

# Case Study:

## Protecting Baby Formula Stocks from Online Raiders

### The Business Problem

- A local manufacturer's e-commerce channel was being abused by shoppers who were exporting products to China via unofficial channels ("daigou").
- Demand was highly volatile. Local supply was under threat.
- Daigou were evading product quotas by logging in as guest users and obfuscating their identities.



### The Solution

#### Analysis

- Unsupervised learning revealed 5 user behaviour segments, ranging from short-term quota abuse to large-scale operations.
- The most active daigou used **identity obfuscation / augmentation** (multiple logins, names, address variants) and/or **coalitions** (large numbers of individuals with a small number of common addresses or telephone numbers).
- One coalition employed countermeasures against credit card fraud detection rules.
- Supervised machine learning (using an engineered feature as a proxy label for daigou class membership) revealed 6 useful predictors of near-term daigou behaviour.

#### Actions

- Street address validation.
- Quota enforcement on street address, telephone number, e-mail street address.

#### Outcomes

- Long-term predictive modelling revealed significant changes in user behaviour following corrective actions.
- Most daigou gave up. Apparently, even coalitions became impractical once quota enforcement was in place.
- Demand returned to pre-daigou levels.

