



S A V A N N A

WHITE PAPER

Uncovering Visa Fraud with Savanna

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EXECUTIVE OVERVIEW

Although it's not a story often portrayed in the news, visa fraud is a widespread problem with a multitude of variables, making it tricky to track and prevent. One type of visa that is prone to abuse is the H-2B visa for temporary or seasonal nonagricultural labor. The US plans to admit 66,000 workers under H-2B visas in 2015, and the cap of 33,000 for the first half of the year was reached on January 26th.

While many applications are legitimate, and criminal prosecutions for H-2B violations are rare, abuse of the program is common. Employers ask for more workers than they need, or ask for workers for longer periods of time than the standard seasonal time period. Because employers aren't responsible for housing costs, H-2B visas cost employers less, unlike the H-2A program. Because of this, fraud and abuse of the H-2B visa program becomes more prevalent.

Because of the complex, multi-party involvement of this issue, a collaborative and cohesive analysis environment is necessary for effectively addressing the unique challenges that analysts face when looking for solutions to complex problems like visa fraud.

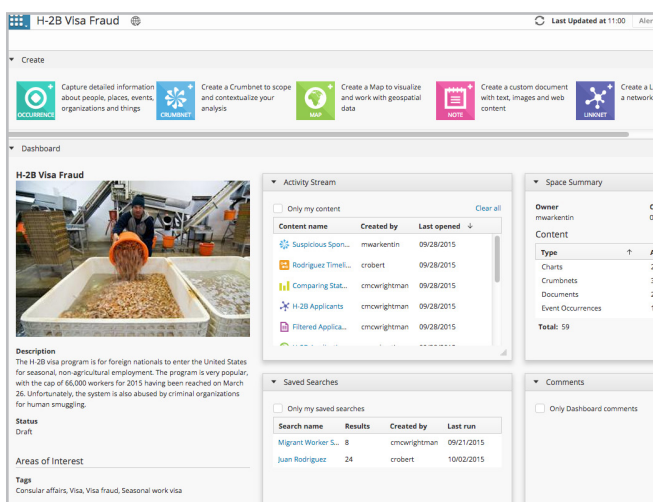
To address complex and constantly evolving problems like visa fraud, enterprises are turning to big data analytics to detect and prevent crime. However, the sheer volume of data reporting and false positive rates are daunting to analyze and require a solution to extend data results. Savanna's dynamic, all-source analysis environment gives participants the ability to delve into each point of interest, discovering connections and evidence to implement strategies for prevention methods.



ANTICIPATING OUTCOMES WITH SAVANNA

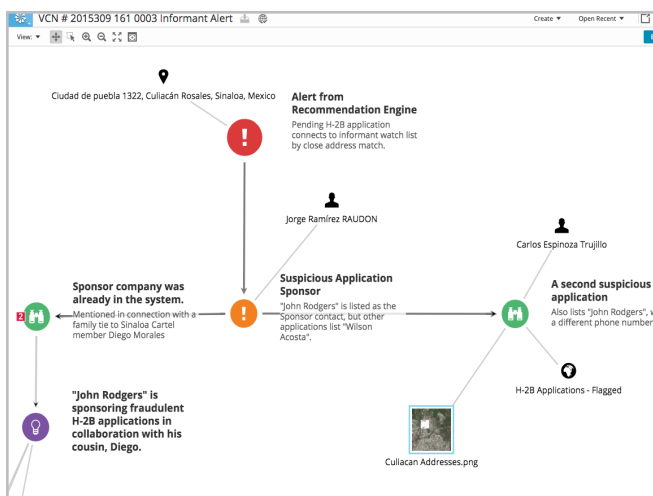
Complex, multi-party projects require a unique, multi-faceted approach to assessing and developing scalable community watershed development model. With the appropriate tools and expertise, analysts can anticipate potential outcomes and prepare accordingly.

Savanna, Thetus Corporation's flagship browser-based analysis platform, enables analysts to model complex problems. By identifying key information and visualizing relationships between structured and unstructured data, Savanna users construct holistic narratives that convey known risks as well as information gaps.



Access data via Savanna's web interface for easy file sharing

Savanna is browser-based, meaning that any authorized user with an Internet connection can access the Savanna platform and all public content created by other users on the network.



Contextualize and synthesize information with Crumbnet

Savanna Crumbnets serve as white boards for free-form analysis. Crumbnets allow analysts to capture questions, hypotheses, and assumptions to create an analysis narrative and place relevant data in context (e.g., Analyst's Notebook Charts, documents, images, other Crumbnets, videos, and much more). Analysts use Crumbnets to collaboratively ask and answer questions, pose hypotheses, note assumptions and state relevant facts to contextualize data. Crumbnets also serve as a navigation tool to guide audiences through the analysis.

Juan Sebastián RODRIGUEZ

Date of birth: 1982 APR 23 (Age 33)

Vital status: Living

Alternate names: Sebas (U), John Rodgers (U)

Skills: Business (U)

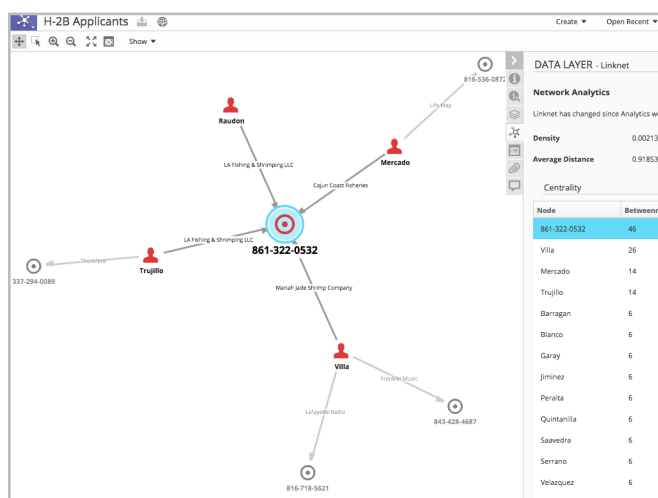
Description: Juan Sebastián RODRIGUEZ is an American businessman and manager at LA Fishing & Shrimping LLC. Much of his extended family resides in Estado de Sinaloa, Mexico and in 2013 he was questioned by Mexican authorities in regards to his cousin Diego's work smuggling and laundering money for the Sinaloa cartel.

Relationships (5):

- Diego Alejandro MORALES, Cousin
- LA Fishing & Shrimping LLC (Manager)
- Jorge Ramirez RAUDON (Sponsor Contact (suspected) of)
- Gabriel Luciano MERCADO (Sponsor Contact (suspected) of)
- Cajun Coast Fisheries (Owner/Manager of)

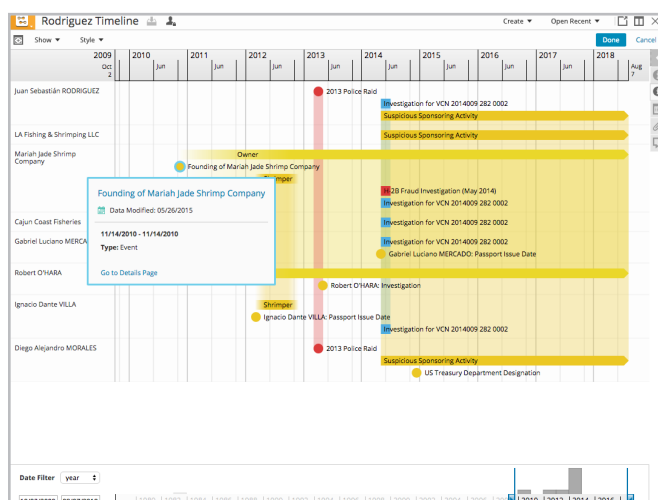
Build interconnected information networks with Occurrences

Occurrences are the problem-specific building blocks of an information network that any Savanna user can access and quickly add new discoveries and pull on existing data to connect information. With Occurrence templates, analysts can set requirements, define important fields and identify information gaps. These templates capture problem-specific information in a uniform way, eliminating redundancy and creating a common analytical framework that analysts can build on. Occurrences are fully sourced and linked between related profiles, allowing users to easily navigate between connected information.



Visualize connections and relationships with Linknet

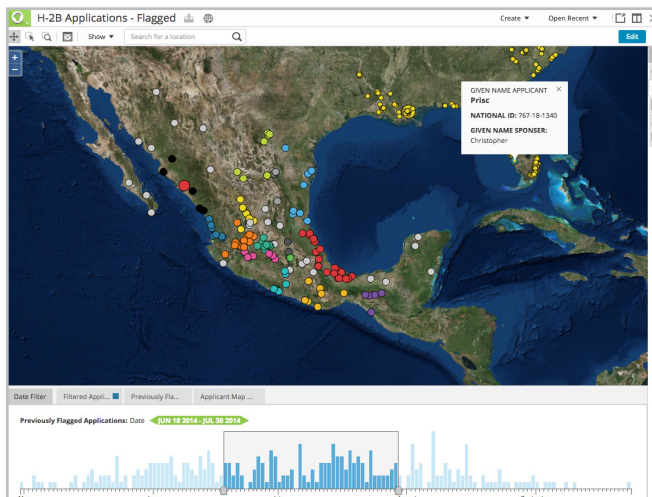
Analysts can add multiple Occurrences from the information network to a Linknet to view interconnected people, places, organizations, events and things by simply dragging and dropping. Occurrences in the Linknet are fully sourced, allowing analysts to easily access information about individual entities on the Linknet.



Temporally visualize information with Timeline

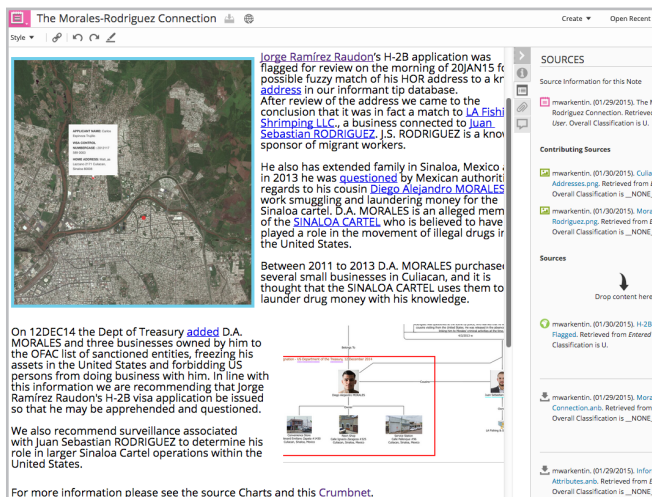
With Timeline, analysts can temporally visualize Occurrences (people, organizations, places, events and things) and their associated events by simply dragging Occurrences onto the Timeline. With Timeline, users can interact with Occurrence events by zooming, panning, drilling down for more specific information, and filtering with a temporal filter.





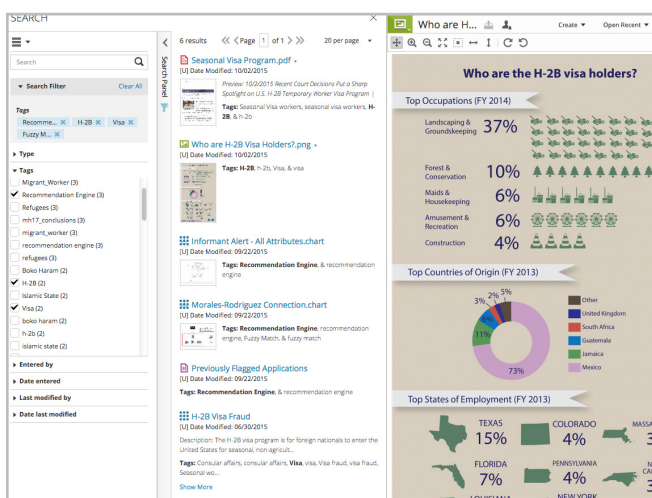
Visualize geographic data in Savanna's enterprise-level mapping tool

Using geographic data or a CSV file containing geographic coordinates, analysts can create and stylize maps to complement their analysis. Automated mapping of data sets facilitates visualization of large quantities of geographic information while customization tools allow the user to modify colors, base layers, and data visibility.



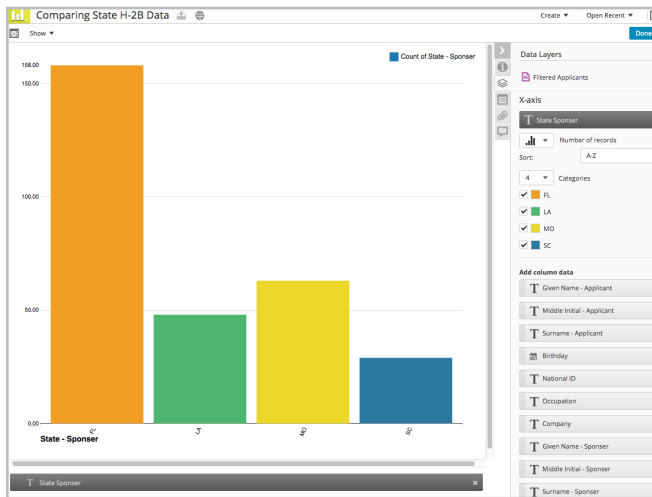
Support analysis conclusions with evidence created in Savanna and from other sources

Analysts collaborate on Crumbnets to support their conclusions with content created in Savanna, such as a screenshot image of a Map and relevant research. Viewers explore evidence in the form of documents, images, videos, maps, notes, quantitative data, and profiles of people, places and organizations.



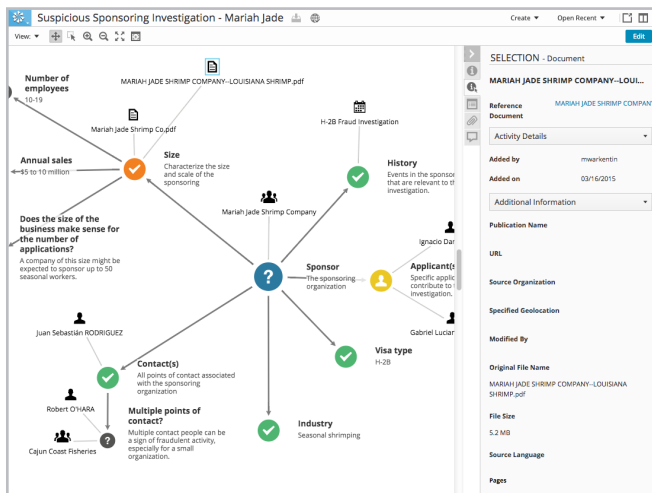
Discover external data and Savanna content through keyword search and filtering

Savanna's search capabilities enable analysts to find relevant data and model content among public material on the shared network through searching for keywords and other filters, such as file type and classification level. Search results can then be added to the user's Space and incorporated into their analysis. Searches can also be saved so that analysts can be alerted when new relevant content becomes available.



Visualize structured data as charts

With the Graphic tool, users can visualize structured data inside Savanna as charts (pie, bar, scatter, line) by simply dragging and dropping datasets onto the Graphic background. With Graphic, analysts can pick multiple columns of data to visualize on the chart, and choose custom style settings to visually differentiate the data.



Understand how information changes over time by tracking provenance and lineage

Savanna users have multiple options to describe information, including adding citation details, linking to contributing sources, attaching reference materials, and organizing related information in a Space. Savanna automatically captures details like citations and user activity for content created within Savanna.

Manage privacy settings to control access to classified information

Administrative controls enable careful management of user access to information. Users select private or public settings for material they create or upload. They can also mark information according to its classification level, thereby permitting public view of the information only for those users whose accounts are set to the same classification level.

SPOTLIGHT: CAATINGA WATERSHED MANAGEMENT

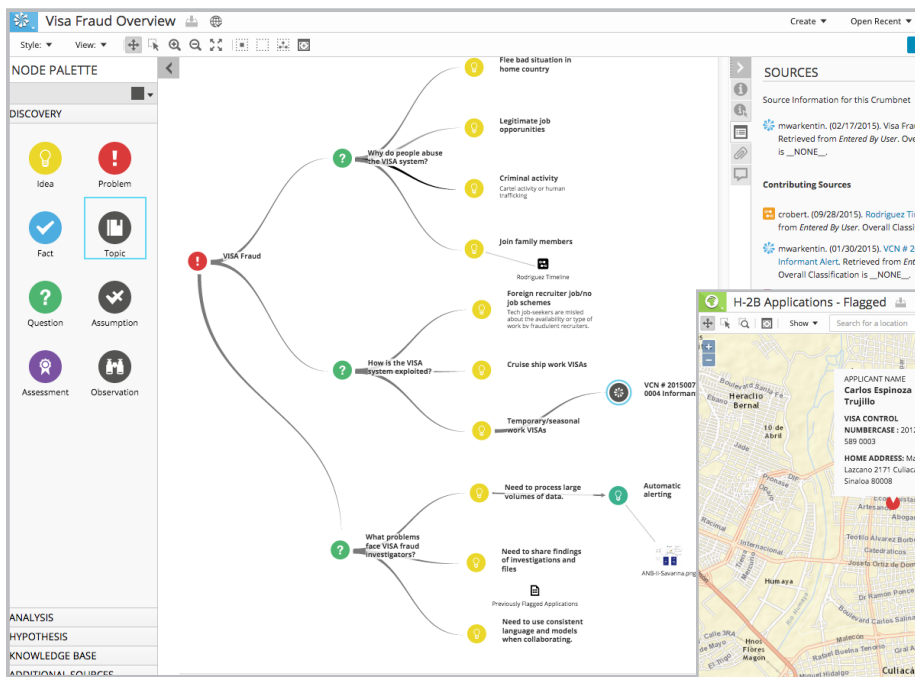
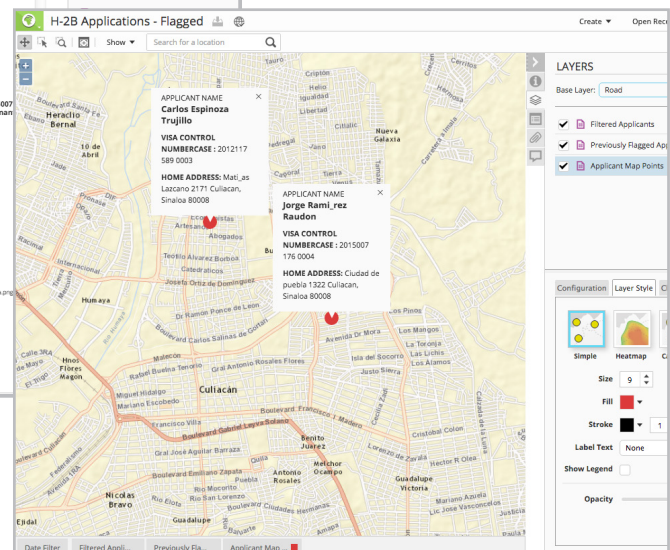


Figure on left: Crumbnet displaying visa fraud detection and prevention.

Figure below: Map for flagged pending H-2B applicants.



A team analysts are tasked with investigating a flagged pending H-2B Visa application, and connections to a suspicious sponsor employer, LA Fishing and Shrimping.

First, they use Savanna's powerful Search tool to find relevant content through a targeted tag search of Recommendation Engine and Seasonal Work Visa tagged content, resulting in two Analyst's Notebook Charts which they add to the Space they're working in.

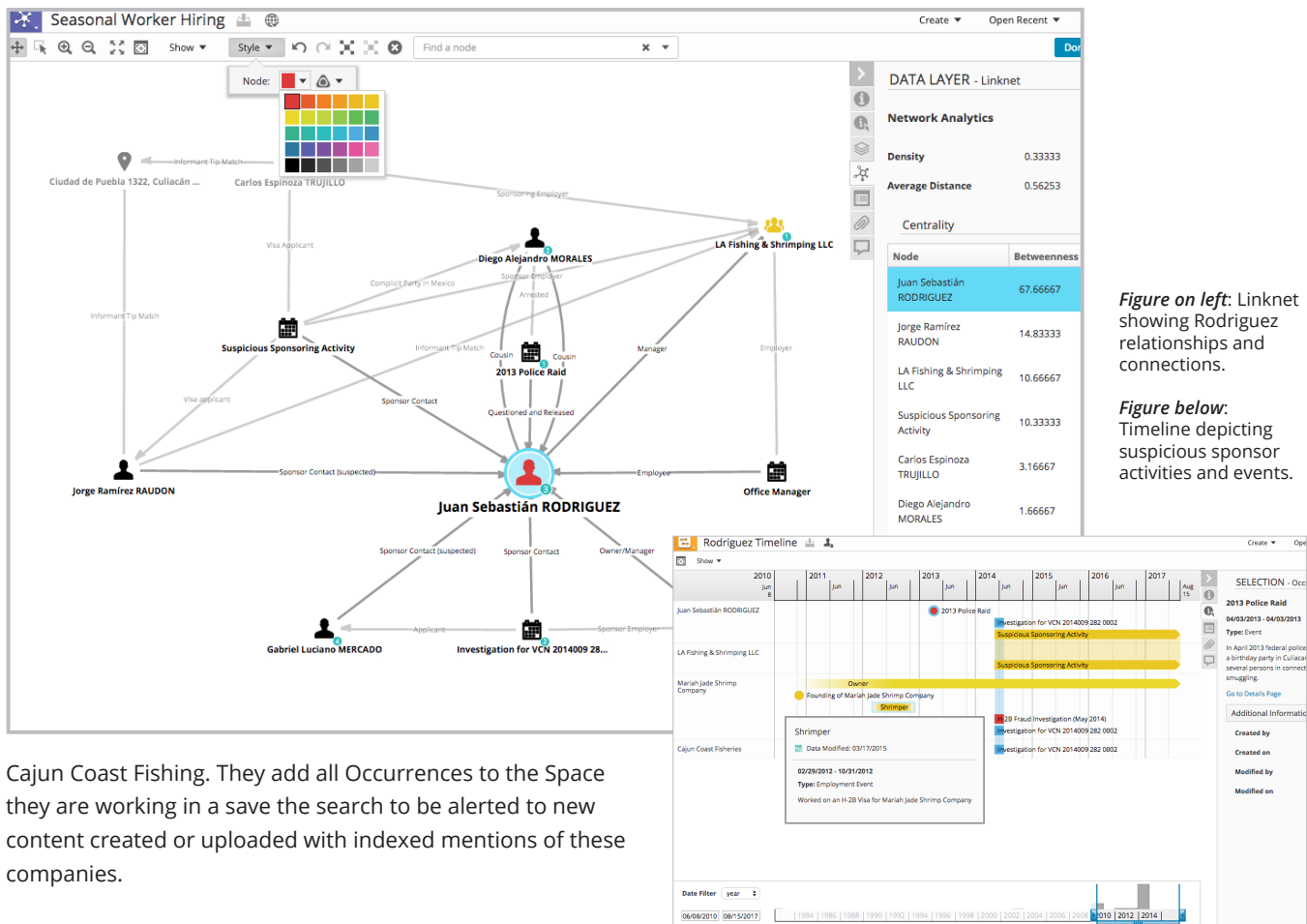
To get a better understanding of their existing knowledge, the analysts use Savanna's mind-mapping tool, Crumbnet. They outline the participants and connections between the flagged applicants and the sponsor company, LA Fishing and Shrimping, and add information collected from Search as supporting evidence to corresponding nodes.

With Savanna's dynamic Occurrence dossiers, the analysts collaboratively populate an information network about the flagged applicants. Occurrences are building blocks that capture people, organizations, things, places and events related to a problem. In this case, the analysts make Person Occurrences for the two flagged H-2B applicants. Under its

Relationships section, they add the flagged addresses listed on each application, discovering another team member has already recorded the address in Savanna.

Using this information, they create a Map to confirm their suspicions that the home addresses of the two flagged applicants are located in the same city. Simply drag and drop a Grid file (uploaded CSV) containing the applicants' addresses onto Map, visually indicating that these two applicants are indeed from the same city, within walking distance from each other. They take a screenshot to be used later in the analysis, which is automatically saved to the Space they're working in.

At this point, the team wants to know more about the sponsor company, LA Fishing and Shrimping, LLC. Using Savanna's powerful Search tool, they are able to quickly find relevant content, including previously built Occurrences for LA Fishing and Shrimping and for Juan Rodriguez, an employee of LA Fishing and Shrimping with connections to a Sinaloa Cartel member, Diego Morales, as well as a previous Visa Fraud investigations for Mariah Jade Shrimping Company and



Cajun Coast Fishing. They add all Occurrences to the Space they are working in a save the search to be alerted to new content created or uploaded with indexed mentions of these companies.

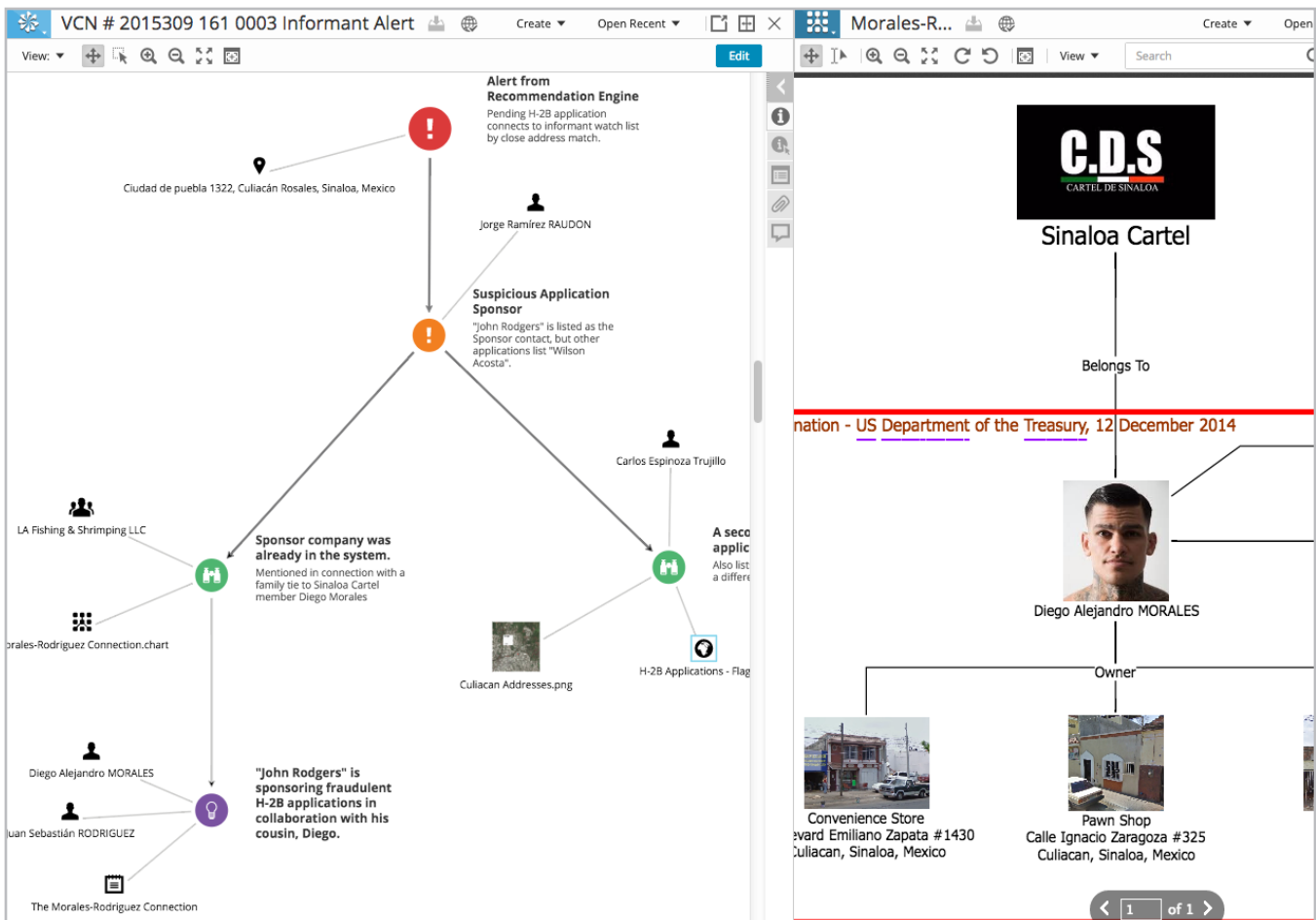
In Timeline, the analysts drop multiple Occurrences, such as the Occurrences discovered in their recent search, onto a visual span of time to draw connections between events within each Occurrence. Visualizing event times from multiple Person and Organization Occurrences side-by-side gives analysts the opportunity to see a similar event, Investigation for VCN, is shared between Rodriguez and two organizations. They can use the Selection panel in the Details sidebar to read more about this event. The Selection panel also provides a link to view the event in more detail as an Occurrence.

Then, they use Linknet to create a link chart visualizing all connections to the suspicious sponsor company, LA Fishing and Shrimping, using an uploaded CSV file listing all suspicious visa fraud activity. They view selected nodes in detail and expand relationships to discover and identify any outliers. After defining the entities and relationships they wish to view, it becomes apparent that LA Fishing and Shrimping shares a telephone number with Mariah Jade Shrimping and Cajun Coast Fishing, implicating all three companies in this evolving visa fraud issue.

Notes are custom documents that house important information from the analysis process with connections to all source materials. In Note, the analysts can capture relevant content from multiple sources, such as the Map image showing the close proximity of the two suspicious applicants, and easily adds links to existing Savanna models, such as the Occurrences for LA Fishing and Shrimping, Cajun Coast Fishing and Mariah Jade Shrimping, for quick collaboration and sharing.

The analysts revisit the Crumbnet outlining the suspicious Visa applications and add discoveries and evidence collected throughout their analysis. From the Space Content panel, they add the H-2B Flagged Applicants Map and Suspicious Sponsor Linknet as supporting evidence to a node. The Crumbnet now acts as a final summary of the analysis and is shared with team members and exported to PDF to send to fellow analysts and decision-makers for further action.

BENEFITS



Decision-making insight

Whether reviewing content from a bird's-eye view or focusing on a detailed event profile, decision-makers gain the critical insight they need to determine when to adjust organizational strategy in response to growing risk indicators.

Agility

Using Savanna's dynamic information management capabilities in coordination with Analyst's Notebook's data analysis tools, organizations can maintain current intelligence needed to respond to rapidly evolving situations and perspectives.

Productivity

Savanna eliminates the time required for integrating analytical output and sharing and formatting files, resulting in more time to devote to analysis and review.

Expanded source material

The ease of uploading and manipulating diverse forms of data frees analysts from technological limits to incorporating all relevant information. Should a growing conflict present incomplete or fuzzy data, analysts can utilize such information in Savanna and update it as clarifying details emerge.

Reduced exposure

Savanna minimizes exposure to error resulting from bad information by offering users the ability to annotate all source material and analysis products. Automatic updates documenting user activity further assign ownership while privacy settings maintain protected data.

CONCLUSION

Complex problems require multi-part solutions. With the rise of tools to mine large data sets, businesses have reaped greater knowledge from structured data¹. However, challenges involving human variables like drug trafficking require a more nuanced understanding of context. Particularly when information is scarce, analysts must give special attention to informal knowledge, which they can use to construct formal models of how their problem space works.

Only by viewing problem spaces through multiple lenses and exposing inconsistencies can companies identify—and begin to quantify—risks. In doing so, alternatives become clear, imperatives become known, and negative consequences are avoided.

ENDNOTES

1. Furrier, J, "Big Data Is Big Market & Big Business - \$50 Billion Market by 2017," *Forbes*, last modified February 17, 2012, accessed September 25, 2014, from <http://www.forbes.com/sites/siliconangle/2012/02/17/big-data-is-big-market-big-business/>.

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