

# Percept Solutions

Case Studies



# Overtime Hours Monitoring Application

## The Problem

- Our client, a global hi-tech manufacturing company, was having severe challenges with attrition rates, with employee surveys revealing that there was general mismanagement of shift scheduling and planning of overtime hours.
- Our client recorded information regarding leaves, work schedules and employee timesheets in an Excel workbook. This resulted in lack of visibility into peak periods of workforce demand, overtime requirements, and vacation scheduling. HR would also struggle with the labour-intensive manual update process. The macro-heavy Excel was poorly designed and would take 5 minutes to function after updates were made.
- This was impacting morale and was leading to classic measures of job avoidance including frequent absence and tardiness. Employees avoided going to work because they felt overworked and were constantly juggling competing demands. There was also frustration in some locations where during the holiday season the managers approved leave for multiple employees resulting in added workload for others

## The Solution

- We developed a web-based scheduling & time tracking management platform that enabled our client to effectively roster and schedule employees. It helped the organization manage shifts, achieve labour balance, and adhere to compliance regulations. Excel formulas that used to take several minutes to process would now be done in milliseconds. Employees were able to see real-time updates which resulted in transparency and workforce balance. Errors and omissions decreased by 99%. Business rules around scheduling could be created and assigned.
- The SaaS application created for the organisation, allowed workers to update their information and access relevant information about overall team scheduling through a user-friendly UI. Employees received consistency and flexibility in their work schedules while managers were given tools to forecast expected peak demand days and visualize approved vacations

## Benefits

- A post implementation survey demonstrated the benefits of the solution. The employees showed substantial improvements in measures of overall feelings of belongingness within the organization. Qualitative feedback highlighted proper channels of communication and a sense of schedule predictability as key reasons why. Employees also reported big improvements to work-life balance. Follow up conversations with the client revealed an overall decrease in employee turnover.
- The HR function identified key gains in productivity as highly manual processes were now automated. Attendance and payroll rules were also more easily processed without manual intervention. The application provided vital workforce KPIs to executives, increasing organizational agility



# Marketing Analytics Platform

## The Problem

- Our client was a global food retailer looking to conduct analysis on their pricing strategy. They were seeking analysis of the price elasticity of demand and to evaluate if they should more closely mirror their competitors' pricing strategies.
- Additionally, our client's company's marketing campaign planning application lacked a simplified approach for updating information on a regular basis. Data was distributed across disparate sources and there was no integrated view of sales success across the organization. They lacked capabilities to provide near real-time marketing effectiveness insights such as continuing "due-to" analysis, business planning simulations, and model changes
- This was impacting our client's market reach and was driving a high marketing cost-base. Furthermore, by using outmoded methods of marketing like last click attribution, our client was losing out on opportunities to maximise sales and customer reach and was unable to make the most of digital marketing platforms

## The Solution

- We developed an integrated 'Operation + People + Artificial Intelligence' solution. This featured a data ingestion method that automated sales data and forecasting uploads to better understand marketing campaign success. We also helped create a Planning Platform for continuous 'due-to' and business planning simulations.
- We further developed a pricing simulator to calculate the volume and value impact of price changes for various Promoted Price Groups (PPGs). The simulator helped provide information on price sensitivity across various merchants, both offline and online. Analytics-driven insights on price interactions between online and physical retailers were also surfaced. We provided our client with the tools they needed to study the impact of in-store promotions and merchandising support. This helped the client understand consumer behaviour and create more granular client segments

## Benefits

- An analysis of the current and previous data was done in terms of customer reach and the impact of price change.
- It was found that frequent model updates assured real-time and relevant information which helped our client to target the right market and the right consumers. It also allowed our clients to implement marketing model driven insights across additional markets, and our Planning Platform was pushed out as the worldwide solution for continuing due-to and business planning simulations.
- The pricing stimulator helped the client with promotion optimization to enhance ROI across brands, consumers, channels, and regions. It also helped our client conclude that volume losses from price hikes might be offset by in-store promotional efforts. The results from the pricing simulator helped our client to simulate various price and marketing scenarios. Such insights aided in the optimization of pricing methods



# Migration of Intranet Apps to .Net Blueprint

## The Problem

- Our client was a German car manufacturer dealing with car booking, car ordering and providing other customer services to the client. The company used intranet applications developed in silos to manage key customer ordering, production, and supply chain management functions.
- The siloed nature of the applications meant that the functions were unable to communicate with one another leading to customer journey misalignment and poor sales planning. For instance, while at the time of car booking, the application showed they were still accepting order for a particular model, the production department had updated its system to discontinue the supply of that particular model. The lack of integration of data across the organization led customer frustration and strategic misalignments across the company

## The Solution

- We helped our client migrate the intranet applications to a .Net Blueprint and helped them modernize their system of car booking, car ordering, sales planning as well as improved the UX/UI of warrant/servicing app suite integration. Data was integrated in a cloud-based system across applications and customer sales, customer servicing, inventory, and supply chain management teams were able to collaborate closely on sales planning and management. We also helped them improve the use of SSO Plus AD for authenticating and authorizing.

## Benefits

- The client saw substantial decreases in customer complaints and a 15-20% reduction in order fulfilment time as the sales and inventory teams were able to more closely coordinate on supply chain planning. A simpler UI/Ux helped surface key insights and intelligently alert users to potential supply-demand mismatches



# E-Trial New Workflow Framework

## The Problem

- Our client was a global hi-tech manufacturing company that provided expenditure management solutions for technology, procurement, education, utilities, and other industries. The company has over a hundred personnel working in different departments.
- Our client had rapidly grown and had created multiple ad-hoc workflows with little consistency with respect to the procedures, approvals, or process owners involved. This would lead to a lot of internal confusion by team members as they sought to identify the appropriate procedure for their specific needs. It also led to frustration on behalf of clients who were often left waiting due to extended processing times. There was consensus that even when an individual did find the appropriate workflow many of the steps were superfluous or would refer to individuals who were no longer at the firm.
- Our objective was to create a new automated web-based, single-page workflow application that would intelligently route requests to appropriate approvers as required and clearly outline to individuals the steps they'd need to take to proceed with their action.

## The Solution

- We created a cloud-based multi-user procurement management solution from the ground up. The user was able to select their task and then receive a clear system of action items and timelines. Where appropriate the system would intelligently route requests to the concerned individual for their approval / review / input and send reminders depending on the criticality of the task. The system was integrated with the HR platform so that during the off-boarding process, approval responsibilities would be migrated to another individual helping ensure consistency in handover of activities.
- JavaScript frameworks and widgets were used to construct interactive dashboard features such as a drag and drop module within the "Expression Bar" research data display. We designed the application's user interface based on the design of the original on-premises system and the company brand book. The product's design was also optimized for mobile use and the interface included both dashboard and list views.
- To accommodate complex user hierarchies, the technical team created a serverless, multi-tenant solution. The product provides for the addition of additional users to the system, as well as the assignment of roles, and transparency of the work done. Integration with single sign-on substantially boosted speed of user adoption. The solution made use of Azure Functions and a flexible data exchange technique in a buffer fast storage with a backend developed using .NET Core and React for the UI.

## Benefits

- The system transformed internal approvals and controls across the organization. After launching the platform with a small number of workflows, the popularity of the system through the pilot phrase spread, and deployment was accelerated as multiple business functions sought to leverage the system across internal departments. Within six months the number of workflows in active use across the system increased 300%.
- Migrating to the new workflow system was a further opportunity to review ossified processes and to streamline operations. Multiple redundant approval requirements were eliminated while in a small number of cases critical organizational vulnerabilities were detected and new approvals were added.



# Securing Application From Vulnerabilities

## The Problem

- Our client was a financial agency that provided individuals with loans and wealth management products. When their competitors experienced a data breach due to an unpatched vulnerability leading to sensitive client information being compromised, our client sought to take preventive measures and to improve identity management and access control throughout the company's infrastructure.

## The Solution

- We helped our client by leveraging proprietary algorithms to identify vulnerabilities in their system and potential avenues for exploitation. The testing consisted of automated security vulnerability scanning which was further augmented by manual testing to detect and remediate vulnerabilities. We also aided in improving identity access management and helped implement a framework to classify and make information available across the firm on a need-to-know basis.
- A team of software developers who were experienced in standard and security development approaches conducted the assessment and remediated security gaps with extensive testing being done to ensure the quality of the fix. Reruns of automated web application security scans were compared to pre-remediation scans to confirm that high-risk weaknesses had been repaired and that no new vulnerabilities had been created.
- Vulnerability assessment and extensive penetration testing was used to determine if the app was vulnerable to attacks and exploitation. The test consisted of automated security vulnerability scanning, supported by manual testing on both form factors (Web, Mobile) to detect and exploit vulnerabilities.

## Benefits

- Our client was able to use our final systems security review document in due diligence discussions with clients to help boost AUM levels.
- The client also saw performance improvement as the application got facelift in terms of performance while other issues were being fixed simultaneously.



# Sales and Volume Planning Platform

## The Problem

- Our client was German car manufacturer. They were striving to discover tools to evaluate, prioritize, and respond swiftly to new challenges such as shifting consumer trends and a changing macroeconomic environment. They desired more comprehensive and realistic sales predictions to help marketing and sales teams make wiser financial decisions. Mismanagement of sales forecasting meant that our client was forced to keep an unnecessarily large inventory on-hand incurring significant warehousing, inventory, and other costs.
- Our client wanted us to develop the tools they'd need to better forecast demand allowing them to then draw insights and develop strategy based on their operational capacity to supply that demand.

## The Solution

- We delivered a solution that combined commercial, macroeconomic, and marketing data to create an ensemble forecast model utilizing several machine-learning based algorithms. With each monthly incremental data upload, the AI-based ensemble enhanced prediction accuracy by rapidly responding to developing trends including supply chain disruptions due to natural disasters and potential price spikes of key inputs.
- The platform incorporated baseline sales data and expected uplifts in a single model. It would readjust its forecast based on new data and events to revise forecasts. The platform helped the client leverage historical sales information and use it to predict product demand and optimize production cost.

## Benefits

- The platform helped our client gain significant business benefits such as improved demand planning accuracy, customer service levels, and product brand reputation after numerous planning cycles with statistics given and model performance appraised. Eventually management felt confident to keep much lower levels of inventory on hand freeing up significant capital to invest in other priority initiatives.



# Shared Capabilities Architecture Revamp

## The Problem

- Our client was an online insurer startup which had seen a large amount of success and was seeking to rapidly scale across its region. Their core insurance sales software platform had been built with a quick GTM in mind and was struggling to scale alongside the needs of the organization. The system encountered traffic and technical difficulties at every step and required frequent reboots causing disruptive server downtime. Furthermore, the website design was non-responsive, and didn't adapt to differing screen sizes and platforms. The system as expensive to maintain.
- The system was further limited in having hard-coded design features based on the company's host country's regulatory requirements. As it sought to expand across the region it required extensive reworking of the entire code-base to adapt to the regulatory requirements of new markets. This was uneconomical and substantially reduced organizational agility.

## The Solution

- We helped the client re-engineer their entire core software platform. We further helped our client create a supporting shared services entity and ramp up from 3 tactical staff to 25 strategic personnel. The system was designed with an extensive back-end controls panel which allowed the organization to easily migrate the system to other countries, and make changes through a straightforward GUI to adapt to the local regulatory requirements of new markets. We also helped our client take an enterprise architecture approach by helping them stabilize their core system and their microservices.

## Benefits

- Our client was able to roll out their services to the Thailand market in just nine months. The response time of the B2C portal went dropped several orders of magnitude from seconds to milliseconds. Server downtime was virtually eliminated and a more responsive web design helped the client expand its market presence and reach. The company was also able to more quickly adapt to changing regulatory requirements in the markets in which it had an existing presence, and to quickly roll out new products and features. An A/B testing engine allowed the company to create and test different campaigns, and to target them at specific markets or user profiles, to evaluate its potential impact before taking the campaign live based on pilot results.
- The company has continued to expand its presence both within and across markets backed by a core insurance sales software platform that is able to flexibly adapt to varied markets while consistently delivering an industry leading attractive user interface.

