Supply Chain Early Warning System

VEGA is a powerful analytic solution that allows risk managers to track their suppliers network worldwide and detect supply chain threats – in real time – before they cause problems to production and impact costs. It’s based on award winning technology using the world’s most sophisticated semantic ontology; where warnings are derived from the analysis of multiple signals and data sources.

- Real-time prediction analysis of supply chain disruptions.
- Designed for large manufacturers with 1,000 – 1,000,000 suppliers worldwide.
- Value proposition for Aerospace & Defense, Automotive, High-Tech.
- Customized and secured solution under customer’s control.
- On-premise and cloud deployment.
- Complementary to SAP software offerings.
Automatic Detection and Analysis of Information from Cyberspace

Warnings are not based on a single document and source but derived from the analysis of many.
Scenarios

(I) **Direct Threat** – VEGA detects over 100 predefined threats with respect to the particular set of suppliers.

(II) **Geo Warning** – VEGA detects threats with respect to regions and geolocations and connects the threats with relevant suppliers even if not mentioned.

(III) **Δ Negative** – VEGA detects anomalies in the sentiment indexes related to each supplier.

(IV) **Δ Documents** – VEGA detects anomalies in the number of articles related to each supplier.
Two models of information exploitation - the OSINT shift

Increase of up to 65% in the quality of the final analytical 'product' when adopting a combination of these two models.
Solution Uniqueness

- Employs global awards winning technology with the world’s most sophisticated semantic ontology.

- Maximizes the world’s largest and constantly updated news database (1 billion documents, 40 TB metadata).

- Automatically understands and synthesizes 90% of the world’s news content.

- Daily 1 million articles in 11 languages from 200,000 global sources are analyzed.

- Gains knowledge regardless of language and geography.

- Categorizes the companies in the supply chain according to their level of risk exposure.

- Uses AI algorithms to improve the signal-to-noise ratio and complex analysis.
Patented Cross-Language Solution: A Key Differentiator

Content

GDP

Intelligence

Δ Big Data = Δ Knowledge

Across Languages → Across Markets / Geographies → Truly Global
• All major world languages are condensed into one universal semantic language by creating computer-processable identifiers which have the same meaning and context irrespective of language.

• This enables Semantic Visions (SV) to interconnect and leverage information independent of the language.

• Currently the languages condensed are: English, German, French, Spanish, Italian, Portuguese, Czech, Russian, Arabic, Korean and Chinese.

• No machine language translation is applied because it simply can not do the job and is not necessary.

• SV’s super-language makes it possible to bridge the gap between structured and unstructured data even if existent in different languages.
Selected Sources

Production sources: 214 593

<table>
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<tr>
<th>Language</th>
<th>Count</th>
</tr>
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<tbody>
<tr>
<td>English</td>
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<td>Spanish</td>
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<td>Arabic</td>
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</table>

Total of classified sources: 11 308 420
### Selected Threats

#### GEOPOLITICAL
- Violent Inter-state Conflicts
- Violent Intra-state Conflicts
- Guerilla Warfare
- Civil War
- Ethnic War
- Military Invasion
- Military Occupation
- Coup d'Etat
- Immigration Flows
- Political Crisis
- Credit Rating Downgrade

#### SECURITY
- Cyberterrorism
- Terrorist Incident
- Terrorist Bombing
- Car Bombing
- Terrorist Incident in Aviation
- Air Traffic Security Risk
- Maritime Security
- Modern Piracy
- Piracy in Somalia
- Civil Protest & Disorder
- Civil Disobedience
- Protest & Demonstration
- Rioting & Looting
- Computer Crime
- Hackers
- Identity Theft
- Phishing
- Keylogging

#### NATURAL
- Natural Disasters
- Earthquake
- Volcanic Eruptions
- Tsunami
- Flood
- Landslide
- Avalanche
- Wild & Forest Fire
- Drought & Heat Wave
- Storms
- Snowstorm
- Tornado
- Hurricane
- Sandstorm
- Thunderstorms
- Geomagnetic Storm

#### CORPORATE
- Regulatory Compliance Issues
- Corporate Crime
- Fraud & Forgery
- Corruption
- Insider Trading
- Money Laundering
- Financial Reporting Fraud
- Conflict of Interest
- Unethical Practice
- Corporate Waste Management Issues
- Workplace Discrimination
- Neglect of Workplace Safety
- Child Labor
- Sanctions Violations
- Extortions
- Racketeering
- Intellectual Property Infringement
- Patent Infringement
- Trademark Infringement
- Copyright Infringement
- Anticompetitive Behavior
- Corporate Lawsuits
- Corporate Bankruptcies
- Distrant
- Insolvency
- Plants Shutdown & Relocation Plant Disruption
- Senior Management Changes
- Quality Issues
- Product Recalls
- Labor Disputes & Strikes

#### INDUSTRIAL
- Environmental Disasters
- Radioactive Contamination
- Chemical & Oil Spill
- Industrial Accidents
- Explosion Accidents
- Fire Accidents
- Mining Accidents
- Maritime Accidents
- Railway Accidents
- Aviation Accidents
- Nuclear Accidents

#### HEALTH
- Pandemic
- SARS
- Bird Flu
- Swine Flu
- Cholera
- Ebola
- Plague
- Smallpox
- Polio
- Food Poisoning
- Dangerous Gene Mutations
Benefits

- Prevent supply chain disruptions and minimize potential losses.
- Timely replacement of endangered supplier to meet demands before competition.
- Negotiate better deal agreements with remaining available suppliers.
- Customized, dedicated and secured solution under customer's control.
- Complementary to SAP software offerings.

Situational Awareness  Actionable Intelligence
Deployment / Solution Architecture

Semantic Visions Datacenter

- web-mining system
- semantic engine
- statistics

Intelligent metadata

HANA Enterprise on premise or cloud

- real-time predictive analysis
- visualization

Powered by SAP HANA®
Awards

- UK Trade & Investment – Technology of Exceptional Potential
- UN – World Summit Award for Best e-Content & Creativity
- Red Herring – Global Award

- SAP – Startup Focus Award for the Most Social Impact at SAPPHIRE 2013

Hasso Plattner, Chairman of the Supervisory Board of SAP AG, and Frantisek Vrabel, CEO Semantic Visions.