

# Combating Customs Fraud and Tax Evasion Case Study

## CHALLENGES

- Insufficient field personnel for inspections
- Fusing and analyzing multiple, siloed data sources
- Low seizure rate due to outdated risk management
- Failure to meet revenue goals

## SOLUTION

- Unified view of all data sources
- Holistic profiles of customs entities
- Tailored machine learning model for risk management
- Analytics-driven detection of trends, anomalies, and hidden relations

## RESULTS

- Increase of 155% in customs seizure rate
- Identification of suspicious taxpayers and bills of lading
- Significant improvement in revenue collection



## CHALLENGES

A leading customs organization in Latin America was faced with a high rate of customs fraud and tax evasion on postal parcels entering and leaving the country, which resulted in a **large loss in revenue, due to evasion of customs duties and taxes.**

The customs organization dealt with **multiple, siloed systems and data sources**, such as customs tariffs and HS codes, which change frequently, so achieving one unified view and extracting actionable insights was very challenging.

The organization **lacked predictive analytics tools** that could help spot anomalies and red flags in customs paperwork, detect patterns of suspicious activity, and expose trends — all of which could allow it to proactively inspect shipments likely to be involved in customs fraud or smuggling. Instead, the organization used a random approach for its inspections, and initiated investigations only after customs violations were discovered in goods that had already arrived at the country's points of entry.

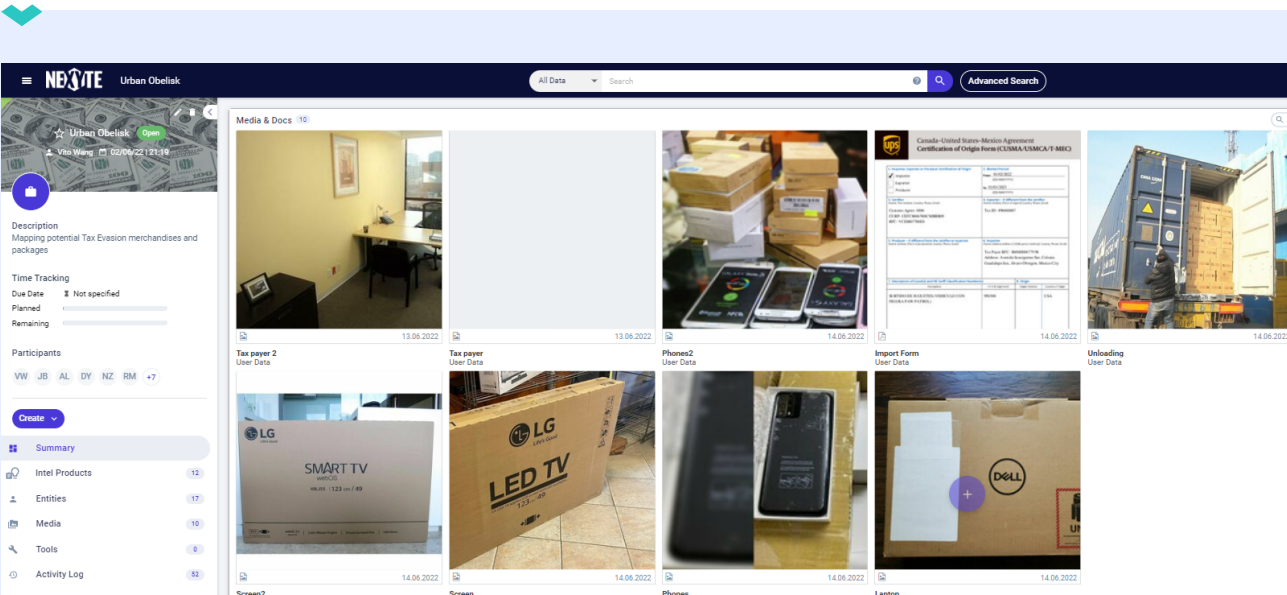
## SOLUTION

The organization turned to **NEXYTE, Cognyte's decision intelligence platform**, with the goal of reducing customs fraud and tax evasion, and increasing revenue.

NEXYTE's **customs-specific data model** automatically fused data from separate sources including customs forms, incident reports, and more, to provide a unified view of all information the organization has access to.

NEXYTE created **enriched profiles for every customs entity of interest** - including freight carriers, brokers, shipping agents, import/export companies and bills of lading - and provided analysts with the ability to easily map the connections between entities.

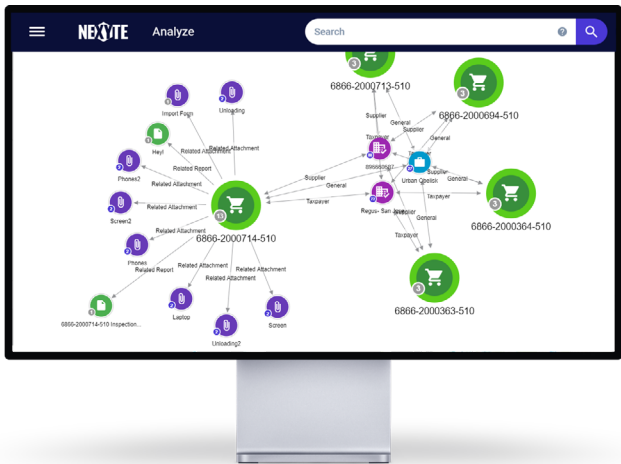
Shipment entity dashboard



This allowed analysts to proactively pinpoint patterns of suspicious activity, detect illegal actions and investigate suspected perpetrators of customs fraud and smuggling, rather than relying on random inspections.

In addition to the platform's built-in data fusion, data visualization and analytics capabilities, NEXYTE's expert team of data scientists quickly developed **a tailored, machine learning-based model to automatically score every incoming package** according to its likelihood of involvement in customs fraud or tax evasion. The customs organization supplied 2 months' worth of incoming shipment data, which encompassed over **130 million records** from **15 different data sources** – including **1.6 million merchandise records**.

Visual link analysis between a suspicious shipment of merchandise and other customs-related entities



Data records analyzed

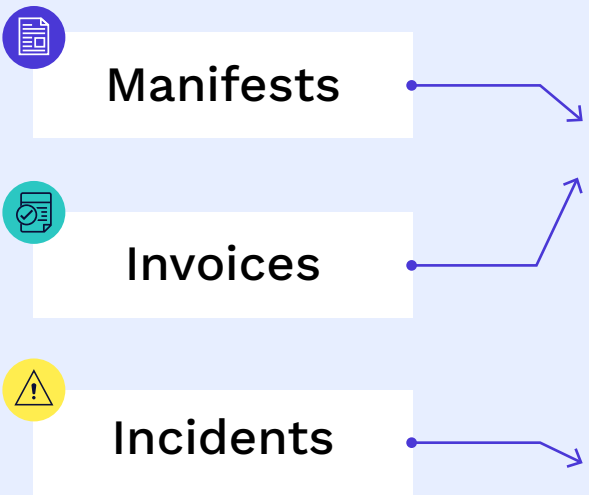
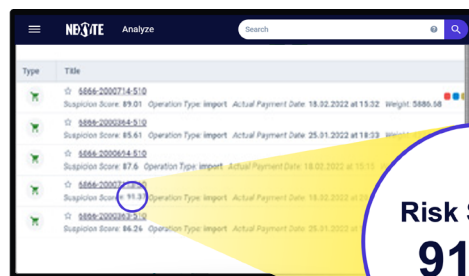


Table	Records	Columns	Unique Keys
Merchandise	1.6M	38	1,400,000
Carrier	800K	10	665,357
Manifest	7.7M	7	561,289
Containers	1.3M	7	597,162
Invoices	2.9M	20	1,165,700
Dates	3.3M	7	
Identifiers	8.2M	9	1,426,918
Contributions	4.3M	9	1,445,513
Batches	23M	31	1,449,775
Permissions	2.3M	12	351,397
Batch level identifiers	54M	10	
Batch level rates	12.3M	10	954,457
Batch level contributions	12.4M	10	954,388
Incidents	230K	21	150,276
Selection	3.1M	14	

The risk scoring model extracted 260 features (attributes) and based on these features it automatically assigned a risk score of 0 to 100 to each piece of merchandise in the system, helping customs inspectors prioritize their work and determine which shipments to inspect.

Automated risk score for merchandise shipments based on the tailored machine learning model



Type	Title
🚚	5886-2000714510 Suspicion Score: 89.01 Operation Type: Import Actual Payment Date: 18.02.2022 at 15:32 Weight: 5886.58
🚚	5886-2000884510 Suspicion Score: 85.61 Operation Type: Import Actual Payment Date: 25.01.2022 at 18:19
🚚	5886-2000904510 Suspicion Score: 87.6 Operation Type: Import Actual Payment Date: 18.02.2022 at 15:11
🚚	5886-2000714510 Suspicion Score: 91.37 Operation Type: Import Actual Payment Date: 18.02.2022 at 15:32
🚚	5886-2000884510 Suspicion Score: 86.24 Operation Type: Import Actual Payment Date: 25.01.2022 at 18:19

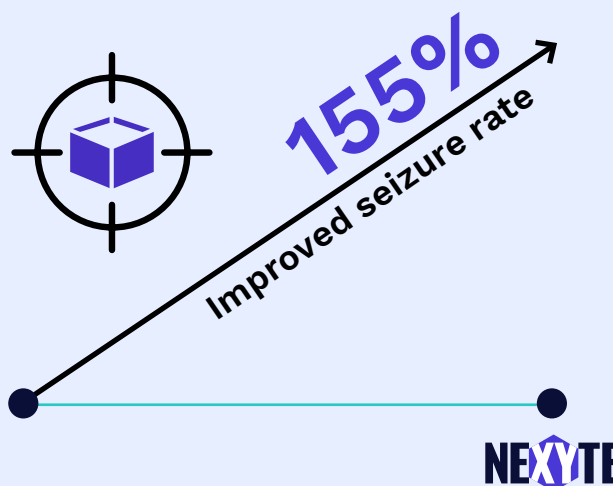
Risk Score:  
**91.37**

## RESULTS

The risk scoring model reached a 72% accuracy rate, with future improvements expected over time as the model continues to be trained on fresh data.

Guided by the risk scoring model, field inspectors **increased the discovery of illicit goods and customs violations by 155% over random inspections**. The intelligence gathered also assisted the customs organization in detecting taxpayers and brokers suspected of evading customs tariffs and regulations on a regular basis.

NEXYTE generated a **positive return on investment (ROI)** for the customs organization by enabling the organization to achieve a higher seizure rate and increase its revenue collection.



## To Learn More

Read more about the benefits of NEXYTE for customs organizations

Book a live demo with a NEXYTE product expert

### SOURCES

Manifests →

Invoices →

Import/Export registry →

Registrar of companies →

AIS →



### INSIGHTS

→ Container/Package risk score

→ Links between individuals, companies & shipments

→ Timeline pattern anomalies

→ Object recognition in images/videos



#### About NEXYTE

NEXYTE, Cognyte's decision intelligence platform, enables governments and enterprises to effectively assess risks and investigate threats across multiple disciplines and use cases, including counter-terrorism, organized crime, financial crime, cybercrime and customs.



#### About Cognyte Software Ltd.

Cognyte is the global leader in investigative analytics software that empowers governments and enterprises with Actionable Intelligence for a Safer World™.

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