

42576 FROM ANALYTICS TO ACTION

Online Fashion

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1 Introduction

The future of retail industry is getting more competitive. Retail owners are facing huge challenges to understand customers and to create targeted campaigns without using data. Transforming retail companies in to data-driven organisations, companies can reach new revenue streams and enhance customer interaction. If companies are not using the opportunities offered by data analytics, it may have an enormous impact on the companies performance.

1.1 Case description

This case is about the company OnlineFashion. OnlineFashion is a retailer, which sells articles of particular sizes and colours to their customers via an online shop. They are selling articles of several brands from different European countries, and thereby offering a wide selection of clothes. OnlineFashion buys their different brands directly from small and innovative manufacturers at a discounted wholesale rate, stores the clothes and resells them at a higher price. The satisfaction of customers with the products and services has a high priority, and therefore the company currently have a free return policy using BestDelivery as their business partner.

OnlineFashion is facing high amount of returned clothes, which makes the returns a big cost driver in the company. These costs includes the fee for the post office (4 euros per package) and the cleaning expenses varying from 2 euros to 25 euros. The online retailer company is currently not using their opportunities offered by their data, because their data-base is a closed CRM-system, which means that they can only print and read the large amounts of data from their system.

This report is set to investigate the return rate and the extent of the problem OnlineFashion is facing. Finally, propose a solution based on the results of the investigation.

2 Understanding the business and business problem

Firstly, it is important to establish if OnlineFashion has an return rate higher than the market, which is a return rate between 10% and 50 %. It is calculated that OnlineFashion has a return rate of 52.4%, which is above the general quote of return in the online shopping industry. Thereby it confirms the sales departments concerns about the problem with the high amount of returned clothes.

Before proceeding with the data analysis, it is crucial to understand the business and the environment the company operates in. To achieve a better understanding of OnlineFashion, a Business Model Canvas is conducted.

2.1 Assumptions

While pertaining analysis, not all information is available in order to present an optimal solution, therefore some assumptions are made, in order to proceed with the analysis and then ultimately reach onto a recommended solution.

The assumptions, made during the analysis that follows, are stated in this segment. Some of the generic assumptions are given below about the delivery process, quality Assurance and value for money. These assumptions tend to severely make an impact on the return rate. Also, it should be noted that the assumptions are not particularly legitimate source but definitely helps make a kind consideration in different aspects while an optimised decision needs to be made. The assumptions made in this analysis are the following:

- **Prompt delivery service is focused in order to maintain timely delivery.**
- **Customers receive what they ordered with less probability of defects, change in size, or mismatch in the colour of the products ordered.**
- **Quality of the products is not compromised and customers conceive value for price products.**

2.2 Business Model Canvas

The Business Model Canvas tool is used to improve the focus and clarity of what business OnlineFashion is trying to achieve.

From the Business Model Canvas seen in figure 1, a clear business understanding of OnlineFashion can be depicted. Therefore, the sections under the Business Model Canvas can be classified under two types: internal activities and external activities. Internal activities mostly covers the Key Partners, Key activities and Key resource section of the canvas so basically left side and the external activities covers Customer segment, customer relationship and channels.

The main activity of the OnlineFashion is buying trendy clothes from a wide range of small manufactures and reselling it to customers through their online website as mentioned in section 1.1 Case Description. OnlineFashion can do this with very competitive prices.

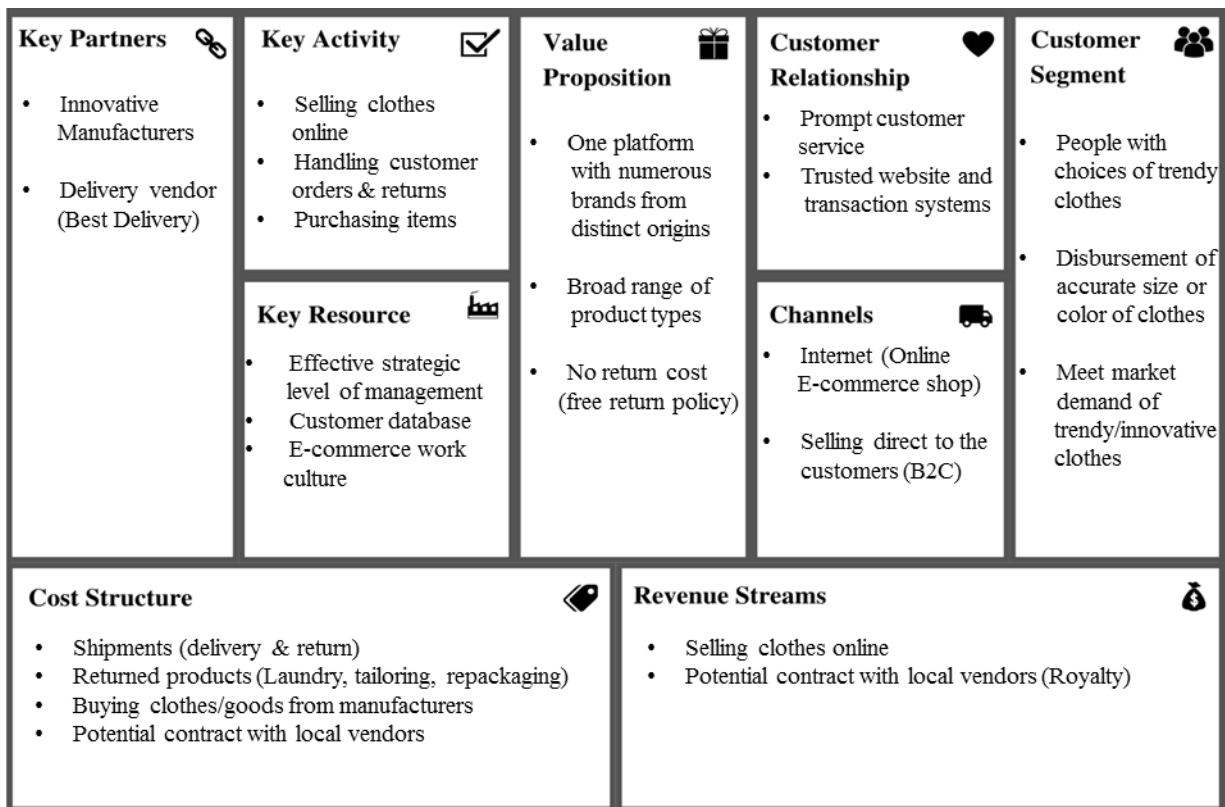


Figure 1: Business Model Canvas

OnlineFashion has a large business partner in the form of a delivery company called BestDelivery and various payment companies. Apart from buying and reselling clothes, OnlineFashion also needs to manage a large product inventory, maintaining a customers base, website and having competitive prices. The cost structure involves investment in the inventory purchasing, packaging, repacking the returned items, cleaning and shipping the items.

Customers relationship and its channels in OnlineFashion are identified through the website application and the customers service. Lastly, we have the customer segments which is the people admiring trendy clothes at the competitive prices along with numerous choices in brands, vibrant colours and distinct sizes.

2.3 Value Proposition Canvas

The Value Proposition Canvas in figure 2 is illustrated below, it majorly consists of two main parts: *Value proposition* is on the left side of the canvas and *Customer segment* is on the other side of canvas. Although the Value Proposition Canvas is depicted from the Business Model Canvas, it is in a broader way used to illustrate the graphical expression of what the client needs and suffer from, and what a product can offer to cope with the market.

Value proposition is a value map where an organisation is supposed to comprehend the likelihood of pains and gains of their customers along with labelling the products and services.

Customer segment has features of the clients that mostly are observed, assumed or are acknowledged. Deep diving into each subsection of the Value Proposition Canvas it can be seen that each feature have different characteristics when it comes to the current situation of OnlineFashion.

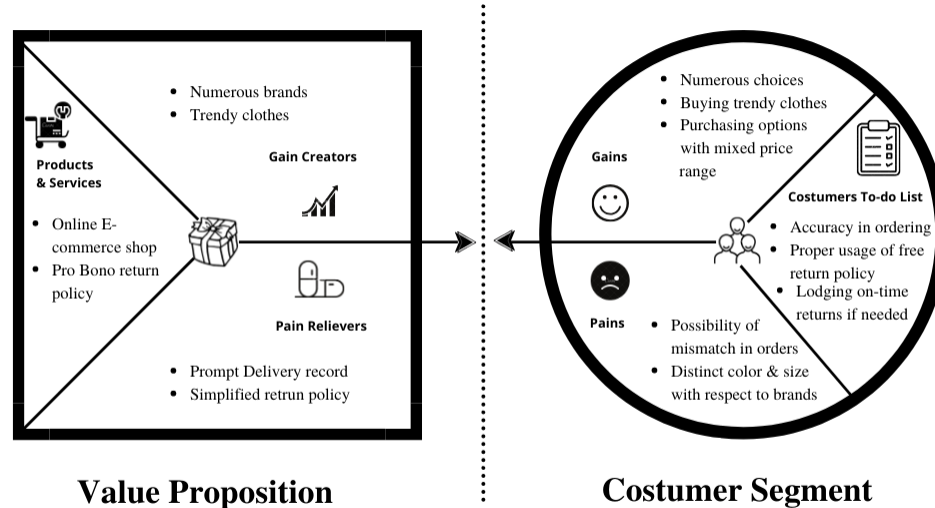


Figure 2: Value Proposition Canvas

Value Proposition

- *Products and services:* The OnlineFashion provides an E-commerce platform in the form of online shop and free return policy for the clients.
- *Gain creators:* Availability of numerous choices in brands along with in-trend clothes.
- *Pain relievers:* Potentially prompt delivery system and easy return policy without charging clients for an extra payment.

Customer Segment

- *Gains:* Choices of brands to buy at one place with simplified prospect of website application having distinct products with vibrant colours, mixed price range, etc.
- *Pains:* Possibility in order mismatch could be potential pain for clients and companies both along with not-able-to-try the theme on colours and sizes.
- *Customers-to-do-list:* Ordering accurately can be a potential job for clients to follow apart from being proactive with the legitimate return of products.

3 Data Analysis

In this part of this report the data analysis will be conducted using Power Bi. Firstly, the amount of returns and orders are explored to check for possible seasonality tendencies in the way OnlineFashion's customers behaviour. As mentioned earlier the company has a return rate of 52.4%, which is above the general quote of return in the online shopping industry.

In below, figure 3 the development of the amount of orders and returns is shown.

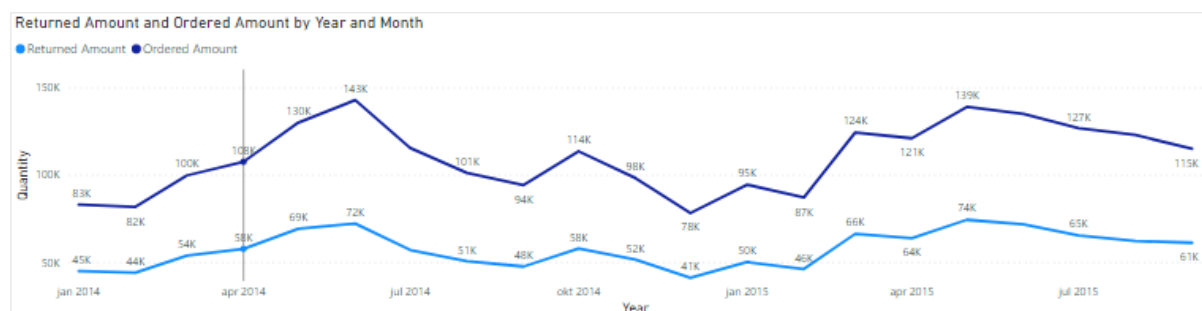


Figure 3: Ordered vs. returned items

In figure 3, a small pattern can be observed between the orders and returns. The orders and return rate have a similar path over time, but the return has a more flattened tendency. A seasonality tendency can be observed, but mostly for the orders. In the period from April to mid May, there is a higher amount of orders, which follows a simultaneous increase in the return. Here it is observed that OnlineFashion has its peak period of ordered amount in the summer months, which cannot be said about the return to the same degree. The return rate fluctuates with 4% during this time period, which is not a lot. Therefore it will not give any more valuable information to continue exploring any more seasonal trends regarding the problem.

Since, there is not any significance tendency in the seasonality, the return rate is then investigated compared to the order specifications. Investigations are done with regards to the sum of the orders compared to the sum of returns based on the order size.

To investigate this further, the correlation between the return rate against the total order size is shown in below figure:

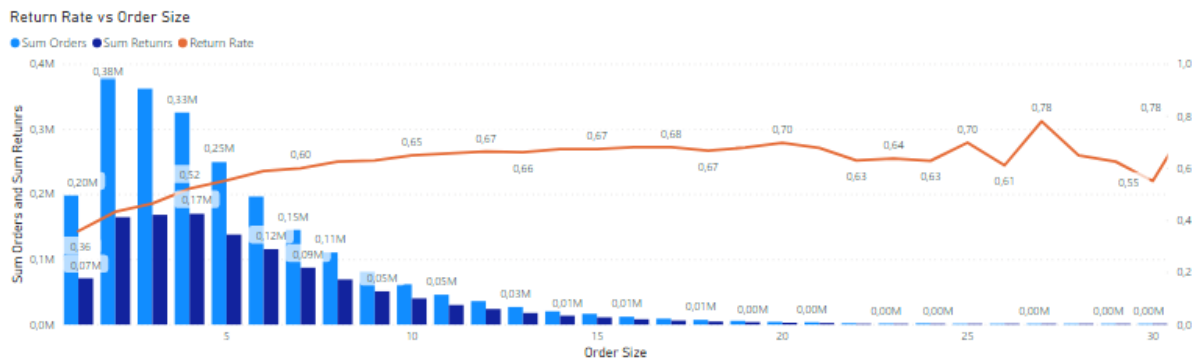


Figure 4: Return Rate vs Total Order Size

In figure 4, the order size is shown on the x-axis and the total number of item on the left y-axis and the return rate on the right y-axis. There is a clear correlation between the order size and the rate of return. As the order-sizes increase the rate of return also increases. This could indicate that customers tend to return more, the bigger the order. This can be due to the costumers ordering various sizes and colour of the same type of clothes, because they are not entirely sure on what they want or if it fits. Which is supported by the collected opinions from the four customers of the online shop.

"...What I like about the shop is that I can order several sizes and colors... I can send the stuff back that I don't like or that do not fit" - Linda (24)

"...I find it very difficult to decide what I should buy, although I know my size. So I like to order a variety of shirts (different colors and styles)..." - Anna (45)

3.1 Partial conclusion

As seen from the analysis above, we can quickly interpret that the larger the orders are, the higher the risk of returns are, which is also stated by some of the customers. This does not take the analysis to the next step, because it is not possible to pin-point the reason why the return rate is high based on order size. Therefore we are going to shift the analysis towards the customers, and see if there are some more specific pattern there.

3.2 Customer segments analysis

For customer segment analysing, the customers have been divided into four different groups based on their rate of return, as following:

- Loyal Customer: $0\% < \text{Rate of return} < 10\%$
- Fair Customer: $10\% < \text{Rate of return} < 30\%$
- Customer: $30\% < \text{Rate of return} < 50\%$
- Bad Customer: $50\% < \text{Rate of return} < 100\%$

The above split between the customers have following distribution results:

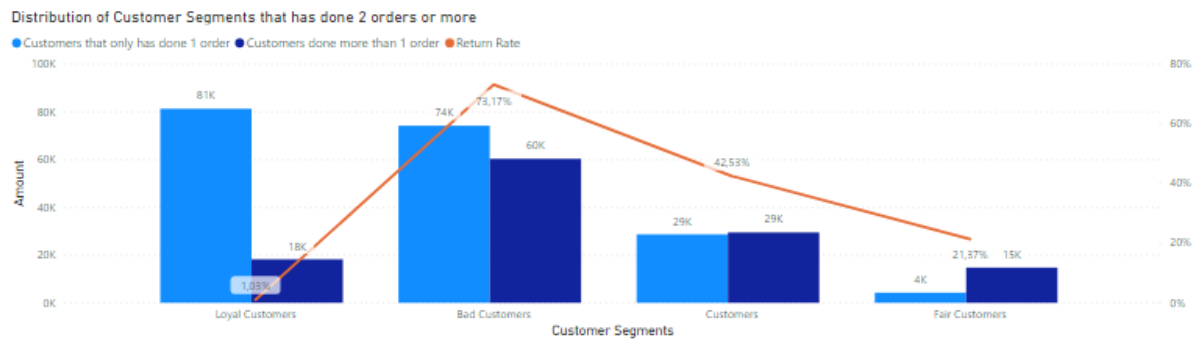


Figure 5: Return Rate vs Customer Segments

The figure 5 displays customers that have only bought from OnlineFashion once, and then customers that have bought from OnlineFashion more than once. It is seen that more than 50% of all customers only have used OnlineFashion once, which can indicate that most customers do not return to buy from the shop again. Of these customers it is seen that half of them do not return the order, and the other half returns about 70% of their order. The customers that have ordered more than once from OnlineFashion, it is seen that the majority of these customers are in the segments of "Bad customers", "Customers" and "Fair Customers". This is an interesting split of the customers, and leads to a more in depth investigation.

The four different segments are investigated to see if they have preferred products or some products that sets them apart. The following plot shows the four customers segments top six

most bought product group:



Figure 6: Return rate vs Top 6 product groups

In figure 6 a pattern can be seen. "Loyal Customers" and "Bad Customers" all buy the same products, which is also the group that have the most one timer customers. "Fair Customers" and "Customers" share the same top six product groups. These two groups have an overweight or an equal amount of customers that have used the site more than once. Common for all the groups are that they share the same top five most bought product group.

3.3 Customer Conclusion

From the customer analysis, it is seen that many customers only shop at OnlineFashion once, this could be due to bad customer experience. "Fair Customers" and "Customers" has a fair amount of customers who has ordered more than once from OnlineFashion. This segment is also within the "normal" return rate, which is between 20% - 40%. From these analysis it is hard to determine what type of people are in the different customer segments, what the average age is, gender type and where in the country they live. Unfortunately there is no way

of categorising the person types in the different segments, which would give a better insight in the different behaviours people do online shopping, which will make OnlineFashion able prevent these problems and give the customers a better shopping experience result in fewer returns.

4 Data-driven Solution

Retailers embracing big data can increase their operating margin by more than 60% (Research Gate, 2019 [8]). This project recommends OnlineFashion to transferring their business to a data-driven organisation. Data analytics will help OnlineFashion to stay ahead of shopper trends by applying customer analytics to uncover, interpret and act on meaningful data insights, including online shopper's return rate patterns.

The first steps of the “analytical transformation” requires three mutually supportive capabilities. Firstly, a company must be able to identify, combine, and manage multiple sources of data. Secondly, they need the capability to build advanced analytics models for customer outcomes. Thirdly, an top management strength to transform the organisation so they incorporate analytics and insights as key elements of all critical decisions (McKinsey, 2013 [3]).

4.1 Choosing the right data

OnlineFashion encourages a comprehensive look at data by being specific about the return rate problems, but with the provided data it is not sufficient enough to understand the customer behaviour (Towards Data Science, 2017 [11]). To accommodate OnlineFashion's business problem with a clear strategy for how to use data. There are different data sources OnlineFashion can be looked into (Cygnis Media, 2017 [5]):

- Transactions and order data such as sales systems that generate data on purchases, order- and renewal dates, customer and product value, abandoned baskets, returns, and more. These data could provide the customers with personal product recommends and

forecast customer's buying trends, which leads to more opportunities for growth and user engagement.

- Behavioural, web and mobile data such as products and categories browsed, clicks, interaction data, number of pages visited, and more. This data is what event driven campaigns need to understand the customer pattern of current and expected behaviour and preferences, which leads to customers buying more products.
- Profile data such that knowing who your customers are and what they want, which will lead to more effective marketing. This category includes contact data (age, gender etc) and details about lifestyle, preferences and personality.

These data points are very valuable for marketing and sales efforts. But it is essential to identify which source will bring the most benefit because the data will consistently flow into the organisation from all directions. Tracking the right data points can be vital during the critical decision making, and can help drive growth within the organisation (Towards Data Science, 2017 [11]).

4.2 Organisation and people capabilities

Succeeding with data analytics requires a different approach: embedding data analytics into the organisation. This way can ensure that information, insight and decisions are shared across all the business units and functions. In order to improve their current situation and take advantage of the data better, the OnlineFashion shop has to integrate an analytics team into its organisation.

As it has a flat organisational structure, it is better to start with adding sub units in all departments and a new department (analytics group) to manage and assist all these new teams. This can result in a quick win. For the further integration with growing analytics demands, a Centre of Excellence model should be pursued since it has the most advantages and the fewest limitations compared to other models. As what mentioned in (Big Data: The Organisational Challenge, 2013[6]), big companies like Amazon, LinkedIn are relying on CoEs. The CoE

serves as the go-to organisation for analytics strategy and insight support.



Figure 7: Analytics Integration

In addition, hiring the needed talents is necessary. OnlineFashion should hire consultants to start their transition journey. Currently, OnlineFashion is using Excel which could give more simple analytics, but other platforms like SaaS offers a significant accessibility so that everyone can access data, which can make the entire organisation workforce more agile. The more accessible and visually compelling the data is, the better and easier for the management team can spot insights from the data.

Meanwhile, analytics training is required to teach employees how to use the new software or technology. On the other hand, the management makes decisions based on the output of the software. It requires some computer-based management techniques, which means OnlineFashion has to hire some managers or train the current managers. They has to make sure that employees are well-trained in the use of the software.

4.3 Diamond Framework

The Diamond Framework (R. Vidgen, 2017 [7]) is a useful tool to analyse the challenges that will be faced when introducing analytics in a company. In this case it is used to show how the solution explained so far will impact OnlineFashion and how all the areas will have to adapt.

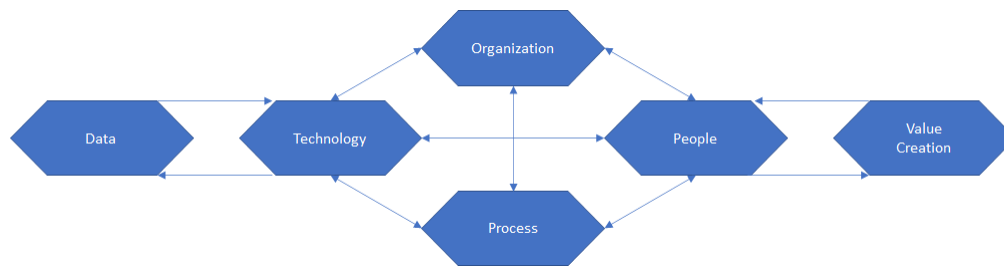


Figure 8: Diamond Framework

Data: To improve the quality of the data several sources will be added, such as transactional data (information about the orders), customer behaviour (information about performance of the customer communication channel) and profiles (information about the customer). The data should still be anonymised and comply with GDPR. This includes asking the customer for permission to collect their data, using pseudonyms to refer to each customer as it currently is being done, and storing said data within the EEA.

Technology: The solution requires data to be used seamlessly across all the organisation without having to deal with these problems. Therefore, the current software must be changed to one that allows extraction and modelling of data with ease.

For data to be useful, different technologies need to be used in order to take advantage of the vast amounts of data. Mentioned in *10 Key Technologies that enable Big Data Analytical for businesses* [10], different methods can be used to store and organise data. OnlineFashion can use a NoSQL Database to store different types of information, such as, Customer information, sales information and other data which is relevant for the company to analyse. Based upon their database, they can have multiple tool that analyse the data in the background. This way, OnlineFashion is always able to optimise on the go, and see the changes fast, and act upon it. On top of this, visualisation tool can be implemented to visualise the valuable insight the analysed data can give, enabling management to understand and make critical decisions from the data. Driving OnlineFashion on a path to being data-driven, and optimised and be a stronger competitor on the market.

Organisation: The company will integrate an analytics group into the organisation to help other departments analyse the customer behaviour and improve customers' shopping experience. Then the management level can make a better customer strategy. In this way, the company can attract more loyal customers and decrease high return rate.

In the nearer future, it can be recommended to hire data-oriented employees and to build an in-house data science department. Those employees are supposed to have relevant background of working for an E-commerce platform and possess experience in modelling data which includes cleaning, mining and visualising to recommend the management with the prospective solutions for the company problems.

Building an in-house team will make a huge impact on the business by exploring different genres in online shopping. It can be proposed in such a way that the Data science department can integrate with different business units in order to understand the business better and serve the management with optimised solutions for OnlineFashion to thrive in the commercial market.

Process: It is recommended for OnlineFashion to follow a data-driven mindset & leverage the opportunity of the data availability and accordingly optimising the strategic solutions. The process consists of monitoring data processes, generating and visualising potential analytics, modelling the data, and performance management. It can be suggested for OnlineFashion to follow the **CRISP-DM** (*Cross Industry Standard Process for data mining*) to leverage the potential value the analytics may create once it is implemented. CRISP-DM addresses each individual part of problems by defining a process model which provides a framework for carrying out effective data analytics project (CRISP-DM, 2000 [12]). The structure of the CRISP-DM is illustrated in Figure 9.

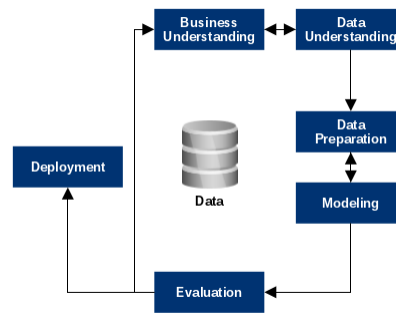


Figure 9: CRISP-DM (*Process Model for Data Mining*)

The generic process model is useful for planning, documentation and communication. Specialised process models can be written generically based on amateur data and basic ideas. By generalising the knowledge on certain prospects in the method, it might be predictable for Businesses to identify their potential customers and the current market trend. It might establish a standardised process that can be reliably performed by marketing people with lesser technical skills and sufficient time to experiment with different approaches and work productively.

People: To form an analytics group in the beginning, some employees should be chosen from other departments such as sales and marketing since they are responsible for the return rate and familiar with the policy. In addition, new talented people like consultants and IT should be hired to help deploy the data-driven business. The consultants can offer much professional advice from their experience and IT can maintain the new software or build an easy-to-use platform to analyse the data. Besides, employees have to be trained to use the new technology on their work daily schedule and managers are required to have the computer-based managerial skills to make better decisions in this group. When the company has high demand for analytics across all departments in the future, the training has to be offered to more employees. At that time, a group of people in each department know how to analyse and mine the data and managers can make better decisions, leading the company to be more data-driven.

Value creation: OnlineFashion needs to understand the customer's behaviour to develop the

service satisfaction by gaining insight of the customer's experience. Involving data to understand and predict customer behaviour and by using the organisation's capabilities (Akemi T. Chatfield, 2018 [1]). To measure the value creation OnlineFashion need to focus on customer agility by continuously have insights of the customer's experience. This is possible by using data analytics for integrating, analysing and interpreting data to create actionable customer insights and knowledge. One of the important common barriers which need to be addressed are the managerial and cultural barriers. For OnlineFashion to be data-driven it is important to have a managerial strategic alignment and collaboration across the company.

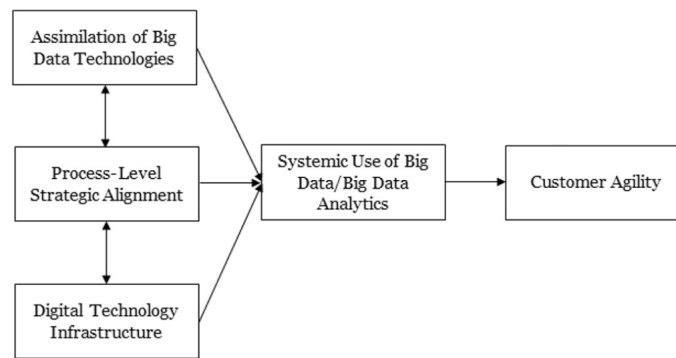


Figure 10: Theoretical framework for customer agility (Akemi T. Chatfield, 2018 [1])

Using the theoretical framework for customer agility in figure 10, enables OnlineFashion to enhanced customer agility and responsiveness through effective use of data analytics (Akemi T. Chatfield, 2018 [1]). In order to create value of data it is important to assimilate on all parts of the Diamond Framework (figure 8) and use the theoretical framework for the customer agility. OnlineFashion must include infrastructure capabilities, data management capabilities, and organisational capabilities to create most value of becoming a data-driven organisation.

4.4 Amazon case study

When faced with such a huge range of options, online customers can often feel overwhelmed and have little idea about what would be the best purchasing decision for them, which results in excessive purchases and high return rate later. To solve this, Amazon (Bernard Marr, 2019 [4]) uses big data gathered from customers while they browse to build its recommendation

engine. It gathers data on every one of its customer site while using its site and monitors what you buy, what you look at, your shipping address and whether you leave reviews. Then it can predict what the customer wants to buy and analyse the customer behaviour. In 2016, Amazon earned \$29 billion using big data analytics for retail decisions and knowing exactly what customers want.

5 Conclusion

The report has depicted the situation of OnlineFashion in the market and the generated value for the customer. The report illustrates the understanding of the business, using two important models identifying the value they create for the business. It is recommended for OnlineFashion that in order to improve the rate of return, they are supposed to be capable of using their data more strategically in order to analyse their market, customer behaviour, trends, etc.

OnlineFashion needs to work on diverting their focus with a clear strategy if they want to thrive. Hereby, identifying the right data points, which can be vital during the critical decision making, and thereby help drive growth within the organisation. Making use of analytics is crucial in online shopping companies and especially useful when attempting to change core aspects that differentiate it from the competition.

Although some of the key take away from this analysis, which was not related to the return rate, is that a huge amount of the customers only buy once. This low customer retention can be translated as low satisfaction. This goes against the high priority customer satisfaction in the company. Analytics can be used as a leverage to raise this metric, which can be insightful. It is recommended to build an in-house data science team in order to process existing data and provide an optimised solution for the business problem. The data specialist team could work effectively and collaborate with respective teams in order to make use of the data in the most productive way. Thereby, it is proposed for OnlineFashion to tap into data analytic technologies and work on improving customer experience to get better understanding of the return rate and customer segment.

6 Future technological considerations

The future will be dominated by AI-assisted customer behaviour and decision making, which will continue to grow. It is clear: Big data and analytics will be the bedrock of smart retailing in the future (Scendio, 2019 [8]).

VR-headset: The VR-headsets offer merchants a bevy of impressive new ways to share their brand's story with clients. Retailers tend to experiment this immersive, 3D world as a means of standing out from the competition, attracting new customers, and boosting sales as explored in *Virtual Reality Helps Retailers Lure in Customers* [2]. The early adopters might have the novelty of creating simulated experiences on their side, which captures the curiosity of potential customers and the media. However, there is a lot to be learned about how VR can be used to influence customer behaviour and set a benchmark in the commercial World.

Size helping software: The future is here, and the retail industry is under immense pressure to capture customers. Customer service online is not the same as when in an ordinary shop, and different measures have to be taken. A technology to improve customer service and experience can be to have them sign-up and make a custom profile with simple measures of themselves. This way OnlineFashion will be able to help the customer with choosing the right size or suggesting a size. This will reduce the need for order different sizes, and makes the experience for the customer more seamlessly. Looking at Son of a Tailor [9], they have incorporated this in their web-shop with great success. This allows them to even produce articles for customer, with minimum waste since they know the size of their customer. The customer can also purchase items with minimal effort.

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