

# **Biometrics:**

**BIG DATA, ANALYTICS, &**

**BIOMETRIC-ENABLED INTELLIGENCE**

— FOR DEFENSE, INTELLIGENCE,  
HOMELAND SECURITY AND LAW ENFORCEMENT —

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# **DEFENSE INTELLIGENCE AGENCY**

## **Biometrics Big Data Symposium**

**Data Analytics and Biometrics**

**Mr. Dalton R. Jones, Senior Biometrics Executive  
Directorate for Science and Technology**

12 December 2013



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## Identity Intelligence (I2)

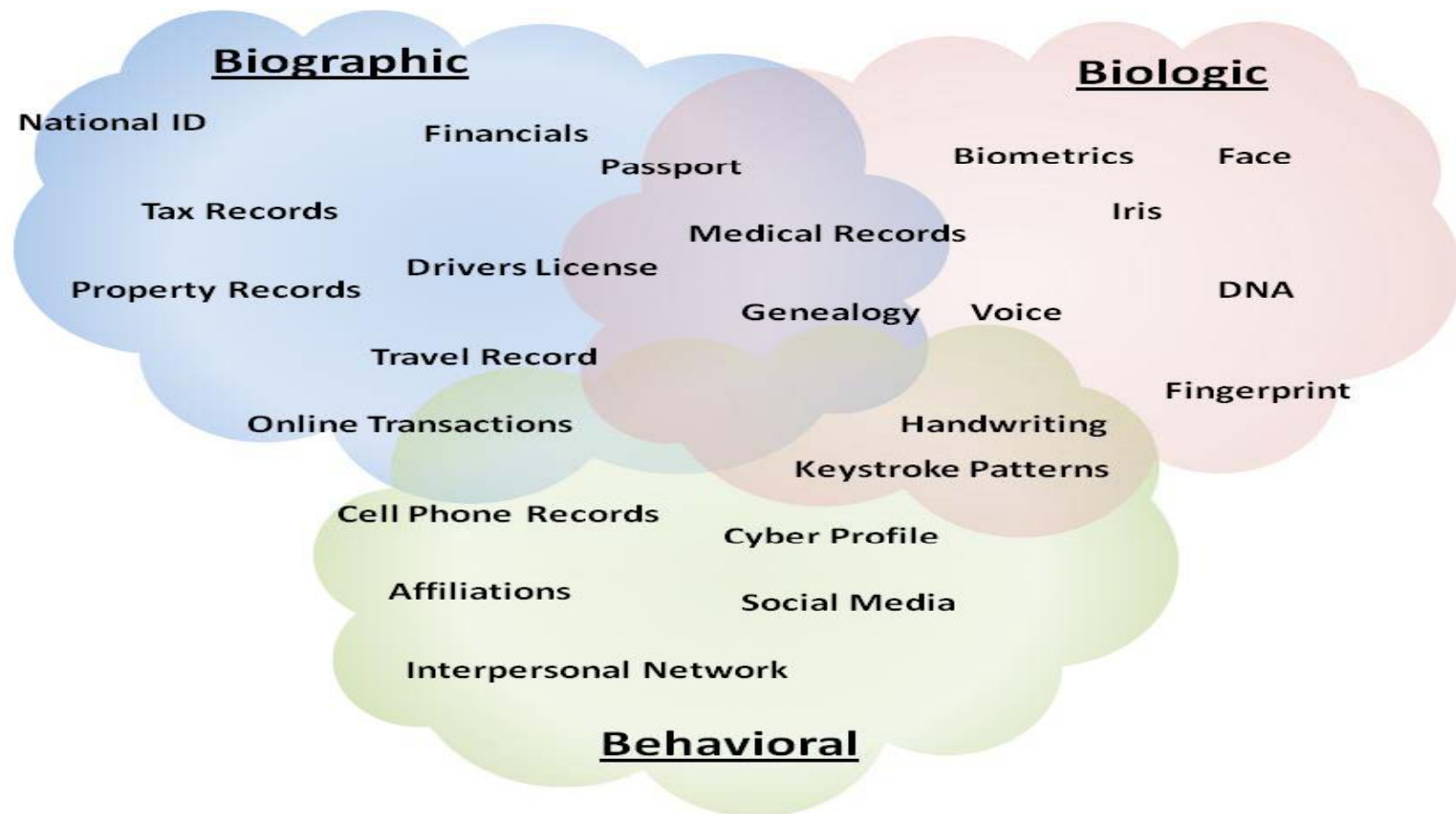
*The intelligence resulting from the processing of identity attributes concerning individuals, groups, networks, or populations of interest.*

\* Joint Publication 2-0: "Joint Intelligence", 22 October 2013



## I2 Is All About Individual Attributes

Attributes include all biographic, behavioral, digital signatures, familial connections, social networks, and criminal information as well as linkages to other people, places, events, locations, and weapons





# Identity Intelligence is Big Data Challenge

- As we reduce the collection enterprise's "gain" to improve its chances of capturing relevant individual human-level "signals," we also open the enterprise up to collecting more "noise."
- *Collect massive amounts of information, and let the analysts sort it out* has become the new rule of thumb—the quintessential "big data" problem, filtering through massive volumes of data to find the "needle in a haystack," without knowing that there is, in fact, a needle to be found.



# Characterizations of Big Data Problems<sup>+</sup>

**Volume**—the increase in the number of available data sources and the employment of higher resolution sensors, like gigapixel class wide area motion imagery surveillance systems, lead to exponential increases in the amount of data that must be cleansed, transformed, exploited and understood in order to make sound data-driven decisions.

**Velocity**—enhanced computing power and improved connectivity increase the rate at which new or updated data is generated and the speed at which it must be received, processed, and understood.

**Variety**—85% of the world's data is unstructured data, provided by an ever-increasing number of sources. For the Identity Intelligence problem set, security considerations also add to the variety problem, as data sources are likely to exist at all security classification levels, and means will have to be taken to protect the sources and methods of collection.

**Veracity**—data inconsistency, incompleteness, ambiguities, latency, deception, and model approximations negatively affect the “pedigree” (traceability) of the data.

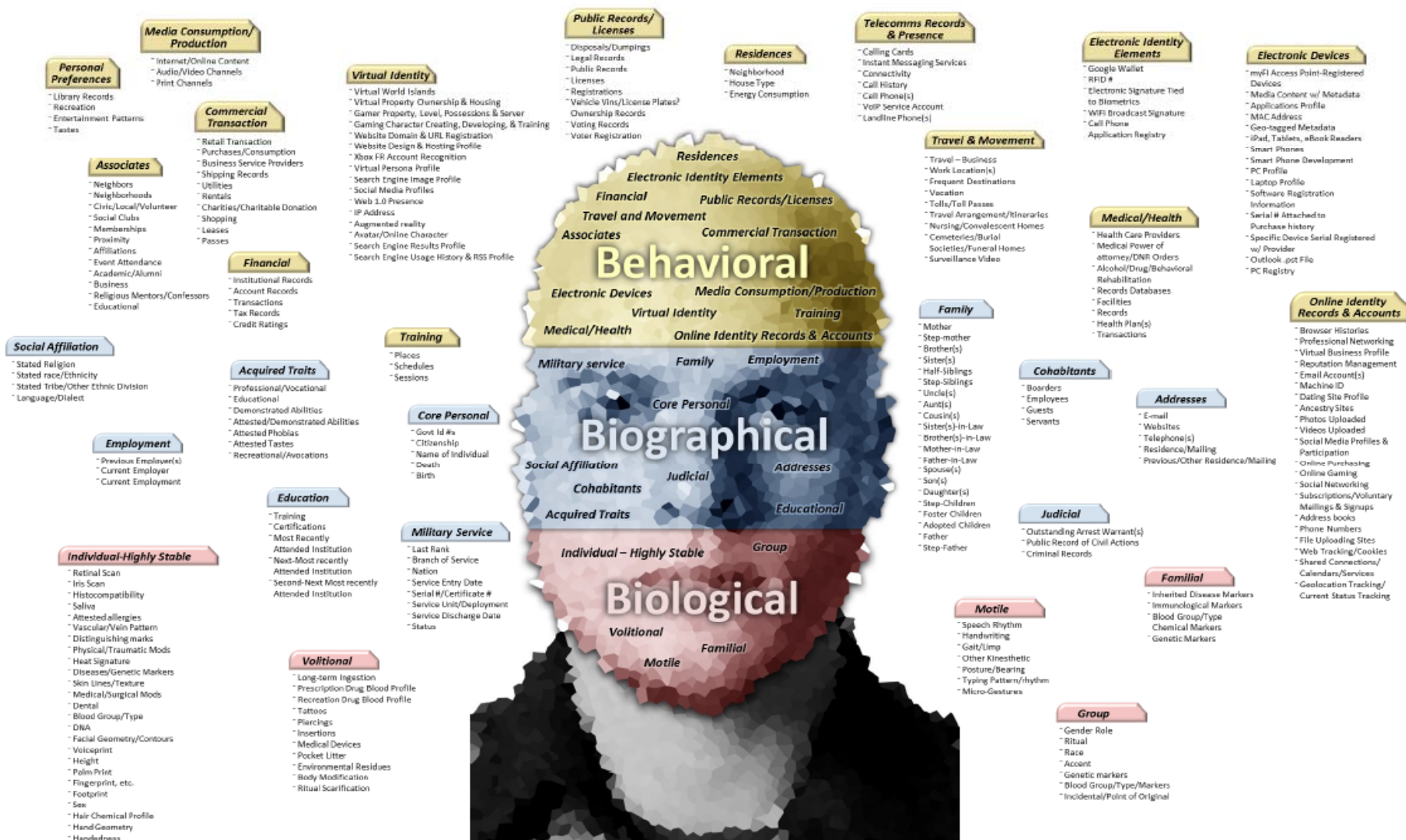
<sup>+</sup>TechAmerica Foundation, *Demystifying Big Data: A Practical Guide to Transforming the Business of Government*, 03 OCT 2012; <http://www.techamerica.org/Docs/fileManager.cfm?f=techamerica-bigdatareport-final.pdf>; p10; [accessed 04 DEC 2013].





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# Identity Intelligence



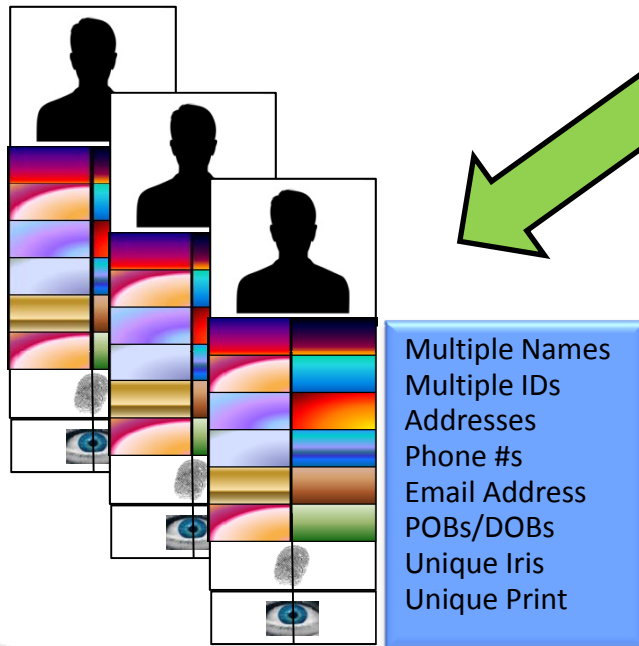
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# Data Analytics and Identity Intelligence

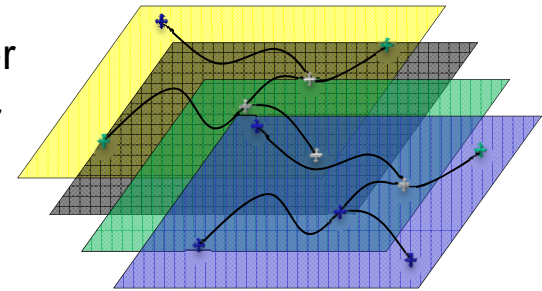
## Fusing Identity Data with Other All-Source Intelligence

*Starting with what we know about Persons of Interest...*



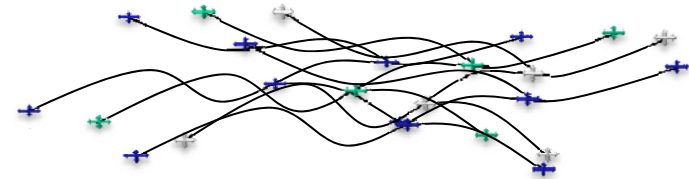
## Knowledge Layers

Classified Layer  
Financial Layer  
Travel Layer  
Identity Layer



*... and fusing it with other all source data using analytical tools...*

## Integrated Knowledge



*... reveals threat patterns and new knowledge.*



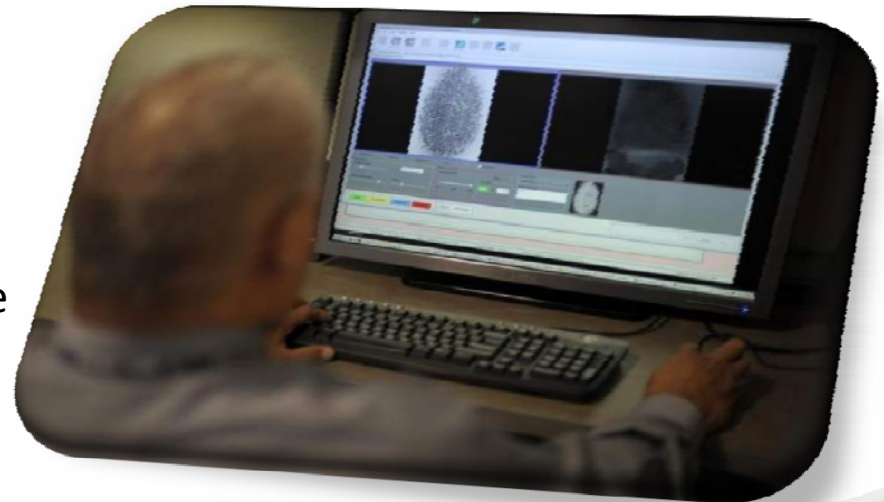


## DoD Biometric Enabled Watchlist (BEWL)



The DoD BEWL is a **list of persons of interest**, with individuals **identified by biometric sample instead of by name**, and the desired or recommended disposition instructions for each individual.

Policy – Under DoD Instruction, DIA develops and provides management, supervision, procedures, support, and requirements for the BEWL.





# Identification & Verification



**Identification:** The process of comparing a submitted biometric sample against all of the biometric reference templates on file to determine whether it matches any of the templates and, if so, the known identity of the biometric subject whose template was matched.

**Verification:** The process of matching a biometric subject's sample against his stored biometric file. Also known as "Authentication".



**Biometrics are a critical enabler to both the Identification and Verification processes**



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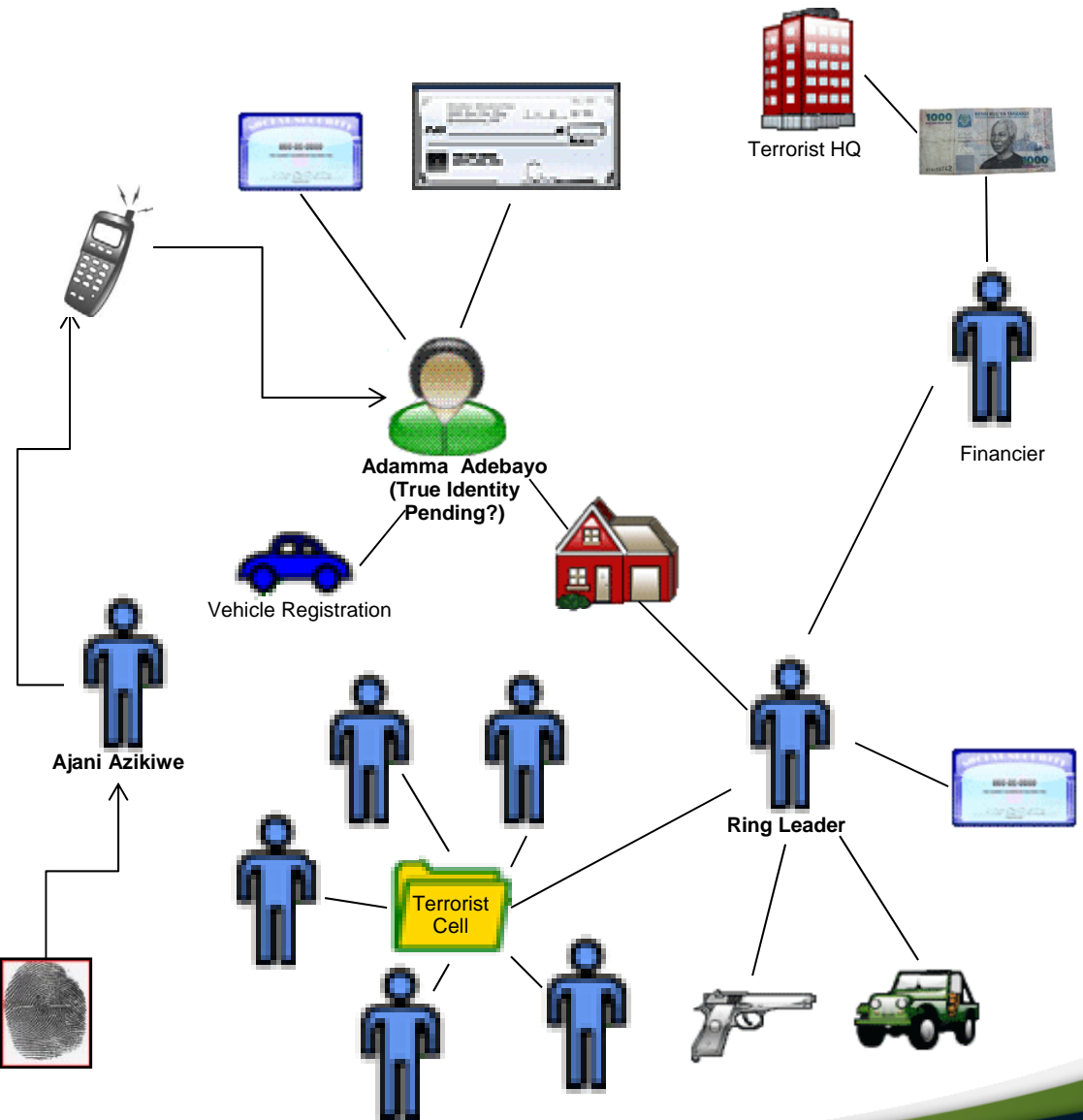
# How Do We Identify the Right Person?



False Passport



Finger Prints



\* Notional Link Analysis Example

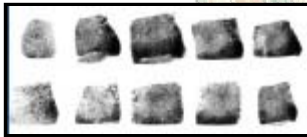
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# Biometric Intelligence Prevents Terror Suspect from Entering US

**NAME:** XXXX, XXXX  
**DOB:** 01 JAN 1968  
**POB:** Somalia  
**HT:** 5'7"  
**WT:** 145

Biographic Information



Visa Application Enrollment



## Homeland Case Study

- 5 JUN 2003: Subject identified by foreign **partner law enforcement** as known member of terrorist organization
- 12 SEP 2007: Subject attempts to enter US with expired passport and is **denied entry** due to his affiliation with terrorist organization
- 3 DEC 2007: Subject **nominated to DoD Biometric Enabled Watchlist (BEWL)**
- 24 MAY 2009: Subject **added to "No Fly" list**
- 10 AUG 2013: Subject applied for entry to the US and was biometrically enrolled. Enrollment matched Subject's watchlist status.

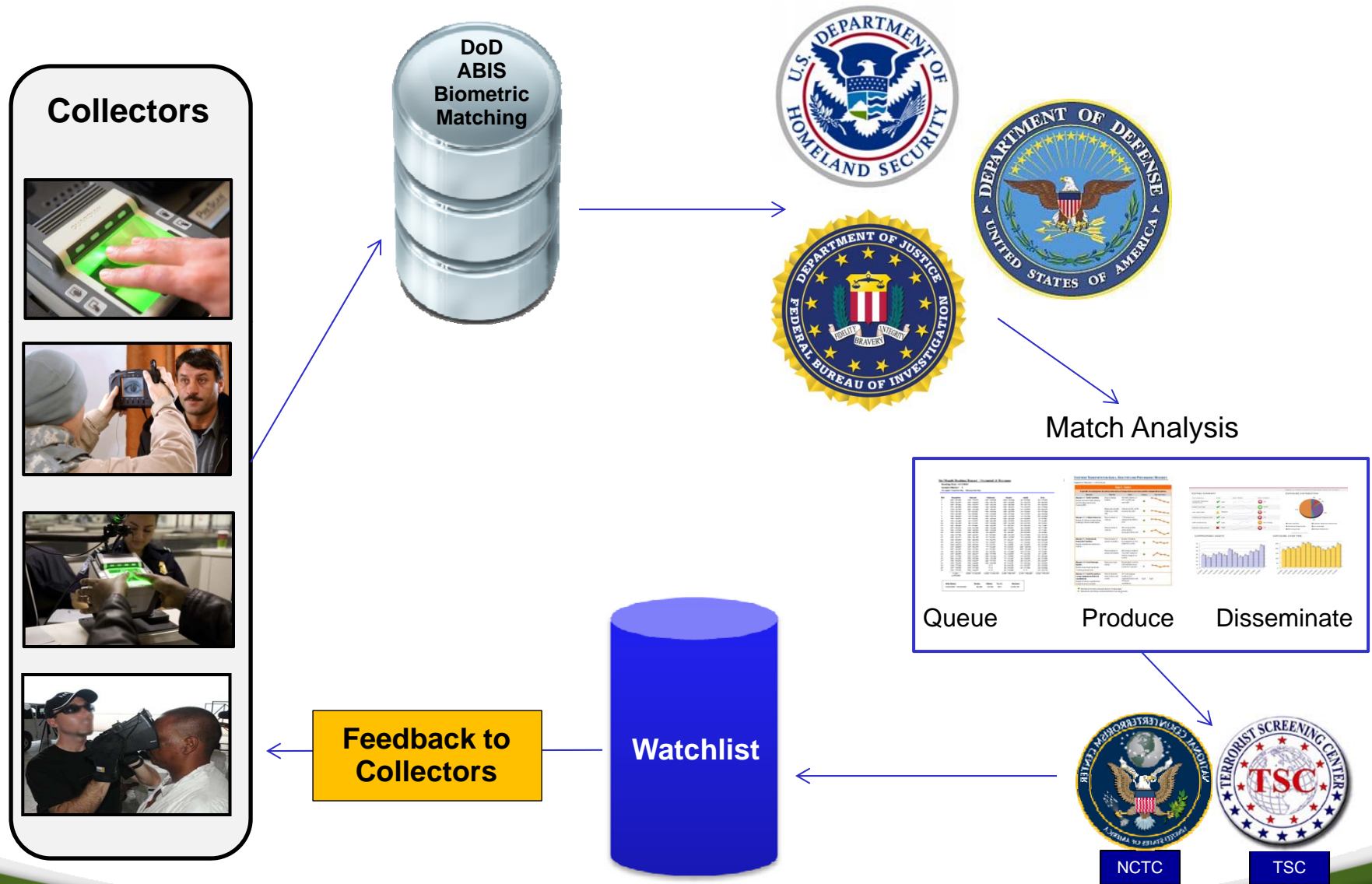
**Biometric Enabled Watchlisting identifies Persons of Interest applying for Visas and country access**





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# Biometric Community Enterprise

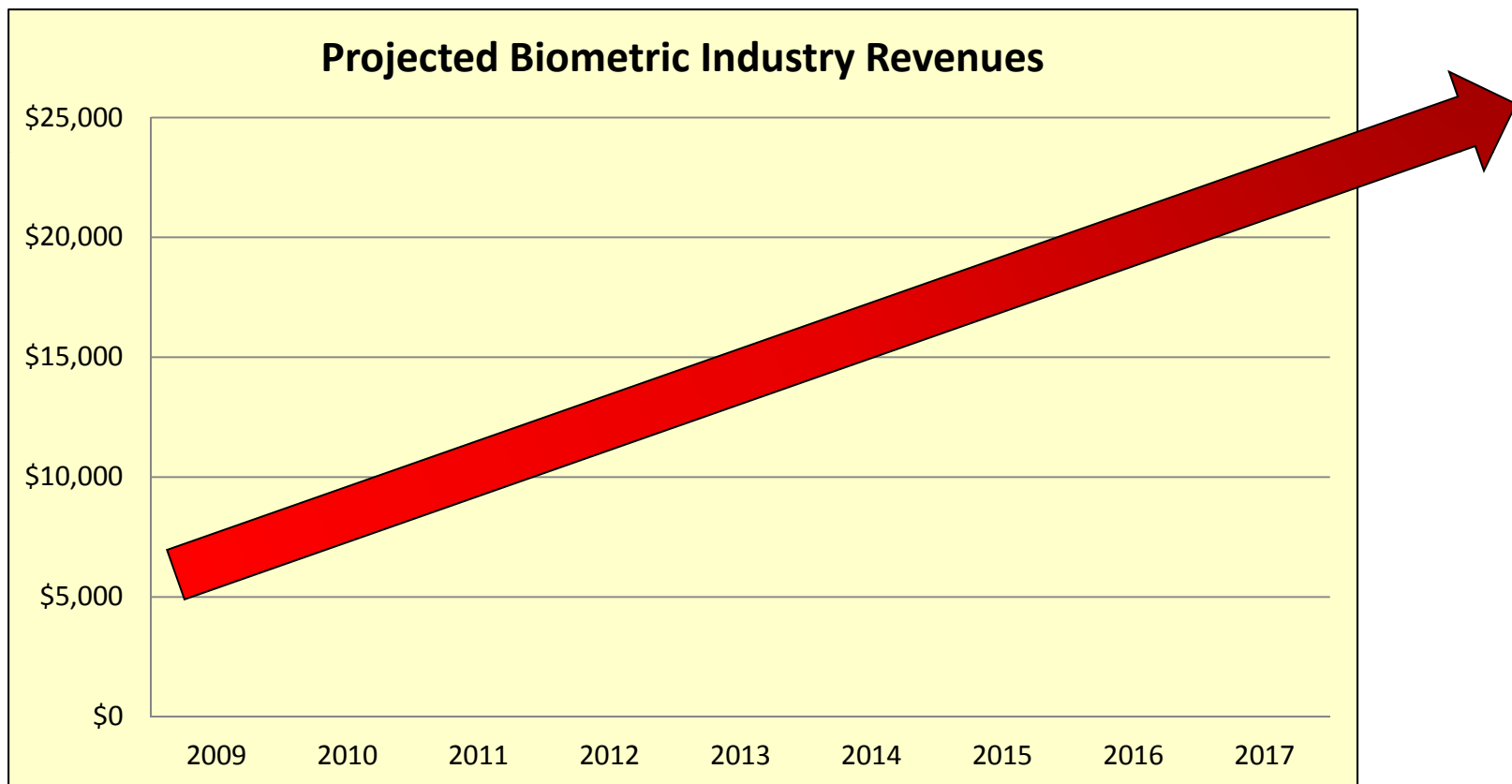


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# Biometrics Boom

A variety of market research firms report that biometric industry revenues are increasing dramatically, with this trend expected to continue through 2017 and beyond.







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# Citizen ID Programs\*



\*Emerick, Kelli. "Conference-Wide Opening Panel." *2013 Biometric Consortium Conference Preliminary Program*. Proc. of 2013 Biometrics Consortium Conference, Tampa, FL. The Biometric Consortium, n.d. Web. 4 Dec. 2013. <<http://www.biometrics.org/bc2013/program.pdf>>.

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## Setting Conditions for Future Collection

Outside the war environment, biometric data collections will increase exponentially through COIN operations, Foreign Partnerships, and Interagency Collaboration





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## Preparing for Future Biometric Data Requirements

- Develop strategy in support of community of interest requirements
- Continue developing and refining policy and doctrine
- Integrate biometrics with analysis supporting evolving mission areas





## Legal/Policy Considerations that Enable Sharing

- National Data sharing and privacy laws and policies dictate how and what information can and should be shared with international partners
- Majority of nations have National Security or Public Safety Exceptions that enable sharing
- Protection assurances for information provided/received
  - End User Restrictions
  - Systems Security





# Leadership Challenges

***“If we don’t figure out how to incorporate biometrics into everything we do to include cross leveling and sharing our information between law enforcement, military, and at least our closest allies, we will miss critical information that could save lives.”***

*- MG Flynn  
August 16, 2011*

***“We need to integrate biometrics both horizontally and vertically throughout DIA”***

***“We need to integrate biometrics within the Defense Clandestine Service (DCS) timeline”***

*- LTG Flynn, Director DIA  
July 30, 2012*

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# Questions?



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## Back Up Information



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# DoD Biometrics – A Crosscutting Enabler

## Base & Checkpoint Security

- Employee screening
- 86,000+ Denied Base Access

## Detainee Operations

- Attain convictions in criminal courts
- 2,300+ denied early release

## Vetting for positions of trust

- Police and Security Forces
- 77,000+ identified as “do not hire”

## Border Control/Ports of Entry

- Stop flow of foreign fighters
- 39+ High Value Individuals detained at Points of Entry

## Defend the Homeland

- 218+ interdictions in collaboration with Interagency partners

Biometrics is an enabler across the full Range of Military Operations



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