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The Government Technology Silver Bullet:

Hiring In-House Technical Talent

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Bringing experienced technologists into government should be the top priority for addressing government's repeated tech failures.

Introduction

We have seen software failures across every layer of government over the course of this pandemic. State governments have had significant issues with their unemployment insurance websites. Local governments have had outages and troubles with vaccine distribution services. Software systems at the Federal level have experienced significant security breaches. Trust in government

is at "near-record lows," in no small part because modern public services continually fail to meet people's needs. The past year has shown that our public services continue to fail in the traditional ways: they cost too much, take too long to deliver, have a subpar quality, and regularly face security breaches. We have not made significant enough progress in improving government technology to prevent these troubles, let alone to provide effective, modern digital tools and technologies. Government services have largely not kept up with the raised expectations of the digital era, leaving many people without access to critical services they need.

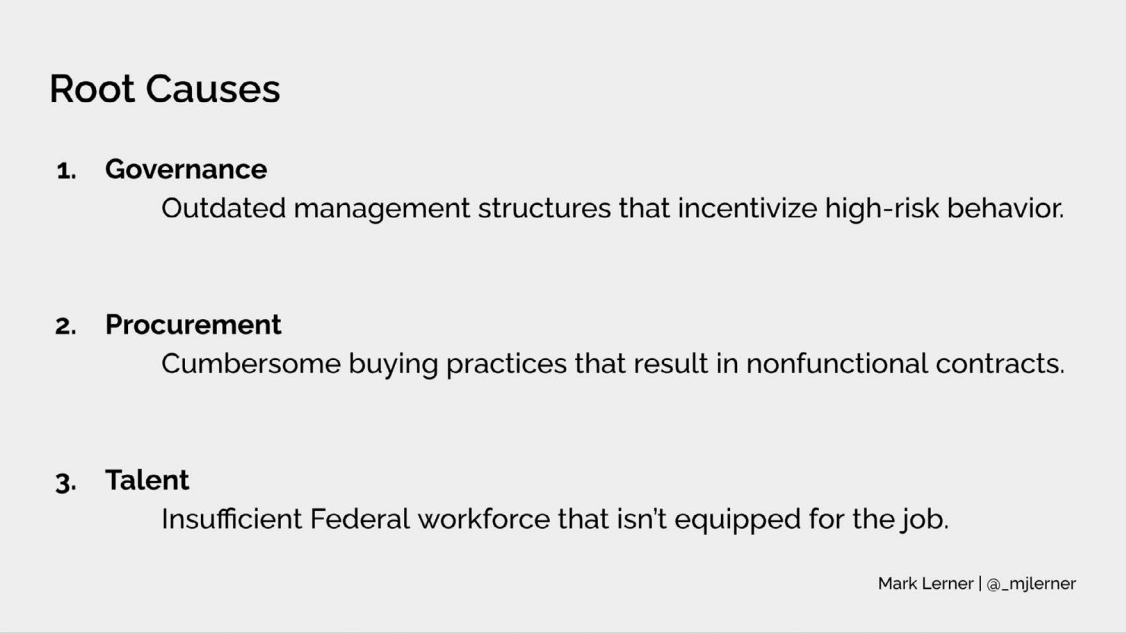
And yet, there is incredible momentum growing in the government technology space. As I mentioned in a previous blog post, we are seeing a wave of technologists from the private sector expressing deep interest in working in the government, with many actually coming into government for the first time. Anecdotally, I've personally heard from all manner of technologists—from fresh graduates to high-level executives— looking to work in the public sector for the first time. Thousands of technologists are applying for jobs at the U.S. Digital Service, and thousands more are signing up to volunteer with the U.S. Digital Response. These people are deciding to work and make public services better after years of becoming more aware of the ways in which our public infrastructure is failing our neighbors in most need.

The federal government is also allocating more money towards these problems, in recognition of their severity. The American Rescue Plan gave $200M to the U.S. Digital Service, and $1B to the Technology Modernization Fund. The Biden-Harris Administration's FY2022 budget request calls for even more money for tech modernization programs. These massive investments show that Congress and the Administration take these challenges seriously, and are looking for ways to address this years-long problem.

If we want to have a lasting impact on the way that our country serves its people, we need to make the most of this momentum to address the root causes beneath these repeated failures. We need to focus our efforts onto the long-term work of addressing the systemic problems that cause our most critical services to fail when they are most needed. I believe that hiring more in-house technical talent might be a silver bullet to addressing the federal government's technology problems. In this report, I hope to convince you that we need to make hiring in-house technical talent our number one technology priority in building better digital services.

Talent as the Root

Over the last year, I've been researching the underlying systemic reasons why government technology projects fail, and what we can do about it. Throughout my research, I've interviewed dozens of people, including Federal and State CIOs, modern software service vendors, State financial officers, international government technology officials, leaders in the Public Interest Technology space, and more. I've also pulled insights from dozens of reports, essays, books, articles, and oversight documents, as well as from my personal work experience. Across all of my research, I've found three main roots to the problems of delivering modern digital services: **Governance, Procurement, and Talent**.



Each of these has deep, systemic sources, and each causes vast amounts of problems in delivering digital services. Governance failures manifest as outdated management structures that incentivize high-risk behavior. Procurement problems manifest as cumbersome buying practices that result in nonfunctional contracts. Talent troubles manifest as an overreliance on outside technical expertise, and an insufficient Federal technical workforce that lacks the experience needed for the job.

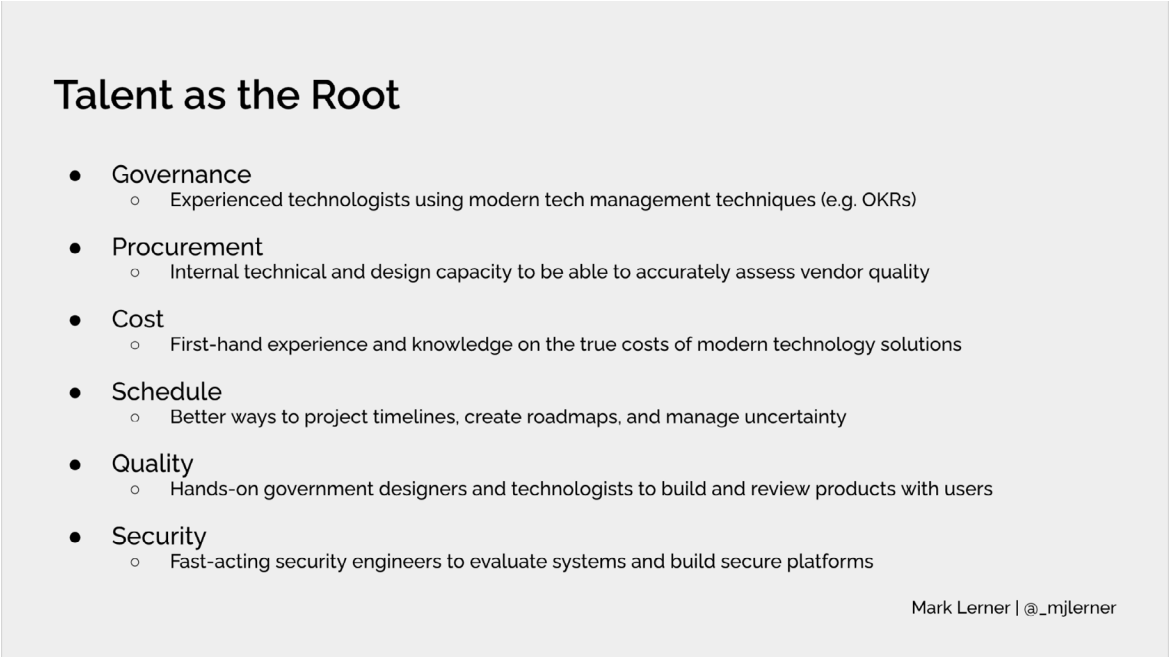
Between the three roots, I believe that we can make significant progress on both Governance and Procurement by working specifically on Talent. That is, if we focus on hiring experienced and diverse technologists into government, they can work on addressing the problems of Governance and Procurement. We can bring experienced technologists into the governance of technical projects, rethinking the existing governance structures using modern tech management techniques. Similarly, we can leverage internal engineering, product management, and design capacity to

accurately assess vendor quality, manage technical vendors, and create better methods of procuring technical services in a more efficient manner.

> ***"You've outsourced so much for your IT, you don't know IT anymore. How are you supposed to be an informed shopper if you don't know what it is?"***
> *—Innovation Specialist, GSA*

Greater in-house technical talent can also address the problems of cost, schedule, quality, and security. First-hand experience brings with it knowledge on the true costs of modern technology solutions, which can prevent overpaying for simple digital services (particularly in the case of using open source solutions). Hiring modern product managers to manage software delivery can lead to rapid and frequent delivery of functioning services, as well as better ways to project timelines, create roadmaps, and manage uncertainty. Diverse teams of hands-on government engineers and designers can work directly with users, test assumptions, and build and review products for high quality, all while working with vendors and introducing service design techniques. Lastly, Federally-employed security engineers can move much more rapidly to evaluate systems, manage breaches, and build secure platforms.

Given this deep connection between Talent and each of the other core problems, it's clear to me that by focusing on hiring in-house technical talent into the government, we can make incredible strides towards delivering better public services. There are other problems that deserve attention as well—for example, many services fail to address the needs of the public because of policy or legislative aspects. However, even many of these can be addressed by bringing experienced and diverse technologists into those decision-making processes. It's this vast network of problems, all grown from this singular root, that leads me to believe that Talent may be the silver bullet to addressing government technology problems.



The Trouble with Talent

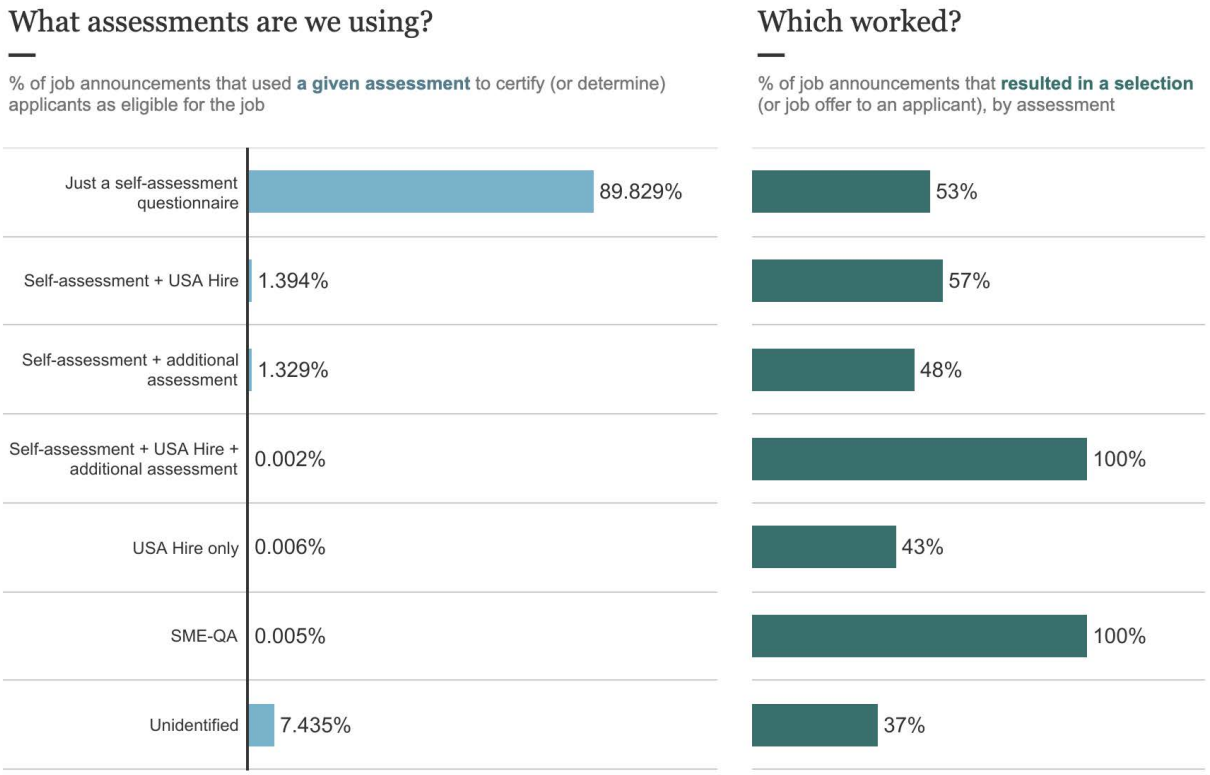
Of course, none of this is to say that solving the Talent problem is easy. There are many challenges that make it difficult to hire technical talent, including issues around misplaced funding, cumbersome processes, and even misalignment between the technologists and the job opportunities. It's worth looking deeper into these challenges to build common language, and understand how we can tackle them.

Possibly the most cited challenge with hiring technical talent into government relates to wages. The wage mismatch between public sector and private sector technology jobs is an openly discussed challenge to bringing in technologists into government, particularly at senior and executive levels. The maximum salary pay in the federal government is about $170k annually, whereas senior technologists and high-level tech leaders in the private sector can expect to receive a salary that is much higher than the federal cap as their careers progress. Even at more junior levels, the wage gap prevents the federal government from attracting well-educated technical college graduates and fresh talent. The starting salary for a college graduate in a technical government role (for two very common job serieses) is between $30k and $40k annually, which is three to four times lower than the average starting salary for new graduate software engineers in the private sector. Furthermore, differences in non-salary compensation also affect talent attraction—government benefits tend to not be in sync with what modern technical talent expects from their employers.

> ***"An entire generation is missing from Public Service. Less than 4% of the workforce across the whole VA is less than 30 years old. In OIT, less than 1% is under 30."***
> *—Technical Executive, VA*

On top of mismatched wages and incentives, there's a significant lack of funded full-time headcount for technical positions. When it comes to technology, the majority of budget dollars are specifically set aside for contracts with vendors, leaving the budgets for headcount of full-time technical staff small and insufficient. This money can't be readily shifted around due to the "colors of money" structure of federal budgets. One Chief Information Officer that I interviewed noted that his organization has had "a fixed budget for salaries that's been fixed since 2013 or 2014." preventing him from hiring any new technologists. Another technical executive noted that in their organization, they "have a 1:10 ratio of employees to contractors." Without the appropriate funding—which would require changes in many places across government, including potentially in Congressional appropriations—federal agencies have no choice but to rely on outsourced contractors for their technical talent.

When federal agencies do manage to create job openings for technical roles, there are still significant issues with the hiring processes that prevent technical talent from coming into government. The burdensome experience of the hiring process is a well-known blocker that prevents many talented people from seeking jobs in the public sector. On the candidate side, there are numerous issues and blockers that make applying for federal jobs difficult. Government-style resumes, lengthy background check processes, obscure qualifications assessments, and unintelligible job postings all make it very difficult for interested technologists to enter the public service for the first time. The process isn't much easier from the side of the hiring manager, either. Hiring managers must go through arduous and obscure processes to create job postings and job descriptions, and generally are forced to use antiquated and inefficient methods for reviewing candidates. Recent data from GSA shows that nearly half of all job postings and applicant reviews lead to no job offers being made at all. As one technical executive at OPM put it, "As hard as it is to contract, it's easier to do that than to hire people."



Source: https://d2d.gsa.gov/report/hiring-assessment-and-selection-outcome-dashboard

There are many other challenges that make it difficult to bring in technical talent into government. For example, technologists generally don't have defined career ladders in government, causing many to leave to seek higher level positions and more growth opportunities in the private sector. Additionally, federal technology jobs tend to be based in the DC area, while tech talent hubs are

currently distributed across the country in places like San Francisco, New York, Seattle, Boston, Atlanta, and Austin—and many technologists in these areas aren't willing to uproot their families and lives when the private sector can offer remote jobs. And to add to all that, there's also the set of negative myths and perceptions around working in the public sector that instill distaste in people that haven't seen the truth about working on public problems.

There are many efforts underway and many well-known strategies to address each of these issues. Organizations both inside government and outside of it are actively working to make it easier to bring in good, qualified technical talent. We know that leveraging the mission and impact of public service problems as a selling point is an effective tool to address both the wage discrepancy and the set of myths on working in the public sector. Finding ways to raise the wages of tech workers, such as through OPM Special Pay authorities, can help in attracting great talent at competitive rates. Efforts such as SMEQA aim to significantly simplify the hiring process, bringing it more in-line with the private sector models. Make no mistake: the Talent problem in government is a challenging one. But each of these efforts are finding successes, challenging the status quo, and making it easier than ever to bring in the technical talent that we need.

Filling the Gap

In a previous essay, I outlined the six areas that I believe that the federal digital service community (e.g. the U.S. Digital Service, Technology Transformation Services) should invest its incoming talent into. These organizations have a large influx of new applicants and new talent coming their way, and they have the opportunity to build a strategic foundation for the coming years. However, to truly address the root of the repeated government technology problems that we've seen, we need to hire technologists directly into federal agencies across the board, not just into these specialized groups. Federal agencies cannot continue to rely on support from these centralized digital groups, and must build out their own technical capacity to offer the digital services that the public needs.

> ***"Rather than building a crisis team for one project and one area, let's build true institutional capacity for change management."***
> *—Special Assistant to the President*

Of course, it would be impossible to fill every needed technical position in the government at once. It takes significant effort to create the positions, recruit candidates, review and interview candidates, and hire them on. Given the urgency and severity of the problems, we need to act quickly to fill the top priority gaps. We can separate the prioritization into both *roles* (e.g. Chief Information Officer) and *disciplines* (e.g. Product Managers), which lets us talk about the independent aspects of

each. Here, I'll outline my perspectives on which roles and disciplines we need to focus on hiring as soon as possible to have the greatest impact on the development and delivery of modern services.

Disciplines

In the development of digital services, there are three primary disciplines that need to be brought in-house: Product Managers, Designers, and Software Engineers. Each of these disciplines contain much more than a single job or role—they are fields of expertise and skills that, when brought together, constitute the teams that build quality digital services.

Of the three, the government should prioritize hiring Product Managers. Product Management differs from traditional project management in that it is "focused on delivering a product a user wants or needs," rather than delivering to a predetermined plan (often at the expense of user needs). Product Management as a discipline is nearly completely absent from the development and operation of technical systems in government, particularly at leadership levels. Experienced Product Management skills are not simply substituted by contracting agile coaches or scrum masters, as neither of these disciplines bring the focus on vision, strategy, effective collaboration, stakeholder management, and user needs that a Product Manager does.

Designers are the next most needed discipline in government tech projects. Across all of the lessons learned in the public interest technology space, arguably the most important one is to bring the users of a product into the process of building that product. Design is the discipline that encompasses this lesson. Design as a discipline includes many different facets, including user research, interaction design, visual design, and, potentially most critical to the work of government, service design. Bringing Designers in-house will enable the government to build all aspects of its services, not just the digital ones, in a way that accurately and effectively meets the needs of the people that will be using them.

While still critical to delivering modern public services, I believe that hiring in-house Software Engineers is lower in priority than these other two disciplines. The reason is that the government tends to have a ready supply of software engineers via contracts, and that without these other two disciplines in place, the engineers on their own are not enough to build effective digital services. That said, we still need a wide range of Engineering talent to cover a variety of needs. By sheer number, the government will most likely hire more Software Engineers than Designers or Product Managers, and it's crucial to build the internal capacity for actually writing software. In-house technical talent will be able to move much more rapidly than contracts can allow, reacting to the needs of their users and the realities of software development much more effectively than outside vendors.

Roles

The disciplines mentioned above can fit into many different roles within government. For example, a Product Manager can take on the role of a product owner, a program chief, or an executive. Just as with disciplines, these different roles should be filled in a priority order, based on their impact on the delivery of modern services to the public.

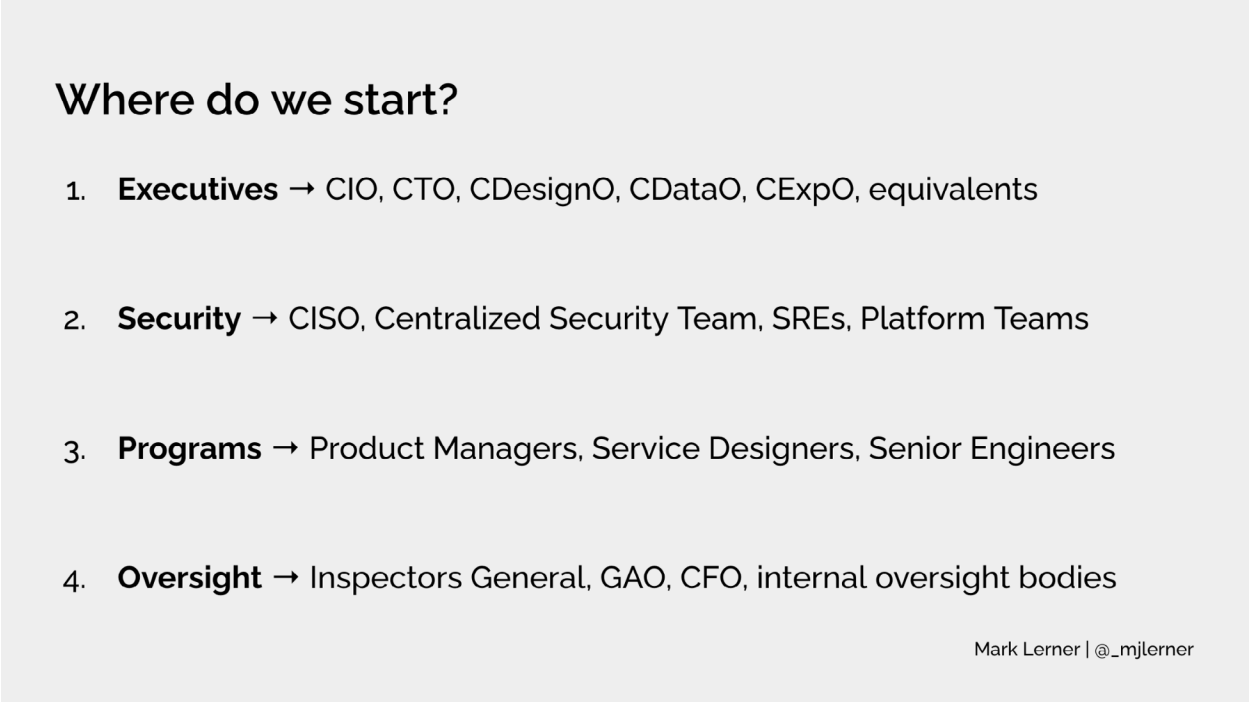
As is generally the case, key executive positions need to be filled to effectively lead the digital modernization of government. Certain roles already exist and have a steady stream of good talent coming into them, such as Chief Information Officers, Chief Technology Officers, and Chief Data Officers. Other executive positions, such as Chief User Experience Officers or Chief Design Officers, are not yet widely adopted, and need to be brought in to build momentum in their respective fields. For each of these roles, we need leaders with deep expertise directly in the areas that they are taking on, and we need consistent leadership that doesn't turn over multiple times per year. By filling the executive positions first, federal agencies can generate the leadership momentum needed to adopt new ways of working across the entire agency.

> ***"OPM has had more than one CIO per year, on average."***
> *—Technical Executive, OPM*

Security roles are a close second, including Chief Information Security Officers, centralized security teams, Site Reliability Engineers, and platform teams. Security of the information held by the government is absolutely critical to offering functioning digital services, and as of right now, the government's track record on software security does not inspire confidence. A system that is not secure is not usable, which is why these roles are so critically important. Just as with executive roles, security roles can and should be filled with a diverse slate of candidates from each of the listed disciplines, to ensure proper management, usable design, and effective construction of the security measures.

Once these key roles are filled, technical talent should be hired directly into the program offices building software systems. These roles should be filled in the same discipline-based priority order: Product Managers, Designers, and Senior Engineers. By bringing this talent directly into the program offices, with experienced leaders and an experienced security team, the teams can focus on delivery of modern digital services in a supportive environment. They'll be able to build secure systems, building with their users, aligning with the product and service vision as a whole.

Lastly, technical staff needs to be hired into oversight positions, such as the Offices of the Inspectors General, the Government Accountability Office, and other internal oversight bodies. These offices have immense power and responsibility in ensuring that our public services actually work as they should. As it stands, many of these offices are just as hamstrung in their ability to effectively evaluate digital services as the agencies are in building them. Modern oversight bodies can ensure consistency and quality of services from a position that few other places in government can.



Structures

Bringing in the right talent will already be immensely impactful in building better services, but they can be further empowered by putting in place effective organizational structures. Unless there are efforts from leadership to change these structures, any incoming talent will unfortunately inherit the flaws of siloed and disjoint government tech org charts.

Effective organization of technical talent should carefully heed Conway's Law: "Any organization that designs a system will inevitably produce a design whose structure is a copy of the organization's communication structure." Agency tech leaders should take advantage of Conway's Law by building an organizational structure that maps to the needs of their users, rather than to the needs of the bureaucracy. Public users will inevitably feel the seams within government agencies as friction points in the services they use. As such, these agencies need to create structures that reduce siloing and improve how we can address user needs.

There are other aspects to effectively structuring digital teams in government. Richard Pope provides a detailed guide for building public digital platforms, which includes notes on organizational structures to match the need. Dave Thomas describes the structure of funding teams, not projects, which is critical to building consistent technical competency within government. Lastly, digital communities should be supported via Communities of Practice, a structure that provides cross-team (and cross-agency) collaboration.

Training

As it currently stands, many agencies try to fill their technical capacity gap by bringing in mass training programs, in the hopes of massively reskilling their existing talent. Training existing employees is a worthwhile endeavor, as investing in the future of your workforce certainly pays dividends. However, it will not bridge this gap fast enough to meet the growing needs of the modern digital world. Ultimately, even the best training programs can't replace years of hands-on experience. Talent is a rapid solution to the vast problems in government technology. Reskilling the workforce can work, but it will take longer than we can afford. We should invest far more into addressing the blockers to hiring great candidates, and into recruiting exceptional technical talent. While reskilling is still an effective and necessary course of action, it will not cover the ground we need, but it will be improved greatly by having more in-house talent to teach and mentor those being reskilled.

Conclusion

We're at a pivotal moment in the public interest technology space. The broader public is paying more attention to the quality of public services. More technologists are looking for ways to work on deep public problems. More money is flowing into government technology initiatives. And there are more ways for people to get involved than ever before.

And yet, we still have so much work ahead of us. If the past year has taught us nothing else, it's that we absolutely need our government services to work, because we all depend on them. In this day and age, that means these services must work in modern and digital ways, rising to meet our raised expectations. We're getting better at delivering modern public services, but we're nowhere near where we need to be.

Of all the challenges that lead to failures of technology-reliant public services—such as burdensome governance structures, outdated procurement policies, unrealistic cost and schedule expectations,

poor security, and low service quality—the lack of in-house technical talent is the singular root that can address all others. By bringing in experienced and diverse technologists to work directly within our government, we can build our capacity, build our services, and build a government that works for its people.

This path isn't without its own challenges, but we're well on our way to overcoming them. We know what disciplines we need. We know what roles we need to fill. We know what tools we have at our disposal to attract, hire, equip, and sustain talent. And we know how important all of this is.

The stakes are high, but the people are ready. It's time to build up our tech capacity, to truly modernize our government from the inside out, and to build the kinds of public services that the people deserve.

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