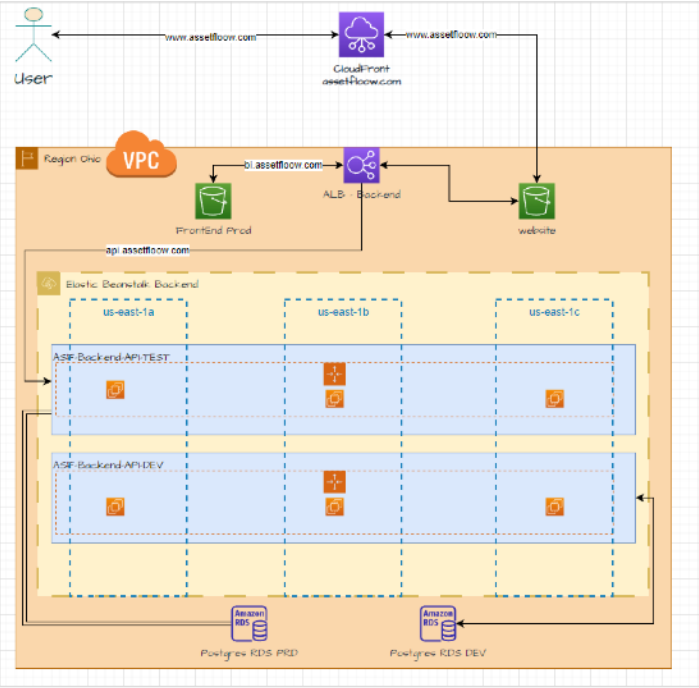
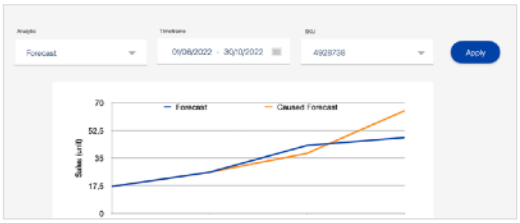
1. ANNEX I. Technical Specification Double-side Page

1. **TECHNICAL SCOPE:** The mock-up solution is suitable and correctly addresses the challenge/theme selected over the REACH dataset/s. The Big Data solution architecture proposed is adequate to tackle the data management issues associated to the solution in mind. "To what extent does the applications handle the data provided?"



During this collaboration, our main objective is to build a web platform that offers a user-friendly interface for effortless visualisation and interpretation of the results. The data provided by users is uploaded in an Excel file format, similar to the one shared, and then processed in a private network of AWS cloud, where our proprietary Behavioural AI models are deployed. To access the system, users simply need to login using their email and password. Once logged in, they gain access to a comprehensive dashboard equipped with a menu that enables them to explore and navigate through the available information seamlessly. On the left, it is shown a general diagram of the solution, and below an example for the frontend.



2. **SELECTION OF ALGORITHMS AND TOOLS:** The indicated Data Science approach, i.e. algorithms chosen, and Big Data architecture approach, i.e. tools chosen may successfully accomplish the required data governance, processing and analysis. A clear understanding of the used REACH dataset/s is demonstrated.

To address the challenge of demand prediction for Migros, AssetFloow plans to use a three-step technical approach. The first step is to prepare the data provided by Migros. AssetFloow will preprocess the sales and inventory data, ensuring that it is in a usable format. This will involve cleaning the data, handling any missing values, and transforming the data into a format that can be fed into the Behavioural AI model. Once the data has been preprocessed, the AssetFloow team will explore it to understand the relationships between the different variables and identify any behavioural patterns that can be leveraged by the model. The second step involves applying behavioural models. This will include training the AI model and evaluating its performance on a validation dataset. AssetFloow will use various metrics such as accuracy, precision, recall, and F1 score to evaluate the model's performance and identify any areas where it may be underperforming. Based on the results of the evaluation, the model may need to be optimised by leveraging simulated environments or by introducing additional stimulus to the data. The final step is the development of an API. Once the model has been optimised, it will be deployed to a production environment where it can be used to make predictions on new data through an API running on the cloud AWS. This will allow Migros to leverage the prediction models on their own platforms, or to use AssetFloow's web platform.

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3. **TECHNICAL SCALABILITY AND FLEXIBILITY OF THE SOLUTION:** The solution can truly cope with humongous and increasing datasets, potentially from diverse data providers, and is flexible it to adapt to other related domains.

Our solution supports growth, in which a technical approach is implemented using an RDS database and backend instances that incorporate an "auto-scaling" feature. This feature allows the solution to dynamically scale its resources in response to increased demand, even though it may result in higher costs. As a result, the system ensures high availability and fault tolerance by adapting to workload fluctuations and effectively managing failures. On the AI models front, we have developed a framework capable of identifying data patterns from various sources beyond sales and inventory data. This flexibility allows the utilisation of different data sources, such as weather and calendar events, as long as they adhere to the required format. This means our solution can effectively leverage diverse data sources, without manual input, enhancing its adaptability and expanding its applicability beyond traditional datasets.

4. **DATA GOVERNANCE AND LEGAL COMPLIANCE:** Data sharing challenges, data governance and legal compliance, must be observed. The proposed solution is compliant with the current data legislations concerning security and privacy (e.g. GDPR).

Our proposed solution prioritises data governance and legal compliance by addressing data sharing challenges. It is important to note that our models do not utilize personal data associated with shoppers. The reason to use Behavioural AI models is to avoid bias related with gender, age or any individual metric. All the analysis is anonymous, based only on transactional and environmental behavioural. Regarding data deletion, we provide users with a straightforward and transparent process to request the deletion of their data. Users can submit a deletion request through our platform, and once verified, their data will be permanently and securely erased from our systems.

5. **QUALITY ASSURANCE AND RISK MANAGEMENT:** Feasible and credible quality process followed for the final product generation. The potential risks in all the phases of the project (design of the solution, development, testing, deployment...) are identified and convincing mitigation plans put in place.

In order to ensure a safe and highly productive deployment process, we have implemented a complete development environment that operates independently from the production system. This separation not only safeguards the stability and reliability of the production environment but also maximizes productivity during the development phase. Throughout the program, users from Migros have the opportunity to leverage our web platform. To guarantee the optimal performance of our solution, we make extensive use of a dedicated testing environment. This environment is specifically designed to facilitate testing and gather valuable feedback from users before moving forward with the deployment to the production environment. By utilising the testing environment, we can proactively identify and address any potential issues, ensuring a smooth and seamless transition to the final production stage. This approach minimizes the risk of unexpected complications and allows for thorough validation of the solution's functionality and performance closed with the end users.

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