



## ADDRESSING VFS GLOBAL'S KEY CHALLENGES USING DATA ANALYTICS

- Data-driven decision making
- Operational efficiency
- Positive Customer Trust

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# 1. Company Overview

## 1.1 Company Background

VFS Global is a leading provider of visa processing services that operates globally. Founded in 2001, it is headquartered in Zurich, Switzerland and Dubai, United Arab Emirates. It is majorly owned by funds managed by Blackstone, the world's largest asset manager. VFS Global's core business operation is to provide visa application processing services on behalf of governments, diplomatic missions and other authorities related to the visa issuing. It offers visa services for multiple travel purposes such as those for study, work, tourism and family visits. It also provides a range of related services such as biometric data collection, document authentication, travel insurance and value-added services such as concierge services and visa application support. It operates visa application centres in over 145 countries and has partnerships with 67 client governments worldwide. It has 3427 application centres worldwide, 9758 employees and claims to have processed 257.79m applications to date (VFS Global Group, 2023). The main competitors to the company are Transguard Group, IW, DU Digital Global and Galposter.

## 1.2 Business Model Canvas

The company generates revenue mainly through service fees charged to customers for visa processing services. Additionally, it charges fees for premium services such as form-filling assistance, self-kiosk, mobile and e-visa services etc. (VFS Global Group, 2023). Its main focus and value established can be found in Fig 1. The value proposition canvas is illustrated in detail in the Appendix A.

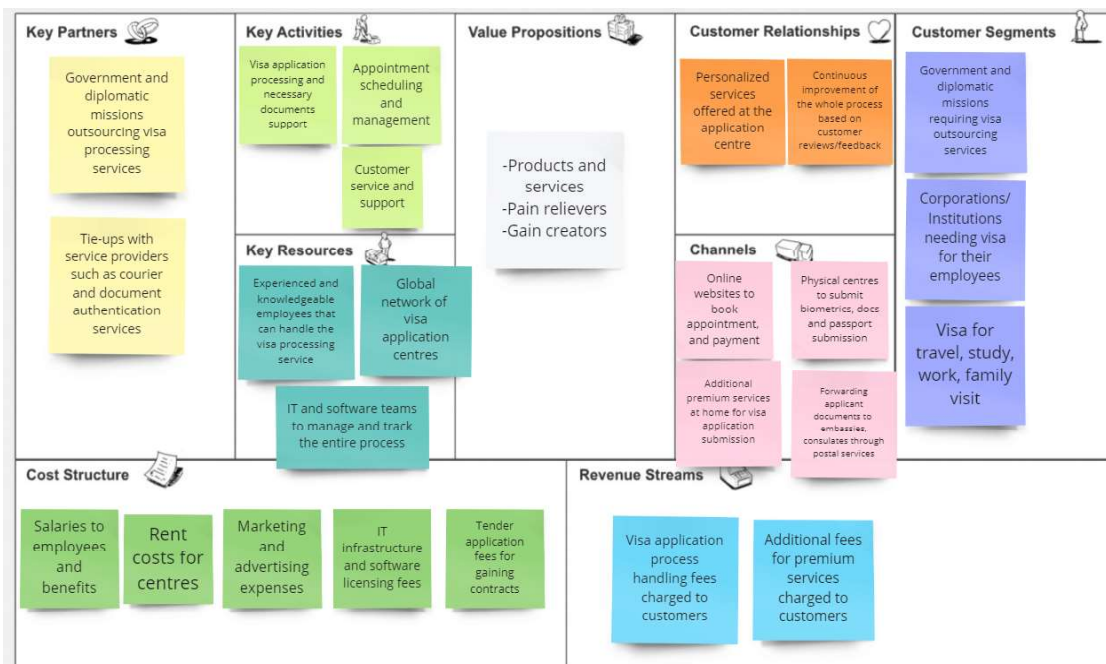


Fig 1. Business Model Canvas

## 2. Company's current problems and solutions

As seen from reviews (Appendix B), VFS Global has attracted criticism from its clients regarding long wait times for appointment booking, extended delays in returning passports to applicants, and failure to follow up on applications in a timely fashion. The value-added services which it offers to expedite the process come at an additional cost which may not be affordable for all applicants. Another critical challenge is how it handles customers' personal data. There are reports of breaches in 2005-2007 and 2015 where it allowed any user to access personal information of other applicants (Dehghan, 2015). VFS Global has also received negative reviews regarding poor customer service, indicating the need for the company to improve its services and enhance customer satisfaction (Appendix C). The main three challenges in order of importance are as follows.

Challenge 1	Challenge 2	Challenge 3
Processing time optimisation	Data Security and preventing breaches	Poor customer service

### 2.1 Processing time optimisation

**Challenge:** One of the biggest challenges faced by VFS Global is in its operations where the visa application processing time at the centres is slow. As seen from the user reviews (Appendix B), this is a major cause of concern among VFS customers which could lead to a bad reputation and potentially result in business loss. VFS needs to identify the bottlenecks and inefficiencies in this process and take appropriate measures to reduce processing times and improve customer satisfaction.

**Solution:** Data profiling/mining techniques can be used to perform exploratory analysis of the time taken for each of the different stages of the application process such as document submission, biometrics collection, document verification, and payment. Data analysis techniques such as classification (e.g., Decision trees) and clustering (PCA, LDA) algorithms can be used to identify the factors that contribute to slow processing time (Chettri, 2023). These could be factors such as ill-trained staff, differing age groups among applicants and process inefficiencies (courier delays, and other third-party delays). The company can then focus its resources towards addressing these concerns by training staff and addressing separate customer segments. Furthermore, commonly observed feedback from the users is long waiting times for booking appointments through the online portal. Using predictive analysis techniques such as regression analysis, historical data on visa application volumes can be correlated with seasonality, sporting events etc to forecast demand for applications in the near future. This information can further be leveraged while optimising resources, , managing staffing levels and operations (Flynn, 2023).

**Pros:** This solution will result in better process optimisation and shorter wait times for the applicants. This will in turn boost the reputation of the company.

**Cons:** In some scenarios, while allocating resources to handle higher demand, as the number of employees cannot be managed dynamically, it could result in overstaffing. Further cost analysis will be required for such cases.

## **2.2 Data Security and preventing breaches**

**Challenge:** Data security is a critical concern for VFS Global since it handles sensitive personal information and documents of applicants. There were cases in the past where data was breached from the VFS Global database. A data breach would result in loss of trust from customers and have legal ramifications with financial losses. Hence, it is crucial for the company to ensure data security with utmost care using data analytics along with regular audits (Jones, 2019).

**Solution:** The first step would be to identify key data sources and types that need to be monitored. This includes data related to user activity on VFS Global's websites and portals, system log data and network traffic. On this data, anomaly detection algorithms can be trained to establish patterns of normal behaviour (Sushir, 2023). Once these models are in place, incoming data can be monitored and any suspicious behaviour can be flagged for further investigation. Specifically, autoencoders in Deep Learning can be used to identify complex patterns and anomalies that may otherwise be difficult to find using traditional learning methods. This anomaly detection approach is suitable as most of the data would have normal activity.

**Pros:** The anomaly technique allows for real-time detection and adapts to changing patterns automatically. VFS Global can find this to be a highly effective tool to detect and prevent security breaches early by taking proactive measures.

**Cons:** These algorithms would need to be trained on large amounts of data and requires high computation requirements. Additionally capital investment would also be needed to collect this data.

## **2.3 Improving customer support**

**Challenge:** As seen in customer reviews (Appendix C), quite a few customers have expressed dissatisfaction with long wait times, confusing processes and the need for staff help. If the customers' queries are not addressed on time and effectively, it will lead to a negative perception among them and may have a negative impact on customer retention and future business. Addressing poor customer service is also vital to identify areas of improvement in the service delivery process.

**Solution: Sentiment analysis:** VFS Global should use NLP in conjunction with ML techniques (hybrid approach) to analyse customer feedback data collected from email, social media, customer surveys and review websites. The process is to pre-process the text data first to remove irrelevant information and then tokenise the text to split it into individual words. One NLP technique can be a Lexicon-based

analysis that is performed by assigning each word/phrase a score based on its polarity indicating whether it is positive, negative or neutral. Next, ML algorithms like Support Vector Machine (SVM) can be used to classify the data into categories (positive, negative, neutral) based on sentiment lexicon. Real-time customer feedback can be fed to this model to generate insights into the overall sentiment of customers towards VFS global services. (Hota, et al., 2021). By soliciting customer feedback and analysing data on customer experiences, VFS Global can identify pain points and makes necessary changes to improve the customer experience. This analysis can be used to further improve the solution to challenge 1.

**Solution: AI-powered Chatbots:** Chatbots that can handle various customer queries and concerns and respond in a personalised manner could be incorporated by the company to create a more engaging and satisfying experience for the customer (Forbes Business Development Council, 2022). A suitable Chatbot platform should be chosen (IBM Watson, Google Dialogflow etc.) and customised using NLP engine to make the bot understand customer queries appropriately. These could be trained on the information provided on the relevant government websites to provide accurate information that the user is seeking.

**Pros:** Chatbots can provide 24/7 customer support. Sentiment analysis provides valuable feedback to the company to improve its processes proactively.

**Cons:** In some complex occasions, human intervention is required as chatbots may not be able to provide complete answers. For sentiment analysis, understanding context might be important in some cases which may not always be captured correctly.

### 3. Action Plan

The action plan for the three strategies are as follows.

Challenge	Resource needed	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Long Term
<b>Processing Time Optimisation</b>								
<b>Solution: Data Profiling</b>								
Define scope, identify skills, resources needed	Project Manager/HR							
Data collection and preprocessing	Data Engineer/Analyst							
Exploratory Data Analysis	Data Engineer/Analyst							
Modelling (Classification/Clustering)	Data Analyst/Scientist							
<b>Solution: Predictive Analysis for demand</b>								
Define scope, identify skills, resources needed	Project Manager/HR							
Gather data of application volumes	Data Engineer/Analyst							
Train models (Regression analysis)	Data Analyst/Scientist							
Deployment of the models	DevOps Engineer							
Monitoring and Optimising processing time	Data Engineer/Analyst							
Further maintenance and improving models	Data Engineer/Analyst							
<b>Data security and preventing breaches</b>								
<b>Solution: Autoencoders for anomaly detection</b>								
Define scope, identify skills, resources needed	Project Manager/HR							
Investigate computational resources needed	Data Engineer/Analyst/Scientist							
Identify sources and gather data	Data Engineer/Analyst							
Implement Autoencoder model	Data Analyst/Scientist							
Deploy the model	DevOps Engineer							
Use the model to identify potential threats	Data Engineer/Analyst							
Further maintenance and improving model	Data Engineer/Analyst							

Challenge	Resource needed	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Long Term
<b>Improving Customer support</b>								
<b>Solution: Sentiment Analysis</b>								
Define scope, identify skills, resources needed	Project Manager/HR							
Gather data	Data Engineer/Analyst							
Data pre-processing	Data Engineer/Analyst							
Implement NLP+ ML based technique	Data Analyst/Scientist							
Analyse sentiment	Data Engineer/Analyst							
Use feedback, improve customer experience	Data Engineer/Analyst							
<b>Solution: AI-powered Chatbots</b>								
Define scope, identify skills, resources needed	Project Manager/HR							
Implement Chatbots	Data Analyst/Scientist							
Customise chatbot on relevant information	Data Analyst/Scientist							
Deployment	DevOps							
Further maintenance and improving model	Data Engineer/Analyst							

## 4. Conclusion

This report identifies three significant challenges currently faced by VFS Global and provides solutions to overcome them. The first challenge is of long wait times for the visa application process which is addressed through a two-part solution. First is to perform data profiling of the process flow to identify bottlenecks and process inefficiencies. The other part is to forecast demand using predictive analysis to optimise resources and third-party dependencies accordingly. This would help improve process efficiency with respect to time. The second challenge is identified as issues with data security and data breaches. In order to tackle this, the company needs to implement a framework for anomaly detection to facilitate early detection of potential threats and take appropriate action. The third challenge is to improve overall customer service. To address this, the company can implement AI-powered chatbots for customer support and perform sentiment analysis on the customers feedback to understand their needs and grievances better. The innovation road map is shown in Fig. 2.

	AS-IS	TO-BE (process time optimisation)	TO-BE (Better customer service)	TO-BE (Better customer service)
<b>Strategy</b>	Operating with same workforce irrespective of demand. Delays due to staff issues, third party dependencies Data protection using firewalls and regular audits. Customer support relying only on customer representatives	Streamline processes, optimise resources to reduce the wait time for customers by identifying bottlenecks and process inefficiencies by data analysis	Data protection using anomaly detection system too to identify abnormal activity in the network early	To focus on enhancing customer experience through chatbots assistance for queries and sentiment analysis of reviews
<b>People</b>	Administrative staff, Visa agents, IT staff, Data science team, Customer service agents	Train in-house or hire project managers with experience in process optimization. Hire / train current data scientists and analysts and DevOps engineers for this task	Hire or train engineers with knowledge of network traffic, train in-house Data team for this task and ensure the two teams are aligned	Hire engineers with NLP expertise. Train customer representatives to use the AI powered tools.
<b>Governance</b>	Currently does not make use of automated process optimization tools. Limited auditing of internal processes. Limited customer support.	Adopt data driven decision making for efficient resource allocation and operations.	Prioritize data security and continuously monitor existing processes. Stay updated with the best practices of the industry.	Improve communication with customers through region specific customer service centres. Understand customer grievances and incorporate redressal practices.
<b>Technology</b>	Manual data collection and analysis. Insecure databases. Limited communication channels.	Deploy a framework for automated data collection throughout the process. ML based tools to automatically identify bottlenecks with data visualization tools to interpret results.	Tools for continuously monitoring network traffic and database integrity. Anomaly detection frameworks using DL for early detection and prevention of data breaches.	Deploy chatbots for 24hr support. Implement NLP+ML algorithms to capture customer sentiment. Automatically track company reputation.

Fig 2. Roadmap for the implementation of data analytics strategies identified



## Appendices

### Appendix A:

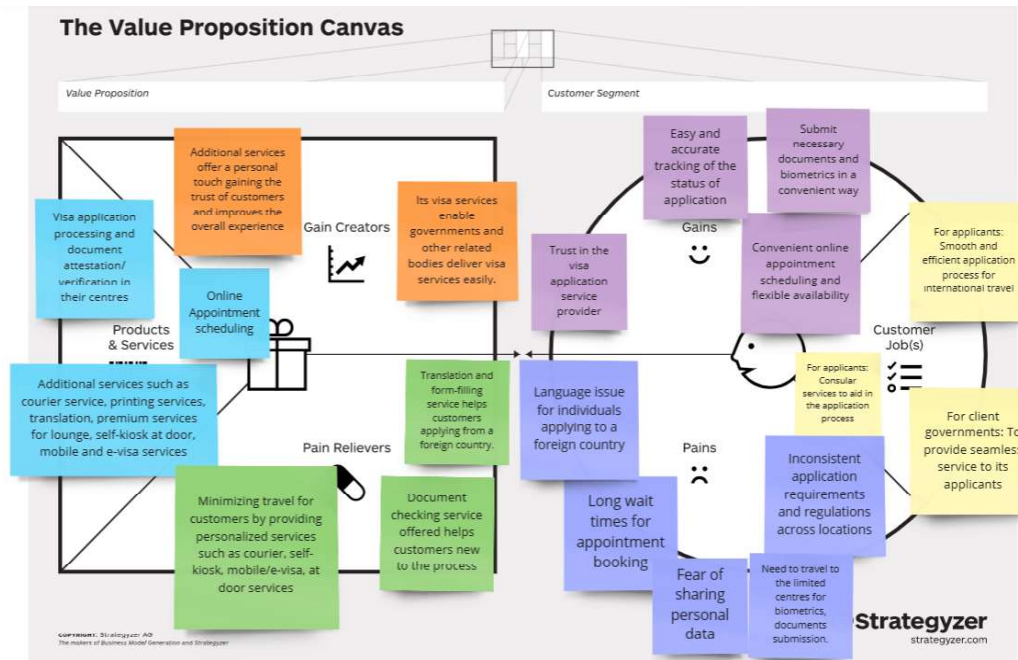


Fig.3 Value Proposition Canvas

### Appendix B: Sample reviews where customers express dissatisfaction with slow processing times

Source: <https://uk.trustpilot.com/review/vfsglobal.com?page=5&stars=1&stars=2>

★ ★ ★ ★ ★

A day ago

**Passport submitted more than 2 weeks...**

Passport submitted more than 2 weeks back. Till then no mail, no sms, no communication.

While SMS service fee was charged, no sms regarding any status.

Website also not working. after 2-3 times, it blocks. customer care saying send email and call embassy. Called embassy but they can't tell status.

Now what to do? No answer from anyone.

I should file a consumer court complaint regarding this.

**Date of experience:** 17 April 2023

★ ★ ★ ★ ★

3 days ago

**my visa experience is totally wrong...**

my visa experience is totally wrong becuz their process is to slow my enrollment date is near that's why i take premium for d stamping my friend he is also with me he received their visa but I'm still waiting nd now my enrollment date is so close i feel that my admission will cancel this is all because of this lazy process i submit my application/passport on 5 and embassy received my passport 11 and still now i am waiting.

**Date of experience:** 05 April 2023

### Appendix C: Sample review where customers express displeasure about poor customer support

★ ★ ★ ★ ★

19 hours ago

**Horrible customer service**

There is inconsistency in communication. Not one set of instructions are congruent. The wait time was over three hours. And I was made to come back. To find the entire floor empty And no one on the floor would help me. This has been the single most horrifying visa experience of my life.

**Date of experience:** 14 April 2023

★ ★ ★ ★ ★

3 days ago

**We are extremely disappointed with the...**

We are extremely disappointed with the after application service we got from VFS. We submitted our application on the 4th of April. We have paid a premium for the service along with SMS alerts fees. After submitting our application we did not receive any updates about our application until I called the customer care yesterday and was told that our application reached New Delhi only yesterday and that the embassy will take 15 more days to process it. We are supposed to fly out on the 4th of May and now if we don't get our visa on time it's going to be VFS's fault. I called the office more than 10 times yesterday and the 3 times I ended speaking to someone they said they will call back and I still haven't been called back. Today I was suddenly flooded with SMS and email alerts after I followed up so much. This is extremely disappointing and unacceptable service and we're very unhappy with how this has been handled. And I do not understand why it would take so long for our application to be sent to the embassy, this is just unacceptable.

**Date of experience:** 14 April 2023

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