Modernized Border Targeting Using Altana AI

Altana proves an AI approach can modernize border targeting for international narcotics trafficking

Altana

Executive Summary

Over 81,000 drug overdose deaths occurred in the United States in the 12 months ending in May 2020, the highest number of overdose deaths ever recorded in a 12-month period. A major driver for the increase in opioid deaths has been the widespread introduction of synthetic opioids, mainly fentanyl, into the illicit drug supply.

Fentanyl can be up to fifty times more potent than heroin and less than half the cost to produce. This has resulted in a significant profit opportunity for drug manufacturers and traffickers compared to traditional opioids. According to the United States Drug Enforcement Agency, one kilogram of heroin stands to net a profit of roughly $80,000, while a kilogram of 99% pure fentanyl could net anywhere between $1,280,000 and $1,920,000. Vast, decentralized trafficking networks have emerged to capitalize on this opportunity.

The complexity, scale, and sophistication of these networks have challenged traditional law enforcement methodologies. Not only has illicit opioid production become distributed across a large, unregulated chemical and pharmaceutical industry in China and India but its supply chain relies on the internet and traditionally less-regulated parcel and post distribution as well as a series of obfuscation techniques that overwhelm traditional investigation techniques.

Altana applied their Atlas platform to illustrate how they can power a modern approach to international narcotics targeting. The case studies in this paper have proven Altana's ability to produce the real-time global network visibility and context necessary to help regulators and supply chain operators identify and analyze risk to improve investigation, shipment interdiction, and enforcement activity.

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[1] Source: Center for Disease Control and Prevention

Traditional Targeting Techniques Can't Keep Up

Fentanyl's potency and ease of production has created a large, decentralized, and complex digital network of producers, importers, and fulfillment agents.

Illicit organizations have disintermediated traditional drug trafficking supply chains using the internet to directly interact with customers around the world. This has enabled bad actors to extend their reach while also insulating them from law enforcement. Seemingly legitimate chemical manufacturers are able to mask illicit activity using shell companies across multiple jurisdictions, produce semi-legal chemical analogues, falsify transaction records, receive payment in cryptocurrency, advertise on the "dark web," and ship high-purity low-volume shipments through international postal networks.

Traditional enforcement and targeting methods cannot keep up with these sophisticated narcotics adversaries. Traditional techniques are manually intensive, retrospective, have limited global visibility, and leverage siloed datasets.

The Altana Atlas Enables Data–Driven Targeting & Investigations

It is not feasible to examine every straw (or entity) while searching for needles within the proverbial haystack. A modern approach is necessary and requires a unified data-driven solution to create the global network visibility and context necessary for effective risk management and targeting.

Altana's approach satisfies the need in two parts:

1. The Altana Atlas. Thanks to recent advancements in data management, Altana has leveraged natural language processing and machine learning to resolve billions of data points creating the world's most complete knowledge graph of the global supply chain, the Altana Atlas. The Atlas brings together global trade and ownership data that, until now, has been disorganized, inaccessible, disconnected, described in different languages/scripts, messy, and incomplete to provide a unified source of risk intelligence for entities, transactions, and their global supply chain networks.

2. Apply machine learning analytics. The application of machine learning-based analytics enables the programmatic and probabilistic identification of illicit activity from the Atlas to derive network analysis for more efficient targeting and enforcement purposes.

Case Study 1

## The Zheng Drug Trafficking Organization

The Zheng Drug Trafficking Organization ("Zheng DTO") was sanctioned by the US Department of the Treasury in August, 2019 for the manufacture and distribution of fentanyl and its analogues to the United States. In building their global network, the Zheng DTO developed a robust online presence including websites that advertised and sold drugs in more than 35 languages and obscured their activity through the use of multiple unregistered front companies. Since 2008, the Zheng DTO had shipped 36 different types of controlled substances to the US from production facilities in China.

Zheng DTO Corporate Structure

Altana used their Atlas to construct a clear picture of the Zheng DTO from a large, unstructured corpus of data. The Atlas identified the companies and individuals involved in the Zheng DTO network across multiple business jurisdictions. This set the foundation for accurate and efficient watchlist-based screening and machine learning-based targeting.

Once the Atlas realized the Zheng DTO's corporate structure and trade activity, Altana was able to identify their key members. One member was identified as Bin Wang 王斌, a Canadian citizen and chemist who had registered several companies in the US and, thus, was subject to US law.

Resolving the Zheng Drug Trafficking Organization Across Companies, Names, and Jurisdictions
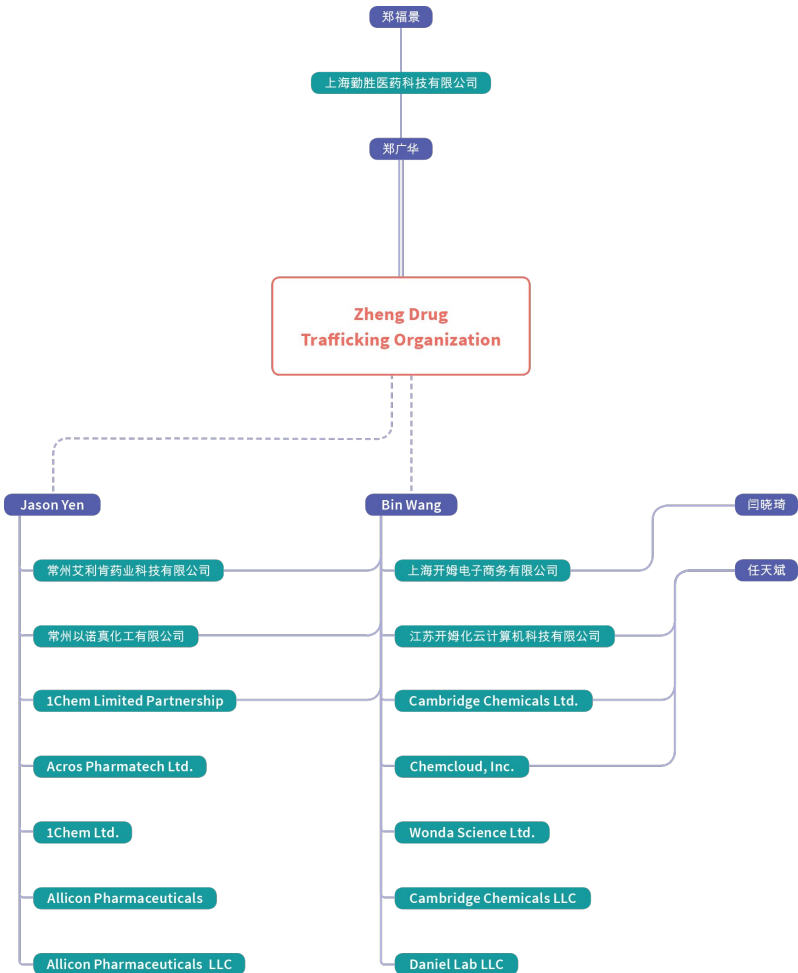
A traditional investigation and enforcement approach would attempt to explore the Zheng DTO network up the chain starting with the one flagged entity. In this case, that was Bin Wang. This is an extremely labor intensive approach. For example, a naive search for the name "Bin Wang" across trade and business registry data within the jurisdictions in which the Zheng DTO is reported to have operated produces over 100,000 entity matches, and more than 150,000 relationships. The vast majority of which were false positives, yet a human analyst would be burdened with filtering through these results and researching each one manually.

Challenge: Naive Searches for Flagged Entities

Naïve search for "Bin Wang" — flagged Canadian national in the ZDTO with US companies registered to him.

The central technical challenge in resolving and linking data is the absence of canonical identifiers for companies, people, products, transactions, and other entities.
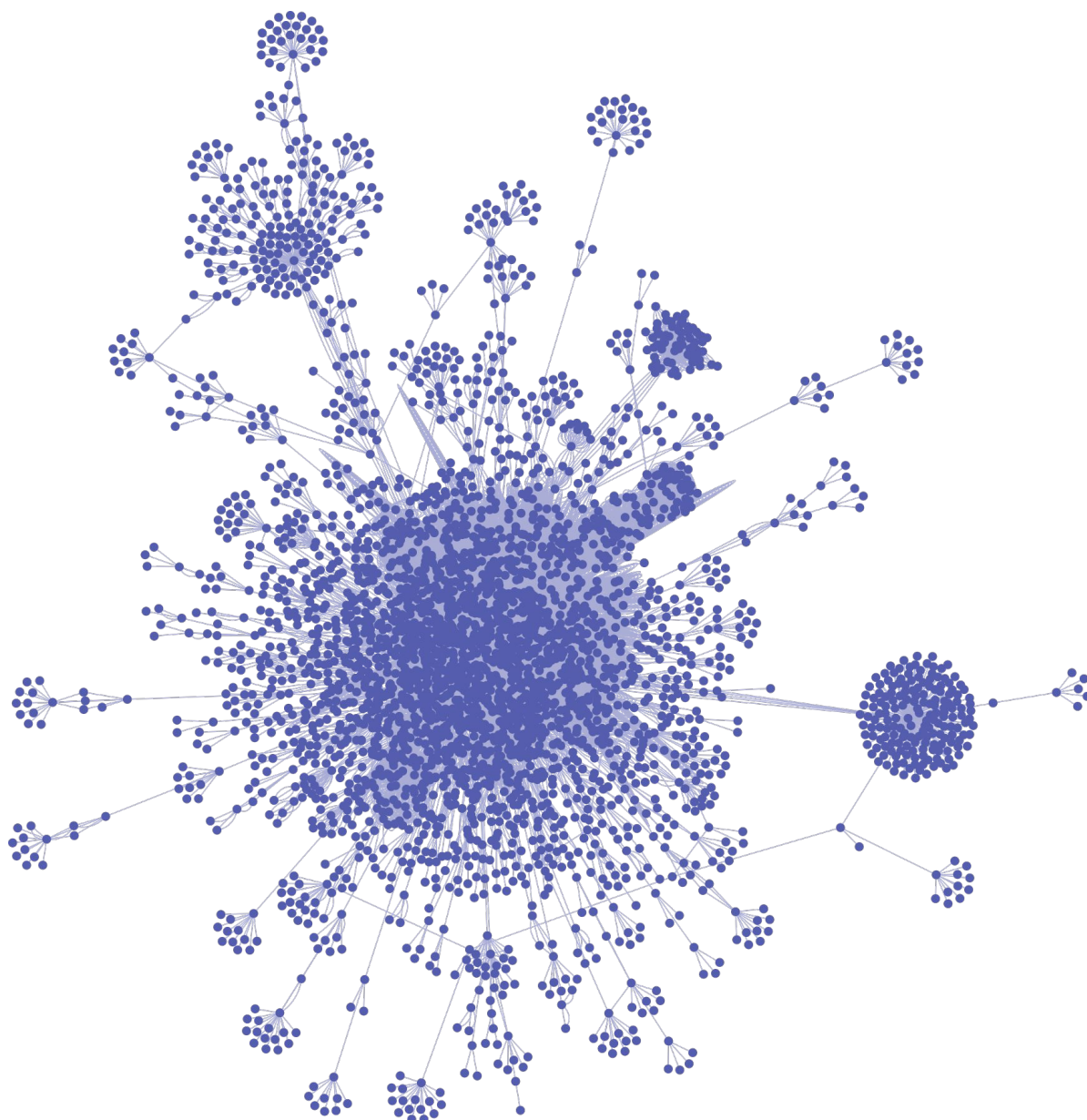
Zheng DTO Activity Discovered in Mexico

Once Altana was able to situate Zheng DTO within the global trade network, it was possible to examine their trade activity and business relationships.
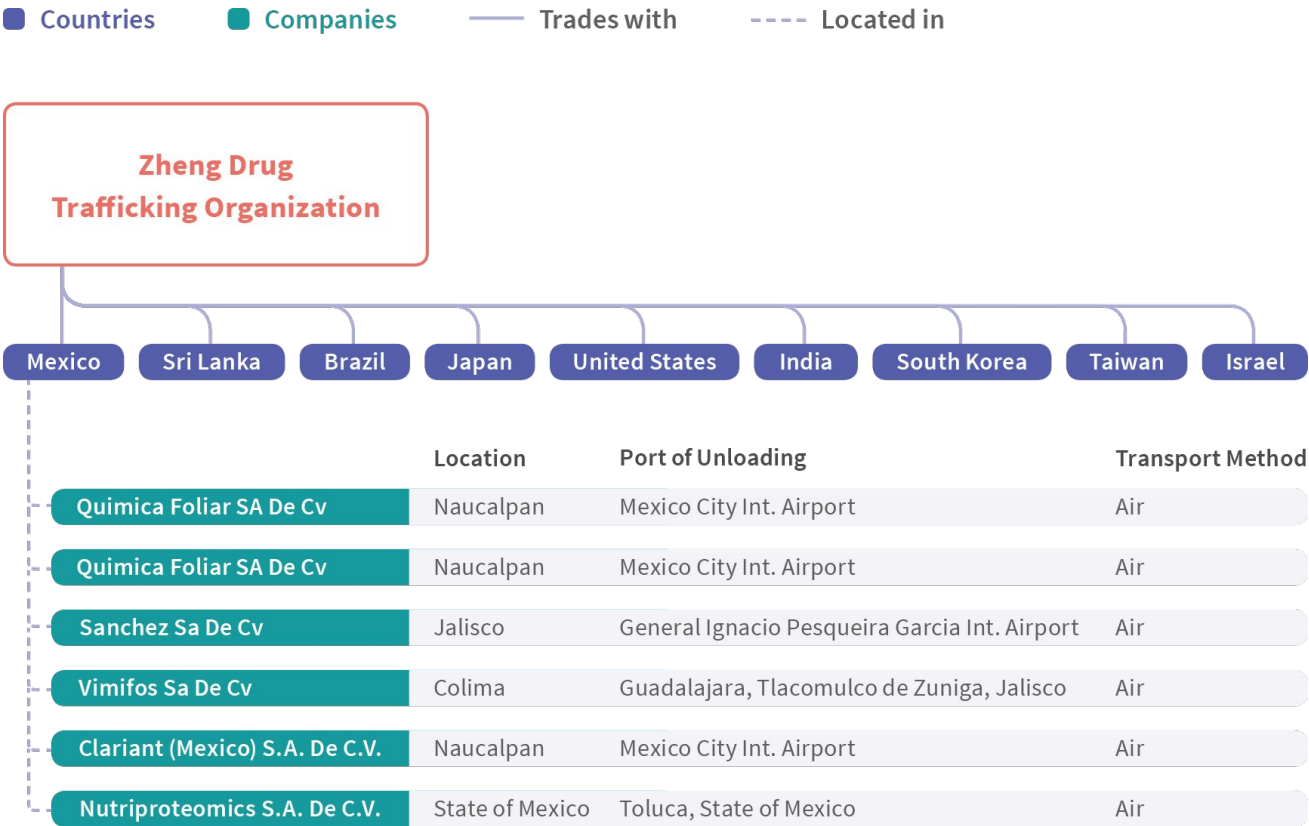
The US federal indictment against Zheng DTO specified their trade activity with over 25 countries. However, the Atlas revealed shipments from a previously unidentified shell company of the Zheng DTO that linked them to five companies in Mexico. It had been well documented that the Zheng DTO sent multiple shipments of illicit chemicals to the US, however, there was no indication in any of the court filings of shipments to Mexico.

The shipments to Mexican companies represented a likely shift in Zheng DTO fentanyl trafficking to the US via Mexico. They also uncovered deeper insight about the broader trade network of the Zheng DTO and range of affiliated suspicious network entities and network flows emerged (from the data) for further investigation and shipment targeting.

Targeted investigation of these Mexican companies and their counterparties was then possible. Altana systematically uncovered actionable insights about the names, locations, trading partners, and trading patterns of these companies. For example, Altana revealed:
- Shipments to five Mexican companies through multiple Mexico airports
- Chinese shipments to these companies include opioid precursors and pill presses
- US-domiciled recipients of shipments from these Mexican companies included suspicious online pharmacies

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Resolving the Zheng Drug Trafficking Organization
Across Companies, Names, and Jurisdictions

■ **Countries** ■ **Companies** —— **Trades with** ---- **Located in**

Zheng Drug Trafficking Organization

Mexico | Sri Lanka | Brazil | Japan | United States | India | South Korea | Taiwan | Israel

Company	Location	Port of Unloading	Transport Method
Quimica Foliar SA De Cv	Naucalpan	Mexico City Int. Airport	Air
Quimica Foliar SA De Cv	Naucalpan	Mexico City Int. Airport	Air
Sanchez Sa De Cv	Jalisco	General Ignacio Pesqueira Garcia Int. Airport	Air
Vimifos Sa De Cv	Colima	Guadalajara, Tlacomulco de Zuniga, Jalisco	Air
Clariant (Mexico) S.A. De C.V.	Naucalpan	Mexico City Int. Airport	Air
Nutriproteomics S.A. De C.V.	State of Mexico	Toluca, State of Mexico	Air

The Atlas is Flexible

In addition to the data built into the Atlas, it is also able to consume custom or abstract data elements for more powerful combined insights. In a collaboration with George Mason University's Terrorism, Transnational Crime and Corruption Center (TraCCC) in the Schar School of Policy and Government, Altana demonstrated how data derived from online advertisements can be fused to the Atlas and proved that it's possible to integrate online and real life behavior data to derive risk insight enabling effective and comprehensive targeting of illicit drug shipments.

Case Study 2

The Yuancheng Group

The Yuancheng Group is a trafficking organization reportedly responsible for providing "huge quantities" of fentanyl precursors to clients around the globe including, "Mexican cartels, American drug dealers, and many others." They were responsible for over $3 million USD worth of chemical exports from China between August 2017 to September 2019. However, this figure may under-represent the actual total as their fentanyl advertisements claimed acceptance of Bitcoin.

Atlas Uncovered the Yuancheng Corporate Structure

The internet may have given illicit actors, like Zheng DTO and the Yuancheng Group, a new channel for global reach, but it has also provided a new channel for the identification and targeting of illicit activity. While it's difficult to police online activity, online fentanyl advertisements can be a tremendous source of scalable targeting data.

Regardless of where trafficking organizations post, the advertisements typically include electronic identifiers. 350+ online advertisements for fentanyl and other targeted illicit drugs were scraped for data where key electronic identifiers were extracted. Altana resolved these extracted identifiers to the Atlas to construct the Yuancheng Group's online digital footprint, global supply chain, and trade activity.

Altana's Atlas linked over 40% of these identifiers to legally registered Chinese companies - mostly chemical and pharmaceutical companies. This revealed that the Yuancheng Group was composed of at least 34 companies in China and Hong Kong. These companies posted classified ads for fentanyl, registered at least 112 websites, and their global trade relationships spanned 75 countries including shipments to 43 countries across North America, South America, Europe, Africa, Asia, and Australia including the following high-risk entities located in the United States, Mexico, and Canada.

Yuancheng Group Corporate and Digital Network
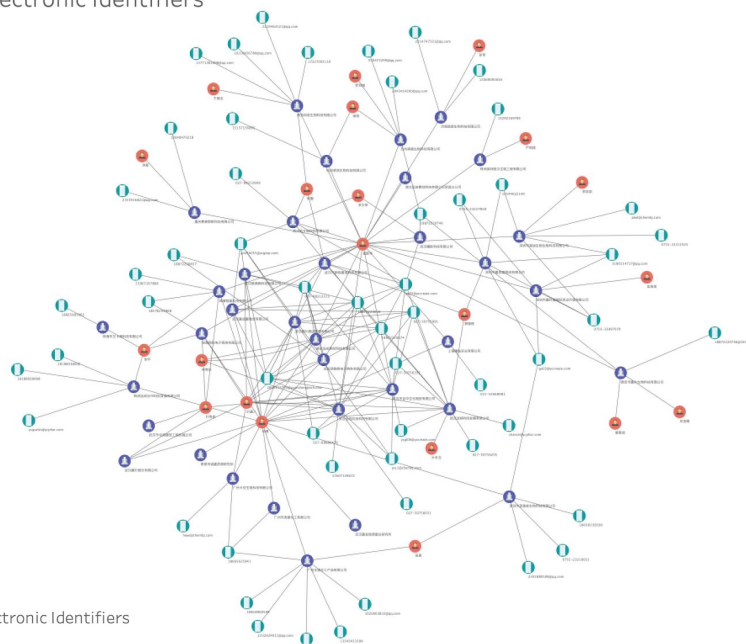
Newtork Built with Director
& Shareholder Relationships

Network Fused with
Electronic Identifiers
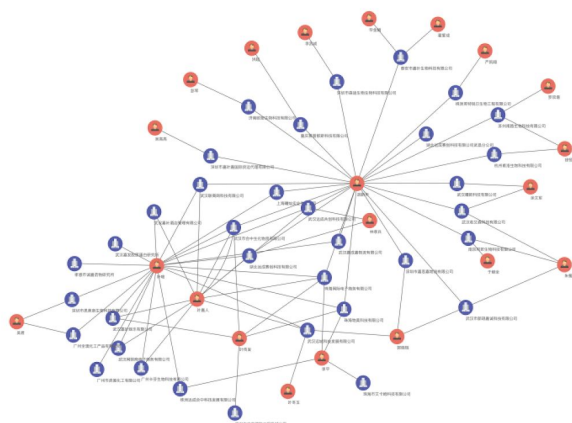
Individuals   Chinese Companies   Electronic Identifiers

The Way Forward/Data–driven Approach with Altana

The increasing complexity and scale of fentanyl trafficking have rendered traditional targeting and enforcement techniques ineffective. New global regulations that require advanced data such as the STOP Act in the US and ICS2 in the EU were designed to reduce the volume of opioids crossing borders via the mail/postal systems help but hinge on the ability of regulators to effectively process more data in real-time.

The Altana Atlas empowers organizations to modernize targeting efforts by extracting signal from data collected from both cyber and physical activities and linking that signal directly to actual companies, locations, and commercial activities. When done at scale, supply chain networks materialize and machine learning-based analysis can be applied making advanced targeting possible. This leads to faster investigations and more effective enforcement actions.

Does your organization need a data-driven solution to reduce risk and increase compliance with new regulations targeting narcotics trafficking? Contact Altana today to get started.

Altana

Altana AI was formed by leaders in supply chain artificial intelligence with a mission to improve global commerce. Altana helps governments, enterprises, and financial institutions build safe, lawful, inclusive, and resilient supply chains. Without pooling sensitive data, Altana's customers gain global supply chain visibility and shared risk intelligence through the Altana Atlas - a shared artificial intelligence model of the global supply chain.

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