



# IMPROVING FRAUD DETECTION FOR A GLOBAL TRAVEL FOOD RETAILER THROUGH STANDARDIZED DATA ANALYSIS

## Abstract

Infosys BPM worked with a global catering and food retailer to develop an analytics solution to detect and control employee fraud. Our solution employed efficient data analysis techniques and used a Center of Excellence (CoE) concept to deploy best practices across the client's business globally. This helped detect 5% higher employee fraud than previously detected and convert about 70% of the fraud cases identified into corrective action.



## Detecting employee fraud key to plugging loss but complicated

Our client is a global leader in catering and food retail with stores spread across 400 locations. The company has over 450 brands in its portfolio, including local country-specific brands. It has expertise in running food outlets in travel locations in different formats – including quick service restaurants (QSRs), table restaurants, and small retail store outlets. Such a wide-ranging portfolio added complexity to detecting employee fraud that primarily stemmed from employees taking cash and inventory from the stores.

The company's small and regionally distributed Loss Prevention Analysis (LPA) team was constantly juggling between data to identify fraud cases and conducting physical verifications through store visits. Each region had its own set of rules based on local laws, franchisee brands, and regional culture. The LPA team members mostly belonged to the regional operational teams. Despite having good retail operations knowledge, they lacked the capability to identify fraud through analysis. Some of the key pain areas for the client were:

- **Low detection:** Employee fraud identified was only 0.8% of the revenue whereas trade associations such as the National Retail Association (NRA) estimates that it can cost a retailer up to 7% of their annual revenue.
- **Unaccounted gap:** This is defined as the theoretical cost of sales less actual cost of sales –essentially a leading indicator of loss. Some of the contributing areas to loss are:
  - Returns / waste
  - No-Sale / cancelled transactions
  - Error corrections
  - Voids
  - Negative checks
  - Split checks and discounts that are fraudulently used
  - Sales under threshold / under-ringing
- **Tribal knowledge:** The client's operations were spread across seven global regions and each region was working independently with their own set of rules, without sharing the knowledge or best practices for detecting fraud with other regions
- **Legacy system:** The client's legacy system for fraud detection had multiple limitations such as single rule-based analysis, no case management capability, and inability to drill-down into transactional data
- **Analysis by eyeballing:** With the limited capability of their legacy tool, the client team was unable to drill-down and were just eye-balling the transactional Point-of-Sale (POS) data of a few top cashiers contributing to fraud / loss.
- **Case tracking using MS Excel:** Fraud cases were logged into Excel spreadsheets and there was no workflow tool to track the lifecycle of case investigation and closure.
- **No benchmarking at store-type level:** There were no benchmarks around risk areas at a store-type level. For example, there was a dollar limit established for 'sales under threshold' but this was at an aggregate level (across stores) so it was impossible to use this to determine whether there was fraud for a specific store that sold only small-value items.

## Our solution

### Our solution comprised:

- Setting up a team of data analysis experts:** Our team consisted of experts in analyzing retail Point-of-Sale (POS) data, pattern recognition, and establishing relationships between multiple data points. They also had experience using LPA tools to develop analysis.
- Gaining real-world store experience and training:** To gain real-life exposure to the store operations, issues, and the workarounds used by cashiers, our analytics team spent several weeks in client stores and worked as staff / cashiers. Through this, the team gained an understanding of systemic provisions used by cashiers and how can they possibly be misused for personal gain.

- Setting up a CoE to centralize knowledge:** We centralized the LPA team in the form of a CoE dedicated to employee fraud detection using POS data. These analysts with their specialized data-analysis skills and business logic focus were able to detect fraud by rigorously analyzing data.
- Separating analysis from investigation:** While we focused on building a team with pure analysis skills, the physical in-store fraud investigation was managed by the client's teams in the respective regions. The LPA analysis team worked in partnership with the clients' regional LPA teams and created fraud cases backed up with data / facts for investigation.
- Appending risk books with new ways of fraud detection:** Once our LPA team identified new areas of employee

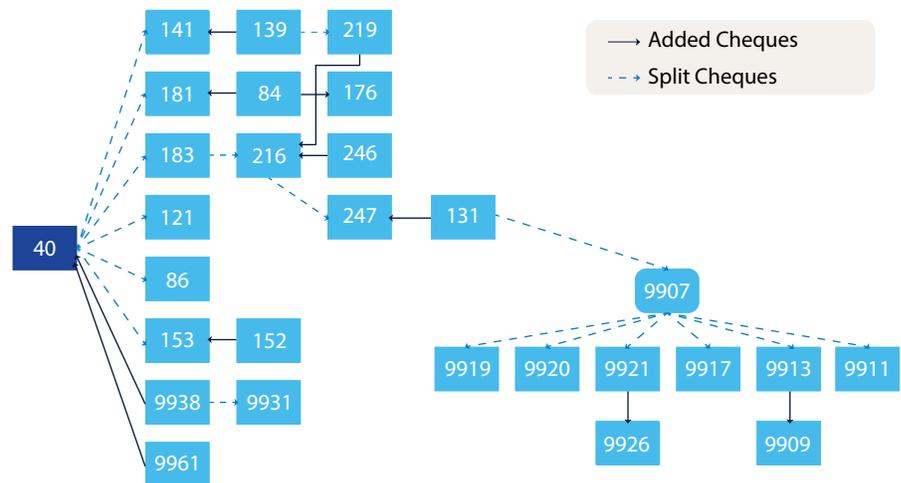
fraud in the client business, this was promptly added to a risk work-book. As an example, a cashier was splitting a cheque, as high as over 25 times and eventually converting them into waste to pocket the sales.

- Integrating case management:** We leveraged the case management functionality of the new fraud detection tool. All detected cases are now tracked with detailed analysis, supporting facts, data and reports, and step-by-step details of investigation and the final action / decision. For e.g., Warning letters / dismissal of fraudulent employees, etc. is recorded against each case. This greatly helps our client adhere to the legal compliance with labour laws in each country.

## Benefits

### Our approach and solution resulted in three important benefits for the client:

- Higher fraud detection:** With dedicated analysts working on data analysis, we are able to detect higher volume of suspected fraud – 5% higher than previously detected in the first two months. Furthermore, we were able to convert a majority of the fraud identified (about 70% of cases) into corrective action (employee dismissal or systemic fix).
- Identified new category / highly complex fraud:** The Infosys LPA team identified new areas of employee fraud including some complex fraud cases where a cashier was splitting a cheque (bill) as high as over 25 times and eventually converting them to waste and pocketing the money.



*Illustration of high-complex case of split cheques that were subsequently converted to waste. The above numbers represent cheques which have been split / added back.*

- Globalized / standardized loss-management:** By establishing a CoE, we were able to develop several artefacts to document the knowledge gained for future reference and training such as:
  - Centralized store repository (store-level master data)
  - Knowledge repository of new tactics to detect fraud
  - Robust training documentation to help vertical start the subsequent waves to transition loss prevention analysis from the remaining regions.

We thus helped identify highly complex employee frauds, improve the quality of analysis, and reduce the time to analyze & detect employee fraud.

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