

Voyager Analytics™

AI-Driven In-Depth Analysis Platform

October 2020



1. INTRODUCTION

Voyager Labs welcomes the opportunity to submit this proposal for the Voyager Analytics™ AI-driven, in-depth analysis platform. This document describes the benefits, capabilities, and workflow of the Voyager Analytics platform.

Each day, an immense amount of publicly available, unstructured data is produced. Approximately 4.5 billion people using the internet worldwide constantly create billions of data points. This reality presents an opportunity for agencies tasked with public safety. By leveraging this vast ocean of data, they can gain actionable insights on individuals, groups and topics, and then deep dive to uncover even more.

To harness open source data, Voyager Labs offers its unique Voyager Analytics platform, designed to analyze massive amounts of unstructured data and infer human behavior insights. This analysis is based on AI-based technologies such as machine learning, pattern recognition, natural language processing, combinatorial and statistical algorithms and more. These deep, actionable insights provide analysts and investigators with a comprehensive view of individuals, groups and topics, including social whereabouts, circles, key and hidden relationships and content based on relevancy and importance to the specific use case.

Based on these insights, an analyst can make decisions which enable fast and efficient reactions to developing situations or proactive prevention of event escalation.

While other existing solutions are at times too complex and time-consuming, or superficial and only partially effective, Voyager Labs' unique technology is simple, fast, and profound in the depth of insights and hidden truths it enables analysts to uncover.



2. PLATFORM MAIN BENEFITS

AI-driven Automation

Voyager Analytics simplifies and enhances data gathering, analysis and smart visualization that would take an army of analysts months to handle or, more likely, would simply be otherwise impossible to obtain (such as the mediators between a pharmacy and a drug trafficking ring; an alias or fictitious identity; close connections between an airport employee and an extremist recruiter, etc.). These key and hidden insights can prove pivotal in an investigation or intelligence mission. The platform presents the most relevant and important pieces of information in near-real time, saving valuable efforts normally spent retrieving, processing and analyzing vast amounts of unstructured data.

Harnessing publicly available unstructured data in near-real time

Unstructured data consists of a complex mesh of images, texts, dialects and what we call 'human behavior indicators' – relationships, opinions, trends, activities and other signals that make their mark on the digital world. Voyager Analytics enables analysts to harness unstructured data from a wide variety of sources within the social sphere. The platform's insights enable the customer to enrich existing leads as well as highlight new leads, such as additional core group members or relations to existing known entities, all detected within seconds for further examination.

Simplicity and Ease of Use

Voyager Analytics can provide a cloud-based solution, not requiring any advance preparation of data or infrastructures. Voyager Analytics provides a simple visual and intuitive interface – designed by intelligence experts but accessible to any user type. Straightforward and quick to deploy, automatically processed insights are displayed in a simple, visual manner in minutes. With two days of training and two days for deployment, the platform can yield immediate intelligence generation.



Collaborate & Share Existing Know-how: The Database

Voyager Analytics enables analysts to connect new entities to the existing data repository or to an external database. In addition, the platform enables the discovery of new entities which share common attributes within the data repository. Voyager Analytics can dramatically enrich analysts' existing databases from the first day.

A word about publicly available data

Here's why publicly available data has so much value:

- It is a vast & growing data source, where people are encouraged to participate by their peers and by the networks themselves.
- It is rich with insights (for instance, even if your target isn't active online, their environment is).
- The social sphere is the optimal medium for those looking to influence people and societies.
- It is a unique, potent source for receiving a very clear view of what is happening in social networks, as well as relationships between individuals and groups and topics of interest.
- Gangs, terrorists, traffickers and extremists, for example, use social networks to recruit, communicate, sell illegal goods, spread propaganda and create impact.



2.1. Premium Capabilities and Features

- **Profile Finder** – This feature enables the analyst to correlate a given email or phone number with a social network ID. Voyager Analytics integrates these conversion functionalities into the analyst workflow. The Profile Finder module enables the conversion and provides the analyst with the relevant social IDs, when available. The analyst can then commence analysis of the target directly.¹
- **VoyagerDiscover** - Voyager Discover helps public safety investigators expand topic analysis to find under-the-radar leads that would otherwise never be found, and often indicates those most likely to act, rather than simply those with the most media reach. This information is presented as the social profiles who most fully identify with a stance on any given topic.

Voyager Discover takes Voyager Analytics' abilities a step further, analyzing not only who is most influential but also who is most invested in a given stance: emotionally, ideologically and personally. This ability moves the discussion from those who are most engaged online to those most engaged in their hearts. These new leads may lack media savvy and therefore slip under the radar of most topic analysis platforms. In the world of public safety, however, it is these very people who are of interest: they have the passion needed to act on their beliefs.

The following parameters are taken into account when determining ideological solidarity.

- Personal Involvement
- Emotional Involvement
- Knowledge
- Call to Action

¹ Discovery of social ID depends on availability of factors outside the control of Voyager Analytics and thus cannot be guaranteed. Current average conversion rates are around 20-40% and are constantly being improved. Please note the following:

- Profile Finder functionality is cloud-based. Even in an on-premises implementation, this functionality accesses the cloud for identity resolution.
- Profile Finder queries are priced separately from standard Voyager Labs queries.



In addition, this sentiment analysis can be acquired in near-real time. Unlike most platforms, which require a period of “learning” to gradually recognize sentiment around a given issue, VD acquires the domain expertise on the fly.

- **Genesis** – Enables deriving immediate analysis and insights from massive document repositories. These documents contain the full user record for Facebook and Instagram accounts supplied to law enforcement agencies via court-order or subpoena.
- **Updates** – This capability enables analysts to schedule periodic re-collections of an individual’s profile to detect various changes, such as publishing new posts and adding new connections. For each target, any change to the new content or new connections is highlighted and the analyst is notified of the change. The automatic collection can be set to weekly or monthly.²
- **Active Persona** – This capability enables analysts to use avatars, provided and maintained by the analysts or their organizations, to collect and analyze information that is otherwise inaccessible. Data collected using the Active Persona is analyzed exactly as all other data collected using the system, thus enabling a unified, effective, investigation flow.³
- **Telegram** – This feature enables analysts to periodically collect posts, media, and other relevant data from Telegram channels and groups, including post content, media, and group details. Collection from Telegram is performed by using an Active Persona provided and maintained by the customer.
- **Group Target - Non-Target - Target** – This advanced algorithm enables analysts to examine the connections of the whole group according to previously identified profiles in the system through hidden links, connections or go-betweens. This unearths new profiles of interest that usually could not have been found in any other way.

² Available for selected networks.

³ Available for selected networks.



- **Media Download** – For profile pictures and images within a profile's posts, Voyager Analytics enables analysts to download the images and save them locally. Saving images locally will keep them available in the system in case the profile is suspended from the network.⁴

⁴ Available for selected networks.

3. VOYAGER ANALYTICS WORKFLOW

3.1. Overview

The Voyager Analytics platform enables analysts to view, query and analyze publicly accessible data points from a wide range of publicly available data sources. This, in turn, enables analysts to receive in-depth, aggregated, contextual and actionable insights about individuals, groups and dedicated topics of particular interest. Voyager Analytics provides analysts with valuable output in many domains.

3.2. Workflow

Voyager Analytics sources publicly available, unstructured data from the social sphere: images, texts, dialects, and other indicators such as relationships, opinions, trends, and activities. It can also integrate data from existing databases into its analysis.

Voyager Analytics allows you to analyze data and provides actionable insights in three steps: collection, analysis and actionable insights visualized.

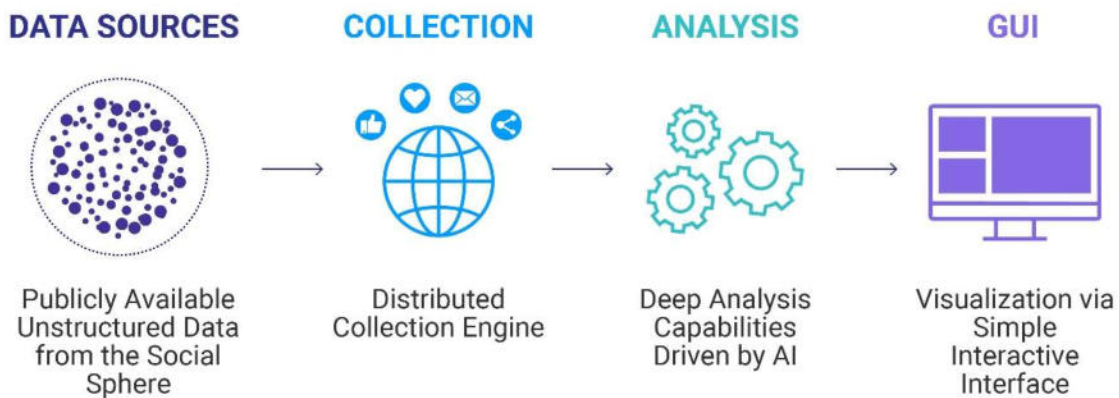


Figure 1: Voyager Analytics Workflow

1. **Collection** – Upon user initiation, Voyager Analytics collects publicly available, unstructured data, which are processed in near-real time and presented as in-depth insights. This provides the analyst with the latest and most recent data about an entity of interest. The platform runs on a distributed collection engine which uses a variety



of proprietary methods to enable analysts to collect relevant public data; for the analyst, this process is transparent.

Voyager Analytics enables collection from the following networks: Facebook, Twitter, Instagram, VK, Telegram, TikTok, LinkedIn, Tumblr, YouTube, Pinterest, Medium, and Vimeo, per customer's request and authorizations. For most of these networks both profile and topic information is collected, for a few only profile or only topic is available. Extracting topic information from Dark Web is also available. Additional networks can be added, subject to prior agreement.

2. **Analysis** – Following the collection stage, Voyager Analytics applies algorithms based on multidisciplinary methods to enable analysts to build a comprehensive presence of the entity of interest within the social sphere. Voyager Analytics enables the analyst to combine different data points and derive multiple aspects of the social behavior of that entity of interest, using cutting-edge AI-based technologies such as machine learning, cognitive computing, pattern recognition, natural language processing, combinatorial and statistical algorithms and more.
3. **Visualization** – Following the analysis stage, the actionable insights regarding individuals, groups and topics are visualized for the analyst in an intuitive and interactive user interface. The visualization layer provides analysts with an easy-to-use GUI which enables them to combine the powerful Voyager Analytics capabilities with their own know-how and skills. The result: previously unattainable insights of unprecedented depth at the analysts' fingertips.



4. ABOUT US

Voyager Labs is a world leader in AI-driven advanced technologies for human behavior analysis. The company has developed a proprietary AI-based technology that harnesses billions of data points from unstructured data to reveal deep actionable insights.

Our unique technology searches, aggregates and fuses data points and human behavior indicators from multiple data sources, intelligently processing and analyzing them to provide a holistic view of reality from insights that were previously unattainable. Using an innovative, scalable, and cognitive approach, we have an unparalleled ability to interpret the complex layers of the digital world.

Our platforms are used by analysts, agents and other professionals worldwide to tackle challenges like fraud, crime, terror, insider threats, trafficking and other risks, helping to create a safer world for all.

Founded in 2012, Voyager Labs employs a multidisciplinary team of AI researchers, data scientists, engineers and intelligence experts. Our offices are located in Washington DC, New York City, Singapore and Israel.