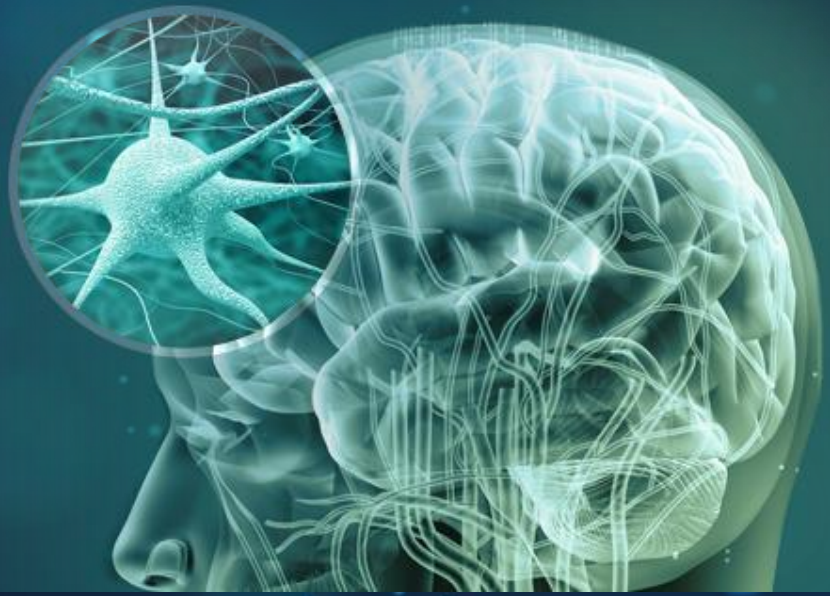
IntuView



Introduction to Artificial Intuition by IntuView

Dr. Shmuel Bar,
CEO, 2018

About the Company

Established in 2006, IntuView has field-proven AI technology.

The IntuView technology is patented in the US and Israel as an automated method to imitate processes of human reading of texts. IntuView's technology can be applied to any area where text analytics is needed.

The technology features a Natural Language Processing (NLP) platform provided both as a stand alone server and a cloud-based API.

Our clients come from all over the world.

Collecting Data is not Enough: "A needle in the haystack"

Big data platforms need very large datasets and phenomena that manifest themselves in a large part of those datasets. Crucial risks are more likely to be manifested in tactical information that is "a needle in the haystack".

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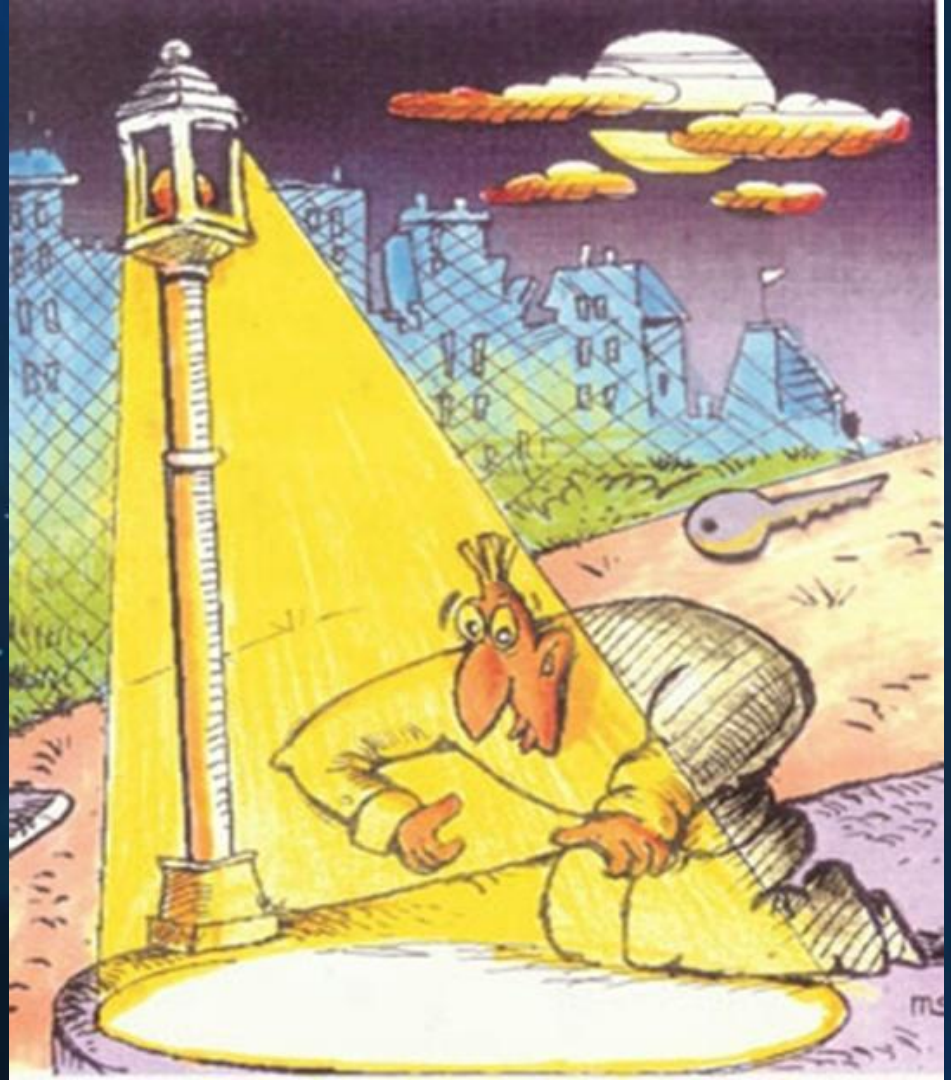

Collecting Data is not Enough: "Streetlight Effect"

Data Collection is handicapped by the "Streetlight Effect" - we search for answers where it is easy to find them. They are not necessarily there.

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"Vicious Circle"

This creates a vicious circle: our pre-conceived perceptions of "what the world looks like" are the basis for our intelligence requirements and collection tasking; The intel gathered will naturally reinforce those perceptions. This is the stuff that intelligence failures are made of (Barbarossa, Pearl Harbor, October 1973, the Iraqi invasion of Kuwait).

We enable the user to break out of that vicious circle and discover information that is not "self-evident" and thus to reduce the risk of intelligence surprises.

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“Knowns” and “Unknowns”

In analyzing information after it is collected we need to find “Black Swans” even when we don’t know they exist.

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This is Where "Artificial Intuition" Comes In

This is Where "Artificial Intuition" Comes In

"Artificial Intuition" enables the machine to emulate the way that well-versed human experts "read" texts and to reach "intuitive" conclusions, to detect anomalies and to reduce ambiguity through extra-linguistic information (e.g. social, cultural and religious concepts).

The technology is based on US patented "artificial intuition" for "meaning mining" of texts. It serves government agencies in the US, Europe and the Middle East for Public Opinion Monitoring and Political Research and Financial Research.

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How it works

emails mobile chats social SIGINT legal web archive

SEMANTIC ANALYSIS

IntuScan™

Get "Big Picture" from Big Data

Find the Needle in the Haystack

Discover the "Unknown Unknown"

Workflow

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Input Your Documents

- Natural Language Processing
- Entity Extraction & Analysis
- Ontological Analysis
- Categorization
- Relationship Analysis
- Sentiment

View & Analyze insights

How is This Different?

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Depth and Breadth of Analysis

Unlike the run-of-the-mill social media monitors that are limited to retrieving the "known knowns" and the "known unknowns" – mainly from structured data and string searches - our technology casts a broad "net" in order to provide the user with a wide view of the data and "needle in the haystack" alerts on potential hostile and extremist elements by identifying ideas, relationships, activities, opinions and moods aggregating the results from over 12 supported languages into one intelligence picture.

Focus

The ontology contains, inter alia, the world of concepts, religious and cultural references and memes of the Middle East and Islam, identifies – like no other system – the author's sect (Sunni or Shiite), ideological stream, and level of extremism, including by identification of the user's employment of verses from Quran and Hadith. Other domains (macroeconomics, narcotics) have similar depth of the ontology.

Accuracy

The technology integrates ontological knowledge with statistical algorithms, achieving a higher level of accuracy in text analytics than any other system and applicable to a wide spectrum of language styles. Hence, a search for a concept retrieves not only that specific concept – however it is expressed – but suggests related concepts.

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Features

Language Support

Language Identification module

The language identification module identifies over 100 languages and different languages in multi-lingual texts and supports English, Spanish, French, Russian, Czech, Arabic, Farsi, Urdu, Pashto, Hindi, Bahasa Indonesian/Malay and "hybrid language texts": "Spanglish", French-Arabic (used by North Africans in France), Arabeezi, etc.

BUT

"Language" is often a political and not a linguistic definition; Swedish, Danish and Norwegian – are closer linguistically than Moroccan, Libyan, Mauritanian and Egyptian which are all called "Arabic". IntuScan differentiated between these "dialects"

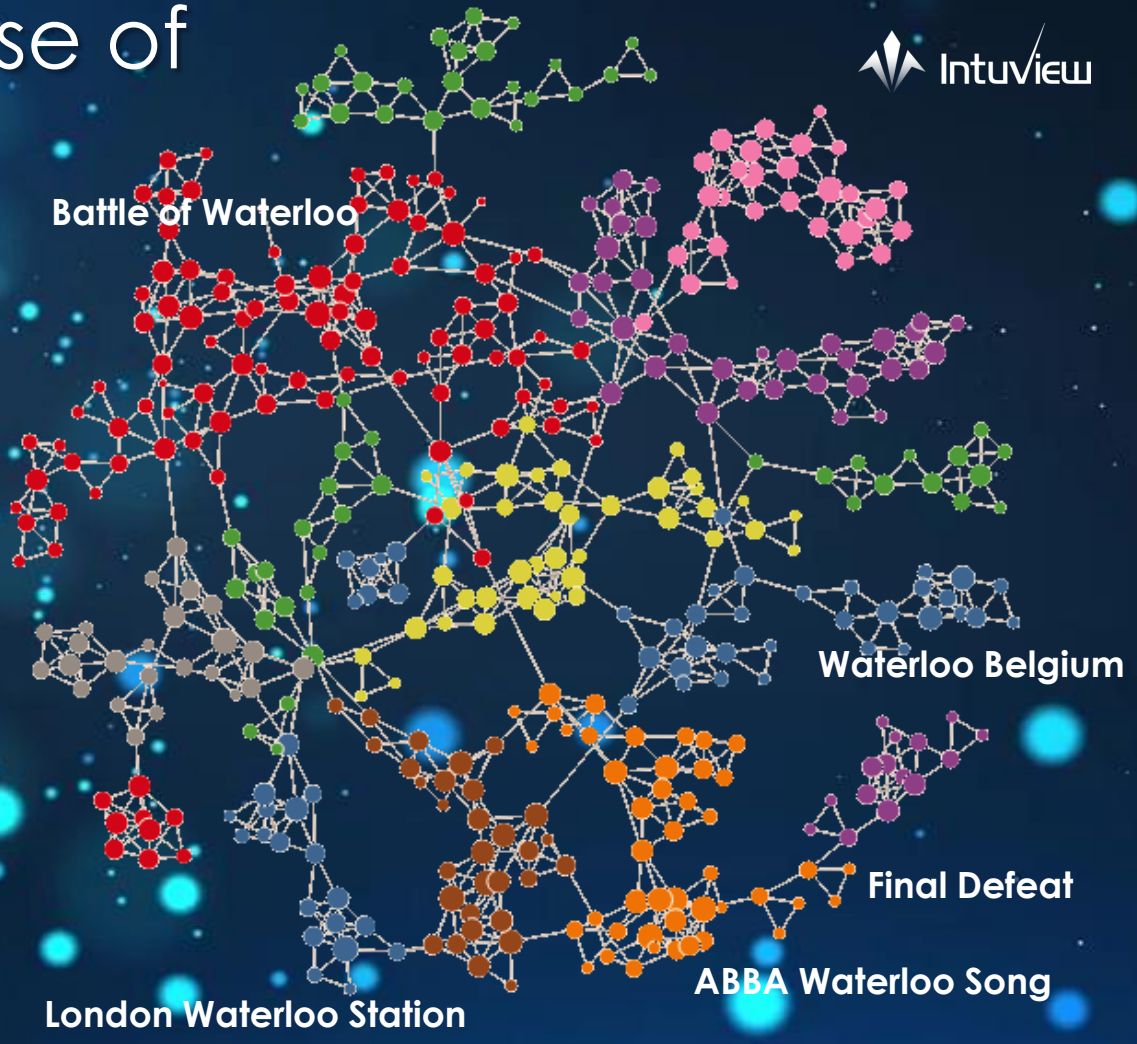
AND

Languages contain cultural references and allusions that are not self-evident; words, quotations, slogans, sacred texts, idioms or historic allusions may have different meanings to people from different backgrounds. Understanding the "meaning" may depend on knowing "who" the author is - culturally, politically, professionally or ideologically.

This is Solved by Use of Ontologies

An ontology is a hierarchal map of concepts and specific instances and their attributes that clearly defines each instance and its relationship with other instances.

Many expressions in different languages can all “mean” the same ontological instance, which, in turn, may be linked to different concept parents under different conditions.



Categorization

Categorization allows the user to focus on the texts that really are important without the need to invent ambiguous "keywords" and crawling rules.

Categorization may apply to “topics” or to characterization of the author.

Topics	Ideological Stream Cluster	Moderate-reformist
Arts & Culture		Khomeinist
Cyber		Jihadi-Salafi
Finance		Muslim Brotherhood
Health & Medicine		Mainstream
History		Traditional Shiite
Weapons and Explosives		Wahhabi
International Politics		General Radical
Islam	Document Type cluster	fatwa
Legal		essay
Military		bomb-preparation-instruction
Physical Sciences		essay
Politics		purchase order
Social Issues		technical manual
Sports		commercial financial report
Terrorism		banking document
Tourism		communiqué
		blog-posting
		email
		news item
		letter
		book review
		financial markets analysis
		presentation
	Risk/Threat cluster	low-risk-parameter
		medium-risk-parameter
		high-risk-parameter
	Sect cluster (Religion)	Shiite
		Sunni Sect
		Hindi
		Buddhist
		Christian
		Jewish

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Entity Profiling

IntuScan identifies entities: persons, groups, organizations, locations, addresses, URLs, dates, bank accounts, ideas, actions etc. and links them to entities that interest the user.

Names in the text that relate to the same entity even when the spelling or the name are not the same or variants of the name occur are matched by reversing Romanized Arabic or Farsi names into Arabic script and using cultural naming conventions and statistical models to discovers information such as ethnic origin, gender, religion/sect, status, family/tribal links etc.

All the extracted information is integrated to create "profiles" of the entities – persons, organizations, locations, etc.

These profiles include: the titles of person entities, relationships (family, workplace, organizational), Emails addresses used by the entities, Interactions (meetings, phone calls, travels, etc. mentioned in the data), Sentiment expressed towards the entity and all Co-references that may indicate other undefined relationships. Since variant references to the same entity are aggregated, mentions of an entity in different languages or with name variants (nicknames, "Kunya") are aggregated.

Entity Matching

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Names reflect cultural naming conventions, are received from different sources and are corrupted by different linguistic backgrounds of the transmitters and the transcribers of the names.

A name may be full (with patronymic, grandfathers name, Tribal name) or partial or a Kunya or may include a nisba or laqab. All these must be matched.

A name can identify the person in many ways: Gender; Ethnicity; Religious Sect; Region/City ; Tribal affiliation; Family relations; Social status; Age etc.

Dr. Al-Zawahiri = Ayman Rabi' Eddhawahri = Aiman Eddaouahiri = Abu Rabi'a Zuwahiri = الدكتور أيمن ربيع الظواهري

Dzokhar Anzarovitch Tsarnayev=Johar Tzarnaev=Djohar Ansarovich Zarnayof = Dschochar Ansorowitsch Zarnajew = Джохар Анзорович Царнаев

Xi Jin Ping = Hsi Chin P`ing = شي جين بينغ = Xíjìnpíng =習近平

Qassem Suleimani = Ghassem Soleimani = Qasim Suleimani = قاسم سليمانى .

Sentiment Analysis

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Focused opinions of the public or authors of documents towards people, governments, leaders, groups, countries, ethnic groups etc. are extracted from the text and measured over a period of time to view shifts in public opinion.

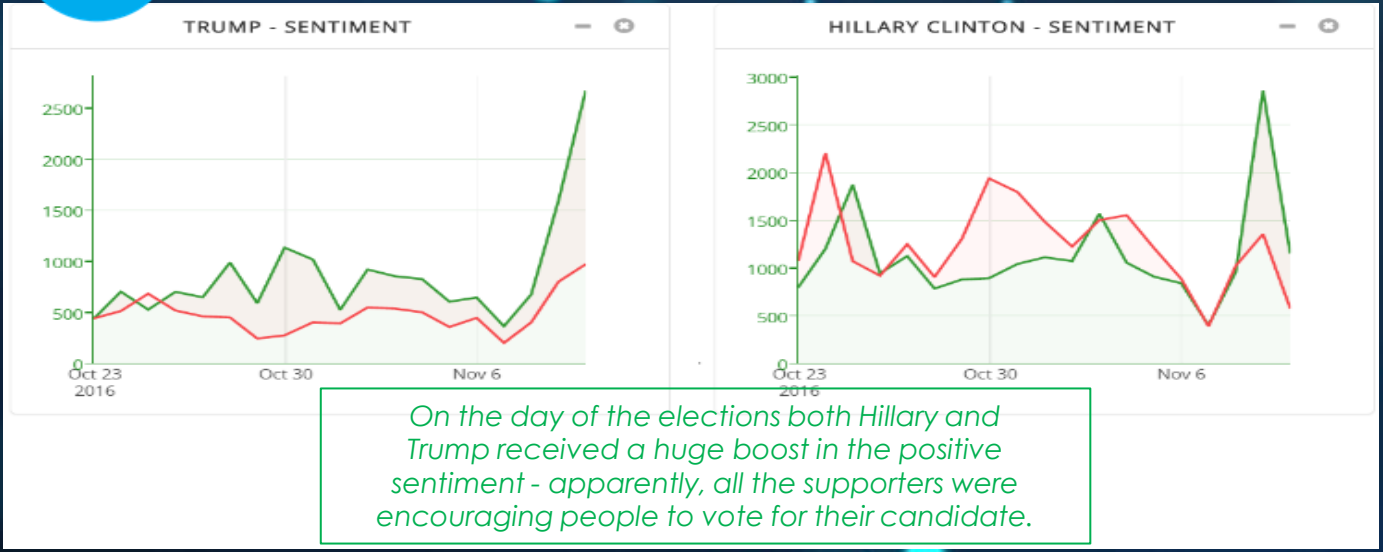
Sentiment analysis is not limited to "positive", "negative" or "neutral" but drills down to the details of "who" (the ideological orientation of the author) thinks "what" to "what degree" about "what characteristic" of "whom".

The user can create groups ("all the leaders of an organization or party) and measure public opinion towards those groups as a whole.

Sentiment from social media does not depend on responsiveness of people to pollsters; it covers hundreds of thousands to millions of "opinion holders" as opposed to samplings of traditional public opinion polls.

Sentiment Analysis

Analyzing Tweets: what people think about Trump and Clinton?



On the day of the elections both Hillary and Trump received a huge boost in the positive sentiment - apparently, all the supporters were encouraging people to vote for their candidate.

IntuScan supports User Generated Texts in different Social Media formats: Facebook, Twitter, blogs, SMS, instant chats.
Social Media Monitoring is the best alternative to active surveys: robust results , low-cost.

Sentiment Analysis

Analyzing Social Media: Twitter, Facebook

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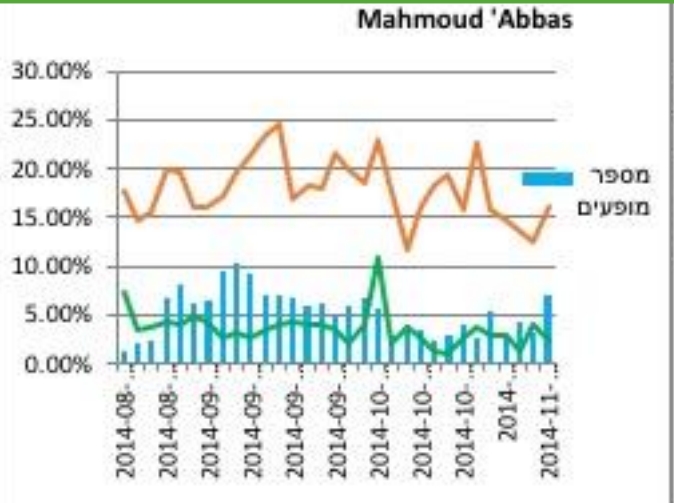

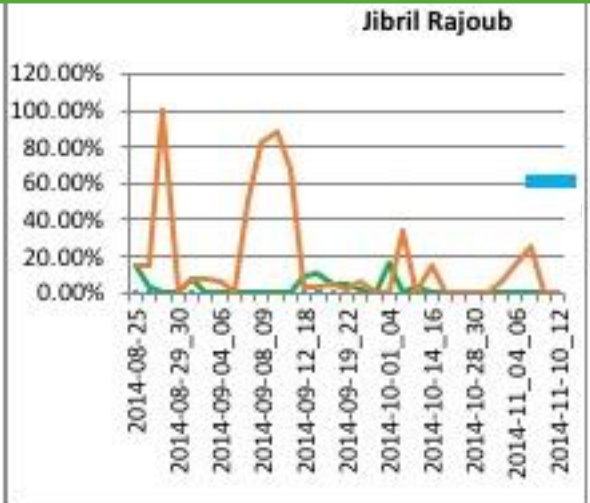

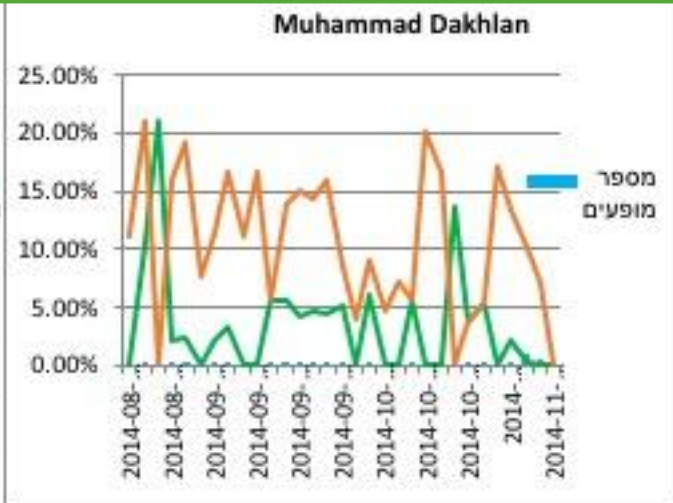

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Commercial Applications

Legal E-discovery

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The technology can save law firms and legal support teams money and time by finding the precise relevant documents in discover batches, scanning them for pertinent information and revealing relationships between entities, sentiments, events and other salient information. The system helps to identify and retrieve information necessary to support legal research team, through:

- processing of massive volumes of documents in all possible formats
- automated machine-learning based categorization, and "push" of documents to the relevant team members to expedite case preparation
- entity recognition, resolution and identifies links between persons, organizations, places, objects and ideas, relevant to specific case
- multi-lingual processing and discovery of related bits of information in documents in totally different languages, including hybrid language ("Spanglish", "Frarabe" etc).
- Real Time

Financial Research

Financial Research – analysts of Financial Markets can benefit from deep analysis of sentiment towards companies, markets, areas, and products and announcements of Central Banks.

The information gathered can be leveraged to identify long-term "investing" signals that provide investment professionals with a better sense of timing of events, critical in capital allocation.

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Financial Investigation

Investigation for money laundering, inside trade, fraud through mapping of the internal correspondence and creating sociograms from the text of the correspondence of relations, trust, distrust, meetings, etc.

Libraries and Research bodies

Libraries and Research bodies - general, professional or corporate – can use the technology to drill down to the relevant documents needed in research or reference, replacing the antiquated manual attribution of “key words”. Companies can use the text analytics capabilities to transform the internal correspondence into a valuable knowledge source.

Academic Research

Manual classification of academic literature is not enough. “Keywords” are subjective, limited and given to interpretation. String search will not return variants and return all the strings regardless of their actually representing the entity searched for.

Current search engines are not language independent. In a global world and multi-lingual environment, search must be multi-lingual. Multi-lingual Ontology-based text analytics to all digital or digitized texts to transform the structured text into a comprehensive database of all elements of the text.
Statistical models for categorization define the degree of match of the text to each category.
Search for real relationships and affinities between search parameters.

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Public Opinion Polling

While telephone surveys and focus groups are expensive, restricted in scope and are pre-structured to quantify sentiment towards known issues and contenders, the technology enables the user to identify “dark horses” and “unknown unknowns” that may have a critical effect on the political scene.

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System Journey & Live Demo site

http://demo.intuview.com/intuview-guest/

Dashboard

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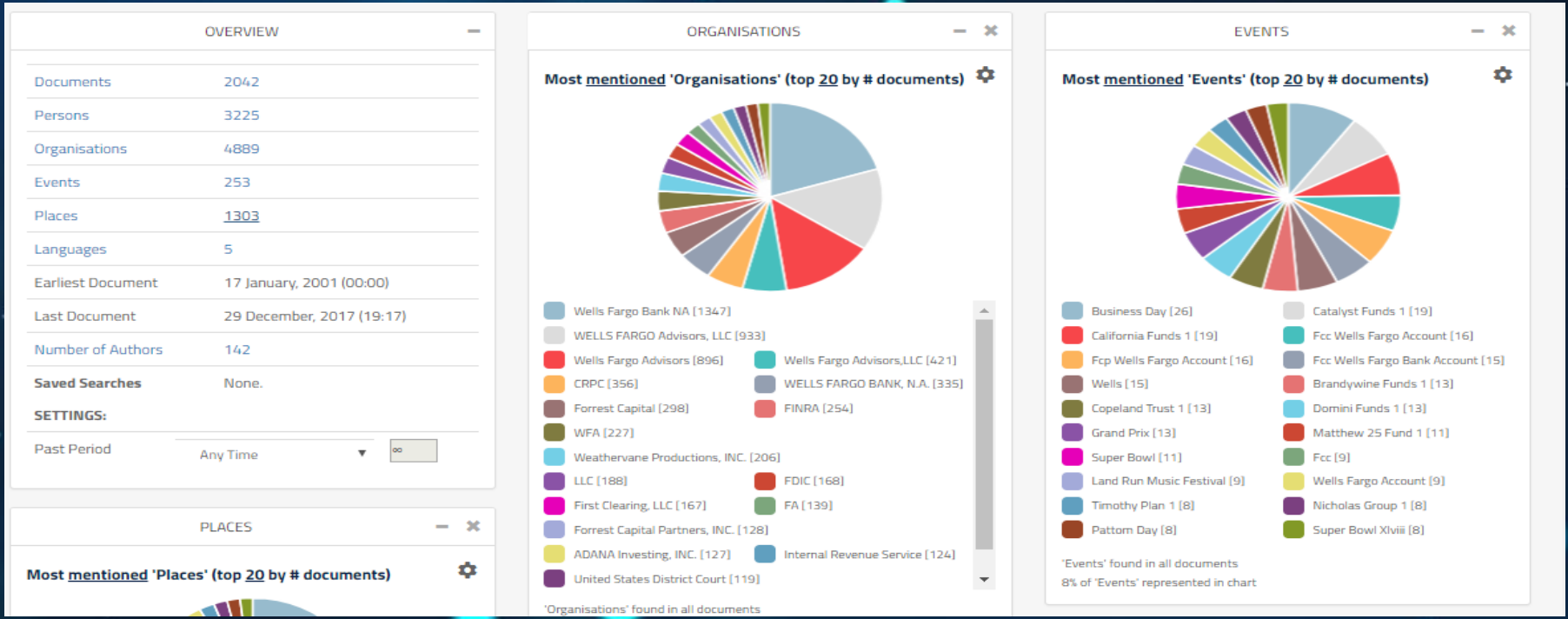


The dashboard shows the key statistics of the documents: the number of analyzed documents, number of people, organizations, events and places mentioned in the documents, date of the earliest and of the latest documents.

Report Screen

Once the document has been analyzed, you will receive the analysis on the screen in the Document View. The Tags window allows you to tag the document according to user-defined categories. The definition of the tags is enabled through "TAGS" in the main screen navigation sidebar. The Properties window (also called the digest presenter) allows you to see all the entities (persons, locations, organizations, events etc.) and ideas found by System in the document.

Report Tab

SEARCH

SEARCH PARAMETERS

ACTIVE FILTERS: RESET FORM SEARCH

RESULTS

OVERVIEW & FILTERS | MATCHING DOCUMENTS (108) SAVE SEARCH

GENERAL | GEORGE BUSH

GEOGRAPHICAL THEATRE (34)

Iraq 45
Egypt 42
Syria 41
United States 25
Israel 13
Palestine 11
Afghanistan 11
Saudi Arabia 11
Russia 7
Jordan 7
Lebanon 6
Qatar 5
Algeria 3

CO-REFERENCED PEOPLE (499)

President Abd al-Fat... (216) - 160 occurrences in 25 documents
Dr.Muhammad Mursi (217) - 119 occurrences in 17 documents
Osama bin Laden (79) - 67 occurrences in 10 documents
Ayman al-Zawahiri (216) - 46 occurrences in 7 documents
the Prophet Muhammad (111) - 12 occurrences in 7 documents
Muhammad Hosni Mubar... (72) - 26

CO-REFERENCED ORGANISATIONS (405)

"Islamic State of Ir... (216) - 48 occurrences in 38 documents
Muslim Brotherhood P... (217) - 70 occurrences in 20 documents
United States (216) - 26 occurrences in 12 documents
Egypt (216) - 16 occurrences in 11 documents
al-Qaeda (216) - 11 occurrences in 7 documents
Twitter (216) - 11 occurrences in 7

CO-REFERENCED PLACES (218)

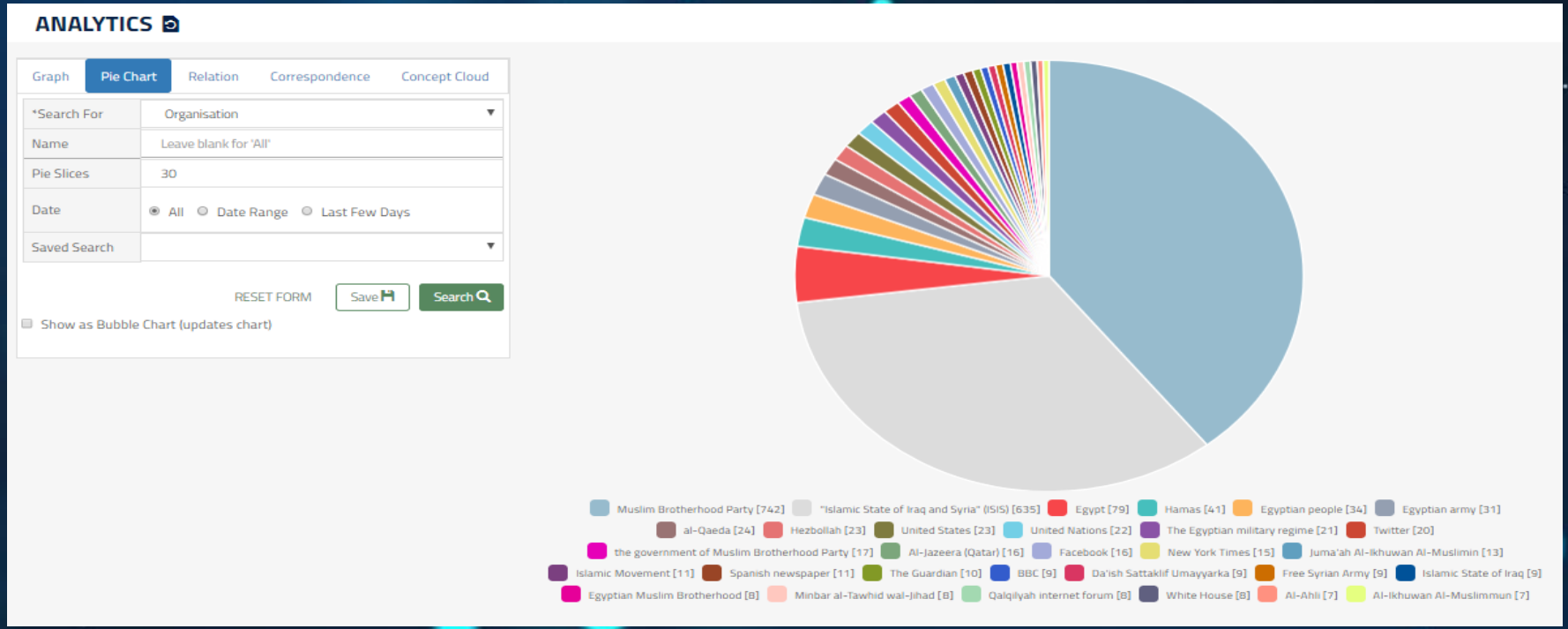
Israel (73) - 106 occurrences in 34 documents
Egypt (217) - 175 occurrences in 33 documents
Iraq (216) - 131 occurrences in 24 documents
Europe (69) - 26 occurrences in 16 documents
Palestine (108) - 121 occurrences in 15 documents
Syria - 28 occurrences in 15 documents

The System report provides a concise summary of the key elements in the document: categorization, topics, priority, ideas expressed etc.

The mention of ideas may contain a link to a short brief on the meaning of those ideas or the hermeneutics of verses or sayings in the document. The search is for any statement that expresses the search terms and not merely a string search.

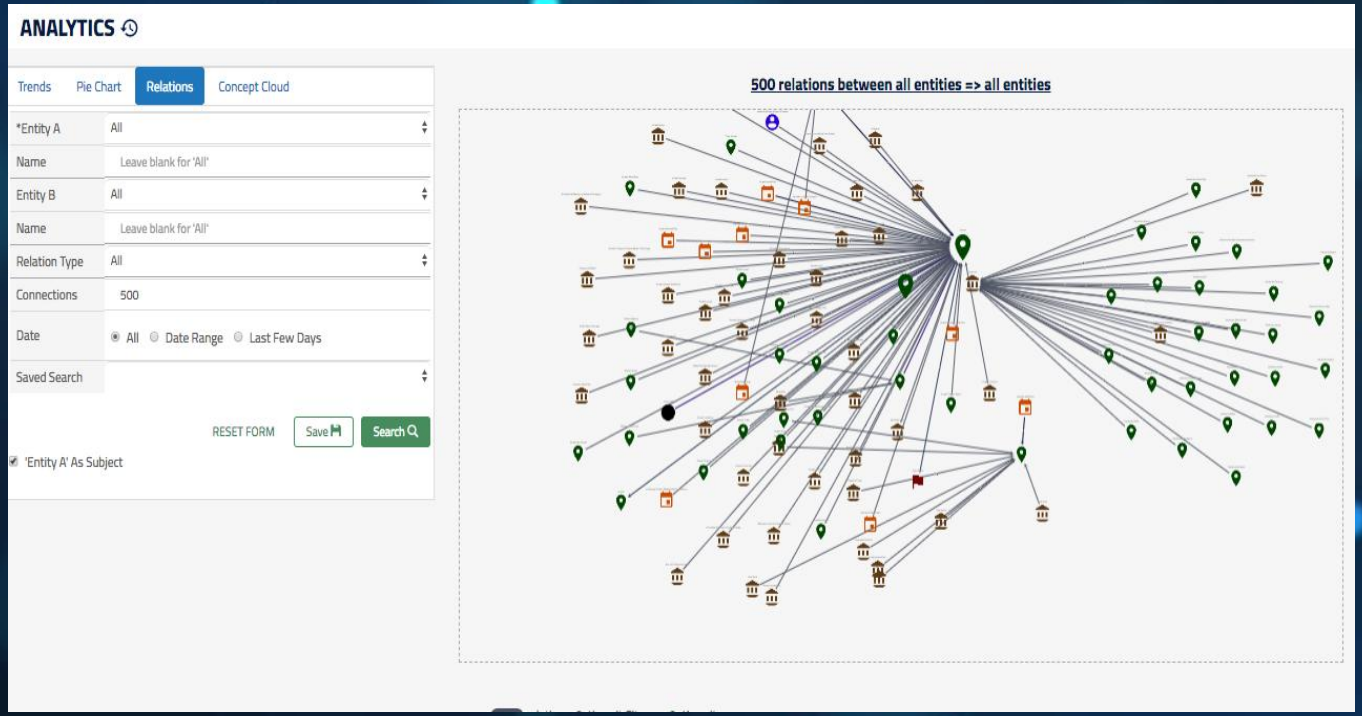
For example, a search for a location "US", "America", "United States" or in other languages ("Amerika"," Estados Unidos", etc.) will always return the "United States

Pie Chart



In this option you can see the amount of documents or mentions of a particular parameter or you can draw a relationship graph between all entities or ideas in the documents.

Relationships



A relationship graph visualizes all the relationships of all entities or drill down on specific types: family, workplace, travel, meetings, relations between persons and organizations, locations etc.

IntuView

Contact Us

Contact us to discuss how IntuView products can contribute to your needs
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