COGILITY

Cogynt Decision Intelligence Solutions Meet National Challenges

Introduction

Cogynt is an advanced, AI-powered platform to support diverse operational missions that overwhelm human analysts with high risk/high consequence decision-making challenges. By processing vast amounts of data in real-time to identify patterns and anomalies that are often missed by humans, Cogynt enhances *situation awareness*.[1] Automation of routine tasks enables Cogynt to reduce cognitive load on decision makers and free them to focus on the most time-sensitive and critical threats. Through its AI/expert system driven, patented Hierarchical Complex Event Processing, Cogynt integrates and consolidates information from multiple sources to produce a common operating picture that prioritizes the most critical data for human decision makers to address. By analyzing historical and real-time data, Cogynt uses predictive analytics to alert on pending events and forecast potential impacts and risks. This *decision intelligence*[2] platform — engineered and designed to reflect expert decision-making processes — provides a *joint cognitive system*[3] that performs better than either the human or the computer component alone.

Cogynt Platform

Cogility's **Cogynt Decision Intelligence Platform** has been operational in supporting decision-analytic and risk assessment missions for several years, demonstrated as a proven force multiplier that improves analyst productivity while enhancing accuracy and explainability. At the heart of Cogynt is our **patented Hierarchical Complex Event Processing (HCEP) engine** (see Figure 1).

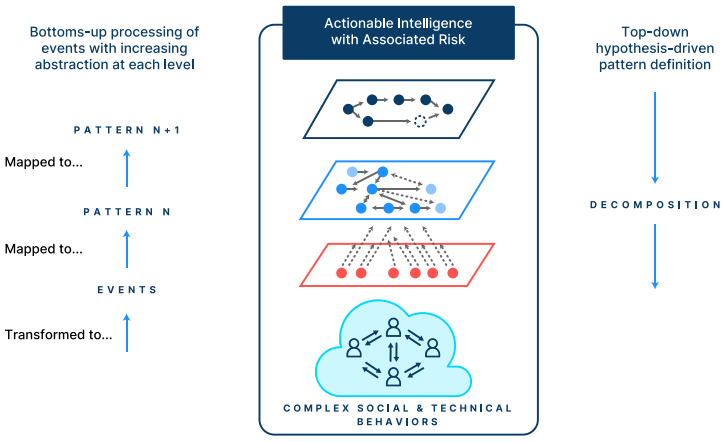

Figure 1. HCEP emulates expert human judgment at scale with explainability

Unlike traditional analytics that operate on static datasets, HCEP continuously ingests and analyzes **streaming data** in real-time. HCEP emulates expert human judgment. The HCEP model performs top-down and bottom-up pattern based processing to infer and associate events with patterns and higher order abstractions that enable the system to recognize potential risks. Analysts can build or tailor the model by making any desired adjustments to fit their organization's mission and priorities.

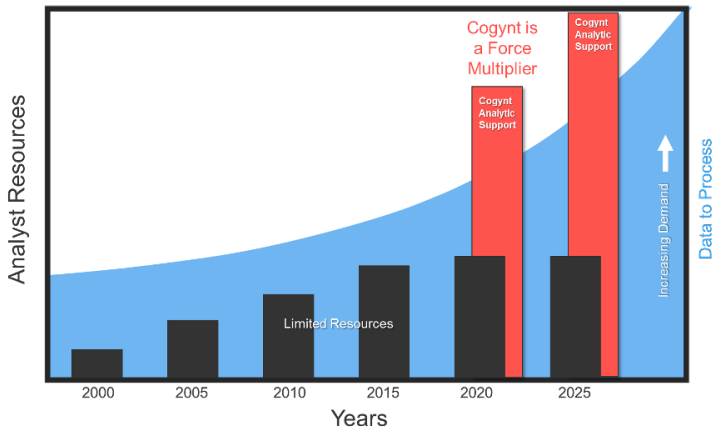

Figure 2. Cogynt is a Force Multiplier

Program Managers consistently demand greater efficiency with fewer resources (see Figure 2). By providing AI/expert system based support, Cogynt meets the demand in delivering powerful decision support through three operational modes (see Figure 3):

- No-code authoring for building or tailoring expert-informed decision support models employing advanced predictive analytics
- Analyst workstation that supports multi-user collaborative decision making with powerful case management tools
- Management dashboard provides an overview of operations.

Supporting Diverse Operational Missions

The Cogynt decision intelligence platform is well-suited to support critical operational missions that protect national security, promote public safety, and enhance commercial productivity across diverse business sectors. Its AI-powered, expert-informed behavioral analytic HCEP processing, with an integrated generative AI Large Language Model, is

1. Endsley, MR. (1995). Toward a theory of situation awareness in dynamic systems. Human Factors Journal 37(1), 32-64. DOI: 10.1518/001872095779049543

2. Gartner. (2024). Market Guide for Decision Intelligence Platforms. 18 July 2024. https://www.gartner.com/en/documents/5599159

3. Hollnagel, E, & DD Woods. (2005). Joint cognitive systems: Foundations of cognitive systems engineering. CRC press.

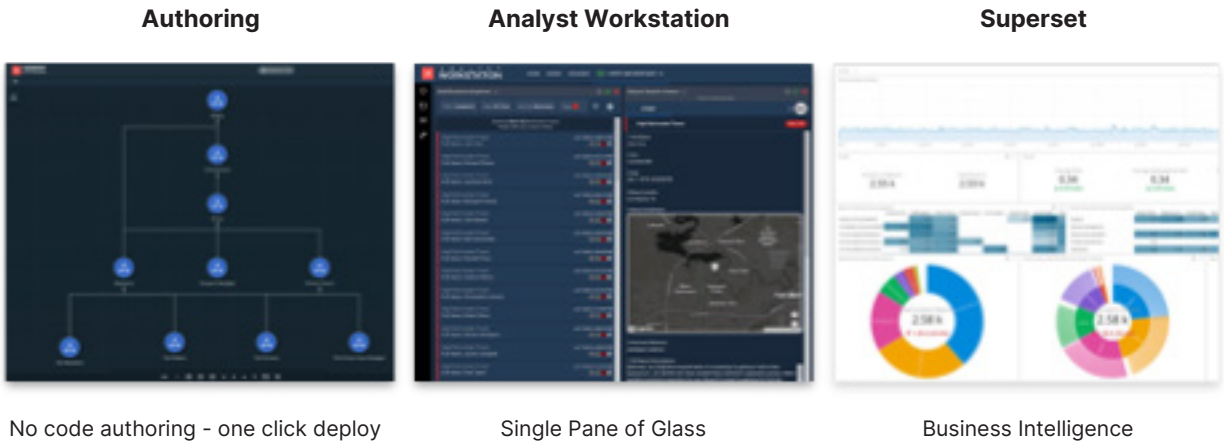

Figure 3. Cogynt role-based support

uniquely equipped to extract large volumes of structured and unstructured data to support these challenges in real time, with explainable results that derive from decision analytic models reflecting how domain experts solve problems. The Cogynt platform currently supports several customer mission applications, including insider risk management and cyber threat and attack analysis, as described below:

- **Cogynt Insider Risk Management Solution.** Insider threat solutions that only consider online behavior (technical indicators) are inadequate to predict and enable proactive intervention to mitigate insider risk. A "whole person" behavioral analytic approach is needed to consider technical and behavioral/ psychosocial indicators that reveal at-risk individuals on the critical pathway to insider risk. Cogility's whole person approach is embodied in the hierarchical SOFIT knowledge base of insider risk indicators — integrated within and operated upon by Cogynt's HCEP behavioral analytic engine. Cogynt ingests all available data, matching it continuously and in real time to behavioral patterns. This triage process facilitates efficient and effective risk management.
- **TacitRed Continuous Cyber Attack Surface Intelligence.** Powered by Cogility's patented HCEP processing, TacitRed continuously analyzes massive amounts of global attack signals and threat intelligence sources to pinpoint active exposures, attacks, and risks of over 18 million U.S. companies. TacitRed delivers fully-curated and detailed threat intelligence, maps and visualizes external attack surface, identifies and prioritizes imminent at-risk assets to enable rapid threat mitigation. This unparalleled tool was recently acquired by DATA443.

Other current or potential applications include:

- Aviation safety
- Healthcare compliance/patient risk analysis
- Financial systems compliance/risk analysis
- Violence risk assessment and mitigation

Cogynt Key Features:

Composable AI – Expert and Learning AI
Cogynt's HCEP Hierarchical Complex Event Processing integrates an advanced Expert AI behavioral analytic with LLMs to provide intelligent support for the human analyst and decision makers.

Continuous Risk Assessment
Cogynt's HCEP engine explicitly models the decision process, analyzing risk indicator patterns at increasing levels of abstraction. This approach more closely matches expert judgments compared with most models that treat risk indicators independently.

Explainability
Cogynt's HCEP behavioral analytic supports causal event analysis that helps analysts understand "why" with full provenance and traceability that is essential in high consequence decision making.

Human Factors Optimization
Cogynt's no-code, decision-centric UI streamlines analytics, reduces cognitive load, and facilitates team collaboration. This increases analyst efficiency and effectiveness.

Scalability
Cogynt is a horizontally scalable platform hosted on the client's VPC, proven in the most challenging decision support use cases with high data volumes, behavioral pattern complexity, and concurrent users.

Configurability
Cogynt is highly configurable: It can ingest any data for diverse intelligence and decision support missions, enabling expert analysts to develop powerful analytic models and enhancing task and role-based workflows.

Decision Support
Best-suited for complex, high-consequence problems, Cogynt drives risk-driven decisions with automation, augmentation and support. Its integrated case management solution is highly configurable.

Fully Integrated Platform
Cogynt is delivered as a fully integrated containerized platform that is ready to be configured after installation in the client's Virtual Private Cloud.

Visit **www.cogility.com** to obtain more information and request an expert demo.

Cogility
15495 Sand Canyon Ave.
#150
Irvine, CA. 92618

sales@cogility.com
+1 949.398.0015

COGILITY

10/25