Legal Case Study

Automating Business Processes for a 100-Year-Old Legal Business

	Industry	year founded	location
	Legal	**1920s**	**USA**

The client is a family-run legal data business based in USA. The company offers a wide range of public record search services and performs foreclosure reviews as well as document filing procedures.

Challenge

The business in question is a small family-run business in the US that offers court background checks and prepares court notes in the legal niche. Traditionally, the industry is very conservative and relies heavily on paperwork. Many procedures are carried out by obtaining physical documents from the court as well as faxing, snail-mailing, photocopying, or archiving said documents.

Needless to say, with the advent of the digital age, the technology was already there to permit automation. But going from predominantly human-powered to a digital business is no trivial task.

The business in question provides the following services:

- Running background checks for physical and legal entities.
- Generating reports by request from customers.
- Preparing court notes for interested parties.

When ObjectStyle began working with this client, their system consisted of a database and multiple desktop applications that used the database to produce reports, as well as some scripts and a web application (their public website). Over the years, the system had accumulated technical debt. When the client attempted to upgrade their Microsoft SQL Server, the database started to throw errors.

Considering that the database had been developed by different companies/ contractors over a long period of time, the client's representatives did not have full insight into the database's design. It was time to look for a tech company that could take up the challenging task of debugging and upgrading the DB.

Solution

1. The database.

Since the pressing issue was with the database, ObjectStyle engineers began by reverse-engineering its model to understand how it was set up. The legacy version of the database used a Microsoft SQL Server (which was rather costly). The choice of technology itself dictated certain design patterns that were not sustainable in the long run.

ObjectStyle reverse-engineered the database, moved it to a MySQL server (a more modern, economically-efficient variant), and revised its model, making it more scalable, transparent, and in line with the best practices for relational database modelling.

2. Migration to cloud.

Another part of work was migrating the old desktop app to cloud. The new back office application now works on any device with a web browser and is no longer limited to a particular installation. The application has been rewritten using a modern technology stack. This has made adding new features easier. It's also easy to release new program versions, because it is now in the cloud and users get each new version automatically - there is no need for them to install updates manually.

3. Farewell to paperwork.

By and by, the client started to consider moving from the old routine (when a person went to court to collect information and then prepared court notes by hand) to automating parts of this process, or even the entire workflow. The client is not completely there yet, but some steps in the process have already been automated (with a plan to delegate the entire cycle to machines that require minimum oversight.)

ObjectStyle has built a "crawler" (essentially, a web browsing script) that can make copies of any new publicly-available court documents, recognize the information in them, and spare the client's employees the need to physically visit the court for those docs. In the future, developers want to have the crawler automatically check for updates to court documents and notify the client if it finds any.

ObjectStyle also has plans in the pipeline for an interactive questionnaire that will help the client prepare court notes. This way, employees won't have to type the same boilerplate text over and over - it will be enough to provide just the details about a specific court case. The next step would be to automate the entire process of producing court notes by using a combination of AI (artificial intelligence) and ORC (optical character recognition).

Once this goal is achieved, the client's business process will be automated in full, which will, no doubt, save a lot of people-hours and resources.

4. New website and client-facing app.

In addition to the business app that was mentioned earlier (which the client uses to run reports, etc.), the client also offers a user-facing application that is available through their website. The tip of the iceberg of that app is a personal account system that exists on the company's website. Website users can create accounts and place orders (e.g., request a background check report, a court note, and many more services provided by the company).

ObjectStyle has already released a new, more powerful version of the client's website that has been designed together with the client, closely following their business requirements and design guidelines.

5. Setting up CI and automated testing.

Last but not least, ObjectStyle also established a smooth *ideation > development > testing > release process* for the client's software. A CD (continuous delivery) pipeline has been set up, which now allows the client to release new functionality and new software versions as often as is required. (Continuous delivery is one of the processed used in Agile software development, so you can say that our current development method adheres to the Agile approach.)

ObjectStyle also went from occasional per-request testing to systematic quality assurance. Gradually, automated tests have been introduced to (1) save our test engineer's hours, and (2) continually test the software to detect problems early on - ideally before the new version goes live.

Results

Thanks to the RESTful architecture that was introduced while redesigning the website, the client has started to use APIs to onboard system corporate users (that rely on said APIs for data).

As of today, ObjectStyle has largely modernized the client's tech base and automated their business process. The old database was fixed and upgraded and now works without errors. The old desktop app was replaced with a new web-based application - the migration was performed gradually and without interrupting the client's operations.

Now the immediate goal is to finish automating the entire business process, from getting the required court documents to analyzing them, singling out the bits of information one needs for court notes, and preparing the very notes. That will lead to the client's workflow being 100% supported by digital technology, and much less human effort will be required to deliver the same volume of services.

Technology stack

- Apache Cayenne
- Apache Tapestry
- Amazon EC2 cloud platform, Amazon Lambda, Amazon S3
- SQL Server/MySQL databases
- Jasper Reports
- React / Redux
- Java 8 / JavaScript and jQuery

Time Span and Resources

Duration: 5 years 6 months

Effort: 49,500 man-hours

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