PMI states in PMBOK that any first stage of a project must start with the definition of the project's scope, stakeholders identification and the estimation of the investment needed.

In Chapter 3 were presented some important concepts for a better perception of the scope of this project, alongside of what time to market represented to Farfetch. This project has been elaborated by the Operations Strategy team with the input of the Director of Production. The request was to understand how production should allocate their resources when their peak is reached, something that was becoming more frequent due to business growth, increasing number of partners and products that Farfetch has to work with. Using this request as a motto, the team defined that this work would be an exploratory project. The goal was to fully understand the impact of reducing supply time to market and give visibility, to the main stakeholders, what are the internal and external processes that allow an item to go online. We also identified some pain points in the process, investigated how is Farfetch comparing to its competitors, defined KPIs that enable to control time to market performance and suggested actions to be taken to reduce the supply time to market.

Having the main goals of the project defined it was clear that not only the production team would be affected by this project's outcome, but also some other stakeholders. The stakeholders were identified and the project team was built with some members of these teams as shown in Table 4.1.

Table 4.1: Stakeholders and project team members

Team	Role in the project	Justification
Operations Strategy	Project manager	Responsible for projects inside Operations
Digital Production	Project team	Accountable for production and its planning
Account Management	Project team	Support boutiques inside Farfetch
Commercial	Stakeholder	Responsible for contracts and negotiations with partners
Marketing	Stakeholder	Responsible for benchmarking and marketing campaigns
Partner	Stakeholder	Liable for owning products

As for the investment, on this project two things should be considered, working hours of project team members and the capital invested in applying measures to reduce time to market. Given the exploratory scope of this project, it was defined that no capital should be spent before business cases were developed. It was defined that this thesis project should last until June, time when further developments must be studied and goals aligned.

4.1.1 Project timings

Based on previous process results, it was the moment to plan actions that must be taken through the course of this project. According to the project's scope, actions were defined and their timing is presented in the Gantt chart in Figure 4.2. Note that the last task presented was accepted to take longer than the time period defined for the project because some stakeholders, such as commercial and marketing teams, can become liable for this and might not have availability.

The first task, "As-Is mapping", is crucial because it will be used as the baseline for the produced work. The main results achieved with the process mapping were presented previously in section 3.7 and in Appendix A, enabling to understand how is product's life cycle and to identify a potential moment to act in order to reduce the time to market. In Figure 4.3 is summarized the

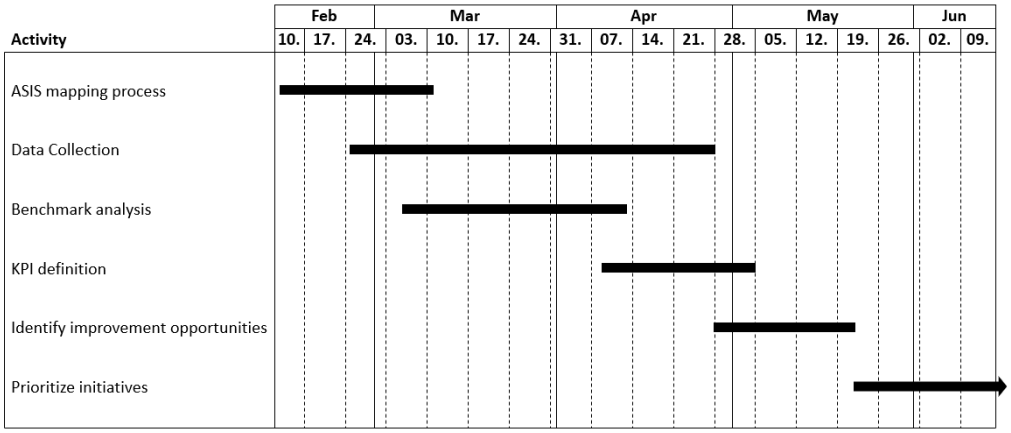


Figure 4.2: Project Gantt chart - high level view

process mapping and an explanation of the challenges between phases. Right after the moment boutiques place their orders to the brands there is a big time window that can be explored. Until now, Farfetch had no visibility on this part of the supply chain and it is where tasks take longer to be completed.

Although some past work was done to improve production's activities, it can be seen in Figure 4.3 that even by optimizing at its maximum, production can only reduce supply time to market up to a certain point. Comparing the timings of each event, production is the one that less time takes to complete its processes. Based on this, the following work was mainly driven to understand these early stages and how could Farfetch act to take the most advantage on them.

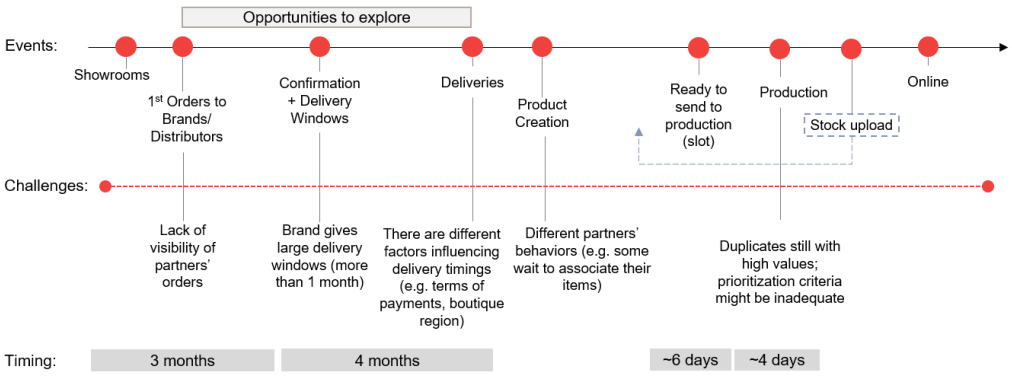


Figure 4.3: Summarized process mapping and challenges that Farfetch faces between different stages of the process

4.2 Data collection & analysis

Data collection & analysis tasks were divided into several sub-topics because they were the starting point of all the phases and the more complex and structural phase of this work. This part of the project was the driver for the subsequent tasks.

Planned work was based on requirements from the main stakeholders and the work group. In the first moment of the planning process it was defined that the analysis listed in Table 4.2 would better suit the purpose of the project.

Table 4.2: Analysis planned for the project

High-level approach	Justification
Impact of reducing supply time to market	Understand the potential of the project and justify the investment on future initiatives
Farfetch's business unit - Browns and Browns Concessions	Test if different partners act distinctively when giving visibility to stock
Partners behavior	Categorize in multiple ways Farfetch's partners and test for hypothesis according results
Distinct production methods	Verify if producing items with different processes affects their time to market

As results were being achieved, planned timings were being adjusted as new hypothesis appeared, reinforcing the idea of iteration that is being presented through this work.

4.2.1 Impact of reducing supply time to market

A decision making process should be based on data and for investment and strategic positioning it is useful to know the impact of a project to either implement it or not.

Having a seasonal product for sale faster can impact an organization in distinct ways, as presented in section 2.4. After presenting the time to market problem, in Chapter 3, it was identified the potential impact on Farfetch derived by different reasons:

- Arriving earlier to the market allows to sell the products for more days;
- Selling more items on full-price increases the order contribution;
- Reducing the lost sales impact.

The main focus of the economical impact of this project was based on the first reason presented. Reducing the supply time to market will allow to sell products for a longer period. To estimate the impact of this it was calculated the GTV for a time period of one day. For this possibility three situations were thought:

1. The extra day of sales follows the growth of sales during the season;
2. The sales of this extra day consider the average sales per day for the season;
3. The extra day allows to reach the same GTV value as the last day of the full-price season.

All of these were based on two assumptions: there is no stock limit and carryovers are not impacted by reducing time to market. It matters to refer that it was assumed that by anticipating the products' entry on the platform, customers would actually buy them. In Appendix B is shown the correlation between items online and GTV distribution, that helps supporting this assumption.

1) Extra day follows sales growth The first procedure for this analysis was to gather the distributions of the last seasons' GTV. In Figure 4.4 is presented the seasons' curves from SS16 to AW18. The graphs presented consider the sales of all season original products for the referred periods.

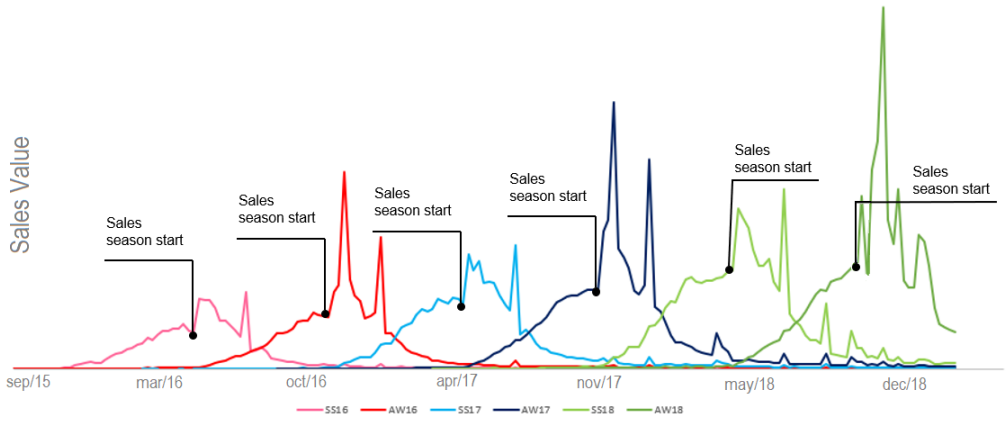


Figure 4.4: GTV distribution for SS16, AW16, SS17, AW17, SS18 and AW18

By looking at Figure 4.4 there is a clear pattern that the distributions follow, that is due to seasonality. All of the seasons seem to have an almost linear distribution during full price, but there is a peak during sale season. For that reason the distributions were grouped into homologous seasonal periods with the values of full-price GTV distribution, presented in Figure 4.5.

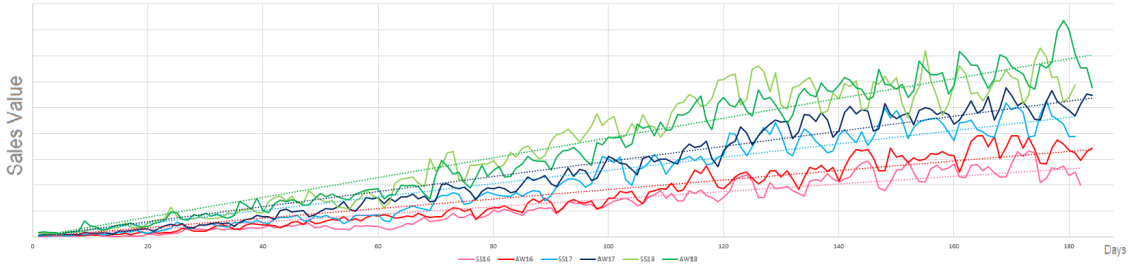


Figure 4.5: GTV distribution for SS16, AW16, SS17, AW17, SS18 and AW18 during full-price period with linear regression modeling.

Modeling the curves behavior with a linear regression could allow to predict the value of sales growth with one more day of selling. For that purpose, it was applied a translation to the left for each season and then it was integrated the linear expression, changing the domain as well. A general expression of calculation made is presented in equation 4.1.

$$\int_{a}^{c+1} [m*(X+1)+b]dx \tag{4.1}$$

Where X represents the number of days, both b and a in this case take the value of 0, c takes the number of 181 for SS seasons and 184 for AW seasons (approximation of the number of days for full-price period) and m is the slope of the line.

The difference between the actual value of GTV obtained, with the one calculated using the equation 4.1 gives the impact of arriving one day earlier to the market. The values obtained for each year (Spring/Summer and Fall/Winter) were weighted on the annual GTV and with the average value of those it was possible to get the potential impact by multiplying it by the company forecasted GTV for 2019 (full year). According to these calculations, GTV would increase 0,75% in 2019.

Up to this point it was determined the impact without taking into consideration the error of the linear regression model. For its determination it was used the weighted MAPE (Mean Absolute Percent Error), explicit in equation 4.2. The value for the error was of 16,30%, which is a considerable variation, but due to the high absolute value that represented on GTV earnings even for the inferior limit of the range of values it was accepted the measure of the impact.

$$weighted\ MAPE = \frac{\sum |A - F| * 100}{\sum A} \tag{4.2}$$

Where A is the actual value of the GTV and F represents the forecasted values from the linear regression equation.

2) Extra day with average level of sales For this hypothesis the procedure is similar to the previous one, but instead of considering that the sales follow the same growth as the full-price period it is considered that the extra day has the average level of sales. To evaluate the impact it was calculated the average of GTV increase for the years of 2016, 2017 and 2018 for that one extra day. The economical impact for this situation would be for 0,18% increase on GTV in 2019.

3) Extra day with last full-price day sales This time the process to obtain the impact of reducing by one day the time to market is the simplest. Using the last day of full-price sales for each season it was determined the increase on GTV of that season, that last day of full-price sales would cause if it happened for another day. Calculating the average of those extra percentage of GTV. It was obtained an estimated impact of 0,26% on GTV in 2019.

4.2.2 Browns and Browns Concessions behavior

As mentioned in Chapter 1, Farfetch has distinct BU. To take advantage of this, Browns and Browns Concessions were studied once they are two partners owned by Farfetch. These BUs buy stock and sell it both on their channels and on Farfetch. As they buy stock it is possible to better understand the supply chain instead of only receiving information from external partners. Besides, the profit of sales goes in any way to the company, not benefiting arriving late to Farfetch's website. By analyzing Browns and Browns Concessions, it will also be possible to do some comparisons with all the others and understand if there is any trend on other partners in holding the stock during some time in the season, as they would prefer to sell it by their own channels, not paying commission fees to Farfetch.

The first thing to be done was to confirm the idea that both Browns and Browns Concessions had their products online faster than the others. The results, in Appendix C, indicate that products

were not online as fast as expected. It came to the point where it was required to investigate further how these partners were performing, comparing with others, in different moments of the process. The stages that were studied were the creation date, scan-in date and slot ready to send date. In Appendix C are presented the resulting graphs for all the analysis made for these two partners.

It was concluded that both Browns and Browns Concessions were creating the products several weeks earlier than other partners. After a brief research it was discovered that this happens because they create products on the system just after placing their orders to the brands. It was found that even some of the products created were not even received by these partners because brands did not produced them. Something that can happen because brands did not receive enough orders, as explained in Chapter 3. The delay on Browns and Browns Concessions life cycle product was not on creation date stage.

Since the cause of arriving online later than expected was not because of delays in product creation, it was checked when the products were arriving at production for shooting. The conclusion with this analysis was that their products were not arriving faster than the other players. The problem was between the moment of creation and scan-in.

The next logical step was to test when Browns and Browns Concessions were putting their slots ready to send to production. The results, in Figure 4.6, showed that Browns was not placing its products faster than other players, but on the other hand, Browns Concessions did (concluded by only looking to the two most recent season).

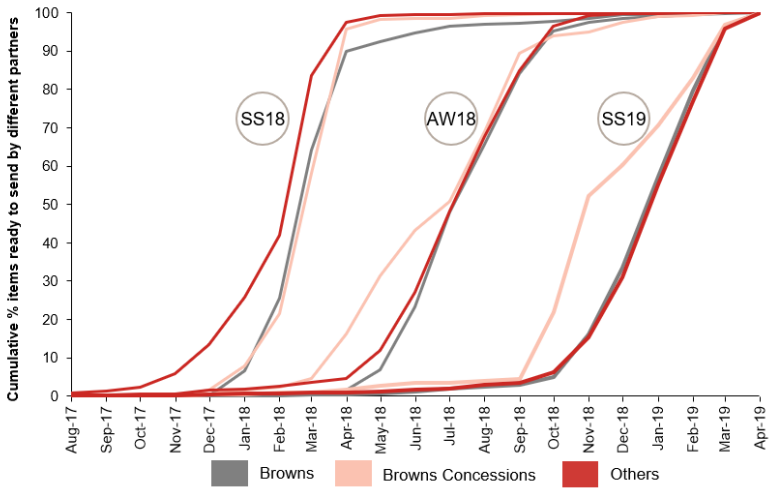


Figure 4.6: Cumulative percentage of products from Browns, Browns Concessions and other partners placed on ready to send to production for SS18, AW18 and SS19.

These results were presented to the accountable people of these two partners, that stated that it was not a surprising outcome. Browns does not receive products from brands earlier than the majority of boutiques. On the other side, Browns Concessions receives products earlier than most of the boutiques because they work as an agent of the brands (they sell in consignment) and due to that, brands send products faster to their warehouse. Yet, their products were not arriving faster to

production and that was because the production planning team does not prioritize their products, pulling them only according to the production availability.

It was concluded that Farfetch was not using its distinct BUs to improve its time to market performance. The products were being created faster on the systems, but they were occasionally being held at Browns Concessions warehouses before being produced in Farfetch's production centers, which resulted in losing sales because products cannot go online without being photographed first. These conclusions were presented to the project team that decided to update the prioritization rules (address Figure A.6) to pull Browns and Browns Concessions slots to production as soon as they are ready to send.

4.2.3 Partners behavior

The external partners behavior was the analysis that took longer to finalise. There were several tests to be done so that it was possible to better understand the situation that Farfetch was at. The goal was to understand how could the company work with distinct partners and whether to take initiatives to improve its performance or to encourage partners to perform better. A distinct goal of these analysis was to trace partners' behaviors and comprehend their motivations.

Some hypothesis were raised based on the results of the initial meetings with the main stakeholders:

- Some partners take longer than others to create product;
- Existence of boutiques that wait for a product to be created so they only have to upload stock;
- Best selling boutiques behave differently than others.

Through the project these were refined and segmented to give more granularity to the analysis and understand which factors could really be causing delays on having the products online.

The first segment made was dividing boutiques and only brands that work directly with Farfetch. These brands have close relationships with the company and some of their products arrive at production directly from them and are online with stock given by them as well. It matters to refer that these brands' products are not exclusively sent by them, some boutiques are also responsible for that. This split was done to check if these brands with partnership were giving visibility on their stock earlier in the season than the boutiques. This would demonstrate if working directly with brands could help improving the time it takes for products to reach the market and test the idea that boutiques send products faster than the brand itself. In Figure 4.7 are presented the final results[1] of the work done for this segmentation.

It was concluded that working directly with brands has a positive impact on the timing of products' arrival to the market. The evolution of the curves of brands with partnership showed

[1] To achieve these results some iterations were done. These were responsible for only analysing brands and boutiques that worked on the full season. Partners that started working with Farfetch in the middle of the season could be accountable for deviating the curves. It was also used only products that both boutiques and brands had in the season, removing any exclusive items for each.

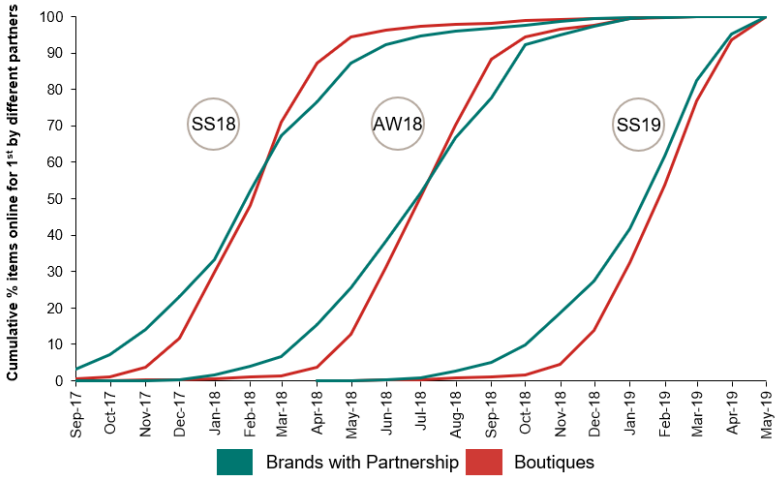


Figure 4.7: Cumulative percentage of new items online for SS18, AW18 and SS19 seasons, separating boutiques by relationship.

that they can possibly be more engaged over time once their products are arriving earlier, on each season comparing with boutiques.

In this phase of the project it was also analysed the behavior of different boutiques according to their sales value *per* season. Boutiques were sorted by GTV and the top 20 boutiques were grouped in one group and all the other boutiques into a distinct one. The hypothesis that was being tested was to confirm if top boutiques performed better concerning time to market.

The study considered two hypothesis: top boutiques are responsible for having the items online faster than the others and they upload their stock earlier in the season. Soon it was realised that the analysis could not be done considering all the partners and all the products' families as a like for like. Partners that were not with Farfetch during the full season were removed and it were compared only clothing with clothing as it was for shoes and bags (the three top selling families) and for each family it was considered the top 20 GTV partner.

It was concluded that top boutiques tend to be responsible for having products online faster than others. In Figure 4.8 is presented the result for the AW18 season[2] study for this case, where it is clear to see the gap between top boutiques and the others.

Concerning the stock upload, we split the analysis in three categories with mixed results. For clothing the two groups had similar behaviors, for shoes the other players were on average faster to upload. This situation occurs because for shoes there are boutiques that sell them exclusively and therefore they have access to stock earlier and more bargaining power with the brands. For bags, top boutiques upload their stock considerably faster than other partners. This is supported by the graphs presented in Figure 4.9.

The last hypothesis that was tested concerning the external partners behavior was to see if partners in general were holding stock until late in the season. The idea was to confirm if partners

[2]It is only presented the results for the AW18 season because the graphs for the SS18 and SS19 showed the same result.

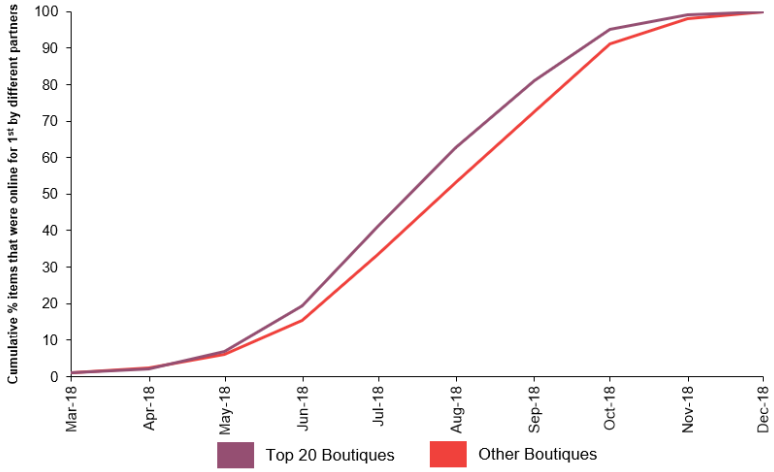


Figure 4.8: Cumulative percentage of items online for the 1st time for the AW18 season, considering top 20 boutiques vs other.

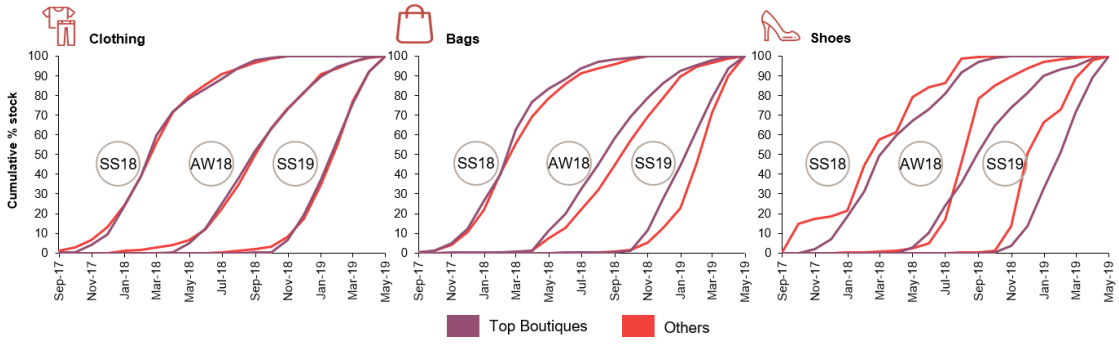


Figure 4.9: Cumulative percentage stock upload for SS18, AW18 and SS19 seasons, considering top 20 boutiques vs other, by category.

were avoiding to share the commission with Farfetch. They would try to sell their products at their stores and in case they could not do it, it was uploaded closer to the end of the season.

This analysis included boutiques that were responsible for 80% of the GTV of Farfetch. This decision was based on the Pareto rule that, in a summarized way, says that 20% of the resources are responsible for 80% of the results and the focus should be put on those resources. Then it was identified when in the season was reached the upload of 50% of the stock. Having found the week when that happens, they were grouped as late *uploaders* and early *uploaders*. For the late ones were considered all the partners that only had uploaded 30% of their stock on the week that 50% of the stock was reached by all of the partners. The early *uploaders* are the ones that on that particular week already uploaded 60% of their stock.

Figure 4.10 and 4.11 show the distributions of upload by all the partners, the late *uploaders* and the early *uploaders*. It was decided to compare SS seasons with SS season and AW seasons with AW seasons. Farfetch's database only has records that enable to run this analysis from SS18. That is the reason for only presenting the results for both SS18 and SS19.

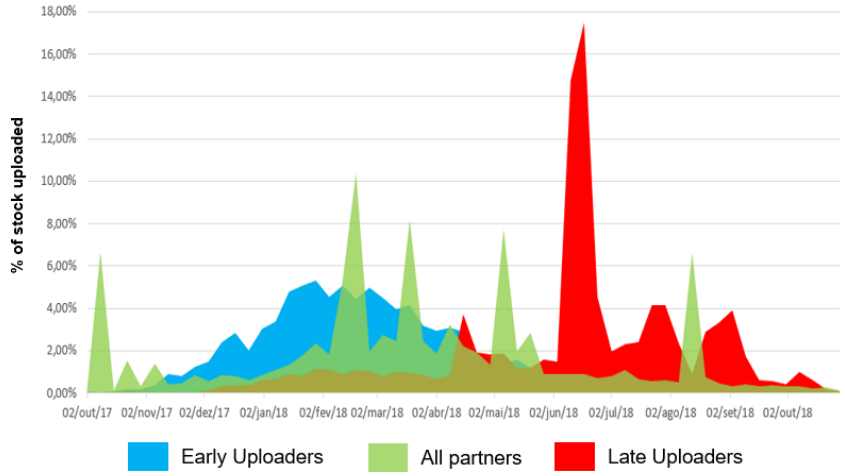


Figure 4.10: Percentage of stock upload for SS18 season grouping early *uploaders*, late *uploaders* and all partners.

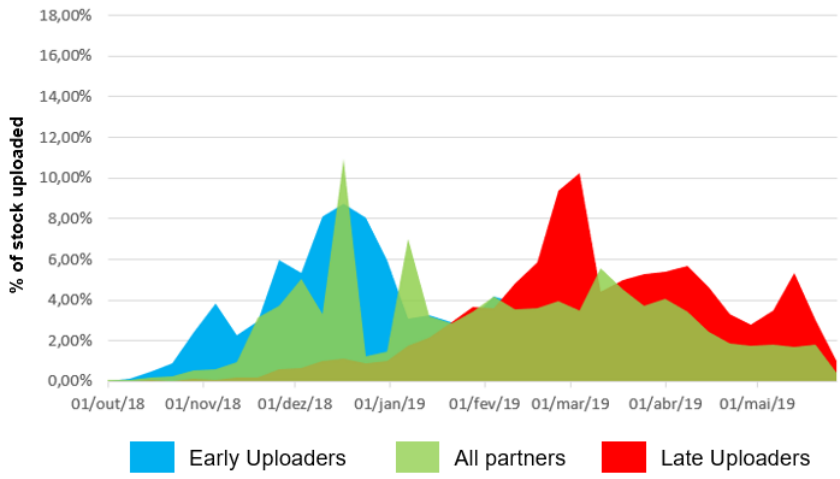


Figure 4.11: Percentage of stock upload for SS19 season grouping early *uploaders*, late *uploaders* and all partners.

The two[3] graphs led to the conclusion that there are some partners that actually upload stock late in the season.

Nevertheless, it is important to understand that partners might receive their stock at different moments - which can justify the referred behaviors. Being located in regions with different delivery windows from brands is just one example of the justifications for that. To confirm this question it were identified the recurrent late *uploaders* and the list passed to commercial teams that could investigate if the partners' regions could be the reason for that delay. The goal is to see if from those there are any that upload late by choice and convince them not to do it so.

[3]The SS19 is still a preliminary graph, at the moment of this work, it was still in progress.

4.2.4 Distinct production methods

One initiative that could lead to reducing time to market and has been already discussed in the company was producing items via FTP. The idea of not having to receive the items at the production center seemed to be powerful in terms of reducing time to market. The approach used was to check the first time products produced by different methods went online and confirm if FTP was indeed faster. For that it is presented Figure 4.12, the graphs show the cumulative percentage of stock for three distinct seasons that went for sale on the platform during the season.

The idea is to use a similar way of thinking as the one proposed by Coimbra (2013) in the single minute exchange of dies (SMED) process. His proposed strategy aims to reduce the set-up time of an equipment. His strategy is divided into different steps, one of which is to convert internal work in external. On his work he gives the example of preheating a die before placing the product there, saving the heating time without having the product on wait. At Farfetch the concept is similar. If converting the internal work of photographing to an external work, Farfetch would only need to produce the descriptions and edit the images. With this production method Farfetch hoped to have items for sale faster.

Figure 4.12: Cumulative percentage of new items online produced via FTP and regular production for SS18, AW18 and SS19 seasons.

Theoretically speaking this approach would make sense as it would be possible to shorten the process and with the advantage that this production method is cheaper to Farfetch as it is the partner's cost to produce the images. On the other hand being the brands and boutiques responsible for shooting, Farfetch brand identity could be lost by having distinct types of images on its website. Adding to this, Farfetch and partners processes are not optimized for this type of procedures and it is still necessary to normalize them. To Farfetch, production means shooting and editing products' images and descriptions, while for brands is about manufacturing the items. This is one of the reasons why brands take longer to shoot their products, being faster for Farfetch to receive the products and shoot them itself.

It was proven with this analysis, with the current processes and resources, that FTP is not the solution for reducing the supply time to market.

4.2.5 Benchmark analysis

The benchmark analysis has been given a special attention due to the importance it has Farfetch's behavior in comparison with its competitors, as explained in section 2.4. Moreover, in the company there was the perception that Farfetch was behind its competitors, but nobody could quantify that delay.

The aim of this analysis is to take into consideration several dimensions and deep dive in each one of them. The plan was to perform a benchmark divided in the following segments:

- Overall performance of the competitors;
- Time to get items online by category;
- Different markets perspective;
- Time it takes for competitors to have different brands online.

For this part it was used an internal tool that scrapes competitors websites and with machine learning technology finds a match for Farfetch's products. The tool provided raw data with fields like the product ID, brand and day a product went online for both Farfetch and competitors. It matters to refer that this tool was not projected to use for time to market, so it was necessary to give new inputs for scraping the required fields.

As presented earlier in this work, we live in a digital era and there is quite a considerable number of players selling luxury products online, which led to a numerous amount of data collected from this tool. In a first moment this was a good insight as a more broader study could be done to evaluate Farfetch position comparing to more competitors. Soon it was clear that using all competitors was not a good option. The first results showed to be biased because there were some significant differences in the business models and operational standards of each competitor. This led to the decision of only using, as term of comparison, some key players. From the total data, we removed players whose core was not selling online. Not being their core business naturally leads to under perform in having their items online faster than Farfetch. Their operational activity is focused on having the items ready for customers on the shelves of their stores and not on having optimized procedures to take photos and upload them on their website. The other players that were removed of this analysis were the brands that also have their online selling platform. Brands position themselves differently than any other player. They control a crucial part of the supply chain. Brands define when products arrive to the stores and have access to the products earlier than anyone else. Theoretically, they can place their products online faster. Only players that their main focus is on selling online, or they developed this business unit in a similar way to Farfetch, were used to see how the company is positioned in the time to market, and were identified as being Farfetch main competitors.

It was discovered that Farfetch was, on average, 34,3 days behind its main competitors, for a sample of 529 products matched only for SS19 season original products. The analysis by category, market and brand could not be presented at this work. The product matching tool was just recently launched and is still working to retrieve more data. With the referred segmentation the products' sample was reduced and any results that could be presented would not represent the reality.

The resulting numbers of these analysis strengthens the idea that Farfetch's business model, not possessing stock, can be a disadvantage concerning time to market performance. Furthermore, currently Browns is not being used to reduce this gap.

4.3 Proposed actions

With all the gathered data the team had, at that moment, enough knowledge of the process and current situation to start identifying ways to measure company's time to market performance and point out initiatives to improve it. For this purpose are now presented the suggested KPIs and identified the initiatives considered best suitable for Farfetch.

4.3.1 Defining KPI

The plan for the KPI definition was to come up with metrics that will help during the controlling process. Domínguez et al. (2019) proposed that to create a KPI it has to be clear what is being measured and what for. In accordance to their work, the plan was to follow their guidelines creating the KPIs, based on the results achieved with the previously mentioned analysis. It is expected that the KPIs allow to check if the project's objectives are being achieved and understand how obstacles are being addressed.

Firstly, the project team decided that the goal was to give visibility of the season's performance, regarding time to market. If possible, it was intended to get a way of controlling time to market performance during the season so that it would give a chance to act in case that a metric was below the objective. The KPIs that were discussed were the following ones:

1. Measure Break Even Time (BET);
2. Percentage of items that went online in the first 3 months of the season;
3. Percentage of stock uploaded before sales season;
4. Average time from brands' showrooms until scan-in date from products received at production;
5. Percentage of items created with buying tool reports for each season;
6. Average days behind competitors on the top items for that season;
7. Time taken to reach 70% of the stock units produced of the season.

1) Measure BET Based on the idea of BET being related with both the investment made on the products' production and release date, as evidenced on section 2.4, the goal with this KPI is to measure, in days, how long it took to reach BET. For this to be feasible it would be necessary to calculate, at the end of the season, the cost of producing all the products of that season and determine when did the profit met that value. Since it does not exist any metric in Farfetch that would easily measure this KPI it was decided not to use it at this moment.

2) Percentage of items that went online in the first 3 months of the season This KPI was expected to evaluate the first time products arrive to Farfetch's website. As it was explained on the section 3.8, full-price sales are more profitable for both Farfetch and its partners and using this evaluation is possible to see the items that were available during that full-price season (normally the first three months). As initiatives are expected to be taken after the end of this project, the expected outcome is that this KPI shows increasing numbers of products online for the first time, or on the other hand, decreasing numbers showing that the time to market performance that season was worst than the previous.

3) Percentage of stock uploaded before sale season Determining the percentage of stock uploaded before sale season has similar fundamentals as the previous presented KPI. The difference between each would be that with this one is possible to evaluate stock depth through the season and see if Farfetch has product availability during full-price season. Although these two KPIs are similar in some aspects, this last one helps to better understand boutiques engagement, once boutiques are the main responsible of the stock upload. The evolution of this KPI could give good insights to the account managers team, that work directly with the partners. They could push boutiques to upload stock sooner and indicate improvements to implement in future seasons.

4) Average time from brands' showrooms until scan-in date from products received at production The strategy behind this KPI was based on the fact that Farfetch has a big gap to explore on the supply chain of the product's life cycle, that is between the orders placed to the brands, by boutiques until the reception at their stores. The objective was to obtain the number of days that it takes until Farfetch gets the products for production. It was soon realised that this KPI could be impacted for numerous internal and external factors, e.g. brands delay deliveries to the stores, boutiques create products on the systems late due to technical issues, production is behind schedule. Therefore, it is not advised to use this KPI as it could mislead to interpretation of its values.

5) Percentage of items created *versus* items listed on buying tool reports Different teams were involved through this project and their insights led to the idea of this KPI. There are some teams at the company that receive information of what could be the stock for the season that brands create or that boutiques have. The geopricing lists could be a good starting point for that, since they are lists sent by the brands and that have information with the products that were produced for a particular season. Yet, it was found that these lists are sometimes incomplete, leading to incorrect conclusions.

The other way found to use this KPI was by using information of a buying tool that is being studied to be used by Farfetch. This buying tool gives information of the products bought by the boutiques that are users of this tool. To confirm if this tool could give an acceptable list of products it was calculated the GTV weight that the products that the tool users had. The GTV impact of that products was 76%, being a good result for the usage of the buying tool.

The percentage of items that were online considering the total of the buying tool products is not directly related to time to market. Yet, it could allow to confirm if Farfetch had a considerable amount of items ready to sell on its platform and combining it with another KPI could lead to good conclusions related to the partners' will to give visibility over their products and hence a good time to market performance.

6) Average days behind competitors on the top items for that season This KPI is the one that enables Farfetch to act in a more active way if its results are showing poor performance on time to market. Using the information that the commercial team is going to produce from a project of their own and with the product matching tool, this KPI indicates if Farfetch is behind its competitors on key products for that season. The commercial team creates a list of the products thought to be the 100 top products for that season, being top products the most desirable ones by the market. With that list the product matching tool would scrape the internet, searching if the products were first being sold at the company competitors' website. Allowing Farfetch to act on problems that might be happening, correcting them as immediately as possible and not at the end of the season.

7) Time taken to reach 70% of the stock units produced of the season The third KPI presented, for example, does not take in consideration that even when uploaded during full-price season it has a distinct importance uploading the product in the first day of the season or in the last of full-price period. This KPI tackles this problem. The goal is to create a "S" curve graph with the stock upload of the season and compare it with the previous year's season. After that it will be checked how much time passed since season start until it was reached 70% of the stock upload.

The main stakeholders of the project suggested to only bring two of these alternatives. This was due to the fact that until the moment of execution of this project there was not any controlling metric and it would be better to start in a more controlled way so that lessons could be learned. It was chosen to use at a first moment the 3rd, 6th and 7th KPIs presented. To calculate these it was proposed the equations 4.3 and 4.4 (the 7th does not require a formula to be calculated).

$$\%\ of\ stock\ uploaded\ before\ sales = \frac{Stock\ uploaded\ during\ full\text{-}price\ season}{Total\ season's\ stock\ uploaded} \tag{4.3}$$

$$Average\ days\ behind\ competitors\ on\ top\ products = \frac{Sum\ of\ late\ days}{N} \tag{4.4}$$

Where N corresponds to the number of the products given in the list by the commercial team of the top products for that season. With equation 4.4 is calculated the average day *per* product that Farfetch is late comparing to its competitors.

4.3.2 Identify improvement opportunities

At the end of the project it is expected to have a full understanding of the process pipeline to get a product online and have identified the process' pain points supported with analysis' results based on data.

With all the information gathered a list of main difficulties and opportunities to improve the process was created. It was not expected to take action on all the opportunities identified, but to give visibility of them to gradually change for better all the procedures.

After looking into the problem, it was possible to identify some pain points during product's life cycle to make it available in Farfetch's website. Some of the ideas were already pointed out during previous subsection in this work. They are all grouped here:

- Work with brands to get the samples from showroom to shoot;
- Optimize production - moving data entry next to the scan-in point so the product does not have to wait for activities like descriptions to go online;
- List the partners that upload stock late in the season on their own will and work to engage them earlier in the season;
- Include in incentive plan for partners time to market performance metrics like having the products ready to send to production faster;
- Work closer with brands by increasing the number of partnerships so it is possible to have items online for the first time earlier in the season;
- Use information from the buying tool to request partners to send their items to production and to motivate them to upload their stock as soon as they receive products at their stores;
- Gather small boutiques' and boutiques from vendor funding project orders and place them to the brands.

As final project meetings were held, some of these were not an option as there were some operational problems in following them. On the other hand there were some ideas that were passed to the directly affected teams and they started analyzing the feasibility of them.

Working with samples from the showrooms was rapidly excluded because it was realised that from the showroom until the products are fully produced at scale can suffer considerable changes in their physical look due to change of brand's suppliers for example.

During this project, while visiting the production center to map the process and understand the as-is situation it was discussed moving the data entry process closer to the beginning to the the production line. This would allow to minimize the number of times a product is waiting for descriptions to go online once it has more time for execution. This idea was used by the teams responsible for the production centres and they are studying the necessary shifts to be made so this could be applied.

The results of the analysis made in subsection 4.2.3 were delivered to the Account Management team so they could see if the boutiques behaviour was logic in creating products, sending to production and uploading stock or if they could influence them to improve their timings in each task.

Brands are the first stakeholders to have contact with the products in the supply chain, hence working closer to the brands can have a positive impact in the time to market strategy. Previously it was proven that working with brands enables products to go online faster, so the goal is to improve relationships with them and with more brands to have items earlier.

Using information from a buying tool was suggested in the follow-up of an ongoing project of the Product team. The information is obtained from a company that compiles orders of the products bought by several boutiques. The Product team would pass information of what each boutique bought and the operational and commercial teams would use this knowledge to arrive earlier to the market. Farfetch could check how much products each boutique has and compare how many they have created and uploaded. In case there is a necessity of that, the commercial teams could work on influencing the partners to upload the stock we knew they have and to send none-photographed products to production centers.

The last idea presented is based on the fact that small boutiques have wider delivery windows than bigger ones and receive their products later in the season because they buy smaller volumes. The idea is to aggregate small boutiques and boutiques that are in the vendor funding project requests and place them as one order to the brands. Farfetch would be responsible for delivering the orders to each boutique. This way delivery windows could be shorten, being a win-win situation for boutiques and Farfetch. Boutiques receive the products earlier and Farfetch would have access to the products to shoot them and could know the list of most of that season's products.

4.3.3 Prioritize initiatives

The last activity planned to be done in this project was, using the final results of subsection 4.3.2, elect what initiatives are going to be taken to fulfill this project goals, based on the time and difficulty of implementation, strategic positioning and on necessary budget versus possible gains. These initiatives can be addressed for a particular department, to several ones, or to a multidisciplinary team that can be created. This to say that is not expected to be a responsibility of the current team to carry on the operational work.

In Chapter 5 is going to be presented the work done in prioritizing the initiatives as it is one of the supposed outcomes of this thesis' work.

Chapter 5

Results

The results of this project are divided in three parts. Firstly, are presented the conclusions of having understood the as-is situation. Secondly, the biggest opportunities to explore based on that. Lastly, are presented the KPIs' results and prioritized initiatives, identified previously, to reduce the supply time to market.

5.1 Identified opportunities

The way that all the process is led at Farfetch to get an item online was mapped and presented in section 3.7. That mapping allowed to see that are some opportunities to explore before the item arrives to the production centers. After that moment there are still some opportunities of improvement, but there was already a project inside Farfetch tackling the issue (catalogue management project), so it was not prioritized for this thesis. Figure 5.1 summarizes the identified possibilities and key moments to act that can improve Farfetch performance regarding the scope of this project.

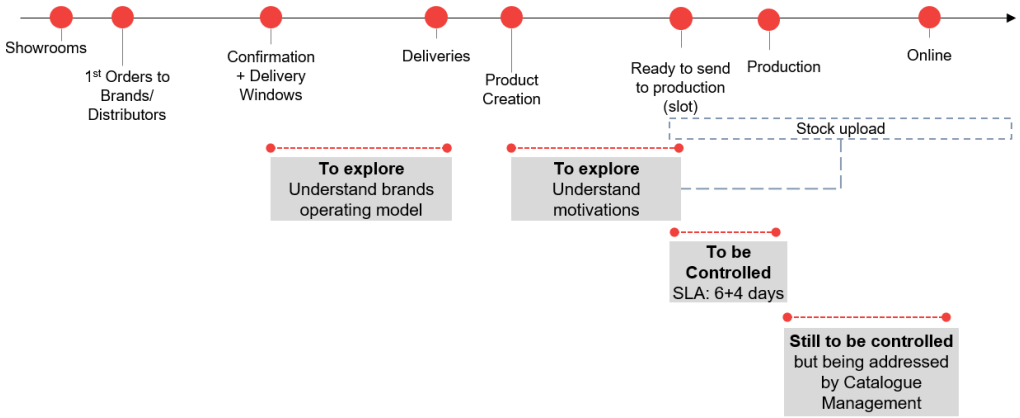


Figure 5.1: Identified opportunities in the product life cycle to explore to reduce time to market.

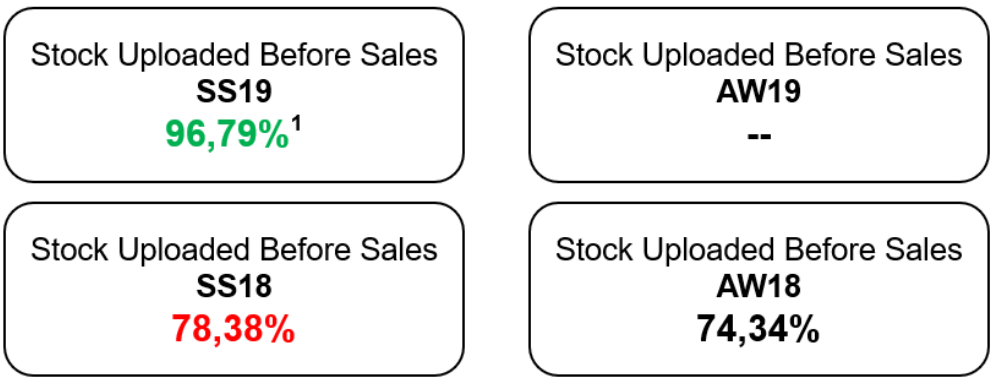
With these opportunities identified and the results achieved in the data collection (section 4.2), the recommendations to present are now data driven and with a full understanding of the process. To have contact with products for the first time the best solution is to work upstream on

the relationship with brands. This close relationship between brands and Farfetch was proved that it allows to have the items online faster. Improving relationships with brands, existing and new, will have a positive impact and can be done by adding specific clauses in contracts that request brands to send products to Farfetch production centers to be photographed. For the second part of the problem, the recommendation is to simplify partners actions, such as creating product and sending them to production and convince them, specially with the account managers work, that giving visibility over their stock will benefit both parts.

5.2 Evaluation of Farfetch's current performance

The KPI presented in equation 4.4 was not possible to be achieved in this thesis work because the list of top 100 products was only going to be defined for the season after the end of the project. This KPI will not only give Farfetch the possibility to act during the season, if necessary, as indicates if the stock that is available early in the season is stock of desirable products.

The other KPIs presented were calculated from SS18 season until SS19. This was due to the fact that records of units uploaded are only available since 2017. To control the percentage of stock upload before sale season it was decided not to define a value that it was supposed to reach. Data that gives this information has just been started to be recorded and there is not sufficient background to decide what should be a suitable number for this time to market metric. In Figure 5.2 are presented the numbers for the referred seasons for that KPI. For the first moment of control, the idea is to compare the values obtained for the same season of consecutive years and see, ideally, growth in those numbers.



[1] This value was calculated in June and is still going to decrease

Figure 5.2: Percentage of stock uploaded before sales.

To support this first KPI, as mentioned in subsection 4.3.1, it was created a report, which resulting graphs are shown in Figure 5.3. With it, Farfetch has now visibility on how was the partners' behaviour regarding the stock upload through the seasons. Once again, during this work SS19 season was still in progress and therefore the curve presented is supposed to decrease its

slope through time. The KPI results are presented in table 5.1 where it can be seen the time, in weeks, it took to get 70% of the season's stock uploaded.

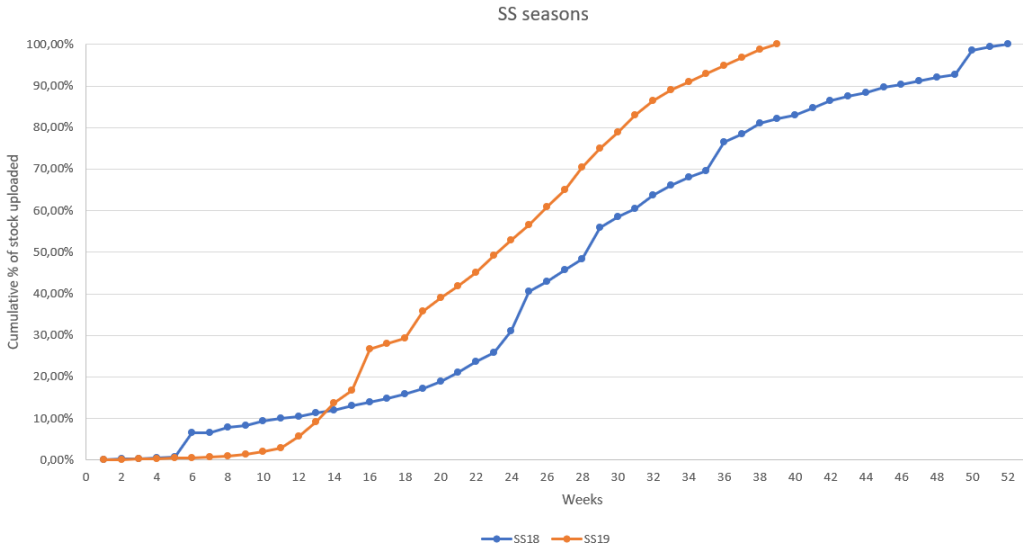


Figure 5.3: Cumulative percentage of stock uploaded for SS18 and SS19 seasons.

Table 5.1: Necessary time, in weeks, to have 70% of the stock uploaded in each season

SS Seasons		AW Seasons	
Year	Weeks until 70% of stock uploaded	Year	Weeks until 70% of stock uploaded
2018	28	2018	30
2019	23	2019	–

By looking into the results provided it was expected to say that in 2019 time to market performance at Farfetch was improving, once the percentage of stock upload before sale season is increasing and the number of weeks required to achieve 70% of stock was decreasing. Yet, such conclusions should not be taken because SS19 was still in progress. However, this gives the idea of how conclusions could be taken with these KPIs.

5.3 Initiatives Prioritization

The final result of this work is to present a list of initiatives that will improve time to market performance and recommend which to implement first, based on the relation between impact and effort. For that purpose the initiatives thought out in subsection 4.3.2 were placed in a matrix impact-effort. For effort it was considered the resources to allocate, estimated expenses, time consuming, complexity of implementation and if they depend entirely on Farfetch. For the impact it was only considered impact in reducing the supply time to market. Both impact and effort were classified on a scale of 1-5, being 5 the highest. The resulting matrix impact-effort can be seen in Table 5.2.

Table 5.2: Evaluation of the impact and effort of the various initiatives proposed

	Proposed initiatives	Impact	Effort
1	Use information from buying tool	4	2
2	Work on partnership with brands	3	3
3	Optimize production by changing process layout	1	2
4	Gather small boutiques' and boutiques from vendor funding and place their orders to the brands	4	5
5	Update incentive plan for partners	2	4

To have a more visual display of information, the initiatives, that are numbered in Table 5.2, were ranked in Figure 5.4 to decide which ones are going to be executed firstly.

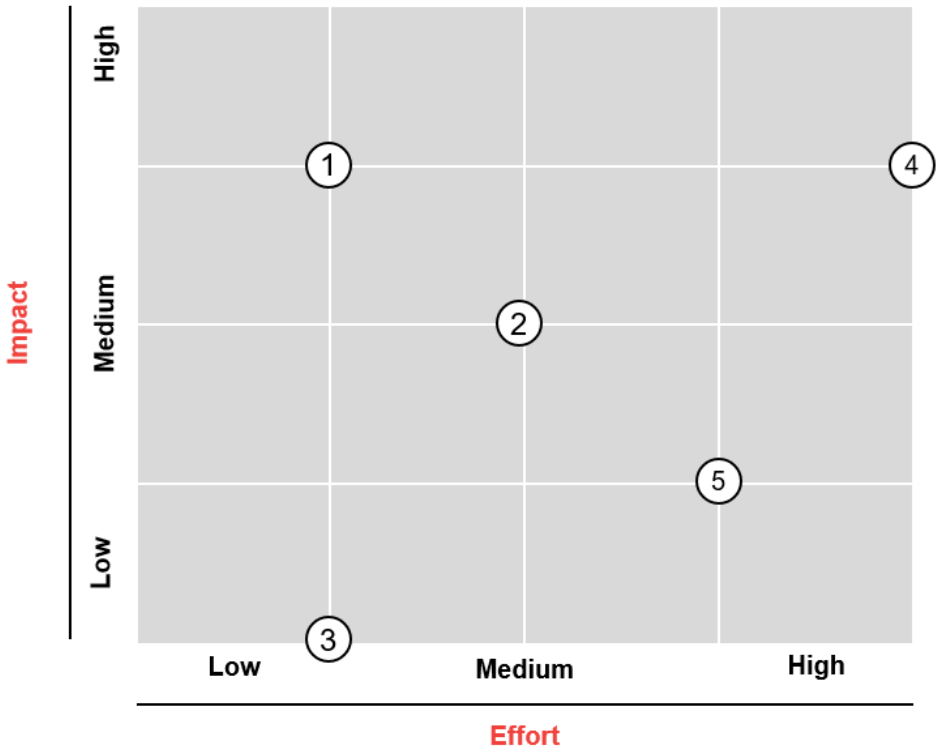


Figure 5.4: Impact-effort matrix for the various initiatives proposed.

The first initiative that is recommended to be implemented is using the information from the buying tool (initiative 1), that will give much insights on the season's products and allow to work with partners to send their products to production earlier and on request. As it is an easy initiative to implement, on the near future, the commercial team can contact boutiques that already work with Farfetch to send products earlier to production centers and try to sign-in new brands (initiative 2). Ultimately, the changes on the production layout (initiative 3) can be chosen over gathering orders for small boutiques and the ones in vendor funding project because, besides impacting on the results of the project of catalogue management already referred in this work, is the recommended order to follow based on the impact-effort matrix.

Chapter 6

Conclusion

6.1 Project Conclusions

A company position in the market is affected by several factors. One of those is the time it takes to arrive to the market with new products. As we are living in a digital era, the need of being the first in the market as information flows faster and buyers are no longer restricted by physical boundaries is getting reinforced. Fashion is getting commoditized, generally every player has the same products, so having a new arrival earlier than competition has an impact on sales. In this project, it was covered the problem of time to market by: estimating the potential impact of it, clarifying the as-is situation in the end to end process, understanding pain points in the current process, suggesting improvements and defining ways of evaluating the overall time to market performance.

The project was run with the idea that with Farfetch's business model, problems must be solved in a collaborative way with its partners, so that both parts can benefit from it. This helped initiating the project and to define the first goals of it. It was necessary to understand the position of Farfetch regarding time to market and how everything is processed to have a product online.

Planning an approach with the main stakeholders was crucial. The developments of the project were presented to them in a monthly basis and in an open way. With this strategy they could be engaged with the project and give their inputs that were fundamental for the iterative way the project evolved. Following the first recommendation from those monthly meetings, the processes were mapped and concluded that there were two important moments to act on. From the moment brands have their products ready to send to boutiques until boutiques have them on their stores is an opportunity to try having products photographed earlier. In addition, the creation of products on Farfetch's systems by the partners and the stock upload was also identified as a gap that exists that could be explored. It was also a goal of this project to indicate how much of an impact would have for Farfetch reducing the supply time to market. Selling at full-price is more profitable for both boutiques and Farfetch and was based on this premise that work was developed. With all the assumptions stated on this work it was estimated to increase 0,75% on GTV if in 2019 all products arrived one day earlier to the website.

To support this project's results, some hypothesis were tested and confirmed or disproved. Based on data, it was concluded that working directly with brands is an opportunity to have the items online, for the first time, earlier than when only working with boutiques. The idea that producing items via FTP would bring them to the the market faster was also disproved, at least if the way of operating with this method does not get improved. Regarding the boutiques, was discovered that distinct boutiques receive their products in different moments and big boutiques tend to have them earlier in the season. For that reason, top selling boutiques in Farfetch platform, are responsible for products reaching the market earlier, but concerning stock upload on average, top boutiques and other have similar behavior in clothing family. However, there are some partners that are late *uploaders* constantly. Those were passed to the account managers team so they could understand the reasons for it and, if possible, convince these partners to upload stock earlier. Finally, it was used an internal tool that matches items at sale on competitors' websites and compares the first online date with Farfetch. For the scraped sample it was concluded that Farfetch is, on average, 34,3 days delayed in comparison with its main competitors.

To control the time to market performance it was necessary to create new KPIs. As this work's scope was at an early stage at Farfetch there was not enough records to use to calculate the KPIs defined. Yet, it was demonstrated how should the performance be evaluated, now that data records are being kept, and how should the KPIs' results define the goals for Farfetch.

Close to the end of the project some ideas were discussed with the main stakeholders of initiatives to implement and improve the time to market performance. With their insights and supported by a matrix impact-effort initiatives were prioritized. The first initiative to be implemented was to use information from an external buying tool. This would allow to get visibility of the season's products to compare with the products sold at Farfetch and to give the possibility to influence partners to send products to production according to the production plan, and to upload stock earlier in the season. Based on the results of the position of the initiatives on the matrix, it is proposed to improve already existing contracts with brands to send their products to production faster and to spread the number of brands that work directly with Farfetch as well as optimize the production layout.

Summing up, the project has presented very promising results and the stakeholders involved accepted to continue to keep the work of reducing the supply time to market within their teams. However, this path is still in its beginnings. It is necessary to track the results from the KPIs proposed and see the evolution of Farfetch's performance and understand if the problems identified in this work are being tackled.

6.2 Future Projects

A great deal was accomplished in the development of this work, but a lot more can be accomplished . This section will provide a direction for future work that can be built using this project as its base.

First of all, there are some clear pain points in the flow of information between Farfetch and its partners. One of the most critical is the creation of product in Sales system. Partners struggle to create items in bulk in that system and it is not possible to identify duplicates based only on the information uploaded. Improving this part of the process could help to better engage partners in product creation and would help the production planning team. The capacity to identify duplicates based on information would make the number of those products that arrive at production to decrease. Production planning team would not be required to replan the work because it would arrive mainly never photographed products. Partners would also benefit from this as they would not be paying to 3PL to take to production centers products that are not going to be photographed.

Secondly, it is advised to explore new analysis to support decisions in the future concerning time to market. Investigate further on which markets and products' families and categories are more influenced by the speed of arrival of new products and which boutiques are receiving products from brands on first place.

All the knowledge acquired during this project was crucial for the development of an area which was almost unknown to the company. Probably, that was the reason of the arising of new projects such as the business case for the purchase of the buying tool and the identification of the top 100 items for the season.

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Appendix A

Process Mapping

In this appendix is presented the process mapping of placing a product online on Farfetch's website from showroom. It is a multilevel process and there are three different phases and each phase has its processes. The figures are presented in the same order as the process flow should occur.

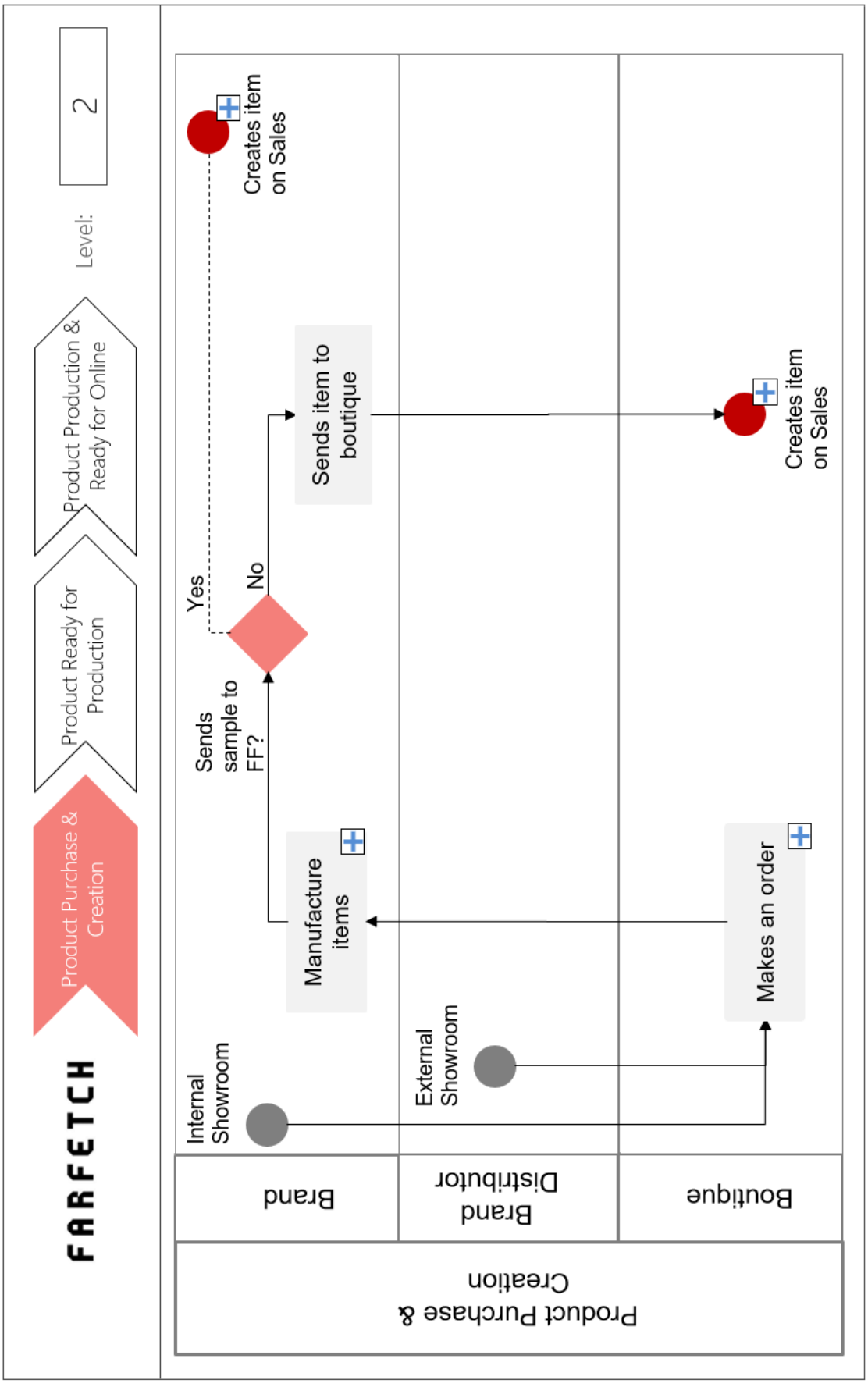

Figure A.1: Product purchase and creation - 1st phase of the process on the 2nd level mode.

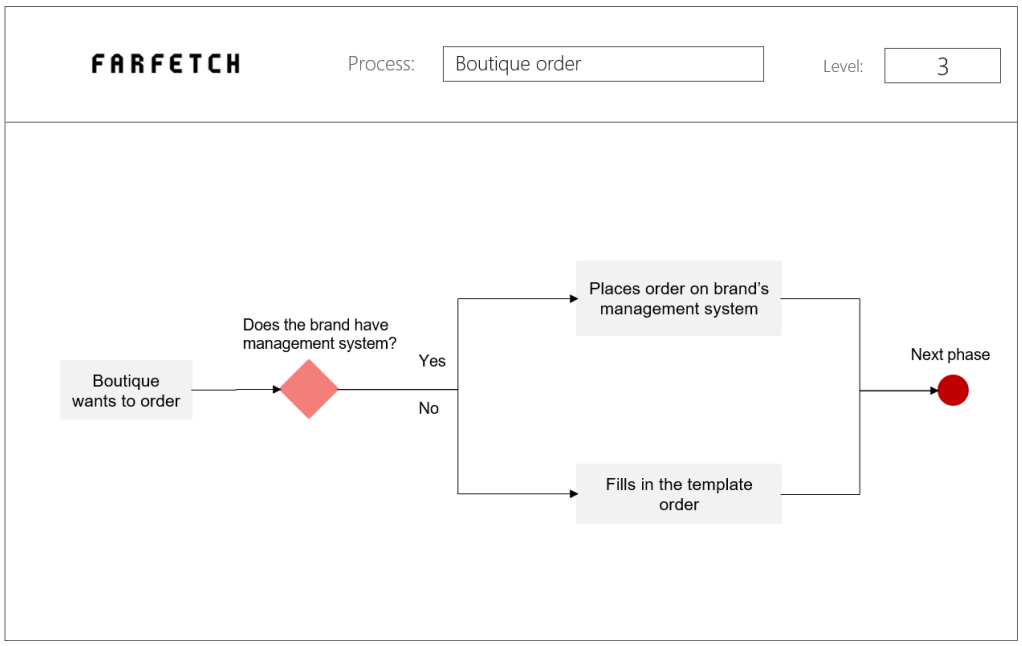

Figure A.2: Process of a boutique ordering to a brand.

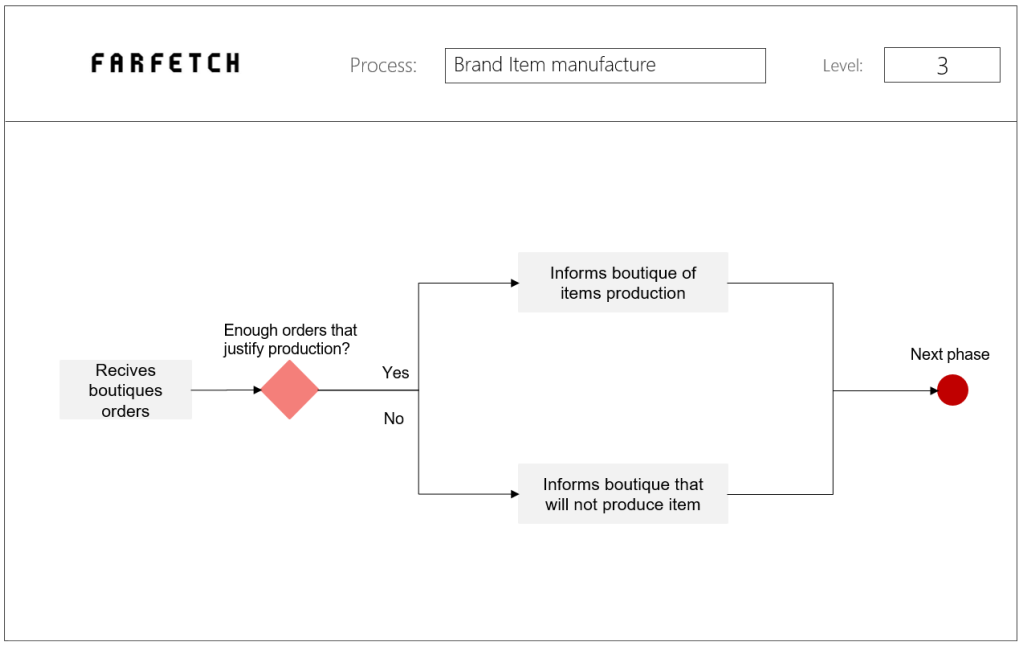

Figure A.3: Process of brand manufacturing a product.

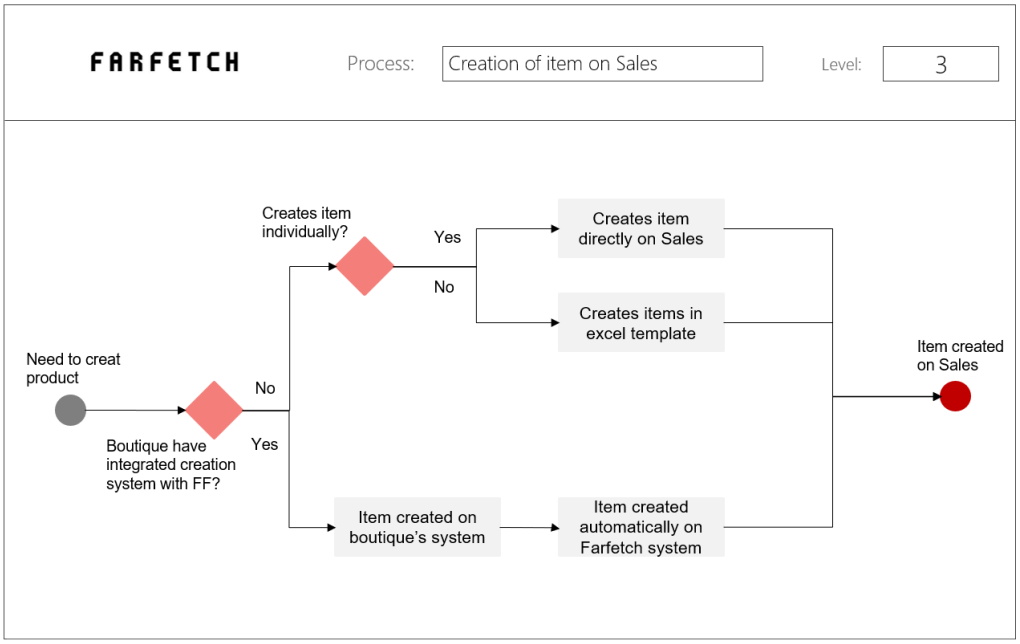

Figure A.4: Process of creating item on sales.

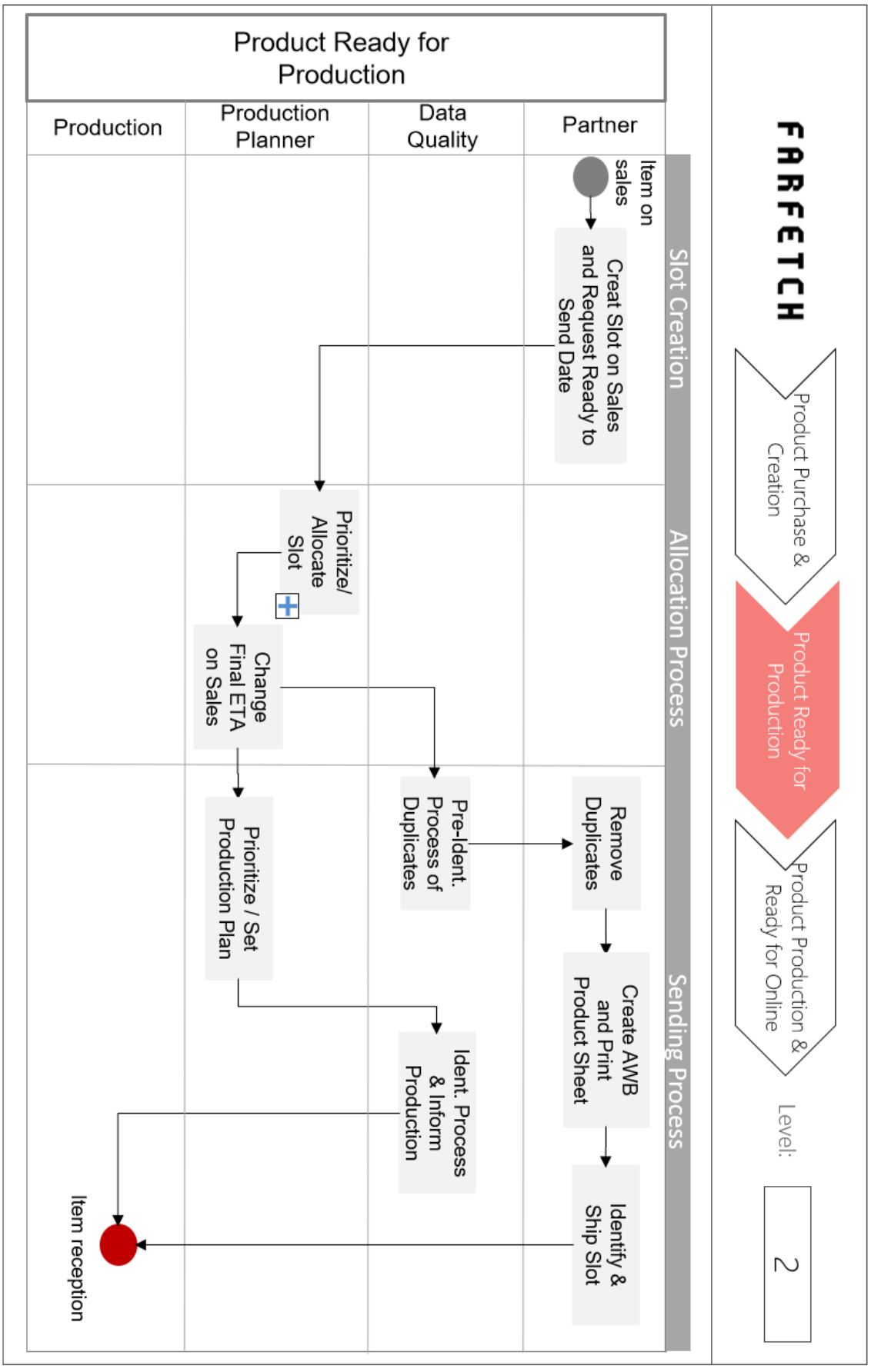

Figure A.5: Product ready for production - 2nd phase of the process on the 2nd level mode.

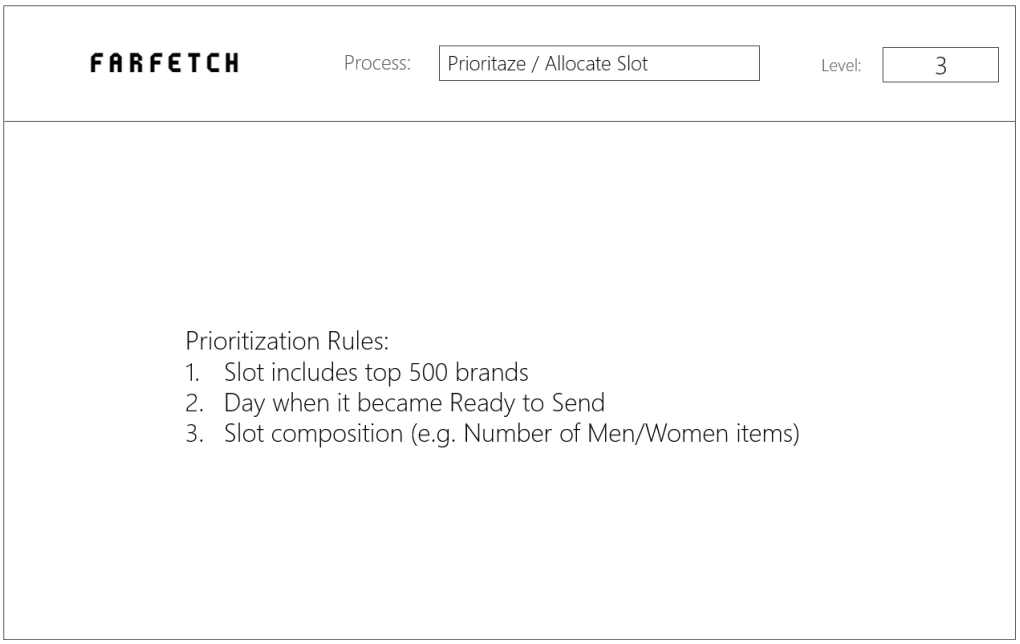

Figure A.6: Process of prioritizing and allocating slots.

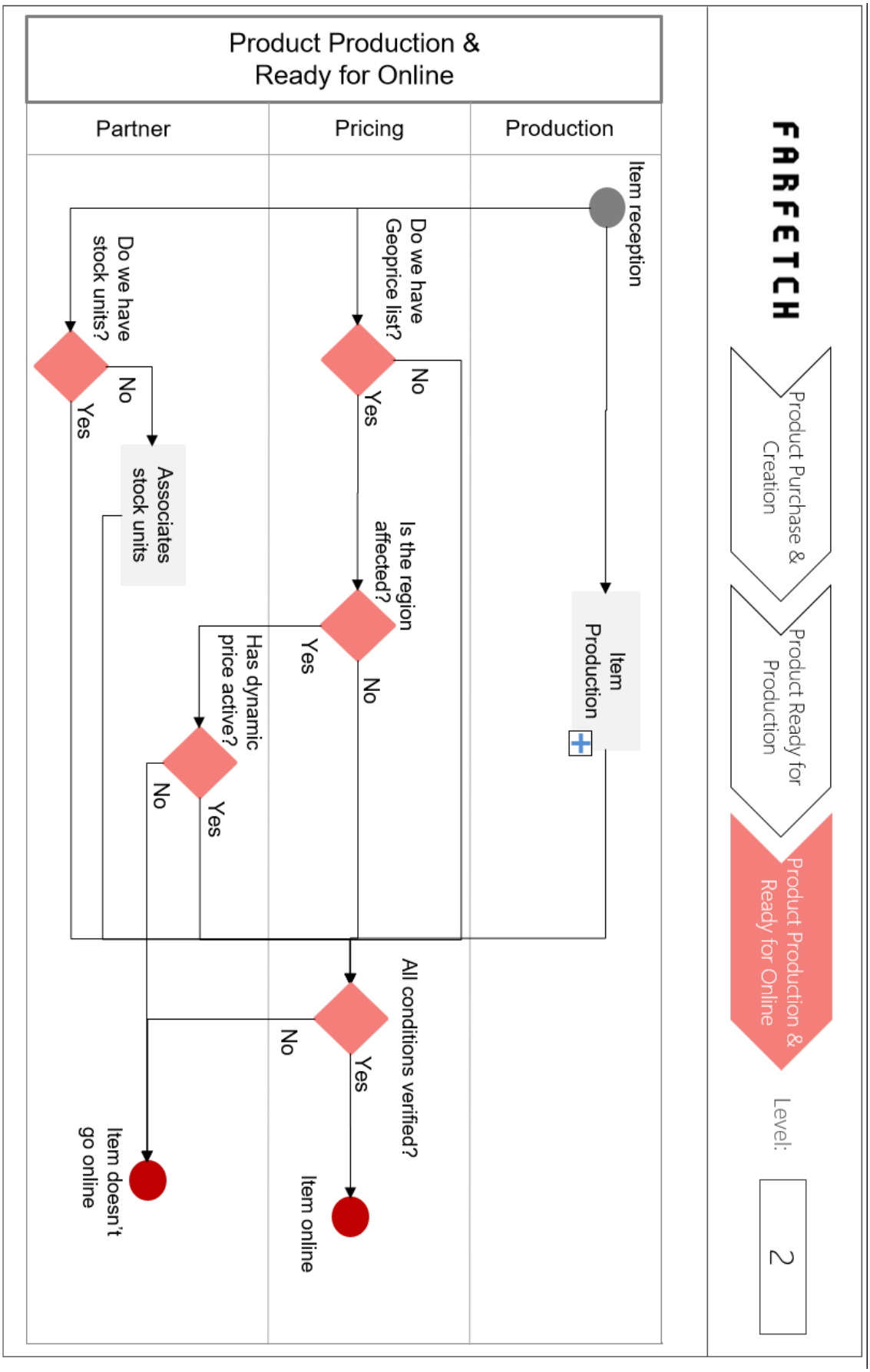

Figure A.7: Product production and ready for online - 3rd phase of the process on the 2nd level mode.

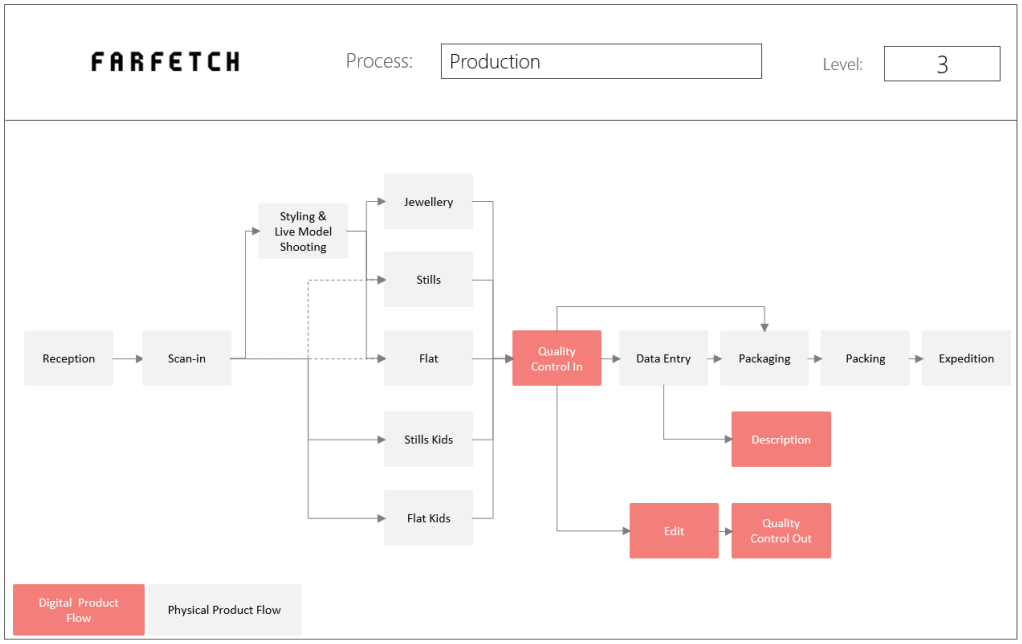

Figure A.8: Process of producing items to go online.

Appendix B

Correlation between items online and sales

The analysis presented in this appendix pretend to support the work done and justify some of the assumptions made.

Firstly, it is intended to prove that the GTV is correlated with the number of items at sale in Farfetch's website. This is something foreseeable, as the more items you have for sale the money from sales will increase. For that, it were used the number of distinct items at sale in Farfetch's website and the GTV, both cumulative values, for the SS16 season until the AW18. The correlation coefficients obtained via data analysis in Microsoft Excel are shown in Table B.1:

Table B.1: Correlation coefficient of distinct items at sale and GTV for seasons from 2016 to 2019

Season	SS16	AW16	SS17	AW17	SS18	AW18
Correlation Coefficient	0.904	0.949	0.948	0.951	0.949	0.932

According to Cabral and Guimarães (2010), the coefficient takes values from -1 to 1. In case the value is equal to 1 there is a perfect linear relation between the two variables. If the correlation coefficient assumes a positive value it indicates that if one of the variables increases, so does the other. This being said, as in this situation all the coefficients take a value higher than 0,90 we are looking to a strong association of the two variables, as expected.

The next step was more complex, but it was the one that supported the assumption that if the products arrive earlier to the market, the sales are also going to happen earlier. To notice that, this analysis was only done before sales period. Using the cumulative for both items online and GTV it was determined the percentage of each week of those, considering the total of the period considered. Equation B.1 exemplifies how these calculations were made. After that it was estimated the time difference, for each season, to GTV reach the same percentage level that the number of items. The results are presented in Figure B.1 and with them it was decided that the difference between the two variables would follow similar pattern each season and, therefore, arriving earlier to the market would indicate that the selling would be anticipated as well.

$$V(I_i) = \frac{\sum_{j=1}^{n} I_i}{I_n}; \qquad i = 1, \ldots, n, \tag{B.1}$$

Where V takes the percentage value estimates, I_i is the number of online items for the i season and n is the total number of weeks used for the calculation.

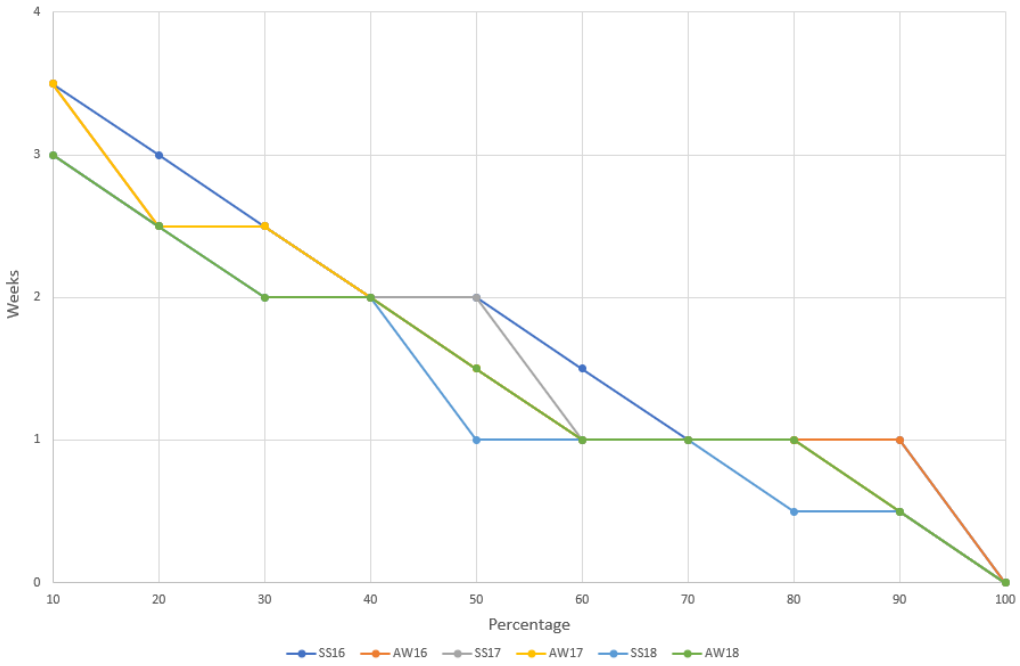

Figure B.1: Weeks difference for the same percentage value for number of distinct online items and GTV for SS16 to AW18 seasons.

Appendix C

Browns and Browns Concessions analysis results

Here are presented the results from each phase, by the order done, of the Browns and Browns Concessions behavior to better understand the as is situation.

The first analysis was regarding the speed that their items were online comparing to the other partners and can be observed in Figure C.1.

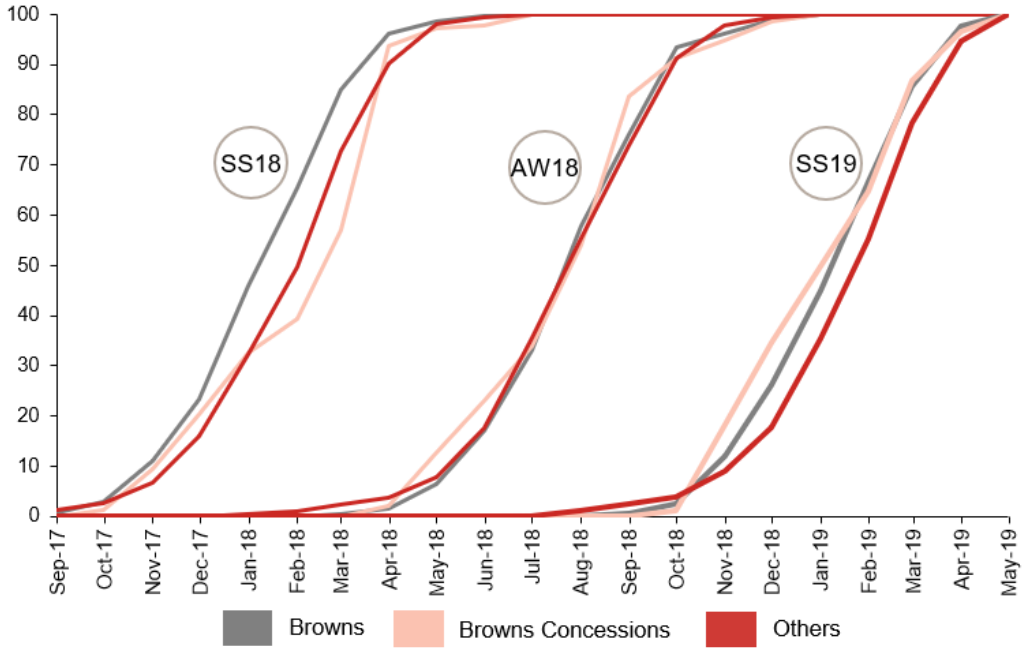

Figure C.1: Cumulative percentage of products from Browns, Browns Concessions and other partners that were online for the 1st online for SS18, AW18 and SS19.

It is clear that in 2018 Browns and Browns Concessions were not very constant, but in SS19 there was an improvement, but the results were not as positive as the team expected so it further investigation was done. In Figure C.2 is showed the graphs that prove that both these partners create products earlier than the rest.

There was a big gap from the creation date from Browns and Browns Concessions and with such a big difference if there was a doubt that the creation date was driving the time to market performance down it was proven that was not true. Adding to this if these partners are so much

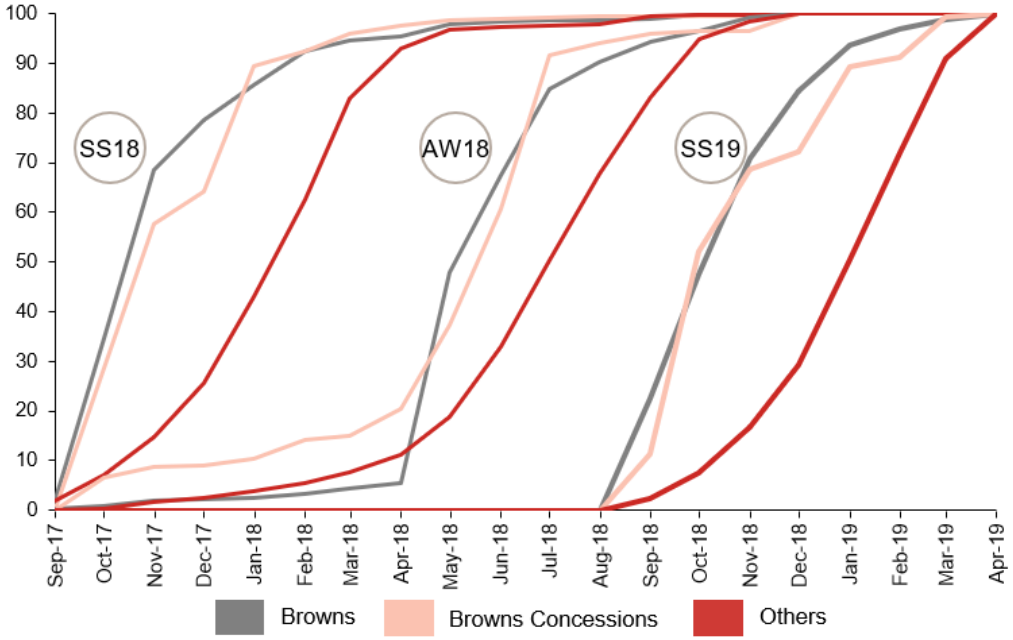

Figure C.2: Cumulative percentage of products from Browns, Browns Concessions and other partners that were created in Farfetch's systems for SS18, AW18 and SS19.

faster the first time to go online was not following the same distribution. That was the reason for the next analysis, when was the product arriving to production. Figure C.3 expresses the results of it.

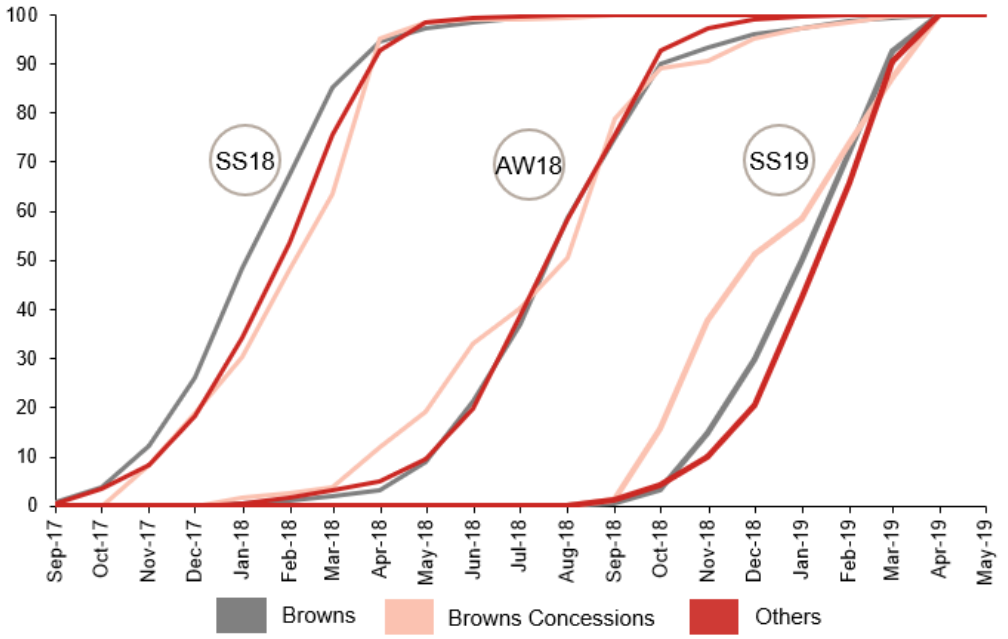

Figure C.3: Cumulative percentage of products from Browns, Browns Concessions and other partners that were scanned-in at production for SS18, AW18 and SS19.

The results showed that there was a significant reduction in the gap between Browns and the others, Browns Concessions also decreased the gap, but keeps being the best performer from the

three. To understand if the problem was due to the partners putting the products ready to send late or was on the production planning team not pulling them has fast as necessary, it were created similar graphs as the previous ones that are presented in Figure C.4.

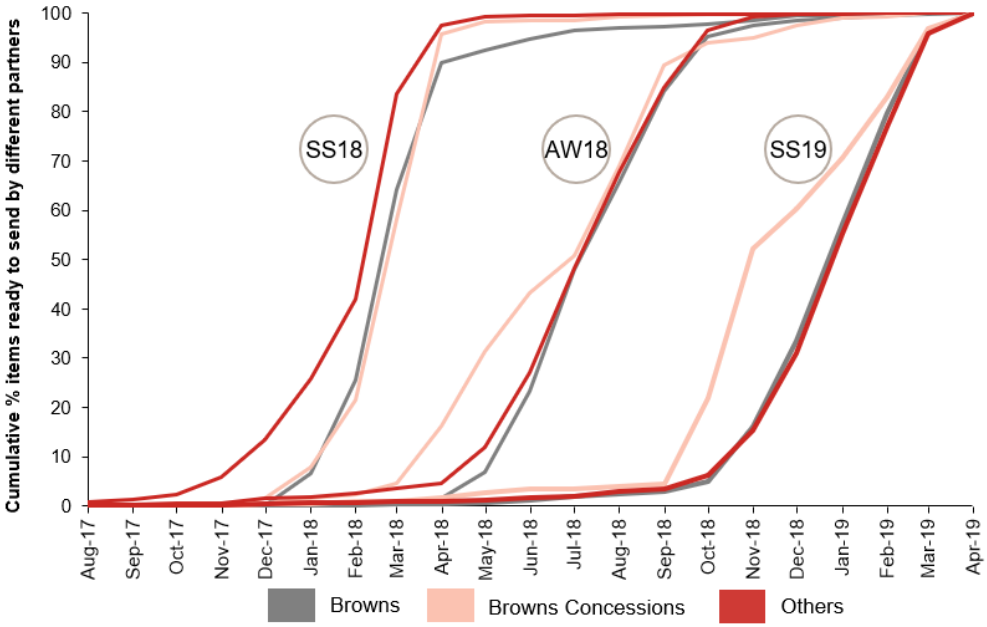

Figure C.4: Cumulative percentage of products from Browns, Browns Concessions and other partners placed on ready to send to production for SS18, AW18 and SS19.

It is visible a difference from the two previous pictures, that leads to the conclusion that the production planning team is not pulling the products. There might be other problems during the production as there is a considerable difference from the scan-in date to the first time online. However, as there is a distinct project in progress to improve production process it was decided to focus on the ready to send moment until it goes online without acting on production directly.