

Creating a data platform for Upside's innovative idea

Starting out in the world of finance

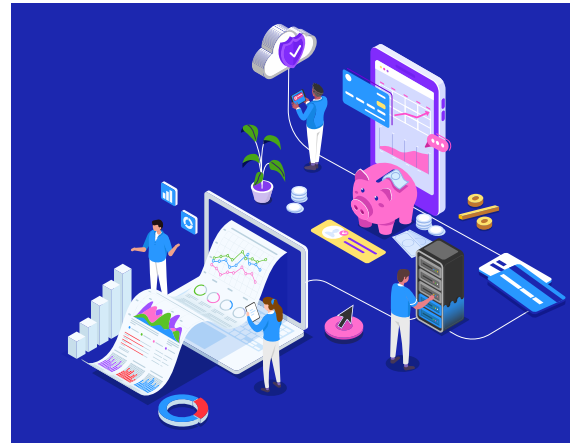
Building a business from nothing is always going to be a challenge. But getting set up in the finance sector made things even more complex for Upside. Their app had to be extremely resilient and satisfy complex banking regulations. Another key objective was to make sure the solution was scalable. As a start-up, demand was also going to be unpredictable and likely to fluctuate – so the app needed to be agile, secure and responsive.

Developing an app from scratch, together

For both Upside's CEO and CTO, Andries Smit and Paul Russell, efficiency was critical. They wanted to transform their business idea into a platform as quickly as possible, and knew building in the Cloud would support this ambition. They chose to work with us here at AND because, not only could we offer our expertise and long-term support in developing their team, we could also give them the speed of scalability.

Employing our expertise to find the best solution

We worked with Upside to design and build a data platform that would underpin its services. Providing them with a flexible team of experts (17 in the lead up to launch), we were able to grow at pace and ensure the platform was built within a tight timeframe. Upside also needed a set of dashboards for customer behaviour analysis and other insights. The main requirements for the business intelligence tool were that it offered fast processing time, complex metrics, and was easy to use.



Company: Upside
Industry: Financial services
Country: UK
Employees: 8
Website: upsidesaving.com

About Upside Saving

Upside is a start-up aiming to revolutionise savings and financial services by using 'Open Banking data' – information that high street banks in the UK have to make available to customers, or anyone they authorise to use it. Using this information, Upside aims to automate savings, optimising and personalising the financial services individuals use. By harnessing the power of data and AI, it will make sure people are getting the most from their savings and not wasting money unnecessarily.

Upside's first offering is a mobile app that gives users cashback on purchases from partner retailers. With the potential to save the average UK earner up to £1,500 a year, Upside's CEO Andries Smit said: "There are so many common pitfalls: duplicate sign ups, train delays that you should be refunded for but never get around to applying, direct debits you no longer need, mobile contracts you're paying too much for. We can deal with all of this automatically and give you a savings account which fills itself up."



“It was kudos to the AND Digital team that the launch went so well. Prior to launch, to satisfy the Financial Conduct Authority, we had to go through its penetration testing. We passed that without a single issue, which I’ve never seen in my 20 years in the business.”

Andries Smit
CEO of Upside

The initial plan was to build a system that took in transactions from customers as they were made, and then build the dashboard. But after familiarising ourselves with the project, we suggested that a safer approach would be to build both the lake and dashboard in parallel.

For the first iteration, we also suggested we took a snapshot of data early in the morning, leaving the possibility of real-time updates to a later iteration. This removed the challenges of sorting through potentially ‘dirty’ data at speed. Although Open Banking rules restrict how data is presented, this was still something of an ‘unknown’ as the business started.

Creating a robust, fit-for-purpose data platform

The first step was creating the data lake and uploading a dump of the existing database to start building the dashboard. This gave the DevOps team, and the business team, a chance to learn how to use their main business tool and tweak its development based on performance.

The data lake had to deal with a large amount of highly sensitive information and keep it encrypted and secure. To achieve this, large parts of the database were made invisible and inaccessible to most employees – with only a select few individuals having full access. The data lake also needed to store information from a wide variety of data sources, in different formats. This was normalised and anonymised, when requested, before being analysed by the business.

To build the data platform, we used Terraform – a code-based tool for provisioning IT infrastructure. This meant the same project could be used for updating different instances – development, staging, production – in minutes.

With data loads doubling every month, the solution needed to process large quantities of data and scale at speed. To help digest this information and review the platform’s performance, we made it possible to create easy-to-use visualisations.

Crunching numbers in their millions

To future-proof Upside, we made sure the data platform was replicable on various platforms. Increasing automation was also critical for dealing with the growing customer numbers, as each new customer brings a huge amount of data. For every 250 customers, about one million rows of data is added. Existing customers can also add additional accounts, with even more data. The good news is, Upside is already on to its second set of algorithms and systems are becoming more rule based.

Upside also uses crawlers to bring in data from a variety of sources, extracting information and transforming it so that it's ready for loading into the database or archive.

Queries are processed in SQL and scale with demand, removing maintenance headaches – because no server is needed. The business can quickly create visualisations from the data and see how retailer offers are being taken up by their users. It also gives Upside a better understanding of what users are spending money on. This in turn helps them make well-informed decisions about future retail partnerships. Dashboard-generated reports, that contain hundreds of thousands of rows, can be visualised in less than six seconds. Once tied to real-time data the firm will be able to tweak it's offers several times a day.

Discovering bonus benefits (already)

Now Upside has a robust data platform in place, it's ready for the next steps in creating better automated financial services for its customers. To further improve its offering to both customers and retailers, Upside plans to continue to grow and develop its machine learning capabilities, focusing on optimising the targeting of their campaigns.

Since launch, Upside's dashboards have provided one unexpected benefit. Beyond providing internal insight of what customers are doing and what additional offers could be attractive to them, they have also proved to be powerful persuasive tools when signing up new retailers. They make it much easier to demonstrate exactly what Upside is offering and how a retailer could benefit from signing up.



Easy-to-use visualisations show how the platform's performing



Automation digests millions of rows of data, effortlessly



New dashboards become a valuable sign-up tool

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