Department of Business and Law

MSc Business Analytics

MSCBA

IS6611 – APPLIED RESEARCH IN BUSINESS ANALYTICS

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Submitted On: 20-07-2024

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1. EXECUTIVE SUMMARY

Retainify: A People Analytics Platform to Empower HR and Reduce Attrition

As Jeff Bezos rightly stated, "An organisation's strength lies in its people." When top talent leaves, businesses suffer from lost productivity, high replacement costs, and a weakened workforce. Existing Human Resource (HR) tools often lack the insights needed to proactively address employee churn.

This is where Retainify, a comprehensive people analytics platform designed to empower HR leaders and combat employee attrition, comes into action. Retainify leverages advanced data analytics to identify company-specific factors driving turnover. It goes beyond basic demographics, adhering to the AI Act and Equality Act of Ireland, to uncover hidden patterns and trends within each department. It combines innovative technologies like data visualisation, predictive analytics, machine learning algorithms, and data normalisation techniques. This powerful suite helps HR pinpoint major problem areas within the organisation and identify potential flight risks. Retainify goes beyond just cost savings. It proudly aligns with four Sustainable Development Goals (SDGs): Decent Work and Economic Growth (SDG (Sustainable Development Goal) 8), Industry, Innovation, and Infrastructure (SDG 9), Reduced Inequalities (SDG 10), and Partnerships for the Goals (SDG 11). We believe employee retention has a positive global impact. By understanding employee retention factors and employing data-driven strategies, Retainify empowers HR to build a more engaged and stable

workforce. This translates to greater business continuity and long-term success. We are committed to continuous innovation, with features like automated promotion nominations on the horizon, making Retainify a unique product from its competitors.

1.1. SALES PITCH

Retainify: The Future of HR Empowerment

Unpredictable talent churn can erode institutional knowledge, disrupts workflows, and hinders your ability to achieve strategic goals. So, what to do?

Retainify, a comprehensive people analytics platform, empowers Human Resource (HR) leaders to proactively reduce attrition and unlock the full potential of their workforce, especially retaining the top talents. As every disease cannot have one medicine, similarly every organisation may not be having the same problem areas. This is where Retainify differs from its competitors. Its predictive model uses its client's (employee) data to pinpoint company specific attrition drivers.

Retainify is more than just a tool. It is a strategic partner that helps you move beyond guesswork. It leverages predictive analytics powered by machine learning (Python) to identify churn risk factors and prioritise high-potential employees. It aids the HR team to deep dive into employee sentiment, churn drivers, and team dynamics python visualisations. Be it addressing biases within your talent management practices or fostering engaged and inclusive workforce, Retainify does it all. With exciting prospects including promotion nomination coming soon, Retainify aims to build a future where HR can truly empower their workforce.

But how will it benefit its core users (HR Leaders)?

Retainify can help to:

- Minimise the financial burden of recruitment, onboarding, and lost productivity due to employee turnover.
- Focus resources on attracting top talent by understanding the needs and motivations of your ideal candidates.

- Enhance employer branding by creating a positive work environment that fosters loyalty and reduces voluntary turnover.
- Gain data-driven insights to inform strategic talent management decisions, ensuring long-term business success.

Do not wait until talent walks out the door. Schedule a demo today and see how Retainify can empower your HR team to build a thriving, future-proof workforce.
Invest in Your People, Invest in Your Future – Retainify

1.2. BUSINESS MODEL CANVAS

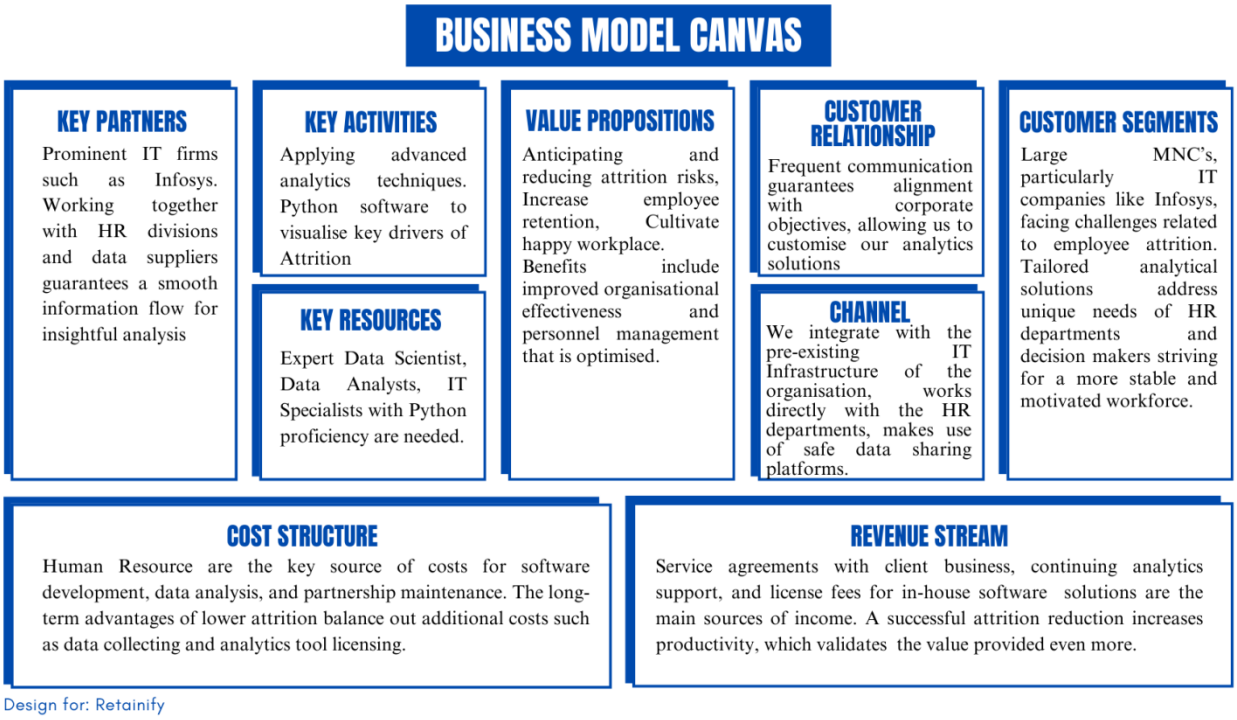

Image 1. Business Model Canvas

2. PROBLEM

2.1. IDEA CONTEXT

Attrition in the corporate environment is more than a mere fluctuation in employee numbers. It represents significant disruption impacting all facets of the organisation, from casual interactions in coffee shops to strategic discussions in boardrooms. The financial implications

of replacing an employee are substantial. Gallup's research indicates that the cost of hiring, onboarding, and training a replacement can be as much as double the employee's annual salary. Along with straining financial resources, it also tightens budgets, hampering organisational growth. Despite rigorous selection processes, Human Resource (HR) departments continually face challenges with unpredictable attrition rates. The departure of top performers leaves critical significant gap, disrupting team dynamics and requiring rapid realignment of skills. Attrition should be recognised as a pivotal business concern, not merely an HR statistic. For example, when an experienced coder exits, projects can come to a standstill, highlighting the immediate and tangible impact of workforce changes.

But why does an employee feel the need to leave the present organisation? This research led to the discovery of certain factors causing this change, known as employee attrition drivers. It is also known as churn factors, flight reasons, or employee turnover. Though there are certain common factors which lead to employee attrition in most of the organisations, however, every organisation will have a different threat level to those drivers. The most common exit factors are noted to be lack of engagement, less compensation and benefits, disturbed work-life balance, poor organisational management, unhealthy organisational culture, and so on. Though the list is long, our study suggests that attrition is not inevitable. By addressing the root causes of these problem areas, and implementing proactive strategies, successful retention can happen, and businesses can sustain.

2.2. PROBLEM DESCRIPTION

Employee attrition is a major worry for firms due to the large financial and non-financial expenses associated with it. It incurs costs for recruitment, onboarding, and training, as well as intangible costs such as skill loss, reduced morale, and diminished engagement among existing workers. Hiring, onboarding, training, and recruitment fees are among the associated costs, which range between 50% and 200% of an employee's yearly compensation. The departure of experienced individuals can result in project delays, poorer production, and interrupts creativity and decision-making. Negative effect on customer relationships and missed opportunities makes it worse. To overcome these obstacles, attrition prediction algorithms become an indispensable instrument, offering significant insights into employee behaviour, spot patterns in attrition, and allow proactive steps aimed at retaining top personnel.

Unwanted employee attrition is a major concern for corporates in the dynamic modern workforce. Replacing an employee can cost six to nine months' income, according to studies, while strong performers can cost twelve to twenty-four times their yearly salary to replace because of lost knowledge, productivity, and customer relationships (HR Magazine - July 2000: Capturing Turnover Costs, no date). The financial strain disturbing team chemistry and the loss of vital institutional knowledge generate a talent pool imbalance threatening firm continuity and future success.

HR professionals are critical components of recruiting and bringing on new personnel, but with unpredictable employee turnover, taking proactive approaches to lowering the risks and effects of attrition becomes vital. Understanding the multiple factors that influence employee retention and addressing them with data-driven strategies and tools enables businesses and managers to cultivate more engaged and stable employees, fostering long-term success.

2.3. MOTIVATION BEHIND ADDRESSING THE PROBLEM

(i) The study of Business Analytics has transformed our team into problem solvers. The above-mentioned idea context and problem description reflect the seriousness and damage that attrition can bring to any organisation. Thus, with a determination to address this pervasive threat, we decided to create a solution truly empowering the HR department and the workforce, by minimising the attrition rate, helping companies keep their top talents. Not only will it provide us with the satisfaction of addressing the identified issue but will also enable us to make a positive impact with our available skillset.

(ii) Secondly, as attrition is a generic issue, there are certain solutions available in the market. So, taking up such an issue intellectually challenged us to create a tool that is different and better than its competitors with respect to cost, user experience, problem solving, and business continuity.

(iii) With ever-evolving technology, we understood that the dynamic environment and experience that we will be exposed to will surely be a learning curve for us. Not only did it improve our collaboration and communication skills but has showed us new paths that leading to career growth and development.

(iv) Finally, we wanted to see the bigger picture by taking up this problem. Our problem strongly aligns with four of the Sustainable Development Goals (SDGs) namely, decent work and economic growth (SDG 8), industry, innovation, and infrastructure (SDG 9), reduced inequality (SDG 10), and partnerships for the goals (SDG 11). Working on this matter also includes understanding how a real-world business analyst functions in gathering data, interpreting trends, and providing unique solutions. Thus, our motivation for addressing the matter goes beyond just fixing problems. Our ultimate motivation was to use this opportunity to harness our analytical skills, collaborative spirit, and desire to learn to create tangible improvements that contribute to the organisation's success.

2.4. SWIMLANE DIAGRAMS

2.4.1. AS-IS SWIMLANE DIAGRAM

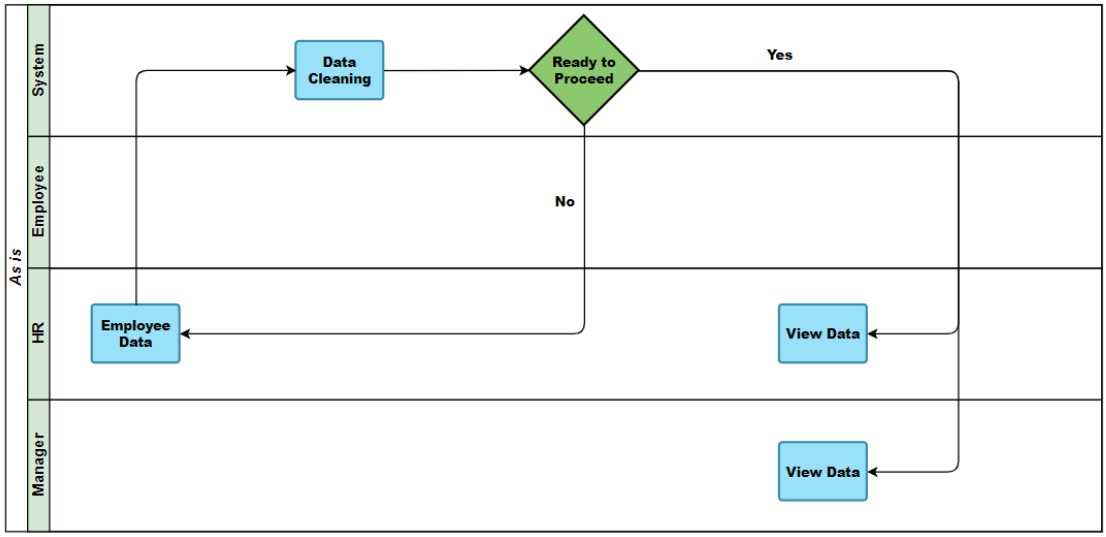

Image 2. As Is Swim Lane Diagram

2.4.2. TO-BE SWIMLANE DIAGRAM

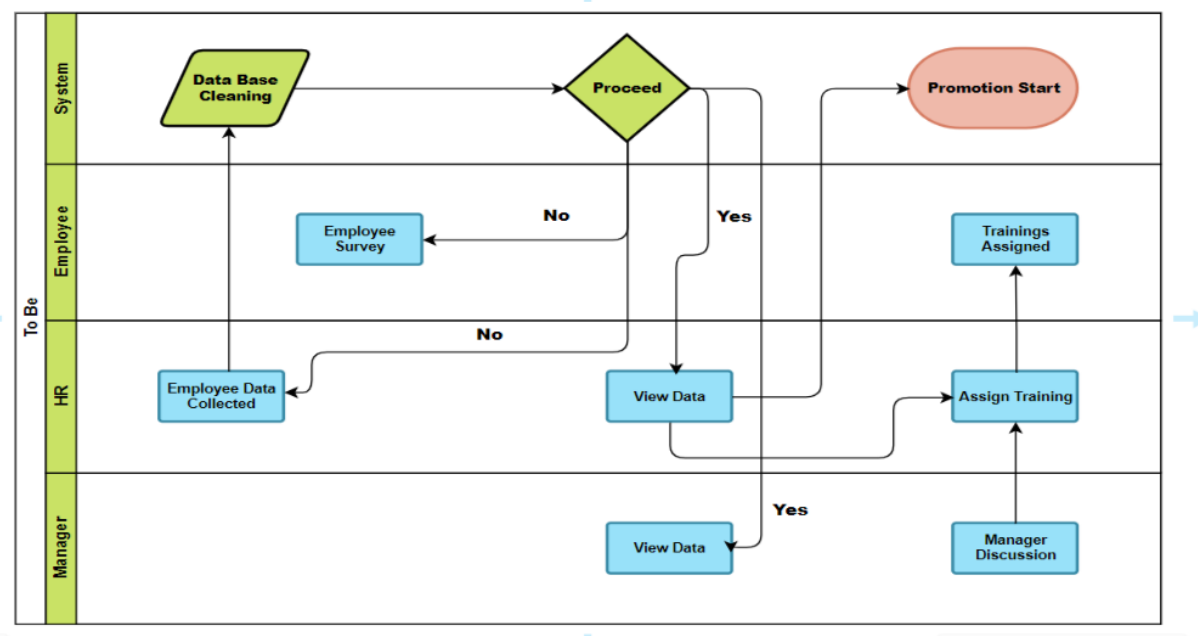

Image 3. To Be Swim Lane Diagram

3. SERVICE - RETAINIFY

The solution created to address the employee turnover is named as 'Retainify.' The proposed tool focuses on the main sources of attrition at its current state which will be further strengthened to suggest promotions and increments in the later stages. The goal is to create a data-driven method that evaluates employee data and recommends worthy candidates for advancement. By automating the process of suggesting individuals for promotions, the algorithm improves management's workflow and reduces the manual labour necessary for performance evaluations. A data-driven strategy reduces prejudice and guarantees fair employee evaluations based on performance indicators, leadership characteristics, skill development, and project accomplishment.

The algorithm helps HR managers make informed promotional decisions, minimising the strain involved with manually examining performance data. However, Retainify's primary focus would be to deliver company specific key attrition drivers and scores. This would help the management to pinpoint their problem areas and work towards organisational growth, keeping their highest performing players with them simultaneously.

Retainify uses data analytics and visualisation concepts, machine learning algorithms, normalisation techniques, and predictive analytics to examine several characteristics that influence employee success.

3.1. ANALYTICAL TECHNIQUES

As we discuss the significant negative impact of employee attrition on businesses, especially those of high-performing players, the solution, Retainify, proposes using analytical techniques to address this challenge. Analytical tools and techniques such as python and machine learning are being used for the completion of this project and are crucial in many aspects.

(i) Need For Analytical Techniques:

Analysing vast amounts of employee data including demographics, performance reviews, compensation, and engagement surveys are being done using the machine learning algorithms in python. It can identify patterns and trends associated with employee departures. These algorithms can then be used to predict which employees are at a higher risk of leaving, allowing companies to proactively intervene and address potential issues.

Analysing this data can reveal the underlying reasons behind employee departures. Techniques like sentiment analysis in python can help extract insights from textual data, while statistical analysis can identify correlations between specific factors and attrition rates. Companies can design and implement targeted interventions post identifying the key drivers of attrition. This would improve compensation and benefits packages, enhance training and development opportunities, and foster a more positive work environment. The effectiveness of these interventions is also to be analysed to measure their impact.

A flask-based web application is used to visualise complex employee data, allowing HR professionals and decision-makers to gain deeper understanding of trends, patterns, and relationships within the workforce. This data-driven approach can inform strategic decision-making regarding talent acquisition, retention, and development. Thus, with this tool we aim to replace intuition with data-driven insights.

(ii) Reason For Analytical Tools Selection:

The tools being used in the project are selected for the unique strength and functionalities that they offer. Another reason they are selected is because they can be integrated and used together in one system without any compatibility issues for addressing Retainify's goal.

Python's powerful machine learning algorithms are ideal for building predictive models that can identify at-risk employees. As we are working with large datasets that require manipulation and data cleaning, python's vast library of data analysis tools and functionalities support the progress of the project. The user-friendly platform will allow HR professionals and managers to navigate and view the dashboards by selecting any of the options from a home button without needing any coding knowledge. When complex employee data is needed to be presented to stakeholders, they enable the creation of insightful dashboards and reports for effective communication. They even offer pre-built connectors to various HR systems and databases, facilitating data integration and analysis.

Additionally, the programming expertise developed during the course supported us to comfortably work and design the model with these languages. By leveraging these analytical techniques and tools, Retainify can empower companies to gain a deeper understanding of their workforce, proactively manage attrition, and create a work environment that fosters talent retention and organisational success.

3.2. HIGH-LEVEL ARCHITECTURE

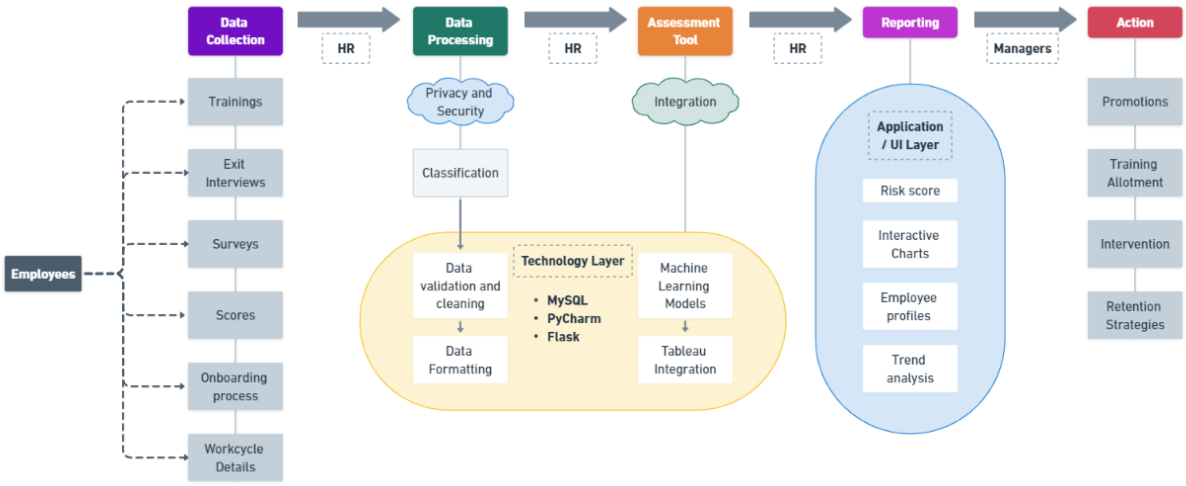

Image 4. High-Level Architecture

(i) Phase 1: Data Collection

In this data acquisition phase as seen in 'Image 4', the focus shifts towards garnering employee-centric insights through engaging methods. High-quality surveys tailored to each employee featuring interactive polls, quizzes, Q&A sessions using storytelling narratives with gamification elements, aim to capture attention and boost engagement by at least 30%. This approach reveals valuable qualitative data on employee sentiment, engagement, and satisfaction. To capture data from less engaged users, we can track engagement metrics like login frequency, time spent, content views and clicks on the platform. Training programme completion rates and performance scores can also offer valuable insights. Integration with existing HR systems allow us to collect data on employee work cycles, personal details, work hours, performance reviews, and project involvement. Furthermore, capturing data during the onboarding process, along with exit interviews, provides invaluable insights for sentiment analysis and identifying recurring retention challenges, respectively. This comprehensive data acquisition strategy lays the groundwork for subsequent analysis and intervention phases, fostering a data-driven approach to employee retention.

(ii) Phase 2: Data Processing and Classification

As seen in 'Image 4', within this phase the data management team will be responsible for receiving all collected employee data. To ensure the absence of bias and maintain objectivity throughout the analysis process, managers and the HR team should not be involved in this stage. The data management team will then categorise and curate the data based on its relevance to the retention analysis. They perform a meticulous data preparation process, crucial for accurate employee retention analysis. This involves 'data wrangling' with MySQL, Python (NumPy and Pandas) to clean, transform, and validate the data, ensuring its consistency and accuracy. Furthermore, qualitative data received from employee surveys will undergo analysis using Natural Language Processing (NLP) techniques. This allows the data management team to extract themes and categorise the textual data into relevant topics. This process enriches the overall dataset, fostering a more comprehensive understanding of employee sentiment and potential risk factors influencing retention. This meticulous approach to data preparation, free

from bias, lays the foundation for accurate employee retention analysis, paving the way for effective and informed decision-making.

(iii) Phase 3: Analytics and Integration

In this critical phase as seen in 'Image 4', our custom-built predictive analytics tool, meticulously designed and developed in-house using Python libraries like scikit-learn, is fed with the prepared data. This tool leverages innovative machine learning algorithms, such as Random Forest and Logistic Regression, which are specifically chosen and tailored to identify patterns and predict flight risk, the likelihood of an employee leaving the organisation. The advantage of this custom approach is two-fold as we can select and configure the algorithms to specifically address the company's unique employee retention challenges and company culture. The algorithm models used in the tool are trained on processed employee data, ensuring a higher level of accuracy and generalisability to the workforce. The output from these models is then translated into insightful dashboards using Python, a powerful data visualisation tool. These interactive dashboards present risk scores for individual employees, trend analysis, employee profiles, and even skills gap identifications.

(iv) Phase 4: Reporting and Action

This stage as seen in 'Image 4', equips managers with granular visibility into their teams through personalised dashboards. These dashboards leverage employee-specific data, enabling proactive identification of potential flight-risk individuals. Our predictive tool categorises employee attrition likelihood, shows patterns and trends that equip managers to implement targeted interventions. These interventions aim to elevate employee experience and proactively address concerns before they escalate.

The tool goes beyond just risk scores. Managers gain valuable insights like:

(i) **Employee Sentiment Analysis:** This helps understand overall employee satisfaction and identify potential areas of concern based on anonymised qualitative data.

(ii) **Skills Gap Identification:** Uncovering potential skills gaps within teams allows for targeted training and development opportunities.

(iii) **Peer Comparisons:** Benchmarking individual employee performance against relevant team or department averages fosters a sense of healthy competition and growth.

(iv) **Engagement Trend Analysis:** Tracking employee engagement levels over time helps identify individuals whose engagement might be declining, allowing for early intervention.

These data-driven insights empower managers to craft personalised retention strategies that cater to the unique needs and desires of each high-performing, low-risk employee. This proactive approach allows managers to intervene before employee morale dips or flight risk becomes a significant concern. This shift empowers managers to create a more positive and engaging work environment.

3.3. DATASETS

This project required a detailed dataset containing the aspects behind employee attrition and promotion. It uses two datasets from Kaggle, one based on attrition and the other based on the promotion (for future implementation). The attrition dataset spans over 1,400 values and 35 columns where each column gives varied information about the employees consisting of technical and personal factors. It is structured to encompass both categorical and numerical variables including demographics such as age, gender, and educational qualifications.

Various employment-related features like job role, job level, department, and total years in the organisation provide a nuanced perspective on attrition trends across different organisational segments. Some performance metrics like job involvement, performance rating, years since the last promotion, and overtime are included. Salary details based on monthly and daily factors are also present. These features add a layer of depth to the dataset for the data of each employee that enables a thorough examination and analysis of the correlation between employee performance and attrition. There are about 15 numerical variables or columns that can each be used to create quantifiable insights by combining related columns or singular variables as numeric filters. Some more numerical columns are present but are categorical as they describe values in categories or ratings ranging from 1 to 4 where 1 being the lowest and 4 being the highest.

The promotion dataset, though kept as a strong future aspect, can be used for predictive analytics where the final variable of whether a promotion is received by the employee or not can be predicted by the model. Various promotional factors like awards won, number of trainings completed, average training score are included. Previous training rating is another major variable in the dataset that can define the promotional chances for an employee.

These dataset's relevance extends to HR professionals, organisational psychologists, and management consultants seeking to create optimised talent retention strategies. Hence datasets like these serve as valuable resources for organisations aiming to understand and address employee experience.

3.4. USER REQUIREMENT

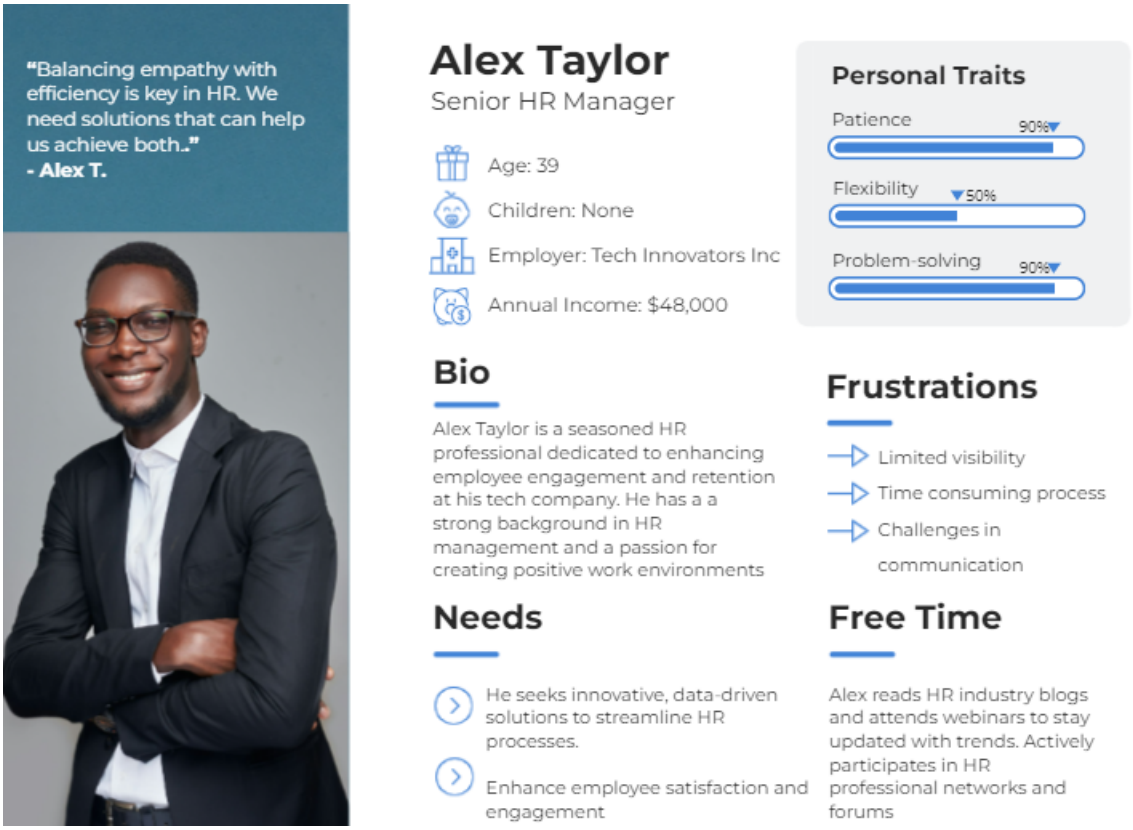

Image 5. HR Persona

Alex Taylor, a 39-year-old Senior Human Resources Manager is shown in 'Image 5'. He works for a mid-sized tech company based in a bustling metropolitan area. With a bachelor's degree in human resources management and over 8 years of experience in HR roles, Alex is passionate about fostering a positive work culture and supporting employee development. Alex faces challenges related to attrition within his organisation, including identifying the root causes of attrition, implementing effective retention strategies, and fostering a positive work culture. [Persona created using ChatGPT]

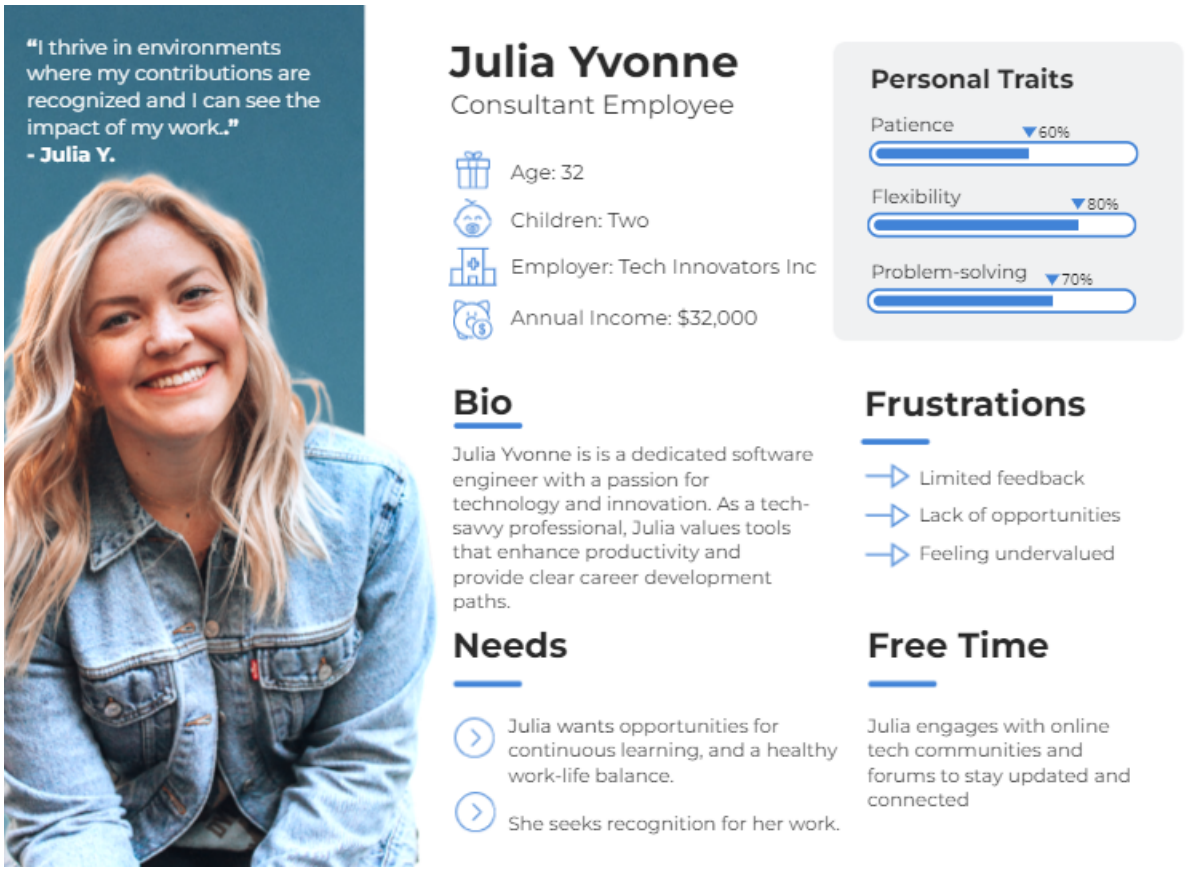

Image 6. Employee Persona

Julia Yvonne is a dedicated software engineer with a passion for technology and innovation. She seeks recognition for her work, opportunities for continuous learning, and a healthy work-life balance. As a tech-savvy professional, Julia values tools that enhance productivity and provide clear career development paths. Retainify's comprehensive platform addresses her needs by offering engagement surveys, recognition programs, career development tools,

feedback mechanisms, and wellness resources, helping her stay motivated, engaged, and committed to his company. [Persona created using ChatGPT]

3.5. EMPATHY MAP

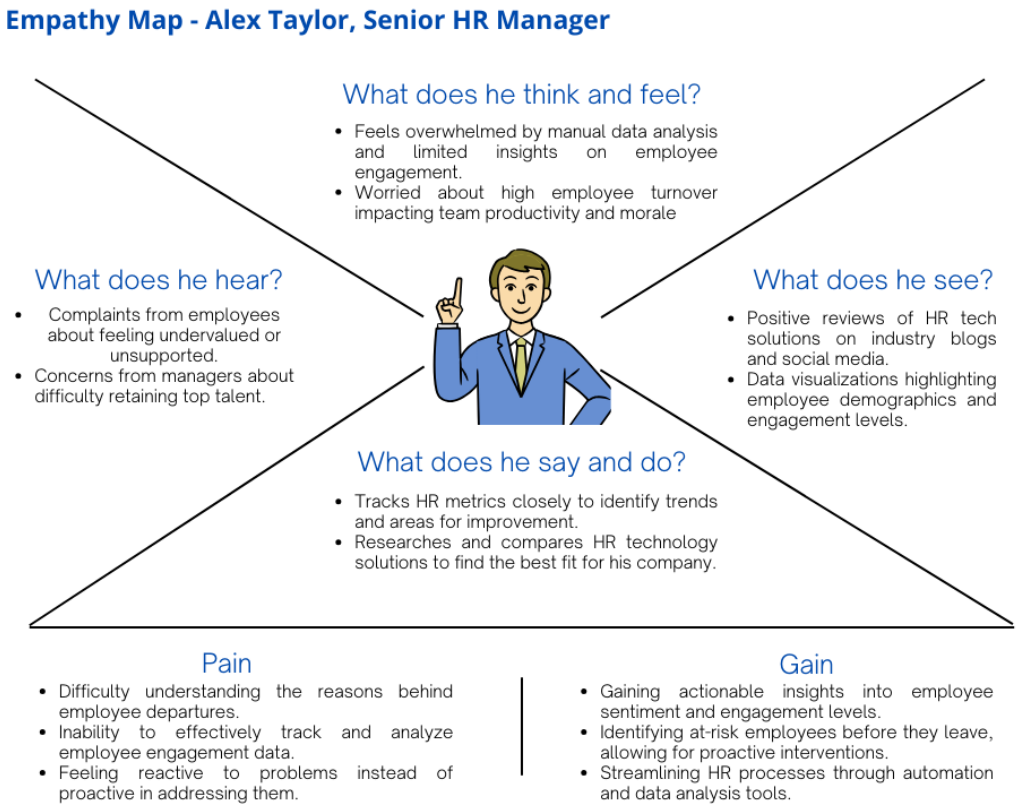

Image 7. HR Empathy Map

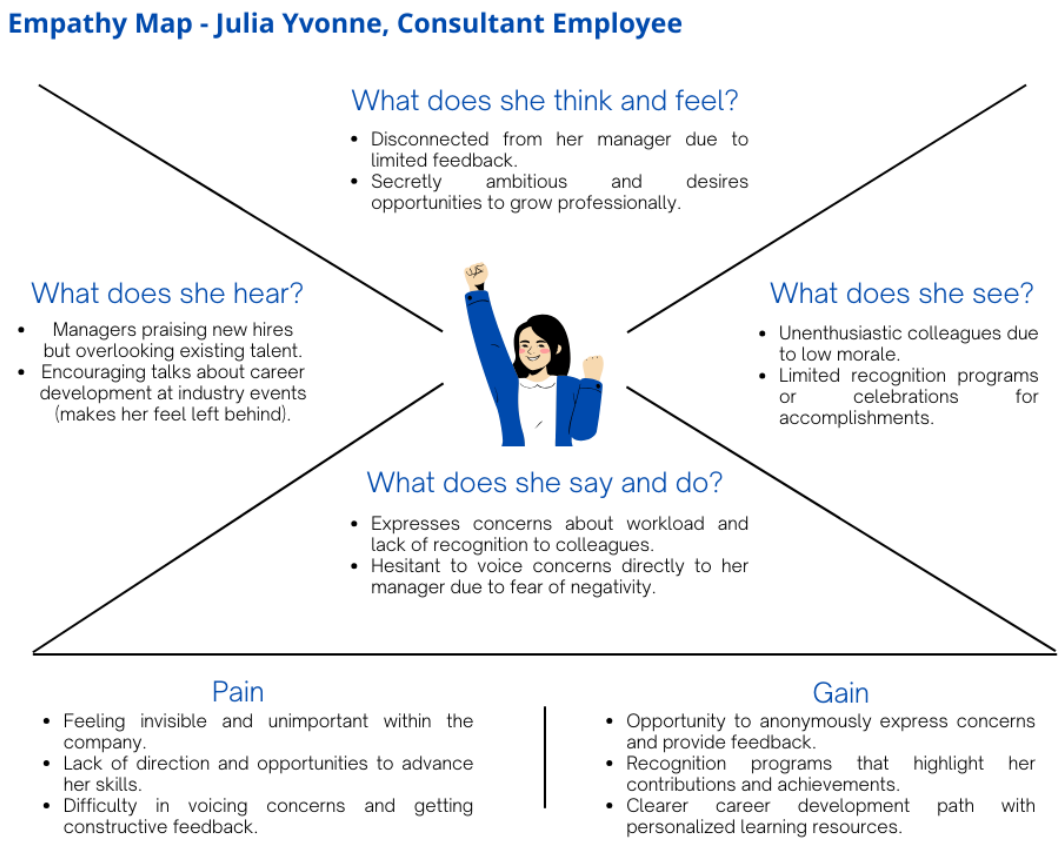

Image 8. Employee Empathy Map

3.6. FUNCTIONAL REQUIREMENTS

3.6.1. IMPLEMENTED FUNCTIONALITY

(i) User Authentication and Access Control:

Users (HR members, analysts, etc.) should be able to log in securely.

Role-based access control: Different user roles (admin, analyst, HR) with varying permissions.

(ii) Employee Data Integration:

The system should integrate with existing HR databases or APIs to retrieve employee data.

Data sources include employee profiles, performance metrics, tenure, and historical attrition data.

(iii) Dashboard Visualisation:

Display an intuitive dashboard with visualisations (charts, graphs, etc.) to present key insights.

Metrics to visualise are attrition rates, reasons for leaving, department-wise trends, etc.

(iv) Attrition Prediction Model:

Develop a machine learning model to predict future attrition.

Input features: employee demographics, performance, engagement, etc.

Output: probability of an employee leaving within a specified period.

(v) Top Reasons for Attrition:

Identify and display the top reasons why employees leave.

Factors may include work-life balance, growth opportunities, compensation, etc.

It can also have Push vs Pull factors which may include employees leaving because of personal reasons or because of the challenges faced with managerial decisions etc.

(vi) Promotion Predictor Algorithm:

Implement an algorithm to predict employees eligible for promotion.

Consider performance metrics, tenure, and other relevant factors.

Generate a list of potential promotion candidates.

3.6.2. FUTURE FUNCTIONALITY

(i) Alerts and Notifications:

Notify HR or managers when attrition risk exceeds a threshold.

Alerts for potential mass disconnects or sudden spikes in attrition.

(ii) Department Insights:

Drill down into specific departments to understand attrition patterns.

Identify high-risk departments and take targeted actions.

(iii) Culture Enhancement Recommendations:

Provide actionable recommendations to improve workplace culture.

Suggestions for team-building activities, mentorship programs, etc.

(iv) System Performance and Scalability:

Ensure the system can handle a growing employee base.

Response time: < 3 seconds for dashboard loading.

Scalability to support at least 500 concurrent users.

(v) Availability and Security:

System uptime: 99.9% availability.

Robust security measures to protect employee data.

(vi) Documentation and Training:

Document functional requirements, system architecture, and user manuals.

Conduct training sessions for users.

(vii) HR Policy Review:

Provide tools for reviewing and updating HR policies and practices.

(viii) Integration Capabilities:

Include integration capabilities with existing HR systems and software.

(ix) Recognition and Rewards:

Develop programs for recognising and rewarding employee contributions and achievements.

3.7. ER DIAGRAM

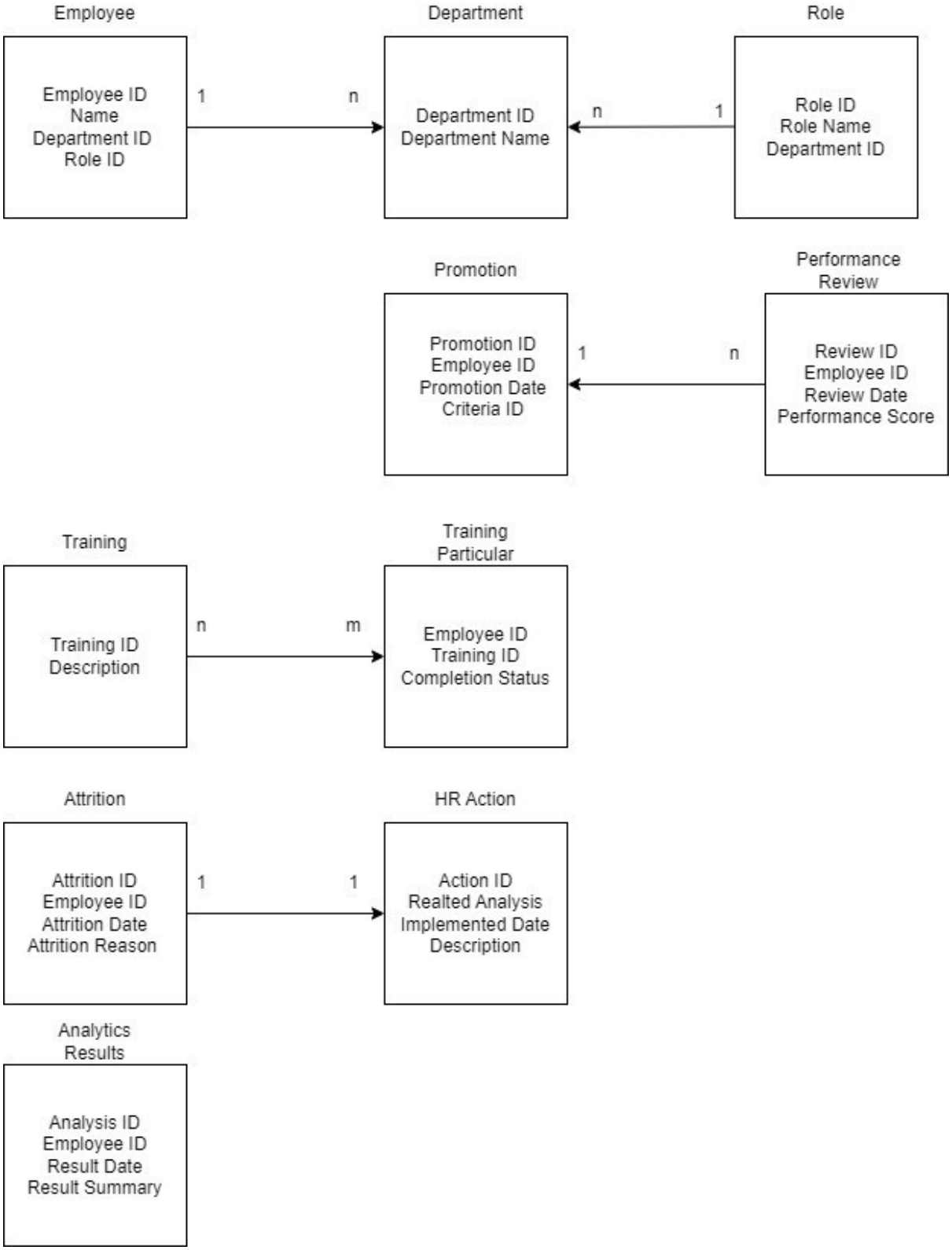

Image 9. ER Diagram

3.8. INCORPORATING SUSTAINABLE DEVELOPMENT GOALS

Our approach to addressing employee attrition, strongly aligns with the Sustainable Development Goals (SDGs). They focus on promoting long-term, inclusive, and sustainable economic growth, full and productive employment, decent work for all, industry, innovation, and infrastructure, reduced inequality, and goals partnership.

An analysis of how the concept corresponds to the United Nations' Sustainable Development Goals targets can be seen below.

Sustainable Development Goal	Key Focus/Objective	Program Details
SDG 8.1	Happy Work Environment	Use data analytics to detect and solve attrition causes, aligning with SDG 8.1's aim of supporting long-term economic growth and providing decent work opportunities.
SDG 8.2	Data-Driven Decision-Making	Boost overall organisational productivity through data-driven automation of employee advancement nominations, recognising efforts via promotions and compensation.
SDG 8.5 (1)	Equitable Career Advancement	Automate promotion nominations via data analysis to address inequalities in advancement opportunities, creating a fairer work environment.
SDG 8.5 (2)	Employee Retention	Retain competent personnel, reducing turnover and indirectly minimising unemployment to foster economic stability.
SDG 8.6	Skill Development	Detect skill shortages using data analytics and provide staff with tailored training options, emphasising ongoing skill development to meet fast-changing market demands.

SDG 8.8	Transparent and Fair Work Environments	Encourage transparency and fairness in the workplace.
SDG 9.1	Resilient Infrastructure	Reduce staff turnover with data analytics, demonstrating a commitment to resilient infrastructure, inclusive and sustainable industrialisation, and fostering innovation.
SDG 10.4	Reducing Disparities	Identify turnover impact on remaining workers, aiming to reduce disparities in workload and responsibility.
SDG 17.6	Collaborative Partnerships	Foster multi-stakeholder partnerships by involving finance, HR, and other departments to assess and resolve attrition comprehensively.

Table 1. List of SDGs

4. ALPHA PROTOTYPE

The alpha prototype of Retainify, provides promising solutions to the attrition problems. This preliminary version of the product highlights several important core capabilities, like being able to predict when an employee is at risk of leaving the company and managing which employees should be promoted. It does this through a combination of predictive modelling (using machine learning techniques) and the dashboard display of user-friendly HR analytics. This section aims to explore in greater detail the various parts that make up the alpha prototype of Retainify and explain the path taken to create it.

The Alpha Prototype consists of two main parts: Prediction Models and Analytics Dashboard.

(i) Prediction Models

The centrepiece of the Alpha Prototype is the Attrition Prediction Model, which uses machine learning algorithms to forecast the probability that an employee will leave the organisation. The model is built with the Random Forest Classifier algorithm and uses a set of features to

make its predictions, including some typical HR features like age and job role as well as some more unusual ones like overtime. To understand how well the model works, the team used some basic means of algorithmic validation—a Confusion Matrix and an ROC-AUC curve. These are standard ways of evaluating any binary classification model types, and they get us to the same place, telling us that in general, our model is right about min 90 percent of the time.

(ii) Analytics Dashboard

In addition to the forecast models, we have an analytics dashboard equipped with powerful visualisation tools that our human resources professionals can use to view the most important kinds of workforce metrics. This user-friendly interface empowers HR professionals with key metrics visualisation, including attrition rates, promotion trends, and department-wise analysis. And because it is interactive, you could do what is now called "data planning" to properly examine these arresting visuals to see what makes them tick and to "listen" as they, and your audience, might tell you something meaningful.

4.1. TECHNICAL ROADMAP

The technical roadmap guides the development process towards achieving a fully functional product.

Development Timeline and Gantt Chart

The Gantt chart provides a high-level overview of the tasks, timelines, and milestones.

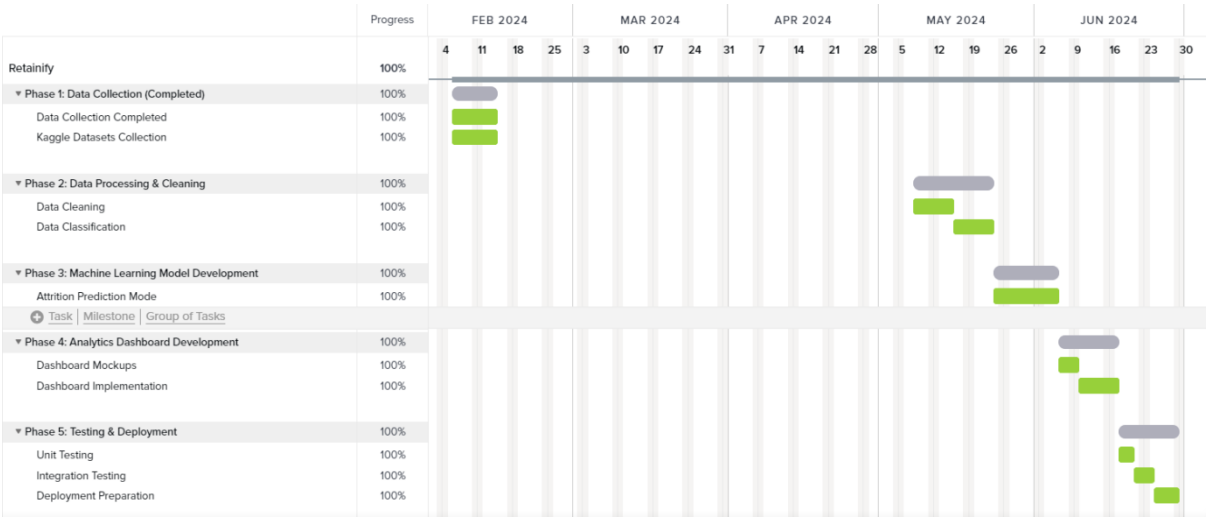

Image 10. Gantt Chart

The project has been carefully split into stages to develop a system for predicting employee turnover and an analytics dashboard. The project timeline spans from May 8, 2024, to June 30, 2024, with the deadline set for July 1, 2024. Let us delve into each phase and its specific objectives.

Phase 1 saw the completion of data collection in February 2024, where the focus was on gathering Kaggle datasets. This initial phase holds significance in laying the groundwork for data processing and model development. Kaggle, being a known dataset platform provides a wealth of information on employee characteristics and workplace dynamics.

Transitioning to Phase 2 titled ‘Data Processing & Cleaning’, commenced on May 8th, 2024, and was scheduled to conclude by May 23rd, 2024. It involved activities ensuring data quality and preparing for machine learning tasks. The first step involved data cleaning aiming at maintaining data integrity and quality. Subsequently ‘data classification’ was employed to structure and categorise data for predictive modelling.

Moving on to Phase 3 titled ‘development of machine learning models’, the project concentrated on creating an ‘attrition prediction model’ from May 24th to June 5th, 2024. This stage was crucial as it utilised machine learning methods to anticipate employee turnover, or flight risks based on processed and categorised data.

During Phase 4 known as "Creating Analytics Dashboards " taking place between June 6th and June 17th, 2024. The team focused on visualising the outcomes of the model. This phase kicked off with the design of ‘Dashboard Mockups’ (3 days) to map out the dashboard's structure and features. It was followed by ‘Dashboard Implementation’ (7 days) to bring these mock-ups to life and blend them with the predictive model results.

The final stage, Phase 5 titled ‘Testing & Launch’ is set for June 18 to June 30, 2024. This phase involved ‘Unit Testing’ (2 days) to confirm the integrity of components ‘Integration Testing’ (3 days) to ensure smooth interaction between the prediction model and dashboard and lastly "Deployment Preparation" (5 days) aimed at getting everything ready for the ultimate presentation and submission due, on July 1, 2024.

The Gantt chart lays out a schedule for carrying out the project making sure that each phase aligns with the project's goals and deadlines. The project advances in a manner starting from collecting and processing data moving on to building models and designing dashboards conducting rigorous testing and finally deploying while following industry standard data science and software development procedures.
The specific durations assigned to tasks within each phase act as a guide for the project team facilitating effective resource allocation and time management. It also underscores the interconnected nature of data science projects, where gathering and processing data play roles in enabling advanced analytics and predictive modelling.

"Retainify" is a thought-out project plan that integrates various methodologies with software development principles to tackle real world challenges in HR analytics. By adhering to a defined timeline depicted in the Gantt chart the project ensures achievement of key milestones leading to successful delivery of an attrition prediction system and related analytics dashboard by the set deadline. This comprehensive approach highlights the projects commitment to leveraging data driven insights, for decision making in employee retention and workforce planning.

4.2. DESIGN AND IMPLEMENTATION DETAILS

The design and implementation phase focuses precisely on developing prediction models and creating clear and easy-to-use interfaces. The predictive models are subjected to harsh and intensive testing using K-Fold Cross-Validation and evaluation metrics such as Accuracy, Precision, Recall, F1 Score, and ROC-AUC. The appearance and functioning of the dashboard are then tested with HR professionals, who determine its intuitiveness, the clarity of its visualisations, and the relevance of its various features.

```python
import pandas as pd
from sklearn.model_selection import train_test_split
from sklearn.preprocessing import LabelEncoder, StandardScaler
from sklearn.metrics import classification_report, accuracy_score

# Models
from sklearn.linear_model import LogisticRegression
from sklearn.tree import DecisionTreeClassifier
from sklearn.ensemble import RandomForestClassifier
from xgboost import XGBClassifier

# Load the dataset from Excel file
#file_path = 'D:\Sagar Win11 Documents\OD\Documents\BA\Semester 2\IS6611 Applied research in BA\Datasets Employee\archive\WA_Fn-
df = pd.read_csv("WA_Fn-UseC_-HR-Employee-Attrition.csv")

# Encode categorical columns
df_encoded = df.copy()
label_encoders = {}
for col in df_encoded.select_dtypes(include=['object']).columns:
    label_encoders[col] = LabelEncoder()
    df_encoded[col] = label_encoders[col].fit_transform(df_encoded[col])

# Define features and target variable
X = df_encoded.drop(columns=['Attrition'])
y = df_encoded['Attrition']

# Train-Test Split
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)

# Standardization
scaler = StandardScaler()
X_train_scaled = scaler.fit_transform(X_train)
X_test_scaled = scaler.transform(X_test)

# Initialize Models
models = {
    'Logistic Regression': LogisticRegression(),
    'Decision Tree': DecisionTreeClassifier(),
    'Random Forest': RandomForestClassifier(),
    'XGBoost': XGBClassifier(use_label_encoder=False, eval_metric='logloss')
}

# Train and Evaluate Models
results = {}
for name, model in models.items():
    model.fit(X_train_scaled, y_train)
    y_pred = model.predict(X_test_scaled)
    results[name] = accuracy_score(y_test, y_pred)
    print(f"{name} Accuracy: {results[name]:.4f}")
    print(classification_report(y_test, y_pred))

    # Convert results to DataFrame and sort by accuracy
results_df = pd.DataFrame(list(results.items()), columns=['Model', 'Accuracy'])
results_df_sorted = results_df.sort_values(by='Accuracy', ascending=False)

# Display results in tabular format
print("\nModel Accuracies (sorted from highest to lowest):")
print(results_df_sorted)
```

Image 11. Code used to find Attrition Probability

```
Logistic Regression Accuracy: 0.8912
              precision    recall  f1-score   support

           0       0.91      0.98      0.94       255
           1       0.68      0.33      0.45        39

    accuracy                           0.89       294
   macro avg       0.79      0.65      0.69       294
weighted avg       0.88      0.89      0.87       294

Decision Tree Accuracy: 0.7721
              precision    recall  f1-score   support

           0       0.87      0.87      0.87       255
           1       0.15      0.15      0.15        39

    accuracy                           0.77       294
   macro avg       0.51      0.51      0.51       294
weighted avg       0.77      0.77      0.77       294

Random Forest Accuracy: 0.8776
              precision    recall  f1-score   support

           0       0.88      0.99      0.93       255
           1       0.71      0.13      0.22        39

    accuracy                           0.88       294
   macro avg       0.80      0.56      0.58       294
weighted avg       0.86      0.88      0.84       294

XGBoost Accuracy: 0.8776
              precision    recall  f1-score   support

           0       0.90      0.97      0.93       255
           1       0.59      0.26      0.36        39

    accuracy                           0.88       294
   macro avg       0.74      0.61      0.64       294
weighted avg       0.85      0.88      0.86       294


Model Accuracies (sorted from highest to lowest):
                Model  Accuracy
0  Logistic Regression  0.891156
2        Random Forest  0.877551
3              XGBoost  0.877551
1        Decision Tree  0.772109
```

```
# Encode categorical columns
df_encoded = df.copy()
label_encoders = {}
for col in df_encoded.select_dtypes(include=['object']).columns:
    label_encoders[col] = LabelEncoder()
    df_encoded[col] = label_encoders[col].fit_transform(df_encoded[col])

# Define features and target variable
X = df_encoded.drop(columns=['Attrition'])
y = df_encoded['Attrition']

# Train-Test Split
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)

# Standardization
scaler = StandardScaler()
X_train_scaled = scaler.fit_transform(X_train)
X_test_scaled = scaler.transform(X_test)

# Initialize and train Random Forest model
model = RandomForestClassifier(random_state=42)
model.fit(X_train_scaled, y_train)

# Predict probabilities
y_probs = model.predict_proba(X_test_scaled)

# Create a DataFrame with employee numbers and attrition probabilities
prob_df = pd.DataFrame({
    'EmployeeNumber': X_test['EmployeeNumber'],
    'Attrition Probability (%)': y_probs[:, 1] * 100
})

# Sort by attrition probability in descending order
sorted_prob_df = prob_df.sort_values(by='Attrition Probability (%)', ascending=False)

# Display sorted probabilities
print("Employees sorted by probability of attrition (highest to lowest):")
print(sorted_prob_df)
```

```
Employees sorted by probability of attrition (highest to lowest):
      EmployeeNumber  Attrition Probability (%)
892             1248                       69.0
363              485                       66.0
777             1079                       58.0
422              566                       58.0
1311            1839                       57.0
...              ...                        ...
339              458                        1.0
1146            1615                        1.0
538              734                        1.0
1185            1666                        1.0
584              809                        0.0

[294 rows x 2 columns]
```

Image 12. Code used to find Attrition Probability continued

```
# Encode categorical columns
df_encoded = df.copy()
label_encoders = {}
for col in df_encoded.select_dtypes(include=['object']).columns:
    label_encoders[col] = LabelEncoder()
    df_encoded[col] = label_encoders[col].fit_transform(df_encoded[col])

# Define features and target variable
X = df_encoded.drop(columns=['Attrition'])
y = df_encoded['Attrition']

# Train-Test Split
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)

# Standardization
scaler = StandardScaler()
X_train_scaled = scaler.fit_transform(X_train)
X_test_scaled = scaler.transform(X_test)

# Initialize and train Random Forest model
model = RandomForestClassifier(random_state=42)
model.fit(X_train_scaled, y_train)

# Standardize the entire dataset
X_scaled = scaler.transform(X)

# Predict probabilities for the entire dataset
y_probs = model.predict_proba(X_scaled)

# Add probabilities to the original dataframe
df['Attrition Probability (%)'] = y_probs[:, 1] * 100

# Sort by attrition probability in descending order
df_sorted = df.sort_values(by='Attrition Probability (%)', ascending=False)
df_sorted
```

	Age	Attrition	BusinessTravel	DailyRate	Department	DistanceFromHome	Education	EducationField	EmployeeCount	EmployeeNumber	...	StandardH
214	30	Yes	Travel_Rarely	1005	Research & Development	3	3	Technical Degree	1	297	...	
688	19	Yes	Travel_Rarely	419	Sales	21	3	Other	1	959	...	
1313	29	Yes	Travel_Rarely	350	Human Resources	13	3	Human Resources	1	1844	...	
1332	29	Yes	Travel_Frequently	459	Research & Development	24	2	Life Sciences	1	1868	...	
589	29	Yes	Travel_Rarely	805	Research & Development	1	2	Life Sciences	1	816	...	
...	...	...	...	...	...	...	...	...	...	...	...	
766	50	No	Travel_Rarely	1464	Research & Development	2	4	Medical	1	1061	...	
755	45	No	Travel_Rarely	1234	Sales	11	2	Life Sciences	1	1045	...	
751	50	No	Non-Travel	145	Sales	1	3	Life Sciences	1	1040	...	
745	55	No	Travel_Frequently	135	Research & Development	18	4	Medical	1	1034	...	
1469	34	No	Travel_Rarely	628	Research &	8	3	Medical	1	2068		

```
# Save to CSV
output_csv_path = r'C:\Users\sagar\Documents\Python Files\HR_Employee_Attrition_with_Probabilities.csv'
df_sorted.to_csv(output_csv_path, index=False)

output_csv_path
```

```
'C:\\Users\\sagar\\Documents\\Python Files\\HR_Employee_Attrition_with_Probabilities.csv'
```

Image 13. Attrition Prediction Model Codes

Prediction Models:

(i) Attrition Prediction Model:

- **Objective**: Predict employee flight risk.
- **Algorithm Used:** Logistic Regression.
- **Data Features**: Age, Job Role, Department, Performance Rating, Over Time, etc.
- **Python Libraries**: scikit-learn, pandas, NumPy.
- **Testing Accuracy**: ~89% with a Confusion Matrix and ROC-AUC curve.

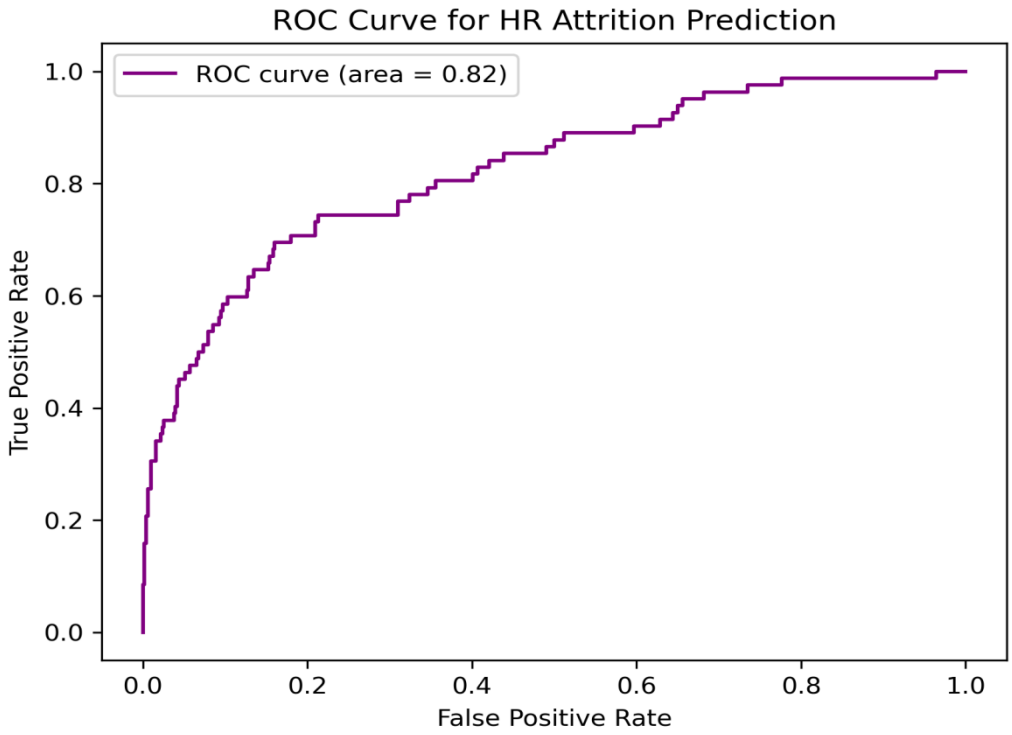

Image 14. ROC Curve for Logistic Regression Model

(ii) Analytics Dashboard screenshot:

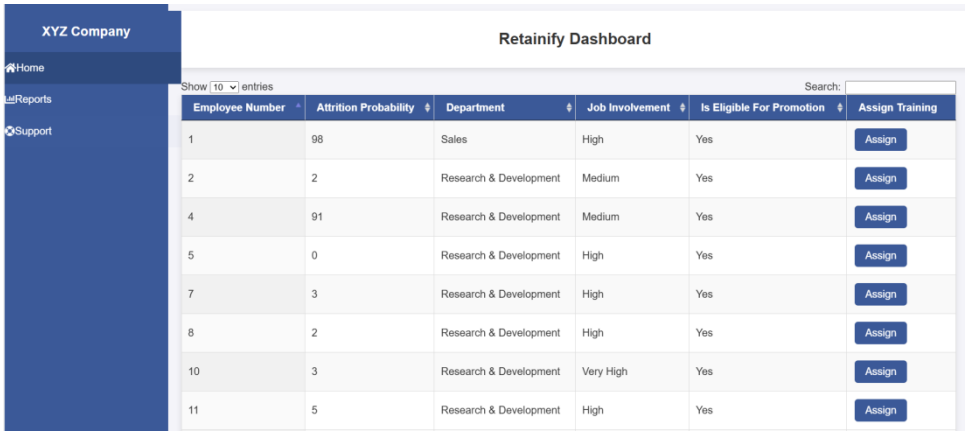

Image 15. Analytics Dashboard Representation

4.3. TESTING AND EVALUATION PROCESS

Retainify's Alpha Prototype undergoes a multiple stage testing and evaluation process to establish its resilience, truthfulness, and practicality. To test the Attrition Prediction Model, we employed K-Fold Cross-Validation. This technique is widely used to determine the performance of models. It assesses their generalisability and reliability by dividing the dataset into 10 subsets or "folds". The next step is crucial: the model is then trained on nine of these "folds" and tested on the tenth. Accuracy, Precision, Recall, F1 Score, and ROC-AUC are all evaluation metrics used in this process. System testing is completed to determine the validation of the incorporated prediction models and dashboards. This contains the process of functional unit testing, where individual prediction model functions are tested in isolation to verify that they perform as expected. Furthermore, integration testing is used to ensure that if any number of prediction models connected to the dashboard is "modular" and seamless, the interaction of the prediction models and the dashboard components makes way for working forms and figures in an explorative manner, for better decision-making.

We use exhaustive and comprehensive methods to test the Alpha Prototype of Retainify. These methods allow us to perform a complete and careful assessment of the system's capabilities. This ensures high confidence that the system is ready for deployment and effectively helps manage the modern problem of employee attrition.

4.4. PYTHON MODELS FOR ACCURACY

Using machine learning models and ensemble techniques, the Python code addresses the problem of employee attrition prediction. The model makes use of a publicly available Kaggle

dataset and is in line with our goal of forecasting employee churn based on a range of features in an Excel file, such as age, frequency of business travel, job role, and the target variable "Attrition," which is a binary indicator of an employee's propensity to leave the company (1) or remain (0). In the end, the model forecasts and displays the likelihood that an employee will leave the company in the future in percentage format, where the higher the percentage, the higher the likelihood that the employee will leave the company.
The following lists the components of the Python code that was utilised in our Alpha prototype.

(i) Data Preprocessing and Feature Engineering:

- Data Loading: Pandas were used for seamless data handling from the Excel file.
- Encoding Categorical Features: The LabelEncoder class from sklearn preprocessing categorical data, converts them into numerical values, making them suitable for machine learning models.
- Data Splitting: The train_test_ml_model function splits the data into training and testing sets for model training and evaluation, respectively.
- Data Normalisation: The StandardScaler class normalised numerical features (zero mean, unit variance) for improved model performance.

(ii) Model Building and Evaluation:

- Four machine learning algorithms- Logistic Regression, Decision Tree, Random Forest, and Support Vector Machine, were employed.
- Each model was trained on the specific set of training data and then evaluated on the testing data. Performance was assessed using two key metrics, accuracy, and classification report.
- Accuracy: Measured using the my_confusion_matrix function, it indicated the overall percentage of correct predictions.
- Classification Report: Generated via classification_report, this report provided detailed insights such as precision, recall, and F1 score for both attrition and non-attrition classes.

(iii) Results and Analysis:

Model	Accuracy	Precision	F1 Score	Recall
Logistic Regression	0.89	0.68	0.45	0.33
XGBoost Accuracy	0.88	0.59	0.36	0.26
Random Forest Classifier	0.88	0.80	0.22	0.13
Decision Tree	0.77	0.15	0.15	0.15

Table 2. Prediction Models Compared

- The outcomes were then put into a dictionary and shown in an easy-to-read tabular style made with pandas data frame.
- This table presents a clear ranking of the models together with their accuracy scores and categorisation reports, organised by accuracy in descending order.
- An 88.4% accuracy rate, for instance, would mean that a LogisticRegression can accurately forecast staff churn 88.4% of the time.
- Additional information was provided by the classification report, which showed how well the model performed in both attrition and non-attrition classes.

4.5. POTENTIAL APPLICATIONS FOR HUMAN RESOURCES

The model offers valuable support for HR departments in managing employee attrition, particularly by identifying high-performing employees at risk of leaving. But the model's versatility does not end there. The same employee dataset can be leveraged to address various HR challenges, streamlining HR operations.

Some of the future recommendations are as follows:

- Employee Promotion and Training: Including features like "YearsAtCompany" and "YearsSinceLastPromotion" can enhance the model's ability to identify high-potential employees and suggest appropriate training programs.

- Organisational Health: Integrating individual employee performance data can enable the model to predict the overall health of the organisation, providing valuable insights for HR to implement strategic changes.
- Hyperparameter Tuning: Techniques like GridSearchCV or RandomisedSearchCV can be used to optimise model performance, particularly for Random Forest and XGBoost.
- Model Ensembling: Combining multiple models (e.g., Random Forest and XGBoost) through ensemble methods like stacking, bagging, or boosting can improve prediction accuracy and generalisability.
- Imbalanced Class Handling: Techniques like SMOTE (Synthetic Minority Oversampling Technique) or class weighting can address potential imbalances in the "Attrition" target variable, improving minority class prediction.
- Cross-Validation: Implementing K-Fold cross-validation ensures robustness and prevents models from overfitting the training data.

By following these recommendations and refining the predictive models, we can achieve even higher accuracy in employee churn prediction. This assists organisations in developing effective retention strategies using the same dataset.

5. BUSINESS PLAN

5.1. SERVICE TOOL

Today's workplaces face a continuing problem with employee retention. When good employees leave, it costs an organisation a great deal of money and can create a lot of instability. To help companies deal with this essential issue, we have developed an all-in-one software solution called "Retainify." It is designed to help organisations stop the bleeding by using advanced data analytics and by working with managers and HR staff to create personalised engagement plans for each at-risk employee.

5.1.1. WHAT WE PROPOSE

(i) Attrition Reduction with Predictive Insights:

Retainify's approach, which is driven by sophisticated analytics and visualisation tools, pinpoints the main causes why workers depart from their companies. It is important to have both foresight and retrospect. HR specialists receive useful information that they can use to

proactively address attrition triggers. They can step in before valuable talent leaves by recognising patterns.

(ii) Algorithm for Promotion Predictor:

Our integrated promotion forecasting system is revolutionary. It finds workers with immense potential who should be promoted. HR departments can suggest qualified candidates for promotions, guaranteeing equity and career advancement. Employee engagement and loyalty are boosted by this.

(iii) Quick and Easy Strategic Decision-Making:

Retainify's dashboard offers instantaneous insight into departmental dynamics, individual disconnects, and attrition patterns. HR personnel and analysts can make knowledgeable choices. Proactive actions, like system updates, cultural adjustments, or strategic shifts, are empowered by the dashboard.

(iv) Parity in Opportunities for Promotion:

Retainify guarantees that promotions are given impartially and based on merit. Favouritism is eliminated and fair play is encouraged by our system. Workers see justice, which promotes loyalty and trust. Promotional transparency improves morale and retention.

(v) Improve Systems and Procedures for a Better Employee Work Experience:

Retainify continues beyond attrition forecasting. It directs businesses toward systemic enhancements. Employers foster a positive work environment by addressing employee pain points, optimising workflow, and improving employees' culture.

5.1.2. DIFFERENTIATION FROM CURRENT MARKET OFFERINGS

i. Comprehensive Data Integration -

Present solutions frequently resort to restricted data sources, usually relying on employees' direct responses in surveys and exit interviews (Bersin, 2017). In using direct responses alone to determine turnover risk, current solutions run the serious risk of producing a wrong or an incomplete picture. That is because many employees might not, for whatever reason, make any direct responses at all, or make the required sort of loaded responses. Retainify, on the other hand, plans to integrate a much wider and extensive range of data across many dimensions of a person's work life.

ii. Advanced Predictive Analytics -

While many current offerings provide basic analytics and reporting tools, Retainify leverages advanced machine learning techniques to predict turnover risks with greater accuracy.

Traditional methods tend to be reactive, addressing issues only after they have occurred (Deloitte, 2018). In contrast, Retainify's predictive analytics enable proactive measures, allowing HR managers to address potential issues before they escalate.

iii. Personalised Engagement Strategies -

Existing solutions often provide engagement plans that are not tailored to individual employees and may not meaningfully address their needs (Gallups,2019). Retainify, on the other hand, builds extraordinarily focused strategies for each employee. These strategies are informed by our deep understanding of what makes their work experience truly engaging. We offer plenty of analytical horsepower to bring clarity to what works and what does not. And we do all this because we believe that when you personalise employee engagement, you supercharge it.

5.1.3. STAGE OF DEVELOPMENT

Stage 1: Idea Conception Model

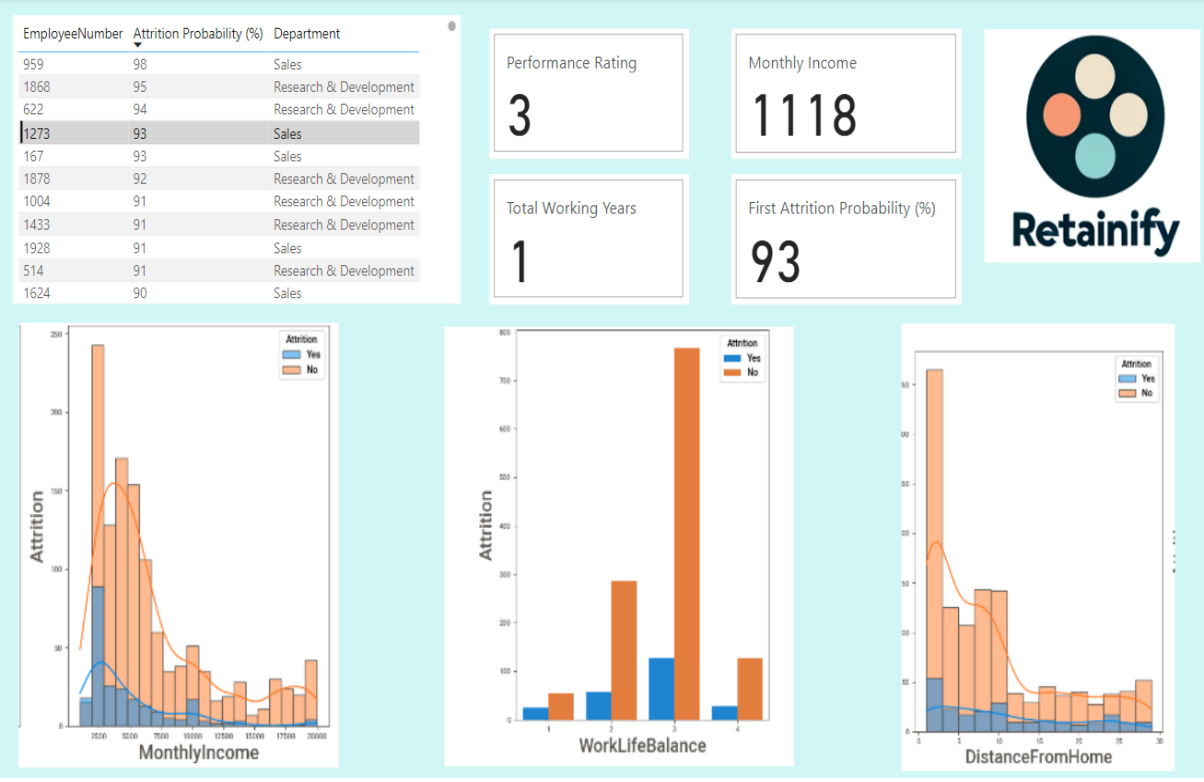

Image 16. Alpha Prototype Dashboard

Stage 2: Testing of Models

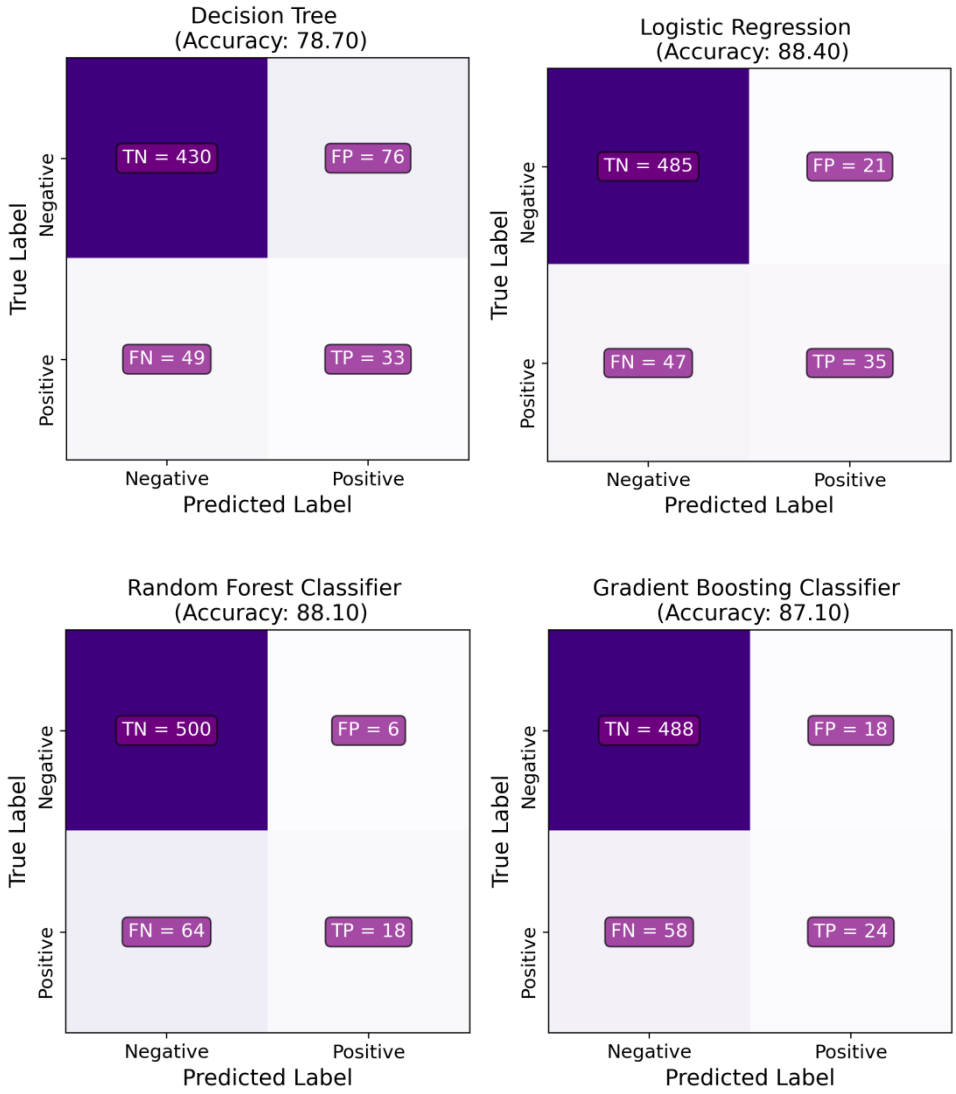

Image 17. Prediction Models Compared

Stage 3: Features driving Attrition Analysis

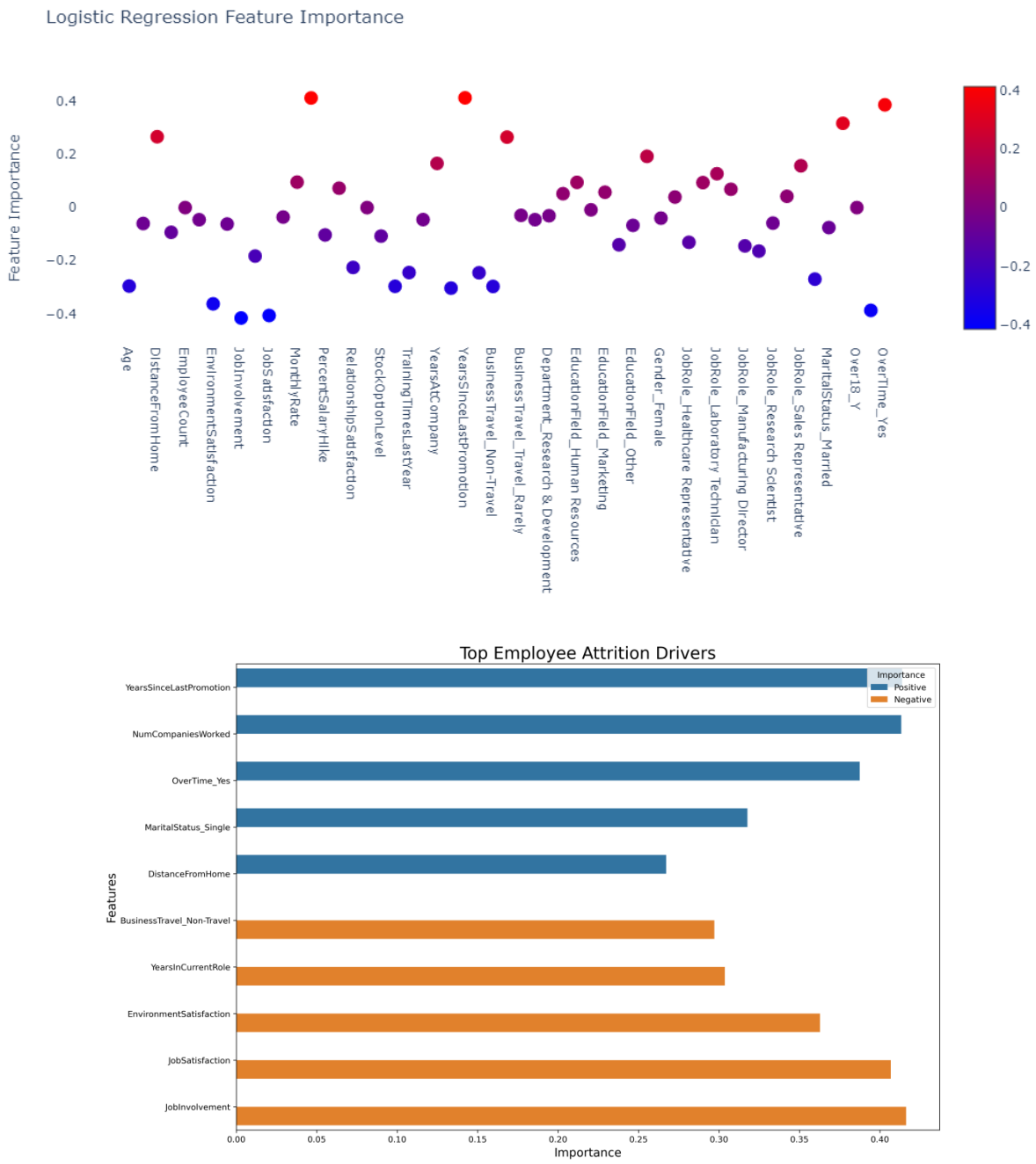

Image 18. Top Employee Attrition Drivers

Stage 5: Visualisation Dashboard of Key Attrition Drivers (Client specific)

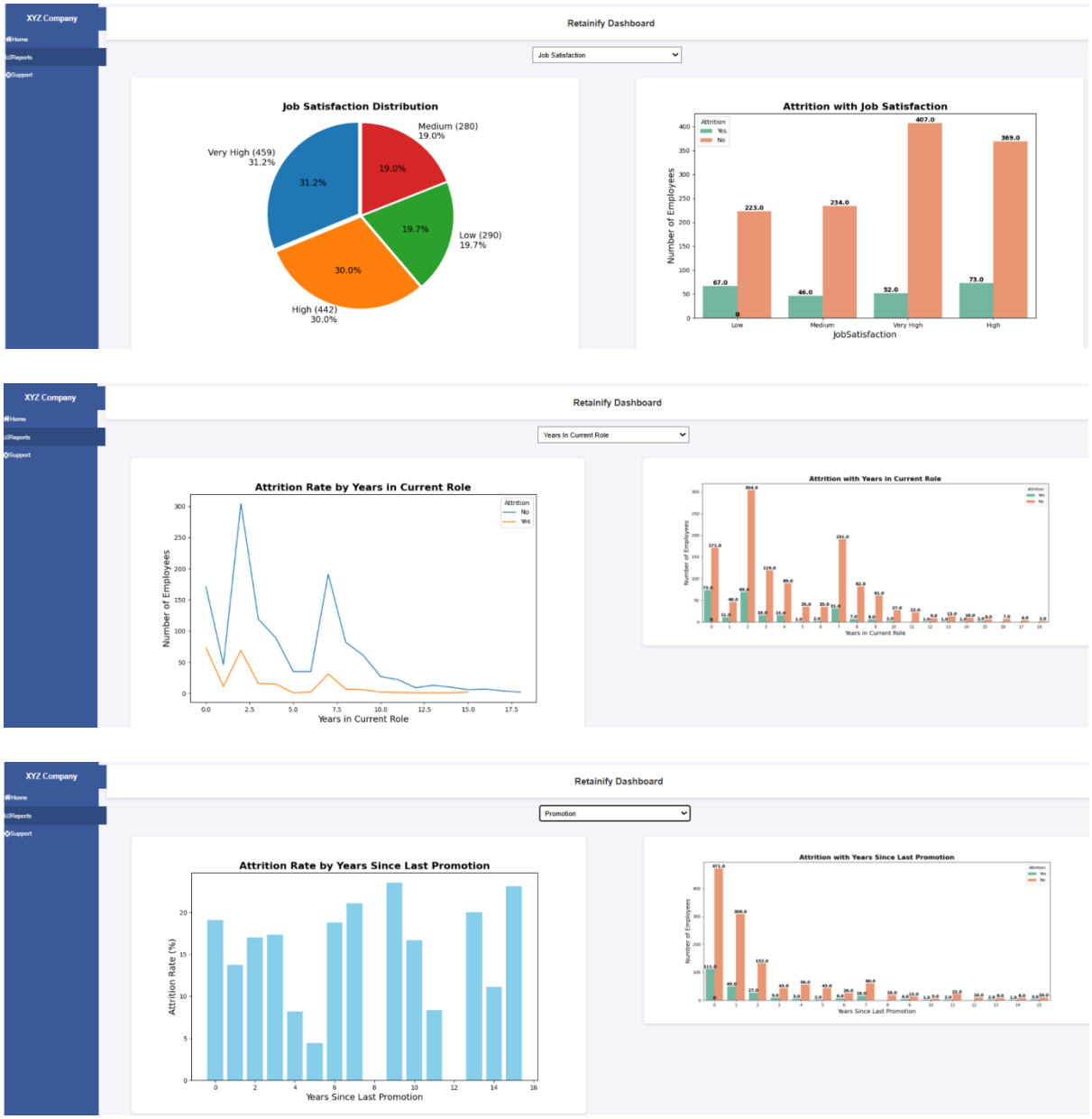

Image 19. Retainify Dashboard Graphs

5.1.4. FUTURE PLANS

i) Cloud Deployment: Moving to a cloud-based platform will improve Retainify's scalability and security, along with making it much more accessible to clients. This will allow its users to take the data stored in the app and feed it into a variety of cloud-based business intelligence or analytics tools, both paying the client back for their data and informing them of ways to boost their business.

ii) Content Delivery Networks (CDNs) and Caching Mechanisms: CDNs can distribute static content like images and scripts, geographically which reduces the latency for users in various locations and improves overall performance. Additionally, implementing stored procedure optimisation, query optimisation, and caching mechanisms can improve system performance and ensure quick data retrieval and analysis.

iii) Promotion Nomination: Introducing tools to streamline the promotion nomination process, ensures transparency and merit-based advancements.

iv) Skill Gap & Engagement Score Analysis: Developing features for analysing skill gaps and engagement scores, enables organisations to address deficiencies and boost employee morale.

v) Managerial Effectiveness Analysis: Offering insights into managerial effectiveness to help leaders improves their management styles and drives team performance.

vi) Retention Impact Analysis with Scenario Modelling: Implementing scenario modelling to analyse the impact of various retention strategies, allows organisations to make data-driven decisions.

To achieve the above future, Retainify aims to migrate its platform onto the cloud, partnering with the leading providers to guarantee the kind of scalability, security, and accessibility we require. Ensuring the performance of that system even as we grow will lie at the core of our investments in data optimisation. Promoting accessible and visually engaging talent pathways and retention strategies will be facilitated by our escalator-like cloud platform. Comparative analytics and scenario modelling ensure the work we do with our customers gives a true, bottom-line advantage. Augmenting these talent tools in a feedback system that promotes the kind of culture that enables us to be in the market not just with clever ideas but with an organisational framework that can act on those ideas.

5.2. MARKET ANALYSIS

5.2.1. MARKET RESEARCH

The HR tech market is huge and growing. The overall HR technology market was valued at 24.04 billion U.S. dollars in 2020. It is projected to grow at an average annual rate of 12.2

percent through 2028 (Grand View Research, 2021). From a market perspective, the tailor-made HR tech sector (which includes bespoke employee retention systems) is booming because the total addressable market for HR technology across all sectors is growing and is projected to reach close to $38.5 billion by 2028 (Grand View Research, 2021).

The target market for Retainify is mostly medium to large enterprises in different industries. The companies in these industries struggle with keeping quality employees in the fold. These businesses usually operate with complex organisational structures that can make a significant difference in terms of how an individual employee feels about their job. Industries such as technology, finance, healthcare, and professional services are particularly relevant due to their high turnover rates and competitive talent markets. Medium to large enterprises is ideal for Retainify because they have the resources and need for advanced HR technology solutions. High turnover rates in these organisations result in substantial financial losses, estimated at around 33% of an employee's annual salary to replace them (SHRM, 2021). By targeting these businesses, Retainify addresses a critical pain point and provides a measurable return on investment through improved retention strategies.

5.2.2. TAM, SAM, SOM ANALYSIS

i). Total Addressable Market (TAM) - The target audience for Retainify is made up of all medium to large enterprises across the globe that could gain from using better strategies for keeping their employees. Since the market for HR technology is set to expand in the coming years, we can estimate the total available market (TAM) for Retainify by looking just at the portion of the HR tech sector that zeroes in on employee retention. That sector was worth USD 24.04 billion in 2020 (Grand View Research, 2021), and if we assume that 20 percent of it is about retention, then we are talking about a TAM of roughly USD 4.81 billion.

ii). Serviceable Available Market (SAM) - The SAM narrows down the TAM to medium to large enterprises in key regions such as North America, Europe, and Asia-Pacific, where Retainify's solutions would be most applicable. Focusing on these regions, which collectively account for about 70% of the HR technology market (Grand View Research, 2021), the SAM is approximately USD 3.37 billion.

iii). Serviceable Obtainable Market (SOM) - The size of the SOM is better defined by considering not just the potential market alone, but also our competitor's advantageous market positioning and realistic attainments. The initial years should see Retainify attempting to capture 5% of this part of the total of these combined markets, which amounts to about a thoroughly good firm market of $168.5 million. This conservative estimate accounts for market entry challenges, competition, and the time required to build brand recognition and customer trust.

5.2.3. MARKET TRENDS

The HR technology market is poised for significant growth, projected to reach USD 35.68 billion by 2028, growing at a compound annual growth rate (CAGR) of 12.2% from 2021 (Grand View Research, 2021).

Market Factors Affecting Change

HR processes are changing with the advent of artificial intelligence (AI) and machine learning. They are becoming automated, which saves time and focuses H.R. on more strategic tasks, such as engaging current employees and retaining top talent. For instance, AI-powered chatbots can handle basic HR queries, freeing up HR professionals for more strategic tasks (Deloitte, 2020).

The shift towards remote work, accelerated by the COVID-19 pandemic, has highlighted the need for robust employee engagement and retention strategies. Companies are increasingly focusing on mental health and well-being programs to support their remote workforce, recognising that a satisfied workforce is key to retention (McKinsey, 2021).

Market Evaluation

The market for HR technology is moving from the traditional, fragmented systems that companies have used for years to a new set of integrated platforms that solve a wide range of HR problems. This evolution is driven by the need for real-time data and analytics to make informed decisions. Moreover, there is a growing emphasis on user experience, with intuitive interfaces and mobile accessibility becoming standard requirements (PwC, 2021).

5.2.4. CUSTOMER VALUE PROPOSITION

Our customers are medium to large enterprises working in a range of different industries. They are companies that tend to see high turnover rates among their employees. These organisations often face significant challenges with high employee turnover rates and are keen on implementing effective retention strategies. Our customers are not just in tech. They are in finance and healthcare, too. The key gatekeepers in these companies are usually HR directors, Chief Human Resources Officers (CHROs), and senior management executives who are responsible for overseeing employee satisfaction and retention. The primary users of the system are HR managers, talent acquisition specialists, and employee engagement coordinators.

These customers have crucial needs, they demand a powerful solution capable not only of forecasting, with high accuracy, which employees are most likely to leave but also of getting a good handle on those who are most at risk of doing so. They want a platform that is easy to integrate with their existing HR systems, offers real-time analytics, and supports data-driven decision-making. Additionally, they seek user-friendly interfaces and comprehensive support to ensure smooth implementation and usage.

Let us analyse the contribution we make.

(i) Attrition Reduction with Predictive Insights:

- Special Advantage: Retainify's approach, which is driven by sophisticated analytics and visualisation tools, pinpoints the main causes why workers depart from their companies. It is important to have both foresight and retrospect.
- Value to Customers: HR specialists receive useful information that they can use to proactively address attrition triggers. They can step in before valuable talent leaves by recognising patterns.
- Predictability: Even though we utilise advanced machine learning to provide forecasts and practical insights it is crucial to acknowledge a fundamental limitation inherent in data driven software; the assumption that all human actions can be foreseen through data alone. This heavy reliance on data implies that human behaviour is completely measurable and predictable which is not always the reality. People's choices and behaviours can be influenced by unpredictable factors like emotions, personal circumstances, and sudden changes, in mood. Therefore, while data driven algorithms

can offer predictive capabilities and insights, they may not always grasp the full intricacies of human interactions. This limitation stresses the importance of supervision and incorporating qualitative aspects alongside quantitative data for thorough and effective HR management.

(ii) Algorithm for Promotion Predictor:

- Special Advantage: Our integrated promotion forecasting system is revolutionary. It finds workers with immense potential who should be promoted.
- Value to Customers: HR departments can suggest qualified candidates for promotions, guaranteeing equity and career advancement. Employee engagement and loyalty are boosted by this.

(iii) Quick and Easy Strategic Decision-Making:

- Special Advantage: Retainify's dashboard offers instantaneous insight into departmental dynamics, individual disconnects, and attrition patterns.
- Value to Customers: HR personnel and analysts can make knowledgeable choices. Proactive actions, like system updates, cultural adjustments, or strategic shifts, are empowered by the dashboard.

(iv) Parity in Opportunities for Promotion:

- Special Advantage: Retainify guarantees that promotions are given impartially and based on merit. Favouritism is eliminated and fair play is encouraged by our system.
- Value to Customers: Workers see justice, which promotes loyalty and trust. Promotional transparency improves morale and retention.

(v) Improve Systems and Procedures for a Better Employee Work Experience:

- Special Advantage: Retainify continues beyond attrition forecasting. It directs businesses toward systemic enhancements.
- Value to Customers: Employers foster a positive work environment by addressing employee pain points, optimising workflow, and improving employees' culture.

To win our first customer, we will employ a targeted marketing approach combined with personalised outreach. To accomplish this, our team will begin by reaching out to key decision-makers in HR departments and Chief Human Resources Officers (CHROs) within companies we think will find the value our product delivers most compelling. Demonstrating the platform's capabilities through detailed product demos and case studies will be crucial in highlighting its value proposition. Offering a pilot program or a free trial period will allow potential customers to experience firsthand the benefits of Retainify, thus building trust and demonstrating effectiveness.

5.2.5. ROOT TO MARKET AND BARRIERS TO ENTRY

Retainify has a comprehensive route to the market. It combines some strategies to make the company known: focused marketing, strategic partnerships, and well-designed customer experiences. There are many barriers to entry in the human resources (HR) technology industry: the development of the basic technology can be very expensive, the integration of sophisticated AI algorithms and analytics can make it even more unfriendly to cash-strapped HR technology start-ups, and building the necessary trust (given responsibility for very sensitive employee data) with major enterprise clients takes a lot of time. Also, getting to the large enterprises usually requires you to have solid relationships and a proven record of accomplishment, and that can be a uphill battle for a new company.

Retainify's competitive edge lies in its advanced predictive analytics, seamless integration capabilities, and user-friendly interface, differentiating it from existing solutions. Our initial success will be driven by a strong value proposition, demonstrating tangible improvements in employee retention, supported by real-world case studies and testimonials. Our strategy for building trust and a customer base is to offer pilot programs that demonstrate how well our solution works. By addressing these barriers and leveraging our unique strengths, we are confident in our ability to successfully enter and capture a significant share of the HR technology market.

5.2.6. PESTEL ANALYSIS FRAMEWORK

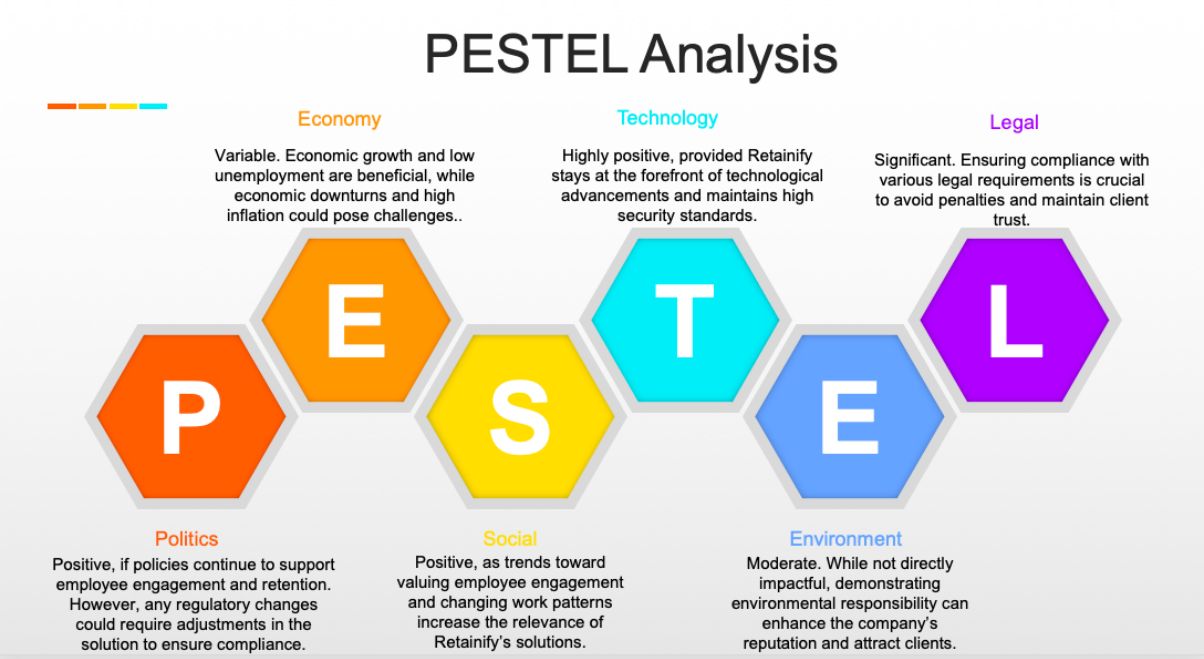

Image 20. PESTEL Image

5.2.7. COMPETITOR ANALYSIS

	Strengths	Weaknesses	Our competitive advantage
ClickUp	Table view to manage data similarly to a spreadsheet. Multiple grouping, filtering, and sorting options are available in the list view. Form view for instantly converting employee comments, requests, and survey answers into a task that may be completed.	It does not offer any particular benefit plans, but it is able to handle data on a safe platform. There may be some adjustment required to get used to ClickUp's extensive feature set. Absence of an attrition tracking feature.	Specialist in attrition tracker and prevention
Rippling	Analytics and workforce reports to monitor hiring, headcount, and advancement. Automation of workflow for jobs that are consistent. Tailored access and approvals using role-based policies and permissions.	Integration is necessary to use Rippling to handle employee reviews and performances. The Rippling background check option is pricey. Absence of an attrition tracking feature.	Specialist in attrition tracker and prevention

Workday	Analytics and reporting to monitor the status of HR tasks, benefits, and payroll. Timekeeping and management of employees.	The interface is outdated-looking, hard to use, and not very intuitive. can take a while to implement, particularly for larger businesses. costly and inaccessible to small enterprises as a choice. Absence of an attrition tracking feature.	Specialist in attrition tracker and prevention

Table 3. Competitor Analysis

Let us go into the dynamic field of Human Resources (HR) software and study three prominent contenders for 2024. These solutions provide HR teams with a solid foundation by optimising workflows, improving workforce management, and guaranteeing the success of the company. We will analyse the features, advantages, and subtleties of ClickUp, Rippling, and Workday.

(i) ClickUp:

- Versatility: ClickUp is a whole ecosystem, not simply an HR application. It effortlessly connects all functions, including project management and HR (People, no date). Envision a harmonious arrangement of tasks, objectives, and personnel information.
- Custom Workflows: ClickUp lets you design unique processes for hiring, onboarding, performance evaluations, and other tasks. Regardless of your size, a startup, or a multinational company, this flexibility guarantees efficient operations (The Best HR Software, 2023). The platform facilitates smooth cooperation among employees, managers, and HR, making it an ideal place to work together.
- AI-Driven Insights: HR professionals may make well-informed decisions by utilising ClickUp's artificial intelligence to generate actionable insights (HR Systems Software - Review Leading Systems, no date).

ClickUp offers multiple price tiers to accommodate organisations of varying sizes.

(ii) Rippling:

- Rippling is an expert in automating HR procedures. Everything about it is like having a digital HR assistant, from payroll to employee onboarding.
- Precision in Payroll: Rippling guarantees precise and prompt payments. It manages benefits administration, tax compliance, and payroll processing with ease (‘5 best HR software systems: Comparing your options’, no date).
- Global Workforce Management: Rippling streamlines personnel data management, benefits administration, and compliance for businesses with global workforce.
- User-Friendly Interface: Complex tasks seem simple to complete thanks to Rippling's intuitive design.
- Top Substitutes: Gusto, Zenefits, and BambooHR

(iii) Workday:

- Workday provides end-to-end coverage for the whole employee lifecycle. It is a complete package from hiring through retirement (Best Human Resources Software (Updated for 2024), no date).
- Workday excels at overseeing multinational labour units, owing to its global reach. It manages a variety of currencies, languages, and regulations (Parker, 2024).
- Workday's analytics engine is a powerful tool for understanding worker trends, performance, and engagement (Best HR Software Company Comparison, no date).
- Mobile-First Approach: Employees may handle their HR requirements while on the road using an easy-to-use mobile app (Best Human Resources Software (Updated for 2024), no date).
- Workday places a high priority on data security, which is essential for businesses handling sensitive data.

In conclusion, these HR software solutions meet a variety of needs. The flexibility of ClickUp, the automation power of Rippling, and the global reach of Workday provide a symphony of options (List of Top HR Management Software 2024, no date). The secret is to match the

software to your organisation's needs. These tools help HR professionals navigate the constantly changing landscape and continue to orchestrate success.

5.2.8. PORTER'S FIVE FORCES

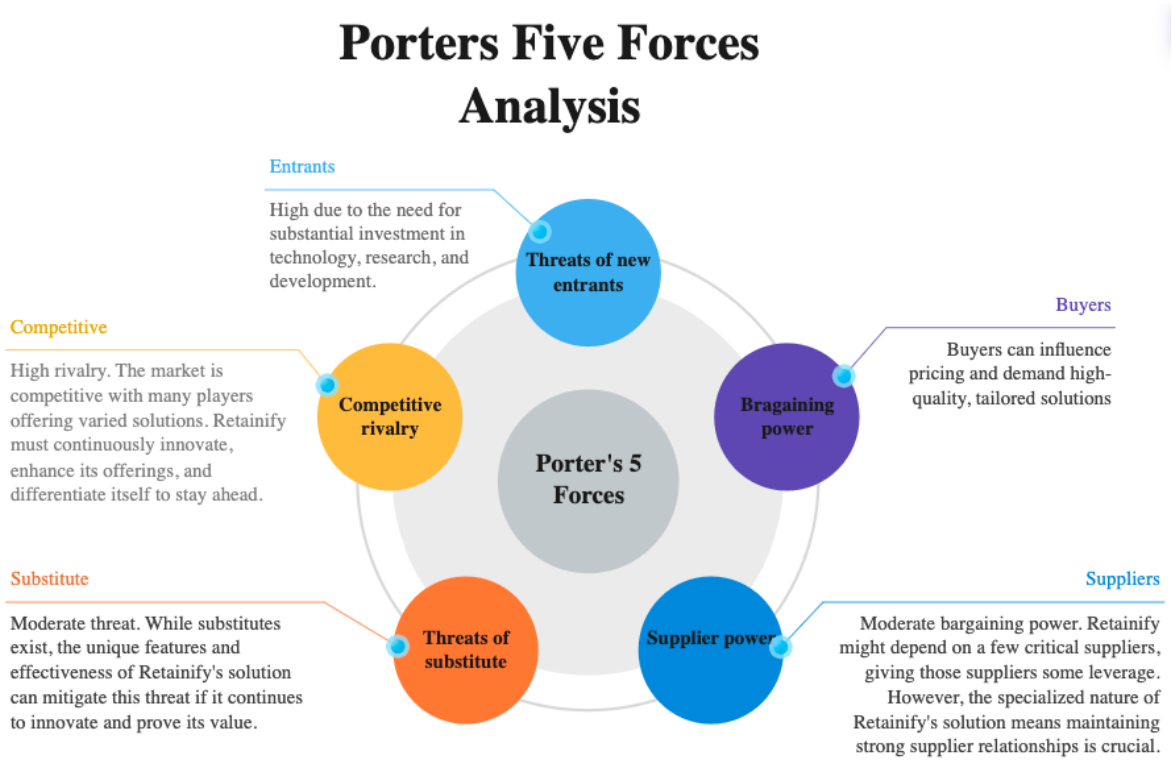

Image 21. Porter's Five Forces

6. OPERATIONS

The operations section plans how the solution would reach its customers, thus making it one of the most crucial parts of our business plan. Retainify's beta version includes the following categories towards achieving a successful operational workflow.

6.1. TECHNOLOGY INFRASTRUCTURE

Like any other IT solution, Retainify too requires basic technology infrastructure for its seamless functioning. However, compared to other solutions present in the market, Retainify's

infrastructure costs and maintenance costs are very minimal. List of essential technologies include:

(i) Flask - Retainify's dynamic flexible framework

Flask being lightweight and offering rich features utilising python programming language, it was our alternative after testing Power BI and Tableau integration with our solution. It is used to create the user interface (UI) and user experience (UX) of our web application. Being an open-source, free framework, Flask does not require any technical costs.

(ii) PyCharm - Back-End Development

Offers excellent support for back-end languages like python and flask. Its extensive features such as debugging, database interaction, and server-side logic, makes it an optimum choice. Using PyCharm's community edition, zero back-end development cost is billed.

(iii) MySQL - Database

Stores and manages the web application's data. Its cost-effectiveness, user-friendliness, scalability, and reliability makes it an excellent choice. Presently as Retainify targets only small organisations, it does not require a huge database bearing a lot of expenses. Thus, no cost is spent in the database.

(iv) NumPy, scikit-learn, pandas - Python Libraries

These libraries are used to develop and train attrition prediction models with no expenses.

(v) Data Visualisation Tool - Python

Interactive dashboards are used to present insights on attrition drivers and potential risks with zero expenses.

(vi) Security Measures - Multi-Factor Authentication

Implementation of Multi-Factor Authentication (MFA) to safeguard sensitive employee information.

Depending on features and number of users, the cost of Cloud-Based MFA Service would range from €2 to €10 per user per month.

(vii) Single Domain SSL Certificate:

Being a single domain host, Retainify has a single domain SSL Certificate, ensuring data security. The estimated cost for SSL Certificate would be €60 per year.

(viii) Google Analytics

Usage of free tier google analytics plan to track user behaviour and website performance.

(ix) Payment Processing - PayPal and Revolute

Ensures secure payment gateways for your web application.
Cost - 1.90% - 3.49% of each transaction amount

6.2. QUALITY ASSURANCE

A business grows prominently when it gains its customer's trust. This happens when it can ensure the quality and reliability of its solution. The following aspects assure the quality that Retainify provides to its customers.

(i) Data Quality

Retainify heavily depends on the data provided by its customers. Incorrect data validation and cleaning procedures leads to incorrect and biassed insights. Thus, Retainify follows practices where it uses ETL tools to extract, transform, load, clean, format, and transform data before using it to generate insights. Additionally, PyCharm provides excellent support to the back-end language and flask framework integration. MySQL on the other hand does effective data management and storing. With these tools, inconsistencies and formatting errors can be rectified along with reduction in human errors and manual interventions.

(ii) Model Validation

Use of python libraries such as NumPy, scikit-learn, and pandas helped in providing the functionalities towards building, training, and evaluating the machine learning models. Visualisation tools such as Matplotlib and Seaborn were used to calculate metrics (accuracy,

precision, recall, F1 score, AUC-ROC curve), quantifying how well the model performs on unseen data, along with creating visualisations. These libraries ensured achieving the churn prediction goal and evaluating the model's performance to drive successful customer retention strategies.

In the coming days, cloud storages will be used to house the datasets and leverage machine learning libraries, improving its scalability and cost efficiency. Also, rigorous back testing and evaluation techniques will maintain the prediction accuracy for client decision-making.

(iii) Security Testing

Retainify performs serious client data safeguarding. Regular penetration testing and vulnerability assessments are conducted to address potential security risks in the infrastructure. No third party is introduced between the Retainify and its clients. It only uses data which is confidently shared by its customers and hides every other data that might be present in the dataset but is not wished by the client to be reflected on the dashboard. On top of it, a Multi-Factor Authentication (MFA) is implemented. This will help safeguard user data, maintain user trust, and ensure the overall security of the solution.

6.3. LEGAL AND ACCOUNTING

The legal and accounting section contains the basic setup cost, and ongoing monthly spend for each.

(i) Setup Costs, the legal fees (one-time) for incorporating the business and establishing standard contracts with clients for Retainify will depend on the following factors.

Cost Type	Individual Service Cost	Total Cost
Business Incorporation Costs (Government Filing Fees + Registered Office Address + Solicitor Fees)	€200 + €100 + €1,200	€1,500

Standard Contract Cost (Template based contract + Lawyer charges)	€50 + 450	€500

Table 4. Setup Costs

The major cost is spent on the solicitor fees as they are responsible for handling the incorporation process. However, considering online incorporation services to handle the company registration process can save expenses spent on solicitor fees.

(ii) Cost spent on accounting and initial bookkeeping setup is saved as these services will be carried out by Retainify's core team members, ensuring financial transparency.

Ongoing Monthly Spend:

- Depending on the scope of the retainer agreement, the online monthly spend towards any additional accounting work and legal services retainer for ongoing compliance and support would be within €250 - €750.
- The monthly spend on cloud platform subscription fee is saved with the beta prototype as it is kept as a future step.

6.4. SCALABILITY

Plans for scaling the business and handling increased demand.

(i) Utilising cloud platforms like AWS and Azure, would be one of the first steps towards scaling the business. This would ensure smoother operations while handling increased demand and avoiding unnecessary costs during low-traffic periods. This can be further improved by using auto scaling features offered by cloud providers.

(ii) Content Delivery Networks (CDN) can be implemented to reduce latency for users in various locations and improve overall performance. This will geographically distribute static content like images and script.

(iii) Implementing caching mechanisms and database optimisations would be the need of the hour as it would reduce the load on the database thereby improving the response time and user experience.

(iv) Hiring skilled professionals who would focus on specific functions such as engineering, customer success, sales, etc, to handle growing business demands.

(v) Leveraging data analytics to further strengthen the prediction model along with strengthening security measures to stay compliant.

7. MANAGEMENT AND ORGANISATIONS

Retainify possesses a strong leadership team and a well-defined growth strategy to ensure successful launch and ongoing development.

7.1. MANAGEMENT AND OPERATIONS / OTHER TEAM STRUCTURE

Current members and their responsibilities are as follows:

(i) Joel Chacko: product vision, business development, and overall strategy
(ii) Karen Annette Delson: product development, engineering, and technical infrastructure
(iii) Nilesh Khatiya: earketing, engineering, and competitor analysis
(iv) Pallav Waghela: ensight development, engineering, and accounting
(v) Paresh Panigrahy: sales operations, cloud, and database management
(vi) Sagar Samantaray: product vision, technical infrastructure, and business development

Planned Hires (Year 1):

(i) Software Engineer: Responsible for building and maintaining the Retainify platform.
(Year 1 Cost: €54,000)
(ii) Customer Success Specialist: Provides onboarding and ongoing support to Retainify customers. (Year 1 Cost: €50,000)

Future Growth (Year 2 & 3):

We plan to strategically expand our team based on market traction and funding availability. This may include additional roles in engineering, data science, marketing, and sales.

7.2. GROWTH PLANS OVER YEARS 1, 2, AND 3

First year would primarily be focusing on:

(i) Product development and launch.

(ii) Securing initial seed funding.

(iii) Onboarding and activating early adopter clients, majorly targeting small businesses.

(iv) Establishing key partnerships and integrations.

Second year would see improvements such as:

(i) Scaling user acquisition efforts and expanding the client base.

(ii) Developing advanced churn prediction models and functionalities.

(iii) Refining marketing strategies based on customer acquisition data.

Third year would define the future of Retainify, because:

(i) New features will be introduced based on user feedback and market trends.

(ii) New market segments beyond small businesses will be explored.

(iii) Growth and development through secure series and funding will be accelerated.

7.3. LEADERSHIP AND KEY PERSONNEL

Year	Role	Number	Estimated Yearly Cost (€)
1	CEO & Founder	1	Salary finalisation from year 2

1	CTO & Founder	1	Salary finalisation from year 2
1	CXO	1	Salary finalisation from year 2
1	Software Engineer	1	Salary finalisation from year 2
1	Data Analyst	1	Salary finalisation from year 2
1	Business Analyst	1	Salary finalisation from year 2
2	Additional Team Member (Variable)	To be determined	To be determined based on needs and funding
3	Additional Team Member (Variable)	To be determined	To be determined based on needs and funding

Table 5. Leadership and Key Personnel

7.4. ORGANISATIONAL CHART

The chart provided below reflects the outlined team structure.

RETAINIFY

MANAGEMENT ORGANISATION CHART

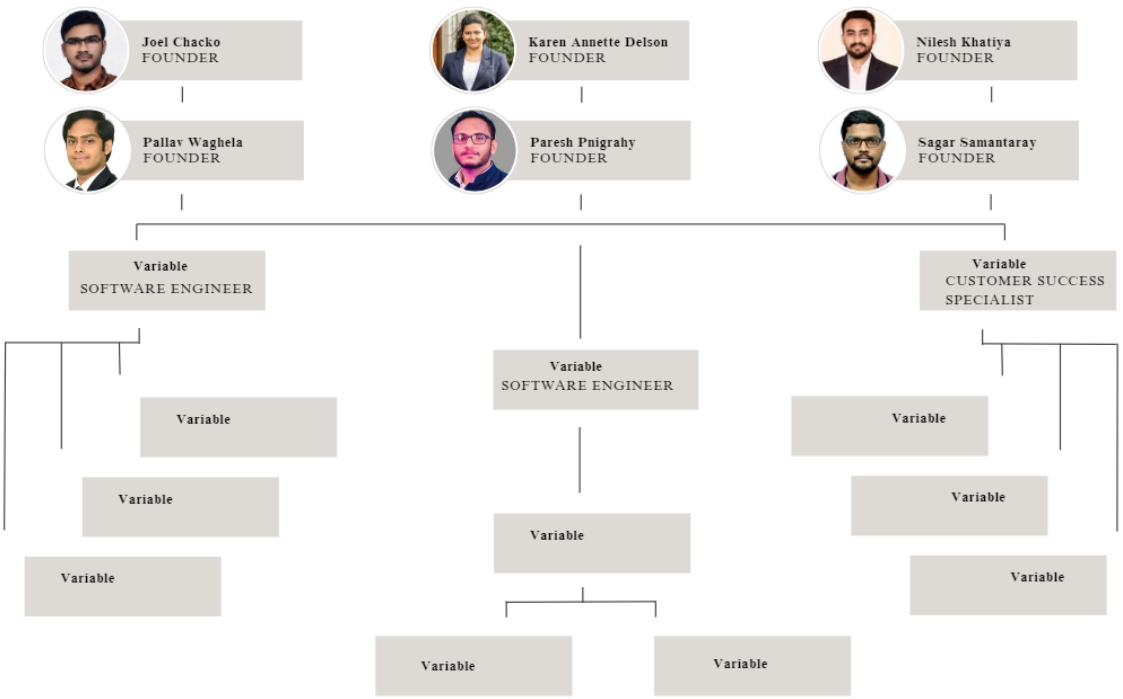

Image 22. Management Organisation Chart

7.4.1. OWNERS AND SHAREHOLDERS

Retainify will be initially owned by its founders: Joel Chacko, Karen Annette Delson, Nilesh Khatiya, Pallav Waghela, Paresh Panigrahy, and Sagar Samantaray. The ownership percentages will be determined in a formal shareholder agreement.

7.4.2. ADVISORY BOARD / MENTORS

We are actively seeking advisors and mentors with experience in relevant fields such as SaaS startups, churn prediction technologies, and marketing for B2B companies. Their guidance will be invaluable in shaping Retainify's growth trajectory. Our present mentor, Mr. J. Ray Doocey have been extremely helpful in sharing his insights regarding the business stratergy and overall service development.

This management and organisation plan provides a roadmap for Retainify's launch and future success. The team's expertise, combined with a strategic growth plan and strong leadership, positions Retainify to become a leading solution in the customer retention space.

8. FINANCIAL PLANS AND GO-TO-MARKET RISKS

8.1. REVENUE PROJECTIONS

Revenue over the next 2 years (quarterly) is forecasted to be €1,292,804.48. This is because, as we look at the sales projection tab in Retainify's financial plan spreadsheet, by the year 2026, the total subscribers are predicted to be 1354, which in turn produces a revenue of €1,292,804.48.

8.2. COST STRUCTURE

Retainify's income expense tab reflects on the breakdown of the costs associated with developing, deploying, and maintaining the solution. Individual cost of each of the expenses against the number of years can be analysed.

Expenses	Year 1	Year 2	Year 3	Total	Avg
Business Licences/ Company Setup (fixed)	€ 1,500.00	€ 0.00	€ 0.00	€ 1,500.00	€ 500.00
Computer Hardware (fixed)	€ 7,000.00	€ 0.00	€ 0.00	€ 7,000.00	€ 2,333.33
Prepaid Insurance	€ 2,500.00	€ 3,000.00	€ 3,500.00	€ 9,000.00	€ 3,000.00
Marketing	€ 15,000.00	€ 20,000.00	€ 25,000.00	€ 60,000.00	€ 20,000.00
Employee Salaries and Commissions	€ 200,000.00	€ 250,000.00	€ 300,000.00	€ 750,000.00	€ 250,000.00
Legal Representation	€ 15,000.00	€ 15,000.00	€ 15,000.00	€ 45,000.00	€ 15,000.00
Amazon Web Services	€ 4,000.00	€ 5,000.00	€ 6,000.00	€ 15,000.00	€ 5,000.00
Twitter Premium	€ 1,500.00	€ 1,500.00	€ 1,500.00	€ 4,500.00	€ 1,500.00
Stripe	€ 3,000.00	€ 5,000.00	€ 7,000.00	€ 15,000.00	€ 5,000.00

Total Expenses	€ 249,500.00	€ 299,500.00	€ 358,000.00	€ 907,000.00	€ 302,333.33

Table 6. Cost Structure

These costs are noted by taking the current cost structure trend being followed for similar expenses and taking the coming years into consideration.

8.3. PROFIT AND LOSS STATEMENT FOR Y3 ONLY

For the projected profit and loss statement for the third year, the income is noted to be €675,135, the expense would be €358,000. Furthermore, the end balance which adds all the three years is calculated to be €485,804.64.

8.4. FUNDING REQUIREMENTS

The required funding needed to support the business plan and growth strategies is estimated to be €100,000. Most of this expense goes primarily towards the initial licensing and marketing costs. This is because the rest of the technical tools and skills utilised are carried out by the founders and co-founders, cutting off all extensive funding required in Retainify's beta prototype.

8.5. BREAK-EVEN ANALYSIS

The calculated and represented breakeven point is noted in January 2024, and the income against the timeline of profitability is €25,743.79. The reason behind it is that even with a churn rate of 5%, post that, the subscriptions increased steadily across.

8.6. RISK MANAGEMENT TABLE

(i) Risk Identification

Disruptions can be inevitable, but recovery is a choice. Risk and Business Continuity Management is a vital component for every smart and sustainable business. It starts with identifying potential risks, planning against it, measuring it, and knowing the degree of accountability for it. Some of the potential risks and challenges that Retainify may face are classified into technical, financial, legal, and staffing.

(ii) Risk Mitigation Strategies

Retainify, unlike its competitors, does not simply rely on technology every time. It perceives business continuity as a state of mind. Instead of asking 'what to do' during a disruption, Retainify's team says 'this is what we do' because of the plans and strategies made to mitigate identified risks.

The following table displays the identified risk, its category, why it is considered as a risk, along with the mitigation strategies.

Risk Identification	Category	Description	Risk Mitigation Strategies
Technical Challenges	Technical	Delays in product development	- Agile development methodology implementation for faster iteration and testing - Setting clear milestones and timelines with buffer periods - Conducting thorough testing throughout the development lifecycle
	Technical	Security vulnerabilities in the Retainify platform	- Conducting regular penetration testing and security audits - Implementing secure coding practices and utilising secure development tools - Employing data encryption and access controls
	Technical	Scalability issues as the user base grows	- Utilising cloud-based infrastructure with auto-scaling features - Designing the platform for modularity and efficient data management

			- Conducting performance testing and monitoring resource utilisation.
Financial Risks	Financial	Failure to secure sufficient funding to support growth plans	- Developing a detailed financial model with realistic projections - Securing funding from investors through a strong pitch deck and business plan - Exploring alternative funding options like bootstrapping or revenue-based financing
	Financial	Difficulty acquiring and retaining paying customers	- Developing a clear value proposition and targeting the right market segment - Implementing effective marketing and sales strategies - Offering competitive pricing and freemium models to attract early adopters
	Financial	High customer churn rate	- Prioritising customer success by providing excellent onboarding and support - Developing churn prediction models to identify at-risk customers - Implementing proactive strategies to address customer concerns and improve retention
Legal Risks	Legal	Data breaches or non-	- Implementing robust data security measures and access controls

		compliance with data privacy regulations	- Ensuring compliance with GDPR and other relevant regulations - Clearly communicating data privacy practices to customers
	Legal	Intellectual property infringement lawsuits	- Conducting thorough patent and trademark searches before finalising product features - Securing necessary licences or patents for any third-party technologies used - Developing a clear intellectual property ownership policy
Staffing Risks	Staffing	Difficulty attracting and retaining top talent	- Offering competitive salaries and benefits packages - Fostering a positive and engaging work culture - Providing opportunities for professional development and growth
	Staffing	Key personnel leave the company	- Developing succession plans for critical roles - Cross-training employees to ensure knowledge redundancy - Fostering a dedicated team culture that promotes loyalty and collaboration

Table 7. Risk Mitigation Strategies

9. CONCLUSION

9.1. SUMMARY

Overall, an organisation is only as strong as its people. People are what make the cogs turn in a business. A business simply cannot succeed without the success of its people, so not only should the Human Resource department and the organisation as a whole, pick the right people, but should do everything in power to retain them, help them grow and develop. As highlighted in the Gallup's study (Inc, 2019), this would give them a competitive edge over its competitors' businesses.

Retainify emerges as a beacon of innovation which offers organisations a powerful tool to help them mitigate the attrition problem. By making use of advanced analytics techniques, software, and visualisation tools, Retainify provides valuable insights into the factors that are driving the company-specific churn with 88.4% model accuracy. At its core, Retainify features a comprehensive dashboard, a dynamic interface that gives a glimpse into the organisation's talent pool. With the help of this dashboard, users gain insights into the top attrition drivers specific to their company. This helps them to identify patterns, trends, and potential red flags such as cultural misalignment, and poor management practices related to the unwanted exits. Moreover, its predictive capabilities, Retainify empowers organisations to take proactive measures to address attrition and improve employee retention. Based on this data and insights, an organisation can implement strategic changes to improve the culture and try to support and improve an employee's experience. Retainify also helps in supporting the organisational growth and development by developing equality in terms of promotion and providing valuable insights to upgrade systems and processes. By aligning HR strategies with the organisation's goals and values, Retainify enables organisations to create a supportive and inclusive work environment that fosters employee engagement and loyalty.

Understanding the market needs and competitive analysis helped us address what our customers look for. Along with placing adequate revenue streams, pricing strategy and sales and distribution channels, having a dedicated management team, effective operational plan, and leveraging the power of data analytics further supports its launch. Future proofing our service with efficient business continuity management and giving importance to risk identification has always been our plus point.

In conclusion, Retainify represents a complete data-driven and transparent approach to how organisations approach talent management and helps in tackling the attrition issue. By using advanced data analytics and visualisation tools and dashboards, Retainify empowers organisations to proactively address attrition, drive strategic changes, and cultivate a culture of excellence and innovation. As organisations continue to navigate the complexities of talent management in an ever-evolving business landscape, Retainify stands as a beacon of innovation, empowering organisations to thrive and succeed in the digital age.

9.2. NEXT STEPS

Retainify aims to achieve even greater heights with exciting prospects.

(i) Technical Transformation:

- Cloud Deployment - As an open-source application, Retainify offers flexible deployment on platforms like AWS and Azure, boosting scalability and cost-efficiency. This will allow us to focus on core strengths and faster innovation.
- Optimisation - We're committed to improving Retainify's performance and user experience, especially under heavy loads. Thus, we plan to implement optimisation procedures and caching mechanisms.

(ii) People-Centric Transformation:

- Promotion Nomination - Going beyond generic attrition studies, Retainify will evolve to offer more personalised, people-centric transformations. Unfair or untimely promotions are a common cause of employee turnover. Our new Promotion Nomination feature will use data analytics to minimise bias and identify deserving people for promotion.
- Skill Gap and Engagement Score Analysis - Promotion Nomination will be linked with Skill Gap and Engagement Score Analysis, two additional features in the framework, empowering HR to create individual development plans and talent acceleration programs, to equip their people with the skills and opportunities for clear career growth.

(iii) Organisational Transformation:

In conclusion, Retainify leverages data to help HR professionals cultivate a positive and thriving organisational culture.

- Managerial Effectiveness Analysis and Retention Impact Analysis with Scenario Modelling - this feature will analyse past data to identify successful practices that promote growth, positive culture, and effective retention strategies. Ultimately, Retainify strives to transform companies into dream workplaces for their people.

  Let us build a future together where HR can truly empower their workforce!

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