2017 FEDERAL WORKFORCE PRIORITIES REPORT

U.S. Office of Personnel Management

TABLE OF CONTENTS

PREFACE

Effective April 11, 2017, Title 5, Code of Federal Regulations, Part 250, Subpart B, *Strategic Human Capital Management* requires the U.S. Office of Personnel Management (OPM) to issue the quadrennial Federal Workforce Priorities Report (the report). The report communicates key government-wide human capital priorities and suggested strategies and helps inform agency strategic and human capital planning. OPM requests that agencies align their human capital management strategies to support the Federal Workforce Priorities Report, as demonstrated in Human Capital Operating Plans (HCOP).

OPM established the report in regulation in response to the first recommendation in the Government Accountability Office (GAO) report *Human Capital: Strategies to Help Agencies Meet Their Missions in an Era of Highly Constrained Resources* (GAO-14-168). Therein, GAO recommended that OPM strengthen coordination and leadership of government-wide human capital issues. One of two key supporting actions was the development of a government-wide human capital strategic plan. Building upon this idea, OPM committed to developing a report that establishes government-wide human capital priorities based upon current and emerging workforce challenges. The report, however, is not intended to serve as a plan that obligates the human capital community to specific actions, timeframes, and measures of success. Rather, the President's Management Agenda and Cross-Agency Priority Goals create a process for establishing such government-wide requirements, and when developing human capital goals, the report may be considered as a source for useful strategies.

Agencies will engage in activities to support the priorities, while maintaining flexibility and autonomy in how they do so. HCOPs will be used to document supporting agency efforts, including timeframes and performance measures. Evaluation initiatives, such as HRStat and Human Capital Reviews, will be used to help monitor progress, assess effectiveness, and refine strategies. The HCOPs, in turn, will be updated annually, as needed and determined by each agency. Therefore, the priorities will be implemented by agencies within various stages of the human capital management cycle.

Within this report, "agencies" refers to those pertaining to the Chief Financial Officers (CFO) Act of 1990 and subsequently the Chief Human Capital Officers (CHCO) Act of 2002. The human capital regulation governing this report requires those agencies to support and incorporate the report priorities within their HCOPs.

EXECUTIVE SUMMARY

The Federal Government is responsible for fostering conditions that create prosperity and safety for the American people. The various Federal missions used to achieve these goals are largely executed by civil servants, who are employed on a full-time, part-time, or seasonal basis by the government and who play a critical role in helping Federal agencies achieve their missions now and into the future. For this reason, Federal leaders and managers must stay abreast of current workforce experiences and issues, while also planning and preparing for future trends. This report is designed to identify current and future actionable challenges, through research and analysis from both the private and public sectors, for use by strategic decision makers, managers, and employees of the Federal human capital community.

SUPPORTING RESEARCH AND ANALYSIS

The Office of Personnel Management (OPM) began conducting research in 2015 to identify current and future workforce management challenges and opportunities. An analysis of the Federal Employee Viewpoint Survey highlighted four questions that were related to how agencies performed against their Agency Priority Goals. Those questions dealt with **senior leaders generating high levels of motivation and commitment in the workforce (Q.53), employees being recognized for high quality products and services (Q.31), managers promoting communication among different work units (Q.58), and supervisors being committed to a workforce representative of all segments of society (Q.45).**

OPM reviewed Inspector General reports outlining management challenges and GAO High Risk List areas for references to human capital management issues or needs. The top six themes were **training and development, staffing levels, skills, hiring and recruitment, data and analysis, and planning.**

Lastly, an environmental scan identified four major trends affecting the workforce at-large. These included: **(1) shifting generational demographics, (2) the digitally connected workforce, (3) the impact of employee health on workplace outcomes, and (4) the evolving role of workers among automation.**

PRIORITIES

Based upon the aforementioned research and findings, OPM identified six priorities in areas that, when addressed, will spur productivity and organizational success and that align with and support the **Administration's initiatives to reshape the workforce and maximize employee performance.** For this iteration, agencies are asked to select two priorities that they will continue to support until the issuance of the next Federal Workforce Priorities Report in 2021.

Priorities in the Context of Workforce Reshaping

Agencies have been asked to take immediate action to achieve near-term workforce cost savings and identify long-term staffing plans. When planning and implementing workforce reshaping, it is critical to ensure that institutional knowledge is not lost, organizations remain nimble to respond to evolving demands, and workforce decisions are based upon sound evidence. The first three priorities were designed to assist agencies with achieving these goals.

Priority 1: Succession Planning and Knowledge Transfer.

Conduct succession planning activities that ensure institutional knowledge is retained and transferred, as workforce reshaping efforts are undertaken.

Agencies should ensure that they have a multi-faceted succession plan that is designed to capture the valuable knowledge and insights of current employees, convey captured knowledge to new and retained employees, and create and utilize a multi-generational pipeline

Priority 2: Deploying Communication Tools

Adopt tools that allow employees to easily connect, communicate, and collaborate with one another regardless of geographic location.

For a geographically dispersed and agile workforce, communication and collaboration should be enabled by technology and fostered by leadership. Enterprise social networks, in particular, can help facilitate organizational fluidity and resilience, by enhancing communication among employees and organizations. Enterprise social networks also help in streamlining knowledge capture and access, while fostering innovation and collaboration.

Priority 3: Securing Technological Solutions for Human Capital Analysis

OPM will seek to acquire or develop enterprise technological solutions to assist the Federal human capital community with human capital analysis.

OPM will aim to provide tools for agencies that can fill gaps in current analytic capabilities to ultimately facilitate more informed and evidence-based planning and decision-making. This will complement agency reform plans, which call for better leveraging of technology to improve underlying business processes and the streamlining of mission support functions through efforts such as shared information technology (IT).

Priorities to Help Maximize Employee Performance

Agencies are establishing plans to maximize employee performance, including a specific set of required actions which emphasize addressing poor performers. To complement these formal performance management activities, the last three priorities focus on efforts in areas that spur productivity and encourage and sustain high performance. As the workforce is streamlined, increasing individual performance among all workers becomes paramount to continuing to meet organizational goals.

Priority 4: Expanding Employee Development Opportunities

Provide employees with ample opportunities for continuous professional growth and skill development.

Training and development are a means to sustain high performance during workforce reshaping. When employees' duties are modified through reassignment, relocation, or increased workloads, it is imperative that they receive the proper training and development to address new and augmented assignments and acclimate to new environments and modes of operation.

Priority 5: Bolstering Employee Recognition Programs

Ensure robust programs are in place to appropriately recognize and reward employees who demonstrate high levels of performance and significantly contribute to achieving organizational goals.

Employee recognition programs encourage sustained excellence and productivity and help retain top talent, which becomes increasingly important as the workforce is streamlined. Recognizing high performers is highlighted in both the Office of Management and Budget's (OMB) agency reform memo and OPM's workforce reshaping guidance. It is a proactive and accountability-based practice that can help prevent negative performance and conduct issues.

Priority 6: Enhancing Productivity through a Focus on Employee Health

Encourage employees to engage in physical fitness activities during time spent commuting and being at work.

Increasingly, employers are engaged in helping employees become more active during work hours. People spend a large portion of their day at work, and there are various ways during this time that aspects of physical fitness can be incorporated. The workplace benefits that employee health can provide, especially in light of the relatively low investment costs, can be a valuable tool for organizations that are called upon to do more with less.

RESEARCH AND ANALYSIS

In 2015, OPM began conducting research to identify current and future workforce management issues that would be used to establish the Federal human capital priorities established in this report. Prior to the issuance of this report, workforce-related goals were outlined by the Administration in the April 2017 memorandum, *Comprehensive Plan for Reforming the Federal Government and Reducing the Federal Civilian Workforce*. Research findings that complemented the Administration's workforce-related goals were considered in establishing the priorities identified in this report.

To serve as a resource for agency planning and decision-making, the Administration's priorities and all major findings are detailed in the Research and Analysis section. These include:

- Administration Initiatives (page 5)

- Employee Perception and Agency Performance Indicators (page 8)

- Workforce Management Contributors to Key Federal Challenges (page 11)

- Major Trends Shaping the Workforce (page 16)

- Promising Agency Practices (page 24)

ADMINISTRATION INITIATIVES

At the time of this report, the Administration had identified two major Federal workforce initiatives as part of a comprehensive plan to reform the Federal Government—reshaping the workforce and maximizing employee performance. On April 12, 2017, OMB issued implementation guidance for CFO Act agencies, with the first deliverables due June 30, 2017.

In concert with reform efforts, the Administration will develop the President's Management Agenda (PMA), which will focus on achieving significant improvements in the effectiveness of core management functions. Further information on the Administration's government-wide priorities will become available with the issuance of the PMA and Cross-Agency Priority (CAP) Goals in February 2018.

Reforming Government and Reducing the Federal Civilian Workforce

The Federal Government can—and should—operate more effectively, efficiently, and securely. In April 2017, OMB issued guidance to the heads of executive departments and agencies for the development of a *Comprehensive Plan for Reforming the Federal Government and Reducing the Federal Civilian Workforce*. It provides guidance on fulfilling the requirements of the January 2017 *Hiring Freeze* Presidential Memorandum and the March 2017 *Reorganizing the Executive Branch* Executive Order. It also aligns those initiatives to the Federal budget and performance planning process. The guidance requires agencies to:

1. Begin taking immediate actions to achieve near-term workforce reductions and cost savings, including planning for funding levels in the President's FY18 Budget Blueprint

2. Develop a plan to maximize employee performance by June 30, 2017

3. Submit an Agency Reform Plan in September 2017 (high-level draft due June 30, 2017) as part of the agency's FY19 Budget submission to OMB that includes long-term workforce reductions

To support agencies in the development of these plans, OPM established a workforce reshaping website. The site provides information and resources geared towards agency leaders and human resources (HR) professionals engaged in strategic workforce planning efforts or considering workforce reshaping options. Specifically, the site provides information on planning a strategic approach, implementing reshaping options, supporting the workforce through transition, and sustaining high performance.

Plan to Achieve Workforce Reductions. Agencies will begin taking immediate actions to achieve near-term workforce reductions and cost savings, including planning for funding levels in the President's FY18 Budget Blueprint. As part of their Agency Reform Plan and FY19 Budget submission to OMB, agencies should identify long-term staffing plans by:

- **Using agency data to determine appropriate workforce staffing levels**. Agencies are asked to better examine how many people are required to perform tasks at the level required. Various data sources can be used to help determine the appropriate staffing levels for accomplishing program objectives. Previous budget allocations should not be the only factor relied upon.

- **Examining total personnel costs.** In addition to staffing levels, agencies will examine their total personnel costs, including the distribution of pay grades. Employee-related costs include salary and benefits, overtime, training, awards, career ladder progression, employee services, and office expenses.

- **Optimizing organizational design and position structures.** Spans of control and delegations of authority should be optimized to accomplish the organization's work and mission using the appropriate layers of management, while providing appropriate risk management, oversight, and accountability. In particular, agencies should address deputy positions, lower level chief of staff positions, special project positions, and management analysts that may duplicate the work performed in areas such as procurement, HR, and senior management.

- **Streamlining policy creation for agency components.** The tendency to recraft agency policies for agency regions and components will be eliminated. For example, agency components may have staff in administrative functions, such as HR and financial management, which customize agency-wide policies, when it may be more efficient to adopt the policies as they are. Similarly, staff in each field location may write local policy on the same subjects, even when unique local or regional expertise is not needed.

- **Reviewing positions as they become vacant.** Agencies will determine whether the duties, qualifications and requirements, and organizational placement of vacant positions reflect current mission needs. They will examine how any appropriate changes to the position can be accomplished in a timely and efficient manner, which may include organizational reassignment and changes in pay grade.

- **Keeping positions technologically current.** Agencies should assess how technology may have changed or eliminated the need for some positions. To address findings, agencies should develop the flexibility to adapt to ongoing technological advances and offer separation incentives as needed. Fields undergoing rapid transformation include database administration, invoice processing, HR transactional services, financial management, and management analysis.

OMB will release the final Government-wide Reform Plan as part of the President's FY19 Budget request to Congress. The government-wide plan will encompass agency-specific reforms, the PMA, CAP Goals, and other crosscutting reforms. The final reforms included in the government-wide plan and the FY19 budget will be reflected in agency strategic plans, HCOPs, and IT strategic plans.

Plan to Maximize Employee Performance. As agencies develop long-term plans for reducing the size of the workforce, they will also take near-term actions to ensure that the workforce they retain and hire is as effective as possible. Agencies will examine whether current policies and practices are barriers to hiring and retaining the necessary workforce or appropriately addressing poor performers. Managers will be equipped with the proper tools to manage performance through activities such as providing ongoing performance feedback, recognizing high-performers, identifying areas for improvement, and quickly addressing poor performance. A plan and timeline for improvement will be developed by June 2017. At a minimum, agencies will:

- **Review and update formal agency policy.** Agencies will determine whether policies and procedures create unnecessary barriers for addressing poor performance. Processes should be streamlined by removing items not required in statute or regulation. Clear guidance will be provided for performance improvement plans. Policies will include expectations for limiting the use of unnecessary administrative leave, once the Administrative Leave Act regulations are final.

- **Provide transparency around the Performance Improvement Plan (PIP) process.** Supervisors will be provided a copy of the rules and guidance for PIPs and reminded that PIPs can be started at any point in the rating period. PIP data will be maintained, including the number of employees placed on them and the number who successfully improve performance.

- **Ensure managers and supporting HR staff are appropriately trained.** Training will be provided to all executives, supervisors, managers, team leads, and employee relations staff on managing employee performance and conduct.

- **Ensure accountability in manager performance plans.** Supervisors and managers will be held accountable for managing employee performance and conduct in their own performance plans. Agencies will review and update the supervisory elements of performance plans accordingly.

- **Establish real-time manager support mechanisms.** Agencies will identify approaches for providing accessible and just-in-time expert assistance and guidance to managers who are addressing performance or conduct issues. This may include a real-time forum, such as a dedicated contact support line, for managers.

Plans to maximize employee performance will be further updated, as needed, and may be incorporated into agency strategic plans and HCOPs.

President's Management Agenda

In tandem with reform efforts, the Administration will develop the PMA, which will be focused on achieving significant improvements in the effectiveness of core management functions. As stated in the President's FY18 Budget Blueprint, the PMA will set goals in areas critical to improving the Federal Government's effectiveness, efficiency, cybersecurity, and accountability. The Administration will take action to ensure that, by 2020, the Federal Government will be able to say that Federal agencies are:

1. Managing programs and delivering critical services more effectively

2. Devoting a greater percentage of taxpayer dollars to mission achievement rather than costly, unproductive compliance activities

3. More effective and efficient in supporting program outcomes

4. Held accountable for improving performance

In accordance with the Government Performance and Results Act (GPRA) Modernization Act of 2010, CAP Goals will be established to support and monitor the execution of the PMA. They serve as a tool to accelerate progress, over a four-year cycle, on a limited number of priority areas where implementation requires active collaboration among agencies. The goals encompass crosscutting mission and policy areas and management goals in financial management, strategic human capital management, IT management, procurement and acquisition management, and real property management. The Administration's CAP Goals will be announced along with the PMA in February 2018.

EMPLOYEE PERCEPTION AND AGENCY PERFORMANCE INDICATORS

To explore the relationship between employee perceptions and agency performance, an analysis was conducted of the 2015 Federal Employee Viewpoint Survey (FEVS) and the indicators of the Agency Priority Goals (APG) from the FY14—15 cycle. The analysis identified 25 FEVS items where APG status groups with more favorable final statuses had higher survey positive response averages. Of those, four had a statistically significant difference among the averages of each APG status group:

- Q.53. In my organization, senior leaders generate high levels of motivation and commitment in the workforce.
- Q.31. Employees are recognized for providing high quality products and services.
- Q.58. Managers promote communication among different work units (for example, about projects, goals, needed resources).
- Q.45. My supervisor is committed to a workforce representative of all segments of society.

Methodology

Positive responses to the 2015 FEVS and indicators from the FY14—15 APGs were analyzed to identify potential relationships between how well an agency managed its workforce and how well an agency performed on achieving organizational goals. To conduct this analysis, APG indicator information was gathered, information was collected from agencies on the workforce segments responsible for each APG, and FEVS data pertaining to each identified workforce segment was downloaded.

Data Points. The GPRA Modernization Act of 2010 requires CFO Act agencies, with OMB discretion, to identify APGs from among the agencies' performance goals. APGs must have ambitious targets that can be achieved within a 2-year period. For the FY14—15 cycle, 23 CHCO Act agencies had anywhere from two to seven APGs each, making 91 total. Those agencies were requested for the workforce segments (identified by sub-organization and occupational series) which were directly responsible for executing the activities necessary to achieve the APGs. The organizational and occupational information was used to filter and download reports tailored to each APG from the 2015 FEVS.

The FEVS is a survey annually administered by the Office of Personnel Management (OPM) in accordance with Title 5, Code of Federal Regulations, Part 250, Subpart C, Employee Surveys. In 2015, more than 400,000 Federal employees participated in the survey. It was administered from April 27, 2015 to June 12, 2015, where each agency's data collection period spanned six work weeks. The 98-item survey, has typically been divided into eight topic areas—personal work experiences, work unit, agency, supervisor, leadership, satisfaction, work/life, and demographics. Of those questions, 77 collect responses that can be placed on a scale of positive-neutral-negative, which were included in the analysis.

Analysis. Each APG was assigned to one of five status groups based on how much of its indicator targets were achieved in the desired direction as of the end of FY15. The "unmet" group includes APGs with final statuses that were worse than the indicator targets. The "unmet-met" group includes APGs with final statuses that were worse or the same as indicator targets. The "met" group includes APGs with final statuses that were the same as indicator targets. The "met-exceeded" group includes APGs that were the

same or 25% better than indicator targets. The "exceeded" group includes APGs with final statuses that were 25% better than indicator targets.

For each FEVS question, the averages of each status group and the differences between group averages were calculated. Twenty-five questions demonstrated a trend where each status group fared better in positive responses than the preceding status group, when ordered from least favorable ("unmet") to most favorable ("exceeded"). For each of those questions, an Analysis of Variance (ANOVA) was conducted to determine whether a true difference exists among the group averages. The ANOVA p-value is the probability that the differences among the group averages are merely what can be expected due to sampling error or "chance." Although none of the questions met the standard 0.05 threshold for the p-value, four questions were statistically significant when considering p-values below 0.10 (i.e., at least a 90% confidence level that a real difference existed somewhere among the group averages).

Limitations. Some limitations were encountered in the availability of APG indicator data, ability to identify workforce segments, and the number of FEVS responses received within workforce segments. This reduced the number of APGs that could be analyzed from 91 to 64. Furthermore, since the analysis grouped APGs according to their final statuses in order of favorability, those with a "mixed" status could not be assigned to one of the main five groups. Therefore, 54 APGs were included in the final analysis used to identify which questions seemed to be related to APG achievement.

Results

The analysis yielded four questions where (a) more favorable APG status groups had higher positive response averages, and (b) it was likely, with at least 90% confidence, that a true difference existed somewhere among the group averages. Workforce segments that exceeded their targets scored 12 to 18 percentage points more positively on those questions than those that did not meet their targets. Table 12 and the following graphs display the APG status group average and differences between groups.

Table 1. Differences between APG Status Groups on FEVS Positive Responses

Q.53. In my organization, senior leaders generate high levels of motivation and commitment in the workforce.

Unmet 35%	Difference	Unmet-Met 35%	Difference	Met 39%	Difference	Met-Exceeded 40%	Difference	Exceeded 53%	Total Difference
	<1 +		4 +		1 +		13 =		18

Q.31. Employees are recognized for providing high quality products and services.

Unmet 46%	Difference	Unmet-Met 47%	Difference	Met 51%	Difference	Met-Exceeded 52%	Difference	Exceeded 64%	Total Difference
	1 +		4 +		1 +		12 =		18

Q.58. Managers promote communication among different work units (for example, about projects, goals, needed resources).

Unmet 48%	Difference	Unmet-Met 49%	Difference	Met 53%	Difference	Met-Exceeded 56%	Difference	Exceeded 63%	Total Difference
	1 +		4 +		3 +		7 =		15

Q.45. My supervisor is committed to a workforce representative of all segments of society.

Unmet 66%	Difference	Unmet-Met 69%	Difference	Met 69%	Difference	Met-Exceeded 73%	Difference	Exceeded 78%	Total Difference
	3 +		<1 +		4 +		5 =		12

Q.53. In my organization, senior leaders generate high levels of motivation and commitment in the workforce.

Unmet	Unmet-Met	Met	Met-Exceeded	Exceeded
35%	35%	39%	40%	53%

Q.31. Employees are recognized for providing high quality products and services.

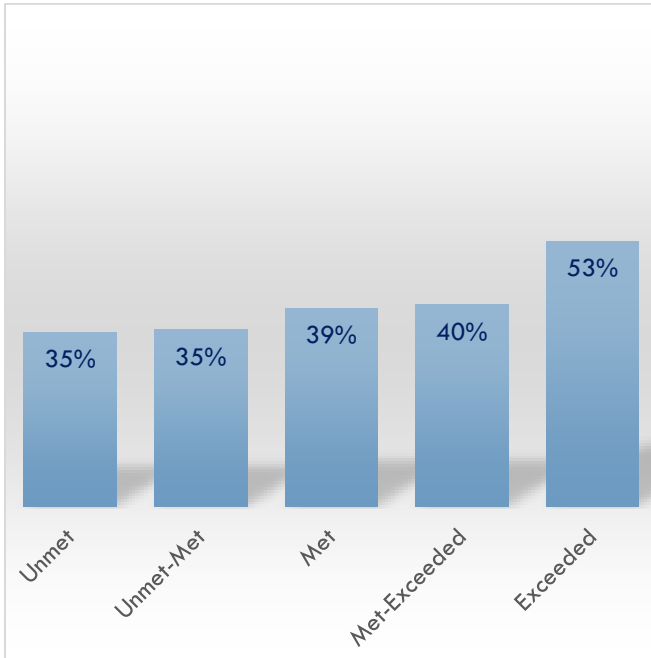| Unmet	Unmet-Met	Met	Met-Exceeded	Exceeded
46%	47%	51%	52%	64%

Q.58. Managers promote communication among different work units (for example, about projects, goals, needed resources).

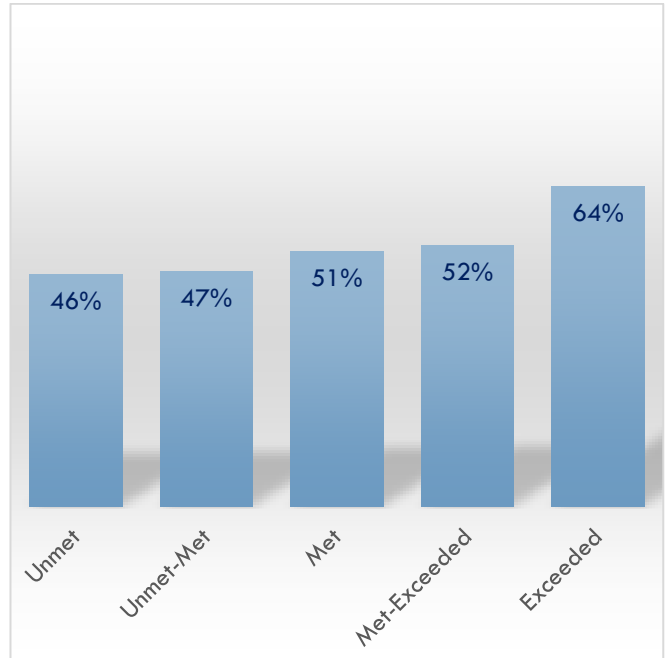| Unmet	Unmet-Met	Met	Met-Exceeded	Exceeded
48%	49%	53%	56%	63%

Q.45. My supervisor is committed to a workforce representative of all segments of society.

Unmet	Unmet-Met	Met	Met-Exceeded	Exceeded
66%	69%	69%	73%	78%

WORKFORCE MANAGEMENT CONTRIBUTORS TO KEY FEDERAL CHALLENGES

To explore the relationship between human capital management and key challenges experienced at the agency and government-wide levels, a review was conducted of agencies' 2015 Inspector General (IG)-identified management challenges and the Government Accountability Office's (GAO) 2015 High Risk List areas. The review found that 38% of IG management challenges and 59% of the High Risk List areas referenced contributing human capital management issues or needs, which were categorized into 28 themes.

The top six themes were training and development, staffing levels, skills, hiring and recruitment, data and analysis, and planning. Individually, each theme affected one-third to over four-fifths of agencies. Collectively, they were found in most cases where human capital issues and needs were raised. Therefore, they often accompanied and influenced each other. Within these themes, further progress was needed regarding:

- Ensuring adequate training, especially within constrained budgets
- Identifying staffing needs
- Assessing skill gaps
- Filling vacancies
- Hiring and retaining qualified personnel
- Conducting workforce analysis with sufficient and accurate data
- Expanding and improving human capital planning and execution

Methodology

Select IG management challenges and High Risk List areas were reviewed to identify references to human capital management issues or needs. The references were compiled and initially tagged with key words. A secondary review recoded them according to 28 themes which emerged. The percentage of IG challenges and the percentage of high risk areas that each theme affected were then calculated. For the IG challenges, those percentages ranged from <1% to 20%. For the high risk areas, the range was 0% to 34%.

IG Management Challenges. Each year, agency IGs summarize the most serious management and performance challenges facing their agencies and how agencies are addressing those challenges, in accordance with the Reports Consolidation Act of 2000. The review focused on the 2015 summaries issued for the 24 CHCO Act agencies. In total, 221 challenges were identified for those agencies in 2015.

High Risk List. GAO publishes an update to the High Risk List every two years, highlighting program areas that require transformation or are significantly vulnerable to fraud, waste, abuse, or mismanagement. A new feature included in the 2015 update was a star-shaped rating system consisting of five criteria required for removal from the list—leadership commitment, capacity, action plan, monitoring, and demonstrated progress. Each criterion is rated on a scale of "not met," "partially met," or "met." The review focused on areas in which capacity, defined as the extent to which an "agency has

the capacity (i.e., people and resources) to resolve the risk(s)," received a rating of "not met" or "partially met." This included 27 of the 32 high risk areas in 2015.

Key Observations

The human capital themes which were referenced in at least 10% of the 221 IG management challenges or at least 25% of the 32 High Risk List areas were identified as the top contributors to key Federal challenges (Table 2~~1~~). This included six themes—training and development, staffing levels, skills, hiring and recruitment, data and analysis, and planning.

Together, the top six themes were found in most cases where human capital issues and needs were raised. Oftentimes, multiple human capital themes were present for a given high risk area or IG challenge. Therefore, the top six themes may not be the only ones that need to be addressed within the items which cited them. For example, attrition and retention, budget and resources, organizational design, and leadership were among the other themes.

Table 2. Percentage of Items Referencing Human Capital Issues and Needs

	IG Management Challenges	High Risk List Areas
TOTAL	221	32
Referenced Human Capital Issues and Needs	38%	59%
Referenced Top Six Human Capital Themes	34%	53%
Training and Development	20%	28%
Staffing Levels	14%	34%
Skills	10%	28%
Hiring and Recruitment	10%	19%
Data and Analysis	4%	25%
Planning	2%	25%

Training and Development. Agencies must be able to provide comprehensive training programs for acclimating new personnel, ensuring workforce skills remain current, and implementing new and improved systems and processes. Failing to provide sufficient training and development programs and opportunities endangers agency performance. However, 21 (or 88% of) agencies encountered challenges and needs in this area. A broad range of management and mission functions were affected, most notably in acquisitions, IT, Federal revenue and cost control, and safety. Broadly, agencies struggled with:

- **Ensuring adequate job-related training.** Primarily, inadequate training left employees within certain agency functions and departments without important job skills and knowledge. For example, some jobs had no formal training or certification programs in place. When training was provided, it was sometimes incomplete or irrelevant, inadequately addressing certain duties or focusing on skills and procedures not critical to the work being done. Other programs were not administered routinely, leaving more tenured employees without updated knowledge. Additionally, some employees went without required training, due to a lack of oversight and documentation.

- **Offering training within constrained budgets.** Training programs were often constrained due to tightening budgets. One agency was specifically concerned with the design and upkeep of training products. Reductions to training funds and, consequently, the availability of training was

said to impede progress on addressing workforce needs and to contribute to challenges in acquiring talent.

Staffing Levels. The services provided by agencies for the benefit and protection of the American public are dependent upon having the necessary Federal workforce. However, many programs cited capacity shortcomings affecting both the management and mission accomplishment of at least 20 (or 83% of) agencies. Gaps in staffing levels were hampering agency performance or placing performance at risk as well as causing stress for overworked employees. Impacted missions and services included those related to public safety, health care, real estate, business ventures, citizen and veteran benefits, law enforcement, and Federal revenue and cost control activities.

While budgetary constraints are typically cited as the basis of staffing gaps, they were also attributed to challenges with:

- **Identifying staffing needs.** Some programmatic areas lacked sufficient analysis to identify workforce needs, and it was unclear in other areas whether any analysis had occurred. Some existing analyses lacked more detailed and lower organizational data, while others were not driven by workloads and requirements but perhaps by "wish lists." In a few instances, steady workload increases and serviced population growth went unaddressed, causing disconnects between workforce levels and the demand for services. Absent proper analysis, agencies risked difficulties in justifying staffing requests and securing necessary funding.

- **Filling vacancies.** Agencies sometimes had room to increase their staffing levels but struggled to fill available positions. New and existing positions remained vacant or were not permanently filled, while turnover and difficulties in the hiring process sustained vacancy rates.

To help address staffing level gaps, some agencies sought to secure funding, implemented targeted hiring initiatives and process improvements, or used contractors to compensate. However, these efforts did not always readily alleviate issues.

Skills. In addition to sheer headcount gaps, at least 15 (or 63% of) agencies experienced gaps in the knowledge and skill sets of the current workforce. Multiple agencies experienced skill gaps in the areas of acquisitions, IT, organizational or programmatic expertise, finance, analysis, and engineering. Other skill gaps were cited for technical skills such as grants, insurance, legal, and telecommunications; management support skills such as performance management, project management, and strategic planning; and soft skills such as critical thinking and professionalism. Challenges and needs contributing to these gaps were related to:

- **Providing adequate training.** Many of the skill gaps were associated with deficiencies in training and development. Examples included difficulties transferring knowledge to new employees, a lack of training for specialized job functions, and gaps in training curricula. To address these challenges, some agencies were implementing plans and initiatives to improve training through new programs and additional content.

- **Assessing skill gaps.** In order to address skill gaps, including prioritizing resources and requesting funds, agencies need to ensure that proper analysis is conducted. On a government-wide level, problems with tracking skill gap data, establishing metrics, and tracking outcomes were noted. Additionally, agencies needed to conduct workload and competency gap analyses,

determine the appropriate mix among a multisector workforce, and assess future critical skill needs.

- **Hiring and retaining skilled employees.** Acquiring and retaining talent is critical for achieving and maintaining desired skill levels. Hiring challenges experienced by some agencies included issues with the hiring process itself and the need for concerted hiring efforts targeted towards the necessary skills and qualifications. Additionally, a few agencies also referenced issues with retaining qualified employees.

Hiring and Recruitment. At least 14 (or 58% of) agencies encountered difficulties with recruiting and hiring personnel. This left agencies poorly staffed to perform vital functions and placed a heavier burden on training for new hires lacking necessary skills and knowledge. Affected functions included IT, acquisitions, oversight and ethics, and general agency management as well as government-provided services such as public health and safety, citizen and employee benefits, and national defense. While most references to hiring and recruitment issues were vague, more detailed information was provided regarding:

- **Attracting and hiring qualified personnel.** Agencies faced an array of agency-wide or position-specific problems in recruiting and hiring new personnel. Factors contributing to struggles with attracting qualified applicants included competition with the private sector which could provide more competitive compensation and shorter hiring timelines, restrictive hiring policies, nepotism and favoritism violations, and classification accuracy issues.

Data and Analysis. One of the most important tools for managing the workforce is data. Data can provide agencies with valuable insight into how the workforce is deployed, to what extent they are accomplishing the mission, and what can be undertaken for greater efficiency and effectiveness. Without useful workforce data, gaps and challenges in hiring, staffing, training, skills, and other human capital areas can be difficult to properly address. However, challenges in collecting and analyzing data were encountered by at least 9 (or 38% of) agencies. These challenges were primarily presented in sections dedicated to human capital management, acquisitions, and information systems. Generally, agencies faced difficulties with:

- **Conducting workforce analysis.** Some agencies either did not have plans to analyze certain types of data or conducted analyses in an insufficient manner. Topics that were not adequately analyzed included workload demands; staffing levels (including those among a multi-sector workforce); current and future skill and competency needs; training programs; and hiring timelines. Other analytic shortcomings included not analyzing lower organizational levels or not engaging in future-focused activities. Furthermore, some agencies did not establish metrics to gauge success or assess the effectiveness of various human capital initiatives and interventions.

- **Ensuring sufficient and accurate data.** In many cases, agencies did not collect all of the data needed to conduct essential analyses. Lacking data points included those pertaining to skills, position functions, workload drivers, hiring timelines, and misconduct incidents. In a couple instances, data was subjective or inaccurate, which can make the results of analyses less reliable.

Planning. Throughout the years, agencies have faced various planning requirements through ever-evolving regulations, policies, and guidance. Within this changing landscape, the greatest task is ensuring that these requirements are both designed by policymakers and executed by agencies to provide value to the projects, goals, and missions they are intended to support. While great strides have been made, at least 8 (or 33% of) agencies continued to experience shortcomings in planning practices related to

managing the workforce. The majority of needs and issues were expressed within discussions pertaining to general agency management functions such as finance, IT security, acquisitions, asset visibility, performance, and human capital. Specifically, agencies needed to work on:

- **Expanding workforce and human capital planning.** In recognizing the critical role of employees in achieving agency goals, there was a desire for more workforce and human capital planning. Agencies also acknowledged the need for including human capital information within plans outlining general agency strategies. More-often-than-not, agencies were engaging in activities to develop new workforce, succession, or human capital operating plans or to include human capital information within other agency plans.

- **Improving the development and execution of existing plans.** Where plans already existed, there were specific concerns around the content and execution of plans. Most commonly cited was the ability to truly identify workforce needs and align funding and investments accordingly. Other issues included failing to address plan elements, determining component-level implementation, establishing outcome-oriented performance metrics, and ensuring plans are kept up-to-date.

MAJOR TRENDS SHAPING THE WORKFORCE

To proactively identify and understand developing changes that will likely impact Federal workforce management, OPM coordinated an interagency environmental scan in 2015. The initiative included two teams that focused on different aspects of the Human Capital Framework. Within the information collected by those teams, four trends were identified that affect the workforce at-large:

- The evolving role of workers among automation
- The digitally connected workforce
- The impact of employee health on workplace outcomes
- Shifting generational demographics

Methodology

OPM conducted an environmental scan with over 50 volunteers from 23 agencies, to support both the current iteration of the Closing Skill Gaps Initiative and this report. Environmental scanning is the systematic exploration of the external environment to better understand the nature and pace of change in that environment and identify potential opportunities, challenges, and likely future developments relevant to an organization.[1] For over 8 weeks, teams led by OPM representatives conducted research to each explore one of seven anchors—five mission-critical functional areas and two Human Capital Framework system groupings—using the Social, Technological, Economic, Environmental, and Political (STEEP) framework for segmenting the external environment.

The Talent Management team focused on the aspects of the employee life cycle related to attracting, acquiring, developing, promoting, and retaining diverse and innovative talent. The Planning-Performance-Evaluation team focused on workforce-related analysis, planning, investment, measurement, progress monitoring, and evaluation as well as individual performance management. The OPM team leaders for Talent Management and Planning-Performance-Evaluation conducted a secondary review of the information collected by the teams, to identify key trends that have the potential to affect the workforce at-large. Four major trends were then researched in greater detail. The additional research included online resources such as academic papers, corporate and professional studies and surveys, and journal and news articles. The majority were written within the past five years.

The Evolving Role of Workers among Automation

Organizations will need to prepare for the redefinition of work as the balance of technological and human contributions to mission accomplishment continues to evolve. Automation and robotics will increase in various industries, as technology is made more useful, sophisticated, and economical. They serve as more efficient solutions for production and routine work.[2] However, it should be noted that, historically, technology has been a net creator of jobs.[3] In the near term, most jobs will experience the automation of certain activities rather than the entire occupation.[4] The value workers provide will increasingly shift towards their cognitive abilities, especially those qualities that make them "human."[5]

A changing landscape. Robots are expanding in number and capability around the developed world. The number of industrial robots in global operation has seen a substantial increase. Funding into robotics

other than drones was up 115% in 2015. Excluding a slowdown in 2013, robotics deals have been nearly doubling annually, with robotic companies raising more than $1.4B in funding since 2011.[6] In 2017, it is projected that 1.9 million robots will be in use.[7]

In the near term, technology does not pose a threat of fully replacing many occupations. As of 2015, less than a quarter of recruiters said they expected to replace some jobs with technology in the following two to three years.[8] Based on technology available in 2016, it was estimated that fewer than 5% of occupations could be automated entirely. Rather, 45% of work activities could immediately be done by machines. For 60% of occupations, this includes more than 30% of their activities. However machine assistance may actually amplify the value of expertise and increase work capacity, by providing employees with time to focus on more important work.[9]

One study predicts that automation advances will occur over two phases divided by a "technological plateau." The first phase, thought to be possible in the next two decades, would affect areas such as transportation and logistics work, most administrative and office occupations, and construction. The types of work affected in this first phase are largely manual labor jobs and jobs that do not require high social intelligence. This will be followed by a technological plateau, or a slowing of the automation process. When engineers are able to artificially simulate creative and social skills, the next phase will commence. Harder to predict, the second phase will include jobs that involve skills in persuasion, care, and fine arts.[10]

Preparing for the future. While it may be difficult to make detailed plans for technology that has yet to materialize, organizations can still prepare for the eventuality that advances will occur and spur positive, disruptive change. Ideally, the discomfort associated with change can be minimized by:

- **Cultivating soft skills in the workforce.** In the long term, experts predict a shift from menial and simple labor to more complex and creative labor. From 2001 to 2009, U.S. production and transaction jobs decreased by 2.7 million and 700,000, respectively, while jobs of human interaction increased by 4.8 million—trends which have continued.[11] As of 2015, only 4% of work activities in the U.S. required creativity at a median level of performance. Similarly, only 29% required a median performance level in sensing emotion. However, both are difficult to automate.[12] Additionally, HR professionals said the skills that will be most needed in the next 5 to 10 years include the ability to manage diverse employees, co-creativity and brainstorming, relationship building, innovation, and working as a team.[13] These are the roles that employees will be fulfilling going forward, and it is crucial that organizations have programs in place to cultivate and promote the needed skills and acumen.

- **Positioning the organization for flexibility and adaptability.** It is important to begin preparing for shifts in the way work will be accomplished, by ensuring management systems are in place that will support adopting new technologies and updating talent strategies for evolving skill needs. Leadership must learn to identify which activities within an occupation will require human capabilities and which will benefit from automation. In the Federal landscape, this will require coordinated efforts that allow for and fund technological experimentation and pilots, the fluid and comprehensive collection of skill requirements associated with programs and activities, and strategic foresight activities.

The Digitally Connected Workforce

The internet and social media have powerfully changed the way people communicate and interact with one another and organizations, both at home and at work. They have created a real-time digital lifestyle primarily powered by smartphones. As of 2016, 46% of the world's population, or 3.4 billion people, used the internet, including the 31% that are active social media users and the 27% that use their phones to access social media. This constitutes a 10% increase in internet and social media use and a 17% increase on mobile social media use from just the previous year.[14] As technology continues to evolve and proliferate, organizations' online presence and use of public and enterprise social media platforms will play an increasingly significant role in the way that employers recruit talent, encourage collaboration, and manage collective knowledge.

Recruitment. The internet is a top resource for connecting today's job hunters with employers. Online resources were used by 79% of Americans who looked for work in the two years prior to 2015, with 34% viewing them as the most important tool. Over a quarter of those job seekers used a smartphone or tablet as part of a job search. Additionally, about a third of social media users have used it to look for or research a job and to inform friends of jobs available at their place of employment.[15]

By 2015, 84% of organizations recruited through social media,[16] and 37% used mobile career sites. Modern online recruitment efforts have been said to provide various benefits. The majority of recruiters reported finding their best quality candidates through referrals, followed by social and professional networks and intern-to-hire programs.[17] Additionally, the top reason organizations use social media for recruitment was to target passive candidates that might not otherwise have been contacted.[18] The preceding year, 44% of recruiters stated that implementing social recruitment had improved the quality and quantity of candidates, 34% said it improved time-to-hire, and 30% said it improved employee referrals.[19]

Actions that employers can undertake to further their recruitment efforts through their online presence include:

- **Managing employer branding.** While 65% of recruiters recognized employer branding as a top priority for their organizations,[20] over a quarter cited a lack of brand awareness as one of the biggest challenges they face in attracting top talent. In trying to increase employer brand recognition, the channels found to be most effective were by far social networks and company career websites. Other tactics cited by fewer organizations were marketing and advertising, outbound communication campaigns, mobile career websites, and company blogs.[21]

- **Optimizing mobile capabilities.** While 28% of recent job-seekers, including 53% of 18 to 29 year-olds, used their smartphones as part of a job search, many encountered various technical difficulties. Nearly half of them encountered problems with content not displaying properly on their phones or not being optimized for mobile devices. Other issues occurred when trying to enter large amounts of text, submit required files or documents, and save or bookmark jobs.[22] Two-thirds of organizations have undertaken efforts to reach mobile users, especially by optimizing their career websites, job postings, and application processes for those devices. Some use technology specifically designed for mobile recruiting and accept social networking profiles in lieu of resumes.[23]

Knowledge Management and Collaboration. Time spent online and using social tools for both work-related and personal reasons can benefit organizations. In a poll of over 9,900 employees across 32 countries, 46% of information workers said that using social tools (e.g., instant messaging, text messaging,

video conferencing, news feeds, social networks, and team sites) increased productivity, while only 9% said they reduced efficiency. Additionally, 37% felt they could do their job better if management was more supportive of social tools.[24] Allowing employees to go online for personal reasons can also be beneficial, as those who did so were 9% more productive than those who did not. Positive productivity effects were exhibited when personal internet usage remained within 12% of work time.[25]

Enterprise social networks and tools for internal audiences can assist agencies with:

- **Streamlining knowledge capture and access.** When deployed within organizations, social technologies have the potential to increase productivity by 20 to 25% for those whose work requires complex interactions, independent judgment, and information access. Contributing benefits include streamlined communications, which become searchable and accessible by many, and the sharing of knowledge and best practices. For example, past meetings can be made available through podcasts, and wikis and blogs can enable the creation and dissemination of content beneficial to employees.[26] Leaders can also utilize these tools to enhance communication with the workforce by maintaining blogs, recording podcasts, and immediately delivering news.[27]

- **Fostering teamwork and innovation.** Social tools can also facilitate collaboration and co-creation. Project initiation, team formation, and task completion can be accomplished by employees in any location.[28] They can also be used to host far-reaching brainstorming sessions and assist employees with widening business contacts.[29] In Europe, 46% of employees said that social networking sparked ideas and creativity. Other key benefits were problem-solving and teambuilding.[30] While 42% of information workers reported that social tools resulted in more workplace collaboration, 39% said there was not enough of it at their workplace.[31]

The Impact of Employee Health on Workplace Outcomes

Time spent in a sedentary manner (i.e., not being physically active) negatively affects a person's health and wellness. Since much of the workday is spent sitting at a desk, this places employees at risk for negative health outcomes. Employers have increasingly incorporated more physical activity into the daily routine. Helping employees be physically active can not only improve employee heath but also worksite outcomes such as absenteeism, job stress, job satisfaction, and healthcare utilization.[32]

Business case for being active. Adults ages 18 to 64 should engage in at least two and half hours of moderate-intensity aerobic activity (or one hour and fifteen minutes of vigorous-intensity aerobic activity) a week, plus two days of muscle-strengthening. Many activities can count towards this requirement, as long as they are done in 10 minute increments or longer.[33] Yet, as of 2015, only 21% of adults met the full weekly recommendation, and 49% met the aerobic activity portion.[34] Conversely, U.S. adults spend an estimated six to eight hours a day engaged in sedentary behavior, which includes sitting, driving, reading, watching TV, and using computers and other screens.[35] As a significant portion of their day, it is becoming necessary to evaluate how employees can be active during work hours.

Reimagining the workspace in a way that recognizes employees' health needs can profoundly and positively affect the workforce. There are a number of benefits gained by incorporating physical activity into the workplace, as part of corporate wellness programs. A meta-analysis of 32 publications found that, for every dollar spent on wellness programs, medical and absenteeism costs fell by about $3.27and $2.73, respectively.[36] In a study of nearly 700 workers, moderate physical activity was related to

improved quality of work and overall job performance. Cardio-respiratory fitness was related to improved quantity of work and a reduced need to exert extra effort.[37]

Ways to promote physical activity at work. In the competition for talent, agencies must create and promote health-friendly workspaces to attract and retain talent. Strategies used by employers have included:

- **Installing standing desks.** Stand-capable desks allow employees to quickly adjust their desk stations between sitting and standing positions. They are relatively inexpensive and readily available to agencies through the General Services Administration Global Supply. One-third of surveyed organizations provided standing desks in 2016, which has increased each year since 2013.[38] A pilot investigation into the neurocognitive effects of standing desks on high school freshmen saw improvements in executive brain function (a set of mental skills that help you get things done) and working memory capabilities, after six months of use.[39] Additionally, call center employees provided with standing desks showed a steady increase in productivity compared to their colleagues in seated desks. The standing desk group had 23% more successful calls after one month and 53% after six months.[40]

- **Encouraging exercise during breaks.** In 2016, employers supported exercise by offering onsite fitness centers (26%) and classes (17%) and subsidies or reimbursements for offsite fitness center memberships (28%), offsite fitness classes (17%), and fitness equipment (6%).[41] Employees who exercised regularly onsite at their organizations, usually for 45 minutes or less, showed improved mood and performance on days that they exercised. Associated focus groups reported positive effects such as greater concentration, problem-solving, and resilience as well as a clearer mind and re-energization.[42] For those without access to onsite or nearby facilities, even walking during breaks can provide positive workplace effects. Among physically inactive employees, greater levels of enthusiasm and relaxation were experienced on days that they engaged in 30-minute group-led lunchtime walks. Nervousness also decreased from the morning to the afternoon on those days.[43]

- **Creating opportunities to participate in sports.** Participating in sports can assist with absenteeism, regardless of how many years employees have engaged in them. Employees who participated in sports used sick leave less than those who did not, resulting in an average of 20 fewer sick days over the course of four years. For highly sedentary occupations, the difference was even higher at 24 fewer sick days.[44] Furthermore, group sports have been shown to provide better psychosocial health outcomes beyond other types of physical activity, given their social and enjoyable nature. Multiple studies associated well-being, social functioning, vitality, and reduced stress and distress with adult participation in sports. Among other associated benefits were belonging, life satisfaction, lower depression, mental health, and sense of community.[45] Notably, 45% of men and 43% of women in a 2,000-person poll said that allowing and encouraging staff to play sports together could be used to help boost morale and productivity in the workplace.[46]

Shifting Generational Demographics

Individuals born between the early 1980s and the early 2000s, also known as "millennials," became the largest share of the U.S. workforce in 2015 at 53.5 million or 34%.[47] By 2024, they are roughly projected to constitute about 45% of the workforce.[48] Their experiences with employment and the workplace are influenced by major events and related trends, such as the proliferation of technology, the

economic downturn of the 2008 recession, slower population growth, an aging workforce, and globalization.

These workers are known for frequently transitioning from one job to the next. In a 2016 survey, 25% expected to leave their current employer within a year, and 66% hoped to move on by 2020.[49] The combination of a weak job market and the growing business practice of outsourcing entry-level jobs left young adults with few stepping stones into the workforce, as they tended to be the last to be hired and first to be fired.[50] As a result, 4.6 million millennials were unemployed in 2014, constituting the lion's share of the unemployed,[51] while at the same time, 27% reported they had already worked for five or six employers.[52] And the good news is even though the days of the company "lifer" have come to an end, organizations can still compete for millennial talent and increase retention rates through:

- Flexibility and work/life balance
- Inclusive and ethical leadership
- Skill development and maximization

When delving into these topics, it should be recognized that every employee is an individual. Although generational trends may exist at a macro level, employers should keep in mind the strengths and preferences of each employee.

Flexibility and Work/Life Balance. The desire for greater flexibility has been shaped by modern household dynamics and shifting work values. More than ever, both men and women are looking for a fulfilling career path and family life. Central to this is a flexible work schedule and greater workplace autonomy, allowing employees to achieve job expectations on their own terms through personal ownership of their work/life balance. Of those surveyed, 95% said that work/life balance is important to them.[53]

One in three full-time workers reported that managing the overlap between work and life is becoming harder. The oldest of their generation are entering a strenuous time in their lives, moving into management positions while simultaneously settling down to start families. Additionally, they are 78% more likely than previous generations to have a spouse or partner working full-time.[54]

When at similar ages, millennials and the two preceding generations all valued an intrinsically rewarding job above all else. This includes intangible rewards, such as the opportunity to be creative or the potential to learn new things. However, they place greater importance on extrinsic values (i.e., consequences of work, such as income and advancement) and leisure, especially when compared to baby boomers. They also place less emphasis on social rewards, or those found in the relationships made with coworkers and clients.[55]

Employers can ensure and enhance workplace flexibility and work/life balance by:

- **Offering attractive benefits.** Approximately 56% said that a quality benefits package influences their choice of employer, and 63% said benefits are an important reason for staying with their current employer.[56] Of course, this includes workplace flexibility, which is generally considered to be flexible start and end times and a couple days of telework per week.[57] Additionally benefits such as health coverage, paid vacation time, and retirement savings plans are also important.[58] Of note, 38% of those surveyed indicated that they would be willing to leave the country for the benefit of paid parental leave.[59] Supporting parents in this fashion can

positively affect retention rates, as 32% intended to remain with their current employer for five years, as opposed to only 24% of non-parents.[60]

- **Administering motivating reward systems.** Millennials often expect other material rewards such as promotions and pay raises for the work they do. If current budgets do not allow for monetary rewards, employers can also incorporate leisure time into rewards systems.[61]

- **Removing flexibility stigma.** Employees should be shielded from "flexibility stigma," which is when pushing for workplace flexibilities leads to being labeled as less than fully committed to the job. One out of six millennials reported suffering consequences from this stigma, including receiving lower pay and losing out on promotion opportunities. Employers should support work flexibility and allow it to be customizable, giving employees control over when and where they work. One way to accomplish this would be to establish a proactive manager-initiated process rather than an employee-initiated one.[62]

- **Supporting autonomy in organizational design.** A flatter organizational structure has the potential to empower employees with independent decision making. Additionally, the autonomy it brings can help employees balance their work and home life and offers a more rewarding intrinsic experience.[63]

Inclusive and Ethical Leadership. Corporate responsibility and inclusive management styles are required for effectively engaging employees. Those intending to stay with their organizations for more than five years were far more likely to report a positive culture.[64] The primary reason they leave a job is directly related to their relationship with their boss.[65] Leaders and managers will need to remain cognizant, and possibly be trained, in the employer traits that help attract and retain workers, such as:

- **Promoting corporate values and ethics.** Employers should create and espouse corporate values that are shared with and believed in by their employees. Among those surveyed, 56% said they would never consider working for certain employers due to their values and standards of conduct.[66] Additionally, they desire managers who value transparency and dependability, while also being ethical and fair.[67]

- **Providing continuous performance feedback.** Employees have consistently shown a desire for constant and direct feedback on their performance. Favored job outcomes should be made clear and fit into a timeline, while affording autonomy on how the outcome can be achieved.[68] Frequent feedback is important, as yearly or quarterly reviews often do not suffice. Providing feedback in real-time allows people to adjust their work habits as early as possible.

- **Encouraging the free flow of information.** Just as performance feedback should be provided in real-time and continuously, millennials also desire ideas and information to flow freely among leadership and colleagues. They are not intimidated by engaging in conversations with others due to experience or rank.[69]

Skill Development and Maximization. Younger workers in the global workforce are entering the office with certain skills while lacking in others. As technology has always been at their fingertips, they bring skills that can offer new and innovative methods to get work done. When polled, only 28% of millennials felt that their current organization was making full use of their skill sets.[70] Additionally, 35% were attracted to employers that offered excellent training and development programs.[71] To address skill shortcomings while engaging workers, employers can undertake efforts such as:

- **Mentoring and coaching.** Younger employees valued working with strong coaches and mentors above other opportunities. They prefer to acquire new work-related knowledge and skills working face-to-face and are looking for mentorship relationships which need not only be with managers.[72] Not surprisingly, 68% of those who intended to remain with their organization for more than five years had mentors.[73] In addition to traditional mentoring, two approaches suited for these workers are group mentoring, which utilizes online platforms to create self-organizing topic groups, and reverse mentoring, where an employee teaches senior management useful skills.[74]

- **Providing leadership development opportunities.** About 39% of those surveyed saw leadership as the most prized skill in regard to advancement, but only 24% thought they possessed strong leadership skills. Tellingly, 71% of respondents who said they were likely to leave in the next two years were unhappy with how their leadership skills were being developed.[75]

- **Promoting soft skills in recruitment efforts.** Younger workers tend to be lacking in soft skills, or "people skills." One study argues that the lack of soft skills might be due to mixed signals from employers. Although the majority of managers and recruiters say hard and soft skills are equally important, they prefer to hire college graduates with industry-specific skills.[76] Managers should ensure they interview and recruit for the soft skills that are also needed.

PROMISING AGENCY PRACTICES

The programs and initiatives listed below have been undertaken by Federal agencies in areas that support the priorities established in this report. They are intended to serve as a sample of examples and help generate ideas for other agencies when planning their own efforts in support of this report.

Succession Planning and Knowledge Transfer

- **Formal Onboarding Process.** The Department of Defense, Defense Security Service (DSS) administers a formal onboarding process as a tool to help minimize attrition and develop and sustain an effective workforce. DSS recognizes five onboarding keys to success—understanding the process and planning ahead, communication strategies with clear two-way communication, social integration, peer support with a mandatory "sponsor," and organizational knowledge. With this in mind, the Human Capital Management Office created three important resources for hiring managers. The *Supervisors' Toolkit for Onboarding* outlines best practices, including detailed information about how to manage the first day, first week, first month, first six months, and first year of a new employee's tenure. The *Onboarding Quick Start Guide for the Hiring Manager* summarizes the toolkit in an easy-to-read brochure. Additionally, a refresher onboarding video discusses the key elements of successfully integrating new hires into the agency, and provides detailed information about the roles and responsibilities that managers and sponsors play during the formal onboarding process. The resources are available to DSS employees on the Recruitment Office intranet site and online Security Training, Education and Professionalization Portal.

- **Pathways to Leadership Program**. The Department of Education's Pathways to Leadership Program is designed for GS-11—13 employees who aspire to move into leadership positions. Each year, employees are competitively selected by a panel, based upon established criteria. Since its establishment in 2009, 107 employees have successfully completed the program, and an additional 20 are participating in the 2017 cohort. Participants complete three to four assessments, such as the Myers-Briggs Type Indicator, Emotional Intelligence Quotient, DiSC, and DiSC 363 for Leaders. Two weeklong training sessions incorporate the assessments and address several topics, including the psychology of leadership, group identity theory, and team building. The cohort is also divided into four teams based on their personality assessments, and each team is tasked with developing a high-priority project. Other program activities include a Leadership Development Plan with the supervisor, a Leadership Application Action Plan (six-week experience reviewing the personal impact, challenges, actions taken, and results of a current work project), 10 hours of individual coaching, an informal mentoring relationship, a collateral detail of at least 20 hours, a one-day shadowing assignment, interviewing four senior managers, a leadership book report, and 40 hours of self-selected leadership training.

- **Peer-to-Peer Power Hour.** The Small Business Administration's Peer-to-Peer Power Hour is an initiative designed to foster a continuous learning environment, promote knowledge sharing, and advance professional growth. The sessions provide an opportunity for employees who consider themselves teaching leaders to share their knowledge, insights, and lessons learned on topics specific to their program office with their peers. They are held for one hour on Tuesdays and Thursdays in the Eisenhower Conference Center accompanied by live streams for field

participants. A schedule of upcoming sessions and presentation materials for past and current sessions are available on the Peer-to-Peer Share Point page.

Communication Tools

- **Slack.** General Services Administration, Technology Transformation Service (TTS) employees use Slack as their primary means of communicating with each other throughout the workday. Slack is a tool that helps people communicate with their team and other project teams across the organization in real-time. Since a significant amount of the TTS workforce lives in other cities and works from home, it assists with sustaining the flow of thoughts and ideas and maintaining focus on current challenges. Every team has at least one channel—a dedicated space containing the conversations among team members on a particular topic. Some teams have additional channels, depending on how they need to communicate their streams of work across the organization. For example, the Digital.gov team has the #digitalgov, #digitalgov-platform, and #digitalgov-university channels. Anyone in the organization can create a channel, and employees may also send direct messages to each other. To include external partners, individuals outside TTS may be provided access to a specific channel, as single-channel users. For example, GSA's Strategic Communications Office has access to the #outreach channel but no others. The expectation is that conversations are carried out in real-time or as close to it as possible. Unlike email, it is not uncommon to send a message and receive a response within minutes or seconds. For later reference, all messages and files from public and private channels and direct messages are archived and searchable by those with access to them. The transparency, speed, usefulness, and enjoyment of the tool are touted by many in TTS.

- **Powerpedia.** The Department of Energy's (DOE) Powerpedia is a non-public, employee-created encyclopedia of information about the Department. It uses the same technology that powers Wikipedia (Mediawiki) and can be accessed and edited by any DOE employee or contractor. Powerpedia's mission is to help employees share information on various topics, while improving communication and coordination ~~between~~among DOE organizations, headquarters, and the field. It was partly inspired by Intellipedia, a Wikipedia-like intelligence database created by the Central Intelligence Agency in 2005, which is currently used by the nation's sixteen intelligence agencies.

Human Capital Analysis

- **Human Capital Results-Oriented Management System (HC-ROMS).** The Department of State's HC-ROMS maintains real-time information that enables the Department to measure how well it is strategically managing human capital across organizational outcomes, employee perspectives, program results, and merit compliance findings. It contains a comprehensive list of metrics and measures grouped together by HR Offices and the Foreign Service Institute. Collectively, they provide a holistic perspective for managing the Department's human capital goals, desired outcomes, and standards and assess overall performance and success in achieving results. Additionally, they provide managers with meaningful data to make more informed decisions related to human capital investments in areas such as employee development and recognition.

- **Federal Employee Viewpoint Survey Dashboard.** The Department of the Treasury deployed a series of dynamic dashboards using Tableau, to provide users with an interactive way to view

and analyze human capital data and make data-driven decisions related to the workforce. The dashboards depict Federal Employee Viewpoint Survey (FEVS) data including overviews of key indices, scatter plot charts with trend displays, and the ability to "drill down" or filter the data. Dashboard views include variations related to organization, survey year, question, respondent demographics, and FEVS indices. The tool is used to help improve employee engagement across the Department by raising awareness of employee sentiment, garnering support for Treasury-wide engagement planning, and supporting bureau-specific root cause analysis and FEVS action planning. Moving forward, another dashboard will be deployed to replace the manual diversity dashboards currently in use. The more dynamic dashboard will provide managers with detailed workforce population, hire, and separation data by ethnicity and race indicator, gender, disability, and veteran status across bureaus, grades, and major occupations.

Employee Development

- **Talent Hub and Skills Marketplace.** The Environmental Protection Agency's (EPA's) Talent Hub is a one-stop-shop intranet site that provides information on and allows employees to apply to a range of career development opportunities available across the agency. This includes full-time details, temporary promotions, lateral reassignments, and Skills Marketplace projects. Skills Marketplace projects allow employees, with supervisory approval, to spend up to 20% of their time working on a project in any part of the agency, without leaving their home office. The Talent Hub allows employees to gain skills and broaden the depth of their knowledge and experience. It also enables EPA to identify skills and expertise among the existing workforce and align employees with specific skill requirements to meet temporary, emerging, and permanent needs.

- **Transition to Supervision.** The Department of Education's (ED) Transition to Supervision program develops new managers, supervisors, and team leaders as they transition to their new role as a Federal supervisor. The objective of the year-long centrally funded program is to build leadership competencies essential for new supervisors to be successful. The program includes developmental training, informal learning activities, coaching, individual assessments, and development planning. Each year, 10 employees are selected to participate on a first-come, first-served basis. Participants are required to engage in a consultation with the program manager, a 360-degree leadership assessment, a Leadership Development Plan (LDP), leadership coaching, 80 hours of training, leadership readings, goal tracking with a coach, and independent learning activities. The training hours consist of ED's Supervisory Essentials (32 hours), ED Human Capital Essentials (8 hours), Uniformed Services Employment and Reemployment Rights Act (1 hour), and electives based on the LDP discussed with a coach (39 hours).

Employee Recognition

- **National Honor Awards and More.** EPA's recognition programs include its National Honor Awards, organizational and personal awards, and major event or major milestone awards. The National Honor Awards are comprised of 17 distinct categories, such as Gold and Silver Medals, leadership and management excellence awards, and functionally-based awards (e.g., human resources, advancing environmental protection, and sustainability). In 2016, EPA awarded National Honor Awards to over 700 deserving employees. The organizational and personal awards include Bronze Medals and customer service, rising star, cash, and time-off awards. Thousands of employees have received these awards. The major event awards include responses to national emergencies such as Deepwater Horizon, Superstorm Sandy, and September 11,

2001. The major milestone awards include recognition for reaching 10, 20, 30, and 40 years of Federal service and the EPA Distinguished Career Service Award. These awards allow the agency to properly recognize its more experienced workforce on a regular and recurring basis.

- **Kudos to You Program.** The Small Business Administration's (SBA) Kudos to You Program is a peer-to-peer real-time engagement vehicle that allows employees to recognize the contributions and accomplishments of one another. The program is fully automated and featured on SBA's intranet Employee Gateway page. Recognition is given to those who have "gone the extra mile" and demonstrated exceptional accomplishments in the areas of customer service, problem solving, team work, and civility. Award recipients receive an electronic certificate that they can print and post, and their supervisors also receive an email notification of the recipient's Kudos to You recognition. The program was introduced by an Action Planning Committee consisting of employees and managers, as part of an initiative to address SBA's 2015 Federal Employee Viewpoint Survey results. Since its inception in 2015, the program has received 937 nominations.

Employee Health

- **Capital Bikeshare.** As part of OPM's commitment to employee work-life balance and well-being, employees are provided with memberships in the Capital Bikeshare program, upon request. Currently, the program offers 3,700 bikes at 440 stations across Washington, DC; Arlington, VA; Montgomery County, MD; and Fairfax County, VA. Once an employee is a member, they are able to borrow the bicycles for 30 minutes at no cost. For longer rides, employees pay an additional fee for every 30-minute period thereafter. The program is relatively easy to manage, as the agency provides redeemable discount codes that employees apply to their own accounts to cover the membership fee. This way, each employee who signs up is responsible for maintaining his/her own account and paying for applicable rental costs. Employee participation has varied over the years, but it is utilized by employees from across the entire agency, including those in the DC suburbs. Some employees have reported that they use this program to travel to meetings within DC, rather than taking a cab or driving, supporting their health while providing a direct return on the agency's investment. Biking saves fuel costs, prevents carbon emissions, provides an exercise opportunity for employees, and supports employee commitment.

- **Census Bureau Welfare and Recreation Association (CBWRA).** Organized in 1950, the CBWRA is an employee resource group that promotes the health and well-being of employees and provides athletic, social, and other events and educational or entertainment programs. The association currently has 16 active clubs under its umbrella, including Green Mountain People (GMP), also known as the Census Outdoor Club; Volleyball League; Tennis Club; Co-Ed Flag Football Club; Soccer Club; Softball Club; Mind Body Spirit Club; and All Around Town and Beyond Club. The group sponsors events for employees during lunch breaks, after work hours, and on weekends. From playing volleyball outside during lunch to renting camp and recreational equipment, there are numerous activities available. For example, GMP hosted a six-mile Raven Rocks Hike on May 20, 2017, and horseback riding at Piscataway Riding Stables in Clinton, MD on June 4, 2017. All Census Bureau and Bureau of Economic Analysis employees as well as contractors at headquarters and the Bowie Computer Center are eligible for membership and participation. As of 2017, CBWRA has approximately 800 members. Members pay annual $3 dues and, at times, an additional cost to participate in special events.

REFERENCES

[1] Jackson, M. (2013). *Practical foresight guide*. Retrieved from Shaping Tomorrow website: https://www.shapingtomorrow.com/media-centre/pf-ch03.pdf

[2] West, D. M. (2015). *What happens if robots take the jobs? The impact of emerging technologies on employment and public policy*. Retrieved from Brookings Institution website: https://www.brookings.edu/wp-content/uploads/2016/06/robotwork.pdf

[3] Smith, A., & Anderson, J. (2014). *AI, robotics, and the future of jobs*. Retrieved from Pew Research Center website: http://www.pewinternet.org/2014/08/06/future-of-jobs/

[4] Chui, M., Manyika, J., & Miremadi, M. (2015, November). Four fundamentals of workplace automation. *McKinsey Quarterly*. Retrieved from http://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/four-fundamentals-of-workplace-automation

[5] Colvin, G. (2015, August). Humans are underrated. *Fortune*. Retrieved from http://fortune.com/2015/07/23/humans-are-underrated/

[6] CB Insights. (2016, March). *Robots r' us: Funding and deal activity to robotics see new highs in 2015*. Retrieved from https://www.cbinsights.com/research/robotics-startups-funding/

[7] West, D. M. (2015). *What happens if robots take the jobs? The impact of emerging technologies on employment and public policy*. Retrieved from Brookings Institution website: https://www.brookings.edu/wp-content/uploads/2016/06/robotwork.pdf

[8] *Jobvite. (2015). 2015 Recruiter Nation Survey. Retrieved from* https://www.jobvite.com/wp-content/uploads/2015/09/jobvite_recruiter_nation_2015.pdf

[9] Chui, M., Manyika, J., & Miremadi, M. (2015, November). Four fundamentals of workplace automation. *McKinsey Quarterly*. Retrieved from http://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/four-fundamentals-of-workplace-automation

[10] Frey, C. B., & Osborne, M. A. (2017). The future of employment: How susceptible are jobs to computerisation? *Technological Forecasting and Social Change, 114*, 254–280. https://doi.org/10.1016/j.techfore.2016.08.019

[11] Manyika, J., Lund, S., Auguste, B., & Ramaswamy, S. (2012). *Help wanted: The future of work in advanced economies*. Retrieved from McKinsey Global Institute website: http://www.mckinsey.com/global-themes/employment-and-growth/future-of-work-in-advanced-economies

[12] Chui, M., Manyika, J., & Miremadi, M. (2015, November). Four fundamentals of workplace automation. *McKinsey Quarterly*. Retrieved from http://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/four-fundamentals-of-workplace-automation

[13] Oxford Economics. (2012). *Global talent 2021: How the new geography of talent will transform human resource strategies*. Retrieved from https://www.oxfordeconomics.com/Media/Default/Thought%20Leadership/global-talent-2021.pdf

[14] Kemp, S. (2016). *Digital in 2016*. Retrieved from We Are Social website: https://wearesocial.com/uk/special-reports/digital-in-2016

[15] Smith, A. (2015). *Searching for work in the digital era*. Retrieved from Pew Research Center website: http://www.pewinternet.org/2015/11/19/searching-for-work-in-the-digital-era/

[16] Society for Human Resource Management. (2016). *SHRM survey findings: Using social media for talent acquisition—recruitment and screening*. Retrieved from https://www.shrm.org/hr-today/trends-and-forecasting/research-and-surveys/Documents/SHRM-Social-Media-Recruiting-Screening-2015.pdf

[17] Jobvite. (2015). *The Jobvite Recruiter Nation Survey 2015*. Retrieved from https://www.jobvite.com/wp-content/uploads/2015/09/jobvite_recruiter_nation_2015.pdf

[18] Society for Human Resource Management. (2016). *SHRM survey findings: Using social media for talent acquisition—recruitment and screening*. Retrieved from https://www.shrm.org/hr-today/trends-and-forecasting/research-and-surveys/Documents/SHRM-Social-Media-Recruiting-Screening-2015.pdf

[19] Jobvite. (2014). *2014 Social Recruiting Survey*. Retrieved from Society for Human Resource Management website: https://www.shrm.org/ResourcesAndTools/hr-topics/technology/Documents/Jobvite_SocialRecruiting_Survey2014.pdf

[20] Abbot, L., & Bevegni, S. (2016). *United States Staffing Trends 2016*. Retrieved from LinkedIn website: https://business.linkedin.com/talent-solutions/resources/job-trends/2016/us-staffing-trends

[21] Jobvite. (2015). *The Jobvite Recruiter Nation Survey 2015*. Retrieved from https://www.jobvite.com/wp-content/uploads/2015/09/jobvite_recruiter_nation_2015.pdf

[22] Smith, A. (2015). *Searching for work in the digital era*. Retrieved from Pew Research Center website: http://www.pewinternet.org/2015/11/19/searching-for-work-in-the-digital-era/

[23] Society for Human Resource Management. (2016). *SHRM survey findings: Using social media for talent acquisition—recruitment and screening*. Retrieved from https://www.shrm.org/hr-today/trends-and-forecasting/research-and-surveys/Documents/SHRM-Social-Media-Recruiting-Screening-2015.pdf

[24] Ipsos. (2013, June 7). *Nearly half of information workers say that using social tools has increased their productivity* [Press release]. Retrieved from https://www.ipsos.com/sites/default/files/news_and_polls/2013-06/6143.pdf

[25] Coker, B. L. S. (2011). Freedom to surf: The positive effects of workplace internet leisure browsing. *New Technology, Work and Employment, 26*(3), 238–247. https://doi.org/10.1111/j.1468-005X.2011.00272.x

[26] Chui, M., Manyika, J., Bughin, J., Dobbs, R., Roxburgh, C., Sarrazin, H., ... Westergren, M. (2012). *The social economy: Unlocking value and productivity through social technologies*. Retrieved from McKinsey Global Institute website: http://www.mckinsey.com/industries/high-tech/our-insights/the-social-economy

[27] Society for Human Resource Management. (2016). *Managing and leveraging workplace use of social media*. Retrieved from https://www.shrm.org/resourcesandtools/tools-and-samples/toolkits/pages/managingsocialmedia.aspx

[28] Chui, M., Manyika, J., Bughin, J., Dobbs, R., Roxburgh, C., Sarrazin, H., ... Westergren, M. (2012). *The social economy: Unlocking value and productivity through social technologies*. Retrieved from McKinsey Global Institute website: http://www.mckinsey.com/industries/high-tech/our-insights/the-social-economy

[29] Society for Human Resource Management. (2016). *Managing and leveraging workplace use of social media*. Retrieved from https://www.shrm.org/resourcesandtools/tools-and-samples/toolkits/pages/managingsocialmedia.aspx

[30] AT&T. (2008, November 11). *Social networking in the workplace increases efficiency* [Press release]. Retrieved from https://www.att.com/gen/press-room?pid=4800&cdvn=news&newsarticleid=26293

[31] Ipsos. (2013, June 7). *Nearly half of information workers say that using social tools has increased their productivity* [Press release]. Retrieved from https://www.ipsos.com/sites/default/files/news_and_polls/2013-06/6143.pdf

[32] Conn, V. S., Hafdahl, A. R., Cooper, P. S., Brown, L. M., & Lusk, S. L. (2009). Meta-analysis of workplace physical activity interventions. *American Journal of Preventive Medicine*, 37, 330–339. https://doi.org/10.1016/j.amepre.2009.06.008

[33] Centers for Disease Control and Prevention. (2015). How much physical activity do adults need? Retrieved from https://www.cdc.gov/physicalactivity/basics/adults/

[34] Ward, B. W., Clarke, T. C., Nugent, C. N., & Schiller, J. S. (2016). *Early release of selected estimates based on data from the 2015 National Health Interview Survey*. Retrieved from Centers for Disease Control and Prevention website: https://www.cdc.gov/nchs/data/nhis/earlyrelease/earlyrelease201605.pdf

[35] Young, D. R., Hivert, M.-F., Alhassan, S., Camhi, S. M., Ferguson, J. F., Katzmarzyk, P. T., ... Yong, C. M. (2016). Sedentary behavior and cardiovascular morbidity and mortality: A science advisory from the American Heart Association. *Circulation*, 134, e262–e279. https://doi.org/10.1161/CIR.0000000000000440

[36] Baicker, K., Cutler D, & Song Z. (2010). Workplace wellness programs can generate savings. *Health Affairs, 29*(2), 304–311. https://doi.org/10.1377/hlthaff.2009.0626

[37] Pronk, N. P., Martinson, B., Kessler, R. C., Beck, A. L., Simon, G. E., & Wang, P. (2004). The association between work performance and physical activity, cardiorespiratory fitness, and obesity. *Journal of Occupational & Environmental Medicine, 46*(1), 19–25. https://doi.org/10.1097/01.jom.0000105910.69449.b7

[38] Society for Human Resource Management. (2016). *2016 employee benefits: Looking back at 20 years of employee benefits offerings in the U.S.* Retrieved from Sagewell Partners website: http://www.sagewellpartners.com/wp-content/uploads/2014/04/2016-SHRM-Employee-Benefits-Full-Report.pdf

[39] Mehta, R. K., Shortz, A. E., & Benden, M. E. (2016). Standing up for learning: A pilot investigation on the neurocognitive benefits of stand-biased school desks. *International Journal of Environmental Research and Public Health, 13*(1), 59. https://doi.org/10.3390/ijerph13010059

[40] Pickens, A. W., Kress, M. M., Benden, M. E., Zhao, H., Wendel, M., & Congleton, J. J. (2016). Stand-capable desk use in a call center: A six-month follow-up pilot study. *Public Health, 135*, 131–134. https://doi.org/10.1016/j.puhe.2015.10.024

[41] Society for Human Resource Management. (2016). *2016 employee benefits: Looking back at 20 years of employee benefits offerings in the U.S.* Retrieved from Sagewell Partners website: http://www.sagewellpartners.com/wp-content/uploads/2014/04/2016-SHRM-Employee-Benefits-Full-Report.pdf

[42] Coulson, J. C., McKenna, J., & Field, M. (2008). Exercising at work and self-reported work performance. *International Journal of Workplace Health Management, 1*(3), 176-97. https://doi.org/10.1108/17538350810926534

[43] Thøgersen-Ntoumani, C., Loughren, E. A., Kinnafick, F.-E., Taylor, I. M., Duda, J. L., & Fox, K. R. (2015). Changes in work affect in response to lunchtime walking in previously physically inactive employees: A randomized trial. *Scandinavian Journal of Medicine & Science in Sports, 25*(6), 778–787. https://doi.org/10.1111/sms.12398

[44] van den Heuvel, S. G., Boshuizen, H. C., Hildebrandt, V. H., Blatter, B. M., Ariëns, G. A., & Bongers, P. M. (2005). Effect of sporting activity on absenteeism in a working population. *British Journal of Sports Medicine, 39*(3), 1–5. https://doi.org/10.1136/bjsm.2004.013052

[45] Eime, R. M., Young, J. A., Harvey, J. T., Charity, M. J., & Payne, W. R. (2013). A systematic review of the psychological and social benefits of participation in sport for adults: Informing development of a conceptual model of health through sport. *International Journal of Behavioral Nutrition and Physical Activity, 10*(135), 1–14. https://doi.org/10.1186/1479-5868-10-135

[46] *Social Issues Research Centre. (2006). The impact of sport on the workplace. Retrieved from http://www.sirc.org/publik/sport_and_the_workplace.pdf*

[47] Fry, R. (2015, May 11). Millennials surpass Gen Xers as the largest generation in U.S. labor force. *Fact Tank*. Retrieved from http://www.pewresearch.org/fact-tank/2015/05/11/millennials-surpass-gen-xers-as-the-largest-generation-in-u-s-labor-force/

[48] Toossi, M. (2015, December). Labor force projections to 2024: The labor force is growing, but slowly. *Monthly Labor Review*. https://doi.org/10.21916/mlr.2015.48

[49] Deloitte. (2016). *The 2016 Deloitte Millennial Survey: Winning over the next generation of leaders*. Retrieved from https://www2.deloitte.com/content/dam/Deloitte/global/Documents/About-Deloitte/gx-millenial-survey-2016-exec-summary.pdf

[50] Seppanen, S., & Gualtieri, W. (2012). *The millennial generation: Research review*. Retrieved from U.S. Chamber of Commerce Foundation website: https://www.uschamberfoundation.org/reports/millennial-generation-research-review

[51] Fottrell, Q. (2014, July 7). 40% of unemployed workers are millennials. *MarketWatch*. Retrieved from http://www.marketwatch.com/story/40-of-unemployed-workers-are-millennials-2014-07-03

[52] Baird, C. H. (2015). *Myths, exaggerations and uncomfortable truths: The real story behind millennials in the workplace*. Retrieved from IBM website: https://www-935.ibm.com/services/us/gbs/thoughtleadership/millennialworkplace/

[53] PricewaterhouseCoopers. (2011). *Millennials at work: Reshaping the workplace*. Retrieved from https://www.pwc.com/m1/en/services/consulting/documents/millennials-at-work.pdf

[54] Fondas, N. (2015, May 7). Millennials Say They'll Relocate for Work-Life Flexibility. *Harvard Business Review*. Retrieved from https://hbr.org/2015/05/millennials-say-theyll-relocate-for-work-life-flexibility

[55] Twenge, J. M., Campbell, S. M., Hoffman, B. J., & Lance, C. E. (2010). Generational differences in work values: Leisure and extrinsic values increasing, social and intrinsic values decreasing. *Journal of Management, 36*(5), 1117-1142. https://doi.org/10.1177/0149206309352246

[56] Seppanen, S., & Gualtieri, W. (2012). *The millennial generation: Research review*. Retrieved from U.S. Chamber of Commerce Foundation website: https://www.uschamberfoundation.org/reports/millennial-generation-research-review

[57] Fondas, N. (2015, May 7). Millennials Say They'll Relocate for Work-Life Flexibility. *Harvard Business Review*. Retrieved from https://hbr.org/2015/05/millennials-say-theyll-relocate-for-work-life-flexibility

[58] Seppanen, S., & Gualtieri, W. (2012). *The millennial generation: Research review*. Retrieved from U.S. Chamber of Commerce Foundation website: https://www.uschamberfoundation.org/reports/millennial-generation-research-review

[59] Fondas, N. (2015, May 7). Millennials Say They'll Relocate for Work-Life Flexibility. *Harvard Business Review*. Retrieved from https://hbr.org/2015/05/millennials-say-theyll-relocate-for-work-life-flexibility

[60] Deloitte. (2016). *The 2016 Deloitte Millennial Survey: Winning over the next generation of leaders*. Retrieved from https://www2.deloitte.com/content/dam/Deloitte/global/Documents/About-Deloitte/gx-millenial-survey-2016-exec-summary.pdf

[61] Twenge, J. M., Campbell, S. M., Hoffman, B. J., & Lance, C. E. (2010). Generational differences in work values: Leisure and extrinsic values increasing, social and intrinsic values decreasing. *Journal of Management, 36*(5), 1117-1142. https://doi.org/10.1177/0149206309352246

[62] Fondas, N. (2015, May 7). Millennials Say They'll Relocate for Work-Life Flexibility. *Harvard Business Review*. Retrieved from https://hbr.org/2015/05/millennials-say-theyll-relocate-for-work-life-flexibility

[63] Twenge, J. M., Campbell, S. M., Hoffman, B. J., & Lance, C. E. (2010). Generational differences in work values: Leisure and extrinsic values increasing, social and intrinsic values decreasing. *Journal of Management, 36*(5), 1117-1142. https://doi.org/10.1177/0149206309352246

[64] Deloitte. (2016). *The 2016 Deloitte Millennial Survey: Winning over the next generation of leaders*. Retrieved from https://www2.deloitte.com/content/dam/Deloitte/global/Documents/About-Deloitte/gx-millenial-survey-2016-exec-summary.pdf

[65] Seppanen, S., & Gualtieri, W. (2012). *The millennial generation: Research review*. Retrieved from U.S. Chamber of Commerce Foundation website: https://www.uschamberfoundation.org/reports/millennial-generation-research-review

[66] PricewaterhouseCoopers. (2011). *Millennials at work: Reshaping the workplace*. Retrieved from https://www.pwc.com/m1/en/services/consulting/documents/millennials-at-work.pdf

[67] Baird, C. H. (2015). *Myths, exaggerations and uncomfortable truths: The real story behind millennials in the workplace*. Retrieved from IBM website: https://www-935.ibm.com/services/us/gbs/thoughtleadership/millennialworkplace/

[68] Correia, T. (2016). *Women, millennials, and the future workplace: Empowering all employees*. Retrieved from Georgetown Institute for Women, Peace and Security website: https://giwps.georgetown.edu/sites/giwps/files/women_millennials_and_the_future_workplace.pdf

[69] Chou, S. Y. (2012). Millennials in the workplace: A conceptual analysis of millennials' leadership and followership styles. *International Journal of Human Resource Studies, 2*(2), 71–83. https://doi.org/10.5296/ijhrs.v2i2.1568

[70] Deloitte. (2016). *The 2016 Deloitte Millennial Survey: Winning over the next generation of leaders.* Retrieved from https://www2.deloitte.com/content/dam/Deloitte/global/Documents/About-Deloitte/gx-millenial-survey-2016-exec-summary.pdf

[71] PricewaterhouseCoopers. (2011). *Millennials at work: Reshaping the workplace.* Retrieved from https://www.pwc.com/m1/en/services/consulting/documents/millennials-at-work.pdf

[72] PricewaterhouseCoopers. (2011). *Millennials at work: Reshaping the workplace.* Retrieved from https://www.pwc.com/m1/en/services/consulting/documents/millennials-at-work.pdf

[73] Deloitte. (2016). *The 2016 Deloitte Millennial Survey: Winning over the next generation of leaders.* Retrieved from https://www2.deloitte.com/content/dam/Deloitte/global/Documents/About-Deloitte/gx-millenial-survey-2016-exec-summary.pdf

[74] Correia, T. (2016). *Women, millennials, and the future workplace: Empowering all employees.* Retrieved from Georgetown Institute for Women, Peace and Security website: https://giwps.georgetown.edu/sites/giwps/files/women_millennials_and_the_future_workplace.pdf

[75] Deloitte. (2016). *The 2016 Deloitte Millennial Survey: Winning over the next generation of leaders.* Retrieved from https://www2.deloitte.com/content/dam/Deloitte/global/Documents/About-Deloitte/gx-millenial-survey-2016-exec-summary.pdf

[76] Bentley University. (2014). *The PreparedU Project: An in-depth look at millennial preparedness for today's workforce* [White paper]. Retrieved from http://www.bentley.edu/newsroom/latest-headlines/mind-of-millennial