The iMPACT analytics playbook

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Intro

Data explosion, digital disruption, and customer experience are today the top three drivers of business operations.

While analytics has been leveraged historically to improve operational efficiencies, enterprises are now beginning to realize that cost reduction is not the end game—the focus has now shifted to improving topline performance and enhancing end-user experience.

According to leading analysts, organizations that effectively leverage RPA, Smart Analytics and AI stand to truly differentiate themselves in the current marketplace. Smart analytics is the critical link that enables harmonization of business operations by driving insight-based decision-making.

HCL's iMPACT analytics framework has been built to seamlessly streamline digital operations across the traditional front, middle and back office setup in enterprises.

Learn how our smart algorithms and research-backed frameworks have helped our customers improve revenue streams, deliver top-class customer experience and smoothly transition from platforms to ecosystems.

Full-throttle predictive analytics **improves lead generation** for a large automobile client

Overview

A large automobile manufacturer with over 40% market share wanted to increase its penetration in the premium car segment. HCL, as an existing vendor, was preferred by the company as their technology partner

Tools & Methodologies

- **SAS Enterprise Guide:**
  Data preparation and evaluation
- **SAS Enterprise Miner:**
  Predictive analytics

Business challenges

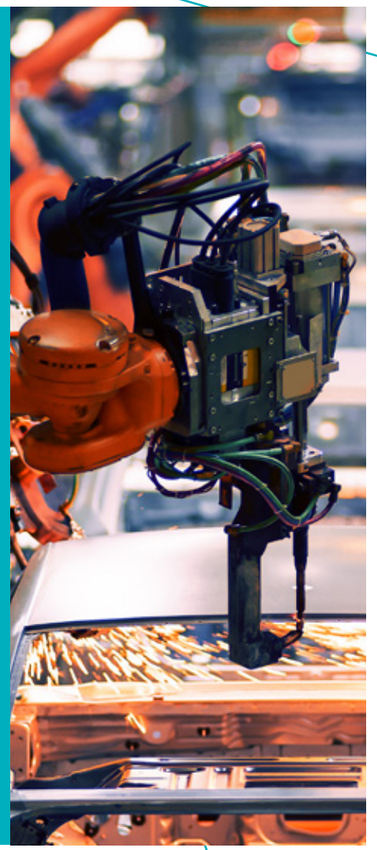
Despite a significant market share, the client faced certain major challenges affecting:

- Fragmented data silos created a hindrance in targeting the right segment
- Lack of skilled personnel to generate mathematical machine learning models to achieve the end objective
- Highly manual process of prospect targeting and conversion

Solution

An extensive statistically backed Prediction Model was developed to identify the propensity of a given customer to purchase the car.

- Segmented customers into more refined clusters, based on demographics, previous buying patter, service history, vehicle information, auto card data, etc.
- Discovered new customers based on likely behavior rather than past behavior
- Successfully targeted and added a substantial footprint in the premium segment of the market



Benefits

- USD 6 million in lead generation for the client
- 18% better reach to customers because of CRM data sanity and data standardization
- 12% boost to sales conversion
- 30% improvement in overall prospect as compared to the manual CRM campaigns

Lowered stress and enabled productivity through big data for a **US-based internet giant**

Overview

A US-based multinational technology company specializing in online advertising technology, search engine tech and cloud computing wanted its procurement team to generate a high-value data insight from all supplier orders. HCL, using its big data expertise, improved the resource utilization and aided the client in providing more meaningful business insights

Tools & Methodologies

- **Google BigQuery:**
  Big data management and schema creation
- **Tableau:**
  Self-service BI

Business challenges

The main challenge lay in collating supplier order and maintaining a record of the due delivery – this was a highly manual process that lead to extended efforts and repeated errors:

- 1200+ vendors spread across geography
- Use of legacy platform with manual compilation
- The process involved duplications and erroneous entries, leading to delay in the overall value chain
- Heavily impacted the resource utilization, affection SLA adherence and higher manual effort

Solution Delivered

- HCL used the server-less and scalable enterprise data warehouse for data rationalization, facilitating more than 10 Terabytes of transactions per day
- Deployed advanced SQL and BigQuery Sourcing data from multiple schemas
- Effective KPI-based flagging on supplier product delivery due date, leading to meaningful business insights
- Downstream data visualization tools were used to create interactive self-service business intelligence dashboards

Benefits

- 14% reduction in manual efforts
- USD 58K savings from the entire process and automated reporting
- Visualization of real-time data for operations as well as for business with 100% accuracy
- Automation and data integration with the BigQuery engine resulted in a consistent and transparent system, reducing risk-based errors and preventing non compliance
- Significantly improved TAT

Transforming the revenue cycle through **predictive analytics** for a healthcare equipment provider

Overview

A US-based healthcare equipment provider wanted to improve the collections by shrinking the inefficiencies in managing the account receivables. HCL was chosen as the technology partner to help the client with its larger volume of unstructured ageing invoices.

Tools & Methodologies

- Random forest and gradient boosting decision were used to build the predictive classification model
- Statistical lift and gain model were used to arrive at the optimum staffing

Business challenges

The client had a large volume of uncollected invoices. This impacted the following:

- Difficult to identify the right invoices to improve collections
- The lower efficiency of collection efforts

Solution

- A comprehensive machine learning-based predictive model was developed, which prioritized the invoices to be targeted
- The model prioritized the invoices based on multiple parameters such as value, ageing, payor, denials, number of attempts, etc.

Benefits

- 41% increase in absolute collections
- 2.6x increase in revenue
- 61% increase in collectibles – Indicating potential increase in coming months

Using big data to achieve **forecasting excellence** for an American tech giant

Overview

A US-based multinational technology company specializing in online advertising, search engine tech and cloud computing faced an inventory forecasting problem for one of its online advertising platforms. HCL was chosen as a technology partner to improve forecasting accuracy and efficiency.

Tools & Methodologies

- BigQuery, Python, Tableau, SQL

Business challenges

The company faced the following supply chain management issues:

- 60-70% variance in demand forecasting
- Over-budgeting
- Low accuracy
- High product obsolescence cost
- High safety stock requirement
- Inventory stockouts

Solution

HCL deployed a predictive demand forecasting model that made use of and facilitated the following:

- Enhanced data selection from historical data ranging back to the past 3 years
- Comprehensive statistical modelling ausing a variety of models, including a linear model, ARMA model, ARIMA model, SARIMA model, VAR model, Prophet model, Holt-Winters model, LSTM- RNN model and boosting techniques
- The forecasting output was tweaked to include long-term forecasts and order planning

Benefits

- 30-40% improvement in forecasting accuracy
- Lower safety stock requirements
- Better product lifecycle management
- Improved budget planning
- Reduced product obsolescence costs
- Reduced inventory stockouts

Data-driven cost allocation using **Machine Learning** for a US-based tech firm

Overview

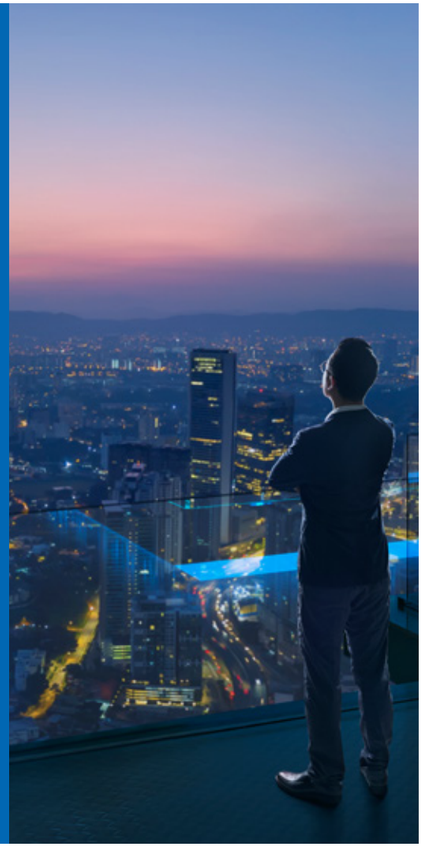
A US-based multinational technology company specializing in online advertising, search engine tech and cloud computing needed to remodel its comparative tool used for calculating total cost of ownership. HCL was the technology partner chosen to help create a foolproof framework.

Tools & Methodologies

- BigQuery, Python, Tableau, SQL

Business Challenges

- No existing framework to measure, control and optimize TCO
- Inability to define products, track costs and assign pricing to unique definitions of value
- No tools to support cost optimization, showback and chargeback
- A need to drive effective cost transparency initiatives



Solution

Created a framework to measure, control and optimize TCO using ML

Benefits

- Identified TCO drivers (cost heads)
- Analytics-driven cost allocation and reduction in TCO
- Reduced capex
- Facilitated informed decision making, improved supplier performance and created what-if scenario analysis models.

Using a probability-backed framework to deliver better **customer experience** for an American software company

Overview

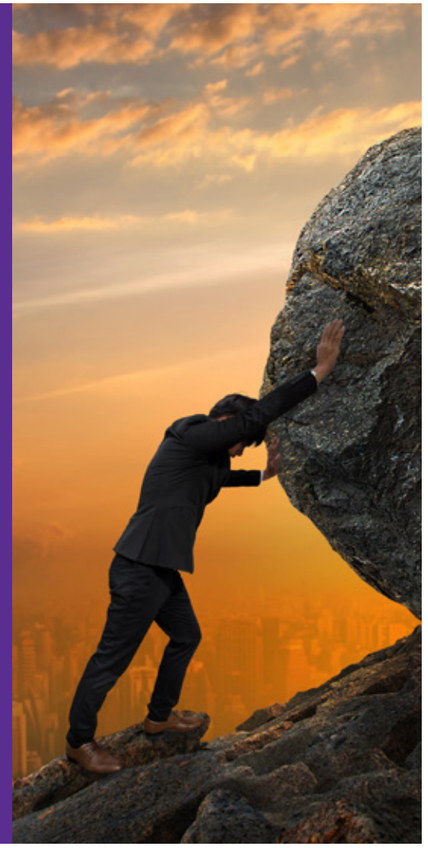
An American cloud-based software company was experiencing low CSAT scores for its products. The company chose HCL as an enabling partner to ramp up its customer experience.

Tools & Methodologies

- Tableau, Python, SQL

Business Challenges

- Low CSAT scores
- The low CSAT scores were caused to a certain extent by different parameters and different combination of parameters, some of which were faulty
- The company also had a huge data problem – it was a challenge to perform the entire analysis on MS Excel and then relate the analysis to find trends via OpenQuery



Solution

- Used historical data to build a pattern of parameters within all queries that received low CSAT
- Identified impactful variables through a probability study using logistic regression

Benefits

- Improved CSAT by 7%
- Created a system that prioritized high-impact incidents based on individual probabilities
- Identified incidents with a high probability of a bad score or an escalation

Improving topline performance via **business intelligence** for a Japanese automaker

Overview

A Japanese automobile giant struggled to identify upsell and cross-sell opportunities. HCL was chosen as a technology partner by the company to improve topline performance.

Tools & Methodologies

- R, Tableau, SQL

Business Challenges

- A need to reduce the MIS headcount for two different product lines
- High costs of running the MIS practice
- Inability to glean impactful insights or run analytics using the current reporting suite

Solution

- Propensity modelling was performed on the existing customer base
- A business Intelligence tool was deployed to support the entire reporting, leading to near real-time dashboards, data-driven insights, sophisticated analytics and a high level of security with user-based logins

Benefits

- The company earned over USD 5mn from cross-sell and upsell-based sales revenues in the first year of implementation
- The automobile giant was also able to save 50% on FTE costs and experienced a 22% reduction in overall MIS costs

Elimination of **human error**, driven by data and supported by automation

Overview

The FAO function of a US-based multi-billion-dollar agricultural cooperative had a reporting and decision-making problem. HCL was roped in as a technology partner to improve organizational visibility and aid data-driven decision making.

Tools & Methodologies

- Tableau, Python, SAS, SQL

Business Challenges

- No data-driven decision making across the FAO function
- A complex, manual logic existed for creating/updating reports, increasing the risk of human error
- High FTE costs were incurred because of the time spent in dealing with multiple data sources
- Slow response time in creating reports and visualizations
- The existing infrastructure was not in line with the organization's wider vision to move to Cloud

Solution

- A newly created architecture where SAP would accurately feed all the existing and new databases with different types of information
- A range of tools were implemented to better inform managerial decisions – some of them include Essbase, Vena, O9 and Analysis Cube (MS Azure)
- Power BI was deployed to quickly generate reliable reports and dashboards

Benefits

- Reduced FTE by approx. 30%
- Automation resulted in error-free exception handling
- Eliminated human error via automated bots
- Better decision-making was made possible through predictive analytics
- Enabled 100% audit compliance via automated logging and audit trail for each performed task

Overhauling invoice fulfilment via **Deep learning** and NLP

Overview

The finance department of a large American commercial broadcast radio and television network wanted to automate invoice fulfilment for over 2000 vendors worldwide. HCL was chosen as a technology partner to improve accuracy, efficiency and compliance.

Tools & Methodologies

- Tableau, Python, Verint, SQL

Business Challenges

- Timely and accurate invoice fulfillment of over 2000 vendors worldwide
- A system comprising highly repetitive tasks that demanded manual data entry
- A need to do away with the manual overhead incurred in maintaining action logs for compliance purposes
- Inability to automate the invoicing process to minimize errors, free up talent throughput, and reduce costs

Solution

- HCL implemented the EXACTO™ in the client's finance department leverages to automate the data extraction in the processing of invoice
- After a Robotic Process Automation (RPA) integration, EXACTO™ used its NLP capabilities to rapidly and accurately extract data from thousands of documents originating from multiple vendors
- Using machine learning, deep learning and NLP, EXACTO™ read emails, identified invoices, extracted invoice data, structured the information, and classified it into categories
- The EXACTO™ invoice data was then provided for verification to the Toscana Business Process Suite, which then directly populated it into the existing workflow
- HCL trained the entire client team on solution usage and incorporated all the necessary business rules to minimize exceptions

Benefits

- Reduced Average Handling Time (AHT) by 40% and increased scalability at the same time
- Provided more than 80% accuracy at the field level for all documents
- Ensured improved audit trails and regulatory compliance
- Automated vendor identification and verification from unstructured data
- Automated data extraction without the need to manually configure each input template
- Enabled rich domain ontology to process invoice documents

A data-backed framework helps improve **customer service** for an Irish bank

Overview

One of Ireland's largest commercial banks faced a problem with its customer service – its AHT and FCR rates needed to be addressed immediately. HCL was roped in as the preferred technology partner to help the company improve its CSAT scores and facilitate better customer service.

Tools & Methodologies

- Tableau, Python, Verint, SQL

Business Challenges

- High AHT rates meant that issues weren't getting resolved as quickly as they should
- Low CSAT scores
- Issues with regulatory compliance
- Problems with the call arrival pattern
- FCR rates needed to be improved

Solution

- The correct metrics were identified and integrated into the system
- Appropriate categories were created
- A data ingestion framework was defined, and the language pack accuracy was enhanced
- The process was improved in an end-to-end manner

Benefits

- Productivity rates improved drastically
- Call volumes saw a decrease
- CSAT scores experienced a marked rise
- Compliance rates improves as well

Digital Process Operations

Please write to us at impactanalytics@hcl.com

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