DEFENSE INFORMATION SYSTEMS AGENCY
The IT Combat Support Agency

Enterprise Business Intelligence in Support of Cyber Operations

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Outline

- Evolution of Service Provider – JIE
- DoD Cyber Challenge
- Business Intelligence for Cyber Awareness
- Purpose/Objective for Providing Situational Awareness
- Cyber Situational Awareness (SA) and Big Data (Current Efforts)
- Data Analysis Lifecycle
- Data Presentation Evolution Timeline
- What's next?

Evolution of Service Provider

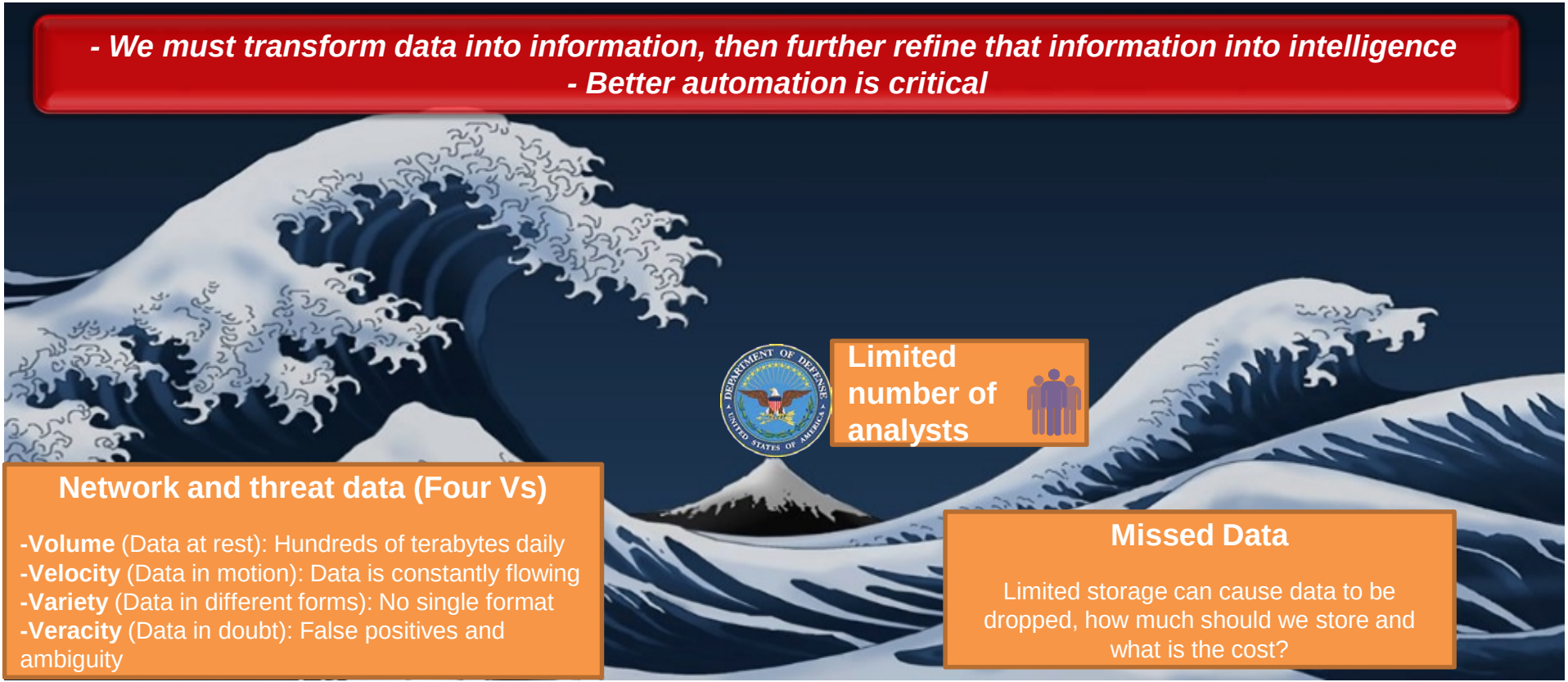
Cyber Situational Awareness

As a combat support agency, DISA is a Joint Information Environment (JIE) Service Provider operating, managing, and securing DODIN enterprise services. As such, DISA has responsibility to provide service intelligence and Situational Awareness (SA) to its mission partners.

- Expose enterprise service data
- Share enterprise service data
- Enhance situational awareness and mission decision support

The DoD Cyber Challenge

- We must transform data into information, then further refine that information into intelligence
- Better automation is critical



Limited number of analysts

Network and threat data (Four Vs)

-**Volume** (Data at rest): Hundreds of terabytes daily
-**Velocity** (Data in motion): Data is constantly flowing
-**Variety** (Data in different forms): No single format
-**Veracity** (Data in doubt): False positives and ambiguity

Missed Data

Limited storage can cause data to be dropped, how much should we store and what is the cost?

Business Intelligence for Cyber Awareness

Data Scientists/Cyber Analysts

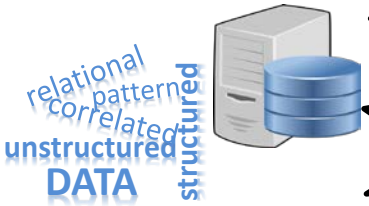
Machine Learning

Business Intelligence

Business Continuity for other Combat Support Agencies

Correlation with Mission Dependency

Big Data Platform



Data Visibility

Combatant Command Situational Awareness

End Users/End Points

Purpose/Objective for Providing Situational Awareness

Situational Awareness

Purpose:
- Make operational information actionable
- Provide awareness to Warfighter and Mission Partners

Objective:
- View situational awareness dashboards in support of business/mission

Insider Threat/Counterintelligence

Purpose:
- Support Mission Partner insider threat defense

Objective:
- Access to system logs and other data in support of insider threat detection

Mission Partners will have different cyber situational awareness needs depending on their cyber terrain that their missions utilize.

Cyber Situational Awareness (SA) and Big Data

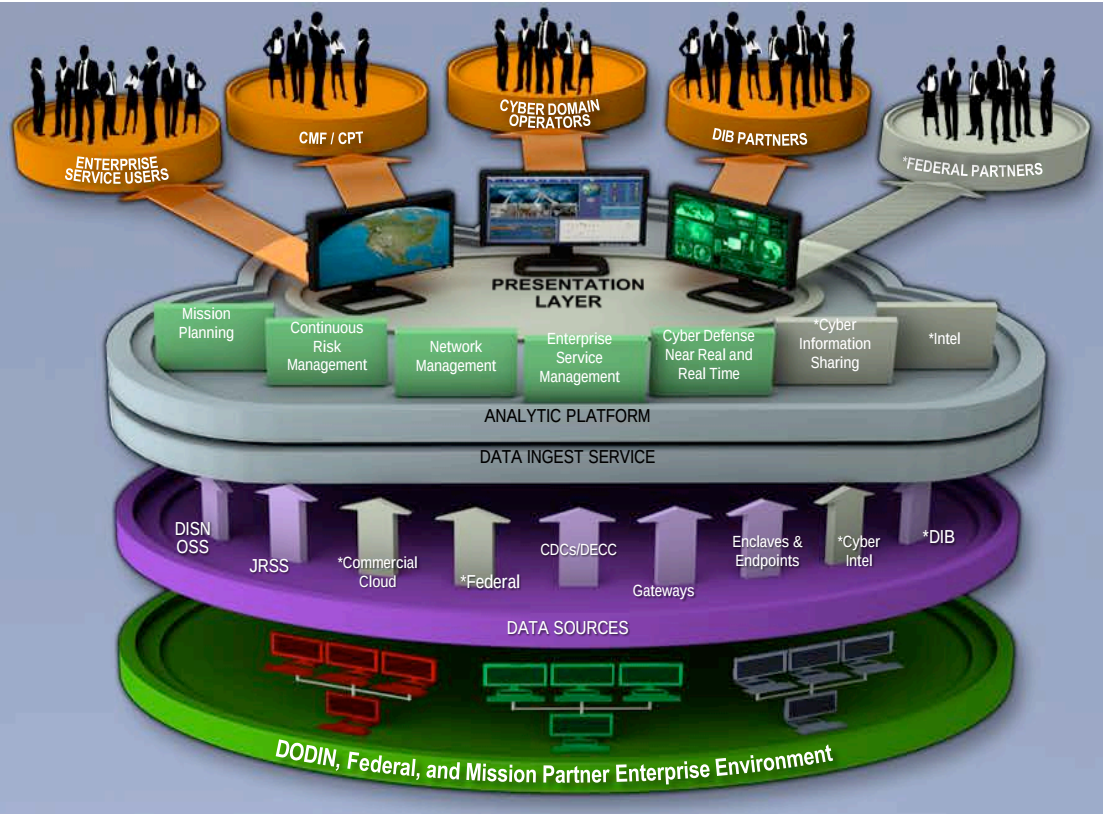
Situational Awareness

Share/Understanding/Act

Visualize/Knowledge/Decide

Analyze/Information/Orient

Collect/Data/Observe



Data Analysis Lifecycle

Detect	Collect	Analyze	Decision/Action

Threat Information

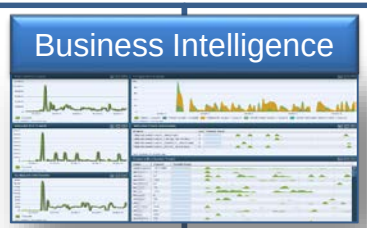
Sensor Output

Mission Mapping

Asset Compliance / Risk

Data Aggregation

Big Data



Data Discovery

Self-Service Queries

Dashboards

Remediate

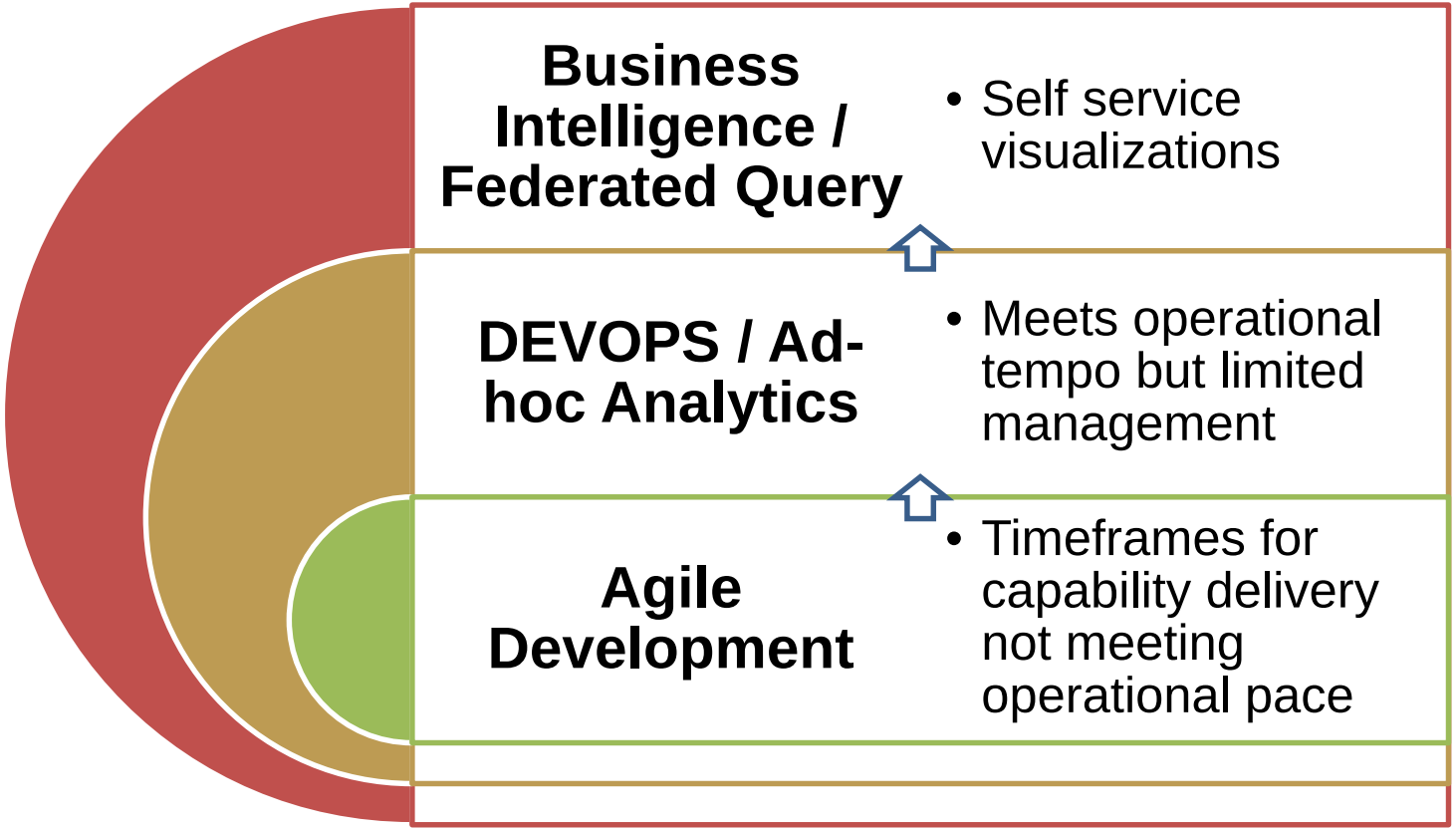
Incident Processing

Analytic Development

Information Sharing

Using big data processing to identify events that raise alarms and threats through indicators which can increase awareness of critical changes in the operational environment.

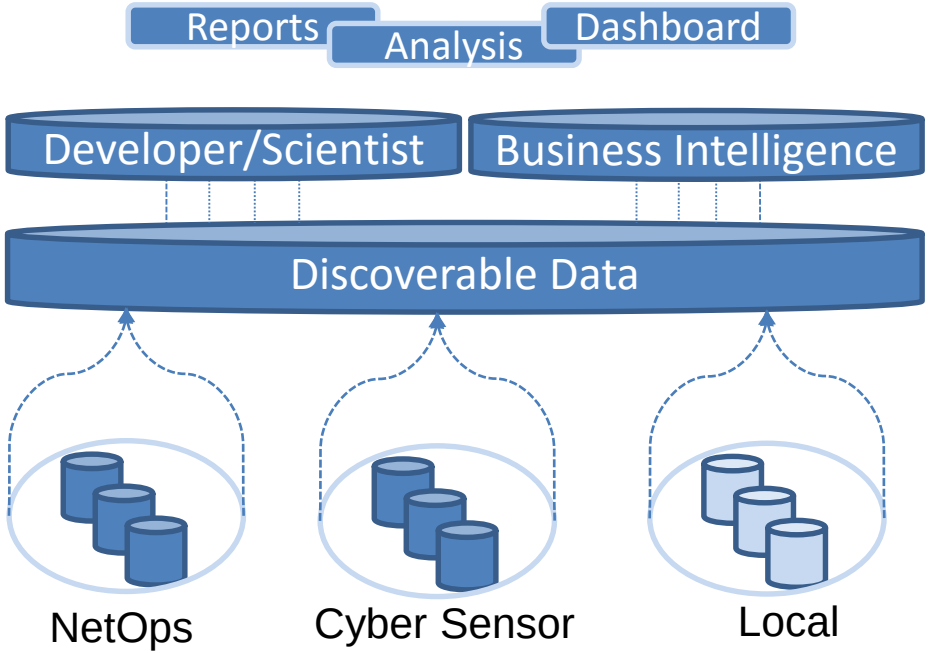
Data Presentation Evolution



What's Next?

Business Intelligence tools for Cyber Situational Awareness

- Provide data visibility to Mission Partners for various operational and mission needs
- Provide visualizations in support of executive dashboards
- Provide cyber analysts ability to discover/explore sensor output without development
- Provide machine learning toolsets
- Support joint data strategy



Mission Partners rely on the information environment to help them understand the operational status which influences the service of critical capabilities.

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