



Harvard Undergraduate Data Analytics Group

PREPARED FOR

PREPARED DATE

Scan Global Logistics

September 5, 2023

ENGAGEMENT TIMEFRAME

Sept-Dec 2023

Harvard College Data Analytics Group (HDAG) is a non-profit student organization at Harvard dedicated to helping organizations make smarter and more data-driven decisions. We assist companies in achieving their strategic goals by translating their data into meaningful and actionable information. We aim to pair teams of well-trained, highly-motivated Harvard students with our partners, specifically focusing on associates and analysts in industries where they have experience or interest, in producing the highest quality of work possible. From data collection to strategy implementation, we want to be there every step of the way to help organizations make data their new superpower.

We competitively recruit undergraduate students at Harvard with demonstrated competence, dedication, and problem-solving skills, many of whom have prior experience working in top management consulting or data science teams. All our team leaders have experience working in or leading data science teams at Fortune 500 companies, and our board of technical advisors includes members of the Harvard faculty. Each team, composed of around seven to eight Harvard students, commits over 600 hours to a case over 10 weeks.

We enjoy different challenges and work with a diverse set of organizations and problems. Our clients range from local businesses to Fortune 500 companies to international non-profits. Using our capabilities in visualization, machine learning, and predictive analytics, among others, we help organizations diagnose problems and identify strategies across their sales, marketing, financial, or operational functions. Client confidentiality is our utmost priority.

Proposal for Scan Global Logistics

Summary:

HDAG will work on a case with the Scan Global financial team to help them optimize account payables. The AP team works to satisfy accounts payable in accordance with what has been “protected” by the operations team. A bill that has been “recapped” by the ops team is matched with bills coming in from vendors based on vendor #, invoice #, invoice amt, ref #, etc.) This matching is meant to be automatic, however, bills sometimes have to be manually reviewed and matched, causing payment delays. Scan Global would like to better understand the difference in efficiency between ingestion methods (EDI, OCR, & manual entry), as well as which vendors are causing the most slowdowns (time and number of touches).

Dataset:

Scan Global has recorded data (in spreadsheet form) of what touches each invoice has been through and with whom. For each day, the “Current Day” tab shows who entered the invoice, who the last touch was with, and when. There is also data about completed records to calculate the number of touches, and how long an invoice took to get processed.

Tasks:

HDAG could work in a number of areas:

1. Vendor analysis. HDAG will deploy statistical analysis and machine learning modeling to identify vendors causing the most delays in the invoice processing cycle. We will analyze vendor classes and summaries to pinpoint areas of improvement
2. Ingestion method efficiency analysis. HDAG will deploy statistical analysis machine learning models to evaluate the efficiency of different ingestion methods (EDI, OCR, & manual entry) in terms of time and number of touches. This will include feature importance analysis (looking at which methods have the most significant impact on the processing time) as well as predictive models (to forecast the efficiency of various ingestion methods).
3. Visualizations. HDAG will develop a variety of visualizations to depict the efficiency of different ingestion methods and vendor performance.

Main Contacts:

Doug Berry, North American Chief Financial Officer [DBerr@scangl.com]

Engagement Timeline

Dates	Week	Tentative Schedule
9/18-9/22	0	Mohan and Doug will be in contact to finalize work expectations and project details and to obtain the dataset
9/25-9/29	1	<p>The HDAG Case Team Leader (CTL) will have a call with the Scan Global team to meet the team, better understand work expectations, and align goals for this semester (in terms of research questions, final format of deliverables, etc.)</p> <p>After the meeting, CTL will map out the weekly work plan for the semester: from both the perspective of technical execution and business analysis.</p>
10/2-10/6	2	CTL will introduce the project and the work plan to the rest of the case team and start delegating tasks to each individual. (In each team we have data scientists who are proficient in Python, R, SQL, and other analytical tools as well as business analysts who have experience working in the industry).
10/9-10/13	3	<p>Every member of the case team will follow the work plan, and start the data analytics, which includes every aspect of the data pipeline: data transferring, cleaning, exploration, modeling, visualization, etc. Every week, each CTL will update the client liaison on the progress the case team has made over the past week. There is also a weekly meeting between the case team where each member will discuss their work with the others, and the CTL will delegate work for next week.</p>
10/16-10/20	4	
10/23-10/27	5	

10/30-11/3	6	Wrap up the work for the first half of the semester, and prepare for the midway presentation to Scan Global which can include a technical product (algorithm, statistical model, web app) and a business presentation (slides).
11/6-11/10	7	Midway presentations with Scan Global: Each team will present their findings and recommendations from the first half of the semester to the client team. Each HDAG case team will follow up with any questions the Scan Global team might have during or after the presentation.
11/13-11/17	8	After the midway presentations, the CTL will integrate comments or suggestions from the client team into the work plan. Each CTL will list out the remaining questions or technical tasks for the latter half of the semester and delegate them to each individual on the case team.
11/20-11/24	9	
11/27-12/1	10	
12/4-12/8	11	The case team will summarize their work for the entire semester and give a final presentation to the client. This will include both technical deliverables and the business presentation. HDAG team will follow up with any questions the client business team might have during or after the presentation.
12/11+	Post-Project	HDAG team will follow up with Scan Global on the implementation of suggestions and deployment of analytical tools. We will ask for feedback on their work for the Spring of 2024.



Pricing

- Engagement Timeline: 12 weeks, September - December, 2023
- Semester Case Fee: \$10,000