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**Aug 18, 2017**

Department of Defense  
OFFICE OF PREPUBLICATION AND SECURITY REVIEW

## DEFENSE BUSINESS BOARD



# Implications of Technology on the Future Workforce

August 2, 2017

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# Task Group Focus

## Terms of Reference

*“Over the last few years, reductions in the Department of Defense (DoD) budget have adversely impacted readiness, force structure, and acquisition programs. As a result, the Department must work to continuously leverage advances in technology to reduce personnel, operations, and maintenance costs.*

*The private sector has made significant progress in the use of automated systems. In addition to performing physical and administrative repetitive tasks and streamlining processes, intelligent autonomous systems are performing higher functions, including assessing environmental conditions, cognitive analysis, and problem solving. These capabilities have potential applications to the DoD and offer an opportunity to reduce force structure and costs associated with support functions.”*

### ■ The Task Group will:

- Examine how the private sector uses automation\* for business functions that are similar to those performed within the DoD
- Assess the potential benefits and risks of using this technology in support of DoD’s non-warfighting workforces
- Recommend courses of action for DoD to take advantage of recognized trends
- Show automation’s potential impact on the DoD future workforce

\*For the purpose of this brief “automation” includes Robotic Process Automation (RPA), Machine Learning (ML), and Artificial Intelligence (AI)

# Forces Shaping the Future of Defense

## ■ Internal Forces:

- Increased number of personnel devoted to support functions over past two decades
- Stagnated DoD Budgets
- Mandates from Congress, OMB and DoD to reduce the size of the federal workforce
- Implementation of a technology offset strategy requiring agility and seamless capability to deal with significant complexity

## ■ External Forces:

- Automation, robotics, and artificial intelligence have increased the capacity for machines to perform more and more complex tasks
- This is causing:
  - Enhanced capability of peer and near-peer competitors for simultaneous physical and virtual warfare
  - Global IT accessibility through cost reductions of data storage and computing power
  - Escalated war for talent as a result of automation in the private sector

# Automation Provides Major Advantages

- Today, DoD is aggressively exploiting automation in the warfighting realm
- The private sector is reaping advantage now, and it is accelerating
  - Automation has the potential to accomplish up to 45% of the tasks performed by employees across all occupations
  - 60% of all occupations are likely to have 30% or more of their work activities automated
  - 30% and above reductions in costs have been achieved, plus major advances in speed, accuracy, and volume of decisions
- The Department can obtain similar advantages in its business processes
  - Automation can enhance the effectiveness of DoD's business processes
  - Enhanced data quality and decision-making will provide better, faster, and more accurate outcomes at a lower cost, and will allow for better use of resources and enhanced support to the warfighter
  - Reduction in costs, primarily in FTEs and other operating expenses, will free up resources (human and financial) that can be transferred to the fight – important because, for now, warfighting remains manpower intensive
  - For DoD employees, using automated processes will result in a more innovative and competitive workplace and a more talented and productive workforce



# Perspectives on the Impact

**“Harnessing Automation for a Future that Works”**

~Mckinsey Global Institute  
<http://www.mckinsey.com/global-themes/digital-disruption/harnessing-automation-for-a-future-that-works>

**“Switching Careers Doesn’t Have to be Hard: Charting Jobs That Are Similar to Yours”**

~New York Times  
<https://www.nytimes.com/2017/07/27/upshot/switching-careers-is-hard-it-doesnt-have-to-be.html>

**“China Plans to Use Artificial Intelligence to Gain Global Dominance by 2030”**

~MIT Technology Review  
<https://www.technologyreview.com/s/608324/china-plans-to-use-artificial-intelligence>

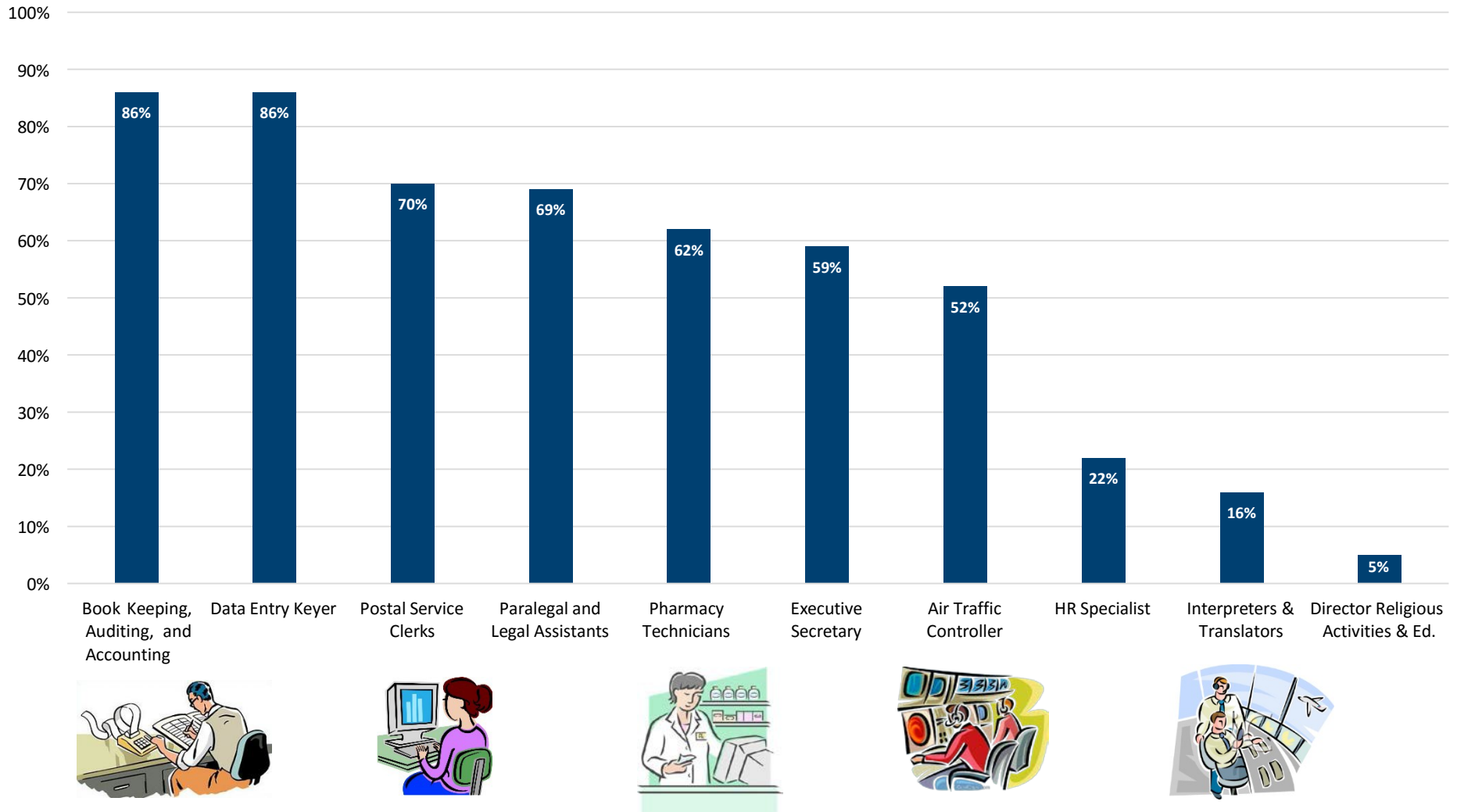
**“How AI and Machine Learning Can Drive Government”**

~GCN  
<https://gcn.com/articles/2017/07/11/ai-machine-learning.aspx>

**“Building an AI Chip Saved Google from Building a Dozen New Data Centers”**

~Wired  
<https://www.wired.com/2017/04/building-ai-chip-saved-google-building-dozen-new-data-centers/>

# Potential of Automating Select DoD Occupations



# Why it Matters to the Department of Defense

- By applying automation to business processes, the Department can:
  - Accurately track financial and resource data
  - Improve management effectiveness
  - Increase decision-making speed and accuracy
  - Analyze and solve more complex problems
  - Generate second and third order solutions not presently available
- Doing this will enable:
  - The defense industrial base to obtain similar benefits and significant cost savings
  - Talent to be reallocated for core missions by reducing FTEs associated with business processes
  - Realization of a technology offset program (specifically per Sec 218 of the FY16 NDAA)

# Approach and Methodology

- The Task Group took the following approach and methodology:
  - Literature review and independent research on current trends in academia and think-tanks to gain perspectives on automation
  - More than forty-five private sector and DoD interviews to develop an understanding of automation benefits and progress across a broad range of private sector companies and DoD, including defense agencies and military services
  - Identified most beneficial automation opportunities for DoD as well as best practices for implementation
  - Developed recommendations and implementation strategies



# Observations & Findings: Private Sector



# Automation as a Continuum

- High maturity
- Internal ops focus
- Rapid Benefits
- High volume process

- Higher “intelligence”
- More customer-facing
- Longer time to benefit
- Complex query management

## Scripting Assisting Activities

## Replacing Executing Processes

## Deciding Assisting Decisions

### Desktop Automation

### Mini-bots “Phantom FTE”

### Robotic Process Automation

### Digital Assistants

### Cognitive Computing

- Basic “Arms”
- Software programming that consolidates from multiple sources into a single view to streamline a process

- Simple “Bots”
- Applying technology to automate simple tasks and activities

- Virtual “Workers”
- Scheduled engine mimics user’s repetitive activities without requiring intervention or assistance to automate more complex, yet predictable processes

- Smart “Hybrids”
- Execute user or client conversations through a computer-generated character that can answer questions or queries and provide guidance

- Cognitive “Brains”
- Systems that gain knowledge from data as “experience” and generalize what is learned upcoming situations to change processes


- Populating a field in one tool automatically populates the same field in multiple other tools

- Up-and downloading documents, mass printing and email


- Automatically detecting and filling missing information in a CRM system (customer Relationship Management)


- Communicating with customers through the telephone using natural language processing

- Enhancing trading algorithms using deep learning

 Implement in only a couple of weeks  
20%-50% FTE

 30% Accuracy

 10%-50% Productivity  
30% Management Time

 20% ROI Optimization  
60% Staffing Optimization

 25% Faster Execution

Source: Accenture

# Automation Benefits in Private Sector...

- Data Processing
  - Reduced paper forms, people entering data, process errors, and cycle times
  - Process larger volumes of data and better data analytics
  - Increased accuracy and speed of decisions
  - Higher customer satisfaction levels
  - Decreased labor and operating costs
  - Increased employee productivity
  - Improved audit and regulatory compliance
- End-to-end Process Efficiency and Effectiveness
  - Process simplification and further reduction of processing times
  - Complex problem solving and monitoring
  - Elevated employee engagement and satisfaction
  - Increased compatibility and integration between business processes and IT systems

# ...Are Diverse Across Sectors...

## International Tech Provider

- 50% reduction in operating costs
- \$50 billion company with 75k employees
- Acquired 150 companies over a 15 year period
- 3000 workers doing transactional work – current focus for automation
- 40% cost reduction per transaction
- 50% cost savings gained through process reengineering & automation
- Reduction in personnel doing repetitive tasks - data entry
- Increased responsiveness – logistics

## Multinational Consultancy

- Reduction in FTE's - 30%  
FTE's retained and reskilled – retraining programs
- Business Process Outsourcing (BPO) service provider - Automates back-office processes across healthcare, banks and financial organizations, telecom industry
- 20-40% processes are suitable for automation (task automation)
- 70% processes do not require reengineering
- 10-12 weeks to implement RPA for simple processes w/in back-office functions

## Fortune 50 Health Insurance Company

- Cost savings: \$200 million in a \$3 billion space
- 1.7 million claims/day
- 92% via automated clearing house
- 75% solved via automation
- 25% manually adjudicated
- 4-8 months to see ROI from process reengineering & automation
- Invested in process engineers and data scientists for data analytics
- Significant reductions in time, claim fraud, waste and abuse, and increased volume of claims processed

# ...And Healthcare

## Robotic Pharmacy Service Provider

Automated pharmacy – customer focused pharmaceutical dispensing and management to optimize retail and ambulatory services

- Automation ROI upwards of 900% with incorporation of inventory management systems and Chronic Care Systems\*
- Provide a 50-60% decrease in FTE workload,
- 99.5% system reliability rate
- 99.7% accuracy rate
- 150 prescriptions/hr – 225 prescriptions/hr (machine dependent)
- Average cost is \$400-\$800K/unit

\*DoD has 700+ automated pharmacies, but does not purchase these services.

## University Medical Center Automated Pharmacy

Automated pharmacy – university medical center focused on the preparation and tracking of medications with the goal of improving patient safety.

- Same # of FTE's - 2X or greater work output
- Reduction in FTE workload resulted in shift of FTE's to other duties (focus expertise on direct patient care and interaction)
- 0 errors per 350,000 doses of medication prepared
- Increased volume, decreased time of distribution
- 2-3 yrs to break-even/capture costs – (did not conduct process analysis and process reengineering upfront) - “Requires change leadership” – resulted in delayed ROI - 5-6 years for full ROI

# Outcomes of Automation on the Private Sector

On the Organization	On the Employee
Companies see increase in speed, accuracy, and volume; reduction of errors; increases in safety, elevated levels of customer satisfaction and budgetary savings	Reduction and/or elimination of dull, routine, repetitive tasks
CEOs can manage organization more effectively	Elimination of reworking completed tasks to fix errors in a process
COOs can streamline and rationalize work, maximizing efficiency	Refocus of time and effort on higher level cognitive tasks requiring soft skills like, creativity, judgement, empathy, and emotion
CFOs can more easily audit the organization	Higher job satisfaction
CIOs can gain a bridging solution between modernization and recapitalization of large IT systems	If task is transactional and rules-based, then FTE workload can be reduced



# Private Sector Automation Roadmap

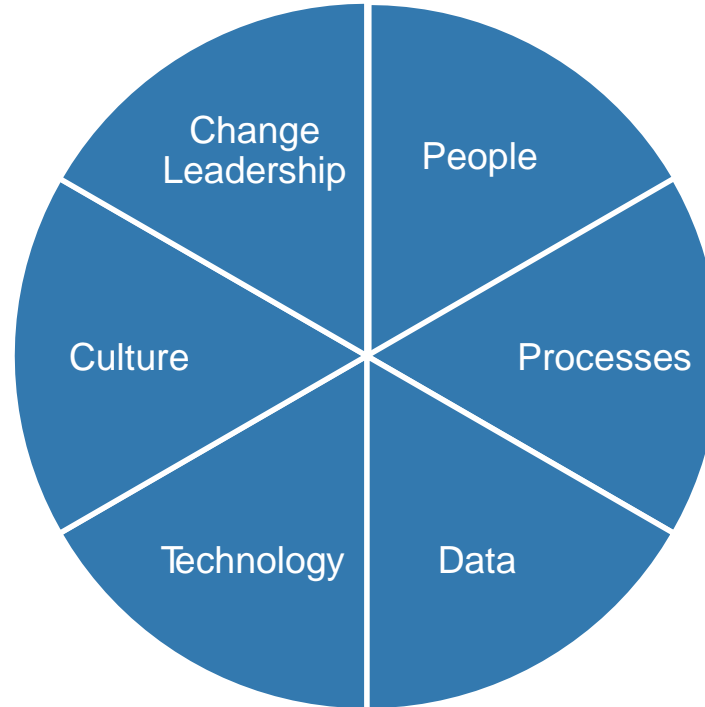
- Identify opportunities to automate
  - Match right tool (automation) to right problem and business endstate/ROI
  - Not every process needs automating...
  - Target labor intensive, repetitive, error-prone processes
- Validate and prepare the opportunity
  - Understand the upstream and downstream impact
  - Rationalize, understand, and reengineer the end-to-end business process
- Select a design model and capability acquisition plan
  - Outsource, Outsource-to-Insourcing, Insource
  - Centers of Excellence for capacity building
- Develop automation plan, governance, and infrastructure
- Design and execute demonstrations
- Scale and sustain
  - Replicate the value into new demonstrations and new business processes
  - Reinvest savings into future projects
- Design new processes and obtain next generation benefits



# Fundamentals: What the Private Sector Has Learned

## Common Denominators Underpinning Success

Six interrelated foundational elements account for successful deployment of automation in business processes





# Observations & Findings: DoD



# Bottom Line Up Front

- DoD will benefit from an enterprise-wide implementation of automation across business functions
- Currently in DoD, there is limited appreciation and application of automation in business processes in contrast to the extensive application toward warfighting, e.g. the Technology Offset Program
- The Congress, President, and Secretary have mandated improved business efficiencies within the DoD
- DoD business processes are very similar to those in the private sector, thus significant opportunities exist to improve the quality and speed of decision making and reduce costs

# DoD Data

- DoD has insufficient data on its business processes and workforce statistics to determine which tasks can be automated
  - Business Enterprise Architecture (BEA) Level 4 analysis, which addresses manual versus automated transactions, is minimal
  - Enterprise-wide enforcement of compliance is sporadic
  - Inadequate incentive to conduct Level 4 analysis and make change
  - Without adequate data, DoD is challenged to justify investment in automation technologies because return on investment (ROI) cannot be calculated
- Cultural resistance to sharing data is pervasive and limits DoD's ability to deploy automation at scale
  - DoD data exists in siloes and access is restricted
  - Loss of ability to control data is considered a loss of status and power
  - Aggregation of data is seen as a cybersecurity risk

# DoD Culture and Talent

- Organizational culture does not encourage business process automation
  - Low interest in the improvement of business processes- “DoD doesn’t promote from it, DoD doesn’t incentivize it, often viewing it as an afterthought.”
  - Achieving efficiencies and cost savings reduces budget and/or headcount, which is considered a loss of status
  - Rewards for success in business operations are not proportional to risks taken – weak incentives to improve, yet penalties for failure are substantial
- Workforce skills required for automation are insufficient
  - Talent required to start and scale automation is in short supply, especially business process engineers, software engineers, computer and data scientists
  - Combination of adverse culture and limited incentives is a challenge to recruiting and retaining highly motivated, well educated, technically skilled and innovative workers

# DoD Management and Governance

- Duplicate and siloed business processes across the enterprise
  - AT&L, P&R, Comptroller, DCMO, DoD CIO each manage their own specific business processes
  - In contrast, services each maintain duplicative business processes
  - Fragmented process ownership and business systems inhibit enterprise business process reengineering
  
- Governance constraints limit DoD's ability and agility to implement projects such as automation
  - Congressional
    - Multi-year budget process requires overly-precise planning, which is especially difficult with rapidly evolving technology
    - Delays with available and accurate fiscal year funding make planning and execution difficult
  - Certification and Procurement Limitation
    - The mandates of Defense Business System certification cause limits on agility and result in inefficiencies
  - Regulatory
    - Federal and DoD acquisition regulations limit ability of DoD to collaborate with the private-sector for business process innovation

# DoD Success: Case Study on DLA

- Automation continuum deployment has resulted in the following outcomes:
  - Since 1992, workforce has been reduced from 61K to 25K
  - Since 2001, same number of FTEs with an increase in business from \$17B to \$42B
- Key Success Factors
  - Progressive vision with committed senior leadership
  - Continuity in leadership, change management governance discipline, and devotion to building organizational capacity
  - Strong employee engagement encouraged by the leadership coupled with ROI and continuous improvement mindset to shape the culture in the following areas:
    - Reporting and Data Collection
      - Reporting with today's COTS tools
      - Big data and a data governance board
      - Comprehensive data repository for reporting and analytics
    - Analysis and Insights
      - Enterprise level metrics/drilldown
      - Ad hoc analysis – easy to use
      - Issue driven insights
    - Advanced Analytics
      - Enterprise Presence Capability
      - Business Decision Analytics
      - Predictive modeling and self service visualization
      - A platform that analysts can grow into

# Summary of Findings

- Automation of business processes within the DoD, including finance, personnel, healthcare, logistics, and acquisition, can provide the following benefits:
  - Automation of transactional administrative business processes
  - Achievement of more accurate financial and human resource tracking
  - Improved effectiveness of management through increased speed and accuracy of decision making
  - Higher order of data analytics for system monitoring and responsive problem solving
  - Generation of second and third order solutions not presently available
  - Enhanced cost transparency with defense suppliers in the acquisition process
  - Realization of enhanced talent management through:
    - Reduced number of FTEs assigned to manual transaction processing
    - Curtailment of the growth of personnel assigned to business processes
    - More robust talent development and meaningful careers for civilians

# Recommendations





# Recommendation 1

## - Automation as a Strategic Enabler -

- Create and promulgate a strategic vision for automation and the future force to achieve the following:
  - Increase quality, volume, speed of business decision making
  - Greater access to resources and accurate information in support of warfighting
  - Accelerate Technology Offset Program by applying automation to business processes
  - Reduce and reallocate personnel performing business processes and reduce costs, especially labor costs
  - Close the gap between future workforce needs and anticipated shortfall of talent
- Develop an enterprise strategy that prioritizes use of automation to significantly improve the quality and cost of business processes
  - Leverage private sector experience, which is accessible and readily applicable, to optimize defense business processes
  - Develop metrics to measure automation ROI to ensure automation efforts and dollars are applied correctly
  - Improve the quality of manpower data needed to quantify the impact of automation
  - Define redeployment strategy and plan for impacted employees



# Recommendation 2

## - Leadership Actions -

- DepSecDef should mandate business process reviews to identify automation opportunities at the enterprise-wide and component levels
  - CMO should lead the initiative
  - Set and promulgate objectives, milestones, metrics, and timeline
  - All business functions to provide a plan on where automation can be applied, and if appropriate, integrated with other enterprise wide functions – use the current DLA pilots as thought starters
- Empower lower levels of management to both lead and effect change
- Manage business operations as aggressively as DoD manages the development and conduct of warfighting
- Develop a strategic communication plan to emphasize and educate the value of automation of business functions
  - Create Automation 101 briefings
  - Educate senior and mid-level leaders on automation and its benefits in order to create a natural demand signal and empower all levels of leadership
  - Communicate the technology offset program in terms of business operations as well, not just the application of warfighting



# Recommendation 3

## - Build Capability and Capacity -

- DoD should establish a Business Operations Center of Excellence
  - Establish and enable governance of automation efforts
  - Provide guidance and support for demonstrations and trials to maximize success
  - Partner with private sector and academia to build talent capacity
  - Internally share best practices and processes
  - Ensure continuous process improvement – second and third generation automation opportunities
  - Support and advise on technology, vendor oversight, and program management
- Establish an Autonomy University Affiliated Research Center (UARC) (DIB Recommendation)
  - Establish a university-based center that focuses on innovation, information, and best practices
  - Address challenges and problems associated with the maturation of the automation continuum

# Recommendation 4

## - Develop Automation Talent -

- Build talented teams to design and implement RPA and AI projects
  - Recruit a critical mass of leaders, managers, and technical support personnel who understand RPA and AI and have the capability to lead change
  - Supplement with external partners as necessary to build competency and transform DoD's workforce and culture
- Define and build professional career paths for new critical skills
  - Includes data scientists, software engineers, process engineers, etc
  - Partner with private sector to expand corporate fellowships and other similar private sector exchange programs to gain exposure to new skills and ways of thinking
- Apply Human System Integration (HSI) tenets to automation of business processes
  - Focus on and incorporate design thinking and impact of the human factor
  - Ensure HSI billets support the program and resource managers in understanding the productive benefits of designing at the interface between humans and machines
  - Expand population of professionally educated HSI professionals



# Recommendation 5

## - Methods to Facilitate Adoption -

- Conduct high-profile demonstrations and competitions to increase awareness and develop world-class solutions
  - Encourage open innovation throughout DoD and its suppliers to increase development of new business processes and technologies
- Develop an RPA/AI self-assessment tool to identify business process automation opportunities
  - Use results to generate internal change and reduce cultural resistance
- Leverage challenge communities to solve business process problems
  - Utilize challenge communities including MD5 at National Defense University and other best-of-class Services' innovation cells
  - Use crowdsourcing forums to support improvement and automation of business processes
  - Incentivize workforce to work on business process problems



# Conclusion: Automation Provides Strategic Advantage

- Automation of business processes and warfighting are inextricably linked
- It is a true Offset as it will revolutionize the effectiveness of both business processes and warfighting
- It will enable the United States to have a major competitive advantage in shaping global stability and warfare, especially with respect to peer-competitors and our current enemies
- Automation will be to business processes as stealth and precision were to warfighting – a once in a decade opportunity to dramatically reshape DoD business operations
- The use of automation will attract and retain a more innovative and competitive workforce and create a more productive workplace
- Enhanced quality of data and decision-making will provide better, faster, and more accurate outcomes at lower costs – resulting in more efficient use of resources and better support to the warfighter
- The substantial reduction in costs, primarily in the reduction of FTEs, will free up human and financial resources that can be transferred to expand and enhance DoD's warfighting capability<sub>30</sub>



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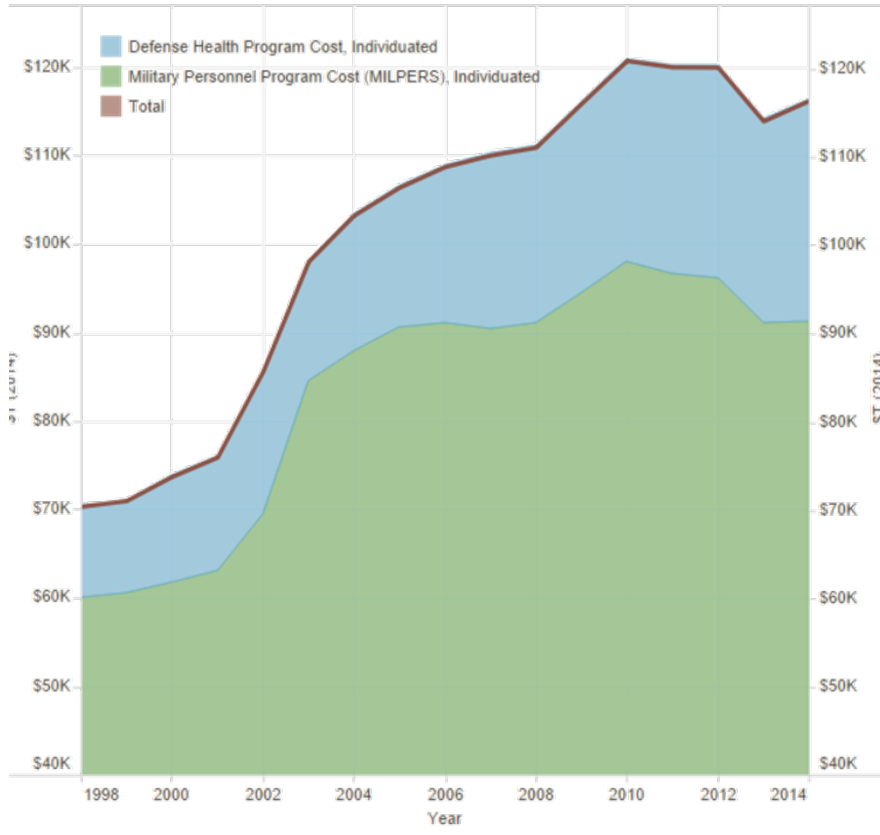
# Appendix Slides





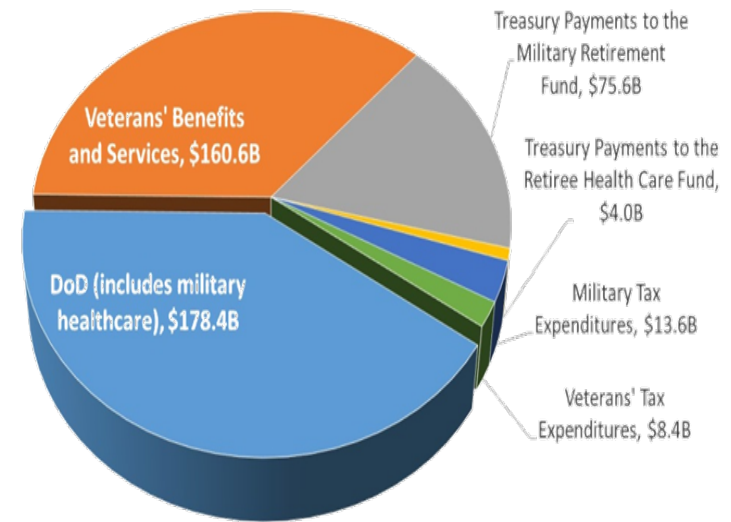
# Escalating Personnel Costs

Personnel Costs Per Active Duty U.S. Service Member, 1998-2014

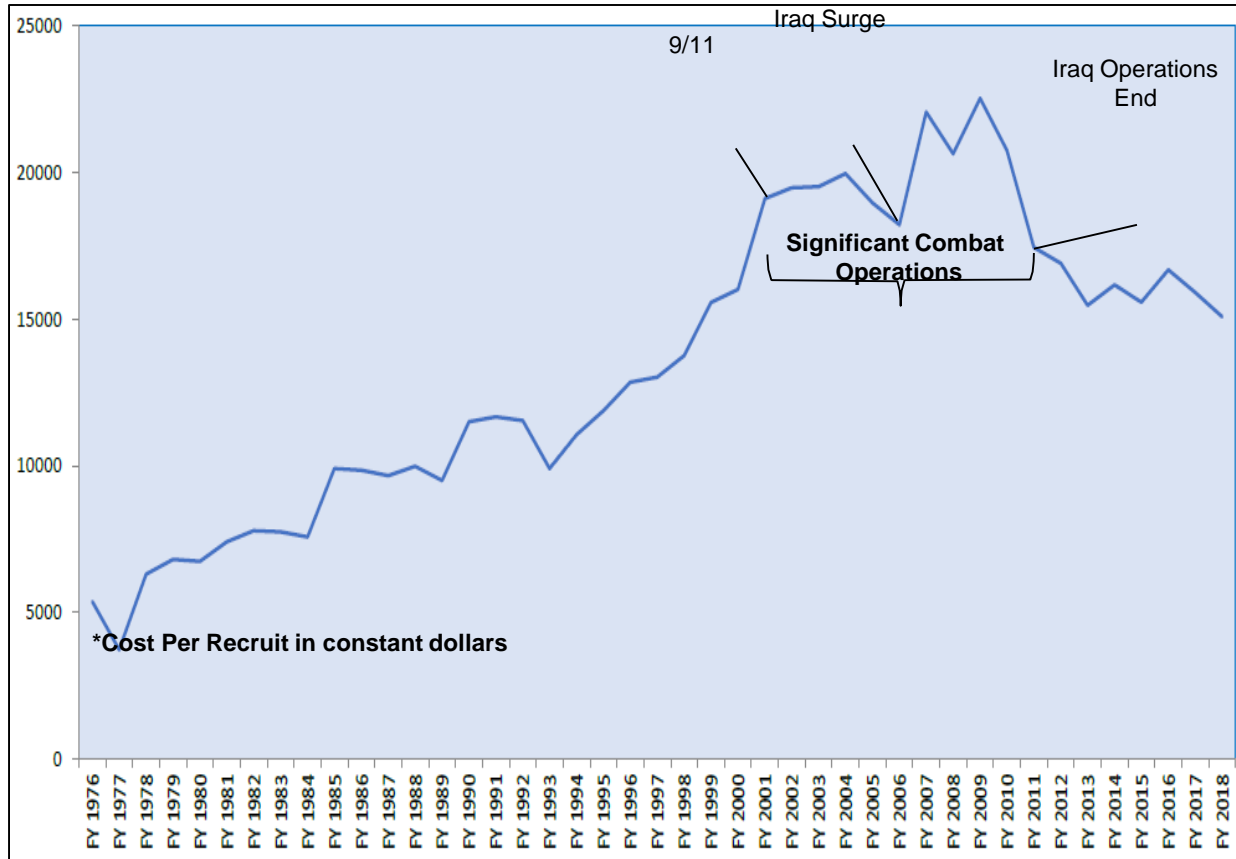


Total Military Compensation Funding in FY15 Federal Budget: \$441B

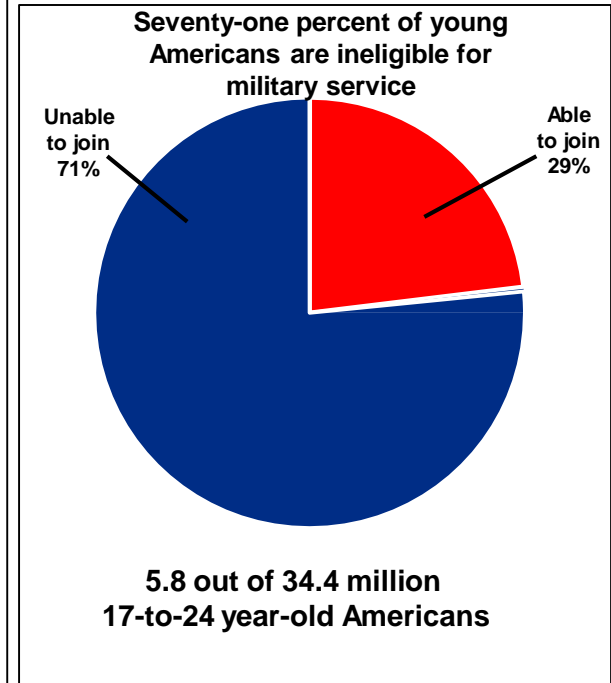
*(includes total discretionary and mandatory funding and lost revenue from tax expenditures)*



# Future Recruiting Challenges



Source: OUSD(R&R) / Military Personnel Policy



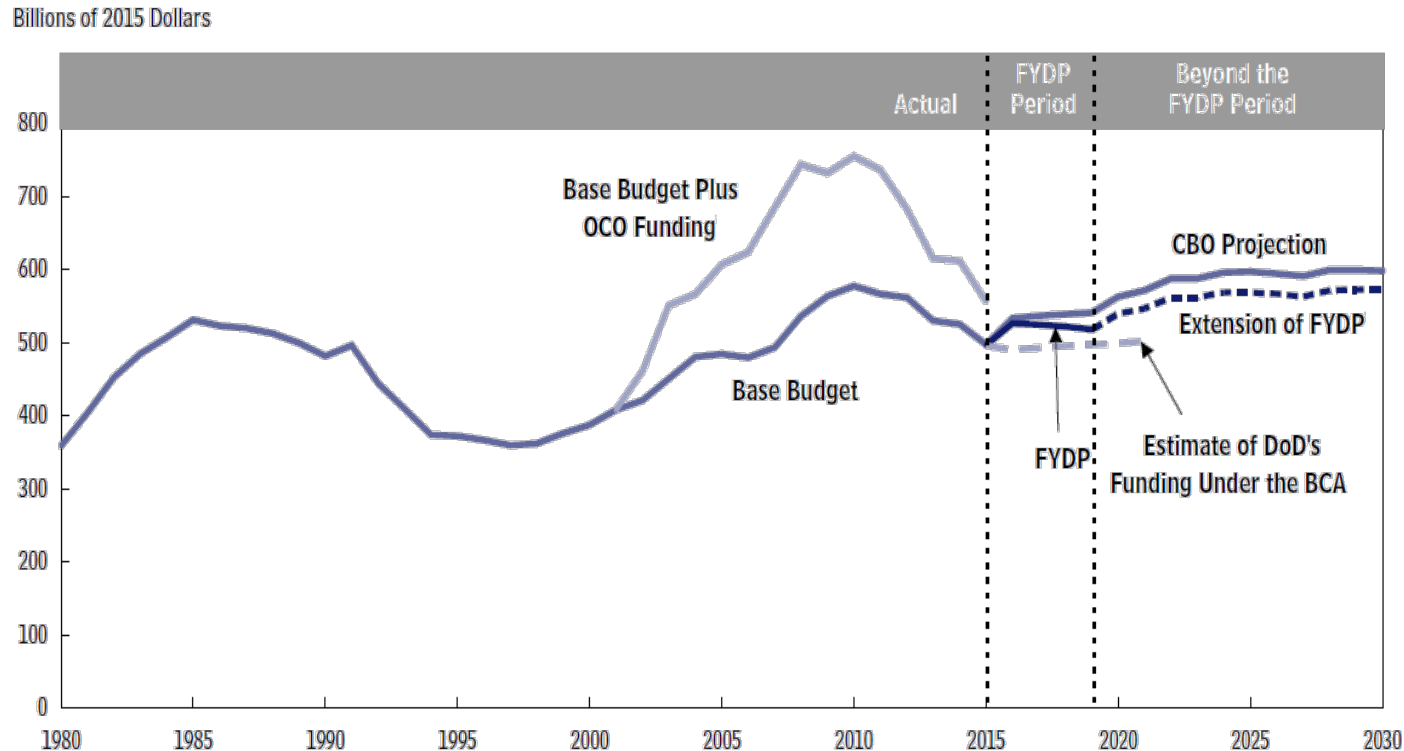
Source: DoD Qualified Military Available Study 2013

**\*Ineligibility based on failure to meet physical, moral, and or other qualification standards**

The cost to recruit the future force may increase if there is an increased demand for technologically skilled and educated recruits and the limited pool from which to recruit



# Low Probability of Additional Funding



Source: Congressional Budget Office.

DoD must adapt to a new business environment; one that requires reduction of costs AND enables a better approach to the challenges and opportunities confronting it.



# Industry & Academia Interviews

- Amazon
- Bitfury Group
- BNY Mellon
- Bloomberg Beta
- Blue Prism
- Cognizant
- Deloitte
- Facebook, AI Research
- IBM Watson
- McKinsey Global Institute
- MIT Sloan School of Business
- Northern Trust
- Phasic Systems
- Professor and author, “A New Approach to Automating Services”
- ScriptPro
- SVP Cisco
- United Health Care
- University California San Francisco Pharmacies

# DoD Interviews

- Army G-1, Human Systems Integration
- CTO, DIUx
- DCMO, OSD
- Navy DCMO
- USAF DCMO
- Defense Digital Service
- Deputy CIO, OSD
- Director, CAPE
- Director, Defense Innovation Board
- DISA
- Federal CIO Council, OMB
- Former USD P&R
- Marine Corps Operational Test Activity
- Marine Corps Warfighting Lab
- MD5 National Security Technology Accelerator
- Naval Post Graduate School, Human Systems Integration
- Navy Office of Strategy and Innovation
- Office of Business Transformation, US Army
- Office of Total Force Manpower and Resources, OSD
- Office of the Federal CIO, OMB
- Office of the US Digital Service, OMB
- OPM Government Innovation Lab Forum
- OPNAV N1, MPTE Transformation Office
- Program Manager, Universe of Transactions, OSD Comptroller
- Robotics and Autonomous Systems Team, Joint Staff J8
- The Innovation Lab at OPM
- OUSD AT&L

# Automation's Impact...

Metric	International Business Process and Tech Services provider	International Telecom	UK Energy Supplier
Processes automated	14	15	60
Automated transactions per month	120,000	400,000-500,000	~1m
Bots	27	160+	300+
FTE replacement	N/A	100+	600+
Cost savings	30%	ROI 650-800%	200%

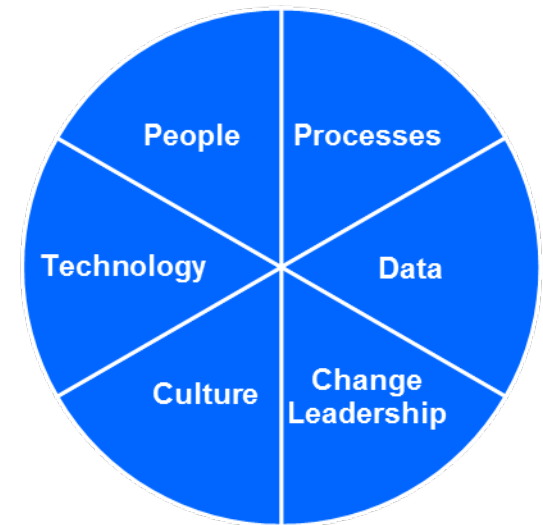
Source: Data provided through interviews with industry

# Fundamentals: What Industry has Learned

## - Common Denominators Underpinning Success -

- **Processes** – Business process analysis and reengineering is essential. Start at the problem, not the solution (IT). Bad processes = bad data, inefficient use of IT, under-utilized people, and worker disempowerment
- **Data** – Single source of truth data requires process reengineering, properly skilled people, cultural transparency, and leaders who understand and pursue its value and application
- **Change leadership** – Dedicated sponsorship and governance of automation efforts is fundamental to success. Top down involvement fosters bottom up empowerment creating a culture of continuous process improvement
- **Culture** – Creating an agile and innovative culture focused on continuous process improvement requires leadership, the right professional skillsets, and processes and data accuracy
- **Technology** – IT solutions are readily available. The right IT to support efficient and effective business processes is important, but, but process analysis and subsequent reengineering is more important
- **People** – Successful automation efforts require an understanding of what people are doing within processes and the right mix of a professionalized workforce that possess the necessary skills to properly analyze, implement, and leverage the benefits of automation

Six interrelated foundational elements account for successful deployment of automation in back-office functions



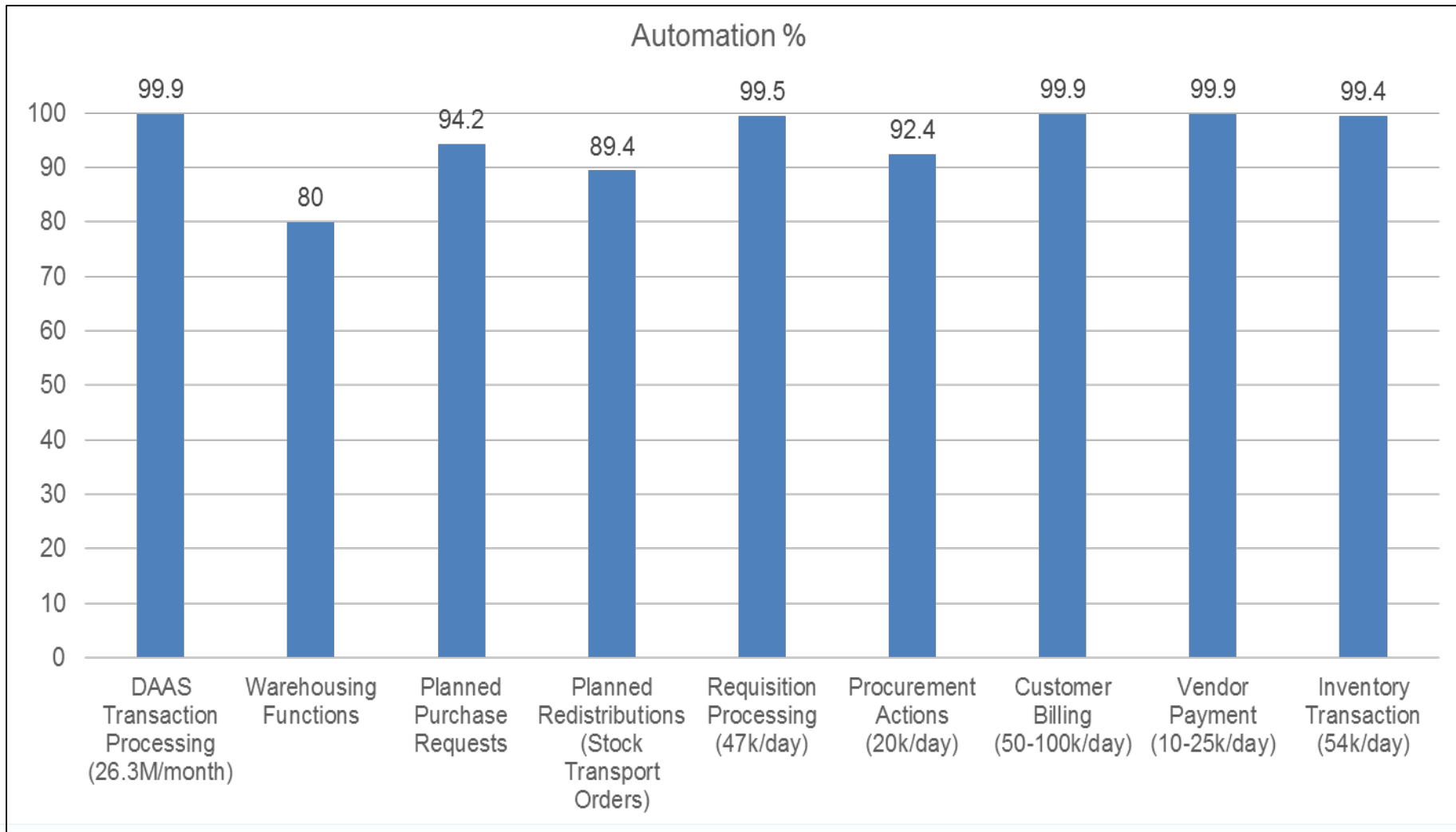
Automation of back-office functions is best done in bite-size portions, involves rigorous focused pilots with continuous test and evaluation. Then increase the scale of projects.

# Diverse Perspectives on the Impact on Jobs

OECD	McKinsey Global Institute	Deloitte Center for Government Insights	International Federation of Robotics	University of Oxford
<a href="http://www.oecd-ilibrary.org/social-issues-migration-health/">http://www.oecd-ilibrary.org/social-issues-migration-health/</a>	<a href="http://www.mckinsey.com/global-themes/digital-disruption/harnessing-automation-for-a-future-that-works">http://www.mckinsey.com/global-themes/digital-disruption/harnessing-automation-for-a-future-that-works</a>	<a href="https://dupress.deloitte.com/dup-us-en/focus/cognitive-technologies/artificial-intelligence-government.html">https://dupress.deloitte.com/dup-us-en/focus/cognitive-technologies/artificial-intelligence-government.html</a>	<a href="https://ifr.org/img/office/IFR_The_Impact_of_Robots_on_Employment.pdf">https://ifr.org/img/office/IFR_The_Impact_of_Robots_on_Employment.pdf</a>	<a href="http://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf">http://www.oxfordmartin.ox.ac.uk/downloads/academic/The_Future_of_Employment.pdf</a>
<p>“...On average, across the 21 OECD countries, 9% of jobs are automatable.”</p>	<p>“...Less than 5% of all occupations can be automated entirely... ~60% of all occupations have at least 30% of constituent activities that could be automated.”</p>	<p>Potential of between 96.7 million and 1.2 billion federal government hours annually saved.</p>	<p>“Robots substitute labor activities but do not replace jobs. Less than 10% of jobs are fully automatable.”</p>	<p>“...47% of total US employment is in “high risk” category [for automation]...”</p>
<p>“...Automation and digitalization are unlikely to destroy large numbers of jobs. However, low qualified workers are likely to bear the brunt of the adjustment costs...”</p>	<p>“The right level of detail...to analyze the potential impact of automation is that of individual activities rather than entire occupations. Every occupation includes multiple types of activity, each [having] different requirements for automation.”</p>	<p>“In the near term...large government job losses are unlikely. But cognitive technologies will change the nature of many jobs...freeing up to one quarter of many workers’ time to focus on other activities.”</p>	<p>“Automation has led overall to an increase in labor demand and positive impact on wages....The issue is how to enable middle-income earners in the lower-income range to upskill or retrain.”</p>	<p>“...[Reduction in] aggregate demand for labor input in tasks that can be routinized by means of pattern recognition, while increasing the demand for labor performing tasks that are not susceptible to computerization.”</p>



# DoD Success: Case Study on DLA



# Opportunity of Automation

Automation in routine back-office business processes offers:

- More and cleaner data entry for processes and analysis
- Ability to analyze data to increase quality, volume, speed of decisions
- Faster, more accurate, and higher volume business transactions
- Reduction of costs (particularly labor costs) and errors
- Reduction or reallocation of FTEs performing routine functions to higher level tasks and more important functions

*“...Less than 5% of all occupations can be automated entirely... ~60% of all occupations have at least 30% of constituent activities that could be automated.”*

~ McKinsey Global Institute

