

Development of a tool for customer performance improvement: a B2B e-tail case

Ana Sofia Baptista Souteiro

Dissertação de Mestrado

Orientador na FEUP: Prof.^a Isabel Horta



Mestrado Integrado em Engenharia Industrial e Gestão

2018-07-02

Purpose fuels Passion

Abstract

Digital commerce is among the hottest topics for luxury industry. While big luxury brands took longer to embrace the Internet, Farfetch, a high-end fashion online marketplace, is suffering from growth pains associated with a constant increase of sales volume.

Farfetch's unique business model makes the company deeply dependent of brick-and-mortar stores, which own the entire stock of the business. During the past years, Farfetch has always considered some strategic partners as core players over small and medium boutiques with less market prestige. Now the company aims to reshape its relationship with those smaller boutiques, providing new methods and tools to support their path along with Farfetch. Currently, their onboarding process, which comprises the initial mechanisms through which partners are trained and welcomed in the company, lacks in standardization at the same time that it is not concerned about boutiques' potential long-term flaws.

The project's main goal is to enhance small and medium boutiques onboarding, providing optimal solutions that sustain day-to-day activities but also that take a glance at strategies for a stable growth in the long run. Several functional areas, such as the required workforce and optimal workflow, were studied to prevent significant orders backlog. In addition, this project also includes the value opportunity assessment of some available technological solutions and the development of a facilities planning based on the key features of each boutique. For such purposes, both on site investigation and data analysis were conducted. The final recommendations are displayed in an interactive user interface tool available for all Farfetch teams, which then are communicated to the partnering boutiques.

In parallel, it was deemed appropriate to develop a graphical representation of the main operational metrics. With this reporting model, it is possible to follow up the onboarding boutiques performance as the recommended solutions are put into practice. In another perspective, the report can also be used to spot out any critical behaviour of the existing boutiques that can afterwards use the solutions provided by the tool to improve their performance.

In the aftermath of this dissertation, its main advantages were highlighted with emphasis on the onboarding process redesign that should allow a proactive stance instead of the current reactive approach of the company. The boutiques are also provided with powerful insights that can be used to support their management and operational decisions. Several further developments are suggested, not only regarding some features that can be added to the tool, but also some concern about the end-to-end partner journey was expressed.

Resumo

O comércio digital está entre os tópicos mais falados na indústria de luxo. Enquanto que as grandes marcas demoraram a reconhecer os méritos da Internet, a Farfetch, uma empresa de comércio de moda para clientes diferenciados, está a sofrer dores de crescimento associadas a um aumento constante do volume de vendas.

O seu modelo de negócio único faz com que a empresa se torne completamente dependente de lojas físicas tradicionais que detêm todo o *stock* do negócio. Durante os últimos anos, a Farfetch tem sempre considerado alguns parceiros estratégicos como intervenientes nucleares em detrimento de lojas com menos prestígio de mercado. Agora, a empresa tem como objetivo reformular a sua relação com essas *boutiques* menores, desenvolvendo novos métodos e ferramentas para apoiar o seu percurso ao lado da Farfetch. Atualmente, o processo de integração de novos parceiros, que inclui os mecanismos iniciais pelos quais estes são formados e recebidos na empresa, não tem qualquer padronização ao mesmo tempo que não demonstra preocupação com potenciais problemas a longo prazo.

O principal objetivo deste projeto é melhorar o processo de integração de pequenas e médias lojas, fornecendo soluções que suportem os processos do quotidiano, dando igualmente importância a estratégias para um crescimento sustentável. Algumas áreas, como o número de trabalhadores e o fluxo de trabalho, foram estudadas para evitar um volume elevado de encomendas em atraso. Além disso, este projeto também inclui a avaliação de oportunidade de algumas das soluções tecnológicas disponíveis e o desenvolvimento de um planeamento logístico com base nas características chave de cada *boutique*. Para isso, foi necessário proceder tanto a investigações de campo como a análise de dados. Essas recomendações finais podem ser consultadas numa ferramenta com uma interface interativa, acessível a todas as equipas da Farfetch que as comunicam posteriormente às *boutiques* parceiras.

Paralelamente, considerou-se apropriado desenvolver uma representação gráfica das principais métricas operacionais. Com esse relatório, é possível acompanhar as novas *boutiques* e a evolução do seu desempenho à medida que as soluções recomendadas são postas em prática. Numa perspetiva diferente, o relatório também pode ser usado para identificar algum comportamento crítico das *boutiques* existentes, que podem igualmente usar as soluções fornecidas pela ferramenta para melhorar a sua performance.

No final desta dissertação, as suas principais vantagens foram destacadas com ênfase no redesenho do processo de integração que permite uma postura proativa contrariamente à atual abordagem reativa da empresa. Às *boutiques* são também fornecidos conhecimentos práticos e poderosos que podem ser usados para apoiar as suas decisões operacionais e de gestão. Vários desenvolvimentos adicionais são sugeridos, não apenas em relação a alguns recursos que podem ser adicionados à ferramenta, mas também relativos a toda a jornada do parceiro numa perspetiva holística.

Acknowledges

First of all, I would like to thank Tiago Pinto, my supervisor at Farfetch, to all the patience and for never letting a question go unanswered. I will never forget his support and willingness to share all his extensive knowledge about Farfetch, but most of all, his enthusiasm about the project which really had motivated me.

I would like to offer my special thanks to Prof. Isabel Horta, my supervisor at FEUP, for all the guidance and valuable feedback provided. Her mindful recommendations have shaped the outcome of this dissertation in a decisive way.

My appreciation is also extended to all the people from Operations department who contributed in a lesser or smaller extent to all my inquiries to understand the business and for making Farfetch a pleasant place to work. I must not forget the amazing interns group for carrying this journey with me since the very first day and for turning every lunch time and coffee break into a cheerful moment. Together we really are extraordinary.

Because the present dissertation is also the result of a memorable 5 years journey, I would like to thank all my *pantagruelic* friends who shared all my failures and successes along the way. Even knowing that it is impossible to express how much I own to them, I must try and say that they made this adventure far better than I could have ever imagined.

Finally, I must address my biggest gratitude to my parents and brother, for all their infinite support and care, not only during this 5 months period, but ever since I can remember.

Contents

1	Introduction.....	1
1.1	Farfetch and its synergetic relationship with Boutiques.....	1
1.2	Project Motivation and Expected Results.....	3
1.3	Methodology.....	4
1.4	Document Structure.....	5
2	State of Art.....	6
2.1	Luxury Fashion: expansion through e-commerce.....	6
2.2	E-Commerce Business-to-Business Relationship.....	7
2.3	Customer Relationship Management.....	8
2.4	Operational Performance Improvement Trough Process Optimization.....	9
3	Description of Current Situation.....	12
3.1	Partners Classification.....	12
3.2	Product Creation Process.....	13
3.3	Order Fulfillment Process.....	14
3.4	Key Performance Indicators.....	16
3.4.1	No Stock.....	16
3.4.2	Speed of Sending.....	16
3.4.3	As-Is Evaluation.....	17
3.5	Boutiques Onboarding Process.....	18
3.5.1	Boutique Setup.....	19
3.5.2	Integrations.....	20
3.6	Boutiques and Farfetch Current Touch Points.....	21
3.7	Key Ideas and Improvement Opportunities.....	22
4	Operational Solutions: Workforce Management and Workflow Optimization.....	23
4.1	Workforce Management.....	23
4.1.1	Methodology.....	24
4.1.2	Processes Analysis and Data Collection.....	26
4.1.3	Standard Times Calculation.....	27
4.1.4	Average Standard Time per Order and Headcount Estimate.....	29
4.2	Workflow Optimization.....	31
5	Strategic Solutions: Facilities Planning and Integrations Software.....	33
5.1	Facilities Planning.....	33
5.1.1	Benchmarking Approach.....	36
5.1.2	Scenarios Definition.....	37
5.2	Integrations Software.....	40
5.2.1	Break-even Points Procedure.....	42
5.2.2	Break-even Points Calculation.....	43
6	User Interfaces.....	45
6.1	Tool Interface.....	45
6.2	Reporting Model.....	48
7	Conclusions and Future Work.....	51
7.1	Main Results.....	51
7.2	Further Development.....	53
	References.....	55
	APPENDIX A Farfetch Connect.....	60
	APPENDIX B Time Study Analysis Sheet.....	61
	APPENDIX C Order Processing Observation Times.....	62
	APPENDIX D Return Processing Observation Times.....	63
	APPENDIX E ILO Recommended Allowances.....	64

APPENDIX F	Allowances given to each task	65
APPENDIX G	Tasks Weight Assessment Queries	66
APPENDIX H	Layouts Design.....	67
APPENDIX I	Form Setup	69
APPENDIX J	Hourly Wages by Region (USD).....	70
APPENDIX K	Integrations Break-even Points By Region	71
APPENDIX L	Tool Interface Output Pages.....	72
APPENDIX M	Reporting Model	74

Nomenclature

AWB	Air Waybill
B2B	Business-to-Business
B2C	Business-to-Consumer
BD	Business Development Team
CRM	Customer Relationship Management
CSS	Cascading Style Sheets
HTML	Hypertext Markup Language
ILO	International Labour Organization
KPI	Key Performance Indicators
PGM	Partnership Governance Mechanisms
PHP	Hypertext Preprocessor
PS	Partner Success Team
SQL	Structured Query Language
USD	United States Dollar

List of Figures

Figure 1 – Operations Department Organizational Chart.....	2
Figure 2 – Implemented Methodology	4
Figure 3 – E-Hub process flow.....	8
Figure 4 – Sales Percentage of the 3 partners groups (GMV).....	12
Figure 5 – Product Creation Process Map.....	13
Figure 6 – Order Fullfilment Process Map.....	14
Figure 7 – Last 12 months KPI results for T0 and Small and Medium Boutiques	17
Figure 8 – Evolution of the number of onboarding boutiques	18
Figure 9 – Onboarding Roadmap	18
Figure 10 - Sales distribution by the number of locations of small and medium boutiques ...	20
Figure 11 – Comparative Analysis: boutique Y vs. small and medium boutiques	24
Figure 12 – Workforce management methodology flowchart.....	25
Figure 13 – Boutique Perspective’s Order Process Map.....	26
Figure 14 – Boutique’s Perspective Return Process Map	26
Figure 15 – Total cycle time.....	29
Figure 16 – Average Standard Time of each Task in minutes (note at scale).....	30
Figure 17 – Order Volume Boutiques Clusters	35
Figure 18 – Possible Scenarios for the Definition of Critical Locations.....	38
Figure 19 – Possible Scenarios for Medium Sales Volume Critical Locations	38
Figure 20 – Possible Scenarios for High Sales Volume Critical Locations	39
Figure 21 – Seasonal Product Creation Evolution	40
Figure 22 – Returns and Orders Correlation ($r=0,81$)	43
Figure 23 – Break-even Points for each Integration Type.....	44
Figure 24 – Inputs Interface.....	46
Figure 25 – Workforce Tab	47
Figure 26 - Setup Tab	48
Figure 27 – Reporting Model and Optimal Solutions Tool Interaction	48
Figure 28 – Orders Section of the overview table	49
Figure 29 – Speed of Sending Graph	50
Figure H.1 – Recommended layout for a space between 0 and 10 sqm.....	67
Figure H.2 - Recommended layout for a space between 10 and 20 sqm	67
Figure H.3 - Recommended layout for a space bigger than 20 sqm	68

List of Tables

Table 1 - Average Frequency of each task per order.....	30
Table 2 – Number of boutiques per setup type and order cluster.....	35
Table 3 – Decentralized Setup Examples.....	37
Table 4 – Centralize Boutique Example.....	37
Table 5 – Development Time for each Integration Type (working days).....	40
Table 6 – Boutiques Percentage by type of Integration and Region.....	41
Table I.1 - Form sent for a boutique with 3 locations.....	69
Table I.2 - Form sent for a boutique with 3 locations.....	69

1 Introduction

The digital revolution has led to an unavoidable change on the behavioural pattern of the final consumer, who understood the compelling advantages that e-commerce offers over conventional brick-and-mortar stores (Jianhong and Hua 2011). In what concerns luxury fashion, Farfetch proved that a selected multi-brand marketplace was just the perfect balance between the convenience consumers were looking for and the boutiques and brands' need of reaching a wider audience.

Farfetch business model, in which the products are directly shipped from the boutiques, results in the need of providing them an effective operational support. As the boutiques network keeps increasing on a monthly basis, it is becoming unsustainable to give them that kind of guidance without a certain degree of process automation. Taking this into consideration, the present dissertation focuses on developing a tool that supports boutiques in their onboarding process. The tool provides optimal solutions and effective setups that will guarantee a stable performance since an early stage of the partnership. To assure a complete follow-up of the whole boutiques lifecycle, a reporting tool was also developed to continuously monitor their performance.

In order to completely understand the goals and motivation of this dissertation, this chapter will provide the necessary context about Farfetch business with a greater emphasis on the company relationship with its partnering boutiques. The methodology chosen to tackle the challenge will also be described.

1.1 Farfetch and its synergetic relationship with Boutiques

Farfetch is an e-commerce platform for luxury fashion launched in 2008 with the premise of bridging shoppers with the best boutiques and designers around the world through a single marketplace. The company sought to fill a gap in fashion industry where small- and medium-sized boutiques didn't have enough influence nor expertise to develop and run steadily an online business. Ten years later, Farfetch has customers scattered across 190 countries served and supported by more than 2000 employees established in 11 offices worldwide. The entire workforce is dedicated to a forward-thinking strategy that allows outperforming results each year, reaching \$1 286 million of goods sold through the platform in 2017, more 40% than in 2016.

Farfetch is characterized by an asset-light business model, carrying no stock itself, a circumstance that brings many merits but also might be a burden in some extent. On the advantages side, the lack of inventory means no risk for the company in situations of product underselling and no inventory holding costs are ever considered. As there is no need of stock

management, Farfetch can keenly focus on building considerable capabilities in technology and operations side. Secondly, due to the high number of boutiques involved, Farfetch is able to reach economies of scale, since it provides the same services to a high number of boutiques, making its business model difficult to replicate.

On the other hand, controlling multiple products from various stockpoints and synchronizing all the stock information is a task difficult to perform. Furthermore, relying on boutiques to be partially responsible for the final product shipped to the customer demands a huge communication effort between them and Farfetch.

To manage all these complexities, it is no surprise that the structure of the company includes several teams, being the largest ones the Technology Department, where all the back and front office development take place, and the Operations Department (Fig. 1) which covers the whole process since the moment the order is placed on Farfetch’s website until its arrival to customer’s address, ensuring the overall quality of the service. The team is divided in several functional areas. E-Commerce Operations deals with every distinctive aspect of online shopping: it oversees the payment procedure, fraud detection and manages the delivery process. Creative Operations are in control of all the media content uploaded on the website. Customer service answer customers’ inquiries on orders, products, campaigns and other issues. The areas highlighted in the organizational chart are responsible for the relationship with the partners.

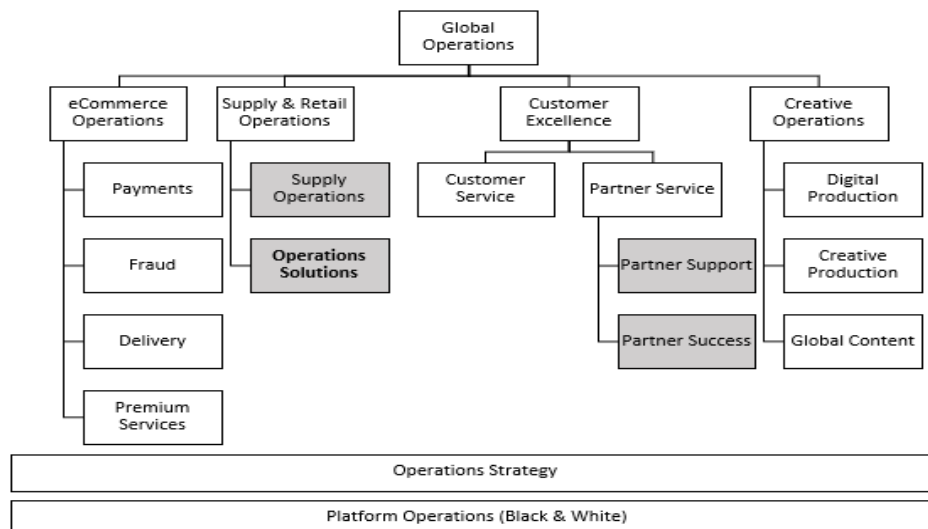


Figure 1 – Operations Department Organizational Chart

Due to its business model, Farfetch must build a lasting and solid relationship with every partner. They are exclusive boutiques or brands that made their portfolio available to be sold under Farfetch seal. While Farfetch handles the transaction, each store is individually responsible by the whole in-house process, including order processing and packaging. If a boutique consistently underperforms it will impact not only the operational performance but also the customer satisfaction.

Farfetch-boutiques relationship has to be synergetic and mutual beneficial to effectively run the business. Hence, there are several teams responsible for this interaction. Account Management takes responsibility for every commercial aspect related to boutiques, advising

them on which brands and items should they buy to maximize sales, acting as boutiques' commercial point of contact with Farfetch. On the other hand, the operational matters are in charge of Supply Operations, Partner Service and Partner Success (PS) on different levels:

- Supply Operations deals with every macro operational aspects related to the boutiques. It manages all activities that impact the partners globally, such as the packaging supply, but they do not interact individually with them;
- Partner Service interacts directly with partners and comes into play to solve day-to-day problems mainly related to order processing, return issues or system queries;
- PS is a relatively recent team in the company that deals with partners' operational concerns on a higher level. The team covers middle-sized partners and it is in charge of their training and development during their Farfetch lifecycle, while intervening every time their performance drops to critical values in a rather reactive approach.

However, Farfetch sensed that some partners, either because their outstanding sales volume or because they are strategic by some means, deserved an individual consultancy approach. Operations Solutions team, where this dissertation was developed, seeks to implement tailored success plans to maximize key partners' performance. Among the most important goals of the team are:

- Proactively trend spot partners' behaviors, being able to anticipate business risks and implement corrective measures;
- Look out of the box to improve operational processes and workflows to exploit partner's efficiency and profitability;
- Manage effectively the onboarding process, a set of integration actions that guide the boutiques in the first stages of the partnership, so that the relationship foundations are well settled from the beginning;

Through the combined effort of these teams, Farfetch is able to build a trustworthy relationship with the exclusive boutiques that want to be part of Farfetch business.

1.2 DefiniProject Motivation and Expected Results

Farfetch is growing at an accelerate pace and its partners community is following that trend. This ever-increasing network includes more than 1200 boutiques with different features and cultural backgrounds. However, for the majority of these boutiques Farfetch is their very first pure online experience and their expertise is limited to exclusive offline concerns, such as building an appealing storefront or training a knowledgeable sales workforce. Hence, it is unsurprisingly that they need a qualified help to manage the efforts between online and offline businesses.

With such a diversified partners' network, with dozens joining every month, it is impossible to give a personalized support to all. While Operations Solutions team provides a tailored service to strategic partners, smaller boutiques are left behind with no guidance in the onboarding process nor further ahead. Among all the partners-dedicated teams inside Farfetch, there is none whose scope is giving them a tailored service with a high level of commitment. Since those boutiques represent 60% of the total sales of the company, the

consequence of an insufficient support can be dramatic since their business potential is not fully explored.

The present dissertation addresses precisely this fragility and its main goals can be summarized in the following topics:

- Conceive a model that defines a set of optimal solutions for the small and medium-sized boutiques onboarding process with focus on four different areas:
 - Workforce planning;
 - Optimal layouts and workflows;
 - Efficient logistics setups;
 - Decision supporting on the adoption of technological solutions.
- Develop an interactive tool to be used by Farfetch PS team to effectively communicate the optimal solutions found, alongside with a reporting model to follow boutiques performance evolution;

Although the main goal is the development of an internal tool, the possibility of usage by other stakeholders shall not be excluded, which represents additional responsibility and attention regarding the information displayed and the way it is represented. In the same way, the tool can also be used for existing partners on the long run with the goal of improving their results.

1.3 Methodology

In order to meet the previously stated goals a methodical approach was implemented, as exhibited in Fig. 2. The methodology has 3 main stages and its fundamental goal is to create a high-level timescale that will allow the identification of all actions needed to achieve the expected results.

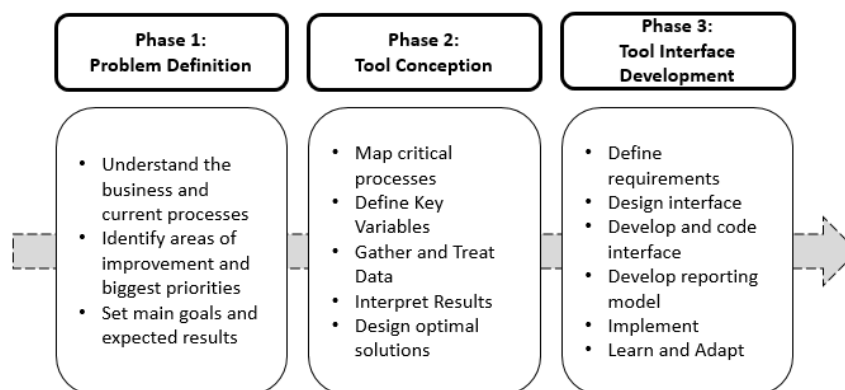


Figure 2 – Implemented Methodology

As in every project, the first step is focused on understanding the current processes within the company until getting comfortable with the processes that are crucial for the project scope. After that, potential opportunity areas were studied and the ones with highest improvement margin were chosen to be included in the next steps. To assure the project completion, it was considered important to define key stages and milestones.

Phase 2 main goal is to define the most suitable solutions for small and medium boutiques onboarding process taking into consideration each one of the pinpointed areas. That phase was considered the most demanding and for that reason each area was treated as a module of the final outcome. Hence, Phase 2 was separately implemented for each one. Mapping the most critical processes and defining key variables that may have impact on the studied processes were the first actions performed. Next, the relevant data was gathered either by accessing the company database or by on-site investigation. With all the information collected, the main discoveries were highlighted, being possible to identify the optimal solutions and best practices that suit smaller boutiques;

With the solutions properly defined, the development of the tool could take place. The tool consists of an interface for the final user and for that reason their main requirements were collected before the interface design and coding . Since it was felt the need of monitoring the boutiques performance once the solutions begin to be implemented, this project also comprises the development of a reporting model where the main operational Key Performance Indicators (KPI) boutiques can be scrutinized. After the implementation, the users can give constructive feedback to achieve a continuous improvement approach.

1.4 Document Structure

The present document will be divided in six more chapters. The following one, Chapter 2, will consist of a brief review of the main concepts and techniques developed so far in the relevant areas that this dissertation addresses.

Chapter 3 will be looking at the key processes of the company, which will help to understand the scope of the project. The focus will be given to the order fulfilment process as well as to the explanation of the two most important operational KPI. The current processes that support the partnering boutiques will also be detailed. Those processes can be divided in the ones that are related to the boutiques onboarding and the ones that provide guidance in the business-as-usual operations.

The next two chapters are dedicated to the solution developed to face the problem. Chapter 4 will provide a set of best practices that boutiques should adopt in order to improve day-to-day activities. Chapter 5, in its turn, will address the macro aspects that cannot be adjusted in a short or medium term, which boutiques should optimize. These chapters follow a similar methodology, starting with a deeper assessment of the as-is situation to provide later a set of solutions that boutiques should adopt, based on data analysis and on-site investigation.

Chapter 6 will address the development of the two user interfaces that materialize the final outcomes of this project: the tool where the designed solutions are displayed and the reporting model where the small and medium boutiques performance can be tracked.

The final chapter, Chapter 7, will draw some conclusions about the project and evaluate the final outcome. As final consideration, a series of recommendations and future opportunities are identified, as a result of a deeper understanding of the process through the findings encountered and the valuable feedback collected.

2 State of Art

In this section, it is provided an overview of the most relevant and up-to-date literature of the key aspects approached in the present dissertation. Firstly, it is given an introduction over the luxury fashion industry and how was its adaptation to e-commerce. The Business-to-Business (B2B) model is later described, with a special focus on new business models that emerged due to the technological innovations in that sector. The specificities of the commercial relationship between two companies in a digital environment are explored, as well, as some known strategies to enhance their performance.

2.1 Luxury Fashion: expansion through e-commerce

For centuries luxury was the visible result of a strong social stratification (Kapferer and Bastien 2012). Although the present-day society has gradually become more inclusive, luxury still stands as a concept full of heritage and tradition notions. In 1988, Grossman and Sharpiro conceptualized one of the first formal contemporary definitions of luxury goods as being products that “bring prestige to the owner, apart from any functional utility” (Grossman and Shapiro 1988). Besides the social statement luxury gives, individual pleasure as well as emotional and quality value are also seen as the main drivers for luxury consumption (Melika and Muris 2009).

It is unreasonable to mention luxury without doing a deep dive on fashion. It is estimated that fashion and other related goods, like fragrances and cosmetics, account for almost 70% of the total luxury market, leaving the car industry in a distant second place (Delloite 2017). However, while in the past fashion was the privilege of few, in the 20th century it started diverging from luxury with the growing of fast-fashion brands on western societies. Today, the overlap between luxury and fashion can be considered slight (Kapferer and Bastien 2012).

To face these current trends and survive the economic downturns of the new century, luxury brands were obliged to make decisions that represent a turnover in their recurrent strategies. There are two shifting strategies worth noticing. First, the creation of joined conglomerate groups (M. and Grete 2005), like LVMH and Richemont. They represent a competitive advantage considering the opportunity of sharing expertise and resources along with a strong corporate culture (RayeCarol and H. 2015). Secondly, luxury fashion brands had also to put their efforts on extending their portfolios (Stankeviciute and Hoffmann 2010) as an attempt to survive saturated markets and attract different customer segments. Chanel was the first brand to accomplish it with the iconic N° 5 fragrance created in 1921(Kapferer and Bastien 2009).

However, vertical and horizontal integrations are not the only strategies used by luxury brands to strengthen their influence. As the Internet is continuously changing the business landscape, luxury brands had to react to the changes technology brought to consumer shopping behaviour (Okonkwo 2009). However, luxury business is frequently counter-intuitive, and

Internet can be seen as a mixed blessing for the high-end market. Embracing online sales could result in the irreparable weakening of the *snob effect*. This concept advocates that luxury consumers avoid buying popular brands and only perceive the exclusivity that luxury offers (Melika and Muris 2009). Internet on its turn seems to be just the opposite world: it is fast, convenient and accessible to all (Francesca Dall’Olmo and Caroline 2003). Nevertheless, with the heavy cost structure and in a sector with more competitors than ever, luxury brands had no choice but to adopt *abundant rarities* strategies, characterized by a false sense of limited supply (Jean-Noël and Pierre 2016).

Moreover, apart from technology, there are other new forces shaping the luxury fashion business. Emerging markets will be responsible for the highest sales growth in the luxury fashion industry in 2018, 7%, against the modest 2 % of Europe (McKinsey 2018). In 2017, Gucci generated 34% of its revenue in the Asia-Pacific region (Kering 2017). This new consumption pattern proves the need of reaching other geographies and maximizing the brand presence. The inevitability of an online channel adoption becomes even stronger when considering the generational shift of consumer power to the millennial generation (Ordun 2015). Bain predicts that online sales of personal luxury goods will total 25% of the market in 2025 (Bain 2017).

The increasing presence of internet in the day-to-day lives also opened the doors for new business models and forward-thinking strategies. Multi-brand e-commerce platforms have been growing robustly over the past few years: Yoox Net-A-Porter saw its high-end goods sales increase 17% in 2017 (Reuters 2018). Those type of retailers come to dominate the digital luxury business (Runfola and Guercini 2015) and they are already a preferred source of information, with more 8% of the total online searches than official brands sites (McKinsey 2018). This *platform-first* syndrome is justified by the convenience, relevance and wide variety of products platforms offer, without neglecting the customer care and logistics performance (McKinsey 2015). Multi-brand stores seem to represent the perfect balance between satisfying the need of reaching a broader audience and safeguarding the brands’ exclusiveness.

2.2 E-Commerce Business-to-Business Relationship

A B2B organization makes commercial transactions with another company in order to use the acquired products or services for the own development and growth (Fauska, Kryvinska, and Strauss 2013b). B2B sector encompasses an increased complexity when compared to companies that strictly deal with final consumers. Business customers will only purchase the products that increase the value of their own enterprise in a decisive way (Paul, Ronan, and Trevor 2006). Frequently, B2B translates into fewer customers, but closer and long-lasting relationships (Walters 2008).

However, the fast-digital transformation of the last decades has resulted in innovations that reshaped the B2B framework. Internet has enabled electronic communication between companies and provides now a robust environment in which interfirm transactions can take place in an automate and safe way (Walters 2008). The typical B2B buyer is also changing: millennials are joining the workforce, expecting nothing but a personalized experience through integrated omnichannel approaches (Google 2015). Moreover, the growing complexity of data structures and of system workflows make of an online solution one of the main opportunities to maximize profitability in every type of business model.

In the last decades, B2B e-commerce has proven to be an increasingly source of competitive advantages (Fauska, Kryvinska, and Strauss 2013a). Its employment results in an enhanced

operational performance and in a faster product placement, providing significant financial returns (Kumar and Raheja 2012; Gorla, Chiravuri, and Chinta 2017). In 2021 it is predicted that 13,1% of United States B2B sales will be through an e-commerce platform (Forrester 2017).

With the increasing popularity of B2B e-commerce relations, new models had begun to emerge. It is the example of online business-to-business intermediaries platforms, called 'e-hubs' (Fig. 3). They facilitate information exchange and negotiation between the parties involved (Albrecht, Dean, and Hansen 2005). In this model, the digital intermediary runs a marketplace where sellers and buyers have a central point to come together (Paul, Ronan, and Trevor 2006). The appeal of these trusted hubs is evident. They aggregate supply and save time for buyers, while providing more favourable terms and a well-structured market for sellers (Shevchenko and Shevchenko 2005; Kaplan and Sawhney 2000). One of the biggest advantages for this model comes into play when considering that e-hubs are usually industry-specific, being able to lure proficient sellers and customers (Qizhi Dai 2002). By earning fees for the transactions, the intermediaries can achieve extensive revenues.

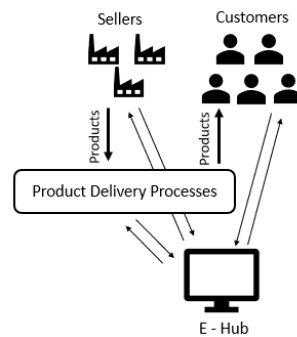


Figure 3 – E-Hub process flow

Some advocate that those trading platforms represent an advanced method of making online transactions (European Commission Expert Group 2003) as they include two types of relations: the one with the sellers that usually are businesses and the one with the customers which can be either companies or final consumers. However, the challenges for this model can be overwhelming. Merely automating the main operations will not be enough, instead the cooperation of the parties involved must be sharp (Kumar and Raheja 2012). To develop such a profile, the e-hub platform should work closely to the sellers to make sure that technological compatibility is achieved (Claycomb, Iyer, and Germain 2005) . For relatively large companies, it might not be difficult to develop and invest on matching processes, but for small enterprises this integration might be challenging and the excess of standards may be a strong disincentive (Gulledge 2002). Nevertheless, connecting a large number of buyers with a set of diversified sellers in one single virtual marketplace is able to reduce transaction costs by streamlining the supply chain (Sawhney 2000).

2.3 Customer Relationship Management

In 1990, Reichheld and Sasser awoke business community to the need of managing customer relationships on a long term (Reichheld and Sasser 1990). Customer Relationship Management (CRM) can be defined as “all the tools, technologies and procedures to manage, improve and support (...) interactions with customers and business partners” (Davenport, Harris, and Kohli 2001). The implementation of CRM promises a higher level of customer

satisfaction and reducing operational costs by an enhancement of organizational systems (U. and Aysegul 2012).

CRM is not only a valuable tool in the markets directed towards end consumers but also plays a key role in the B2B context. When it comes to business customers, they demand a tighter process integration (Kumar and Reinartz 2012), but they can generate large revenues since the amount spent per transaction is usually larger than in Business-to-Consumer (B2C) models. However, business service or product purchasers have become more consumer-like as they are being increasingly influenced by peer-to-peer word of mouth (Stanley 2015). Some researchers propose that emotional commitment is a new source of competitive advantage in B2B commerce (Elena and José 2001; Derrouiche et al. 2010). For that reason, B2B businesses need to continuously innovate and find new opportunities for engaging their customers, overcoming the strict commercial relationship (Joseph 2015). In current days, CRM is more than the pure use of Information Technologies, being also the combined efforts that enable the company and its clients to achieve their common ambitions.

Bearing this in mind, many companies use Partnership Governance Mechanisms (PGM) to support CRM systems, promoting a stronger relationship with their clients and partners (Ling-Yee 2007). Governance theory distinguishes two types of mechanisms. Formal governance comprises the specification of goals and obligations between the two parties. The contract performance can be closely monitored while service level agreements and penalties in case of noncompliance are defined (Gilliland, Bello, and Gundlach 2010). Though, the cost of sustaining these kind of contract can be significant (Poppo and Zenger 2002). At the beginning, the involved companies incur costs of designing which tools should be used for monitoring; afterwards, implementing them may imply a huge effort on gathering all the required information; finally, reviewing and evaluating the outcomes provided by the reports are also a source of expense.

On the other hand, a more comprehensive approach relies on informal governance which focuses on enhancing the knowledge and capabilities of the partners (Gilliland, Bello, and Gundlach 2010). This type of process includes tasks forces, shared decision making and the technical assistance and know-how offered to the customer to sustain their growth in a medium and long terms (Storey and Kocabasoglu-Hillmer 2013). These continuous learning procedures are becoming more popular as they reduce the likelihood of opportunistic behaviour (Ling-Yee 2007). Nevertheless, the costs of informal governance mechanisms can be higher than expected due to the repeated interaction that is required between the two companies (Hoetker and Mellewig 2009).

Despite the advantages and flaws of each one of the PGM, researchers of several business sectors agree that they are not mutually exclusive (Yu, Liao, and Lin 2006; Wann-Yih, Ya-Jung, and Yi-Ju 2006). The simultaneous adoption of both proves that pure technological CRM is not the sufficient condition to achieve valuable relationships (Irene, Marta, and Amparo 2009).

2.4 Operational Performance Improvement Through Process Optimization

Partners and customers represent a critical resource for every company. Competitive advantage no longer resides within companies own capabilities and resources, but rather with the linkages they can build with external organizations (Lewis 1995). However, partners may not achieve the proposed targets (Stephan 2006). To leverage their performance according to expectations, partner development and operational performance improvement might be the most natural solution as it carries no switching costs (Roman, Osinski, and Erdmann 2017).

Partner or customer development can be defined as the effort to upgrade the partners “technical, (...) delivery, and cost capabilities and to foster ongoing improvements” (Watts and K. Hahn 2006) and it should also include the collaboration efforts between the two parties and process-oriented methods, rather than traditional results-oriented procedures. It is believed that a firm that engages on partner development is more likely to survive the global competition (R. Krause 1997). To take this opportunity, business managers are following the trend of reducing the stakeholders network, concentrating their efforts in the remaining ones (Prahinski and Benton 2004). Many organizations are opting for extensive development programs whose main scope is investing on the improvement of, not only in-house processes, but also of shared processes between the company and the partner (R. and M. 1997; Modi and Mabert 2007).

Business processes can be considered a key building block of partner development and the consequence performance improvement. They can be defined as “collections of one or more linked activities which realize a business objective” (Georgakopoulos and Tsalgatiidou 1998). Typically, there are four key features that characterized any process (Mohamed 1997):

1. Predictable and definable inputs;
2. A linear and logical flow;
3. A set of clear tasks and activities;
4. An expected and desired outcome.

A process includes value-adding activities, which create outputs that the customer is willing to pay to receive, and hand-off activities, which move work across the organization (Grover and Malhotra 1997). There could also exist unnecessary activities that represent waste and avoidable costs, affecting process performance and consequently customer satisfaction (Borgianni, Cascini, and Rotini 2010).

As organizations grow, procedures have to be modified to meet immediate needs and cope with the change (McKinsey 2012). Customers’ needs are ever changing, new competitors join the sector in an accelerate pace and new technological solutions are always being developed. Yet, for exponentially growing companies, any minor improvement or automation only masked the problem by increasing the process speed (Guha, Kettinger, and Teng 1993). Anyhow, the backbone process continues to follow the same logic, being deteriorated over time (Castellanos 2008). The solution lies in effectively rethinking processes by removing wasteful activities and replacing the out-dated processes with integrated activities that support service quality and innovation (Vom Brocke, Petry, and Gonser 2016).

Business process optimization comprises not only automating processes but also simplifying and improving business workflows in any suitable instance (Vergidis, Tiwari, and Majeed 2008). Companies must implement process optimization through a defined framework to ensure that all the actions are performed accordingly and on time in a continuous cycle of activities (Arlbjørn and Haug 2010):

- *Analyse*: with data analysis, it is possible to spot trends and follow up the performance indicators. Monitoring helps to identify bottlenecks and pain points;
- *Design*: with the previous step, it is possible to design new solutions and identify the most critical processes to focus on them. The to-be process should be modelled;
- *Validate*: one must see the designed solutions in action and validate them to ensure their feasibility and minimize business risk. New improvement points may appear;
- *Automate*: with every step of the process working in the most effective way, the organization can automate some of them or even the entire process in order to reduce the leading time;

- *Evaluate*: continuously measuring the performance is critical to the success of the organization. By identifying not met standards, managers should take the appropriate corrective action.

A business process optimization initiative also includes the social-cultural challenge (Reijers and Liman Mansar 2005). The workforce may react against the proposed organizational changes if severe effects are felt. Taking this into consideration, change management should be a concern of managerial team to leverage the engagement level (Macaya, Crawford, and Soto 2016).

Despite all the difficulties, undertaking process optimization provides several advantages. The reduction of wasteful activities will allow every worker to focus on meaningful activities that truly bring value for the business (Umeshwar 2004; Malhotra 1998). In addition, process automation may reduce human errors likelihood. The effects on the reduction of operational costs and on the enhancement of customer satisfaction confer competitive advantage to the company, strengthening the market entry-barriers (Arlbjørn and Haug 2010).

3 Description of Current Situation

As already mentioned in the previous sections, Farfetch distinctive business model implies that several stakeholders are accountable of important tasks in the sequential array of processes that assure the provision of products to the final customer. Boutiques play an important role on this complex journey, assuring stock availability and items packaging among other responsibilities. However, boutiques are seen not only as a partner, but also as a client whose interests must be protected. With a higher number of boutiques entering the business, it is binding to achieve a full optimization of the processes that support all the partnering boutiques to assure that they take the most advantage of the partnership. In order to completely understand the current procedures and this dissertation background, a brief overview of the relevant processes in place is conducted in this chapter, with a highlight to those which directly represent the touch points between Farfetch and the partnering boutiques. Finally, resulting from the as-is analysis conducted, some improvement opportunities were identified.

3.1 Partners Classification

With more than 1100 partners scattered all over the world with a different set of operational features and expectations, would be difficult to give to all the same type of support and solutions. Farfetch had identified 33 strategic boutiques, which represent 3% of all partners, to whom is given a personalized and complete guidance. Those boutiques are called T0 and they are either partners with an exceptional sales volume or considered strategic because of, for example, their geopgrapical location. T0 represent about 37% of the total sales (Fig. 4). Operations Solutions team is responsible for those partners, performing a daily follow up not only of the main operational KPI, but also of their concerns and struggles. The team and each partner do a bi-weekly call where higher-level issues are discussed such as sales season preparation and the headcount needed to achieve a good performance. Operations Solutions speacialists do regular on-site visits where the stores layouts are optimized, among other strategic improvements.

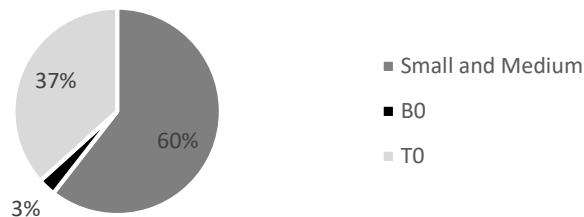


Figure 4 – Sales Percentage of the 3 partners groups (GMV)

In addition to boutiques, Farfetch is also dealing directly with brands, eliminating boutiques, which buy their products from brands, from the supply process. This opportunity has arisen due to the increasingly important role Farfetch plays in fashion industry. Today, Farfetch deals directly with 9 strategic brands called B0. Those brands have also a dedicated team responsible for all their affairs. In spite of their increasing relevance within Farfetch business, at the moment they only account for 3% of the sales.

Lastly, most of the partners are small and medium boutiques, which are responsibility of PS. However, because of the heavy workload of the team and as will be evident throughout this chapter, they do not receive the proper support from the company. However, the weight of small and medium boutiques should not be discarded, as together they are responsible for 60% of the sales.

Due to this dissertation scope, brands partners will not be mentioned throughout this document. They are a recent player in Farfetch business with very different supporting processes. Only boutiques and their related procedures will be scrutinized.

3.2 Product Creation Process

Farfetch production process is different from the ones of manufacturing companies. Being an e-tail company which deeply controls every stage that may impact the customer journey, Farfetch has proper standards regarding all the content that goes online. Every product placed on Farfetch website must be styled and photographed in the Production Center at Guimarães Office.

After buying the items from brands, a boutique has to create each product at Farfetch system with all the required information, from the brand name and size to all the relevant fitting data. However, it is likely that a product has already been created in the system by another boutique and has already been sent to the Production Center. Under these circumstances, the product is called a duplicate and the boutique has only to associate its product with the existing one. To avoid wasting resources, boutiques are always encouraged to check for duplicates. If indeed a product does not exist in Farfetch database, the boutique has to send the items to the Production Center, creating a slot request. A slot is a parcel with up to 50 items. After that, the Production team has to approve the request, checking if all the information is properly filled.

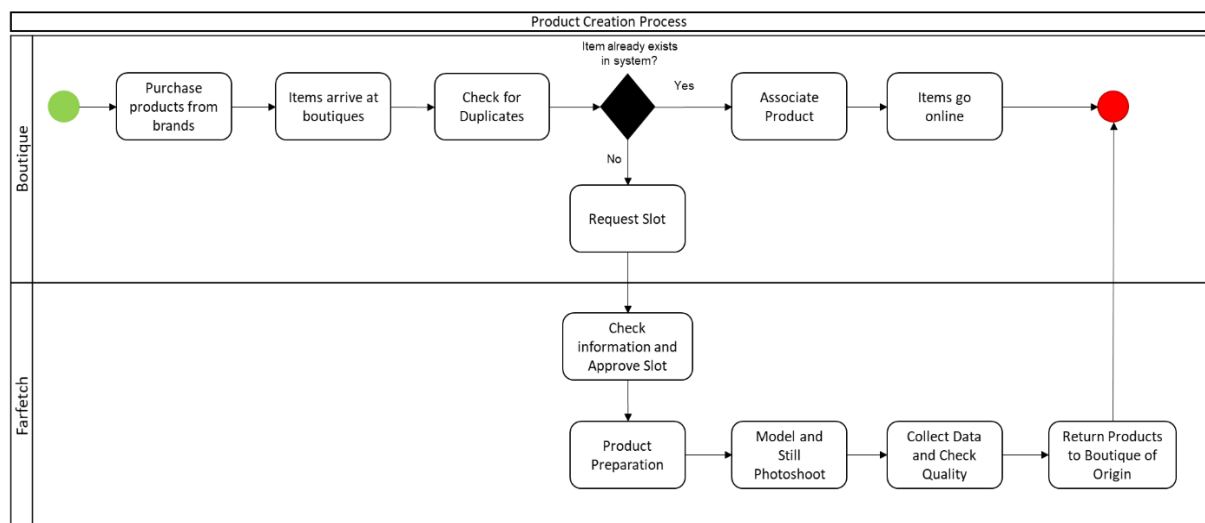


Figure 5 – Product Creation Process Map

If the confirmation is positive, the boutique is authorized to send the slot to Production. Here, the item is scanned and the quality control takes place before it is photographed. The Production team is also responsible for collecting further data on the article and each photography is edited and polished in post-production section. After the scan out, the slot is returned to the boutique of origin. The entire process workflow can be seen in Fig. 5. The timeframe agreed for the production process is of four days, after which the slots need to be returned to the boutique of origin.

3.3 Order Fulfillment Process

When the product is created, the item is finally ready to go online and be purchased by every user of Farfetch website. After customers choose the item(s) and the payment and delivery option among those available in their country, there are a lot of steps that need to be taken in order to deliver the very best service and experience. Each step is detailed below and the order fulfilment process is mapped in Fig. 6.

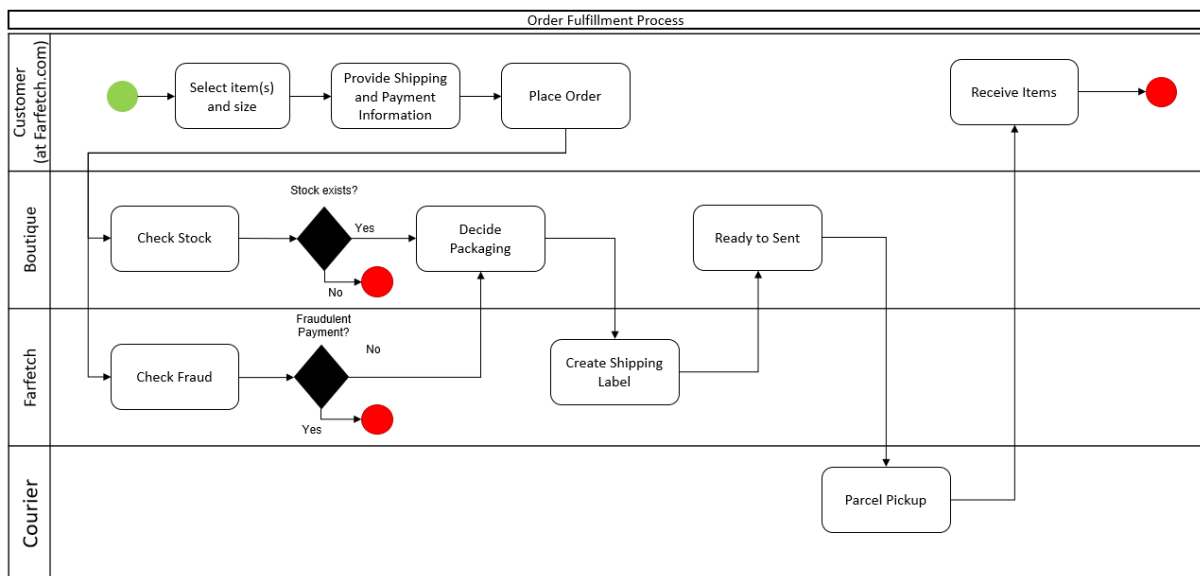


Figure 6 – Order Fulfillment Process Map

Step 1 – Check Stock

The first step is the boutiques’ responsibility. Boutiques use a web-based application, STORM, to process the orders and they firstly must confirm if the item ordered by the customer is still available. Although Farfetch keeps track of the stock level of each partner, the system is not 100% accurate. A physical sale at the boutique between the moment a client places an order at the website and the moment the stock is synchronized can be the root cause of a negative answer in the Check Stock step. In these cases, there isn’t another option but to cancel the order.

Step 2 – Approve Payment

The Approve Payment step is Farfetch responsibility and happens in parallel with the first step. This phase can be processed differently depending on the customer transaction history. A payment can be automatically approved if it was made by a recurrent customer. On the contrary, if a customer is already known for fraud events in the past, the order is automatically cancelled. However, the majority of the payments cannot be classified in those two categories

and the Fraud team has to verify the authenticity of those transactions and look for anomalies to reach an approval decision. In a luxury business, fraud detection becomes of major importance due to higher average order values. Most of the times, Step 2 spans a shorter time period than Step 1 and, as they begin simultaneously, Check Stock is in most cases the bottleneck before Step 3.

Step 3 – Decide Packaging

Farfetch is responsible for the packaging design and procurement whereas the boutiques manage the boxes stock level and is up to them order more when needed. Farfetch has several boxes of different sizes and shapes to accommodate at the best way possible the diversity of items sold at the website. The boutiques are advised to choose the smallest packaging that suits the item to be sent, however the partners have the freedom to include additional personalized details, catalogues or other small gifts that will maximize the customer experience.

Step 4 – Create Shipping Label

The Step 4 represents the creation of the Air Waybill (AWB), the mandatory document that must go along every parcel in its way to the final destination. The creation of an AWB is totally Farfetch concern and it is automatic in most of the cases. Yet there are situations where the Delivery Support Team might have to intervene, either because of a misspelling address or any legal restriction regarding the import country.

Step 5 – Send Parcel

Provided that the shipping label is created, the package is now ready to leave the boutique to its final destination. It is important mentioning that not every boutique has daily couriers pickups, small dimension boutiques have to schedule manually the pickups based on their sales volume.

Step 6 – In transit

While the packaging is travelling with the couriers until reaching the customer address, its final destination, Farfetch system considers the order at Step 6. The order is moved to this step once the courier scan the AWB and, at that moment, an automatic email is sent to customer saying that the item left the boutique of origin.

Return Process

When a customer receives the order, it is always given the option to request a return within the established time limit of 14 days after the receiving date. The reasons for a return request are diverse, from a faulty item to a wrong size choice. The flexible Farfetch Return Service allows customers to choose between a packaging pickup by the courier at their address or returning it personally to any partner boutique at choice.

When the item arrives to the boutique of origin, the return can be either accepted or contested depending on the item condition. If the item is in perfect condition, the boutique accepts the product which will become part of its stock again. Due to a customer friendly policy, Farfetch rarely returns the item to the client and damaged items are usually offered to charity institutions. At the end of the process, Payment team processes the refund. Due to the complexity and number of parties involved in refunds, this step can take up to 15 days to complete.

3.4 Key Performance Indicators

In order to evaluate process performance there are some KPI used by the company. For the Operations Solutions and PS teams what matters is having a clear vision of partners' performance. Currently, No Stock and Speed of Sending are the most used operational KPI as they are considered the most suitable to assess the boutiques commitment to the business, being at the same time crucial for the final customer journey. These KPI are further explained below.

3.4.1 No Stock

As mentioned before, it is possible that a boutique faces a scenario where the item ordered by the customer does not actually exist anymore, creating a no stock situation. No stock rate is one of the most important metrics, impacting both operational and finance levels. This metric compares the number of no stock cases with the total of received orders and is mathematically represented in equation 3.1, as seen below.

$$\text{No Stock Rate} = \frac{NS}{Orders} \quad (3.1)$$

Where:

NS – number of orders that had a no stock during the period

Orders – total number of orders that entered the system during the period

No stock is one of the worst customer experiences possible, since the customer has already paid for the item and is expecting for it to be delivered in a few days. Thereby, no stock ought to be closely monitored for all the partners.

3.4.2 Speed of Sending

Speed of Sending measures the time elapsed between the moment the order was created and the moment it was picked up by the courier. It can be represented by equation 3.2.

$$\text{Speed of Sending} = OS - OC \quad (3.2)$$

Where:

OS – the time and date in which the order was sent by the boutique

OC – the time and date in which the order was created in the system

However, boutiques do not work during all the week and they also take public holidays. For that reason, the previously stated way of calculating speed of sending can lead to wrong conclusions when evaluating a boutique's performance, as it doesn't take into account these limitations. To convert speed of sending in a more boutique-oriented metric, Speed of Sending Net is instead used in the company. This KPI can be mathematically expressed as the Time Spent on Steps 1, 3 and 5 minus weekends, holidays and the time spent on hold. An order is placed on hold when something which halts order processing and isn't boutique's responsibility happens. This way, only the time directly related to the boutique is measured. Speed of Sending Net is expressed as in equation 3.3.

$$\text{Speed of Sending Net} = T1 + T3 + T5 - Weekends - Holidays - Time on Hold \quad (3.3)$$

Where:

T1 –time that an order remained on step 1 (days)

T3 –time that an order remained on step 3 (days)

T5 –time that an order remained on step 5 (days)

Weekends –time that an order could not be processed because of the weekend (days)

Holidays –time that an order could not be processed because of bank holidays (days)

Time on hold –time that an order spent on hold (days)

3.4.3 As-Is Evaluation

In order to assess the performance of the small and medium boutiques, an analysis considering the 12 months between May 2017 and April 2018 was conducted. The two main operational KPI results, no stock and speed of sending, of those boutiques were compared to the ones of T0 (fig. 7).

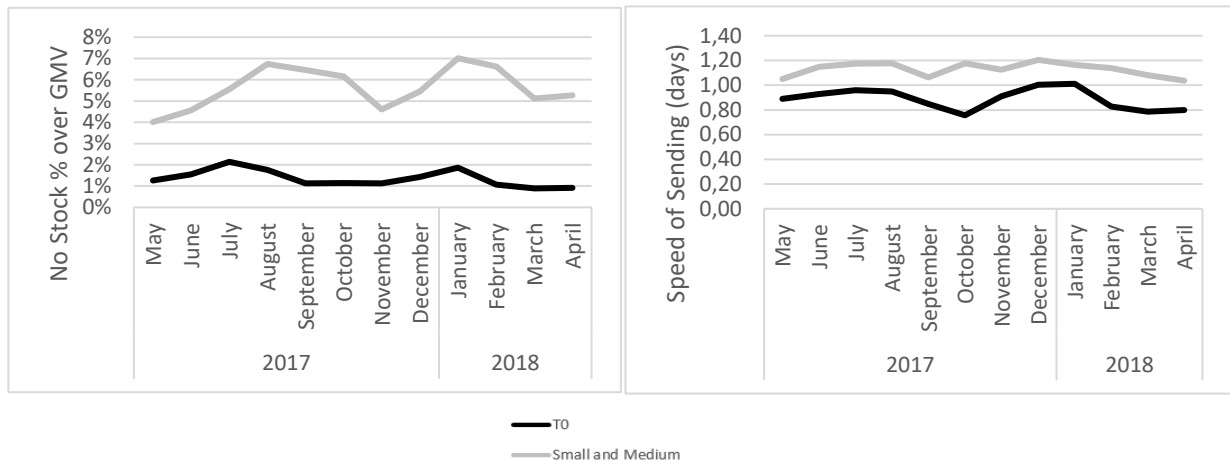


Figure 7 – Last 12 months KPI results for T0 and Small and Medium Boutiques

The difference between the two groups of boutiques is evident during all the period considered. T0 shows an average of 1,36% of orders with no stock, a value that increases 75% if considering only the small and medium boutiques. Moreover, the no stock figures of T0 seem more independent of the month of the year, with just only a slight peak on July and January, the most critical sales season months. On its turn, no stock for the other boutiques seems less stabilized. Regarding the speed of sending, on average, a T0 boutique takes 0,89 days to perform Step 1, 2 and 3. This time increases for 1,12 days when considering smaller boutiques.

Both no stock and speed of sending deeply depends on boutique work load, since the partner does not have at its disposal an infinite set of resources. Some may argue that a boutique with a lower sales volume would take less time to process one order, since the number of orders on pipeline would be lower. The pipeline corresponds to all the orders that have been placed on that boutique and haven't still been sent. At the same time, a small Farfetch volume usually means a small volume in other channels and, in this case, the number of no stocks would also be lower. However, the results show the opposite as bigger boutiques have a considerable better performance. The reasons can be twofold. First, some of those big boutiques have a dedicated online manager that tries to optimize the resource allocation and gives visibility on Farfetch partnership. Also, Operations Solutions team has developed a consistent work on those boutiques' continuous improvement with both short-term and long-term strategies. For that reason, the lower operational performance of small and medium boutiques can represent their lack of multi-channel experience but also some absence in the support given by Farfetch.

3.5 Boutiques Onboarding Process

The number of boutiques entering Farfetch business has never stabilized, reaching a new peak every year (fig. 8), consequence of an increasing demand of luxury goods and, in particular, of Farfetch growth that potentiates a greater awareness of the company, luring a wider spectrum of boutiques. It is evident that the number of boutiques entering the partnership faces seasonal variations, always decreasing in the months corresponding to the sale season, while Farfetch prefers to concentrate its efforts in other business affairs.

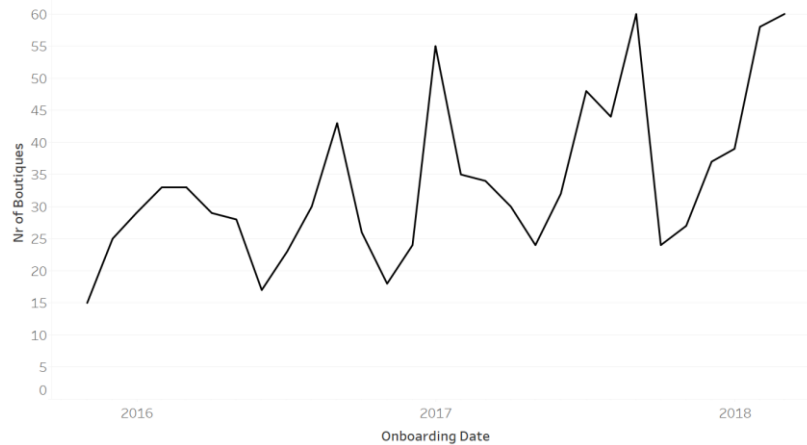


Figure 8 – Evolution of the number of onboarding boutiques

The process of selecting which boutiques are likely to become a valuable Farfetch partner is carried by the Business Development team (BD), a commercial team based in London offices. BD is also responsible for settling the contract between Farfetch and the boutiques considering their mutual expectations. In this phase, the percentage of the profit that will be allowed to Farfetch is also discussed, together with the boutiques incentives and penalization conditions.

For small and medium boutiques, the next stage begins with the handover to PS team that receives the boutique commercial information, which includes its background, target market and the sales growth expectation. PS nominates a team specialist to be responsible for the boutique during all its Farfetch path, who is in charge of scheduling a first call with the boutiques' representatives. In this first approach, it is important to start building a relationship based on trust and support. Farfetch process overview is explained and the onboarding roadmap (Fig. 9) is described in detail.



Figure 9 – Onboarding Roadmap

After the first call, it will be given information to the boutique about how they should set up their product catalogue, all the products that will go live in a first moment. The process continues with a training about order processing when boutique's representatives learn how to use all the STORM's functionalities. To assure that everything is settled, the Success

specialist promotes a pre-live call to confirm inventory levels. The packaging process is explained at that moment.

After the boutique went live in Farfetch.com, the training sessions will this time focus on returns processing and the order fulfilment is reviewed. One month later, the check-in call will assess the boutique performance on the first weeks and any further doubt is answered. The onboarding process is then finished and it is expected that boutiques have enough knowledge to carry on the business-as-usual activities.

The current onboarding process does not have a defined time frame and is mainly focused on platform trainings, only providing support to the indispensable activities without which a boutique could not go online. However there are two more aspects that may be present in the onboarding process but their inclusion and how they are approached deeply depends on the PS specialist in charge. These two elements are explained below.

3.5.1 Boutique Setup

Every Farfetch Partner can operate multiple stores and warehouses. From this point of the present document onwards those stores and warehouses will be called locations. Each location can be situated in a different city or even in a different country from the other ones and have a completely distinct set of operational features. The sales volume and the stock level can be very distinct as different locations do not necessarily have the same relevance within the partner offline business and the partner can also decide if there will be a more dedicated location to Farfetch channel than others. The resource allocation regarding dedicated space to process Farfetch orders or the available workforce between the locations can also be unbalanced. Those variables will surely impact the partner performance and the overall dynamic between the partner and Farfetch.

When the contract between the partner and Farfetch is being discussed, the boutique communicates how many locations will be associated to Farfetch and all their logistics and geographical features. To meet the expectations and capabilities of the different locations, each one can have different roles when dealing with Farfetch orders and other related responsibilities. A location can be:

- **Stock point:** in this case, the location will have stock units that can be sold at Farfetch.com and the staff will be responsible for picking up the item from its storage and confirm in the system its existence. The Step 1 is then completed.
- **Shipping point:** apart from the step 1, a shipping point is also responsible for all the steps from Step 3 to 5. It will take care of the packaging, creating the shipping label and assuring the proper courier pickup schedule.
- **Return point:** given that a location is a return point, this will be responsible for the entire return process. Usually there is only one return point per partner.

These 3 different roles lead to different possibilities in the way a partner manages its locations. Except for very rare situations, a location is always a stock point. Regarding the return point, usually the location with the bigger sales volume is chosen to be the return point. That chosen location will be in charge of processing all the returns, independently of the location from where the item left to the final customer. Generally, this option suits most of the partners, since processing a return is a demanding task, which many times leads to a sequence of messages exchanged between the boutique and the Partner Service team. Moreover the partner do not have to hand back the product to the location of origin by force. In what concerns the shipping point, the decision is not straightforward, since it will depend deeply on

the locations geographical and operational features. A shipping point will handle the most demanding task sequence, being a crucial decision. In the case location X serves as shipping point the location Y, the location Y will not probably need any Farfetch dedicated staff or space, which can suit some stores struggling with resource allocation. This consolidation may make sense, particularly if the distance between the two locations is small. During the present document, the way the different locations roles are settled will be called *boutique setup*.

The amount of variables to be considered and the multiple possible setups, especially in partners with a big number of locations, oblige to a complex setup definition. Moreover, analysing the number of locations per partner, the small and medium boutiques with more than one location represents 32% of the sales. The total sales distribution by the number of locations for those smaller boutiques can be seen in Fig. 10.

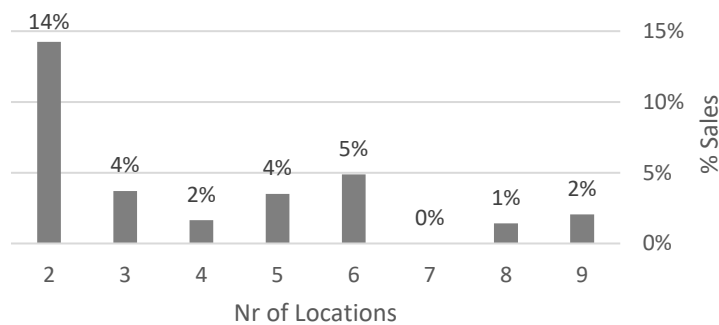


Figure 10 - Sales distribution by the number of locations of small and medium boutiques

Those numbers give strength to the need of the development of a decision supporting setup that will allow achieving a long-term planning mind-set that will suit both the company and partners. Currently, boutique setups are developed by the PS in collaboration with the boutique itself when it is felt the need to do so because of critical performance values after the boutique is online.

3.5.2 Integrations

For a boutique it would be very difficult to perform every task that being a Farfetch partner demands handling two different independent systems (Farfetch and its own) without any automation. Integration processes fill that flaw by connecting boutique’s system to Farfetch’s and are designed to reduce duplication of work, since it centralizes tasks on one system. Among the main advantages on an integration are the avoidance of manual work that prevents human error, allowing boutiques to achieve better results with less effort.

The different type of integrations are independent of each other and can be implemented separately or together. Farfetch offers four type of integrations, namely Stock Sync, Order Sync, Return Sync and Product Creation, which will be detailed below.

Stock Sync

Stock sync creates a one-way communication channel from boutique’s system to Farfetch on the stock levels. Sync updates should be either in real time or at a chosen frequency. Every time a physical purchase occurs in a boutique, the stock sync integration updates the stock level in Farfetch system, eliminating the need of a boutique employee make the update manually.

Order Sync

Unfortunately, Stock Sync is not a 2-way integration. Items sold at Farfetch will not be communicated to the boutique's system, but it is possible to implement a complete syncing through Order Sync. This type of integration allows boutiques to get information about Farfetch orders and adjust stock in their system, removing or reserving inventory for the Farfetch sale. Every time a sale on Farfetch portal occurs, the item will no more be considered in the partner system.

Return Sync

As mentioned before, processing returns is a significant part of the partnering boutiques work, unavoidable in an e-tail business. Return Sync allows boutiques to get information about Farfetch pending returns and validate them.

Product Creation

Product Creation integration centralizes product creation process on the boutique's system. As explained earlier in this document, Product Creation is a very exhausting job performed by boutiques before the start of a season, with a long task sequence. The search for duplicates, the product creation itself, with more than 15 fields required to a complete item description, and the slot management are automatically done.

3.6 Boutiques and Farfetch Current Touch Points

After the onboarding process, the points of contact between Farfetch and the small and medium size partners are mainly in a reactive perspective every time the boutiques faces an order level issue. To solve that kind of problems, which can be either because of a courier pickup failure or any other straightforward issue, the boutique contacts Farfetch through email. Partner Service team will be notified through Zendesk, a ticket management platform that concentrates all the partner requests information in a single location, allowing tracking, prioritizing and solving partner issues.

Moreover, a monthly performance report with the two main operational KPI is automatically sent to every partner, where they can assess their own performance and identify critical areas. Each PS specialist is also responsible for including in the report of the top 10 partners they follow a few comments about the performance with some improvement strategies. The boutiques are limited to reactive calls if their performance goes below critical values.

However, the exponential growth of the partner network lead to an uncontested need of a shift towards a more proactive relationship with every type of partner. With this in mind, the company launched Farfetch Connect (APPENDIX A), an online platform to achieve a closer relation with boutiques around the world. Among other features, Farfetch Connect offers monthly web seminars, *webinars*, since November 2017 where a Farfetch specialist introduces a topic of interest to boutiques' representatives connected via Internet. The key aspect of those training sessions is a 15 minutes Q&A where boutiques can express their main concerns and doubts and see them answered immediately.

Farfetch Connect also displays several manuals, files that boutiques can freely access related to a diversity of topics, from commercial advices to sales preparation tips. Some manuals also include generic operational best practices or customer insights reports.

3.7 Key Ideas and Improvement Opportunities

Boutiques play a key role in what concerns Farfetch success. Even if Farfetch achieves perfect performance on its processes, the company can fail to deliver an excellent service level if the boutiques do not perform accordingly. This as-is analysis evidences that Farfetch does not support small boutiques properly and does not fully recognize their potential within the company:

- T0 performance in the last months proves that Farfetch discovered a good way to enhance their performance and this dynamic should be keener explored;
- Small and medium boutiques number overcomes significantly the T0 being unthinkable to give the two groups the same type of solutions;
- The onboarding process for small boutiques lacks on standardization and long-term planning regarding critical operational aspects such as boutiques setup or integrations decisions. It is rather a process focused on platform usage;
- Boutiques setup decision is seen as something that can be completely modified anytime, rather than an optimal solution that will serve the boutique's interests during a significant time period;
- The points of contact offered to smaller boutiques after their onboarding process are mainly reactive or represent non-personalized solutions;
- On the whole, Farfetch does not provide a long-term solution for smaller boutiques that supports them during their partnership nor invests in their sustainable growth.

Unfortunately, the company has not yet found a way to promote a close support to the existing and new boutiques without an increase in the internal headcount. This is because the processes that sustain the contact between Farfetch and the partners are antiquated and do not include any standards either. Moreover, boutiques must adapt to face future challenges caused by the company exponential growth and the increasing competition outside and inside Farfetch frontiers.

4 Operational Solutions: Workforce Management and Workflow Optimization

Mastering operational processes requires a continuous effort. Such reality is reinforced when performance depends on several entities. As stated before, boutiques do have a decisive role on the perception the final customer will have of Farfetch, however this is not necessarily translated into an effort of the company to support them. The outcomes of this chapter were mainly obtained through on-site investigation that had allowed an in-loco observation of the typical boutiques behaviour dynamic. The proposed changes described in the present chapter consist on the designing of a set of solutions and best practices that would give support to boutiques in their everyday activities. Workforce management will be tackled as a way to improve boutiques' resource allocation and the order processing workflow will be enhanced through layouts and storage optimization.

4.1 Workforce Management

Although Farfetch does not own those statistics, it is known that for a big number of boutiques Farfetch channel does represent a huge volume in their workload. The capacity of each boutique is then an issue that should worry the company. However, the capacity is the conjugation of several variables, such as the headcount, number of boxes available for packaging and number of locations. Evaluating all this information for more than 1200 boutiques is not possible because each one is willing to share different levels of data. From all the resources that a boutique has at its disposal, it is critical to infer which one has more impact on a boutique performance and at the same time it is flexible enough to manage and optimize. The number of locations cannot be considered as a variable that can be changed. The number of boxes surely isn't the bottleneck of the process, since boutiques can store them easily and request as many as they want, but the same cannot be said about the number of employees. The headcount can be seen as a critical resource due to the effort needed to manage it and the financial investment that may represent.

Assessing the optimal headcount level can only be done by mastering all the actions that need to be performed to get a detailed picture of the boutique workload. This necessarily includes the time each task usually takes. However, Farfetch only stores the date and time that each step was confirmed in the system. Considering only these data, it would be impossible to calculate how much a certain task exactly lasts to be executed. As an example, the packaging does not correspond to a specific step on the order processing workflow and checking stock can most of the times be done in bulk, eliminating any possible perception of the time interval each task takes. Therefore, the only way to accurately calculate the real workload of a boutique is by direct observation, measuring the time of each activity.

For simplicity and budget reasons, this study was only conducted in a boutique located in Porto. Bearing in mind the required confidentiality, the boutique real name will not be used, instead it will have a letter associated. Boutique Y was chosen because its main characteristics are similar to small and medium ones (Fig. 11).

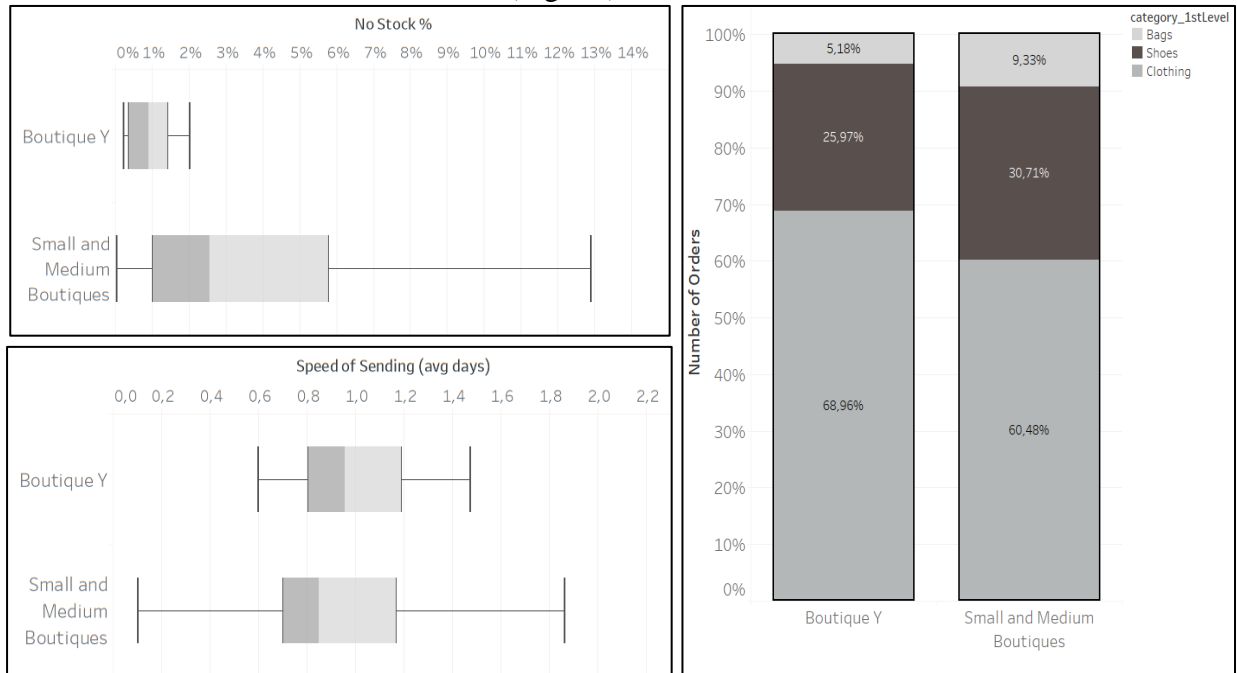


Figure 11 – Comparative Analysis: boutique Y vs. small and medium boutiques

Boutique Y, which went online on May 2016, received in 2017 an average of 30 orders per day and its performance indicators resemble the small and medium boutiques ones. However, Boutique Y values are slightly better which represent a substantial aspect since Boutique Y will work as a standard in the measurement of time of each task. Moreover, its order distribution by the main categories sold at Farfetch (bags, clothing and shoes) is in line with the figures of similar boutiques. Packaging will be one of the main tasks assessed in the time study and the time it takes deeply depends on the item category. Accessories do not require folding them and shoes have a different packaging process as they are sent within the original box. Those conclusions prove that Boutique Y has expression among the others targeted boutiques and can be used as a standard to conduct the time study.

4.1.1 Methodology

Time study was firstly introduced by Frederick Taylor and its main goal is to “establish standard times to the completion of the work by a qualified worker” (Taylor 1914). Although Taylorism has been gaining some criticisms during the years that advocate the need of a more modern approach of the work systems through, for example, teamwork (Derksen 2014), time study can still has a lot of advantages when assessing repetitive tasks. Its methodology consists on the following steps:

1. Analysis of work, splitting the job into smaller tasks and assuring that all the tasks are included;
2. Standardization of methods, guaranteeing that the sequence of tasks studied is the most effective;
3. Time measurement;
4. Adjustment of the observed time considering allowances and worker performance;

5. Testing and reviewing standards.

Taylor’s method was used as support in this phase of the project, adapted every time it reveals not being in line with its scope.

As mentioned before, each boutique has to perform a set of tasks after it begins to partner with Farfetch, from processing orders, creating product, answering and managing Partner Service (PS) queries and processing returns. However, not all of them will be object of study of time measurement. The study of messages exchanged between the boutique and PS was done in collaboration with Farfetch Workforce Management team that provided, not only the average amount of messages per boutique, but also an estimate of the time boutiques usually take to answering a query. Product Creation, a seasonal task that is not performed by all the boutiques, will not be addressed herein. Order and Return processing will then be the core tasks tackled in the time study.

Considering Taylor methodology, time measurement is just a small part to take into consideration to achieve an effective result. The flowchart of the whole procedure is displayed in Fig. 12. The normal times for each task will be calculated through the time measurement, but allowances should be added whenever appropriate to cover relaxation and contingency periods. These allowances will allow to get the standard times. However, the distinctive characteristics of the tool, the final goal of this project, put an extra challenge on the procedure, as it aims to address the needs of every new boutique. For an onboarding boutique it would be impossible to know how many returns will be processed or how many pair of shoes will be sold. Those numbers should then be inferred from a variable that is already known for every boutique joining Farfetch: the expected number of orders. For that reason, the standard time considered for the headcount calculation will be a weight function considering the standard time of each task and the average number of times it occurs per order.

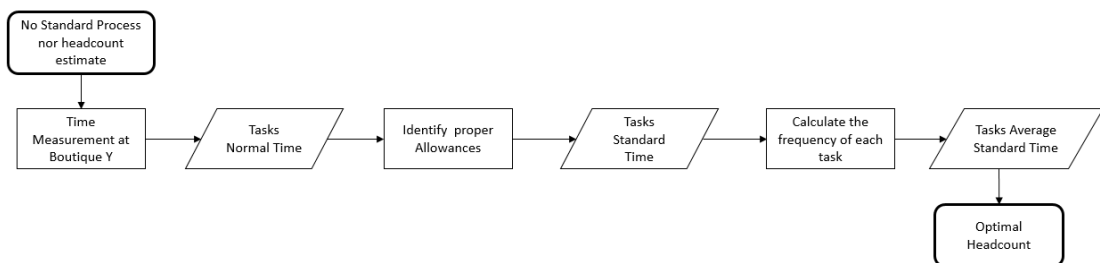


Figure 12 – Workforce management methodology flowchart

In the next sections, the whole method will be described in more detail. First, all the main boutiques processes will be analyzed and the data gathering will be addressed, comprising the steps 1 and 2 of the Taylor method. The next section will focus on data treatment, approaching the remaining time study steps. Finally, the optimal headcount will be calculated.

4.1.2 Processes Analysis and Data Collection

To conduct a time study it is important to be completely engaged to the process and to know the exact set of inputs, outputs and the precise start and end points of which task. In order to clearly define all the tasks to be measured, the targeted processes were carefully mapped with the goal of getting a close-up view of the actions performed by the boutiques, instead of an integrated view of all the process stakeholders. Regarding order processing (Fig. 13), most of the boutiques have two employees in charge of the task: check stock, printing documents and performing a first quality check on the item are responsibility of one of the workers whereas the whole packaging procedure is executed by the other. Packaging comprises the most demanding sequence of tasks since an extra care is given to it due to the luxury condition of the business. It includes the swap between the item original security tag and the Farfetch one, as well as all the necessary actions to assure the item protection during the courier transportation.

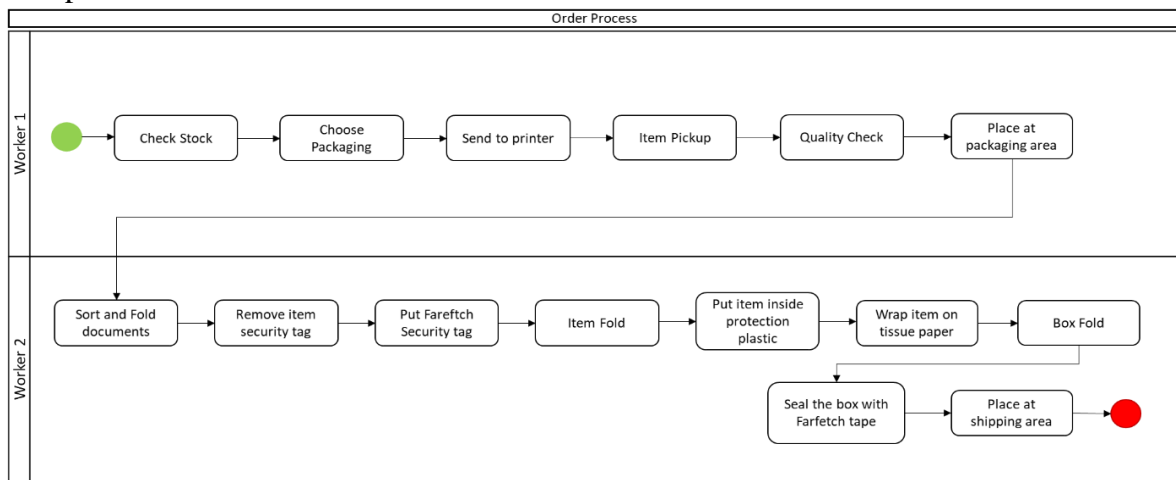


Figure 13 – Boutique Perspective's Order Process Map

For the boutique, the return process (Fig. 14) is usually a simpler process, characterized by an exhaustive quality check when the item arrives to the boutique. On quality check depends if the boutique will accept or not the return. If no faults are found, the item will integrate again the boutique stock. However, if the boutique decides to contest the return, an exchange of messages with Partner Service team starts. If Partner Service team agrees with the boutique motivation, the item is sent to Farfetch to serve charity purposes or other suitable end.

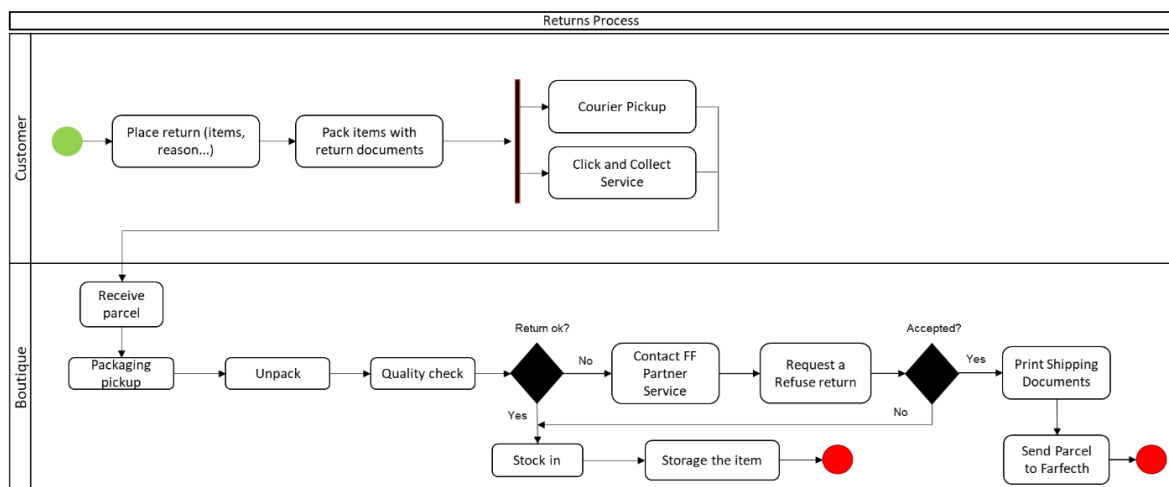


Figure 14 – Boutique's Perspective Return Process Map

Nevertheless, not all the small tasks in these two processes are suitable to perform an effective time study. Those actions can be divided into two groups:

- Actions made in bulk: checking stock, sending to printer and choosing packaging are tasks made on the computer with just one click for a set of items. In these cases, the total time of each action will be divided by the number of items processed at a time;
- Actions that depend on the store layout: item pickup, storing the item and printing, which includes the way from and to the printer, vary severely from boutique to boutique and for that reason no standard time will be given to those tasks;

Having this into consideration and also attending to the previous process maps, a list with the tasks to be measured was prepared. The list and the time study analysis sheet used can be consulted at APPENDIX B. The observations should be taken over a range of standard conditions. If the workers are observed during an abnormal busy period, they will probably be under pressure to get the work finished to avoid extra hours or backlogs. For that reason the time study in Boutique Y was performed during off-sale season, without any exclusive promotion in the days before or after.

A preliminary observation of 20 cycles was undertaken to validate the task sequence and to determine the sample size. The number of cycles to be observed will depend on the variability of the first sample and the level of accuracy required. The pilot study resulted in a mean of 6,705 minutes and a standard deviation of 0,987 minutes. Assuming that the distribution of sample times is normally distributed, the recommended sample size can then be estimated through the formula 4.1 (Chase, Aquilano, and Jacobs 2001).

$$n = \left(\frac{Zs}{hx} \right)^2 \quad (4.1)$$

Where:

Z – Standard normal deviate for the desired confidence coefficient

s – Standard deviation of the initial sample (minutes)

h – Accuracy level desired of the job element (expressed as decimal)

x – Mean of the initial sample (minutes)

Considering a confidence level of 95% and applying the formula 4.1, 33 cycles had to be made. Thereby, the second study was done in the same conditions as the previous one to observe 13 more series. The observation times for each of the tasks can be seen in APPENDIX C.

As stated before, return process was also studied through a time study and the results may be found on APPENDIX D. Again, 20 observations were made in the preliminary study resulting in a cycle average of 2,296 minutes and a standard deviation of 0,167 minutes. Applying once more the formula 4.1, the sample size required is 8 observations and a second study was not required.

4.1.3 Standard Times Calculation

Time measurements are not precise, but only estimates of how long a task takes. While performing an action, other things may intrude, like asking a question or taking a phone call. Moreover, people have different work styles: some can be fast and motivated while others, maybe because of their lack of experience, take a longer time. In addition, there are also tasks easier to carry or more interesting than others. Thereby, there are many opportunities for

variation while conducting a task and for that reason there are two factors that can change the time calculated in time measurement phase:

- Worker experience: taking into account the worker experience, it is important not to consider as standard the time of a beyond competent worker or the time of an unqualified one. In Boutique Y two workers are responsible for processing Farfetch orders. As one of the workers is much more experienced than the other, since it is responsible for processing Farfetch orders for almost two years, an experience margin of 10% was given to the tasks undertaken by this worker; for the other employee no experience value was considered;
- Allowances: they can be defined as the time required by the worker to recover from fatigue and to attend personal needs. Once a normal time for each element has been determined, allowances are added to derive a standard time.

The previous two factors are included in the normal time that was measured following the equation 4.2.

$$\text{Standard Time} = \frac{\text{Normal Time}}{1 - (\text{Experience Factor} + \text{Allowance Factor})} \quad (4.2)$$

Where:

Normal Time – time calculated in the time measurement phase (minutes)

Experience Factor – margin given to the task considering the worker experience (minutes)

Allowance Factor – margin given to the task, considering the proper the allowances (minutes)

The allowance factor to be considered is always subjective, however the recommendations from the International Labour Organization (ILO) (APPENDIX E) were followed as guidelines. The exact value of the allowance depends on the nature of the work and the working environment. Among all the types of allowances, it should be done the effort of choosing the ones more suitable to the work measured. Bearing this in mind, four allowances factors were considered in this study:

- Basic Fatigue: when carrying out work over a complete shift or working day, workers obviously suffer from physical and mental fatigue. The ILO recommends an allowance of 4% of the basic time. In the present study, this allowance was considered for all the tasks;
- Standing work: this allowance is used whenever the operator is in a standing or in an abnormal position. For a good performance, all the tasks measured demand a standing position of the worker, with exception of the ones done on a computer. The normal allowance given in these cases was 2%.
- Use of force: when a workstation has a task where an abnormal muscular energy is used, a force allowance has to be considered. The normal value given to this allowance factor is 1% for a low level of force. This allowance value was given only to three tasks: folding and sealing Farfetch boxes and unpacking the return box.
- Monotony: if a worker performs repetitively the same tasks with low level of mental action, ILO recommends an allowance of 4%, which was used in all the tasks.

The full picture of the allowances given to each task can be examined in APPENDIX F. As a final remark, the standard times were communicated to some boutiques which roughly confirmed the values.

4.1.4 Average Standard Time per Order and Headcount Estimate

Analysing the total cycle times of each observation (Fig. 15), most of them have lasted between 5,5 and 8 minutes. However, two observations stand out as extremes: observation 4 that corresponds to an accessory, with a total time of 4,213 minutes and observation 10 that corresponds to a delicate dress, with a total time of 10,136 minutes. These two observations correspond to distinctive items that take respectively a shorter and a longer time to be processed. This is proven analysing the times of the tasks that are more related to the item that is being processed (APPENDIX C): quality check, place Farfetch security tag and item fold. Nevertheless, those observations cannot be considered as outliers since those situations are pretty common in a fashion boutique environment and for that reason all the observations were considered for the headcount calculation.

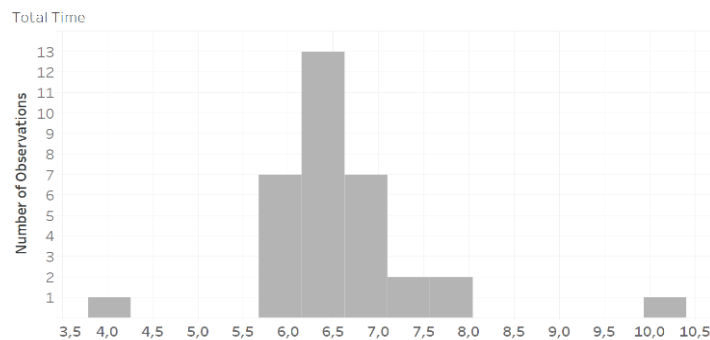


Figure 15 – Total cycle time

As earlier stated, the tool need to support every boutique. Apart from that, it is projected to be used on a regular basis, as it will not only support the onboarding boutiques, but can also help to adapt the solutions used by existing ones. In order to request a small number of inputs, the number of orders is used as the only information required to calculate the workload and all the other variables are a function of it.

The solution found was calculating the average frequency each task occurs per order. Check stock or quality check are actions performed every time a boutique is requested to fulfil an order. The same cannot be said of returns: not every item sent by the partner will result in a return by the customer and it is even less likely a return ending up being refused by the boutique, meaning that not all the returns are sent from the boutique to Farfetch. A similar situation arises regarding the packaging: as already mentioned, shoes have a different packaging procedure and usually take a considerable less time to pack. Here, the challenge is to determine the percentage of shoes, clothing and accessories orders. An analogous thinking can be done concerning the tickets exchanged between each boutique and Farfetch PS team: the boutique does not create one ticket per order. The method can be summarized through the equation 4.3 that will be applied to every task:

$$\text{Average Standard Time} = \text{Frequency} * \text{Standard Time} \quad (4.3)$$

Where:

Frequency – percentage that represents how many times on average the task occurs per order

Standard Time – time that resulted of the time measurement considering already the proper allowances for the task (minutes)

Farfetch database was used to determine the frequency of each task that is not done in every order. Structured Query Language (SQL) was used to retrieve the needed data which considered all 2017 orders. The queries can be found in APPENDIX G and the results are displayed in Table 1.

Task	Weight
Clothing	57,61%
Accessories	16,52%
Shoes	25,87%
Returns	17,15%
Refuse Returns	0,50%
Tickets	2,82%

Table 1 - Average Frequency of each task per order

With this information, it was possible to calculate the average time for each task per order (Fig.16). The average time per order to answer a Farfetch tickets was also considered: 0,03 minutes. The sum of the final results reveals that on average a Farfetch order takes 7,8 minutes to be processed by a boutique, if only one worker is in charge of the process.

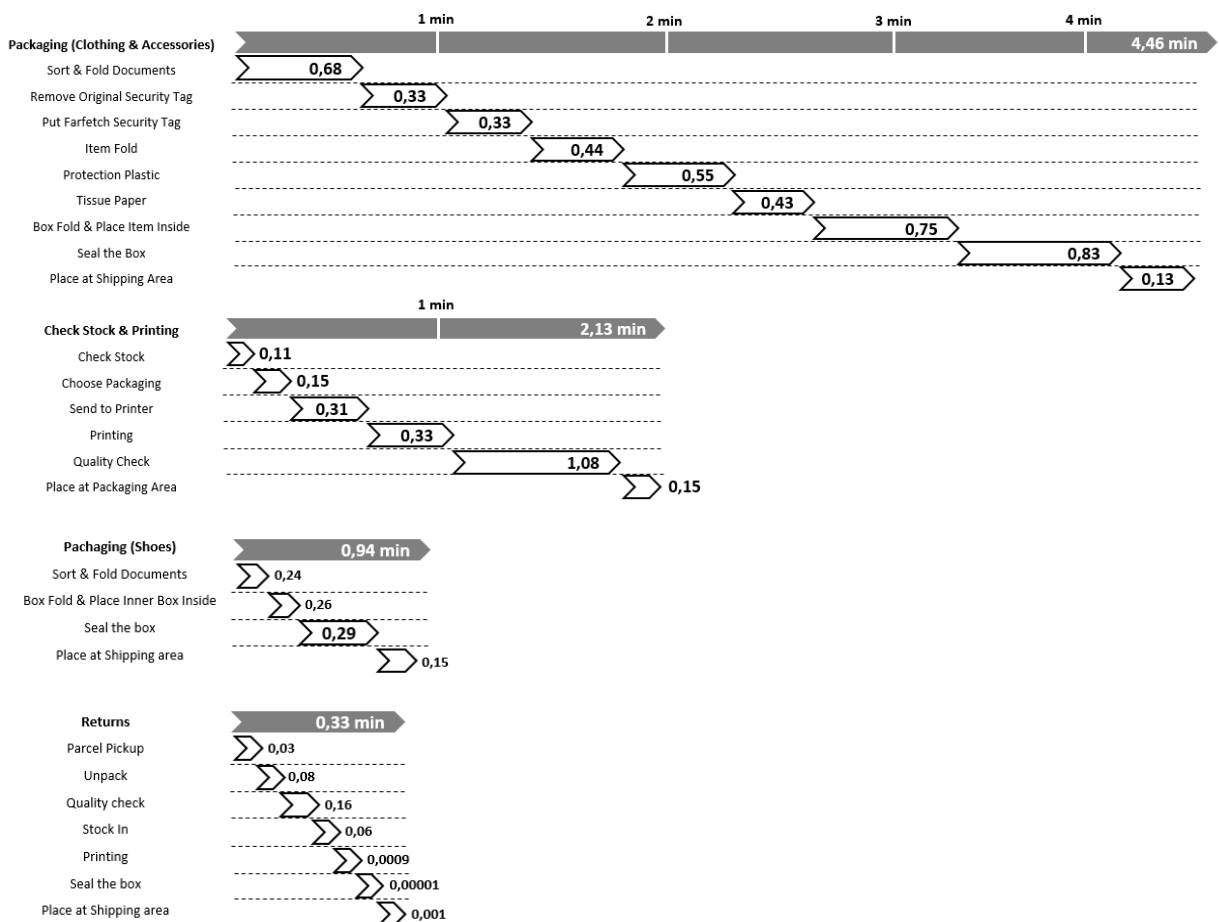


Figure 16 – Average Standard Time of each Task in minutes (note at scale)

Considering the average standard times, it is possible to give an estimate of the headcount boutiques need for a certain order value. Though, there are two more variables that must be considered in this step: the working hours per day and the working days per week. There are boutiques which work more than the regular eight hours a day and it is common that some work on Saturdays. Both variables will be asked to the users of the tool every time the headcount is being calculated, allowing a re-computation of that output whenever, for example, a boutique decides working during the weekend on sales season. This kind of flexibility will empower boutiques with support at different moments of the year, according to their needs. The headcount is given by the equation 4.4.

$$\text{Headcount Estimate} = \left(\frac{\text{Orders/Day} * 7}{\text{Working Days/Week}} \right) * \frac{\text{Time}}{\text{Working Time/Day}} \quad (4.4)$$

Where:

Orders/Day – the expected number of orders a boutique will receive in one day

Working Days/Week – number of days a boutique will work in a certain week

Time – average standard time of a task, a set of tasks or of the entire order fulfilment process (minutes)

Working Time/Day –time that a boutique usually works in a day (minutes)

The number of orders in a day is multiplied by the number of days in a week, 7, since costumers may place an order whenever they want, and then divided by the boutique's working days in the week. By doing that, the headcount is calculated considering the number of orders that a boutique has to process in each working day to avoid backlogs from one week to the next.

4.2 Workflow Optimization

Workflows can be defined as a fundamental building block of a steady organization characterized by a set of repeatable operations a worker or a taskforce perform. When well defined, it enables a systematic and efficient process. Usually, workflow optimization comprises three main phases (Georgakopoulos, Hornick, and Sheth 1995):

1. Process modelling;
2. Process reengineering;
3. Workflow implementation.

Process modelling was tackled in the previous section of this document with a detailed mapping of boutiques actions that allowed to capture the whole order and return procedures. After modelling and measuring these core processes, process reengineering comprises methodologies and plan of actions to improve them.

Both order and return processes are undertaken in the same boutique space, usually in small store rooms, turning their layout definition imperative to a good performance level, providing cost savings while enabling a possible consolidation into a small area that otherwise it would be impossible. For a layout design intrinsically connected to a task sequence, it is important to fully define the required workstations and the relation between them. The proper definition of workstations will eliminate unnecessary handling time between them. For the processes currently studied, two workstations should always be contemplated in every possible layout: check stock station which must include computers and where the shipping documents should be folded and sorted; and the packaging station where the whole packaging procedure should be undertaken. In addition, on-hold stations, where items on different stages of the process wait until the next step, are also essential to create hand-off points and smoother transitions between tasks. Several on-hold stations should then be considered:

- Picked items that are waiting for quality check;
- Ready to pack items;
- Ready to send items;
- Items returned that are waiting for the quality check and the resulting task sequence;
- Items on hold, if for any reason an item must wait to be processed and the boutique knows it will take a considerable period of time.

The layout can also include a dedicated space to store the packaging supplies such as Farfetch boxes and embellishment materials. The layout will depend on the space boutiques will have at their disposal to perform Farfetch activities. As it is impossible to cover all the possible area values, the user of the tool will be asked for the approximate dedicated Farfetch space and should choose between three areas ranges: between 0 and 10 sq., between 10 and 20 sq. and bigger than 20 sq. Those thresholds were discussed with some Farfetch teams and were considered as the most suitable to cover all the options in the most customized way. For each one of the area range mentioned, an optimal layout will be given. The layouts are displayed on APPENDIX H. Operations Solutions team has already optimized the layout for the biggest boutiques, with an area superior to 20 sq. The other two layouts were designed based on the existing layout, considering that less work stations are needed, though making an effort to keep the relative positions of the stations to preserve the sequence flow. The layouts were developed on the software used by the team, SketchUp, a browser-based program.

However, the improvement opportunities are not limited to the layout design. There are other practices recommended by Operations Solutions team regarding T0 boutiques that can also be useful to smaller boutiques. These guidelines can be divided in the following categories:

- Visual Management: a quick recognition of the information will increase the efficiency clarity. Every on hold station should be identified through labels or floor marks, so every worker understands the workflow.
- Kanban Cards: Kanban helps creating responsive work sites, as it facilitates the hand-off between workers or between stations, providing a quick visual status on work items. Kanban cards are especially useful to support the stock management of supplies, such as boxes and other packaging materials without each an order cannot be processed. When a Kanban card is reached, the reorder should be triggered.
- Storage tips: effective storage systems provide visibility and awareness of the inventory, along with an optimization of space. For a higher stock control, items should be organized by gender, brand and category. Racks are commonly used by small boutiques that should use labelled dividers to a quicker identification of the model and size. On heavy stock depth brands, a photo of the item should be placed to easily identify all models.

These guidelines will also be displayed on the tool, along with photos that will work as example. PS can communicate them to the boutiques.

5 Strategic Solutions: Facilities Planning and Integrations Software

In the beginning of their partnership with Farfetch, boutiques are usually hesitant regarding Farfetch business model and the advantages they may take from it. They start with a small stock quantity, which they gradually increase as they become more comfortable with the business. A small boutique can significantly grow within a couple of years. In order to achieve an accelerated growth without a performance breakdown, boutiques should be worried not only with their every day activities like order processing, but also with achieving a long-term compromise that will empower their development. Unlike Chapter 4, the following solutions were obtained through data analysis either from Farfetch database or provided by Operations Solutions and PS teams. This chapter will describe the strategic solutions designed to support small and medium boutiques from software integrations to the definition of a suitable boutique setup.

5.1 Facilities Planning

Boutiques should have a more holistic approach in the way they manage their stores network by considering the possible synergies between locations, rather than only improving their individual performance. An optimal boutique setup would guarantee an advantageous interaction between locations having in consideration each one's capabilities. As it was explained in Chapter 3, a location can have a limited space or willing to be more focused on providing an exceptional customer service in the offline channel. If this is the case, other location can take the responsibility of fulfilling their orders from Packaging step onwards. However, that solution may not be desirable if, for example, the two locations are far from each other or if they are located in intense traffic areas.

Currently, Farfetch divide the possible setups regarding the shipping point in four different types, according with two variables. These are the number of independent locations a boutique operates and how many shipping points it has. The four possible classifications are explained below.

All in One

All in One boutiques only operate one store and they only have one shipping point. The physical sales, the storage area and probably the offices are located in the same building. These are usually boutiques that have been in the market for only a few years and haven't still expanded. These kind of boutiques will not be studied in this module as they only have one location and no different setup scenarios are possible.

Centralized

Centralized boutiques operate various locations but ship all the orders from the same space. The shipping point can be a central warehouse, where all the orders are processed, or the

biggest store operated by the boutique or even an independent office where no “real” sales occur. In most of the cases the stores are located in the same city, within a few kilometres radius. Still, there are some cases where the different stores are some hours apart but still ship orders from the same spot.

Decentralized

Decentralized boutiques operate various stores and each one processes and ships its own orders. The entire order fulfilment process is done independently by each boutique. It's the most usual type for boutiques that operate stores in different countries.

Hybrid

A Hybrid is a boutique that operates several stores but only ships orders from some of them. The other stores ship their orders from centralized shipping points. This type of boutique is a mix between the decentralized and the centralized boutique type.

Apart from the four setup types, all the variables that may determine the most suitable one ought to be analysed, guaranteeing that speed of sending is not neglected with the decision. Orders waiting to be processed in a location which does not have the enough resources or items travelling internally between locations may delay the moment they become ready to be shipped to the final customer. Boutiques' compromise is sending all Farfetch orders in less than 2 days, what is most of the times a challenge considering all the tasks they have to carry on. Based on Operations Solutions insights and experience, the following variables were identified as the most critical for the setup definition:

- Order volume;
- Farfetch dedicated space;
- Staff number;
- Staff engagement level, there are workers more keenly interested in deliver a good performance and more enthusiastic regarding the business activities. When the location resources are reaching the limit, this variable can make the difference;
- Traffic level of the area where the location is situated, for luxury fashion boutiques it is important to be located in wealthy neighbourhoods in the city center. However, those areas are also characterized by an intense traffic that may prevent a smooth flow of items between locations.

All the above variables should be analysed by location in order to clearly describe each one. Besides those variables, the distances between locations should also be asked to the tool users. However, only order volume can be retrieved from Farfetch database. For this module, the number of orders will not be treated as a continuous variable. It would be impossible and meaningless to design optimal setups for each quantity of orders. Unlikely the workload, the boutique setup does not have an immediate correlation with that variable. For that reason, the existing boutiques were divided into groups according to their order volume. In order to give meaning to the analysis and spot patterns more easily, different sets of order volume were created using the Cluster feature of Tableau, an analytics software widely used by the company. Tableau clustering technique minimizes the variance within the same group at the same time it tries to maximize the variance between the clusters. Combining as similar as possible boutiques will enable an easier interpretation of the data. The result is displayed in Fig. 17.

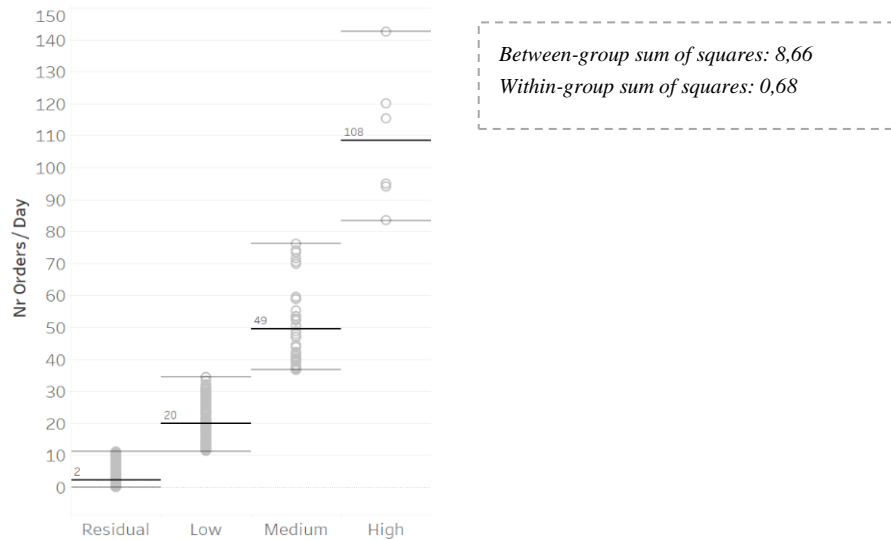


Figure 17 – Order Volume Boutiques Clusters

Boutiques were divided according to their order volume in four distinctive groups: residual, low, medium and high sales volume. Boutiques with residual orders receive on average two orders per day. That number obviously increases for the boutiques with a high number of orders, which are expecting to receive an average of 108 orders per day.

Unfortunately, Farfetch database does not store any information about the adopted setup neither. The only information available is the number of locations each partner has and some straightforward information like the respective address and time zone. To get a clearer view about what the boutique setup may comprise and obtain some general insights, a set of 70 boutiques was selected to serve as a sample. The 70 boutiques are located in both Europe and US (those regions together processed 95% of the orders in 2017) and represent different sales volume, and some of which are from T0 group. Operations Solutions and PS teams were crucial to collect the data from the selected boutiques due to their on-site knowledge. In a preliminary phase, it was asked for each partner which locations serve as stock point, shipping point and return point. Later, these data was treated in order to classify each boutique according to setup type and order cluster. The results are displayed on Table 3.

Order Cluster	All in One	Centralized	Decentralized	Hybrid
Residual	2	0	18	0
Low	2	3	14	1
Medium	5	2	11	2
High	0	4	4	2

Table 2 – Number of boutiques per setup type and order cluster

One immediate conclusion that can be drawn from the table is that bigger boutiques, with a medium or high sales volume, are more willing to try other setups than the decentralized one, the default setup. Smaller boutiques prefer an individual management option, where all the boutiques are shipping points. The reason could be twofold. It can be the case that smaller boutiques have more disperse locations in remote areas. The centralization would significantly increase the speed of sending and no other option but processing the orders individually would be appropriate. Another possibility that arises though, is that smaller

boutiques prefer to follow the default setup and do not even consider changing to a more suitable solution. In order to enquire about which cause is more reasonable, the locations addresses of small boutiques were analysed and the respective cities were obtained. For most of the boutiques (78%), their locations are condensed in the same metropolitan area, being concluded that small and medium boutiques setup has some margin to improve.

However, it would be pointless to study in detail smaller and medium boutiques since there are only a few examples of centralized and hybrid setups among them. For that reason, the second phase of the setup module only included all the 33 T0 boutiques. In order to establish some guidelines and best practices, the solutions already implemented in those boutiques were benchmarked. Although T0 has a better performance, as seen in Chapter 3, which is advisable for a benchmarking approach, it is necessary to be cautious in drawing conclusions for smaller boutiques as they have very different resources and features.

5.1.1 Benchmarking Approach

The benchmarking approach developed consisted of spotting out possible trends in the previously pinpointed variables among the boutiques with the same setup type. Besides order volume, none of the meaningful variables previously stated are stored in Farfetch database and again Operations Solutions Success team was essential to acknowledge the setup solution adopted by T0 boutiques and the critical variables per location. The form sent to the team was structured with a data validation concern. Some fields, like the location space, staff number and distance were arranged based on the current characteristics of the existing boutiques. The form can be seen in APPENDIX I. That kind of information is not easily disclosable and not all the variables could be considered. The staff number changes during the year and many boutiques rely on temporary workers for critical periods. Moreover, the employees can be focused both on Farfetch and boutique offline business. The staff engagement level is also difficult to measure due to its subjective nature. The same can be said of the traffic level of the locations' area, which seems not have a big impact on setup decision. Order number, space to process Farfetch orders and distance between locations were then considered the core variables for a setup definition.

Among all T0 boutiques, there are 7 with only one location, 8 with a centralized setup, 12 adopt a decentralized option and only 6 choose a hybrid approach. For the decentralized setup, two situations arise as the most common. Boutiques A and B can be considered as models for decentralized boutiques as their behavior is similar to most of the boutiques with this setup. Boutique A has 4 locations, each one in a different city, all with a significant sales volume and where the space seems to be a lacking resource. However the distance between them does not allow a consolidation regarding the shipping point. On the other hand, Boutique B, with its 3 locations situated in the same city, seems to have enough resources to process its substantial order volume and for that reason centralization would not be a good option despite the small distance between locations. These operational features can be consulted in Table 4.

		Order Volume	Space
Boutique A	Location 1	High	Medium
	Location 2	Medium	Medium
	Location 3	Medium	Medium
	Location 4	Medium	Small
Boutique B	Location 1	Medium	Medium
	Location 2	Medium	Big
	Location 3	Medium	Medium

Table 3 – Decentralized Setup Examples

Regarding the centralized setup, it is necessary to analyze in detail the shipping point features. Boutique C (Table 5), with 3 locations, has a shipping point (location 1) with unused space, while the other locations seem to have a bigger order volume than the one they can handle. This seems to be a standard behavior among the centralized boutiques.

		Order Volume	Space
Boutique C	Location 1	Medium	High
	Location 2	High	Medium
	Location 3	Medium	Small

Table 4 – Centralize Boutique Example

The boutiques with a hybrid setup were not studied as it was considered that their features would be a mix between the centralized and decentralized setups. The shipping point decision is the trickiest part of the setup definition, as comprises many variables and many possible scenarios. However, it is also possible to define which locations should operate as boutiques return points. This decision is more straightforward than the shipping point one since it was found a clear trend in the analyzed boutiques. Boutiques with one warehouse prefer to centralize all their returns in it. Nevertheless, even bigger partners don't usually own a warehouse location and in these cases they also prefer to consolidate the returns in the location with a greater sales volume.

5.1.2 Scenarios Definition

Although the final setup is a boutique's final decision that, apart from the specified variables, can take into consideration more intrinsic factors whenever needed, it was felt the need of converting the main conclusions of the previous analysis into structured restrictions in order to be able to build an algorithm that can be unambiguously processed by the tool. From the analysis performed on T0 boutiques, one can conclude that space and sales volume are particularly connected. Boutiques are averse to process a big quantity of orders in small facilities, choosing to process the orders in their bigger facility. This conclusion can drive to two main restrictions regarding the setup definition:

- A boutique with a high sales volume and a small or medium space is considered a critical location.

- A boutique with a medium sales volume and a small space is considered a critical location.

One location in these circumstances is considered critical and is candidate to be just a stock point, being served by another location that would work as its shipping point. Figure 18 was developed to visually represent all the possible scenarios.

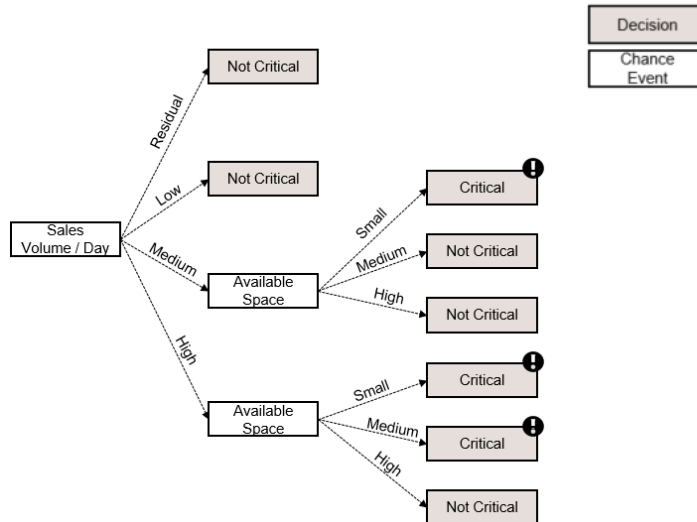


Figure 18 – Possible Scenarios for the Definition of Critical Locations

However, all the other locations ought to be analysed in order to find the most suitable shipping point for the critical location, if any. It can be the case that all the other locations suffer also from lack of resources. In addition, the critical location can be situated in a remote area and thereby there is no other alternative but to be a shipping point. On the other hand, several not-critical locations can be good candidates to serve as a shipping point. Again, the tool must have the capacity of evaluating all the possible scenarios. For critical locations with a medium sales volume (meaning that they have a small space to process the orders), the method will search for not-critical solutions with a big space. If more than one is found, all the locations with a residual, low or medium sales volume are able to serve as a shipping point, excluding the locations with a high sales volume that would not be capable of receiving orders from a medium sales facility. If no big space location is available, the procedure will search for medium space locations and, again, to prevent that a not-critical location will become overloaded, only the ones with a residual or low sales volume will be considered to be the shipping point. In the final step, the algorithm will not be fully deterministic, showing all the locations that meet the previous conditions. All the scenarios can also be seen in Fig. 19.

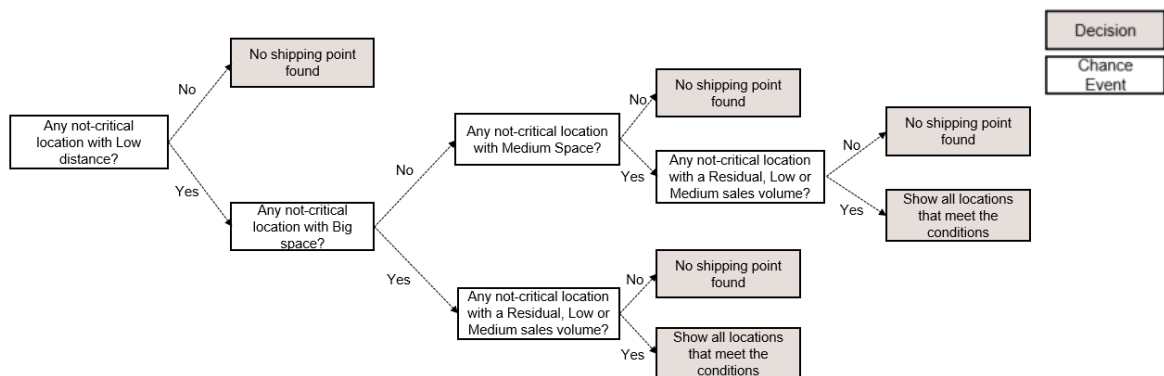


Figure 19 – Possible Scenarios for Medium Sales Volume Critical Locations

For high sales critical locations the scenarios are displayed in Fig. 20. There are two main differences in comparison with medium sales critical locations:

1. The not-critical locations with a low distance from the critical location are considered first, however also medium distance not-critical locations are investigated;
2. The not-critical locations that can be assigned must be locations with a residual or low sales volume, excluding this time medium sales critical locations from being a shipping point candidate.

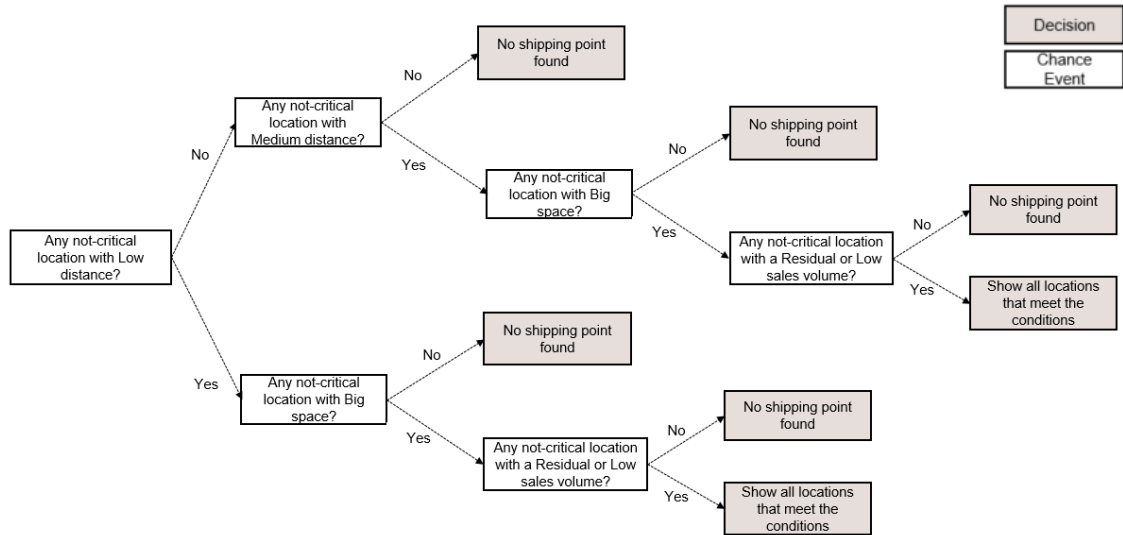


Figure 20 – Possible Scenarios for High Sales Volume Critical Locations

On the final step of the procedure, all the shipping points with a low distance between each other are pinpointed and PS alongside with the boutique can decide if it makes sense to consolidate in any of them.

Regarding the return point decision, once more the order volume and the distance between locations are treated as key variables, but this time the possibility of one of the boutique’s locations be a warehouse must be considered as this type of facilities is most of the times used to be the only return point of a boutique setup. The algorithm that computes the return point automatically defines the warehouse location as the return point. If more than one location meets this condition, PS and the boutique should evaluate which one would fit better in this role. If there isn’t any warehouse, the most common situation for small and medium boutiques, the locations with the maximum order volume are then considered to be return points, as long as they are not lacking in resources.

As a final remark, it is important to mention that a completely deterministic algorithm for both shipping and return points would not make sense since the final setup decision can and should take into consideration other particular aspects that make of every boutique a specific case. Those variables are difficult to measure and predict, being meaningless to include them in an algorithm that should support more than 1000 boutiques. As an example, one boutique may want to consolidate their orders in a location not suitable to serve others just because their management team is more present in there. Bearing this in mind, giving visibility to the tool users of all feasible options seems the most appropriate solution. Moreover, fully optimizing the boutique setup would imply an effort that cannot be taken in this project due to

time constraints. As so, the developed solution seems to be a good compromise between the poor solution currently offered and what would be a entirely automated one.

5.2 Integrations Software

As described in Chapter 3, Farfetch offers an integrations service to connect boutique and Fartech systems in an effort to promote an intimate information channel between the two parties. However, developing an integration demands time, effort and money that are not identical for the four types of integrations. Stock and Return Sync are the ones which demand a shorter implementation time, whereas Order and Product Creation integrations are more complex and request a bigger joint effort between Farfetch and Boutiques’ engineering teams (Table 6).

Integration	Stock Sync	Order Sync	Return Sync	Product Creation
Time to develop	10	20	8	28

Table 5 – Development Time for each Integration Type (working days)

The financial charges of an integration implementation are mainly supported by Farfetch which believes that the process will impact positively the boutiques performance and, consequently, the performance of the company as well. Boutiques only bear the costs related with their own engineering teams that should collaborate with Farfetch in a joint effort.

During this dissertation, the relevance of both order and return processes was made very clear, however product creation was not so deeply analysed, which can cause some uncertainties regarding the reason why it should also be implemented in same cases. Boutiques face two product peaks per year, one for each season (Fig. 21).

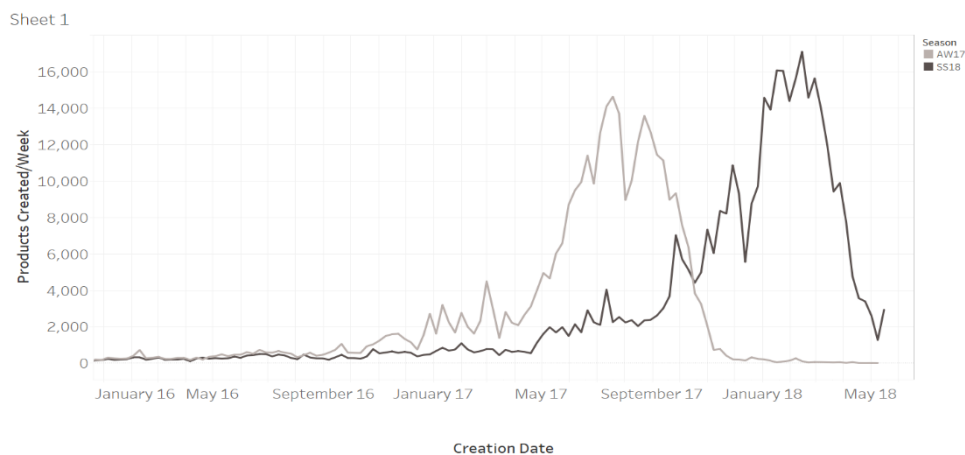


Figure 21 – Seasonal Product Creation Evolution

In those periods, boutiques have to create their product catalogue in Farfetch system and send them to Farfetch Production Center. At the same time, they have to fulfil orders and assume all the related tasks. This increase in the workload can impact service levels and the overall operational performance. For that reason, Product Creation deserves also a deep attention

when comes to improve and manage boutiques’ processes. For the sake of clarification, not every boutique sends items to Production. However, there exists an incentive plan to support the boutiques that first send their items to be photographed.

The four types of integrations can be divided into two categories regarding their main advantage:

- Human errors prevention: stock sync and order sync’s main benefit is improving and automating stock management processes that otherwise will be an exclusive responsibility of boutiques workers. Both integrations can have a direct impact on lowering no stock levels since every stock update due to an offline or Farfetch sale is automatically done with their implementation;
- Time saving: return sync and product creation have a different impact as they allow significant time savings by replacing and support several tasks in return and product creation processes.

Just like the boutique setup, Farfetch doesn’t store in the database or in any file which are the implemented integrations of each boutique. The same 70 boutiques were investigated to get the clearest picture as possible of the current integrations scenario and, again, Operations Solutions and PS knowledge were important to get the information required. The results are displayed in Table 7 and this time the boutique region was analyzed separately.

Integration	Stock Sync	Order Sync	Return Sync	Product Creation
Europe - Residual	3%	2%	0%	0%
Europe - Low	15%	6%	0%	2%
Europe - Medium	22%	15%	3%	8%
Europe - High	18%	17%	3%	12%
US – Residual	14%	3%	0%	0%
US – Low	6%	2%	0%	0%
US - Medium	2%	0%	0%	0%

Table 6 – Boutiques Percentage by type of Integration and Region

One immediate conclusion is that there is a low integration implementation rate among all kind of boutiques. This can be explained by the lack of information given to them about what software integrations really encompass and the opportunities they may exploit. The awareness of a significant initial investment may also dissuade some boutiques. Regarding trend spotting, the boutiques studied do not give much insights. There is no clear relation between the type of integration adopted and the respective implementation time, and consequently the investment needed to do so. Return Sync is the least complex integration but it is also the least popular among the boutiques considered. At the same time, no evident trend can be identified between the integrations chosen and the frequency of the task they aim to replace. It was expected, for example, that boutiques with a higher volume of orders would opt more often by a solution that included stock and order syncs. However, it seems that this is not the case both in Europe and the US. This rather surprising behavior can be explained by the fact that most of the times Farfetch only suggests an integration adoption after the boutique undertook a consistent period of underperformance, in opposition to clear guidelines that would define a

logical solution *a priori*. Analyzing the previously stated integrations' main advantages within Farfetch business, it was considered appropriate to study the costs of developing each integration and compare them with the total costs of performing the tasks manually, in order to advise boutiques with a suitable decision.

5.2.1 Break-even Points Procedure

The solution found for the integrations module is based on finding a break-even point at which integration implementation covers all the costs of not having the integration, in the boutique's perspective. Bearing this in mind, the break-even point was defined following these steps:

1. Calculate the costs of doing the task manually considering:
 - Task time;
 - Hourly wage of low qualified workers;
2. For stock sync and order sync, also consider that no stocks due to human errors on the stock management process represent 50% of the total amount of no stocks. In a no stock situation, the customer receives always a 10 United States Dollar (USD) voucher to be used in another Farfetch purchase that is totally borne by the boutique, representing a direct loss for each no stock;
3. Calculate the costs of integration development considering:
 - Time that the integration takes to be fully developed;
 - Hourly wage of high qualified workers, since the boutique engineering team needs to be dedicated to the integration development.

This methodology was followed for the four types of integration separately and all the costs are considered for a one year period. The method also includes some assumptions. Although it was considered they would not damage deeply the procedure, they still need to be highlighted:

- Independently of the boutique region, the store employees are always rewarded with a low wage and software engineers with a high wage. This is not necessarily true since each country may value in a different way the several types of workers;
- Only the boutique engineering team takes part in the integration process. This can again be considered doubtful. An integration development surely needs the inputs of on-site workers and in some cases of project managers;
- Some boutiques ask the collaboration of third parties in their tech affairs, which can impact the costs of developing a system integration solution.
- The percentage of no stocks among the small and medium boutiques caused by inventory management errors is 50%. Although it is an assumption, the value is probably accurate. Farfetch does not store the reason of a no stock, but it is known that there are two main causes: inventory inaccuracies and *hot-selling* items purchased by a high number of customers in few seconds, a situation that exposes Farfetch system inefficiencies. For T0 boutiques the impact of hot-selling items is probably bigger since they have an easier access to more popular brands, but regarding smaller boutiques the impact of the two stated causes is approximately even.

The method is extremely dependent on the wages estimates, and for that reason the boutique region will be asked for a more precise calculation. The hourly wages used can be accessed in APPENDIX J. After an analysis and in order to keep an acceptable simplicity level, 4 main regions were considered, and the user must choose between them: North America & Australia & Northern Europe, Southern & Eastern Europe, Africa & Central America and South America & Asia.

5.2.2 Break-even Points Calculation

With the methodology properly defined, the required variables to assess the costs can be computed. As stated before, there is the concern of not overwhelming the tool users with the request of several inputs. However, it would not make sense to use the same input for all the four integrations types. The expected volume of orders is being used as the tool main input, what still makes sense to study stock and order sync. Return sync will use the expected amount of returns, calculated again through the volume of orders and applying the return rate already measured in the Workforce Management chapter, a legitimate proposition since number of returns and number of orders are strongly correlated ($r=0,81$), as can be seen in Fig. 22.

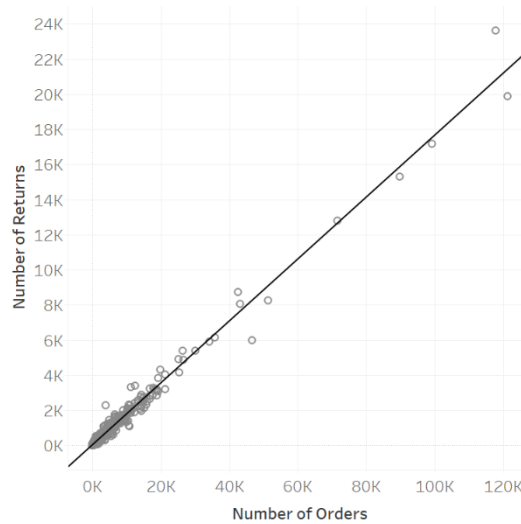


Figure 22 – Returns and Orders Correlation)

However, for the Product Creation integration, it would not make sense to consider the orders value. It can be the case that a boutique creates a low number of different *hot selling* products, resulting in a high orders volume without much effort on creating the items. A boutique can also have a low number of different items but all with a big stock quantity. For these integration type, the tool must use the number of different items the boutique wants to place at Farfetch marketplace in the next two seasons, to be consistent with the one year window that is being used. This is also a figure provided for the commercial team on boutique onboarding.

It is also important to define which tasks each integrations aims to replace in order to calculate the time of performing them manually. Both stock and order sync replace all the stock in and stock out actions. The time of this actions measured in the return time study were used. Regarding return sync, it was considered that it decreases the return time by half. The time each item takes to be created on Farfetch system was asked to Product Creation team. The final break-even point calculation is revealed in formula 5.1.

$$\text{Break – Even Point} = \left(\frac{\text{Input}_i * \text{Task Time}_i * \text{Low Wage}_r + \text{NoStock Rate} * 0,5 * 10}{\text{Developing Time}_i * \text{High Wage}_r} \right) \quad (5.1)$$

Where:

Input – Tool input used for each integration. It can either the expected orders volume or the expected number of styles

Task Time – Time the replaced tasks take to be performed (hours)

Low Wage – Hourly wage for a low qualified worker

No Stock Rate – Average No Stock rate for small and medium boutiques in the last 12 months. Following the method adopted, it is multiplied by a 50% rate and by 10 USD due to customers' vouchers, only for stock and order sync

Developing Time – Time period that the integration takes to be developed (hours)

High Wage – Hourly wage for a high qualified worker

i – Integration type

r – Boutique region

For one of the regions, Northern Europe & North America and Australia, the four break-even points are exhibited in Fig. 23. If a boutique expects to receive an average of daily orders superior to 8, stock sync implementation would assure a stable financial and operational performance improvement. Analyzing order sync, the threshold value increases to 16 orders, what makes sense given that order sync forces to a longer implementation service resulting in more costs. Regarding the return sync, as it replaces a significant less frequent set of tasks and it would not reduce the no stock rate, its break-even point jumps to 138 orders per day, which roughly represents 23 returns per day. For boutiques located in the region considered, adopting the Product Creation integration, it is only advantageous if a boutique expects to create 4175 different products per season (8320 in two seasons). The break-even points for all the other regions considered are displayed in APPENDIX K.

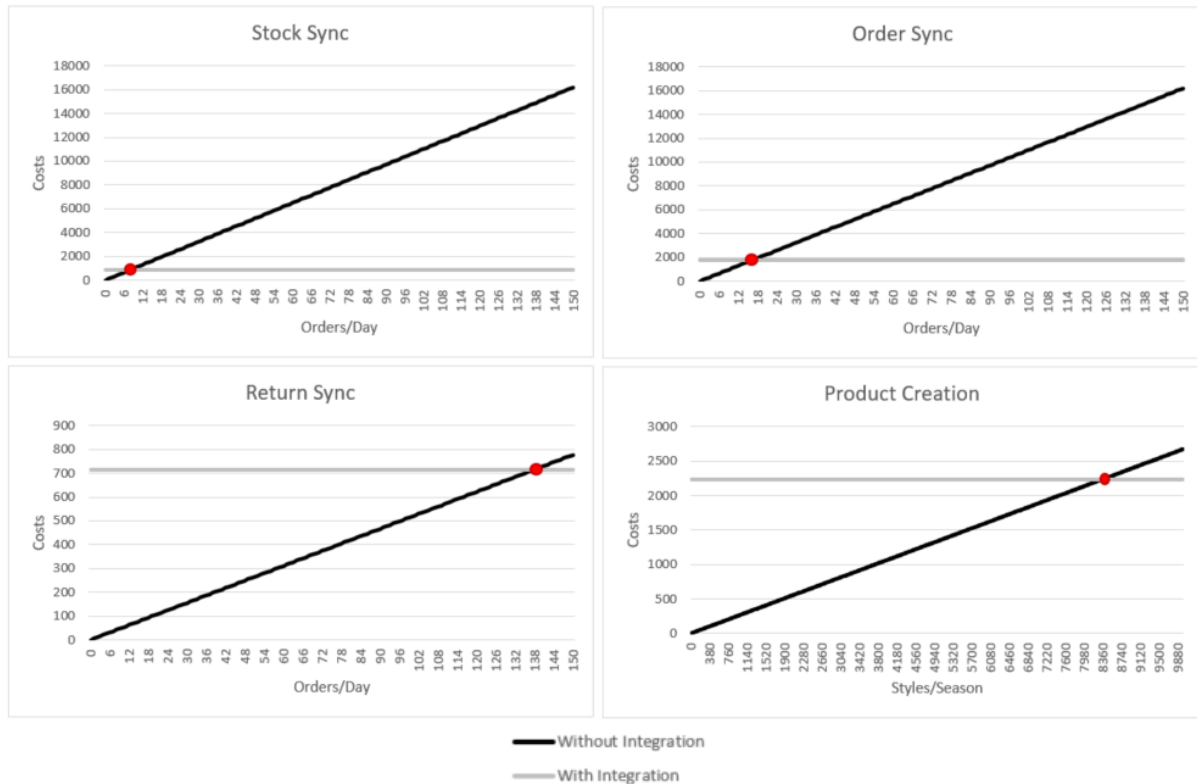


Figure 23 – Break-even Points for each Integration Type

6 User Interfaces

The final phase of the project embraced the design and the development of a tool interface to be mainly used by PS, the team in charge of small and medium boutiques. The tool should be able to effectively communicate the optimal solutions and outcomes found on the previous chapters, bringing together the information that the users need with a pleasant experience and ease of use. Additionally, a reporting model with the main operational KPI was considered an essential complement to the solution developed to enhance the onboarding process. The report will allow a close monitoring of smaller boutiques and identify any abnormal trend.

6.1 Tool Interface

As in every project and especially when producing content for other users, it is essential to understand its requirements. Accordingly, in an early phase, the main functionalities were formulated with the support of the tool final users which had the opportunity to give their feedback and highlight some needs that were not considered in the beginning. After that, the following requirements for the tool interface were listed:

- Easy access by PS and other potential Farfetch users;
- Development in a platform already used by the company and that final users are comfortable with;
- Minimization of the required inputs, preventing the user of being overwhelming with a lot of mandatory fields;
- Computation of the optimal solution for just one of the modules at a time, increasing flexibility and allowing time savings.

As important as the functional requirements, a user interface must also be concerned with making the user interaction as simple as possible. Bearing this in mind, a set of best practices were followed:

- Use of common interface elements, like drop menus or check boxes, which make users more comfortable when interacting with the tool. Moreover, those elements can be used for data validation;
- Use of default values in the inputs fields when appropriate. By anticipating some information, the interface is able to reduce the burden on the user;
- Provide a unique design throughout the entire interface provides a consistency that will pleasure the final users.

To follow all the above-listed requirements, a web application was the chosen solution. All Farfetch users are able to access it through a web browser as long as they are connected through the company network. To develop the web application several front-end languages were used:

- HTML (Hypertext Markup Language), which served the purpose of structuring the entire static content, allowing the organization of the main building blocks on the general layout;
- CSS (Cascading Style Sheets) language, which allowed the addition of stylistic elements such as fonts, colour and text alignment;
- JavaScript, which favoured the application interactivity with the user, dynamically creating HTML content and validating user inputs. For example, when the user communicates how many locations a certain boutique has, the application is able to create dynamically the fields that are dependent of the number of locations, like the distance matrix that is necessary for the setup definition.

For the back-end development, PHP (Hypertext Preprocessor) code was embedded into HTML, providing the logic that powers and populate all the pages. The gathered inputs are transformed by PHP into optimal outputs that are then displayed via HTML and CSS, following the logical model described in the previous sections. It can be said that it is in the PHP code that the core of the project is concentrated.

The web application developed have five tabs, the first being the inputs interface (Fig. 24). As mentioned before, this page was carefully designed to allow a quick recognition of the different areas that can be addressed by the tool. All the asked inputs are of general knowledge of the PS specialist responsible by the boutique concerned.

The screenshot displays a web application interface with the following sections and fields:

- Workforce:**
 - Orders/Day: Input field with value '8'.
 - Working Hours/Day: Dropdown menu with value '5'.
 - Working Days/Week: Dropdown menu with value '3'.
- Integrations:**
 - Region: Dropdown menu with value 'Select'.
 - Orders/Day: Input field with value 'Orders/Day'.
 - Styles/Season: Input field with value 'Styles/Season'.
- For Layout and Setup modules, please insert:**
 - Number of Locations: Dropdown menu with value '3'.
 - Next: Blue button.
- Layout & Workflow:**
 - Location: Labels for Location 1, Location 2, Location 3.
 - Dedicated Space: Dropdown menu with value 'Select' for each location.
- Setup:**
 - Location: Labels for Location 1, Location 2, Location 3.
 - Number Orders/Day: Dropdown menu with value 'Select' for each location.
 - Farfetch Dedicated Space: Dropdown menu with value 'Select' for each location.
 - Is warehouse?: Dropdown menu with value 'No' for each location.
- Submit:** Red button at the bottom right.

Figure 24 – Inputs Interface

All the other tabs are fed by the inputs interface and retrieve the information that will be the backbone of the renovated onboarding process. Not only are the optimal solutions for each one of the investigated areas provided, but also a set of tips and warning notes are displayed in order to support the joint decision of the boutique and PS with a more complete background. For example, if the PS specialist wants to access the optimal headcount of a certain boutique, one can fill in the number of orders per day the boutique is expected to receive, the typical boutique working hours per day and working days per week. Pressing the submit button, Workforce tab (Fig. 25) is displayed. The calculations of chapter 4.1 were used to develop a Workload Distribution graph divided in the main tasks a boutique has to perform. The respective headcount estimate is shown in a table format.

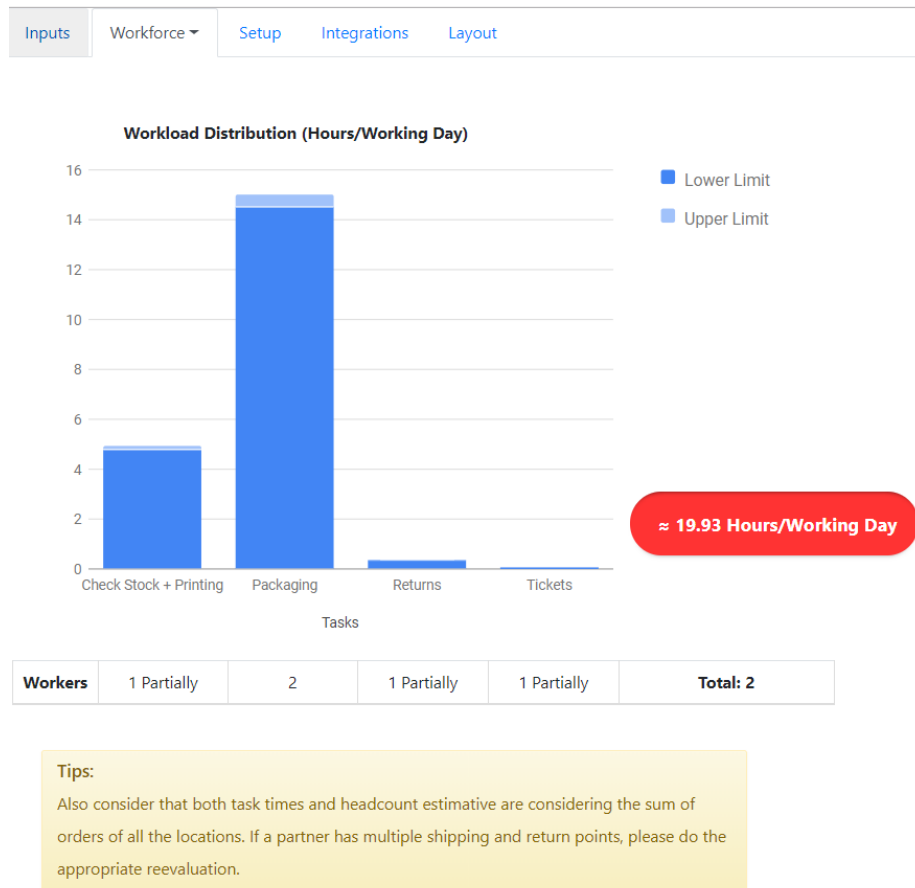


Figure 25 – Workforce Tab

Regarding the setup module (Fig. 26), the users have to fill in the number of orders per day, the available space for each location and inform the tool if a location is a warehouse as well as the distances between locations. All these variables were the ones pinpointed in Chapter 5.1 as the ones with most impact in the setup decision and all of them can be chosen by the interface user through dropdown menus. In the example of the picture, a boutique with 3 locations is advised to use Location 2 as the shipping point of Location 3 and centralize the return point in location 2. The suggested scenario took into consideration that Location 3 has a high level of orders for its available space and Location 2 had the smallest distance to it.

Location	Stock Point	Shipping Point	Return Point
Location 1	✓	✓	⊘
Location 2	✓	✓	✓
⚠ Location 3	✓	⊘ (Location 2)	⊘

⚠ Critical locations are considered locations with few resources. Ideally, they should be served by another shipping point, however the centralization may not be possible in some cases. Either way, they deserve a bigger attention.

Figure 26 - Setup Tab

The other tabs are displayed in APPENDIX M. Integrations Tab use the sub Chapter 5.2 insights to calculate which integration software the boutique should adopt. In this example, only return sync is not worth to develop as the number of orders per day inserted (100) is not enough for the advantages of this integration overcoming its costs for the boutique region submitted (Central and Southern Europe). Finally, the Layout tab makes use of sub Chapter 4.2 to display the suitable layouts and workflow tips for the available space of each one of the boutiques locations.

6.2 Reporting Model

The final phase of the project consisted of the development of a reporting model covering the two main operational KPI of the company: no stock and speed of sending. The report was considered a natural extension of the onboarding tool developed as the implementation of such deep and broad solutions must be followed by a constant performance measurement. The onboarding redesign that was carried out has the goal of sustaining the new boutiques in the long term. However in an accelerated business there is always the possibility of an abnormal event or a growth beyond expectations. By accessing the report, PS specialists are able to continuously monitor the boutiques performance after they are established in Farfetch business, re-evaluating the solutions offered whenever they find necessary. This sequence of actions is represented in the diagram of Fig. 27.

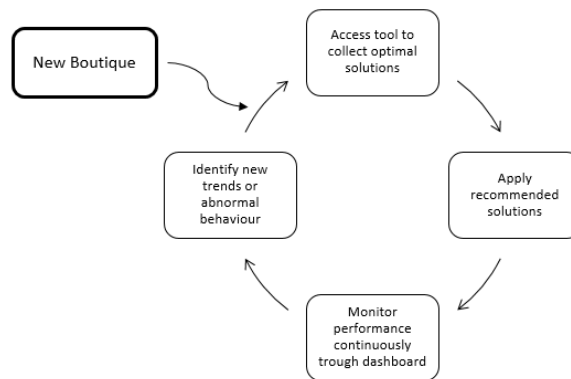


Figure 27 – Reporting Model and Optimal Solutions Tool Interaction

The report developed expects to provide a clear graphical visualization of the most significant metrics, acting as a powerful tool to support decision making. A list of the main requirements concerning the functionality of the report was carefully built:

- Free access by every Farfetch user;
- Automatic data update to allow time savings;
- Information filters by date and by boutique;
- Fully integration with SQL server in order to schedule the update frequency and to get directly the required data from the database.

Bearing in mind the previously stated requests, Tableau was considered the best option to develop the report. There was not such a solution in the company. The performance of T0 and B0 groups is already closely monitored, but through Excel files that do not possess the flexibility these kind of reports require.

The whole reporting model is displayed in APPENDIX M and it has several levels on granularity. The users can filter the results by boutique region, a major advantage given that each PS specialist is responsible for one of the world regions defined by Farfetch. The drill down continues to the boutique level, where users can select one boutique at a time or a set of boutiques at their choice. In addition, the majority of the metrics have a visual formatting that can assume three colours (red, yellow and green) in order to get a quick picture of the results. The colour thresholds were defined in collaboration with Operations Solutions and PS teams.

The report users can find a table overview (Fig. 28) with metrics related to the two main KPI. For each metric, it were always considered four different time periods: the current week (WtD), the current month (MtD), the last four weeks (L4W) and the current year (YtD). Thereby, the user can access the most recent performance figures without losing the overall perception of a certain boutique behaviour. Regarding the speed of sending, it is displayed the average speed of sending of the boutique (SoS) and the percentage of orders sent in less than two days (SoS%), the service level agreement. The no stock level is also shown through the quantity of orders with no stock (No Stock Qty) and the respective percentage (No Stock %). Besides the operational metrics, the number of orders was included in the report as it can deeply influence the performance. If in a certain week a boutique receives an unusual number of orders, it is expected that both speed of sending and no stock reach critical values. Finally, all the represented metrics are compared with last year results, evaluating the variation between the current values and the previous year's (YoY).

	Orders			
	WtD	MtD	L4W	YtD
2018	71	333	356	2,590
YoY	● -4.05%	● -8.77%	● -15.24%	● 32.55%

Figure 28 – Orders Section of the overview table

The report also includes a speed of sending graph (Fig. 29) with the number of received orders per week since the beginning of the year. The percentage of orders with a speed of sending inferior to 2 days of both 2018 and 2017 were also included. This kind of visual representation helps capturing any slow trend or seasonal behaviour. Sales season peaks, for example are easily captured in this kind of representation. The analogous graph was developed to no stock.

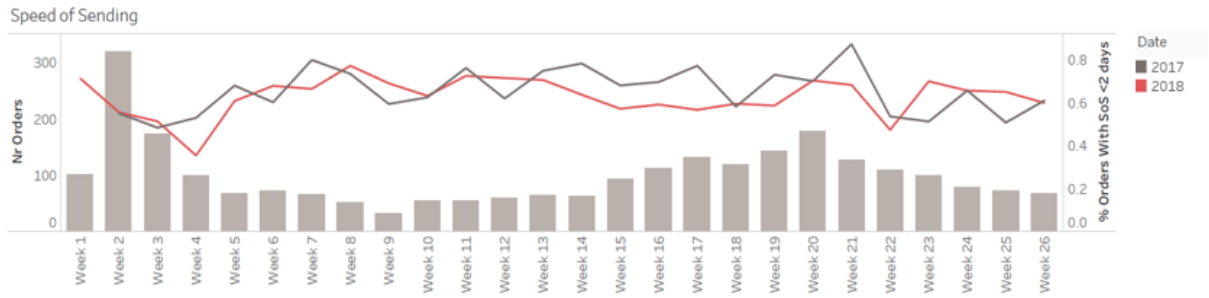


Figure 29 – Speed of Sending Graph

In addition, as it is evident, one location can impact significantly the regular boutique performance whereas the others are following the standards. For that reason, at the end of the report it is also available one table with the individual results of each boutique location. In the example displayed of a decentralize boutique with 3 locations, it is evident that Location 2 has more critical no stock numbers and therefore it might be appropriate to suggest an increase of stock depth in that location. On the other hand, the speed of sending is below expectations in all the 3 locations. In these case, PS specialists must understand the root cause and study a suitable solution, which can include a headcount increase on some locations, a boutique setup re-definition and more training sessions among other solutions.

7 Conclusions and Future Work

A company that fails to reach its customers expectations and to exploit its partners' relations is a company doomed to fail. Farfetch allies the disadvantages of fashion industry, characterized by a fast-moving nature, and the prejudices of luxury, whose customers expect nothing less than an exceptional experience. All of these challenges come with great opportunities, however this also means an outstanding operational performance. Recognizing the importance of partner boutiques, Farfetch is looking for new approaches to strengthen the relationship with them. The present project aims to support the onboarding process of the partners joining Farfetch every month and it meets two main objectives. First, it is able to provide optimal solutions as personalized as possible to every new joiner, providing them with the tools needed to a stable performance right from the beginning of their Farfetch path. At the same time, the tool developed releases the team dedicated to small and medium boutiques' onboarding from a heavy process to carry out without any automation and standardization.

7.1 Main Results

With the tool developed during this project, Farfetch is now able to reshape its attitude regarding the small and medium boutiques, which have been neglected during the past years. Farfetch was mainly focused on key partners that were able to bring a bigger level of stock depth and variety alongside with a greater market visibility. The company exponential growth did not allow the settlement of structured processes, which also could have harmed the interaction between Farfetch and other important stakeholders. Considering the increasingly ambitious service level that Farfetch wants to establish both in-house and with its partners, the Farfetch-boutique relationship ought to be keener explored. The designed tool aims to be a broad solution impacting both daily activities and long-term thinking strategies. Sharing those outputs with boutiques will allow them to make more conscious management and operational decisions.

By crossing information regarding the daily order volume a boutique is expected to receive and the standard time that all the main tasks take to be performed, the boutique is now able to know in detail the amount of time that it should dedicate to Farfetch related tasks to maintain a proper backlog level. Considering that all boutiques are compromised to ship their orders in less than two days, it is important to display the workload information in a daily perspective. However, the processes analysis conducted during the project have evidenced that it is common practice to assign different tasks to different workers. Thereby, only having visibility on the tool daily workload would not meet all the boutiques' needs. The time that must be spent in all the main boutique tasks individually was also computed. This drill-down enables a smarter resources allocation. Along with the workload figures, the required workforce per task was also assessed through the number of working days and working hours a boutique

usually works. Furthermore, the dynamism of the tool ought to be its greatest strength. The tool can be used for re-computing the workload and the respective workforce for abnormal weeks, like sales season. As seen in the present document, the labor force represents the scarcest resource for the boutiques, and for that reason having in advance an estimate of how many employees they will need for such a critical period represents a huge opportunity. In a different perspective, boutiques can also take advantage of the workforce module for assessing their staff performance. If the recommended labor force level does not meet the expected results, this should trigger an alert in the management team. It should be inquired if the working place conditions are appropriate or if training sessions should be provided. If still the underperformance is a recurrent situation, the boutique may want to consider capturing employees with a greater level of commitment.

On its turn, being able to access optimal layouts can be extremely important to small and medium boutiques that many times have a limited space to carry out all the Farfetch related tasks. Considering that boutiques are compromised with a challenging two days window to ship every order, the workflow optimization and a deeper concern on visual management and other best practices can make a difference on boutiques daily activities and on service level. Although the changes recommended in this module are not easy to put into action, they can show immediate results once they are implemented.

The solutions offered also considered the possibility of implementing the integration between Farfetch and boutiques systems. Although this kind of solutions can be defined as tech service offered by Farfetch, they clearly have strong operational advantages. Through the study conducted during this dissertation, it was made clear that integration do not have many expression throughout small and medium boutiques. The lack of any trend in the analysis performed for each integration type showed a possible deficiency on the information given to the partners and their mistrust in the advantages that integrations can bring. By aligning the partner workload with the implementation costs of each one of the four available integrations, boutiques have now access to a threshold from which the cost of doing the tasks manually exceed the required investment for the software development. The inclusion of possible monetary savings in the computation of some break-even points may make boutiques feel more comfortable to advance to the implementation phase. Providing this information in the onboarding process represents a huge shift in Farfetch paradigm of only suggesting an integration when performance is consistently low to a more proactive approach that will support boutiques sustainable growth.

Finally, it was made clear that the concept of a setup definition in an early stage did not exist in Farfetch. Small and medium boutiques usually opt for the default decentralized setup, disregarding the potential advantages of a centralized or hybrid one. Through a benchmarking study it was discovered that some locations suffer from lack of resources and thereby it is advisable that they only become a stock point. The shipping point that will serve this location should be chosen considering the capacity of the other boutique locations, evaluated by their available area, order volume and distance. Regarding the return point, it was concluded that good performance boutiques prefer to centralize it in their warehouse or in one of their main locations. At last, centralization of close locations was suggested when considered appropriate. The choice of a non-deterministic model recognizes that the final setup decision must always be the boutique's, which might want to have in consideration exclusive features.

Although boutiques have independent management procedures and are not by any means obliged to follow Farfetch advice, they recognize their lack of knowledge in online business and the difficulty of balancing it with their regular offline activities. Thereby, boutiques usually do take the improvement recommendations seriously. For that reason, it is expected a

high commitment level to the solutions the tool can provide. However, it is not straightforward to assess how much the performance might improve with the suggested solutions. All of them represent long-term actions that are always dependent on the boutique engagement level and how exactly they carry out the changes. Still, it is expected a performance increasing in both no stock and speed of sending as all the areas tackled in the tool have impact on those metrics.

To sum up, boutiques are now empowered with robust insights that previously were not accessible. The set of proactive measures and solutions encourage a long-term planning. The project scope can be extended to existing boutiques by analyzing the most important metrics in the reporting model developed and using the tool to act accordingly, transforming the present project in a continuous improvement conception. Although being designed to support boutiques, the recommended solutions surely have impact in Farfetch day-to-day work and allow an improved communication between the two parties.

7.2 Further Development

Given the growth and expansion of Farfetch business, one of the company's critical challenges is continuing to ensure that its partnering boutiques are able to cope with an ever increasing demand and a more ambitious performance level. Therefore Farfetch has the responsibility of further explore the tools and support provided. The improvement opportunities that suit this project were divided by the different action plans developed.

Concerning the workforce management, although the product creation task represents a seasonal effort carried out by some boutiques only, its inclusion would be useful for boutiques that get access to new products early in the season and therefore creating product represents an important portion of their tasks during some weeks. That way, all the boutiques tasks would be assessed by the tool.

The workflow management can also be improved. Boutiques are fully responsible for the request of necessary supplies and for the order fulfilment process, like for example the Farfetch boxes where every item is shipped. However, due to bad governance practices, there are a lot of boutiques consistently ordering these materials through an express shipment, which represents a significant increase in the cost per box in comparison with the standard delivery option. Computing the frequency and the respective quantity which boutiques should order these kind of materials would mean substantial yearly savings.

Moreover, during the development of this project, it was found that some features of boutique setups deliver better results. For example, centralization can be a good option if locations are close from each other and their capacity and resources fit this setup type. More relations between the boutiques characteristics and their performance should be researched, validated and tested. With these relations, it will be possible to define better recommended setups. The courier pickup time might be a meaningful variable since not all the locations have daily pickups nor every pickup occurs at the same time during the day. Likewise the integrations study, the tool could compute break-even points for setup definition. By answering the question of how many orders a centralized or hybrid boutique should start shipping from all the stock points, the setup definition would be more complete and fully prepared for a long relationship between boutiques and Farfetch.

Regarding the tool itself, there is some improvement margin too. Having in mind that the solutions found will be fully communicated to the boutiques through a transparent channel, the option of downloading in bulk all the information displayed in the interface would

represent a substantial time saving for the users. Once the tool is being fully used by PS it is expected a valuable feedback. The daily usage of the tool will surely help remodeling some solutions and consider other scenarios that were not included. In the near future, it is expected an improvement in the inputs asked in the tool, since more accurate information is being gathered by the commercial team in the first contacts with the boutique.

The reporting model developed to support the operational follow up of new and existing boutiques should include commercial figures rather than only be focused on operational performance. The two perspectives complement each other in the assessment of the overall value a boutique adds to the company.

As this project aims to support and enhance partners relationship especially on the onboarding process, it is now binding to make some endorsements concerning the end-to-end partner journey. The manuals made available to partners are static documents where the recommended procedures are communicated through several pages contributing to an unfriendly experience. Farfetch should target the development of more effective communication strategies like videos made in some of the best performing boutiques. This would allow capturing almost *in loco* some of the best practices of the boutiques daily procedures. Additionally, the training sessions given to the boutiques in an early stage of their Farfetch path can be extended throughout their entire journey. The addressed topics could increasingly become more complex tackling long-term strategies or even promote the sharing of some boutiques' case studies about former struggling boutiques and how they could manage to deliver better results.

References

- Albrecht, Conan C., Douglas L. Dean, and James V. Hansen. 2005. 'Marketplace and technology standards for B2B e-commerce: progress, challenges, and the state of the art', *Information & Management*, 42: 865-75.
- Arlbjørn, Jan Stentoft, and Anders Haug. 2010. *Business process optimization* (Academica).
- Bain. 2017. 'Luxury Goods Worldwide Market Study, Fall–Winter 2017', Bain, Accessed April, 4th 2018. <http://www.bain.com/publications/articles/luxury-goods-worldwide-market-study-fall-winter-2017.aspx>.
- Borgianni, Y., G. Cascini, and F. Rotini. 2010. 'Process value analysis for business process re-engineering', *Proceedings of the Institution of Mechanical Engineers, Part B (Journal of Engineering Manufacture)*, 224: 305-27.
- Castellanos, M. 2008. "Challenges in Business Process Optimization." In *2008 Mexican International Conference on Computer Science*, 3-3.
- Chase, Richard B, Nicholas J Aquilano, and F Robert Jacobs. 2001. *Operations management for competitive advantage* (McGraw-Hill Irwin Boston, MA).
- Claycomb, Cindy, Karthik Iyer, and Richard Germain. 2005. 'Predicting the level of B2B e-commerce in industrial organizations', *Industrial Marketing Management*, 34: 221-34.
- Davenport, Thomas H, Jeanne G Harris, and Ajay K Kohli. 2001. 'How do they know their customers so well?', *MIT Sloan Management Review*, 42: 63.
- Delloite. 2017. 'Global Powers of Luxury Goods ', Accessed March, 31st 2018. <https://www2.deloitte.com/global/en/pages/consumer-business/articles/gx-cb-global-powers-of-luxury-goods.html>.
- Derksen, Maarten. 2014. 'Turning men into machines? Scientific management, industrial psychology, and the “human factor”', *Journal of the History of the Behavioral Sciences*, 50: 148-65.
- Derrouiche, Ridha, Gilles Neubert, Abdelaziz Bouras, and Matteo Savino. 2010. 'B2B relationship management: a framework to explore the impact of collaboration', *Production Planning & Control*, 21: 528-46.
- Elena, Delgado-Ballester, and Luis Munuera-Alemán José. 2001. 'Brand trust in the context of consumer loyalty', *European Journal of Marketing*, 35: 1238-58.
- European Commission Expert Group. 2003. " Report of the Expert Group on B2B Trading Platforms." In.

- Fauska, P., N. Kryvinska, and C. Strauss. 2013a. 'The role of e-commerce in B2B markets of goods and services', *International Journal of Services, Economics and Management*, 5: 41-71.
- Fauska, Polina, Natalia Kryvinska, and Christine Strauss. 2013b. "E-commerce and B2B Services Enterprises." In *Advanced Information Networking and Applications Workshops (WAINA), 2013 27th International Conference on*, 1141-46. IEEE.
- Forrester. 2017. 'E-commerce share of total B2B sales in the United States from 2015 to 2021', Accessed April, 11th 2018. <https://www.statista.com/statistics/273104/us-b2b-e-commerce-share/>.
- Francesca Dall'Olmo, Riley, and Lacroix Caroline. 2003. 'Luxury branding on the Internet: lost opportunity or impossibility?', *Marketing Intelligence & Planning*, 21: 96-104.
- Georgakopoulos, Diimitrios, Mark Hornick, and Amit Sheth. 1995. 'An overview of workflow management: From process modeling to workflow automation infrastructure', *Distributed and Parallel Databases*, 3: 119-53.
- Gilliland, David I., Daniel C. Bello, and Gregory T. Gundlach. 2010. 'Control-based channel governance and relative dependence', *Journal of the Academy of Marketing Science*, 38: 441-55.
- Google. 2015. 'The Changing Face of B2B Marketing', Accessed May, 2nd 2018. <https://www.thinkwithgoogle.com/consumer-insights/the-changing-face-b2b-marketing/>.
- Gorla, Narasimhaiah, Ananth Chiravuri, and Ravi Chinta. 2017. 'Business-to-business e-commerce adoption: An empirical investigation of business factors', *Information Systems Frontiers*, 19: 645-67.
- Grossman, Gene M., and Carl Shapiro. 1988. 'Foreign Counterfeiting of Status Goods*', *The Quarterly Journal of Economics*, 103: 79-100.
- Grover, Varun, and Manoj K. Malhotra. 1997. 'Business process reengineering: A tutorial on the concept, evolution, method, technology and application', *Journal of Operations Management*, 15: 193-213.
- Guha, Subashish, William J. Kettinger, and James T. C. Teng. 1993. 'BUSINESS PROCESS REENGINEERING', *Information Systems Management*, 10: 13-22.
- Gulledge, Thomas. 2002. 'B2B eMarketplaces and small- and medium-sized enterprises', *Computers in Industry*, 49: 47-58.
- Hoetker, Glenn, and Thomas Mellewigt. 2009. 'Choice and Performance of Governance Mechanisms: Matching Alliance Governance to Asset Type', *Strategic Management Journal*, 30: 1025-44.
- Irene, Gil-Saura, Frasset-Deltoro Marta, and Cervera-Taulet Amparo. 2009. 'The value of B2B relationships', *Industrial Management & Data Systems*, 109: 593-609.
- Jean-Noël, Kapferer, and Valette-Florence Pierre. 2016. 'Beyond rarity: the paths of luxury desire. How luxury brands grow yet remain desirable', *Journal of Product & Brand Management*, 25: 120-33.
- Jianhong, he, and Luo Hua. 2011. *A research on consumers' adopting motives of E-commerce*.

- Joseph, Pine B. 2015. 'How B2B companies create economic value by designing experiences and transformations for their customers', *Strategy & Leadership*, 43: 2-6.
- Kapferer, Jean-Noël, and Vincent Bastien. 2009. 'The specificity of luxury management: Turning marketing upside down', *Journal of brand management*, 16: 311-22.
- . 2012. *The luxury strategy: Break the rules of marketing to build luxury brands* (Kogan page publishers).
- Kaplan, Steven, and Mohanbir Sawhney. 2000. *E-hubs: the new B2B (business-to-business) marketplaces*.
- Kering. 2017. 'Global revenue share of Gucci from 2012 to 2017, by region', Kering, Accessed April, 14th 2018.
- Kumar, V., and Werner Reinartz. 2012. 'Customer Relationship Management Issues in the Business-To-Business Context.' in, *Customer Relationship Management: Concept, Strategy, and Tools* (Springer Berlin Heidelberg: Berlin, Heidelberg).
- Kumar, Vinod, and Er Gagandeep Raheja. 2012. 'Business to business (b2b) and business to consumer (b2c) management', *International Journal of Computers & Technology*, 3: 447-51.
- Lewis, Jordan D. 1995. *The connected corporation: how leading companies win through customer-supplier alliances* (Free Press).
- Ling-Yee, Li. 2007. 'The Effects of Relationship Governance Mechanisms on Relationship Performance', *Journal of Marketing Channels*, 14: 5-30.
- M., Moore Christopher, and Birtwistle Grete. 2005. 'The nature of parenting advantage in luxury fashion retailing – the case of Gucci group NV', *International Journal of Retail & Distribution Management*, 33: 256-70.
- Macaya, E. O., B. Crawford, and R. Soto. 2016. "Change management in technology projects: Using a comprehensive model of change management." In *2016 11th Iberian Conference on Information Systems and Technologies (CISTI), 15-18 June 2016*, 6 pp. Piscataway, NJ, USA: IEEE.
- Malhotra, Yogesh. 1998. 'Business process redesign: an overview', *IEEE Engineering Management Review*, 26: 27-31.
- McKinsey. 2012. 'Getting Ruthless with your processes', Accessed April, 2nd 2018. https://www.mckinsey.com/~media/McKinsey/dotcom/client_service/Organization/PDFs/Getting_ruthless_with_your_processes.ashx.
- . 2015. 'The opportunity in online luxury fashion', Accessed March, 26th 2018. <https://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/the-opportunity-in-online-luxury-fashion>.
- . 2018. 'The State of Fashion', Accessed March, 27th 2018. https://cdn.businessoffashion.com/reports/The_State_of_Fashion_2018_v2.pdf.
- Melika, Husic, and Cicic Muris. 2009. 'Luxury consumption factors', *Journal of Fashion Marketing and Management: An International Journal*, 13: 231-45.
- Modi, Sachin B., and Vincent A. Mabert. 2007. 'Supplier development: Improving supplier performance through knowledge transfer', *Journal of Operations Management*, 25: 42-64.

- Mohamed, Zairi. 1997. 'Business process management: a boundaryless approach to modern competitiveness', *Business Process Management Journal*, 3: 64-80.
- Okonkwo, Uché. 2009. 'Sustaining the luxury brand on the Internet', *Journal of brand management*, 16: 302-10.
- Ordun, Guven. 2015. 'Millennial (Gen Y) consumer behavior their shopping preferences and perceptual maps associated with brand loyalty', *Canadian Social Science*, 11: 40-55.
- Paul, Humphreys, McIvor Ronan, and Cadden Trevor. 2006. 'B2B commerce and its implications for the buyer-supplier interface', *Supply Chain Management: An International Journal*, 11: 131-39.
- Poppo, Laura, and Todd Zenger. 2002. *Do Formal Contracts and Relational Governance Function As Substitutes or Complements?*
- Prahinski, Carol, and W. C. Benton. 2004. 'Supplier evaluations: communication strategies to improve supplier performance', *Journal of Operations Management*, 22: 39-62.
- Qizhi Dai, Robert J. Kauffman. 2002. 'Business Models for Internet-Based B2B Electronic Markets', *International Journal of Electronic Commerce*, 6: 41-72.
- R. Krause, Daniel. 1997. *Supplier Development: Current Practices and Outcomes*.
- R., Krause Daniel, and Ellram Lisa M. 1997. 'Success factors in supplier development', *International Journal of Physical Distribution & Logistics Management*, 27: 39-52.
- RayeCarol, Cavender, and Kincade Doris H. 2015. 'A luxury brand management framework built from historical review and case study analysis', *International Journal of Retail & Distribution Management*, 43: 1083-100.
- Reichheld, Frederick F, and Jr WE Sasser. 1990. 'Zero defections: Quality comes to services', *Harvard business review*, 68: 105-11.
- Reijers, H. A., and S. Liman Mansar. 2005. 'Best practices in business process redesign: an overview and qualitative evaluation of successful redesign heuristics', *Omega*, 33: 283-306.
- Reuters. 2018. 'YNAP in line with 5-year plan, core profit margins to rise in 2018: CEO', *Reuters*.
- Roman, Darlan José, Marilei Osinski, and Rolf Hermann Erdmann. 2017. 'A substantive theory on the implementation process of operational performance improvement methods', *Revista de Administração*, 52: 148-62.
- Runfola, Andrea, and Simone Guercini. 2015. 'Internationalization through E-Commerce. The Case of MultiBrand Luxury Retailers in the Fashion Industry.' in, *International Marketing in the Fast Changing World*.
- Sawhney, Steven Kaplan; Mohanbir. 2000. 'E-Hubs: The New B2B Marketplaces', *Harvard Business Review*, Accessed April 2018. <https://hbr.org/2000/05/e-hubs-the-new-b2b-marketplaces>.
- Shevchenko, Alexander A., and Oleksandr O. Shevchenko. 2005. 'B2B e-hubs in emerging landscape of knowledge based economy', *Electronic Commerce Research and Applications*, 4: 113-23.

- Stankeviciute, Rasa, and Jonas Hoffmann. 2010. 'The Impact of Brand Extension on the Parent Luxury Fashion Brand: The Cases of Giorgio Armani, Calvin Klein and Jimmy Choo', *Journal of Global Fashion Marketing*, 1: 119-28.
- Stanley, Oskar Lingqvist; Candace Lun Plotkin; Jennifer. 2015. 'Do you really understand how your business customers buy?', McKinsey, Accessed March. <https://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/do-you-really-understand-how-your-business-customers-buy>.
- Stephan, M. Wagner. 2006. 'Supplier development practices: an exploratory study', *European Journal of Marketing*, 40: 554-71.
- Storey, Chris, and Canan Kocabasoglu-Hillmer. 2013. 'Making partner relationship management systems work: The role of partnership governance mechanisms', *Industrial Marketing Management*, 42: 862-71.
- Taylor, Frederick W. 1914. 'Scientific Management: Reply from Mr. F. W. Taylor', *The Sociological Review*, a7: 266-69.
- U., Zeynep Ata, and Toker Aysegul. 2012. 'The effect of customer relationship management adoption in business-to-business markets', *Journal of Business & Industrial Marketing*, 27: 497-507.
- Umeshwar, Dayal. 2004. "Business process optimization." In *On the Move to Meaningful Internet Systems 2004: CoopIS, DOA and ODBASE. OTM Confederated International Conferences CoopIS, DOA, and ODBASE 2004. Proceedings, Part I, 25-29 Oct. 2004*, 2. Berlin, Germany: Springer-Verlag.
- Vergidis, K., A. Tiwari, and B. Majeed. 2008. 'Business Process Analysis and Optimization: Beyond Reengineering', *IEEE Transactions on Systems, Man, and Cybernetics, Part C (Applications and Reviews)*, 38: 69-82.
- Vom Brocke, Jan, Martin Petry, and Thomas Gonsler. 2016. 'Business process management.' in, *A Handbook of Business Transformation Management Methodology* (Routledge).
- Walters, Peter G. P. 2008. 'Adding value in global B2B supply chains: Strategic directions and the role of the Internet as a driver of competitive advantage', *Industrial Marketing Management*, 37: 59-68.
- Wann-Yih, Wu, Wu Ya-Jung, and Lo Yi-Ju. 2006. 'The impact of governance mechanisms on interfirm learning and relationship performance', *International Journal of Innovation and Learning*, 3: 673-91.
- Watts, Charles, and Chan K. Hahn. 2006. *Supplier Development Programs: An Empirical Analysis*.
- Yu, Chwo-Ming Joseph, Tsai-Ju Liao, and Zheng-Dao Lin. 2006. 'Formal governance mechanisms, relational governance mechanisms, and transaction-specific investments in supplier–manufacturer relationships', *Industrial Marketing Management*, 35: 128-39.

APPENDIX A Farfetch Connect

The screenshot displays the Farfetch Connect website interface. At the top left is the logo 'FARFETCH CONNECT'. The navigation menu includes 'Home', 'Training', 'My activity', and a search icon. On the top right, there is a 'EU boutiques' button with a circular icon containing the letter 'E'. The main content area is divided into two columns. The left column, titled 'Most recent', contains a 'Featured posts' section with a list of eight posts, each with a thumbnail and text: 'Alert Repository | April 2018-05-08', 'Alert Repository | March 2018-04-11', 'Alert Repository | February 2018-03-01', 'Alert repository | January 2018-02-20', 'Alert repository | October 2017-11-03', 'Alert repository | September 2017-10-03', 'Alert repository | August 2017-09-01', and 'Alert repository | July 2017-07-31'. The right column features a 'Featured' section with a large image of a woman in a colorful swimsuit holding a yellow shopping bag, with the text 'APRIL | Recap' overlaid. Below the image is the title 'Alert Repository | April' and the date '2018-05-08'. A short paragraph follows: 'April was quite a busy month, from Sale preparations to the Forecast of the new season, while also introducing new Pricing tools and innovating with the Brand Siz...'. Below this are two calendar-style blocks: one for 'MAY 1' from 2018-05-01 to 2018-05-08, and another for 'MAY 8' from 2018-05-08 to 2018-05-28. Each block has a bookmark icon.

APPENDIX B Time Study Analysis Sheet

		Observed Time									
		Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6	Cycle 7	Cycle 8	Cycle 9	Cycle 10
Check Stock + Item Pickup											
	1 Check Stock										
	2 Choose Packaging										
	3 Send to Printer										
	4 Printing										
	6 Quality check										
	7 Place at packaging area										
Packaging											
(clothing & access)	1a Sort & fold documents										
	2a Remove original security tag										
	3a Put Farfetch security tag										
	4a Item Fold										
	5a Protection plastic										
	6a Tissue Paper										
	7a Box Fold and place item inside										
	8a Seal the box										
	9a Place at shipping area										
(shoes)	1b Sort & fold documents										
	2b Box Fold and place item inside										
	3b Seal the box										
	4b Place at shipping area										

		Observed Time									
		Cycle 1	Cycle 2	Cycle 3	Cycle 4	Cycle 5	Cycle 6	Cycle 7	Cycle 8	Cycle 9	Cycle 10
Returns											
	1 Parcel Pickup										
	2 Unpack										
	3 Quality Check										
	4 Stock in										
	5 Printing										
	6 Seal the box										
	7 Place at shipping area										

APPENDIX C Order Processing Observation Times

	Quality Check	Packaging Area	Sort & fold	Original security tag	FF Security tag	Item Fold	Plastic	Tissue Paper	Box Fold	Seal the box	Shipping Area	Total
1	0,904	0,178	0,818	0,374	0,330	0,484	0,236	0,496	0,637	1,404	0,233	6,093
2	0,987	0,061	1,113	0,46	0,318	0,737	0,554	0,582	0,527	0,984	0,226	6,549
3	0,830	0,166	0,719	0,372	0,400	1,109	0,625	0,519	0,600	1,387	0,167	6,893
4	1,200	0,096	0,711	0,419	0,421	0,714	0,624	0,805	1,038	1,489	0,148	7,665
5	0,614	0,177	0,741	0,321	0,153	0,192	0,349	0,423	0,521	0,582	0,140	4,214
6	1,094	0,076	0,804	0,398	0,494	0,985	0,350	0,415	0,527	1,741	0,119	7,002
7	1,098	0,082	0,870	0,448	0,374	0,658	0,640	0,440	0,805	0,734	0,096	6,244
8	0,898	0,111	0,787	0,454	0,301	0,600	0,614	0,632	0,834	0,645	0,116	5,991
9	0,974	0,101	0,750	0,471	0,260	0,639	0,397	0,552	0,814	0,622	0,105	5,684
10	1,236	0,122	0,870	0,386	1,243	1,036	1,820	0,589	1,893	0,676	0,266	10,136
11	0,866	0,166	0,629	0,493	0,512	0,200	0,710	0,332	0,741	0,896	0,346	5,891
12	0,981	0,135	0,684	0,351	0,437	0,694	0,517	0,449	0,581	2,299	0,131	7,259
13	0,641	0,099	0,764	0,372	0,479	0,984	0,643	0,562	1,222	1,720	0,090	7,576
14	0,716	0,107	0,904	0,326	0,366	0,874	0,638	0,594	1,122	0,811	0,140	6,597
15	1,013	0,088	0,770	0,352	0,344	0,612	0,647	0,430	0,984	1,314	0,148	6,702
16	0,917	0,092	0,732	0,311	0,470	0,654	0,785	0,446	1,069	0,856	0,210	6,542
17	0,721	0,177	0,801	0,349	0,514	0,743	0,787	0,448	1,091	1,314	0,179	7,124
18	0,886	0,163	0,879	0,485	0,324	0,702	0,709	0,585	0,886	0,578	0,169	6,366
19	1,041	0,126	0,901	0,405	0,374	0,630	0,702	0,449	1,079	1,124	0,147	6,978
20	0,694	0,119	0,606	0,370	0,416	0,847	0,747	0,578	1,031	0,909	0,174	6,491
21	0,744	0,129	1,081	0,366	0,355	0,662	0,724	0,580	1,237	0,762	0,159	6,798
22	1,054	0,102	0,892	0,397	0,396	0,604	0,743	0,590	1,141	0,684	0,103	6,706
23	0,806	0,199	1,080	0,427	0,392	0,740	0,627	0,591	0,913	1,048	0,151	6,974
24	1,010	0,101	0,757	0,467	0,358	0,847	0,703	0,490	0,737	0,616	0,218	6,305
25	0,624	0,115	0,800	0,437	0,315	0,541	0,661	0,564	1,166	0,988	0,179	6,389
26	0,878	0,05	0,567	0,352	0,312	0,529	0,632	0,550	0,875	1,012	0,103	5,859
27	0,907	0,093	0,872	0,437	0,375	0,741	0,601	0,511	0,728	0,620	0,108	5,993
28	0,891	0,115	0,801	0,457	0,392	0,706	0,667	0,435	0,843	0,839	0,169	6,315
29	0,704	0,06	0,743	0,402	0,357	0,803	0,784	0,493	0,884	0,870	0,163	6,263
30	0,881	0,154	1,014	0,313	0,492	0,549	0,697	0,421	0,879	0,816	0,189	6,405
31	0,706	0,184	0,746	0,393	0,362	0,415	0,661	0,507	0,771	0,828	0,180	5,753
32	0,941	0,142	0,984	0,397	0,405	0,745	0,671	0,469	0,777	0,873	0,141	6,545
33	0,847	0,165	0,912	0,361	0,402	0,708	0,794	0,586	0,844	0,806	0,169	6,594

APPENDIX D Return Processing Observation Times

	Parcel Pickup	Unpack	Quality Check	Total
1	0,157	0,063	0,734	0,954
2	0,187	0,288	0,771	1,246
3	0,089	0,453	0,701	1,243
4	0,148	0,526	0,735	1,409
5	0,063	0,301	0,827	1,191
6	0,090	0,319	0,738	1,147
7	0,102	0,633	0,708	1,443
8	0,166	0,547	0,753	1,466
9	0,128	0,565	0,709	1,402
10	0,167	0,065	0,747	0,979
11	0,176	0,392	0,742	1,310
12	0,116	0,288	0,842	1,246
13	0,138	0,548	0,889	1,575
14	0,161	0,553	0,77	1,484
15	0,146	0,373	0,782	1,301
16	0,096	0,427	0,754	1,277
17	0,133	0,414	0,746	1,293
18	0,093	0,344	0,819	1,256
19	0,122	0,404	0,729	1,255
20	0,162	0,315	0,772	1,249

APPENDIX E ILO Recommended Allowances

A.	Constant allowances:	5
	1. Personal allowance	4
	2. Basic fatigue allowance	
B.	Variable allowances:	
	1. Standing allowance	2
	2. Abnormal position allowance:	
	a. Slightly awkward	0
	b. Awkward (bending)	2
	c. Very awkward (lying, stretching)	7
	3. Use of force, or muscular energy (lifting, pulling, or pushing):	
	Weight lifted, pounds:	
	5	0
	10	1
	15	2
	20	3
	25	4
	30	5
	35	7
	40	9
	45	11
	50	13
	60	17
	70	22
	4. Bad light:	
	a. Slightly below recommended	0
	b. Well below	2
	c. Quite inadequate	5
	5. Atmospheric conditions (heat and humidity)- variable	0-100
	6. Close attention:	
	a. Fairly fine work	0
	b. Fine or exacting	2
	c. Very fine or very exacting	5
	7. Noise level:	
	a. Continuous	0
	b. Intermittent - loud	2
	c. Intermittent - very loud	5
	d. High-pitched - loud	5
	8. Mental strain:	
	a. Fairly complex process	1
	b. Complex or wide span of attention	4
	c. Very complex	8
	9. Monotony:	
	a. Low	0
	b. Medium	1
	c. High	4
	10. Tediumness:	
	a. Rather tedious	0
	b. Tedious	2
	c. Very tedious	5

APPENDIX F Allowances given to each task

	Allowances				
	Worker Experience	Basic Fatigue	Standing	Use of Force	Monotony
Check Stock + Item Pickup					
1 Check Stock	10%	4%	0%	0%	4%
2 Choose Packaging	10%	4%	0%	0%	4%
3 Send to Printer	10%	4%	0%	0%	4%
4 Printing	10%	4%	2%	0%	4%
5 Item Pickup	10%	4%	2%	0%	4%
6 Quality check	10%	4%	2%	0%	4%
7 Place at packaging area	10%	4%	2%	0%	4%
Packaging					
1 Sort & fold documents	0%	4%	2%	0%	4%
2 Remove original security tag	0%	4%	2%	0%	4%
3 Put Farfetch security tag	0%	4%	2%	0%	4%
4 Item Fold	0%	4%	2%	0%	4%
5 Protection plastic	0%	4%	2%	0%	4%
6 Tissue Paper	0%	4%	2%	0%	4%
7 Box Fold and place item inside	0%	4%	2%	1%	4%
8 Seal the box	0%	4%	2%	1%	4%
9 Place at shipping area	0%	4%	2%	0%	4%
Returns					
1 Parcel Pickup	10%	4%	2%	0%	4%
2. Unpack	10%	4%	2%	1%	4%
3 Quality Check	10%	4%	2%	0%	4%
4 Stock in	10%	4%	0%	0%	4%
5 Storage the item	10%	4%	2%	0%	4%
6 Send to Printer	10%	4%	0%	0%	4%
7 Printing	10%	4%	2%	0%	4%
8 Seal the box	10%	4%	2%	1%	4%
10 Place at shipping area	10%	4%	2%	0%	4%

APPENDIX G Tasks Weight Assessment Queries

```
--Orders by Category
select d.category_1stLevel as Category
      ,count(distinct ordercodeid) as NrOrders
from factorderslines f
inner join dimproduct d on f.productid=d.productid
where orderdate_gmt>='2017-01-01'
and orderdate_gmt<'2018-01-01'
group by d.category_1stLevel

--Returns
Select
count(distinct ordercodeid) as ReturnsNr
from factorderslines fol
left join dimproduct p on fol.productidoriginal=p.productidoriginal
where returnprocesseddate is not null
and orderdate_gmt>='2017-01-01'
and orderdate_gmt<'2018-01-01'

--Refused Returns
Select
count(distinct ordercodeid) as ReturnRefuseNr
from factorderslines fol
inner join dimreturnstatus r on r.returnstatusid=fol.returnstatusid
where returnprocesseddate is not null
and orderdate_gmt>='2017-01-01'
and orderdate_gmt<'2018-01-01'
and returnstatus='refused by store'
```

APPENDIX H Layouts Design

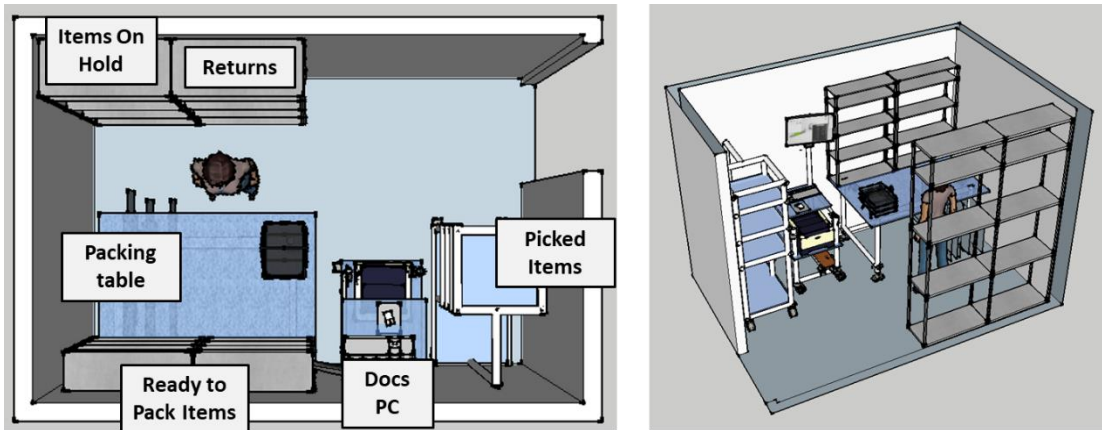


Figure H.1 – Recommended layout for a space between 0 and 10 sqm

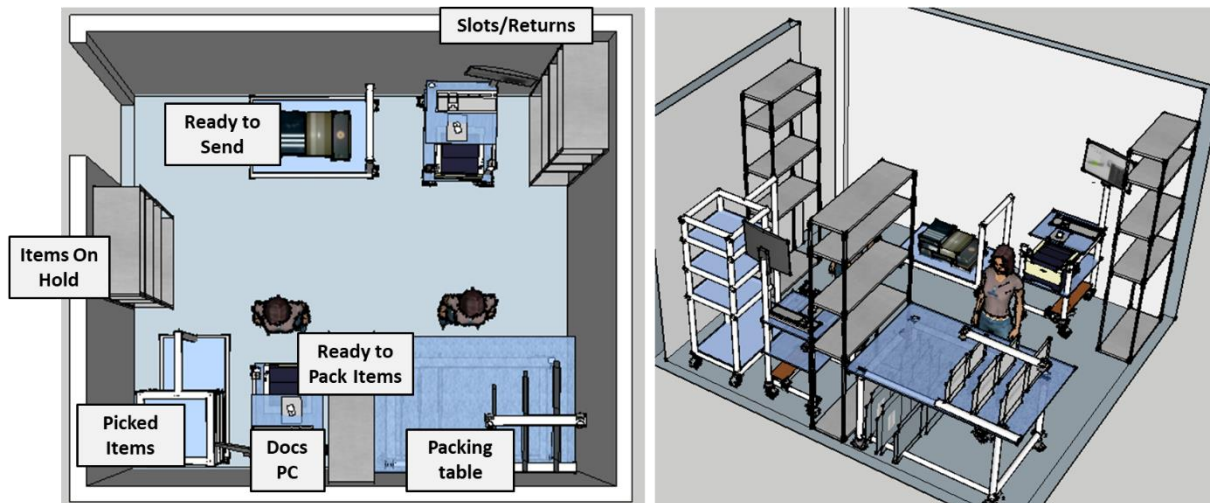


Figure H.2 - Recommended layout for a space between 10 and 20 sqm

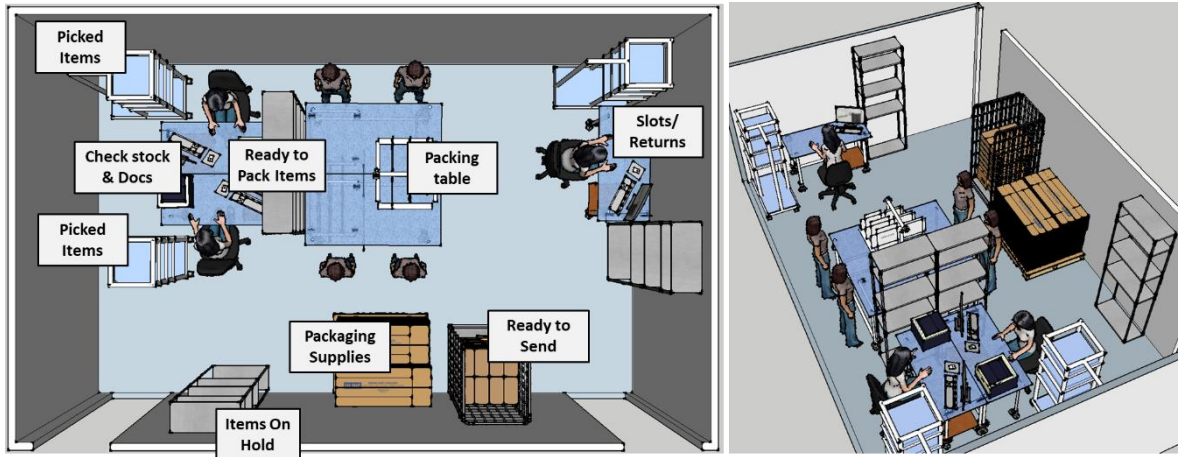


Figure H.3 - Recommended layout for a space bigger than 20 sqm

APPENDIX I Form Setup

Store Name	FF Specialist	Location Name	City	Available Space	Traffic Intensity	Staff Nr	Staff Engagement	Shipping Point	Return Point	Distance to Shipping Point	Distance to Return Point
BOUTIQUE X	Speacialist Z	BOUTIQUE X.1									
		BOUTIQUE X.2									
		BOUTIQUE X.3									

Table I.1 - Form sent for a boutique with 3 locations

Available Space	Traffic Intensity	Staff Number	Staff Engagement	Distance
0 - 10 sq	Low	1-2 workers	Low	<10 km
11 - 20 sq	Medium	3-4 workers	Medium	11-100 km
> 20 sq	High	>4 workers	High	101-200 km
				>200 km

Table I.2 - Form sent for a boutique with 3 locations

APPENDIX J Hourly Wages by Region (USD)

Region	Low	High
Northern Europe & North America & Australia	4,46	11,16
Central & Southern Europe	2,69	6,7
Africa & Central America	0,89	2,23
South America & Asia	0,45	0,89

Source: Wage Indicator Foundation

APPENDIX K Integrations Break-even Points By Region

	Stock Sync	Order Sync	Return Sync	Product Creation
Region	Orders/Day	Orders/Day	Orders/Day	Styles/2 seasons
Central & Southern Europe	6	11	138	8310
Africa & Central America	3	4	138	8310
South America & Asia	3	3	109	8310

APPENDIX L Tool Interface Output Pages

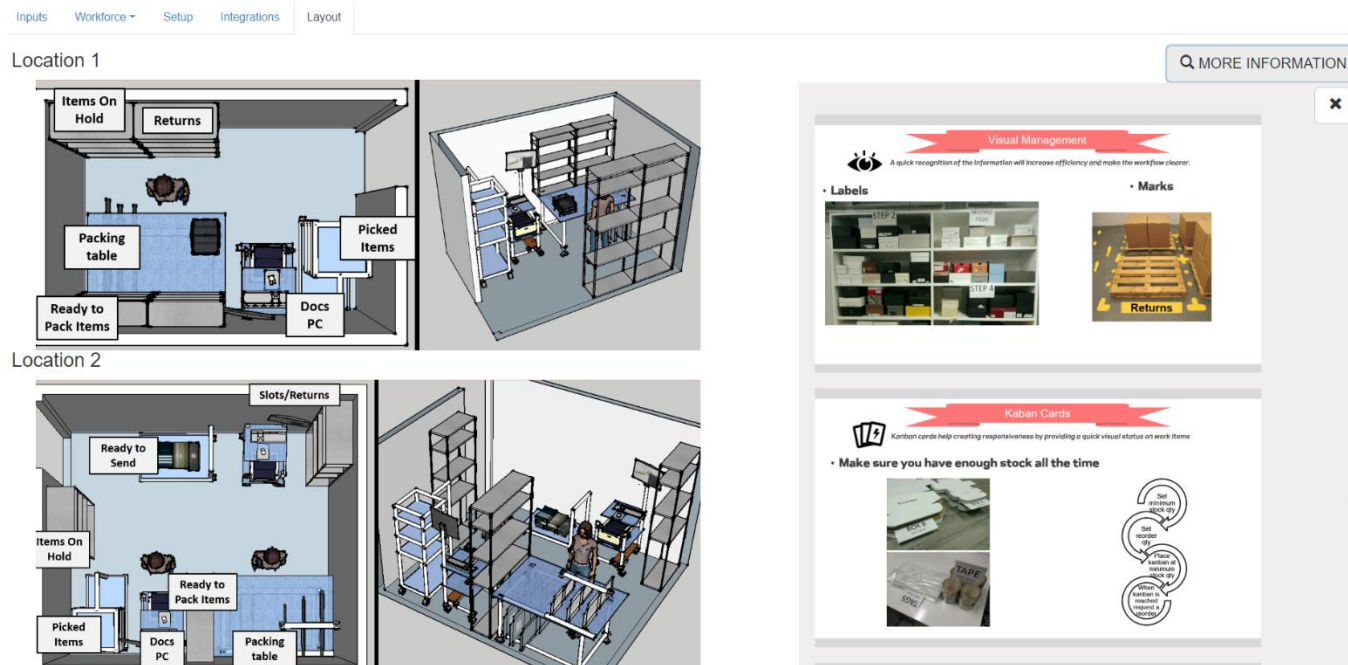


Figure L. 1 – Layout Tab

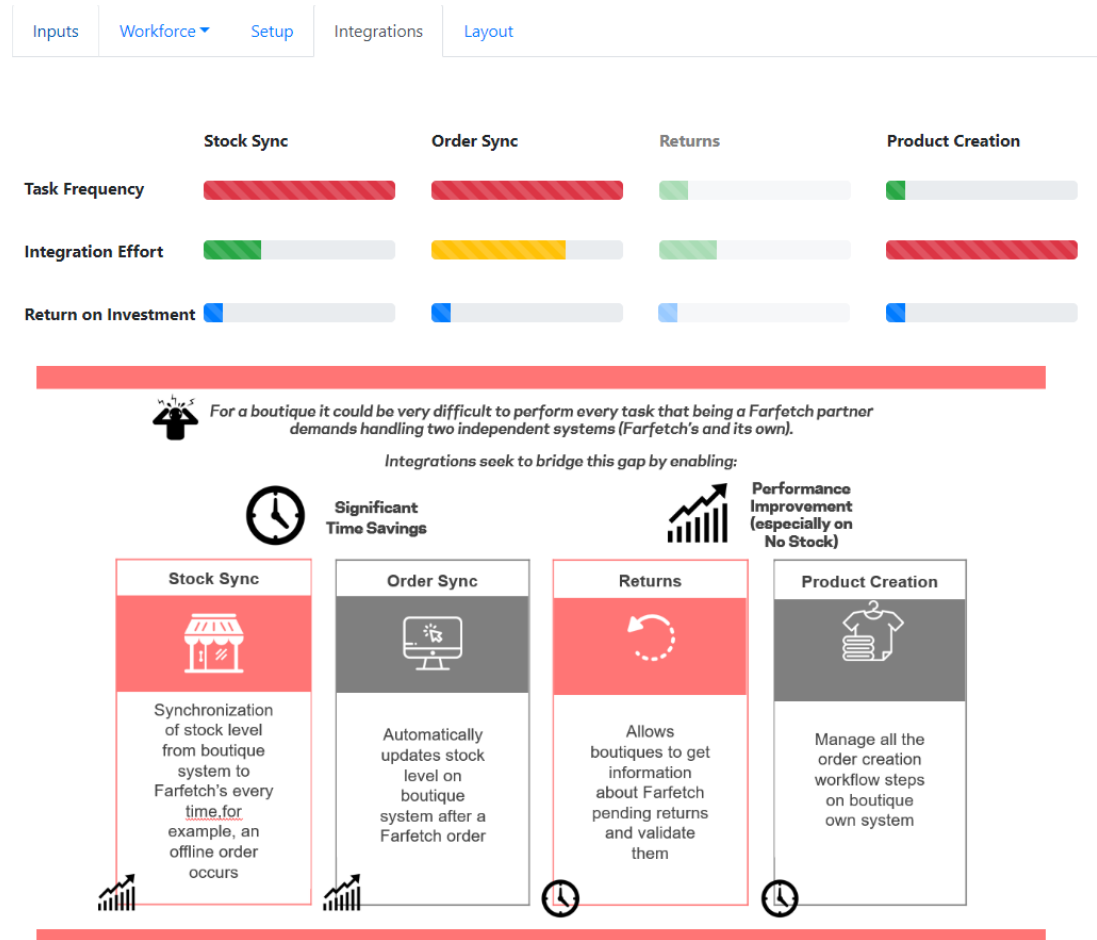


Figure L. 2 - Integrations Tab

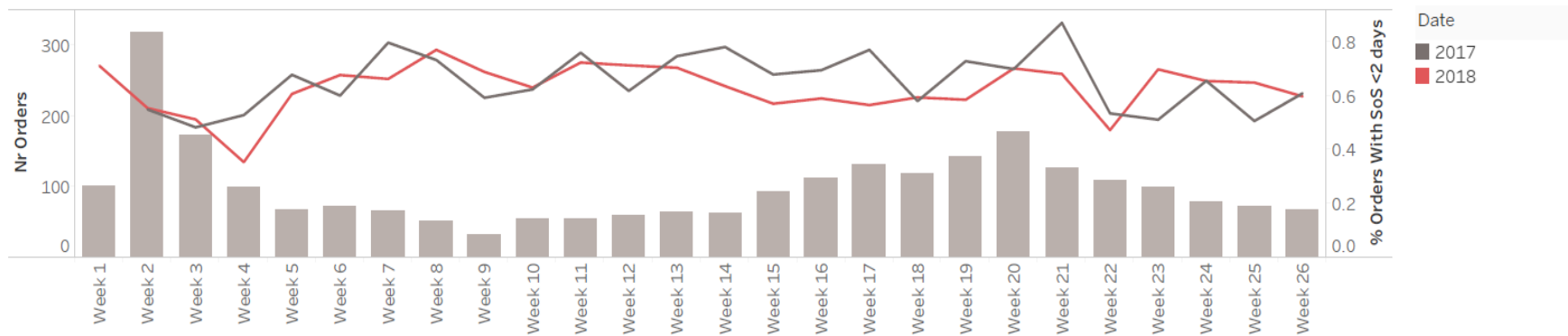
APPENDIX M Reporting Model

Region: (All) | Boutique: [Redacted] | Date: 01/01/2017 23:23:00 to 30/06/2018 22:01:06

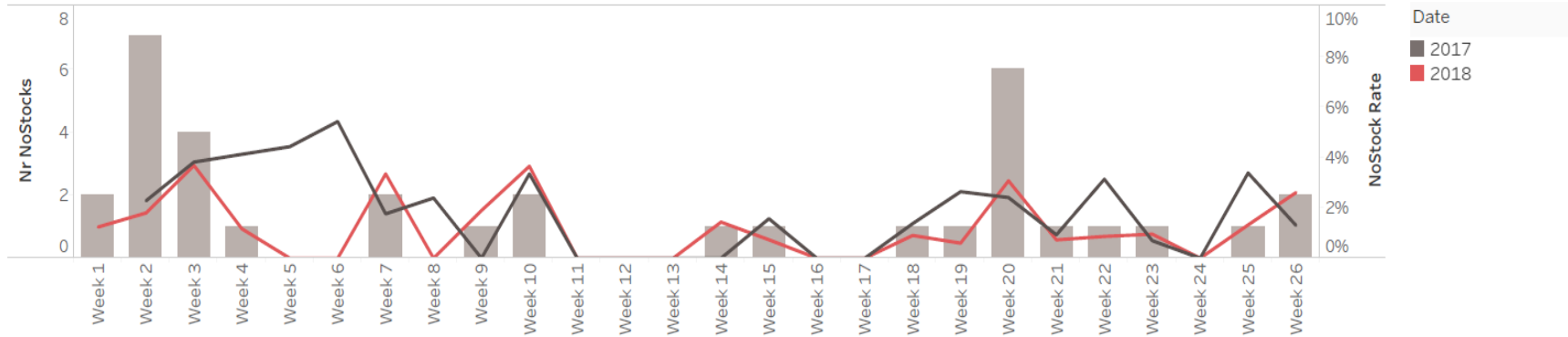
Overview

	Orders				SoS Days				SoS %				No Stock Qty				No Stock %			
	WtD	MtD	L4W	YtD	WtD	MtD	L4W	YtD	WtD	MtD	L4W	YtD	WtD	MtD	L4W	YtD	WtD	MtD	L4W	YtD
2018	71	333	356	2,590	0.98	0.96	1.03	1.00	92.96%	91.59%	91.85%	94.56%	1	4	3	35	1.32%	1.10%	0.79%	1.24%
YoY	-4.05%	-8.77%	-15.24%	32.55%	0.01	-0.02	0.03	0.05	-5.69%	-4.85%	-4.81%	-1.94%	0	-0.6000	-0.1250	-0.2045	-2.05%	-1.36%	-0.91%	-0.77%

Speed of Sending



No Stock



By Location

	WtD	MtD	L4W	YtD	WtD	MtD	L4W	YtD	WtD	L4W	YtD	WtD	MtD	L4W	YtD	WtD	MtD	L4W	YtD
Location 1	9	33	25	226	● 1.21	● 0.82	● 0.91	● 0.93	● 88.89%	● 96.00%	● 97.79%	0	0	0	3	● 0.00%	● 0.00%	● 0.00%	● 1.21%
Location 2	8	26	37	107	● 0.75	● 1.08	● 0.95	● 0.94	● 100.00%	● 89.19%	● 91.59%	1	1	1	10	● 8.33%	● 2.78%	● 1.92%	● 6.37%
Location 3	54	274	294	2,257	● 0.97	● 0.97	● 1.05	● 1.00	● 92.59%	● 91.84%	● 94.37%	0	3	2	22	● 0.00%	● 1.03%	● 0.67%	● 0.91%