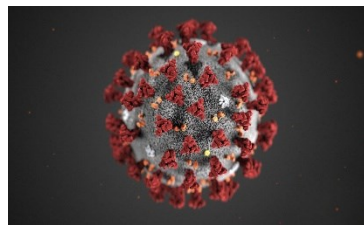# State of Connecticut
CIO AWARD FOR SPECIAL RECOGNITION

WORKER MOBILITY
Competing for Home Office Space with Cats and Kids

"Triumph through Tragedy"

March 2020 to Present
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EXECUTIVE OVERVIEW

We gain triumph through tragedy. The COVID-19 Pandemic has been a great trial for our world. However, through all the trials we encounter, there is opportunity to respond positively and decisively, to which the State of Connecticut IT staff accomplished. Faced with the need to make State workers mobile within a matter of days was the catalyst to this critical project. Within days several initiatives were implemented, and unprecedented communication and collaboration was seen amongst all the Agencies. It is estimated the State spent approximately $800,000 for Pandemic Readiness, in comparison to what we have seen published for other States, approximately $2-3 Million for their efforts. This exercise was a glowing example of strong communication, collaboration and dedication. This exercise was a pilot of collaboration that is yet to come through the State's information technology "Optimization Effort" - an effort that will change the way that Connecticut delivers technology services. Knocking down silos and uniting as one.

THE IDEA

While most private organizations had built and implemented broad, remote work capabilities, the State of Connecticut lagged in this area. Most of the State's functions and services rested heavily on in-person interactions. The pandemic caught Connecticut, and many other organizations across the world, unprepared for remote worker mobility. On March 20, 2020, Governor Lamont signed the Executive Order, *"Stay Safe, Stay Home"*.   How in the world would Connecticut continue to provide its most critical services while keeping the staff and citizens home and safe from this deadly illness? All hands-on deck! Connecticut   needed   to move   fast   and   furious   to transform the   majority   of its roughly   50,000 in-person employee workforce to work remotely.
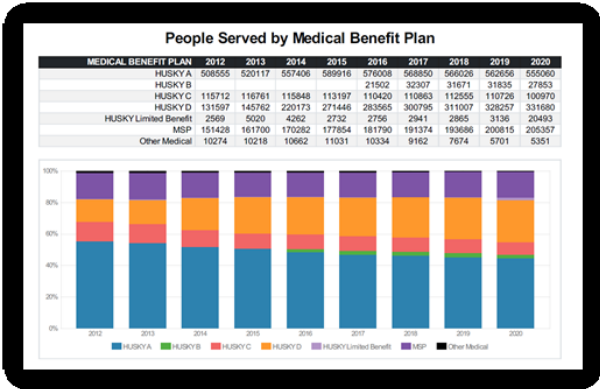
For Connecticut, worker mobility was not the norm. Most staff worked in the office and had limited opportunity to work remotely. Along with this cultural norm of office presence, Agencies, historically, worked independently, with minimal collaboration with other agencies. Many Agencies have their own technology department and staff and felt they were self-sufficient. For remote work to be successful across the State, Agencies needed to come together as one unit, support each other and work together.

In this unprecedented situation, we all needed each other to implement State-wide solutions and strategies to weather the storm. **This was a watershed moment!** Through technology, teamwork and communication, the State of Connecticut was able to enable worker mobility within a few weeks, without skipping a beat as well as setting the stage for the future of Agency interactions and collaboration.
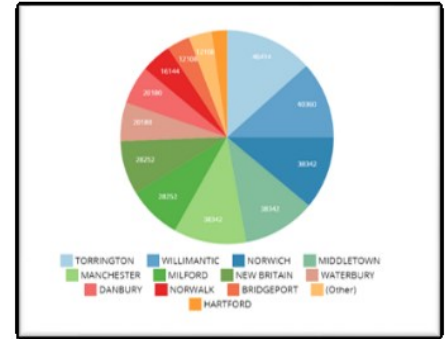

Worker mobility was particularly important for Connecticut to continue its most critical work. Not only was it necessary to protect the people from the pandemic, but many citizens rely on services provided by the State to survive. Among Connecticut's total population of 3,605,944 in 2020, around 1/3 of the people participate and receive State benefits and services. State benefits, programs and services put food on the table, provide critical funding for medical treatments and keep our children safe from abuse and neglect.

People Served by Medical Benefit Plan

MEDICAL BENEFIT PLAN	2012	2013	2014	2015	2016	2017	2018	2019	2020
HUSKY A	508555	520117	557406	589916	576008	568850	566026	562656	555060
HUSKY B					21502	32307	31671	31835	27853
HUSKY C	115712	116761	115848	113197	110420	110863	112555	110726	100970
HUSKY D	131597	145762	220173	271446	283565	300795	311007	328257	331680
HUSKY Limited Benefit	2569	5020	4262	2732	2756	2941	2865	3136	20493
MSP	151428	161700	170282	177854	181790	191374	193686	200815	205357
Other Medical	10274	10218	10662	11031	10334	9162	7674	5701	5351

An example that was crucial to the health and well-being of Connecticut citizens, especially through this health crisis, was DSS Medical Benefit Plans. These benefit plans provide critical medical support to individuals of all ages. Tens of thousands of people over the years have relied on these vital benefits. Enabling remote work allowed State employees to continue to provide these benefits without interruption. Image from published report: Connecticut Department of Social Services - People Served - CY 2012-2020 | Connecticut Data.

In 2018, there were thousands of allegations of abuse and neglect. Worker mobility allowed the Department of Children and Families to answer the *Careline* remotely. Keeping this crucial call center up and running is critical and any delay could affect the safety and well-being of children. Image of aggregated data populated from Connecticut DCF Abuse and Neglect Allegations Open Source Data.

These are just two examples of the many support programs provided by the State. Our citizens rely on us for safety, food, housing, medical and so many other services for their survival. Using technology, the State was able to support worker mobility, enabling State staff to continue to provide our citizens with the services they need, especially during the pandemic.

During a worldwide pandemic, the nation needed to find ways of providing services to their citizens while keeping their employees safe. Many States implemented remote work in response to OSHA's Emergency Temporary Standard COVID-19 Rule. To protect the workforce, Connecticut allowed remote working whenever possible as part of the Governor's Executive Order, *"Stay Safe, Stay Home"*. Remote work is the 7th of the State Chief Information Officer (CIO) top 10 priorities of 2021 Technologies, Applications and Tools. This effort was one Connecticut agencies faced together and worked together to overcome the many obstacles and challenges along the way.

IMPLEMENTATION

Connecticut needed to quickly devise a strategy to bring all the State Agencies together, pool our resources and communicate clearly and frequently across all State agencies, allowing identification of all available resources across the Agencies to enable employees to work remotely. This included Virtual Private Network (VPN), Microsoft Office 365 (O365), application proxy, remote desktop Azure Remote Desktop Protocol (RDP) and a few other approaches.

The Connecticut CIO implemented a statewide information technologies virtual meeting and through cross-agency collaboration, the teams developed a plan - "Everyone in the boat! Start paddling this way!"

This virtual meeting was held 3 times a week (M, W, F) to identify the needs, communicate the options and provide a status of the implementations. A specific COVID-19 work queue was set up in our Information Technology Service Management (ITSM) tool to prioritize requests specific to enable Agencies for remote work. These queues were reported on during the meetings, allowing the Agencies to understand delivery schedules and to ask questions about approaches. Our focus and measures for success were: 1) speed of enabling remote workers, 2) the continuation of State services.

Information Technology (IT) personnel from all Agencies worked collaboratively to deliver solutions. Larger Agencies deployed their own laptops and managed the increased volume of user request while the central IT area worked with all other Agencies. The Help Desk volume increased significantly across the State and personnel from across the State pitched in to help address the work queue. Senior leadership cut through red tape to accelerate the implementation of solutions. Federal and State emergency funds helped streamline the acquisition process.

The entire State faced the issue together and all were on board to provide solutions to allow the State to continue to operate. Finances were needed to provide funding for quick purchases and many of the personnel put in extra time to quickly deliver solutions on time. This was a large coordination effort.

The first technical task was to identify and gather information on how to support a remote workforce of the Executive Branch. We had a physical VPN concentrator of around 8,000 profiles assigned which had never been stress tested for concurrent users. We partnered with our vendor and stress tested the concentrator, determining it was only able to support 5000 profiles concurrently. Further investigation provided us information that through the support of O365/Email accounts we were able to identify a target number of approximately 26,000 personnel needing remote VPN connectivity. This triggered a process that moved us toward purchasing virtual VPN appliances/perpetual licenses at $75k versus that of the physical appliances at $380k-$400k. This accounted for a cost avoidance of over $305k - $325k. To this day, the renewal for these licenses are a reasonable annual renewal rate of $12.5k for the virtual VPN appliances. With this, we did need to purchase RSA licensing for every profile at around $2 per license for each individual.

Initially, 10 proxy RDP servers were created using Azure App Proxy, and over the course of time, we expanded that number to 60. We started the direct RDP (Remote Desktop Protocol) gateway utilizing Multi-Factor Authentication (MFA) and went operational with that service about 3 months after the pandemic started (summer). We migrated all users off the app proxy onto the direct RDP in the fall. Currently, we average about 2,500 users daily through the gateway.

Service delivery was impacted a bit as we scrambled to procure laptops. We also saw a rise in helpdesk calls and the Operations team was full time augmenting the helpdesk for just about 2 months during the start of the remote sessions. The only direct cost encountered was to purchase laptops. We had available storage and licenses for the remote setups.

Additionally, we leveraged Network Policy Servers to allow us the use of utilizing Microsoft MFA versus RSA and slowly but surely gathering us a cost savings measure that will lessen the RSA license count by ¾ of 26,000 (roughly over $150,000), as we have each agency migrate over to Microsoft MFA.

IMPACT

This project was key for the State of Connecticut. The key benefits to this project - Improved coordination and communication between agency IT teams:

- Increased focus on enterprise-wide solutions rather than spot solutions by individual Agencies
- Enablement of worker mobility/telework at the Executive branch level
- Enhanced worker safety during the pandemic
- Better ability to engage remotely/virtually with citizens, enhancing the safety of both workers and the public being served during the pandemic

Prior to the Project:

- Inter-agency coordination/collaboration was lacking as related to technology initiatives
- Spot solutions implemented at the Agency level was often not looked at from a statewide, enterprise point of view
- Many different remote access methods in place that were not always conducive to sharing across agencies
- Capacity for remote access methods was not able to meet the demand of most of the State workforce transitioning to a telecommuting model during the pandemic
- Methods were not in place to allow remote access from non-State owned/managed devices
- Solutions for virtual contact with the public being served were either not available or not vetted by IT in many agencies leaving it up to workers to come up with their own methods. This was exacerbated during the pandemic where, for example, children in State run care facilities were not able to meet in person with their families for fear of transmitting COVID-19 within the facility.

From a Human's Perspective:

Although there was a tremendous amount of activity going on to keep the State functioning and our citizens receiving the services they depend on, there were also many challenges facing all of us, personally. The pandemic meant that EVERYONE was at home and EVERYONE was trying to work, play, eat, cook, etc.!

Most of the State employees have never had to work remotely and were also as unprepared to handle this new environment and way of operating -
- I need to find a place in their home to set up shop
- Which room would work best to have some privacy while I'm "working remotely?"
- Can I wear my PJs at meetings?
- How can I both work and care for my children who are now "home schooling?"
- How can I have a meeting while the dog is barking? The cat is walking across my keyboard!
- Will I have the focus needed to pay attention at work while my family is running around, yelling or singing?
- Learning how to use new technology to get my job done
- Was my home WIFI secure?
- The challenge of looking great over video
- The new boss/employee relationship evolution? How do we interact now?
- HELP!

After the Project:

As a result of our efforts, we dramatically improved inter-agency coordination/collaboration for technology initiatives via regularly scheduled status calls with all IT leadership across all agencies. Additionally, while this was instituted as a direct response to the pandemic, the regularly scheduled calls have continued and now act as an ongoing conduit for inter-agency coordination for IT initiatives beyond the pandemic response.

- Increased IT leadership communication facilitates technology solutions being looked at from an enterprise wide point of view and helps bring to light opportunities for sharing of solutions.
- Centralized solutions for remote access were identified and implemented to meet a broader range of use cases
- Capacity of enterprise solutions was scaled up very rapidly to meet demand. Agencies worked together in a coordinated fashion to adopt these solutions effectively.
- Additional remote access methods were put into place to securely allow remote access from clients that were not State owned or managed. Examples are Remote Desktop Gateways and Virtual Desktop Infrastructure instances presented via secure Universal Access Gateways.

- Solutions that provided a way for families to stay in touch with children in care were vetted and implemented within those facilities to allow families to stay connected during the lock-down phases of the pandemic. Instruction and training were provided to the workers in these facilities to allow them to effectively facilitate these connections via Facetime, Zoom for Gov and Team. Describe the benefits and the impact for the nominating agency and constituents.

From a Human's Perspective:

- There is a new level of understanding when the dog barks
- There is a new way to interact with my peers and it's nice
- Less travel to the office
- More time getting work done from home
- More flexible hours and better work/life balance
- Co-workers getting to know you better (life events happening in your video background!)
- How to snap our fingers to control the kids without speaking
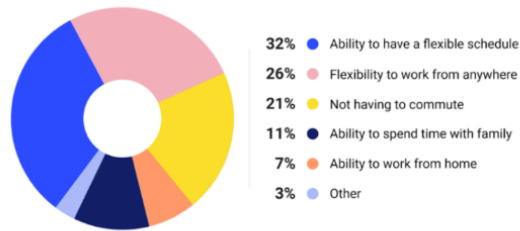
Going forward we will:
- Continue to manage and maintain the solutions that were implemented or expanded to allow the ongoing need for remote access and remote public engagement to be effectively and efficiently met even as in person services are returned. These additional remote options are now a permanent part of the technology offerings to enhance how we work and engage with the public.
- Continue to modernize the current solutions and evaluate new solutions to allow State government to better be able to react to the next emergency whether it be due to another pandemic, natural disaster, or some other unforeseen event.

This has been well worth the investment as:
- It has allowed State government to better engage with the public in ways that are easier for them to access.
- The overwhelming success of teleworking for appropriate areas of the State workforce allow our elected and appointed leaders to explore cost saving measures that were not possible to the same degree without these telework options. Examples of these potential benefits are:
- Office and facility size can be re-evaluated and potentially downsized as a significant portion of the workforce continues to telecommute to some degree.
- Teleworking for large portions of the State workforce has contributed to a reduction in electrical cost for many agencies. This can be seen in data provided in the State's open data portal. Electricity Costs Per Agency | Connecticut Data Some agencies realized a 15% reduction in electrical cost from 2019 to 2020. The continued downsizing of office space would allow the State to realize even greater cost savings.
- Reduced traffic congestion in our larger cities as telecommuting negates the need for all workers to be in offices at the same time.
- Potentially more flexibility in work schedules, better work/life balance, and reduced travel time and costs helps facilitate a happier workforce. These, and other benefits outlined in the linked article by GlassDoor for Employers, help make a happier and more dedicated workforce. (2) New Messages! (glassdoor.com)

What's the biggest benefit you see to working remotely?

- 32% Ability to have a flexible schedule
- 26% Flexibility to work from anywhere
- 21% Not having to commute
- 11% Ability to spend time with family
- 7% Ability to work from home
- 3% Other

State of Remote Report 2020
buffer.com/state-of-remote-2020

- Continuing telework for appropriate staff can have many benefits to the employer such as increase productivity, access to a larger talent pool, streamlined communications, and many others as shown in this article by Indeed.com. 16 Benefits of Work From Home for Employers | Indeed.com

Remote work benefits (for employers)

01	02	03	04
Easier recruitment	Improved retention	Increased productivity	Lower costs

TalentLyft

OVERALL SUMMARY

The global coronavirus pandemic is/was very much a crisis and a tragedy for so many across the world. When a tragedy occurs, there is a pause, a re-group, an assessment and a strong resolute to survive and thrive. This is what happened to the State of Connecticut. We stepped back, identified what needed to be done. Every one of us stepped up and brought our A GAME, locked arms and moved toward our new future. We are strong and will be stronger and more resilient in the future as a result. Let's be sure not to forget the lessons learned and what our State can do when we work together toward common goals.