ValueLabs

Reimagining innovation with cloud migration and machine learning solutions for an eminent US-based market research provider.

Talk to us

Geo location	Engagement	Service
US (South)	ETM	AI&ML, Quality Engineering, Software Development

Challenges

Our client is a leading US market research firm. Founded in 1999, it quickly expanded to more than 55 countries across five continents, with an annual revenue of $85 million. They wanted cloud migration support and NLP services to automate part of their survey answer generation process. Initially, writers would spend time crafting survey questions and false answers. Each question could take up to 10 minutes to write, and the client relied on their writers to draft 40 questions per shift. The client wanted a partner who prioritized innovation and efficiency.

Speed up question generation	Increase efficiency with machine learning	Reduce costs through efficiencies	Innovation in market research

• Improving the efficiency of the survey question generation via automation

• Introducing a machine learning solution to their survey question generation

• Making data migration more efficient through cloud migration solutions

• Strategically supporting work with our software engineering practices

Our Solution

Our client had complex challenges and high expectations, so we began by aligning our strategy with their goals. They wanted to bring innovation and cutting-edge cloud solutions to their writing process and cloud migration. So, we selected the best tools for the job and ensured we could bring new approaches to web application development and data migration. Thus, we set everything in motion to provide the efficiency and modernization they wanted.

Solution Impact

33%
Reduction in survey question generation time
To create a production-ready solution

25%
Increased output
After using the natural language program

AI and predictive analytics
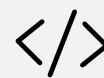Introduced client to the strength of the latest technologies

Services Involved

AI and ML

Quality Engineering

Software Development

Explore our services

AI and ML

Elevating the script with NLG and machine learning

Survey writers took an average of 10 minutes to write a question and spent most of the time generating false answers for the questions. The incorrect answers needed to be grammatically similar to the correct answer but wrong enough to ensure clarity among survey takers. We built a tool that analyzed the writers' questions and could generate the kinds of false solutions they otherwise would need to think of and write out. The tool would generate answers, and the writers could select their preferences. If none of the answers were appropriate, they could generate new suggestions. Whatever they chose was fed back into the tool, so it constantly improved its recommendations. Ultimately, our tool developed incorrect answers instantly, reducing the average time to write a question to 6.7 minutes and saving nearly 50% of the question-generation time. It helped support newer writers as they learned from the tool-generated answers instead of relying on more experienced writers. Our dedicated efforts ensured the tool was awarded 'Best Innovation in NLP' in the AIconics awards at the AI Summit, New York.

Quality Engineering

Bringing efficiency and quality control to data migration

Our client sought cloud migration support and wanted to reimagine innovation, and that's where we came into the picture. Cloud migration becomes cumbersome to manage over time. On the other hand, with FitNesse, we could test sample data during the data migration. Whereas other cloud migration strategies require engineers to test each piece of data individually or risk migration of corrupted files. We built a test suite with FitNesse that tested sample files and data. Now, we could also assume that similar files and data migrated successfully if they migrated without incident. The result: We successfully migrated files without taking all the time to validate each one. Our app highlighted the files that failed. It addressed them and all similar files, so engineers only had to focus on issues and not worry about successful file migrations. Even better, the tool recorded all results in Excel spreadsheets and on the FitNesse wiki to ensure quality remained high and that almost anyone with permission could access test results.

Software Development

Building a firm foundation with Software Development

Many aspects of our work with the client involved innovation and bringing new ideas to well-established processes and markets, so we knew we would need to build software engineering practices into each part of the project. To do this, we put together a team with a robust, strategic foundation in software product development. We began by defining the support processes. We then recommended and configured Jira Service Desk to manage tickets. We used Java and Angular for application development and enhancement and Oracle PS/SQL for app support. When we supported their migration to AWS Cloud, we ran database administration through Oracle and used Manual, Selenium, and FitNesse for quality assurance. When we developed the tool to generate answers for the survey writers, we utilized Terraform scripting to configure the automation. We integrated the tool with Google Docs and a video player so writers could craft questions and answers all in one place without the need to open and close many different apps and windows.

Business Impact

We accelerated the efficiency of our client's survey question writing and database migration by employing a client-centric strategy. More than that, we also proved the utility of AI to the client since they were eager to bring more automation into their processes.

Best innovation in NLP	Web application	$500,000 in potential savings
Awarded at the AIconics Awards at the AI Summit in New York	Enabled for automation and API testing	Created in the first quarter with savings continuing and potentially growing over time

Talk to us

Speeding up surveys with responsive AI and ML technology solutions.

Talk to us

Challenges

The market research industry relies on content written by trained writers. Our client, one of the largest in the US, enjoys a hard-won reputation for innovation and accuracy. They wanted to explore how they could introduce AI/ML to a process that is traditionally reliant on human creativity and, as a result, is often time-consuming and expensive. The client wanted to introduce a machine learning and a natural language processing (NLP) solution in this part of the project, but they needed someone to provide machine learning as a service.

Slow manual content creation	Inefficient use of resource	Updating traditional processes	Quality of market research

- Survey writers were expected to write 40 questions per shift
- Questions could take up to 10 minutes to write, and a significant amount of allotted time was spent generating incorrect answers
- The client wanted to integrate NLP services into their process
- The client needed AI and ML solutions to match the quality of human writers

Our Solution

We are an experienced, full-service machine learning service provider, and we quickly saw how our solutions could speed up and simplify the process of generating questions. We built a custom program that automatically generated incorrect survey answers and integrated a video player and Google Docs into the program. Writers could view research videos, take notes, write the question and correct answer, generate and select incorrect answers, and move to the final distribution step within one product.

Solution Impact

Created significant savings

In the first quarter, with expected increases in subsequent quarters

Sped up answer generation

Made new writers more productive & less reliant on experienced writers

New opportunities for automated AI

The client wished to explore other areas of our artificial intelligence consulting services

Our Approach

Bringing AI/ML technology solutions to market research

Artificial intelligence and machine learning services is one of our core strengths. As always, we began the project by understanding the client's needs. That way, we can provide the right advice and software for the project from the beginning. We gathered a team with vast experience and researched the most appropriate tools. We built a cloud-based app that used machine learning to automatically generate false answers to survey questions and included a video player and Google Docs. It allowed writers to write surveys more quickly without switching between apps and windows.

• Defined support delivery processes and required cloud machine learning services

• Used Terraform scripting to configure automation and generate unique incorrect options

• Included active learning component to improve the program while being used

• Integrated the solution with a video viewer and Google Docs to create a single product

Created a one-stop survey generation shop through AI/ML development

Survey writers had a complex job. They watched market research videos, took notes on what they saw, wrote the questions and correct answers, thought of incorrect answers, and then uploaded all of that for publication. We built the answer-generation program and integrated their video viewer and Google Docs into it to save them from bouncing from one program to another. Now, they can generate survey questions from raw video into the finished product without wasting time opening and closing several different programs. In just a few clicks, they can create the quality market research results on which our client has built their reputation.

CAdded active learning component that improves with use

We wanted our AI and ML solution to constantly learn and improve on its own and hence took content generation a step further. Our solution analyzes the language the writers use to create incorrect answers and allows the writer to rate the responses it generates. Writers can create more options, which helps the AI/ML-driven program to learn what kind of answers don't work. The writers can also edit the options, showing the app improvement opportunities. Finally, writers can select options, which informs the program that the choice was right. Our solution then uses that information to improve options in the future. That way, the program is constantly learning and improving, creating even better choices and more productivity.

Business Impact

We brought the full power of our AI and ML services to bear on this part of the project, and the results speak for themselves. Our natural language processing (NLP) solution has allowed our client to write survey questions seamlessly. It reduces newer writers' dependency on experienced writers and increases their productivity. As productivity increased, so did the cost savings.

Awarded 'Best Innovation in NLP'	33% reduction in question writing time	25% increase in output
At the Alconics awards at the AI Summit, New York	And a simplified training process	As AI-driven solutions sped up the writing delivering $500,000 in potential savings in the first quarter

Talk to us

Boosting cloud migration with inventive quality engineering solutions.

Talk to us

Challenges

The US-based leading market researcher decided to update, digitize, and migrate their processes, systems, and databases all at once, and we knew that this would challenge us as a quality engineering services company. At the same time that we were supplying NLP (natural language processing) solutions to their writing team, we also needed to validate data faster during their cloud migration. While the company constantly continued to generate files and data, we were simultaneously migrating older files and data to the cloud. Because of this, the client needed a system that would speed up the whole process, so the migration could eventually be completed. The design needed to be powerful, fast, and economical, and to do that, we needed to provide our most robust quality engineering services.

Speed up migration	Validating data quickly	Creating a generic framework	Constant database migration

• The client wanted to migrate both old and newly created data

• The process of data validation had to go faster to keep up with the data generation

• The system had to pull data from various sources

• Streamlining the process was necessary to be able to manage everything efficiently

Our Solution

Our client wanted to migrate their data to a new database, and they wanted to do it as quickly and accurately as possible. Our quality engineering consultants introduced the idea of using FitNesse because it validates data samples rather than validating each piece of data, ensuring a swift, accurate migration. We used FitNesse to build a generic framework to easily pull files and datasets from all sorts of places without needing to convert any files.

Solution Impact

Reduced effort & improved accuracy

Built a generic framework to validate data from several sources
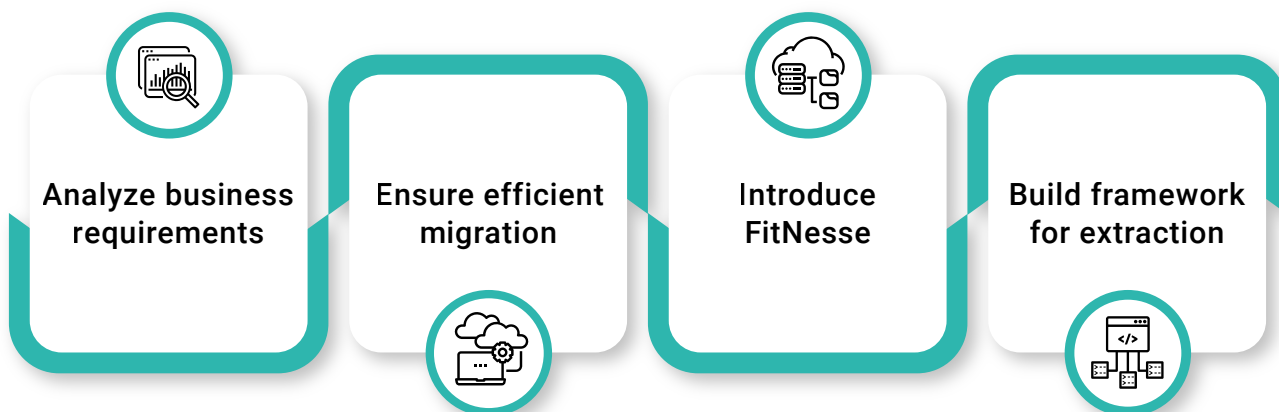
Ensured time & cost-effectiveness

Free software that the client already used was utilized

Eliminated manual interference

FitNesse was applied across the project, allowing multiple comparisons to be run at once

Our Approach

To truly imbed quality engineering for this client, we began by learning what they wanted from the cloud migration. The client wanted to bring the same innovation and efficiency they have across their business to this migration, so we introduced them to FitNesse. This free Quality Engineering (QE) software enabled the client to migrate with accuracy and speed, all while keeping costs low.

Analyze business requirements

Ensure efficient migration

Introduce FitNesse

Build framework for extraction

Getting speed and accuracy with FitNesse

The core of this project was to help our client migrate their data from one database to another. Our cloud solutions included building a regression test suite to work in conjunction with FitNesse. With this tool, our client would select sample data or files. Then the suite could identify the differences between data from the legacy tables and data from the new table. It could also compare a file with a table or another file. The data was validated, and if it failed the process, that failure was logged. Engineers would address that along with other similar files. If the sample data worked in the validation and migration, the client knew that similar data was also working. Engineers didn't have to pay attention to successful files, allowing the process to go much faster.

Saving time and money with freeware

Our client wanted to migrate their data quickly, and we tried to keep a firm eye on their budget. As an experienced QE testing company, we understand how to put the budget at the heart of our software quality engineering. We often turn to freeware for our projects because we believe in finding the best tool for the job rather than the fanciest one. FitNesse fits the brief perfectly as an open-source tool that speeds up data validation. We also utilized tools the client already had in their tech stack, including Oracle and Redshift. In that way, we provided tools that helped our client reach their goals for this project without blowing the budget.

Logging audit trails for quality control

With cloud migration support, quality is often sacrificed in pursuit of speed. We found a way to balance them by building quality control into the solution. Our automation tool includes an audit trail to enable employees to check past details while data is still being validated. We also ensured data validation could be viewed as an Excel report or on the FitNesse wiki pages so that many stakeholders could access results simultaneously in a way that made sense to them. Notably, we included a concise log of failed records. It allowed us to validate records quickly while correcting any issues as they occurred. Ultimately, it is how we ensure speedy validations with thorough quality control.

Business Impact

Our quality engineering team helped our client validate and migrate their data seamlessly. We saved time with sample data validation and the ability to input multiple comparisons at once to avoid the need to manually input data for each comparison. By using freeware and automation, we also ensured our solution was cost-effective. We enabled the client's cloud solutions to truly meet their business goals.

500,000 records validated	**1000 records migrated per minute**	**Reduced time spent on data validation**
Across Oracle and Redshift databases through our generic framework	Ensuring the entire process was completed on time	By testing sample data and files instead of whole sets

Talk to us

Supporting complex projects with top-tier software development services.

Talk to us

Challenges

Our client wanted to incorporate agile software development practices, including software application development, production application support, database development and administration, and DevOps support. They wanted this to all be done at the same time as they onboarded a new natural language processing (NLP) app and while they migrated to a new database. The US-based market researcher was on the lookout for a software development company that would match their ambition, innovation, and drive.

Updating systems	Overhauling processes	Migrating data	Tracking everything

- The client required a new application to update their writing process
- They also needed a new database to be developed and monitored
- Extensive production application support was essential as they integrated new systems and migrated everything at once
- They wanted to integrate DevOps support to ensure nothing was overlooked

Our Solution

As a software development service provider, we knew a project as complex as this one would require our most advanced services. To provide the best possible machine learning and cloud migration solutions, we built software engineering into the heart of everything we did. We assembled a team who could provide all the software application development services the client required and utilized the proper technology to ensure the whole project was completed on time and under budget. Our projects were all individually successful because we started with a foundation in software engineering.

Solution Impact

| Time & budget constraints followed	Customized for seamless integration	5% Reduction
Our software development solutions ensured resources were brought online and onboarded on time and within the budget	We evaluated and recommended Jira Service Desk as the ticket management tool	In the client's post-deployment defect density

Our Approach

Before we started the more high-profile projects for this client, we looked at the development strategies that would be needed to underpin the projects. We defined the support delivery processes and recommended a ticket management tool setup that would support these processes. We then proceeded to utilize this as we undertook the main projects.

Analyze development strategies → Define support delivery process → Ticket management tool → Provide end-to-end support
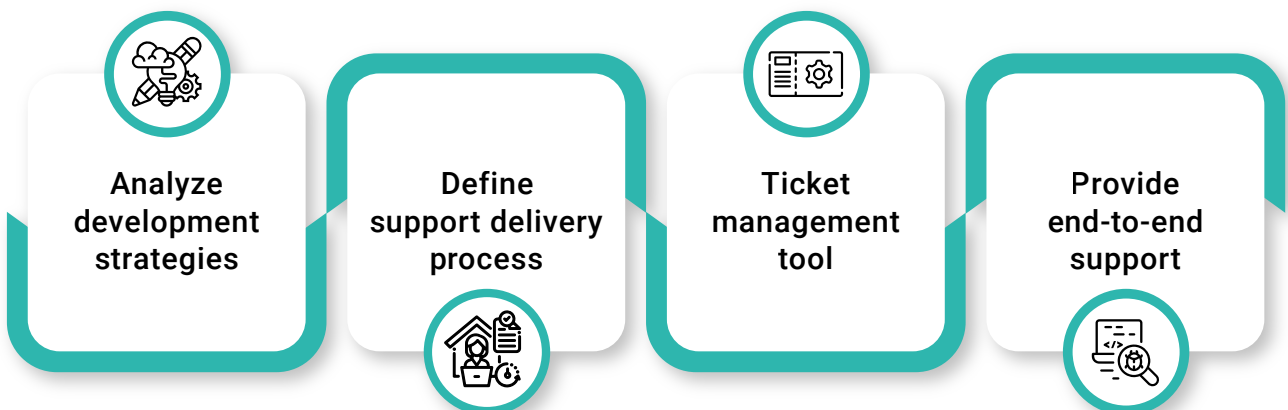
Building software engineering into the project

Our client recognized that building a firm base of software engineering into the project would make it much more successful than trying to piece several smaller custom software product development projects together at the end. That is why we began by defining the support delivery processes. We took care to align those processes with the client's end business goals. We recommended a ticket management tool, Jira Service Desk. We then helped configure and customize the client's version of the service desk to help manage tickets raised against software issues. When issues were raised, the client and our team were able to address them quickly, tracking and recording successes and solutions.

Increasing writing quality and efficiency with automation

Our award-winning software design service involved using natural language generation (NLG) to help the client's survey writers generate false or incorrect answers to their survey questions. We built an app that used Terraform scripting to automatically generate responses to survey questions. Writers could then select from these options. If the writers chose an option, the program would learn that answer was acceptable. The writer could also generate more options, which would tell the program that the options didn't work for the writer. The program would use this feedback to inform and improve future options. This constant learning and evolution means the program continued to increase the writers' productivity. The auto-generated questions even increased the productivity of new writers, as they no longer had to rely on more experienced writers for training. This project was so successful, in fact, that the client asked us to discover new ways to integrate automation into other parts of their business.

Increasing writing quality and efficiency with automation

Our client wanted to migrate to a new cloud-based database while we also automated content generation. We provided AWS cloud migration support that included software product development and enhancements using Java and Angular, with product support from Oracle PL/SQL. We also used Oracle for database administration. When we began migrating data, we built a testing suite using Manual, Selenium, and FitNesse that allowed us to validate selected test data during the migration. That way, we could verify that data could be migrated accurately, without the need to test every single file and piece of data. This sped up the process of migration significantly. The testing suite also highlighted failed files and generated reports in Excel and in the FitNesse wiki. That gave us the necessary clarity and allowed us to manage the quality of the data during the migration without slowing the whole process down.

Business Impact

Because they valued our expertise and ambition as a custom software development firm, our client enjoyed numerous successes. Our NLP services helped reduce the time it took to generate questions, from 10 minutes to 6.7. Our cloud migration support allowed the client to validate 500,000 files at a rate of 1,000 files per minute. These successes were all because of the software engineering we instilled at the beginning. Those practices led to their own successes as well, including:

95% SLA adherence to tickets

And post-deployment defect density fell to below 5%

AI solutions & predictive analytics

Implemented for survey response generation, which inspired the client to find more uses for predictive analytics in their processes

Automated DevOps processes with Terraform

By testing sample data and files instead of whole sets

Talk to us