REPORT

CREATING IMPACT IN DIGITAL GOVERNMENT

Successes, Challenges, and Strategy of New York City's Mayor's Office of the Chief Technology Officer

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About the Beeck Center for Social Impact + Innovation

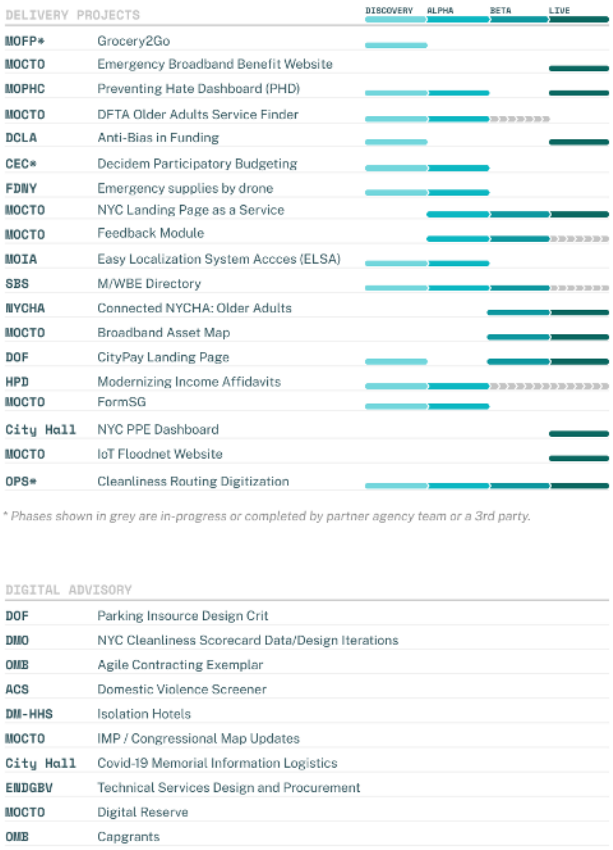
The Beeck Center is an experiential hub at Georgetown University that trains students and incubates scalable, leading edge ideas for social change. We believe impact at scale requires the courage to think and behave differently. Our work centers on investing in outcomes for individuals and society. We equip future global leaders with the mindset to promote outcome-driven solutions, using the tools of design, data, technology, and innovation. We convene actors across the public, private, and civic sectors to advance new tools, frameworks, and approaches necessary to achieve these outcomes

About this Case Study

Across the United States, a number of state and local governments are embarking on digital transformation efforts. This case study is part of the Beeck Center's New Digital Service Teams project, which is learning how leading government digital service units are introducing new approaches to service delivery. Beeck Center researchers are documenting work as it happens, including analyzing challenges and opportunities, and disseminating this information to benefit both the people of New York City and collaborators in other governments.

Introduction

The City of New York's Mayor's Office of the Chief Technology Officer (MOCTO) possesses one of the United States' most high-impact Digital Service teams at the municipal government level. The NYC Digital Service team has produced a remarkable number of digital products (Image 1, below) that have resonated on a global stage, differentiating themselves from traditional government IT teams in three keys ways: first, the work is relentlessly design-focused by virtue of having some of the city's only[1] in-house digital product designers;[2] second, it is one of New York City's only agencies where continuous user research with a diverse range of everyday New Yorkers directly informs the conceptualization, design, build, and maintenance of digital products throughout the entirety of the product life cycle; and third, it explicitly focuses on de-risking digital investments in ways that avoid cost-overruns and embarrassing product failures through the application of modular approaches to both contracting and software development.



With Mayor Eric Adams officially beginning his term on Jan. 1, 2022, we have yet to see how this New York City mayoral administration will prioritize and structure the city's investment in digital services.

[1] There are a handful of other City agencies with a small number of digital product designers, for instance NYC Service Design Studio, DCP Planning Labs, and the Taxi and Limousine Commission.

[2] Digital product designers are defined as experts with deep subject matter expertise, with the advanced technical skills necessary to artfully parlay workflows and process into elegant interfaces that are delightful to use.

Produced by the Beeck Center for Social Impact + Innovation at Georgetown University as part of its Digital Service Network, this report outlines how one small digital service team made an outsized impact on the United States' biggest municipal government. With a focus on the culture, processes, and practices surrounding the NYC Digital Service, this report details how the team supported the City of New York during the initial peak of the COVID-19 pandemic, and how the January 2022 mayoral administration change may impact the future of digital services in the City of New York.

Background

The City of New York established MOCTO in 2014 at the forefront of the digital services movement in municipal governments across the country. John Paul Farmer was appointed chief technology officer by New York City Mayor Bill de Blasio in April 2019. Under Farmer's leadership, the office had four portfolio areas of focus:

1. **Universal Broadband**: working to ensure New Yorkers have access to internet service that is high quality, affordable, and safe.
2. **Inclusive Innovation**: developing and implementing innovative ideas to improve quality of life.
3. **Tech and Society**: advancing policy that protects New Yorkers' digital rights.
4. **Digital Services**: delivering online services that make government accessible services for all.

New York City Context

Like other leading digital service teams at the national, state, and local level, the NYC Digital Service team works outside of the central Information Technology (IT) department. This modern and progressive organizational structure is common in digital transformation, as it creates space for the "acceleration of digital service delivery—without interfering with the traditional CIO office's tasks to support the existing IT services."[3]

[3]Mergel, I. (2019). Digital service teams in government. Government Information Quarterly, 36(4). Retrieved online.

Noting that there have been previous iterations of "digital services" concepts within the City of New York, the NYC Digital Service as it is today was conceived with a partner-first approach—that is, the NYC Digital Service does not serve the public directly. Rather, it supports partner agencies, mayoral offices, and departments that work directly with everyday New Yorkers and want to improve their digital presence and services.

Constraints

In order to understand the impact of the NYC Digital Service, it is important to first consider the constraints under which the team operates. At an enterprise level, strong organizational silos within city government—combined with a lack of prescriptive mandate outlining a clear agenda for change—mean that the NYC Digital Service has no formalized levers to enact digital-era transformation. Their only option is to lead by example. Even with a team of five best-in-class design and digital technologists, the volume of requests for their expertise vastly outweighs their ability to meet every potential partner's needs. As a result—and with greater resource limits due to the COVID-19 crisis—the NYC Digital Service has been forced to break its own best-practice guidelines over the past two years, and work on many projects at once. This suboptimal way of working has long been abandoned by leading technology firms because of its potential for introducing inefficiencies and errors,

While not ideal, "necessity is the mother of innovation." Despite tremendous challenges, the NYC Digital Service team has established processes for identifying and intaking projects, as well as working with partners to design and deliver maintainable solutions that meet the needs of New Yorkers and city employees. The following sections in this report outline how the NYC Digital Service team has approached intake and product development lifecycle and management, and conclude with recommendations for the future.

Selecting a Project

The lack of an official mandate or formal incentive by city leadership requiring agencies to improve digital services—such as the Transforming Federal Customer Experience and Service Delivery to Rebuild Trust in Government Executive Order (2021), 21st Century IDEA at the U.S. federal level (2018), the

Simpler, Faster, Better Services Act (Ontario, Canada, 2019), or the Government Digital Strategy "Digital by Default" agenda (United Kingdom, 2012)—means that the NYC Digital Service team does not have the authority to require partners to work with them, nor to enforce a transition toward 21st-century best practices for applying user-centered technology.

As a result, the NYC Digital Service team must be highly relational in order to identify projects, build partnerships, and deliver transformative digital products. Aging technology infrastructure coupled with the fact that "NYC simply does not have enough staff with up-to-date technology skills to do all the work that is needed of them," means that city resources are often devoted to projects that are reactive, rather than proactive.[4]

Working with limited capacity, and without a formal directive, the NYC Digital Service must be strategic about committing resources to projects. As a result, the team consistently triages, recruits, and scopes potential projects based on set criteria. As part of this ongoing, informal vetting, the NYC Digital Service team looks for projects that demonstrate the value of well designed and delivered digital products while opening the door to more substantial digital transformation work. This philosophy is similar to lawyers looking for "test cases'' to advance legal precedent; the work involves finding compelling use cases to advance digital transformation. Individual projects are considered for both their stand-alone value, and also for the opportunity to amplify other city priorities, like service design, agile development, and cost savings.

For instance, the NYC Digital Service may tackle a smaller, lower-profile project in order to build the credibility needed to persuade a skeptical partner to transition toward agile and user-centered product management approaches. This collaborative approach is a bottom-up participatory strategy to gain the permission—*and credibility*—needed to access larger, more systemic work. This is a common approach used in public sector contexts, which often value precedent over innovation, and where modernization efforts are heavily scrutinized as a source of risk when compared to the status

[4] Aggarwala et al. (2021). Rebooting NYC: An Urban Technology Agenda for the Next Administration. Draft for Discussion. Retrieved online.

quo. Delivering low-risk projects helps embody “delivery-first culture” while building support and momentum toward larger scale projects.[5]

One limitation with this approach is developing a consistent strategic narrative out of a fragmented series of demonstration projects. Here, the longer-term vision may not be immediately apparent to audiences unfamiliar with the digital transformation movement, and who cannot discern the cohesive package of transformation efforts as greater than the sum of each individual project.

Digital Services team projects generally fall into one of the following categories:

- **Ad-hoc requests for support and unmet needs**: Work that addresses an existing, known gap. These often come from city employees who have heard of the NYC Digital Service or seen their work. Often these are long-standing, but unresourced, requests.
- **Replicable digital transformation:** Requests that can be used as “proof of concept,” “exemplar,” or create a repeatable pattern of change. These projects help to demonstrate value (for instance, cost-savings) while also showcasing the art of the possible, specifically how even small digital interventions can have substantial impact. In so doing, this work helps government teams reimagine how services can be delivered in ways that resonate with New Yorkers’ expectations of 21st-century government.
- **Political needs:** Requests that come from political offices or leadership, or advance a high-priority work area.

[5] Clarke, A. (2019). Digital government units: what are they, and what do they mean for digital era public management renewal? International Public Management Journal, 23(3), 358-379. Retrieved online.

Incentivizing Partners

Leaders in the digital government movement argue that "[g]overnment moves at the speed of trust."[6] In the beginning, it can be difficult for new teams like the NYC Digital Service to get government agency partners to take on the perceived risk of working in new ways, even if the "new way" is supported by mountains of evidence. In many cases, public servants have not been specifically asked to transform their ways of working, so why would agencies take on the perceived risk inherent to innovation and experimentation—which includes the potential for "failure" or underwhelming results—without receiving a mandate to explore new ways of working?

As explained above, the inertia for government teams to prioritize the status quo rather than explore innovative ways of working is especially challenging in New York City, where there is no top-down change-management agenda.

To mitigate this misperception of risk, the NYC Digital Service team has honest, up-front conversations with partners at the outset of work and lays out potential outcomes in modern, agile projects. In addition to building trust by being open and transparent, the NYC Digital Service adds an incentive by actively taking on the risk of changing a partner's approach to technology. If the product or approach underperforms or fails, partners will generally not have committed the bulk of the financial, human, or political resources for the project. This strategy minimizes any potential downsides and sunk costs to partners and their team.

Additionally, if a project does fall short and needs additional work, the NYC Digital Service helps partners to build the support needed to get additional resources. When projects succeed, NYC Digital Service's goal is to ensure partners are celebrated and given credit for future-proofing their agency rather than attempting to "claim the win" for the NYC Digital Service or MOCTO as the broader office. The NYC Digital Service also completes the government paperwork needed to launch a project, including lengthy administrative burdens like cyber scans and cloud reviews.

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[6] Dacanay, H. (2019). *Government as (un)usual*. Presentation.

De-Risking Projects

Once a project has been identified, and partnerships agreed to, it is crucial that the project be undertaken in a way that reduces and removes as much risk as possible. There are several approaches to "de-risking" projects in the modern digital government movement. In the U.S., the leading approach is well outlined in the 18F De-Risking guide which details how to approach planning and procurement in smaller, agile, user-centric ways.

The NYC Digital Service team applies these de-risking approaches by breaking down their projects into a *Discovery, Alpha, Beta, Live* framework (see definitions below) to help partners understand and home in on what is most important at each phase of a project.

Key Definitions

Discovery - User needs are researched and identified, the problem framed, and an ecosystem of stakeholders outlined.

Alpha - A core service is built to meet the main user need(s), but is not generally intended for release to the general public or wider audience.

Beta - The service is improved, then tested in public (but not relied on for critical service delivery at scale).

Live - The service is public, used at scale, and works reliably. It will be continually improved to meet user needs.

De-risking by product development stage

The *Discovery, Alpha, Beta, Live* product development framing is used in jurisdictions around the world.[7] While not an official framework within the City of New York—in part because the city has not formalized any product-development approach or philosophy—the NYC Digital Service

[7] Benjamin, K., & Potts, H. (2018). Digital transformation in government: Lessons for digital health? DIGITAL HEALTH, 4.

generally describes projects in terms of the *Discovery, Alpha, Beta, Live* product development stages. This strategy is for both internal project scoping and managing expectations with partners. For instance, when scoping projects with partners, the level of fidelity a partner can expect at an Alpha phase is different than one would get at a Live stage. It is critical to ensure partners understand what they can expect to receive at each stage of development.

The Discovery phase in particular is extremely important in government projects. This stage identifies, defines, and scopes problems that users are experiencing, which in turn ensures that whatever solution is implemented or built actually addresses users' and partners' problems. This work is important as many government projects are based on guesswork, rather than evidence; conducting a Discovery phase ensures that hypotheses are tested before substantial investments are made.

While an excellent de-risking strategy, Discovery work is not easy. The challenges that any team, including the NYC Digital Service, face in terms of delivering Discovery projects include:

- A tendency or pressure to go directly to a solution without robustly understanding the problem first.
- A desire for concrete answers, and a rejection of ambiguity as inherent to the process of generating solutions. In practice, this can mean that potential partners approach the NYC Digital Service with an idea that they cannot resource, maintain, or expect the NYC Digital Service to have a menu of options ready for every bespoke idea.
- Organizational structure and historical process present barriers. For example, it is challenging to get sign off on small amounts of funding to compensate people who are participating in user research, and make sure the process is equitable. Furthermore, because it is often the first time a partner includes user research in the process, there is traditionally no funding set aside to reimburse residents for their feedback; this requires new budget requests and justifications, which is generally an onerous process.
- There are concerns over letting residents see an unfinished product, and questions about who should be interviewed.

- The procurement process is designed to approve and fund fully scoped and specified projects. This makes sense for tangible goods with known endpoints, but a known endpoint is fundamentally at odds with the Discovery phase, which is driven by user research and agile development.

Case study: With the NYC Digital Service acting as a "consultant" doing Discovery Partnering with the Department for the Aging (DFTA), MOCTO was able to build a relationship with the agency to try more interactive, user-centered ways of working. This relationship enabled the NYC Digital Service team to show the art of the possible in terms of creating a beachhead market for how DFTA could holistically modernize its service offerings.

MOCTO achieved this result by conducting interviews with users and stakeholders. This process enabled the NYC Digital Service team to identify the older adults' need for a technological solution that aggregated information and helped users identify services across multiple, disparate providers.

While a vendor had outlined a costly, complex, and imperfect solution to address this unmet need, the NYC Digital Service team was able to draw upon their relationship with DFTA to create a de-risking plan. The NYC[x] Innovation Fellows built an evidence-based Alpha product that helped DFTA avoid spending millions of dollars in licensing fees, allowing them to instead invest a fraction of the costs into an open-source solution. This project's Beta development will start in January 2022. Currently, other agencies within the NYC government are considering how to replicate this model.

Resourcing

New York City has historically relied on outsourcing technology to commercial vendors, and as a result lacks sufficient in-house capacity in terms of developers, product managers, and designers to implement a comprehensive digital government strategy.[8] Vendors form an essential part of the service ecosystem, but without in-house capacity and knowledge, a digital strategy will always be hampered by procurement rules written for physical goods and a lack of proper project management and oversight. The 2021 Rebooting NYC

[8] Aggarwala et al. (2021). Rebooting NYC: An Urban Technology Agenda for the Next Administration. Draft for Discussion. Retrieved online.

report released by the Jacobs Institute at Cornell Tech specifically identified the need for a better process for bringing in "a greater number of skilled technology professionals" that would allow for "co-development processes that distinguishes best-in-class technology development." This creates better management of vendors that allows for the city "to switch from rigid, large, procurement-based contracts to more iterative, smaller contracts."

MOCTO is addressing this challenge in a number of ways:

- Outlining how a Digital Service Standard and Assessments style approach for governance and oversight of project spending can produce results, like the £4.1 billion GBP produced with this model in the UK.[9]
- Collaborating with various partners to build a system that makes it easy to contract modularly, hire more talent with up-to-date digital skills, and build the mature digital infrastructure they need.
- Focusing heavily on the Discovery phase to identify, define, and scope problems that users are experiencing, which in turn ensures that whatever solution is implemented or built actually addresses users' and partners' problems with minimal use of technical time.
- Working with US Digital Response on the NYC[x] Innovation Fellows program, which addresses a needs gap for partners, brings in best-practice approaches from the private sector, and creates a hiring pipeline by providing a chance for volunteers to try out government as a possible career path.
- Following NYC Digital Service engagements, working with partners to develop digital-era job descriptions to support hiring city staff with modern design and technology expertise.

Ultimately, the NYC Digital Service's goal is to align three things:

- Product development phases (Discovery, Alpha, Beta, Live)
- Governance (a Digital Service Standard)
- Funding (Modular contracting)

The NYC Digital Service team is not a permanent resource for partners, so even in early Discovery, the team is working to identify, strategize, and build capacity around what is necessary for a solution to be successful in the long run. In doing so, they are helping to build in-house digital capacity in multiple

[9] Center for Public Impact. (2016). Meet Whitehall's digital wizard: Mike Bracken. Retrieved online.

agencies across the city, making it more possible for NYC to own and execute the necessary processes for Discovery, user research, scoping, and implementation.

Measuring Ongoing Success

It should be noted that the linear construction of *Discovery, Alpha, Beta, Live* product development does not address the tension present in many public sector projects between performance management and maintenance. More simply, governments tend to view the launch of a product as the end point when, in fact, it ought to be the beginning of the maintenance and iteration phases.

Often, once a product has launched, there is little political will to continue investing and improving a tool after the press releases and celebrations have passed. Furthermore, there are diminishing political returns for optimizing and improving a live digital product for the purposes of user satisfaction. This is a critical flaw in government digital services. While a company using this non-customer centric approach would find its users rapidly abandoning their service for a competitor, the monopoly of service provision in governments means a person generally has no alternative but to use the government-provided digital service.

When faced with no alternatives, and sometimes penalty fees or late fines, users of government services will often find a way to complete the government transaction—no matter how cumbersome or poorly designed the interface. This means that the true frustration for users, also known as "Administrative Burden" or "the Time Tax", is not captured or measured, and decision makers are rarely held to account for inaccessible and time-wasting services.[10] Additionally, decision makers do not "incorporate customer burden (and the impact of changes on customer burden) into cost-benefit analysis and business cases."[11] A rare exception is the NYC Digital Service, which has measured and quantified the cost-savings to everyday New Yorkers, pre- and post-digital intervention, using this as a performance monitoring benchmark.

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[10] The December 13, 2021 Executive Order from the Biden Administration is a notable example of this work taken new priority, and may mark a turning point in address these challenges.

[11] Hill, A. & Noti, J. (2009). Costing Customer Time Research Paper. HM Revenue & Customs. Retrieved online.

The Future of NYC Digital Service

Alex Bisker, the former Chief Operating Officer at 18F often asks governments, “do you plan to do less digital work next year than this year?” When the answer invariably is that governments plan to do more, she asks respondents to outline the concrete additional resourcing and scaling efforts they are investing to realize this goal. This question outlines the stark reality that many governments have an ongoing need for digital services, but limited—if any—plans to invest in strategies that enable digital services teams to thrive.

In the case of the NYC Digital Service, a number of factors have caused demand to outpace available resources. Budgetary constraints stemming from COVID-19 resulted in a hiring freeze in early 2020. This freeze was compounded citywide by the otherwise natural attrition of staff, including tech staff, a phenomenon seen at the end of any government administration. [12] However, the confluence of these two factors has resulted in ever fewer digital-era technologists in the City of New York during a period when city agencies have had a greater demand than ever for digital services. Some agencies or departments have lost most or all of their technical staff and are turning to student interns as interim solutions while they attempt to bring in long-term staff. In this regard, MOCTO as a whole, and the NYC Digital Service in particular, have done a remarkable job identifying programs to add additional capacity through programs like the NYC[x} Innovation Fellows. Since March 2020, the Digital Service team has supported dozens of fellows from programs like Coding it Forward’s Civic Innovation Corps, Princeton’s Public Interest Technology Summer Fellowship, and MOCTO’s own award-winning collaboration with the U.S. Digital Response to add additional capacity, primarily focused on New York City COVID-19 response.

While fellowships can be advantageous because they provide temporary increases in capacity without requiring additions to the budget, they are not a sustainable solution. Fellows are temporary, and can present challenges with continuity and knowledge translation. The resources needed to effectively onboard, manage, and provide oversight to fellows can drain a team’s capacity. While the resourcefulness of the MOCTO in times of tremendous

[12] Cooper, C. & Turgeon, L. (2021). The Phoenix pay system and intention to quit the federal public service. Canadian Public Administration. Retrieved online.

constraint should be celebrated, it is impossible for them to sustain and improve digital service infrastructure without broader investments.[13] Indeed, some leading digital government executives have argued that these types of digital service "heroics" ultimately undermine the case for digital investment; it reinforces underinvestment because decision makers are never forced to reckon with how threadbare teams supporting critical services are perilously close to failure.[14] Fortunately, the recent wave of hiring into the NYC Digital Service in the fall of 2021 will provide urgently needed support for product delivery.

While there is some recognition among decision makers in New York City that significant investment in digital-era talent is required in order to deliver 21st century services—for instance, a pre-COVID-19 bill focused on establishing an 18F-style Digital Service in New York City—like many other jurisdictions, New York City has yet to align a comprehensive vision for digital services with the proven operational and organizational approaches that enable digital-era ways of working to thrive at scale.[15,16]

At publication, the city has transitioned to a new administration, the first transition since Mayor Bill de Blasio took office in 2014. What remains to be seen is the extent to which ushering in a digital-era government will be a priority for an incoming administration facing the long tail of COVID-19 challenges. In the interim, state and local digital service teams have seen significant interest from the U.S General Services Administration, and Biden administration, given their investment in 21st-century services. In particular, the recently tabled State and Local Digital Service Act of 2021 seeks to replicate the $3.5 billion dollars in savings produced by the U.S. Digital Service through legislation that would make millions of dollars in funds available to municipalities like New York City, on the condition that they operate and embody digital-era best practices.

With a new administration, and the NYC Digital Service hiring to build out digital teams focused on de-risking and rapid product development, 2022 may usher in a period of rapid digital transformation in the City of New York.

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[13] Clarke, A. (2021). One year into the pandemic, federal digital government is largely business as usual. Policy Options. Retrieved online.
[14] Dacanay, H. (2021). Enabling conditions, not heroics. Retrieved online.
[15] Aggarwala et al. Rebooting NYC.
[16] Clarke, A. One year into the pandemic.

Around the United States, municipalities will be watching the City of New York, and continuing to look to the NYC Digital Service as a model for how digital-era transformation can be achieved inside City government. The Beeck Center will continue studying, tracking, and publishing reports about these leading efforts.