

Enabling Technology Innovations After COVID-19

Lessons Learned from the
Coronavirus Pandemic and
Recommendations to Support the
Deployment of Technology

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About the Fellow



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Executive Summary

Background

- The COVID-19 pandemic forced most businesses, organizations, and governments to suspend in-person operations and shift to virtual settings.
- Like much of the rest of the world, Montgomery County Government (MCG) was unprepared for a pandemic and had to make quick decisions to innovate and implement new technologies that would enable continued government operations from a virtual space.

Problem Statement

- Technology solutions are mostly developed after an existing problem becomes a crisis.

Key Findings

- TEBS developed successful technology innovations which allowed the organization to continue to operate remotely. Examples of technology innovations include the MC311 Chatbot, the HHS Vaccination Hotline Virtual Agent, and Seamless Docs.
- Many of these technology innovations bypassed the standard procurement procedure through emergency exemption waivers in order to expedite implementation.
- Employees report that they do not often have the opportunity to collaborate with others outside of their immediate workgroup, but when they are able to, it is frequently productive.

Summary of Recommendations

- Montgomery County Government should establish two-way feedback channels between TEBS and other departments in MCG in order to more easily identify technology needs, gaps, opportunities, and solutions.
- The county should form standing workgroups to discuss technology services and programs on a regular basis to improve MCG's ability to innovate proactively. An emphasis on cross-departmental collaboration within MCG would help employees to encounter diverse perspectives outside of their immediate workgroups, which could result in a more impactful approach to technology use and innovation.
- TEBS should conduct ongoing needs assessment to evaluate technology needs in the department and the enterprise.

Introduction

County Background

With just over 1 million residents, Montgomery County is the most populous county in Maryland. Montgomery County borders the District of Columbia (Washington DC), Prince George's County, Howard County, and Frederick County. According to 2019 estimates from the US Census Bureau, approximately 16.1% of county residents are aged 65 and over. In 2019, Montgomery County Government had 9381 permanent employees with an average age of 47.1 years old and an average tenure of 12.6 years.

Prior to COVID-19, Montgomery County Government had been slow to move as it pertains to technology innovations and development. It was rare to find an office within Montgomery County Government that regularly conducted business virtually. Contributing factors may have included workforce demographics, internal resistance to change, and the absence of immediate need up until the pandemic.

Timeline of the Pandemic

Much like the rest of the world, Montgomery County Government was unprepared for the pandemic. On March 5, 2020, Governor Larry Hogan announced the first 3 COVID-19 cases in the state – all of which were in Montgomery County – and declared a state of emergency. By March 23, 2020, Governor Hogan had ordered the closure of all nonessential businesses, restricted gatherings of more than 10 people, and postponed a local primary election. Understanding the quick timeline of the March 2020 shutdowns is important in order to emphasize the immediate nature of the shift to remote work. While much of Montgomery County has reopened (partially or fully), it is still important to acknowledge that the pandemic is still ongoing, and thus, issues that have become more prominent due to COVID-19 are still relevant and active challenges.

How did this create need in Montgomery County?

The COVID-19 pandemic created significant need in Montgomery County in two primary dimensions. One, it increased the number of residents requiring or seeking government support. Reasons for this may include needing unemployment benefits,

seeking reassurance during a time of uncertainty, and COVID-related needs such as tests and vaccines. Two, the pandemic put high pressure on the government as it attempted to navigate remote work for the first time.

Problem

During COVID-19, Montgomery County Government and TEBS were challenged to discover a way to continue regular operations while working in a remote setting. In particular, the coronavirus pandemic exposed areas where Montgomery County Government has needed technology innovations for a long time, while simultaneously providing an opportunity to develop those solutions. Due to the sudden nature of the shift to remote work, it was necessary to make decisions much more quickly than normal in order to minimize disruptions to government operations and resident services.

At the writing of this report (August 2021), Montgomery County and the rest of the world is beginning to cautiously reopen. While the pandemic is far from over, the county's pandemic experiences and broader history demonstrate a broader capacity for technology innovation when it is considered essential, but not before.

This report identifies Montgomery County Government's reactive approach to technology innovation as a key problem, as it reduces the county's capacity to serve residents and limits work efficiency. Components of the problem may include issues with communication, process, and organizational culture. Why is it that Montgomery County Government's approach to innovation tends to be reactive instead of proactive? What steps can the county and TEBS take to adopt a more proactive strategy of technology innovation and deployment?

Problem Statement:

Technology solutions are mostly developed after an existing problem becomes a crisis.

Significance

At its core, Montgomery County Government exists to serve its residents. Therefore, Montgomery County should be constantly striving to improve its operations, efficiency, effectiveness, accessibility, and convenience to residents. Over 1 million residents rely on the county government for essential services such as trash and recycling services, public transportation, COVID-19 relief and other health services, broadband, and more.

In an increasingly digital world, it has never been more important to maintain updated technology, systems, and programs. While it is impossible to predict or prepare for everything that could go wrong, MCG has demonstrated that it is able to successfully innovate and deploy new technologies, even during crisis. It is important to continue to remain agile beyond the pandemic in order to stay up to date with technology use and better serve residents.

“Never let a good crisis go to waste.”

– Winston Churchill

COVID-19 Technology Innovations

In the following pages, I will be discussing three examples of successful technology innovations that MCG and TEBS have implemented during the pandemic. These examples are intended to highlight some ways that introducing new technologies into the regular workflow can be effective at improving overall government operations and service delivery for Montgomery County residents. I will then discuss the overall impact of these innovations, how change management can play a role in the deployment of new technologies, and my recommendations for adopting a more proactive strategy of technology innovation.

Example: MC311 Chatbot

MC311 (Montgomery County 311) is a hotline for non-emergency information and resident services. You can reach MC311 by calling 311 in the county or 240-777-0311 from anywhere. Operating hours for MC311 are 7am to 7pm on weekdays only.

Need: As a result of the pandemic, MC311 began to experience an increase in call volume. Many residents were seeking information about COVID-19, including tests, vaccines, stay at home orders and other shutdown mandates. At the peak of COVID-19, MC311 was receiving approximately 900 calls per day with a 10-20% call abandonment rate.

Technology Innovation: Due to an increased number of calls to MC311 particularly regarding COVID-19, TEBS (in coordination with MC311) planned, developed, and implemented a chatbot which is currently hosted on the MC311 website.

Process: MC311 vocalized their need for help. After consultations with Microsoft and Gartner, TEBS decided to move forward with the development of a chatbot hosted by Zammo. The Office of Change Management (TEBS) assisted with this project, including leading kickoff meetings and conducting analysis to understand the root issues that MC311 was experiencing. This process included business objective mapping, an evaluation of MC311 content, and top requests.

Performance/Impact:

- Abandon rate (hang-ups) decreased from approximately 20% in January to an average of less than 3% in March
- Hold times decreased from 15 minutes or longer in January to an average of under 1 minute in March
- In the last 90 days 33671 total users 102485 total messages; 50% of which (51,236 user interactions) are incoming.

Example: HHS Vaccination Hotline – Virtual Agent

In 2020, the Department of Health and Human Services created a vaccination hotline that residents could call to obtain information about COVID-19 vaccines, including eligibility, availability, and appointments.

Need: The increased demand for service during the pandemic exposed our need for innovative and modern solutions. In this case, the COVID hotline was receiving a high volume of calls which staff found difficult to handle.

Technology Innovation: TEBS partnered with HHS to implement an interactive voice response (IVR) telephone solution; the goal was to streamline the manual process for agent assistance to expedite response times and reduce call-wait times. TEBS was able to implement this technology in just a few days.

Process: From an initial call on Friday, January 15 with Zammo and Microsoft, the virtual agent was implemented on Tuesday, January 26 (6 business days). The process went through several iterations as vaccination requirements evolved. It was easy to make revisions with help from Zammo and Microsoft to include improving the telephone experience (long pauses; dropped calls), incorporating a more human-like voice, and adding a Spanish workflow.

Performance/Impact:

- 100% of calls were diverted to the HHS bot in the first two weeks, handling 17,000-plus successful conversations
- In Week 1, the bot supported 7,850 conversations and produced an 80% success rate (the industry standard being 65%)
- Week 2 results grew to 1,300-plus daily conversations, totaling 9,160 conversations; Week 2's success-rate increased to 86%. The success rate remained stable at 86% during the time we used this agent. **(no longer in use)**

Example: SeamlessDocs

SeamlessDocs is an online, cloud-based service which allows users to convert PDFs and other documents into fillable documents that can be completed, electronically signed, and submitted virtually.

Need: When Montgomery County shifted to remote work and residents were asked to stay home, it was no longer possible to fill out or sign forms in person. Montgomery County Government needed a tool that enabled approvals, signatures, signoffs, and more without having to go into the office.

Technology Innovation: TEBS introduced SeamlessDocs to the county government in order to digitize forms that were previously only available as hard copies.

Process: The need for an electronic document service was obvious and immediate upon the transition to remote work during COVID-19. TEBS staff reviewed potential solutions and vendors and chose SeamlessDocs for several features, including multiple signature capability, high cybersecurity measures, and the ease of integrating SeamlessDocs into the workflow. SeamlessDocs was granted an exception to the regular procurement model on an emergency basis to expedite its implementation. Upon hearing positive feedback from staff and observing high usage of the solution, TEBS decided to maintain SeamlessDocs post-pandemic.

Performance/Impact:

- Staff overseeing implementation estimate approximately 100,000 registrations in SeamlessDocs for COVID-related forms.
- 207,703 lifetime submissions, 350 active user licenses, and 3088 active forms (all numbers current as of 6/28/2021)
- Estimated savings:
 - 51,926 hours saved for internal staff (based on 15 minutes saved per submission)
 - \$2,596,288 saved in reduced labor from lower processing time (based on an estimated employee wage of \$50 per hour)

Impact of Technology Innovations

While COVID-19 was the catalyst for the implementation of these innovations, each of the technologies discussed in this report have positively impacted Montgomery County beyond the pandemic.

County employees have reported that COVID-era technology innovations have enabled new services, enhanced productivity, and increased overall capacity to serve residents and deliver additional value.

For example, the AI technology provided by Zammo enables TEBS to customize solutions quickly and adapt readily to the changing needs of the community during normal operations in addition to a global pandemic. This technology helps employees to respond to problems swiftly and effectively and to pivot when customer feedback and data suggests that it is necessary. Unlike contact-center AI solutions requiring costly “rip-and-replace” approaches, the Microsoft-Zammo.ai IVR chatbot can be layered on top of an existing telephony system, requires no technical integration, and can be quickly and easily updated. Benefits include enhanced productivity and reduced costs over other cloud telephone solutions, no developer time (low to no-code solution), quick training, affordable pricing, and a data analytics platform providing insights to improve and adapt content.

Overall, these technology solutions have helped to provide additional value to county residents. In particular, the MC311 chatbot, the HHS virtual agent, and SeamlessDocs all enable expanded support and accessibility for community groups in need by increasing easy access to information and improving convenience for residents.

County employees have already recognized the significant impact of COVID-era technology innovations and are taking measures to ensure that the improvements to workflow and service delivery remain and continue to grow in the future. For example, TEBS has decided to maintain SeamlessDocs for the enterprise beyond the pandemic. While COVID was the driving force behind the digitization of many paperwork processes, the increase to productivity and user convenience was significant under normal operations as well. In a feedback survey sent to enterprise users, staff expressed that they wanted to maintain the program and potentially expand its use in the future.

These outcomes are directly aligned with department goals of best supporting the community in an inclusive manner. By incorporating new technologies into the workflow, the county becomes more resilient, modern, and agile, leading the organization toward more innovative solutions to best support our residents. These solutions are exemplary of how technology enhances government operations. A proactive strategy to technology innovation will modernize operations and better position Montgomery County Government in the future.

Options

Taking into consideration the lessons learned over the course of the pandemic so far, a window of opportunity has opened to reframe the way Montgomery County treats technology. The following are potential courses of action that the county could take to address the problem as put forth in this report and to adopt a proactive strategy of technology innovation.

- **Develop and maintain a technology catalog.**
 - TEBS could develop a catalog of technology services, programs, and other systems that MCG provides to its departments, including examples of ways that offices use those programs. The creation of a comprehensive technology catalog would benefit the organization by facilitating awareness of existing technology programs offered by the county.
- **Establish two-way feedback channels between TEBS and other departments.**
 - TEBS could establish two-way feedback channels in a collaborative effort with other departments. An emphasis on improving internal communications would benefit a strategy of proactive technology innovation by allowing employees to work with other staff outside of their immediate workgroup, fostering new ideas and innovation.
- **Create a decision matrix.**
 - TEBS could create a shared decision matrix to determine if a new technology should be implemented or if an existing technology should be maintained. A decision matrix could help to encourage collaboration between departments and offices to ensure that all relevant stakeholders are given an opportunity to provide input before a decision is made.

Recommendations

So far, this report has identified the key problem that technology solutions are mostly developed after an existing problem becomes a crisis. This report recommends that TEBS should establish a two-way feedback channel between TEBS and other departments in the county government in an effort to adopt a proactive strategy of technology innovation.

This proposal includes a two-part approach to improving internal communications within the enterprise. The first part is a recommendation that the county should establish standing workgroups comprised of employees, managers, TEBS staff, and other stakeholders from a wide range of offices in the enterprise. These workgroups would serve as a venue for “solutions exploration” where employees can discuss technology that they are currently using, additional ways to utilize technology, technology issues, and other issues they are experiencing in their offices that may have technology solutions. The formation of standing workgroups, which could meet quarterly, would fill a gap in current operations by encouraging collaboration within TEBS and across departments, while providing an avenue for bottom-up feedback as it relates to technology innovation and deployment.

The second part of this recommendation allows for top-down feedback in the context of technology innovation. TEBS should conduct ongoing needs assessment of general technology needs within the department and the enterprise. This is something TEBS has already begun to explore in a limited capacity; there is an in-progress needs assessment for applications established by TEBS in an effort to explore needs before solutions. Importantly, any ongoing needs assessment would rely on feedback from stakeholders including users and other staff. This report recommends expanding on current progress and using a similar structure with a broader scope to include other technology beyond applications.

Together, the two components of this recommendation would form a two-way feedback channel that positions TEBS and Montgomery County Government to provide proactive technology innovation. These recommendations are based on commonly cited best practices of internal communications, including the creation of cross-functional teams, clear goal setting with an established timeline, and regular evaluation of current practices.

Implementation & Change Management

Montgomery County and TEBS should employ change management strategies in order to effectively establish two-way feedback channels dedicated to technology innovation and deployment.

What is Change Management?

Change management is the process of helping employees or other stakeholders understand and adopt an organizational change. Effective change management helps an organization make smart choices, increase productivity, and decrease risks. The Office of Change Management works to improve service within the organization and for residents by renovating legacy processes and reimagining end to end processes to provide innovative technology solutions.

The Office of Change Management played a direct role in the implementation process of two of the examples of technology innovation described in this report – the MC311 chatbot and the HHS virtual agent. The change management perspective encourages a deep consideration of the root cause of a problem prior to the development of a solution. Additionally, change management encompasses other components of program implementation, such as IT training and communications planning. In these ways, the Office of Change Management should play a significant role in the development and maintenance of the two-way feedback channels recommended by this report.

The Office of Change Management can help Montgomery County to evaluate aspects of technology problems and to create a space for ongoing needs assessment of technology within the enterprise.

Applications in MCG

The COVID-19 pandemic has proven, if nothing else, that technology is critical infrastructure in a modern world. Technology is widely used across Montgomery County Government, particularly since the onset of the pandemic. This report has described three specific examples of technology use by the county, but there are hundreds more affecting both internal operations and resident-facing services. Examples of technologies supporting internal operations include the use of Microsoft Teams, Zoom, and document sharing platforms. Resident-facing services that rely on technology innovations include virtual meetings and town halls, licensing and permitting paperwork, bill payment, and information services.

The two-way feedback channels proposed in this report would facilitate further technology innovations in the future. Creating space for cross-departmental collaboration would bring other parts of Montgomery County into the conversation, including County Council, County Executive, and other relevant stakeholders.

Challenges

Any recommendation brings its own set of challenges. Potential challenges to the recommendations in this report include:

- **Cost to the County.**
 - Financial: There is a financial cost to adopting and maintaining technology programs such as Zammo, which would need to be included in the budget.
 - Time: Both the proposed workgroups and the ongoing needs assessment would require employee hours.
- **Evaluating success.** For these recommendations to be effective, the county would need to define benchmarks for success, and develop evaluation metrics, and conduct regular progress checks.
- **Risk Management/Cybersecurity.** While technology benefits organizations, it is important to maintain high cybersecurity in government operations.
- **Managing expectations.** In order for the proposed cross-departmental workgroups to be effective, they would likely require some form of mediation among managers, employees, and TEBS.

Conclusion

The past 18 months have certainly been challenging across the board. In particular, the coronavirus pandemic has exposed areas where many organizations have needed technology innovations for a long time, while simultaneously providing an opportunity to develop those solutions. Montgomery County Government's reactive approach to technology innovation disadvantages residents by slowing response in times of crisis. This report has suggested that the county should refocus its strategy of innovation to be proactive in nature to stay up to date and reduce service delays. The establishment of two-way feedback channels between TEBS and the rest of the county government would support this goal. Montgomery County Government exists to serve its residents, so it is essential to develop a system that works for them.

The recommendations in this report may also contribute to the overall strategic vision of TEBS and the county government. Modifying the strategic vision and goals of the enterprise to treat technology as critical infrastructure may help to reframe the conversation surrounding technology innovation and change. In an increasingly digital world, it is important that Montgomery County stays up to date in its technology use, and this means that the county needs a way to discover internal technology needs on a regular basis before crisis occurs. This proposal can serve as an important step towards adopting a proactive strategy of technology innovation.



References

Disclaimer: Much of the information referenced in this report comes from internal interviews, presentations, analyses, reports, and other documents not publicly available. These documents were sent to the author by supervisors and other staff in TEBS. All other sources are listed in this section.

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