



# Responding to Government Technological Needs

John Torres, COO Guidepost Solutions  
MeriTalk | Washington, DC | Newseum  
March 7, 2017

Experience guides us. Solutions define us.

Copyright © 2011-2016, Guidepost Solutions LLC.

# Outline

Government  
Challenges/Opportunities



Current Government Technology  
Needs



Short-term Forecast of Government  
Technology Needs



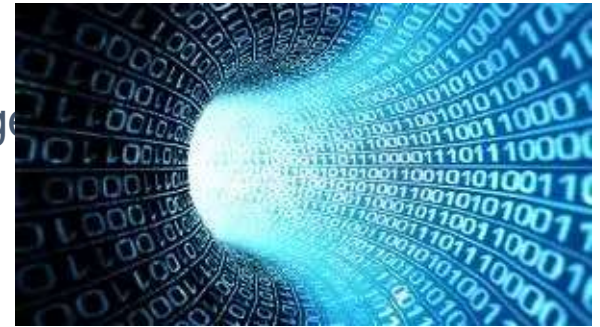
How to Respond to These Needs



Longer-term Forecast of Government  
Technology Needs

# Forecasting Challenges/Opportunities

- **Deluge of Data**
  - State, local, and federal government agencies have tons of data
  - Need ways to make it useful
- **Legacy IT Systems**
  - Previous administration focused on modernizing government's technology infrastructure
- **Empowered Individuals**
  - Previous administration focused on making more government data available to the public
  - Individual capability to perpetrate large-scale violence and disruption
- **Rise in Artificial Intelligence**
  - Blending data already collected by the government with social media, geographic clues, behavioral data, sensors, and other indicators



# Government Accountability Office (GAO) Findings

- Federal Government spent more than 75% of total amount budgeted for IT for FY2015 on Operations & Maintenance investments
- \$7.3 billion decline from FY 2010 to FY 2017 for development, modernization, and enhancements
- Federal legacy IT investments becoming increasingly obsolete (outdated software languages and hardware parts unsupported)

President's  
FY2017  
Budget  
Request:  
\$89 Billion

Department of Defense uses 8-inch floppy disks in a legacy system that coordinates the operational functions of the nation's nuclear forces.

# Office of Management & Budget (OMB) Proposed Modernization

- OMB's Goals for Legacy IT

Systems:

- Modernize
- Retire
- Replace

- OMB's Guidance Requirements

Agencies:

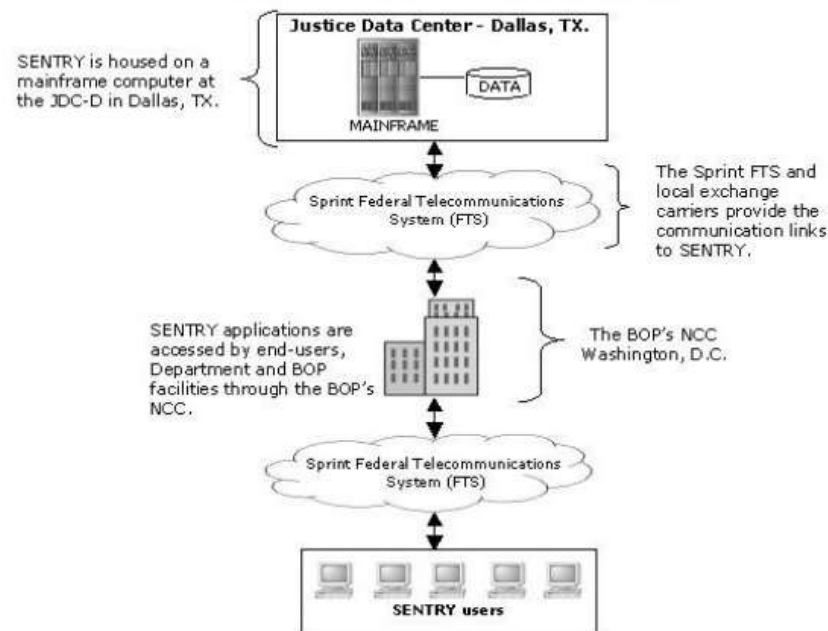
- Identify
- Prioritize
- Plan to Modernize

- Policy is not finalized and not fully executed = Risk of maintaining systems that have outlived their effectiveness

- DOJ: Sentry (35 years)

- Provides info regarding security and custody levels
- Uses COBOL and Java programming languages

## SENTRY Network Configuration



# DHS Technology Acquisition Efforts

## Acquisition Challenges (Staffing, funding, and requirements issues) increase likelihood:

- Cost more than expected (reducing buying power)
- Take longer to complete than expected (wait for new capabilities)



## Path Ahead

- Established and institutionalized a tiered governance and portfolio management structure for overseeing and managing its IT investments
- In 2015, DHS shifted its technology focus from assets to services
- Acquiring services and acting as a service broker

# Case Study: ICE HSI Tactical Teams

- Northern Virginia
- In 2012, HSI tactical teams used software to monitor social media during the execution of warrants within an identified geo-fence.
  - Monitor key words
  - Officer Safety
  - Gather real time intelligence
  - Locate Targets



# Case Study: ICE National Security: Big Data Solution

- Pre-Adjudicated Threat Recognition and Intelligence Operations Team (PATRIOT)
- Visa Security Unit
  - 2013 automated process
  - San Bernardino
  - Identify potential derog from public sources
  - Enhanced vetting for 4% of visa applicants prior to PATRIOT
  - 100% vetting – at least three degrees from applicant.



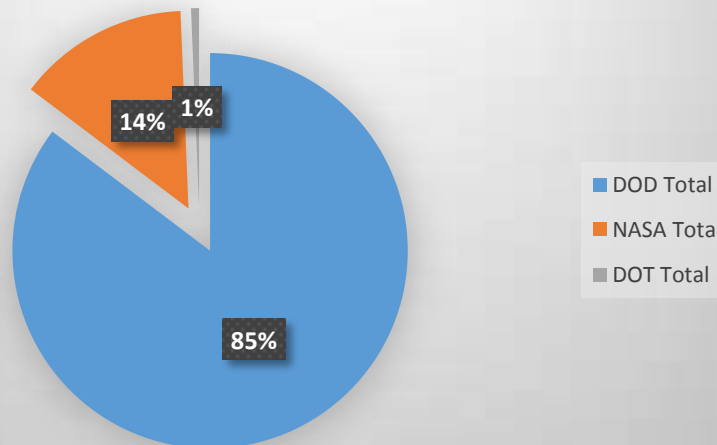


# Unmanned Aerial Systems/Vehicles

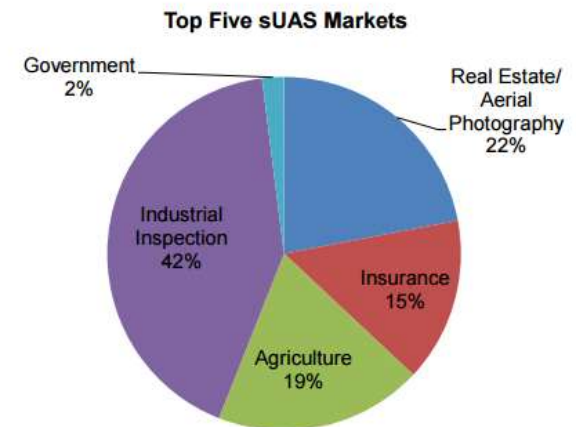
## 2015-2017

- 108 Contracts for Drone Technology
- \$92 Million
- 156 Vendors Awarded Contracts

### 2015-2017 U.S. Government Contracts for UAS/UAV/Drones



- Drone sales tripled from 2015 to 2016 (Fortune, 2016)



Source: FAA

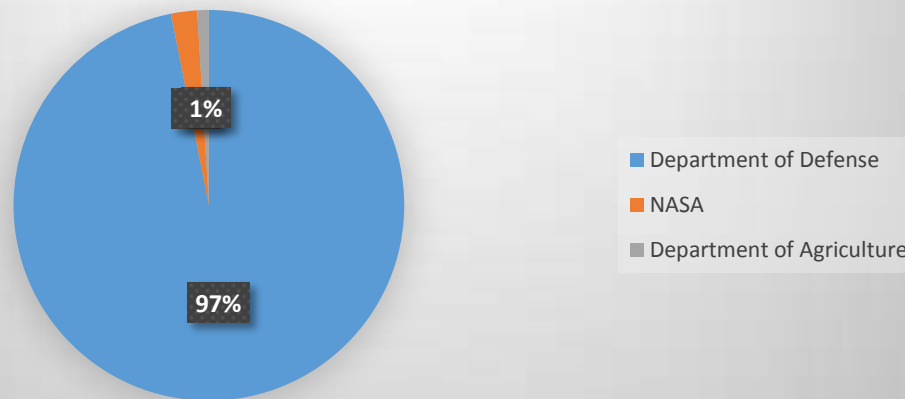
# Big Data Solutions

2015-2017

- 30 Contracts for Big Data Solutions
- \$5 Million
- 11 Vendors Awarded Contracts

- In 2012, the Obama administration launched the Big Data Research and Development Initiative
- Purpose:
  - Improve government's ability to extract insights from various data streams
  - Make better decisions in support of national security objectives, scientific discovery or to help drive economic growth

**2015-2017 U.S. Government Contracts for Big Data Solutions**



# Cloud Technology (DHS & DOJ)

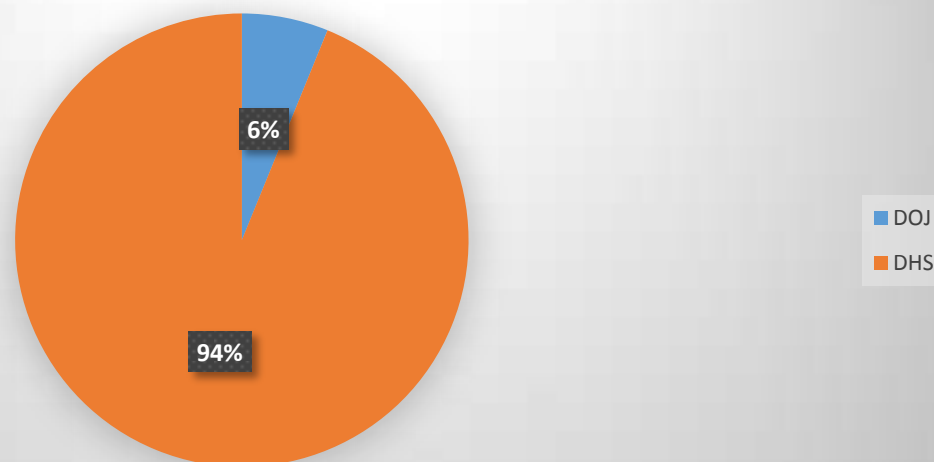
2015-2017

- 33 Cloud Technology Contracts
- \$18 Million
- 7 Vendors Awarded Contracts

Cloud First Initiative:

- Effort to streamline government's technology systems
  - Specifically decrease duplicative systems

2015-2017 Cloud Technology DHS & DOJ



2016, AWS GovCloud grew 221% year-over-year since its 2011 launch

# Internet of Things (IoT)/Internet of Everything (IoE)

- 2015 NASCIO Survey: 53% still investigating IoT and zero states had adopted IoT policies or an IoT Roadmap
- IoT is here to stay, but it's an opportunity and a burden
- Smart Cities V. Smart States
  - Generally cities move at a faster policy pace

4.6 Trillion  
Public-Sector  
Opportunity  
--Cisco

## State Uses for IoT

(sensor data, mobile platforms, analytic software)

- Healthcare
- Transportation
- Public Safety



## Municipal Uses for IOT

- Parking
- Waste Management
- Public Transportation

## IoT Challenges

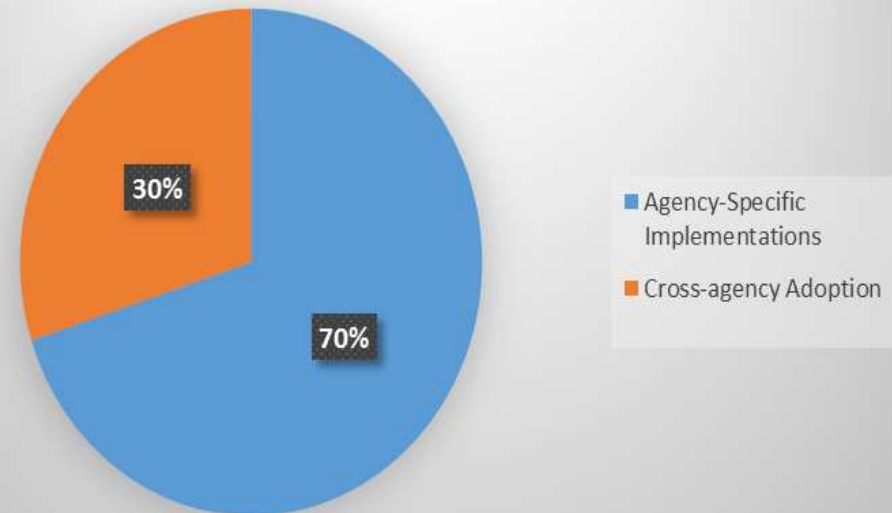
Security, Privacy, Accessibility, Data Management, Standardization, Financing, Legislation, Bandwidth, etc.

# Public Sector IoE Value

## Five (5) primary drivers of IoE Value (Public Sector)

- Employee productivity
- Connected militarized defense
- Cost reduction
- Citizen experience
- Increased revenue

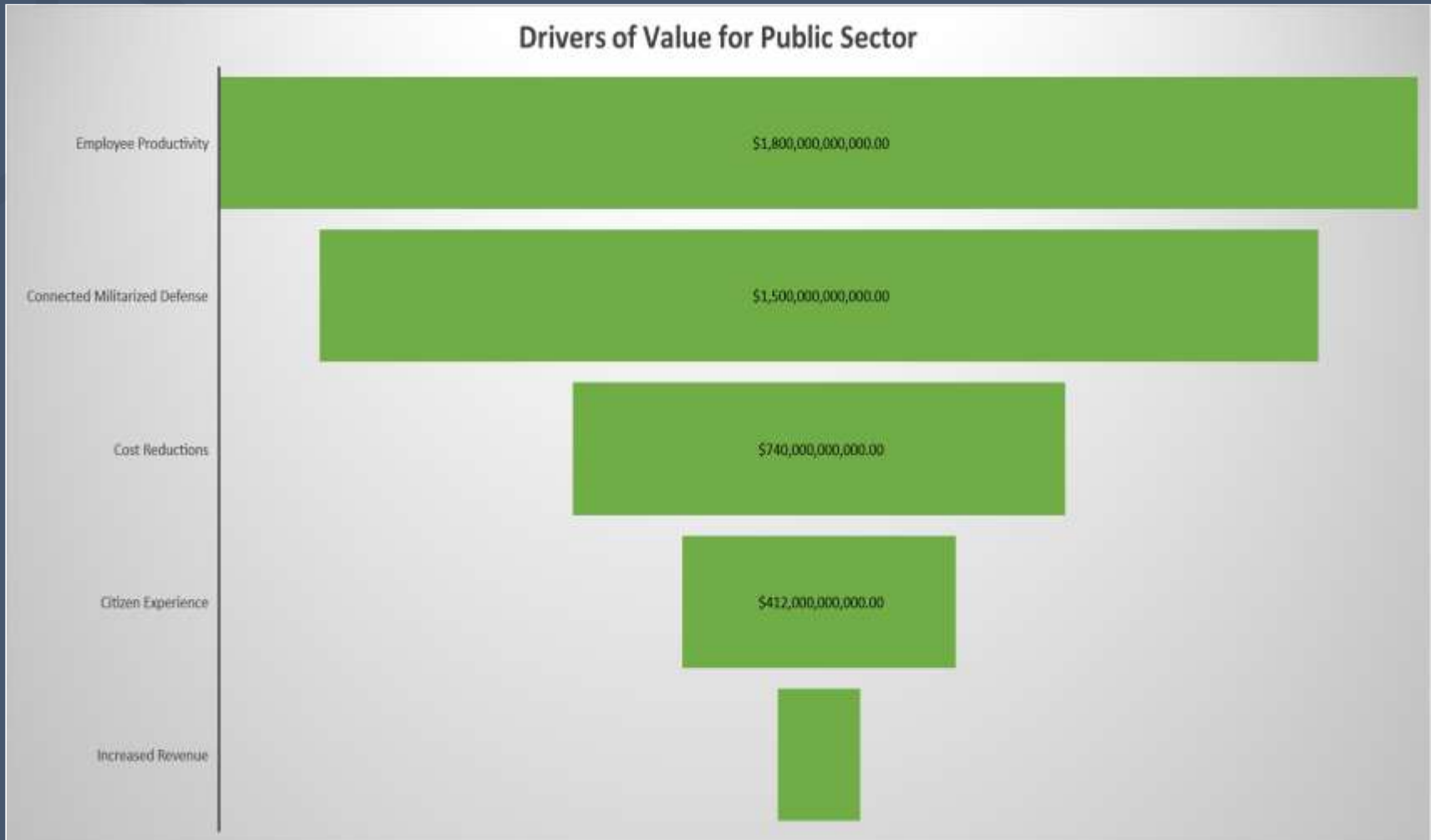
## IoE Public Sector Value



69% of of IoE's Value powered by citizen-centric connections:

- Person-to-person (P2P)
- Machine-to-person (M2P)
- Person-to-machine (P2M)

# IoE Value Drivers Public Sector



## Public Safety

- Enhance Response Times
- Improve Safety of First Responders
- Increase accuracy in locating victims
- Alert engineers when a structure needs repair

## Examples

- Ohio is working on a Next Generation 911
  - Allows Emergency service requests from text, VoIP, and video
- Florida Department of Highway Safety and

## Motor Vehicles Dash Board Cameras

- Collect footage for evidence in trials
- Wi-Fi antennas installed around the state to reduce upload times to 20 minutes
- Saving department \$1.1 million a year in overtime

## Gartner's Emerging Trends on Device Management

- Low-power, short-range IoT networks
- Lower-power, wide-area networks
- IoT processors
- IoT operating systems
- Event stream processing
- IoT platforms
- IoT standards and ecosystems
- Advanced machine learning

# Cities and Increased Urbanization

- Today's roughly 50% urban population will climb to nearly 60% (4.9 billion people)
- Urban centers are estimated to generate 80% of economic growth
- Apply modern technologies and infrastructure, promoting better use of scarce resources
- Currently have 20 megacities, by 2025 nearly 40
- Huge infrastructure, resource, and security challenge

“Drivers of instability are already present and in many places are growing by the day. It is inevitable that at some point the United States Army will be asked to operate in a megacity and currently the Army is ill-prepared to do so.”--Chief of Staff of the Army, Strategic Studies Group



# Case Study: NG911 Morgan County, OH

- Population: 15,000
- In 2000, National Emergency Number Association (NENA) proposed NG9-1-1 to modernize legacy e911 infrastructure and enable public safety answering points (PSAPs)
  - Receive text, data, images, and video
  - More accurately pinpoint caller's location
  - Receive calls faster



## \$1.5 trillion of total Value at Stake

- Provides real-time situational awareness to combat personnel in theater by connecting command-center tents, vehicles, and special forces
- Enables the ability to visualize the location of allied and enemy personnel and material
- **New things created:** Connected command centers, vehicles, and supplies
- **New data flows:** Location of allied and other forces
- **Process innovation:** Situational awareness
- **People impact:** Combat personnel
- **Value impact:** Multiplier effect – fourfold increase in combat-mission effectiveness

# Wait-and-see Approach to IoT

“Government agencies that adopt a wait-and-see attitude toward the IoT are unlikely to develop the expertise or engender the trust needed to effectively and efficiently deliver services in this new reality and to reassure citizens concerned about how this new technology will affect them...public sector leaders ready to start tapping into the potential of IoT technology can begin by identifying specific, pressing mission challenges, and then analyze how more or better information, real-time analysis, or automated actions might help address them.” --GovLab

# State CIO Priorities vs. Technologies for 2017

## Priorities

- Security and Risk Management
- Consolidation/Optimization
- Cloud Services
- Budget, Cost Control, Fiscal Management
- Legacy Modernization
- Enterprise IT Governance
- Data Management and Analytics
- Enterprise Vision and Roadmap for IT
- Agile and Incremental Software Delivery
- Broadband/Wireless Connectivity

## Technologies

- Legacy Application Modernization/Renovation
- Cloud Solutions: software as a service
- Security Enhancement Tools: CDM, advanced analytics, digital forensics
- Business Intelligence (BI) and Business Analytics (BA): applications, big data, data analytics
- Identity and Access Management
- Data Management: Master Person Index/Master Data Management; information exchanges
- Disaster Recovery / Business Continuity
- Networking: voice and data communications, unified, SDN
- Enterprise Resource Planning (ERP)
- Customer Service/CRM: technologies and solutions

# Artificial Intelligence: Law Enforcement

- **Bodycam Industry**
  - Overwhelming increase in data
  - Example: TASER International, one of the largest manufacturers, has 5.2 petabytes of video on servers
  - Combining AI technology to sift through data
- **Autonomous Vehicles**
  - Ability to enhance mobility and safety for societies
  - Ability to have high impact on what law enforcement and adversaries can do with a vehicle
    - Police pursuits: hands free to fire a weapon
    - Bomb inside autonomous vehicle
    - Manipulating vehicle through hacking
    - Transporting drugs and illegal weapons
  - Minimum of 15-20 years
- **Big Data**

- MeriTalk Survey: 76% of state and local agencies plan to increase spending on cloud computing in 2017
    - Public
    - Private
    - Hybrid
  - Data Fabric:
    - Data across cloud environments seamlessly integrated
    - Managed with same set of tools, no matter the provider
  - National Association of State Procurement Officials' ValuePoint
    - Helps provide states with high-quality cloud service providers
- Considerations:**
- Potential cost savings
  - Tight cybersecurity plan
  - Ability of contractors to strengthen cloud procurement services

# Trend of Consolidation

- Attempt by government agencies to reduce costs and redundancy
  - Example: Five (5) years ago in Ohio, 26 agencies using 9,000 servers to support 32 data centers, running 10% capacity, \$1 billion of budget to IT
  - Example: New York State saving \$10-20 million by unifying cellphone contracts (cellphone lines as a pool)
- 2010, Federal Data Center Consolidation Initiative (FDCCI)
  - Created to reverse historical growth in federal data centers
  - Curb unsustainable increase by reducing cost of data center hardware, software, and operations
  - Shifting IT investments to efficient computing platforms
  - Increasing IT security posture

“By shutting down and consolidating under-performing data centers and optimizing the data centers in our Federal inventory, we stand to save taxpayers billions of dollars and curb spending on underutilized infrastructure.”—FDCC Task Force

# Technology Investments & Strategic Agreements





# Strategic Alliance: Signafire

- Intelligently manage and use massive amounts of data from disparate sources:
  - Security & threat monitoring
  - Product defect and safety analysis
  - Brand perception and reputational analysis
  - Pattern of life analysis
  - Predictive analysis
  - Integrate and aggregate
- Scans, searches, assesses, parses, and shares massive structured and unstructured data from internal and external sources real-time
- Originally supported U.S. Special Forces in critical field operations

## Clients:

- National security organizations
- Gaming
- Professional sports
- Defense
- Law firms
- Consulting companies



# Strategic Alliance: RevSec

- Strategic Consulting
- Design & Transformation Services
- SOC Operations
- Security Assessments & Roadmaps
- Vulnerability & Testing
- Incident Response & Remediation



## Clients

- Chemical
- Law Firms
- Technology & Communications
- Financial Services
- Manufacturing
- Transportation
- Health & Life Science
- Oil & Gas
- Utilities

# Giant Oak Search Technology (GOST)

- Negative media search tool, leveraging domain-specific indexes on the Internet
- Focuses on proprietary databases, open source, and public records
- Uses a sophisticated risk scoring method that targets the right kinds of information on countless customers
- Provides a dossier on each individual and provides an audit trail to defend the decisions you have made



- A web-based, SaaS (Software-as-a-Service) identity verification software solution
- Provide clients with the ability to confirm the identity of individuals in a consistent and nondiscriminatory manner
- Developed by former leaders from DHS and DOJ
- Combines automated verification efforts with the use of trained identity and fraud specialists to evaluate usage trends and provide third-party interviews
- Purposes: New hires, authorized payee verification, test/exam participants, account recovery, or authorization

- SecureID® SmartI-9
- SecureID® Identify Verification
- E-verify Web Service Provider



- An analytic compliance software firm to help clients meet:
  - Anti-money laundering
  - Tax and other regulatory
  - Avoid financial crimes
- Siron®: products to help clients with money laundering, tax evasion, know-your-customer, and other compliance requirements
- FICO® Falcon® Fraud Platform, protecting more than 2.6 billion payment cards worldwide
- More than 1,000 customers in over 90 countries
- Comprehensive solutions to fight financial and white-collar crime



## Technology Arenas to Shape Global Economic, Military, and Social Developments

- **Information Technology: Big Data Era**
  - Capturing the benefits while balancing the threats and Orwellian privacy concerns
  - Ensuring viability of megacities through urban planning
- **New Manufacturing and Automation Technologies**
  - 3D printing (additive manufacturing) & robotics
  - Improved productivity, address labor constraints, and diminish need for outsourcing
  - Make low- and semi-skilled workers redundant and exacerbate domestic inequalities
- **Security of Vital Resources**
  - Need for breakthroughs to meet food, water, and energy needs for world
  - GMOs, precision agriculture, water irrigation techniques, solar energy, bio-based fuels, and enhanced oil and natural gas extraction
- **Extended Age of Population**
  - New health technologies to improve debilitating physical and mental



# Responding to Government Technological Needs

John Torres, COO Guidepost Solutions  
MeriTalk | Washington, DC | Newseum  
March 7, 2017

Experience guides us. [Solutions define us.](#)

Copyright © 2011-2016, Guidepost Solutions LLC.