

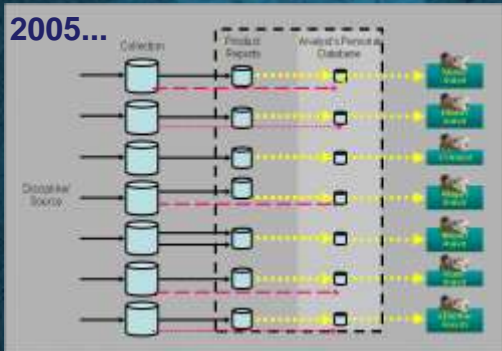


CLOUD ANALYTICS: Empowering the Army Intelligence Core Analytic Enterprise

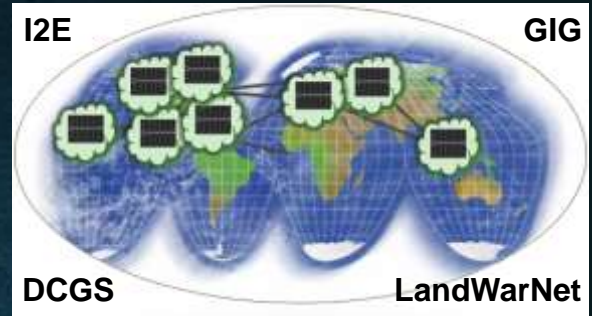
5 APR 2011



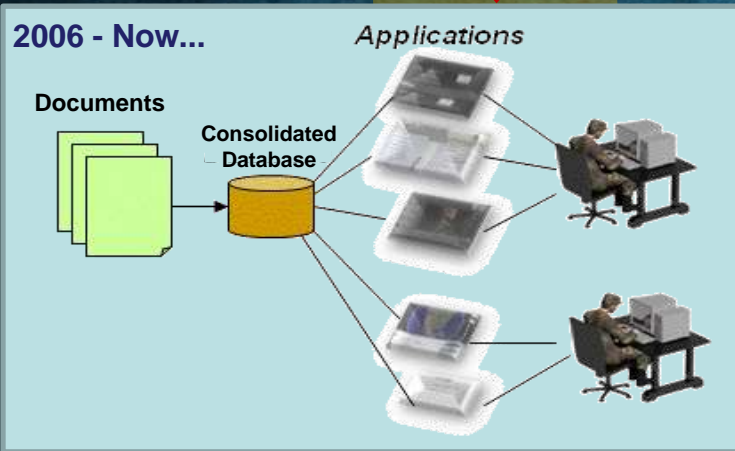
Advanced Analytics Harnessing Data for the Warfighter



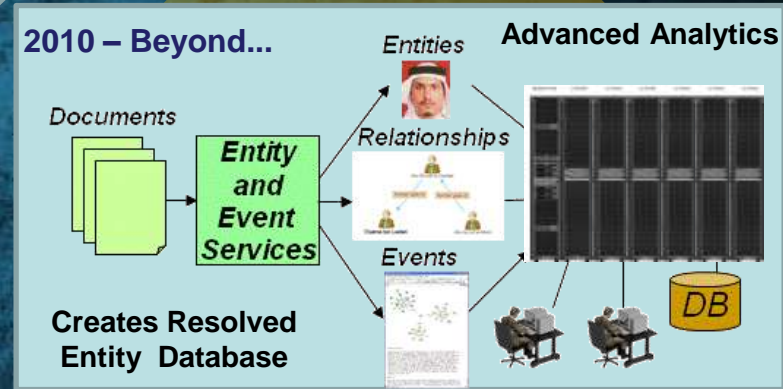
Data Silos



Global Enterprise
"Common Architecture"



Document Centric



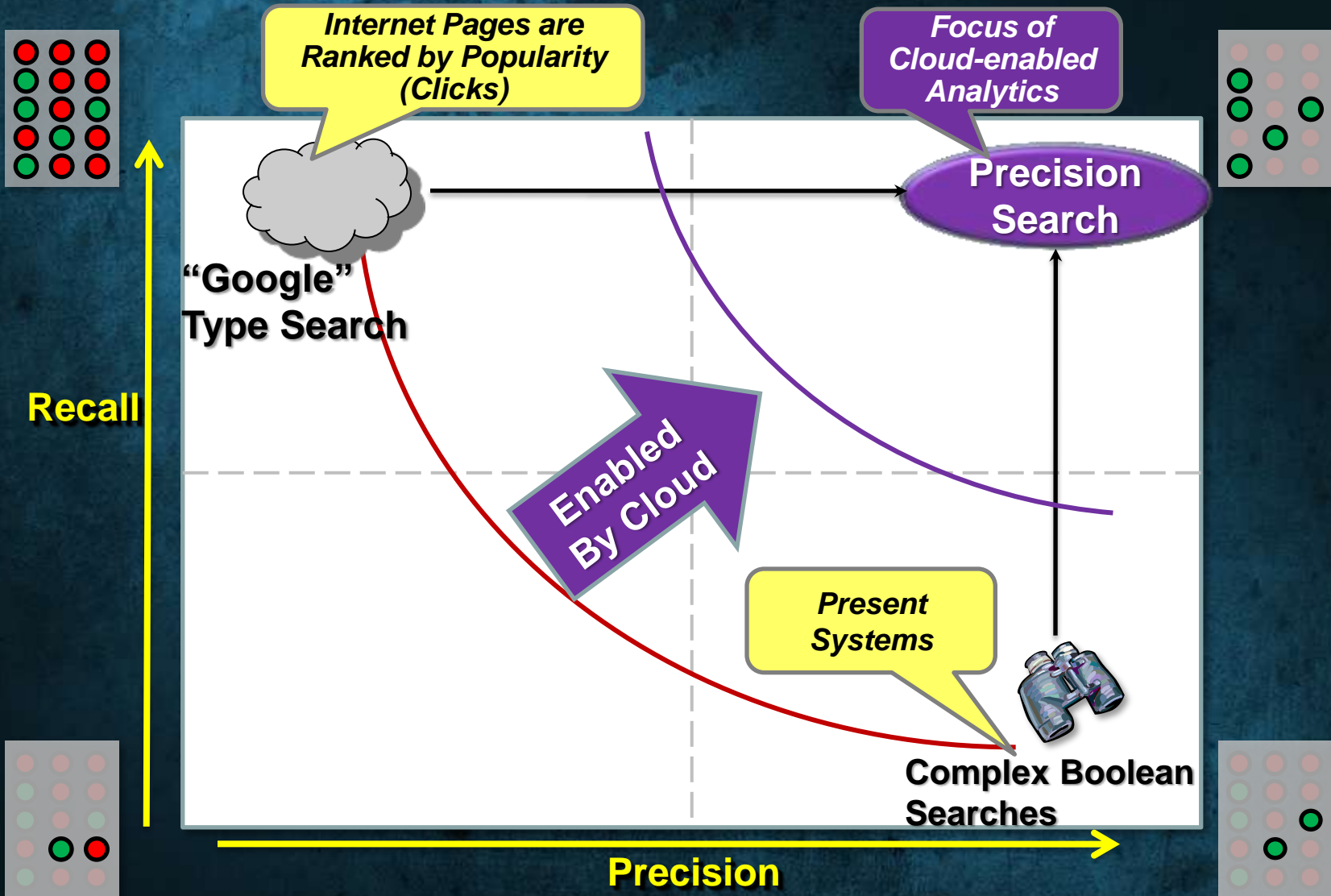
Entity/Event Centric

- Focuses on Persons, Places, Activities, etc..)
 - Resolves and Disambiguates Entities
 - Extracts Entity-To-Entity Relationship
 - Provides Entity & Event Representation



Precision Search

Finding Relevant Data Faster





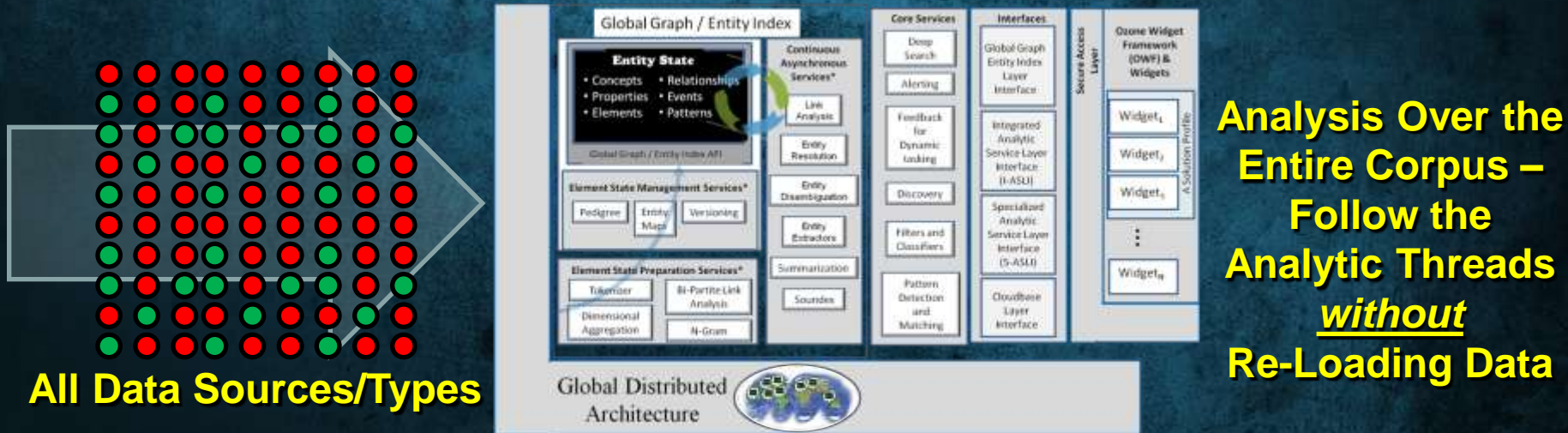
Working with ALL the Data

Today's Analytics Must Filter Data



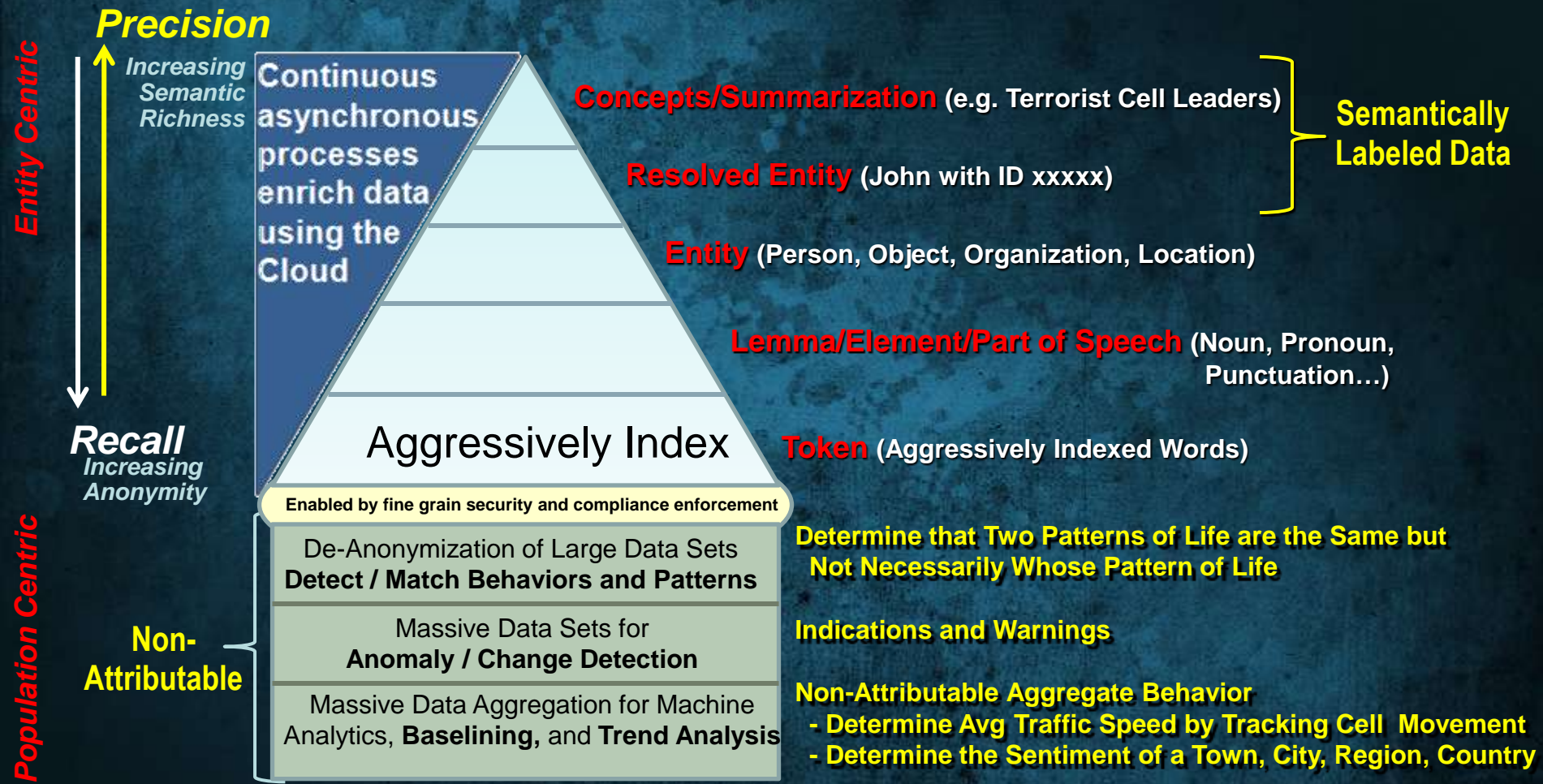
With the Cloud, We Do Not Have to Filter to Get a Working Set

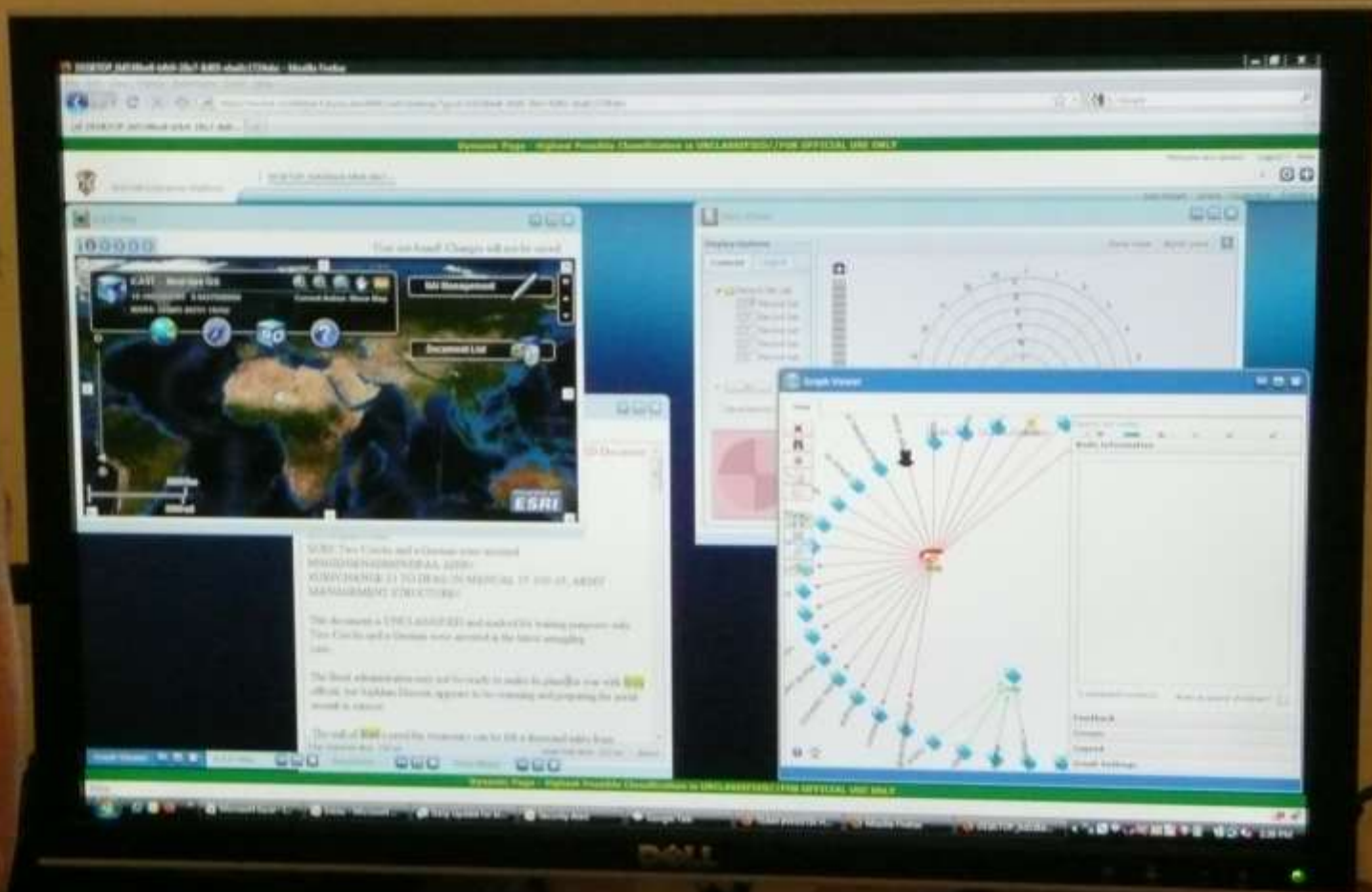
Cloud Analytics





Solving the Precision / Recall Conundrum with Semantic Enrichment of the Data







Simple Search, Graph & Document Viewers (Entity Search, Entity Resolution, Social Analysis)

- **All Searches Are Against All the Data (Structured and Unstructured)**
 - **Unlike Current Systems, *Don't Need to Filter Data***
- **Search Results Returned at Internet Speed**
- **“Chinese Menu” Provides Rapid Discovery of Unknown Connections**
- **Immediately Enter Analysis (Seconds vs Minutes/Hours)**
- **Click to Explore Connections for Relevance (*Snippets*)**
- **De-clutters Visual Display, Without Filtering**
- **Adding Context Leads to “Precision Search”**

- **Associative Memory Index**



Widget Interaction: Patterns of Life

(Widgets: Time Wheel, Histogram, Map)

- **Simple Functions Combine for Powerful Analytic Capability**
- **Decouples Functionality for Widget Reuse** (*Pull Together like LEGOs*)
- **Ease of Widget Creation**
 - **Lightweight Software Coding** (< 100 Lines of Java Script)
 - **Open Commercial Standards**
 - **Users Can Build Rapidly** (Secure Container)
 - **Rapid Response to User Needs and User Feedback**
 - **Harnesses the Innovation of our Users**



Contextual Search / N-Gram (Enhanced Searching)

- **Aggressively** Index Every Word
- **Data Self-Organizes for Analysts to See Context of Terms**
- **Internet Speed of Response**
- **Analysts Form Relevant Queries in Seconds from a Cold Start**
- **Enables *Precision Search***
- **Foundational Index - Building Block for other Widgets + Micro-Analytics**
 - **MSR Example: Map the Documents**
 - **Name Variant Example: Select Common Mis-Spellings to Check ALL**



Community of Interest (COI) (Enhanced Searching, Alerting, Social Networking)

- **Use Cloud Analytics Not Just on Red Threat Data, but to Manage BLUE**
 - **Leverage Knowledge on How the Network is Used**
 - **Exploit User Profiles and Expertise Across the Enterprise**
- **Better, Faster Analysis:**
 - **Link with Other Analysts Working Same Problem (*Auto-find SMEs*)**
 - **Give Recommendations Based on Users' Expertise**
- **Training: Enables Supervisor Oversight and Management of Analysts**
 - **Detect Weak Analytic Skills (*Avoid "Analytic ADD"*)**
 - **Prevent Too Many Analysts from Working Same Problem**
- **Detect Anomalous Activity (*Counter Insider Threat*)**
 - **Users Accessing Data Beyond Assigned Function**
 - **Excessive Downloading (*WikiLeaks*)**



CI-HUMINT / CHAMPION (Integration of “Legacy Systems”)

- **Demonstrate the Flexibility of the Cloud to Integrate Legacy “Boxes”**
 - **Widgetize Functionality:** **1/2 Month**
 - **Complete Integration into Cloud:** **2-1/2 Months**
 - **Total Effort to Integrate Legacy → Cloud:** **3 Months**
 - *Compare with Traditional **18-24 Months** to Deploy,
and Benefit from Less HW / SW / Support Personnel / Footprint*
- **Decouple Proprietary Services and Reuse Existing Services**
- **Focus Development Resources on New Capabilities**



Cloud-to-Cloud (Forming the Ubiquitous Cloud)

- **Demonstrate Cross-Cloud Functionality**
- **Allows Data Stewards to Manage Data**
 - **Others Can *Leverage*, not *REPLICATE*, Vast Amounts of Data**
- **Access Others' Data, Services and Hardware at No Added Cost**
- **Reduced Bandwidth Required (Only Pass Results, not Underlying Data)**
- ***Empowered by an IC-common, Non-Proprietary, Open Architecture***



Cloud-enabled Advanced Analytics

- **Exponential Improvement**
 - **Reduces Time for Analysis** (Hours → Minutes)
 - **Enables Fast Precision Search of Huge Data**
 - **Every Query Searches ALL Data; No Data Filtering Needed**
- **Power of IC-Common Cloud HW, SW, Visualization**
 - **Shared Investments Accelerate Progress**
 - **Common Standards Allow Widgets to Communicate, Even If Built Separately**
 - **Development & Fielding Cycle Reduced from Years to Months: Meet Needs Rapidly**



Responsive, Agile Innovation to Transform Army Intel

