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Fed Cloud: The future of federal work

A GovLab idea

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About GovLab

GovLab is a think tank in the Deloitte Federal practice that focuses on innovation in the public sector. It works closely with senior government executives and thought leaders from across the globe. GovLab Fellows conduct research into key issues and emerging ideas shaping the public, private and non-profit sectors. Through exploration and analysis of government's most pressing challenges, GovLab seeks to develop innovative yet practical ways that governments can transform the way they deliver their services and prepare for the challenges ahead.

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Executive summary

Today's government is being asked to solve the problems of the 21st century with a workforce and managerial structure designed for a different era. The traditional federal workforce model, designed before the computer age, does not take full advantage of advances in workforce innovations to address many of the complex issues government faces. Addressing major challenges has often resulted in the creation of new, permanent structures. Instead of simply creating new departments and agencies the government could instead move to a more flexible workforce structure that could effectively react to unforeseen and ever changing events.

Cloud computing is revolutionizing the way businesses and government use technology. This same concept could transform how the federal government organizes its workforce. Enter Fed Cloud:

- **Shared resources:** Cloud applications reside on shared hardware, which is accessible by many users. In Fed Cloud, cloud workers reside in a central talent pool, accessible by many agencies.
- **Cost effective:** Cloud computing reduces the amount of overall hardware required, which can reduce maintenance cost and costs of associated personnel. Similarly, Fed Cloud could reduce the burden on each individual agency to maintain and manage a large workforce.
- **Dynamically scalable:** Co-locating software on shared hardware allows processing power to be quickly shifted from low-need to high-need programs without going through acquisitions cycles to purchase additional hardware. By pooling workers in a government-wide Fed Cloud, resources could be quickly shifted from low-need to high-need programs and agencies, without requiring individual agencies to hire new workers or standup new organizations.

A cadre of government-wide workers could help small mission-focused agencies adapt to evolving circumstances. This model leverages changes in work, workers, workplaces, processes, and technologies. Fed Cloud would be a collaborative teaming environment that supports shared services, workplace flexibility and scalable, on-demand capabilities.

Fed Cloud's effectiveness depends on first breaking up the current structure of government by thinning agencies to become hyper mission-focused, creating a set of shared services to handle much of the back office support functions, and creating a government-wide cloud of workers to support agencies and shared services. This would require evaluating where existing roles would fall within the new model and may necessitate some changes to current human resources norms. Evolving workforce trends and expectations can provide an opportunity to create a system that meets this need. Finally, Fed Cloud would require a bold leader or organization to take the first steps to move towards the cloud.

Fed Cloud would not be for everyone, and it would require rethinking some traditional human resource norms. However, by building on concepts that have been effective in the private sector and elsewhere, a cloud workforce could help the federal government meet tomorrow's challenges-both foreseen and unforeseen.

Introduction

Let's start with Jane, a freshly minted college graduate who joined the federal government as a clerk in 1971. Jane's work consisted largely of entering information into databases and creating reports, requiring her to sit at a terminal near a mainframe computer that filled an entire room. Jane and her fellow employees were expected to be at their desks from 9 to 5 p.m., five days a week. She was grateful to have a steady 9-to-5 job, and planned to spend her entire career with her agency.

Now flash forward 40 years and meet her grandson, Bobby. He carries a slim tablet wherever he goes that has more computing power than the mainframe with which Jane worked. It also allows him to remain connected to the Internet and work 24/7, from wherever he is.

Bobby expects to switch from project to project and office to office as his career develops and his interests evolve. If he feels he has reached the limit of his ability to learn or grow in one role, he will look elsewhere for a new opportunity. What if government could give Bobby the opportunities and experiences he seeks?

The Fed Cloud concept proposed in this paper would restructure the government workforce in a way that takes advantage of the talents and preferences of workers like Bobby, who are entering the workforce today. The model is based on a large body of research, from interviews with public and private-sector experts to best practices from innovative organizations — public and private.

This report details trends in work and technology that offer significant opportunities for improving the efficiency and effectiveness of the government workforce. It lays out the Fed Cloud model, explaining how the federal government could be organized to take advantage of its flexibility. It examines how work would be performed in the new model and discusses potential changes to government HR programs to support the Fed Cloud. Other sections provide resources for executives, including a tool to help determine cloud eligibility steps they can take to pilot the cloud concept and future scenarios illustrating the cloud in action.

> None of us can predict with certainty what the next big industry will be, or where the new jobs will come from…. What we can do — what America does better than anyone else — is spark the creativity and imagination of our people.
>
> — President Obama, 2011 State of the Union Address

The Fed Cloud model represents a dramatic departure from the status quo. It is bound to be greeted with some skepticism. Absent such innovation, however, the government will be left to confront the challenges of tomorrow with the workforce structure of yesterday. The details of the Fed Cloud model are open for debate, which this paper intends to jumpstart; the need for change should not be.

How we work today — and tomorrow

Forty years ago, more than half of employed American adults worked in either blue-collar or clerical jobs. Today, less than 40 percent work in these same categories, and the share continues to shrink.[1] Jobs requiring routine or manual tasks are disappearing, while those requiring complex communication skills and expert thinking are becoming the norm.[2] Increasingly, employers seek workers capable of creative and knowledge-based work.

The next generation of creative knowledge workers has already entered the job market. These "Millennials" came of age in a rapidly and radically changing world. They are the first true digital "natives." They have grown up with instant access to information through technology. As such, Millennials have considerably different expectations for the kind of work they do and information they use. The pursuit for variety in work has led Millennials to cite simply "needing a change" as their top reason for switching jobs. [4]

Advances in technology also have changed the actual ways in which people can perform work. The ability to crowdsource tasks is one example of this. Since its founding in 2001, volunteers have produced and contributed to over 19 million articles in 281 languages on Wikipedia.[5] Built around this concept, a burgeoning industry is developing around "microtasking," dividing work up into small tasks that can be farmed out to workers. Amazon's Mechanical Turk, rolled out in 2005, allows users to post tasks to a platform where registered workers can accept and complete them for a small fee. As this paper was written, more than 114,000 tasks were available on Mechanical Turk.[6]

> We should ask ourselves whether we're truly satisfied with the status quo. Are our workday lives so fulfilling, and our organizations so boundlessly capable, that it's now pointless to long for something better?
>
> — Gary Hamel, author of *The Future of Management*

Such technologies may offer suitable possibilities for the public sector. Microtask, a Finnish cloud labor company, maintains Digitalkoot, a program that helps the Finnish National Library convert its image archives into digital text and correct existing errors. It does so with volunteered labor; participants simply play a game where they are shown an image of a word and then must type it out to help a cartoon character cross a bridge. In doing so, they are turning scanned images into searchable text, greatly improving search accuracy of old manuscripts.[7] At present, more than 50,000 people have completed over 4 million microtasks associated with this project.[8]

Cloud definitions

Cloud computing: "Internet-based computing, whereby shared resources, software and information are provided to computers and other devices on-demand, like electricity."

— Amazon

Crowdsourcing: "Neologistic compound of Crowd and Outsourcing for the act of taking tasks traditionally performed by an employee or contractor, and outsourcing them to a group of people or community, through an "open call" to a large group of people (a crowd) asking for contributions."

— Wikipedia

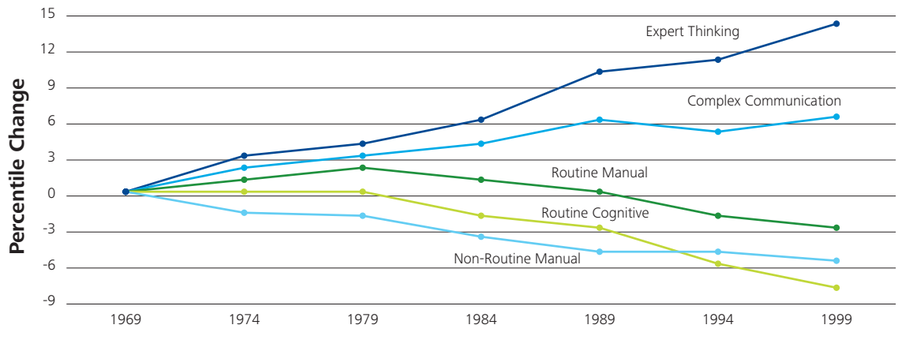
Fed Cloud: "A new model for government based on team collaboration, whereby workforce resources can be surged to provide services to Federal agencies on-demand."

— Govlab

As the pace of computing power and machine learning increases, professors Frank Levy and Richard Murnane predict that more tasks will move from human to computer processing.[9] Skeptics need look no further than IBM's Watson, a computer that can answer questions posed in natural language. In February 2011, Watson defeated two all-time champions of the quiz show Jeopardy! This was not solely a publicity stunt; IBM hopes to sell Watson to hospitals and call centers to help them answer questions from the public.[10]

On December 9, 2010, President Obama signed a bill calling for more telework opportunities for government employees — a powerful step in the right direction for employees whose natural work rhythm is not locked into "9 to 5." Best Buy took this concept a step further, when it experimented with a "Results Only Work Environment" (ROWE). In a ROWE, what matters is not whether an employee is in her office, but rather that she completes her work and achieves measurable outcomes. In a ROWE, salaried employees must put in as much time as is actually needed to do their work — no more and no less.

Figure 1: Trends in routine and non-routine tasks in the U.S. 1960-2002[3]



Source: Frank Levy and Richard J. Murnane, *The New Division of Labor: How Computers are Creating the Next Job Market*, (Princeton: Princeton University Press, 2004), p. 50.

The decline in routine and manual tasks and the rise of new ways of working is not isolated to the private sector. In 1950, shortly after the General Schedule (GS) was created, the federal workforce was largely comprised of clerks performing repetitive tasks. About 62 percent of the federal workforce fell within GS grades 1-5, while employees in the top five grades accounted for only 11 percent of the whole. By 2000, those relationships were reversed. Fifteen percent of the federal workforce fell within the bottom five grades, compared to 56 percent in the top five.[11]

President Obama's 2012 Budget notes: "Fifty years ago, most white collar Federal employees performed clerical tasks, such as posting Census figures in ledgers and retrieving taxpayer records from file rooms. Today their jobs are vastly different, requiring advanced skills to serve a knowledge-based economy."[12]

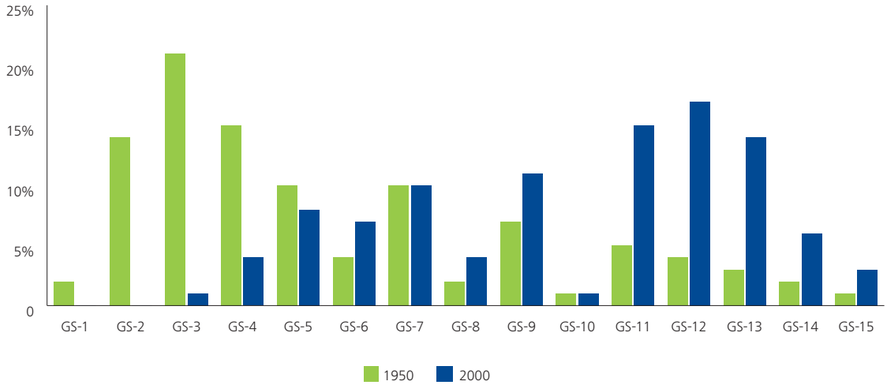
The swelling ranks of GS 10-15s indicate a shift in federal jobs towards creative, collaborative and complex work. The workforce *structure*, however, designed for the clerks of the 1950s, remains the same. With limited flexibility to distribute its resources, the government often is forced to address change by creating new agencies and programs. This can be seen following major events like 9/11, the financial crisis of 2008, and the passage of healthcare reform in 2010.

Given increasing budgetary pressures and a burgeoning national debt, the conventional model of creating new agencies or permanent structures in response to new challenges is unsustainable. This is exacerbated by our inability to accurately predict future needs and trends. Consider a 1968 *Business Week* article that proclaimed "the Japanese auto industry isn't likely to carve out a big share of the market for itself," or the president of Digital Equipment Corporation, who in 1977 said, "[t]here is no reason anyone would want a computer in their home."[14]

The world is full of experts who attempt to predict the future — and fail.[15]

Instead of endeavoring to predict the future, the federal government could choose to create a flexible workforce that can *quickly adapt* to future work requirements. To accomplish this, government can learn from a game-changing concept in the technology world: cloud computing.

Figure 2: The changing federal workforce 1950-2000[13]



Source: United States Office of Personnel Management, *A Fresh Start for Federal Pay: A Case for Modernization* (April 2002), p. 5. http://www.opm.gov/strategiccomp/whtpaper.pdf

Computing	Cloud characteristics	People
Cloud applications reside on shared hardware, accessible by many users.	Shared resources	Cloud workers reside in a central talent pool, accessible by many agencies.
Reducing the amount of overall hardware can reduce maintenance cost and costs of associated personnel.	More cost effective (efficiency)	A government-wide cloud of workers could reduce the burden on each individual agency to maintain and manage a large workforce.
Hardware is partitioned to allow for specific applications. This space is reclaimed once the application is no longer needed.	Virtualized	Cloud workers can be assigned to specific agencies to complete tasks/projects then return to the central talent pool once work is complete.
Access to data or applications in the cloud requires constant network connectivity.	Dependent on network connection	In order to access cloud resources, agencies must be part of the Fed Cloud system.
Co-locating software on hardware allows processing power to be quickly shifted as from low-need to high-need programs without going through acquisitions cycles to purchase additional hardware.	Dynamically scalable(more quickly shift resources)	By pooling workers in a government-wide cloud, resources can be quickly shifted from low-need to high-need programs and agencies, without requiring individual agencies to hire new workers or standup new departments.
Rather than maintaining separate hardware for each user, cloud providers use centralized hardware.	Lower maintenance costs	Rather than each agency staffing and managing each anticipated business need, workers exist in a central cloud and are managed by a central HR function.

Major organizations and small startups alike increase their flexibility by sharing storage space, information and resources in a "cloud" allowing them to quickly scale resources up and down, as needed. Why not apply the cloud model to people? The creation of a government-wide human cloud could provide significant benefits, including:

- the ability to apply resources when and where they are needed;
- increased knowledge flow across agencies and a new focus on broad, government-wide missions;
- a reduction in the number of permanent programs; and
- fewer structures that stifle creativity and interfere with the adoption of new technologies and innovations.

A cloud-based federal workforce or "Fed Cloud" could include workers who perform a variety of creative, problem-focused work. Rather than being slotted into any single federal agency, cloud workers would be true *government-wide* employees.

"With limited flexibility to distribute its resources, the government often is forced to address change by creating new agencies and programs."

Breaking up bureaucracies

This section outlines the organizational structure of the Fed Cloud model, which rests on three main pillars: a cloud of federal workers, thin executive agencies and shared services.

The cloud

The current federal model tends to constrain workers by isolating them in separate agencies.

Consider the 2010 scare over Salmonella and subsequent recall of more than 500 million eggs.[17] The problem of contaminated food is complicated. Multiple agencies focusing on food production, public health and law enforcement have a stake in increasing food safety. The structure of these agencies often confines employees to work in information silos, creating inherent operational inefficiencies. In a cloud workforce model, experts in each area — food production, public health and law enforcement — could be pulled together to support the investigation of the food contamination and propose corrective measures.

The Fed Cloud could become a new pillar of the federal government, comprising permanent employees who undertake a wide variety of creative, problem-focused work. As needed, the Fed Cloud model also can take advantage of the efforts of those outside the federal government, including private citizens looking for extra part-time work, full-time contractors and individual consultants.

Cloud workers would vary in background and expertise but would exhibit traits of "free-agent" workers — self-sufficient, self-motivating employees who exhibit a strong loyalty to teams, colleagues, and clients. Author Daniel Pink argues that 33 million Americans — one-quarter of the workforce — already operate as free agents.[18]

Fed Cloud: Problem-focused	
Types of work	Highly collaborative work such as policy creation, analyzing information and reporting on data results
Types of roles	• Program managers • Economists • Performance experts • Public health specialists

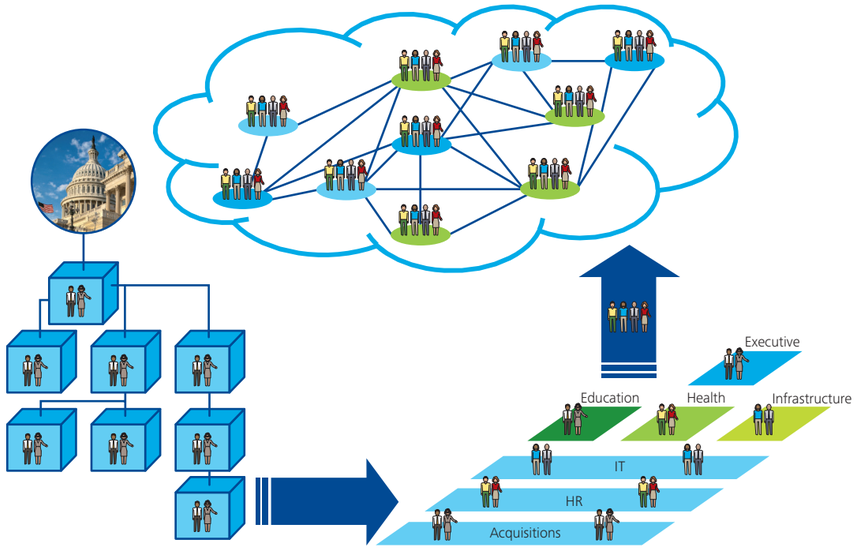
> The problem with silos is that they cause people to focus insularly on the specific mission contained within their agency… If fighting crime is a priority, then why are efforts towards that goal often scattered across separate agencies that don't necessarily collaborate and communicate with each other?
>
> — Scott D. Pattison, executive director, National Association of State Budget Officers[16]

Benefits of the cloud

The fluid nature of the cloud can provide significant benefits:

- **Knowledge exchange:** Avoids "trapping" knowledge within any single agency. The fluidity of the cloud allows for the quick connection of knowledge with the people who need it.
- **Adaptability:** Allows government to concentrate resources where needed. The cloud would make federal work more adaptable and focused on cross-cutting outcomes.
- **Collaboration:** Encourages collaboration, whether in person or virtually, through the expanded use of video conferencing, collaborative tools and electronic communication.
- **Focus resources:** Teams can be formed quickly and dissolved when their work is concluded, reducing the likelihood that government structures continue operating after they are no longer needed.[19]

The Fed Cloud model



The nature of the cloud — teams forming and dissolving as their tasks require — encourages workers to focus on *specific project outcomes* rather than ongoing operations.

The need to support some ongoing missions will remain, of course. These missions will be carried out by thin agencies.

Thin agencies

Thin agencies: Mission-focused	
Types of work	• Work requiring deep agency knowledge and collaboration with the White House and Congress • Specialized scientific and medical work that may require a physical work location • Face-to-face delivery of services or "frontline" work
Types of roles	• Agency directors • Inspectors • Corrections officers • Passport office workers

Under the cloud concept, federal agencies would remain focused on specific missions and ongoing oversight. These agencies, however, would become "thinner" as many of their knowledge workers transfer into the cloud. Thin agencies could also create opportunities to streamline organizations with overlapping missions.

Employees working in thin agencies could fall into two main categories:

- **Mission specialists:** Subject-matter experts who possess knowledge central to the mission of the agency or tied to one geographic location. Examples include agency executives, policy experts, and others with knowledge that is closely aligned with the mission of a specific agency (e.g., foresters, tax code specialists). Mission specialists also could enter the cloud based on specific needs of other agencies.
- **Frontline workers:** Employees who represent the "face" of the federal government to citizens — law enforcement officers, investigators, regulators, entitlement providers, etc. — and who interact with citizens on a regular basis. As the nature of frontline work typically does not lend itself to the cloud, these employees would still align with individual agencies.

The Fed Cloud could change the Senior Executive Service (SES) as we know it today. SESers could rotate between agencies, shared services and the cloud, which would reflect the original intent behind the service's creation: giving executives a breadth of experience in roles across government to help develop shared values and broad perspective.[20] An important benefit of rotation would be SES employees' ability to tap into cloud networks to assemble high-performing teams.

To further focus agencies on specific missions, many of their back-office support functions could be pulled into government-wide shared service arrangements.

Benefits of Thin Agencies

Thin agency structures could lead to:

- simplified mission accountability and responsibility; and
- a greater focus on mission outcomes rather than on back office management.

The use of shared services in government has come and gone in waves — usually dictated by fiscal necessity — since the concept was first authorized by the Economy Act of 1933.[21] More recently, the E-Government Act of 2002 paved the way for President Bush's Federal lines of business initiative as part of the President's Management Agenda (PMA), in which nine (initially five) lines of business were examined to see how technology could be used to cut cost and improve services (for more detail, see e-Payroll Case Study). In December 2010, the Federal Chief Information Officer, Vivek Kundra, published a 25 point plan, which emphasizes the use of shared services to improve Federal IT management.[22]

Shared services

Shared services: Support-focused	
Types of work	Traditional back office support functions such as administration and technology support, facilities and logistics and some HR functions.
Types of roles	• Human resource technicians • Accounting technicians • Administrative officers

ePayroll case study [24]

The E-Government Act of 2002 authorized the sharing of services across agencies. One service targeted was payroll; 26 separate Federal payroll systems represented a solid business case for consolidation. The resulting consolidation, resulting in four Federal payroll systems, required eight years to complete consolidation but helped remove redundancies, improve internal efficiencies and reduce the average cost to process payroll from ~$175/W-2 to ~$125/W-2. OMB estimated that E-Gov initiatives saved agencies $508 million in cost during fiscal 2007.

While the idea of using shared services is not a novel one, it is central to the Fed Cloud model. The Fed Cloud model envisions building upon effective practices and those shared services already in operation to deliver services like human resources, information technology, finance and acquisitions government-wide. Workers in these shared services would include subject-matter experts in areas like human resources and information technology, as well as generalists, who support routine business functions.

The potential for shared services continues to grow. As seen with IBM's Watson and Microtask's Digitalkoot, new technologies provide an opportunity to accelerate the automated delivery of basic services. Some agencies already have begun capitalizing on these trends. For example, NASA has moved its shared service center website to a secure government cloud, facilitating greater employee self-service and helping to reduce demand on finite call-center resources.[25]

Benefits of shared services

Greater use of shared services could allow the federal government to:

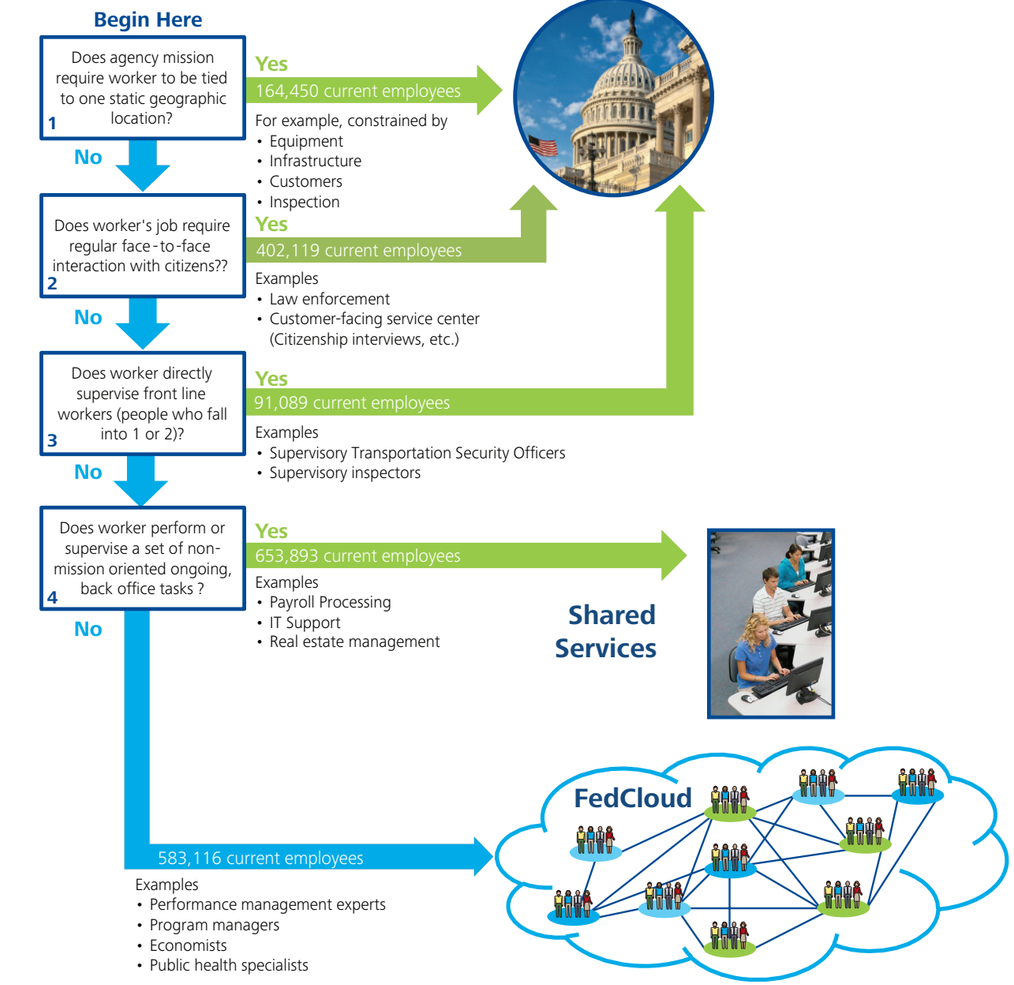
- reduce redundant back-office structures;
- consolidate real estate obligations and data centers; and
- create a government-wide support structure capable of supporting the Fed Cloud.

Who belongs in the cloud?

This decision tool is designed to could help leaders determine which employees are appropriate for each of the three structures in the Fed Cloud model — the cloud, thin agencies and shared services.[26]

To the cloud…

Not sure who would be a candidate for the cloud? Use this guide to help assess whether a role is most appropriate for the cloud, shared services, or agencies.



Fed Cloud Project Lifecycle

Fed Cloud could change the way government does business. While the way executive and congressional priorities are set would not significantly change, the way they are achieved would. This infographic follows a typical government initiative from congressional mandate through monitoring results. It shows how agencies, the cloud and shared services would work together to get things done in government.

1. Priorities set, assigned to agencies

2. Parameters set by agencies

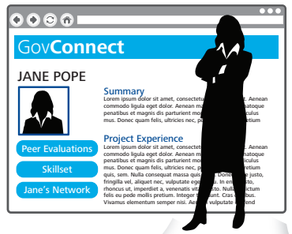
3. Cloud team liaison designated

4. Required skills/expertise identified

5. Call put out to cloud via GovConnect

6. Candidates self-select

7. Cloud Team Manager Identified



8. Manager fills out team with appropriate expertise

9. Cloud team plans project

10. Performance measures identified

Agencies could draw upon the extensive knowledge in the cloud to complete small, specific tasks, on an ad hoc basis. The State Department is planning to do just this, by allowing students to help missions around the world complete tasks that take anywhere from a couple minutes to a couple days.

Agencies farm microtasks out to the cloud, as needed

11. Cloud team composition reevaluated and adjusted

Opening the cloud beyond just employees to include free agents private citizens and contractors could bring benefits. The UK Senior Civil Service (SCS) recruits from private industry to help fill critical gaps in talent at the senior levels of government. According to Keith Leslie, a Deloitte UK partner, SCS staff from the private sector tend to "focus on outcomes rather than process, and bring greater self-belief that they can make a difference. They also have a much broader awareness of different ways of doing things."[1]

12. Cloud team executes project

13. Project information documented and archived

Although cloud teams dissolve, some programs may need to continue on. Cloud teams could work with agencies to establish plans for any required long-term program management. Options exist for managing ongoing programs without creating new permanent structures, including the use of contracts, public-private partnerships, or government employees (e.g. shared service functions or frontline workers). For example, a cloud team might develop a new IT acquisitions strategy, but leave execution to an acquisitions shared service. Alternatively, implementing a cloud-developed plan to address an infrastructure problem might be well-suited for a public-private partnership.

14. Plans developed for long-term administration, if required

15. Personal and team evaluations completed

16. Agencies monitor, evaluate, and make adjustments, as needed

The cloud could provide an opportunity to more completely evaluate performance in new ways, based on one's ability to collaborate to achieve measurable outcomes. It has worked in the private sector. W.L. Gore & Associates has pioneered a peer evaluation technique to measure and reward performance. Compensation is based on peer voting on individual performance and leaders are selected by their colleagues through a democratic process.[2] To capitalize upon competition and human nature, performance information could also become more transparent. HCL Technologies asks 20,000 employees to rate 1,500 managers on job performance. The results of the 360-degree feedback survey are published for everyone in the company to see. This has proven effective in changing unproductive behavior.[3]

Sources
1 - Matt Ross, "Across the Barricades," Civil Service World (December 2008) < http://network.civilservicelive.com/pg/pages/view/262879
2 – Mehrdad Baghai, James Quigley, et al., As One: Individual Action, Collective Power (London: Penguin, 2011), p. 275-9.
3 – MLab, "HCL Technologies," Rethinking Management's First Principles (May 2009). http://www.managementlab.org/files/u2/pdf/case%20studies/HCLCaseStudy.pdf

Shared Services

Shared Services could provide ongoing support functions to agencies and the cloud, helping to relieve agencies of functions that aren't mission-specific. While shared services can already be seen in pockets throughout government, the Fed Cloud model envisions an increase in the adoption of shares services across agencies.

IT SUPPORT
PAYROLL PROCESSING
BENEFITS ADMINISTRATION

For sample case studies of how projects could play out in the cloud, see appendices 1-3.

Reinventing HR

Managing employees in the cloud will require the government to reinvent human resource management. Individual and team performance evaluation, career development, pay structures and benefits and pensions would need to change to support the Fed Cloud. This section examines possibilities for HR reinvention including performance management, career development, workplace flexibility and benefits.

Performance and career management

Employees working in the cloud would require an alternative to the General Schedule (GS) to determine pay and career advancement. The government could take its cues from the gaming world and evaluate cloud workers with a point system.

An HR management system that incorporates the accumulation of Experience Points (XP) through effective work on cloud projects, training, education and professional certifications could replace the tenure-centric GS for cloud employees.

As employees accumulate XP, they could "level up" and take on additional responsibilities in future projects. Workers in the cloud could earn XP in four ways:

- **Education and training:** Employees earn XP based on advanced degrees, continuing education courses and professional certification.
- **Social capital:** Employees could earn XP with high social capital scores based on their participation in Fed Cloud collaboration and networking.
- **Leadership:** taking on additional leadership responsibilities in cloud teams could raise individual XP scores.
- **Projects:** projects in the cloud could be worth a certain number of XPs based on their scope and complexity and team performance. Project managers could award additional XP based on employee level, individual performance and peer evaluation.

> The manager as we know it will disappear — to be replaced by a new sort of business operative whose expertise is assembling the right people for particular projects.
>
> — Dan Pink, author of *Free-Agent Nation*[27]

Just as XP could be gained through learning new skills, it could be lost in the following three ways:

- **Failure to apply skills:** Workers could earn XP for training, but lose these points if they do not use the resulting skills on projects.
- **Down time:** One would expect some cloud employees to be between projects at any given time, and indeed this provides capacity to surge when demands require. That said, employees who spend too much time away from project work could lose XP.
- **Poor project performance:** Employees who receive less-than-satisfactory ratings on individual performance reviews, peer evaluations or team performance could lose XP.

Why XP?

- **Rewards team players:** Creates incentives not only to perform well as an individual but also to be a valuable collaborative team member, and to continue one's personal development.
- **Manages performance:** Allows the government to shift its focus from time in grade to a more holistic performance management scheme.
- **Fits work style:** Capitalizes on the work style of Millennials, who value performance over tenure.
- **Creates right incentives:** Takes advantage of "gamification"; concepts to incentivize desired behaviors.
- **Lets workers own their careers:** Allows workers to take personal ownership over the management of their careers, including their professional development and work-life integration.

Salary and benefits

Any serious discussion about creating a new class of federal employees requires a fresh look at employee benefits and compensation. For example, XP could be used to help determine workers' salaries, but additional research into alternative pension and benefit programs is needed. While any discussion of compensation could be contentious, a healthy debate among stakeholders from across government should be welcomed.

Career paths

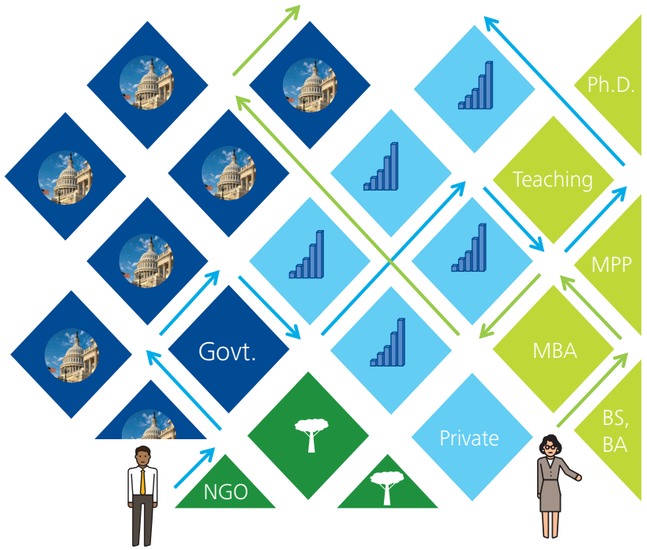
As new roles emerge in the cloud, so too could new career paths. Career emphasis could move away from time served in a particular pay grade and toward milestones that are meaningful for employee development.

Each worker may have different career aspirations. For instance, not all workers aspire to management; some may seek to master a particular subject area instead. Career advancement in the cloud would not equate to moving up a ladder, but rather moving along a lattice.

Here's how the lattice work could work for Bobby, who we met in the introduction.

- **The early years:** A few years after being hired into the Human Resources shared service straight out of school, Bobby has been exposed to a wide variety of agencies. Through these interactions, he realizes he has become passionate about the field of social work.
- **Seeking a change:** Bobby decides to leave federal service and pursue a Master's degree in Social Work, then take a job at his state's social services agency. After a few years, Bobby accepts a position as director of a mid-sized non-profit.
- **Returning to Fed Cloud:** After years of running the non-profit, Bobby begins thinking about Federal service again. He decides to join Fed Cloud by working just a few hours a week. After working part-time on projects that require a social work experience, Bobby decides to return full-time. To more effectively manage social programs, Bobby speaks out all the performance measurement training he can find.
- **Finding a niche:** Bobby becomes well versed in performance measurement, first for social programs, but he quickly learns how to apply those concepts elsewhere. When his social work experience isn't needed, he can also lend performance measurement knowledge from the cloud.
- **Winding down:** As he nears retirement, Bobby wants to help train the next generation of social workers by teaching one course per semester at a local university. However, he is able to remain connected to Fed Cloud and spend one or two days a week working with social programs and measuring performance of other projects.

Lattice Fed Cloud Model



> "Think of the lattice as a jungle gym. The best opportunities to broaden your experience may be lateral or even down. Look every which way and swing to opportunities."
>
> — Pattie Sellers, *Fortune* editor at large

Cathleen Benko and Molly Anderson, the authors of *The Corporate Lattice*, argue that the corporate ladder is giving way to a lattice that accommodates flatter, more networked organizations; improves the integration of career and life; focuses on competencies rather than tenure; and helps increase workforce loyalty.[28] The lattice metaphor allows employees to choose many ways to "get ahead."

Learning

It is unlikely that all workers could thrive in the new Fed Cloud environment right out of the gate. As such, it would be important to assess a worker's readiness before placing her in Fed Cloud and providing training on core competencies critical to cloud success. There could also be opportunities to start workers, especially those at earlier stages of a career, within an agency or shared service to build up expertise in some area before "graduating to the cloud." Once in the cloud, new workers could be paired with mentors, who are more experienced, to help navigate the cloud experience, itself.

There should be an emphasis on continuous learning in the cloud. It would be important for cloud workers to continue to refine their skills, develop additional expertise, and adapt to new ways of working. Not only could continuous learning affect workers' career mobility by increasing the depth and breadth of their skills, but it could also impact their salary and level by increasing their XP.

Learning and development in the cloud could take on many themes of "next learning." Next learning focuses on creating personalized learning experiences that leverage the latest technologies and collaborative communities to deliver education and learning programs that build knowledge bases and promote learning as a focus and passion, not just a checkbox in a career.[29]

To broaden cloud worker skills and the ability to handle multiple tasks and work on a variety of different projects, cloud learning could include the following principles[30] :

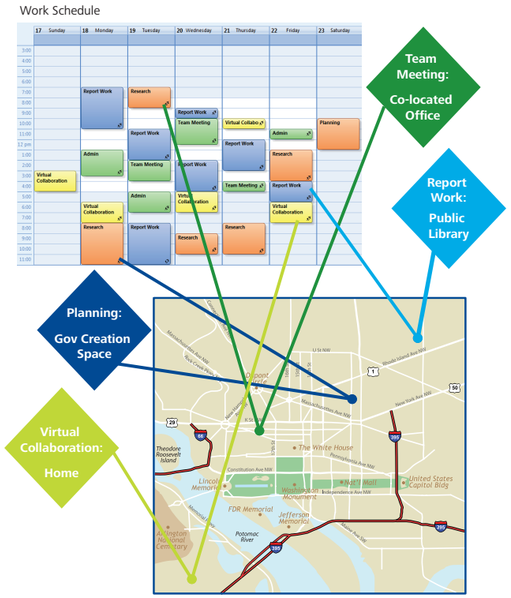
- **Video:** The use of video learning could bring an in-person feel to trainings for cloud workers. Further, it could allow for more meaningful mentor relationships, even over long distances. This is an important component of a highly virtual workplace.
- **Social and collaborative learning:** Using the wisdom of the cloud (and beyond) to create collaborative learning environment.
- **Learning projects:** In an environment where cloud workers are completing microtasks or participating in projects, design training to reflect this, helping to hone collaboration and other skills that will be important in the cloud.
- **Learning and leading in a distributed workplace:** Workers who ascend to positions of leadership will need more than the traditional essentials of leadership to get them there. They will need to learn how to motivate and manage employees in a distributed environment, which requires an emphasis on communication, accountability, trust, and performance.
- **Building knowledge bases and connectivity for learning:** Elective knowledge management will be critical in the Fed Cloud environment. This is just as important for training as for project information. Make knowledge gained in one area available elsewhere through tagging and promoting content for others to see. This can complement social learning, by allowing users to bookmark or promote effective learning channels.

Workplace flexibility

In the cloud, careers and expertise will be built in new ways and work will be something we *do*, rather than a place we *go*. As such, the cloud will give workers more control over their schedules and workloads. By creating a flexible workplace, the government could shed a significant amount of physical infrastructure and create shared workspaces. Many federal buildings could be converted into co-located space; teams could use collaboration spaces or videoconferencing centers.

Some federal workers might rarely set foot in a federal building, instead conducting cloud tasks at home and interacting with project teams virtually. With advancing communications and mobile technology, distance no longer hinders collaboration. It no longer matters whether all workers are at an office between 9 and 5; what matters is whether project teams produce results and whether everyone is contributing.

A more flexible workplace could also take advantage of resources the government might not otherwise have access to. Some retiring workers may not want to quit working altogether and a flexible model could be an enticing way to keep their expertise on retainer. Alternatively, the model could take advantage of would-be federal employees unwilling to relocate or unable to work a regular schedule. By increasing flexibility, the government could increase its available resource pool, allowing agencies to access the skills and knowledge they need, when they need it. For an example of how a retiree could interact with the cloud, see Appendix 3: National Security Case Study.



State Department pilots the cloud

Don't think the federal government could ever take to the cloud? At the U.S. Department of State, the idea could soon be a reality. The Office of eDiplomacy is preparing to pilot a cloud component to its e-internship model for American students as part of the Virtual Student Foreign Service (VSFS), beginning this autumn. The VSFS currently offers e-internships to U.S. university students of multiple month duration. By using a new micro-volunteering platform, State Department offices and embassies around the world will be able to create non-classified tasks that take anywhere from a couple minutes to a couple days to complete. Each task will be tagged by region and/or issue, and will automatically populate the profiles of students who have indicated those interests. Students can then select the tasks that interest them the most or that fit into their schedule.

To see that the most pressing work is performed first, offices and embassies will be able to prioritize their tasks, so critical items appear at the top of the queue. Imagine a small embassy preparing for a high-profile, multilateral meeting. The preparations for such an event could be daunting for a small staff. The power of the cloud could augment an individual embassy's capacity to prepare for a major event and ensure that related items are performed ahead of those that are less critical.

While there are plenty of incentives for participating in the VSFS micro-volunteering platform — from an impressive line on a student's resume to the chance to make a difference by working on topics of interest — thought is being put into how to creatively incent high performance. One idea is to simply invoke students' competitive spirit. Competition could be encouraged by a monthly leader board, which results in bragging rights and potentially even a low cost, but high impact reward. Transparency is also key to competition: with ratings available to State Department staff and other cloud interns and the ability to make short thank you notes from embassies publicly available, interns would be keen to make a good impression.

The potential applications of this type of program are significant. Imagine if offices throughout the State Department could tap into the language and cultural expertise of the thousands of foreign national staff members around the globe. Providing a platform for those employees to contribute even a small amount of time to discreet tasks that require their expertise could unlock a world of knowledge.[31]

Taking the first steps

Creating the Fed Cloud model will require bold leadership and the ideas and initiatives of entrepreneurial executives. While a Fed Cloud model may be years in the making, agencies can begin adopting cloud concepts today.

Build collaboration spaces — Make interoffice collaboration easier. Create physical spaces in your office where employees can casually spend time sharing information across departments. Provide employees with several hours per week to devote to collaborative efforts with other areas of the agency that interest them.

Rotate your people — Embrace the Millennials' aptitude for change. Create a rotational program that allows staff members to work across departments and specialties. As your organization realizes the value of a broader perspective, you can pursue rotations among agencies or even secondments (rotations between the nonprofit, private and public sectors).

Start a volunteer cloud — Plant the seeds for the cloud by allowing workers to seek tasks beyond their current responsibilities. Start by providing a platform for managers to post issues or problems they need help in solving. Allow employees to help with projects or tasks that interest them. This will allow them to expand their networks, build new skills and chase their passions.

Pilot a Fed Cloud — Only experience will bring people to understand the power of the cloud. A few agencies could bring the cloud to life by moving resources to a pilot cloud workforce. This would allow them to document lessons learned and determine the viability of the cloud on a wider scale. Use the Fed Cloud decision tree to help determine who could thrive in the cloud.

For additional information on the Fed Cloud and how you can bring a free-agent culture to your agency, contact GovLab at govlab@deloitte.com.

The road ahead

The last broad restructuring of the federal government occurred in the mid-20th century.[32] Since then, the world has been transformed by computers, the Internet and mobile communications.

To respond to a variety of challenges, the government has created scores of new organizations. However, in today's world of budget cuts and increased fiscal scrutiny, the constant creation of new, permanent structures, is not sustainable.

The Fed Cloud model could offer a new way to use government resources. A cloud of federal government-wide workers could coalesce into project-based teams to solve problems and separate when their work is done. This could allow the government to concentrate resources when and where they are needed. By using this model in conjunction with thinner agencies and shared services, the federal government could reduce back-office redundancies and let agencies focus on their core missions.

This model capitalizes on the work preferences of Millennials — the future government workforce — who value career growth over job security or compensation.[33] The Fed Cloud model allows employees to gain a variety of experiences in a shorter amount of time and to self-select their career direction.

To support the Fed Cloud, the government could establish the processes by which cloud teams would form, work and dissolve. New ways to evaluate performance and help workers gain skills and build careers should be considered. Today's employee classification system stresses job descriptions and time in service; this could be transformed with an XP model that emphasizes the individual's ownership of his or her career.

The Fed Cloud model will undoubtedly be controversial. Many stakeholders, from Congress to public employee unions, must weigh in to shape the future government workforce. The transition to a cloud model will not happen overnight or maybe even in the next five years, but the conversation starts today.

Appendix A: Public awareness campaign

The problem

The year is...

A new study in a leading medical journal reports that more than 30 percent of U.S. children aged 8 to 11 are medically obese. The implications of this trend for Medicare, Medicaid, life expectancy and the U.S. economy are severe. The president announces that the federal government will work to reduce the U.S. childhood obesity rate to the international benchmark of 10 percent within 10 years, calling upon the Department of Health to achieve this goal using its discretionary budget. A "10 Years to 10 Percent" campaign is born.

Fed Cloud solution

The Secretary of Health selects one of his key advisors, Jane, a board-certified pediatrician and child psychologist, to coordinate the campaign. Jane sets out to find a team of cloud workers through GovConnect that will carry the project from planning through performance measurement. The project will require a diverse team of 50 cloud members, including project management staff that will liaise with federal shared services.

Healthcare management	Recreation
Nutrition	School transportation
Primary education	Marketing
Childhood psychology	Performance management
Urban planning	Economics/statistics
Food and beverage industry knowledge	State social services
Agriculture	

Sub-teams form around major project outcomes, with their membership self-selected by participants based on their interests and expertise. Teams begin to plan and create the programs and activities needed to execute the campaign. For example, the marketing team develops an online contest to gather ideas for persuasive ways to push nutritional information to the general public. The physical activity team devises a grant program to encourage schools to allow for 1.5 hours of physical activity daily. To execute both of these programs, workers with expertise in developing grant programs and establishing contest models are pulled in from the crowd to help as needed.

Two years later, the "10 Years to 10 Percent" team has evolved and several cloud workers have moved in and out of the project. Knowledge managers have conducted exit interviews with cloud workers to capture and retain their knowledge and archive project documentation.

A group of statisticians pulled from the cloud work with universities to develop a program to measure the obesity rate and other nutrition-related data points in 8–11 year olds. After two years of collecting data, obesity statistics are promising. The new campaign is working, with rates declining to around 13 percent. Statisticians predict that the obesity rate will dip below 10 percent by the targeted deadline.

Fed Cloud results

The "10 years to 10 percent" project is on the road to success. The cloud team begins to disband; the knowledge manager archives materials on GovConnect. Team members assess each other's performance using the GovConnect rating tool. Jane and her sub-team managers complete the final performance evaluations for their teams and XP points are awarded to each team member based on their roles and performance.

Appendix B: Infrastructure case study

The problem

During a busy afternoon commute in a major U.S. city, a natural gas pipeline explodes with catastrophic consequences. Several buildings collapse; casualties are significant and the city is plunged into chaos. Led by the state's two senators and the city's Congressional representative, Congress promptly begins holding hearings to determine the cause.

Investigators report that the explosion was caused by a combination of a known design flaw coupled with poor maintenance. Congress appropriates $500 million for the inspection and repair of natural gas pipelines on a priority basis over the course of two years.

Fed Cloud solution

The Department of Energy quickly appoints Bill, a former chief safety officer of a major regional gas company, as project liaison for the department. Bill works with the secretary's chief of staff and DOE subject-matter specialists to define parameters for the project, including budget, scope and timeframe. He quickly posts positions requiring the following skills and experience on GovConnect:

Infrastructure security	Economics/Statistics
Gas safety	Scheduling
Energy regulation	Pipeline operations
Engineering	Federal/State inspection
Risk analysis	Pipefitting
Budgeting	Team management

As the team coalesces, Jen, the knowledge manager, begins research. To support her work, Jen assigns several search tasks to the cloud. Workers respond to specific requests for relevant documentation and information, helping team leaders create a project plan to include inspections, job prioritization and repairs.

As the inspections progress, results are sent back to the project team, which begins prioritizing pipelines for repair based on criteria defined in the project plan. The team composition again changes to reflect the new tasks of this phase.

As results are prioritized, program management team members begin working with shared services to execute required repairs through the most expeditious and cost-effective means available (pipeline operators, new contracts, etc.). Legal professionals, regulators, acquisitions specialists and engineers from the cloud work together to confirm the repairs are made in accordance with applicable regulations and codes, while scheduling, budgeting and acquisition professionals from the cloud and shared services work to see that the repairs are made on time and budget.

Fed Cloud results

As repairs are made and the volume of work decreases, the team shrinks and workers return to the cloud. As she has at each stage of the project, Jen conducts exit interviews with each team member to capture historical knowledge; decisions, documents and other resources are documented in the Knowledge Management system. Bill completes an evaluation for each team member and asks members to rate their peers as well as his managerial ability before leaving.

Appendix C: National security case study

The problem

Increased demand from large developing nations, as well as a major drought, has driven up the global price of commodities including corn, wheat, rice and oil. The poorest countries are hardest hit by rising inflation in the price of staple foods and basic goods.

The high price of food and a prolonged depression of local job sectors have stoked unrest in many countries across Northern Africa, the Middle East and Central Asia. Rising civil discontent turns to mass protests in several countries and many unstable governments enforce martial law to regain control of their streets. The deepening regional economic crisis and social unrest create a fertile recruiting environment for terrorist organizations that have taken root in these countries.

Fed Cloud solution

The growing volume of communications among terrorist cells eventually exceeds the capacity of analysts in the intelligence community. U.S. intelligence leaders activate the Secure Watch Analysis Program (SWAP), a portal built into GovConnect that allows any member of the federal cloud with an appropriate level of security clearance to participate in analyzing incoming intelligence cables. Through SWAP, cleared cloud workers can contribute to intelligence-related data analysis and collection tasks.

Sara, a Middle East specialist and 35-year veteran of the U.S. intelligence community, is retired but her clearance remains active. She applies for the job of team manager to help on a part-time basis. Edgar and Tim, two clearance-holding U.S. Customs and Border Protection (CBP) agents working in frontline stations at the Atlanta Hartsfield International Airport, offer to log into SWAP for five hours each week to volunteer their time. The pair's primary responsibility on SWAP is to review a queue of documents and indicate whether information should be elevated for immediate action, further reviewed by an intelligence agency, or logged as not representing actionable intelligence. Their decisions are spot-checked by other analysts and managers.

Six weeks into the crisis, Edgar notices something in an intelligence report that grabs his attention. He believes he has seen a cell phone number listed in the translated text before. Using SWAP's built-in analysis tools, Edgar searches past cables and other incoming data streams for possible hits on the phone number or other related information. Using SWAP's built-in instant messaging, microblogging and file collaboration programs, Edgar begins sharing his findings with SWAP's other users.

Within two days, a team of 15 SWAP volunteers from across the country have uncovered a web of links between the cell phone owner and wanted terrorist leaders across Northern Africa and the Middle East. The connections trigger an alert on Sara's team dashboard. Within hours, Sara's team collects solid evidence indicating that the cell phone's owner plans to bomb a train station. Intelligence community leaders deliver Sara's analysis to that country's security forces for action.

Fed Cloud results

Tim and Edgar receive recognition from the intelligence community for their contributions and return to their CBP responsibilities full-time. Before leaving the team, Sara completes project evaluations for its members and works with the new team manager to facilitate a smooth transition. She once again "retires," knowing that she will return to duty if her country needs her.

Appendix D: Arguments against Fed Cloud

As stated at the outset, the Fed Cloud model represents a dramatic departure from the status quo. It is bound to be greeted with some skepticism. However, the ideas presented here are based on concepts that are becoming more accepted and have worked, in some shape, at other organizations. To advance the discussion, responses to some of the most common objections to Fed Cloud follow.

"But working remotely is a security risk" Virtual cloud team members could be accessing sensitive information from their homes or — even worse — local coffee shops. This poses a major security risk.

Virtual workers could pose some challenges for highly sensitive projects. However, there are ways that some of these concerns could be mitigated:

- If access rights were centrally granted and managed through the cloud, the government could maintain greater control and accountability over who accesses which information.
- If highly sensitive information were available only to those who have access to it via dummy tablets, a situation could be avoided where sensitive documents are downloaded and stored on personal computers.
- Secure locations already exist around the country and could be augmented at shared federal facility to accommodate those employees who must open highly classified documents.

"But the technology required is too expensive…" The technology needed to facilitate this virtual workplace is too expensive — more so than the desktop computers and shared equipment used today.

Technology is evolving quickly and many organizations are taking advantage of social media, VOIP, and other technology to enable virtual collaboration. While there are serious cost considerations in outfitting employees with new technology, there are also savings to be realized in the more efficient use of real estate and physical overhead that is made possible by a more workforce. For more on these tradeoffs, see Deloitte's series on Preparing for the Workplace of Tomorrow.

"But this would require the entire structure of the civil service to change…" Creating a cloud workforce would require a different civil service than the one we know today. Everything from position descriptions to the General Schedule would have to change.

The civil service and agency structure was set up long before computers were introduced into the workplace. As times have changed, so have the way we work and the problems we face. We shouldn't limit our options in facing the challenges and opportunities of tomorrow by wedding ourselves to structures of yesterday. In the Fed Cloud model, some roles would still require clearly defined position descriptions and more linear development paths. More substantial changes would be required for cloud workers, to improve their ability to work, learn, and develop.

"But shared services haven't caught on in government to date. This won't be any different…"

The use of shared services in government has come and gone in waves since 1933. As adoption has often been tied to fiscal necessity, the current economic environment presents an opportunity. Momentum could be built upon recent initiatives, including the consolidation of 26 payroll systems into 4, reducing duplication across the Federal government. This momentum could be structurally reinforced, as well. As the cloud and shared services are stood up, agencies could be incentivized to use those resources and relieve themselves of the burdens associated with salary, benefits, and back office functions. This would allow agencies to spend less effort on administration and allow them to concentrate on executing their core missions.

"But this would not work for national security workers…" The intelligence community and national security apparatus are governed by a complex web of regulations and security measures. It would be unfeasible to substantially change the way they work.

The Project for National Security Reform states that: Until [the agency-centric framework for human capital] is readjusted to encompass the national security community's collaboration across agency boundaries, it will be difficult, if not impossible, to establish a commonality of culture and shared mission, vision, values, and interests that are essential in the national security environment of the twenty-first century."[34]

While major hurdles would exist in attempting to implement the vision laid out here within the national security community, cloud support could enhance the intelligence and security system.

"But telework has been around for years and adoption is still low…" The Government has been discussing telework for years, but only a small percentage of Federal employees are able and willing to telework. In light of this, how would a cloud of virtual workers ever be able to function?

There has been recent momentum in implementing telework. In December of 2010, President Obama signed into law the Telework Enhancement Act, which requires agencies to set clear telework policies, identify and notify employees that are eligible to telework and put into place training for telework employees and managers.[35] The benefits of telework were experienced firsthand earlier that year. John Barry, the Director of the Office of Personnel Management estimates the snowstorms that hit Washington, D.C. in February cost the Federal government $70 million per day. The unexpected number of employees who worked from home during the storms brought this estimate down from over $100 million per day.[36] In addition to being a tool for recruitment and retention, a flexible workplace could further reduce lost productivity and improve business continuity.

"But law enforcement officers and soldiers could not be cloud workers…" Front-line workers need to be in specific physical locations. They could not be part of a cloud workforce.

There is no one size-fits-all solution. The purpose of the Fed Cloud model is to make the Federal workforce as flexible and adaptive as possible. While it might not make sense for front line workers to break from the traditional work models they currently operate in, pieces of the concept could help attract, retain, and enable them. If the adaptable Federal workforce is able to more efficiently adapt and surge to meet evolving needs, it could more effectively support front line workers in performing their jobs.

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Acknowledgments

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