

Leveraging Technology to Innovate and Deliver Results: Insights from Sanjay Gupta, Former Chief Technology Officer, U.S. Small Business Administration

By Michael J. Keegan



Editor's note: Since this conversation, Mr. Gupta has taken on a new role at the U.S. Department of Justice. We wish him all the best.

Since 1953, the mission of the U.S. Small Business Administration has been to maintain and strengthen the nation's economy by enabling the establishment and vitality of small businesses and by assisting in the economic recovery of communities after disasters. By expanding access to

capital, counseling, federal contracts, disaster assistance, and entrepreneurial education, SBA gives small business owners the tools they need to create jobs and grow businesses. "SBA may be one of the smaller cabinet level agencies," admits Sanjay Gupta, "but it has played a very significant role in the nation's largest economic recovery response in the wake of the COVID-19 global pandemic."

For Gupta, technology has been a critical enabler in making this happen. The agency strives to leverage technological advances and innovation to deliver more effectively its mission. He joined me on *The Business of Government Hour* to provide insights into SBA's cloud journey and digital technology strategy. We also discussed his leadership approach, key challenges, and SBA's response to the pandemic. The following is an edited excerpt of our discussion, complemented with updated and additional research.

Would you tell us more about your role and the portfolio under your charge?



The chief technology officer is responsible for the agency's overall technology strategy. What are we trying to accomplish? How are we trying to get capital into the hands of the small business entrepreneurs and startup communities? It is about identifying innovative solutions that help SBA answer these questions and meet its mission.


For example, given the increase in SBA loan and grant applications, we needed to expand and accelerate the use of algorithm-based decision support systems. It was important for us to use these solutions, so we could increase our throughput. On the cybersecurity side, we've implemented a cybersecurity strategy that leveraged the use of artificial intelligence and machine learning for anomaly detection capabilities. This has been immensely beneficial given the shift to working in a virtual environment. Over the last couple of years, we've pursued serious outreach to vendors and partners who offered their assistance. These included Fortune 50 companies and startups. I served as a point of contact for this outreach effort, and it was a very invigorating experience for me.

Since coming to SBA, I have led major transformations. In 2017, I launched the SBA Cloud Initiative, which was an eighty-two-day cloud journey with no funding. The big impact of that was in fall of 2017 when three major hurricanes, Harvey, Irma, and Maria hit landfall. Our disaster response mission went immediately into high gear. We ramped up to nearly six thousand people in less than sixty days. We were able to leverage our cloud computing environment to accelerate our disaster recovery response.

In 2018, I led a ninety-day Trusted Internet Connections (TIC) modernization initiative with the Office of Management and Budget (OMB), Department of Homeland Security (DHS), and the General Services Administration (GSA). I worked closely with them to showcase how we were reaching and meeting the objectives of the Trusted Internet Connections using our cloud-based cybersecurity model. In 2019, I had the opportunity to lead a similar ninety-day continuous diagnostics and mitigation modernization initiative with

DHS. We were able to meet their objectives without necessarily following design patterns or the architecture that they were proposing.

What are the top management challenges?

 The top challenges we face center around people, budget, and contracting acquisition. On the people side, we face two key challenges: technology skills gap and sufficient staffing. The skills and competencies of the workforce do not align with the skills needed to use modern technologies. Second, we do not have enough skilled resources adequate to meet the demand we are supporting.


We have taken four specific actions to help mitigate these challenges. First and foremost, we made increased availability of training, especially in new technologies like cloud, data, and cybersecurity in the cloud environment. Second, we have increased using contractor resources where possible and appropriate. Third, we began a major initiative creating new career paths for the technology workforce, which allows them to grow and advance both technically and managerially. Finally, we are augmenting our workforce by tapping into programs like the Presidential Management Fellows Program.

The next challenge concerns budgeting. We started looking for cost savings opportunities. What I call self-funding models. You identify cost savings from right sizing maintenance contracts and direct those funds to core

priorities like modernization and innovation. We also must understand how the federal budget process works, and then manage resources accordingly. We can tap into our IT Working Capital Fund or the Technology Modernization Fund. You need to leverage all available funding sources. It also helps to make a solid case in your congressional budget justification for increased appropriation.

Our next challenge involves contracting and acquisition. IT is moving into what I call a consumption-based model. In this model, we see less buying of servers or equipment. It also isn't easy to determine how much you will consume of IT services in a given period. You make the projection and then you make the acquisition accordingly.

Would you tell us more about SBA's cloud journey?


 Fairly new to federal service, I launched the SBA Cloud Initiative in spring of 2017. There was a confluence of events at the SBA. Our primary data center had all kinds of challenges, from aging and out-of-date equipment to overheating and reliability issues. We went from no cloud footprint to a design architecture to building a cloud foundation in eighty-two days. Moving to the cloud did result in cost saving and cost avoidance. But the most significant result was our enhanced ability to respond and ramp up during a disaster. Moreover, having this cloud foundation in place has helped SBA tremendously in scaling up in response to the COVID-19 pandemic.





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What were the key cloud benefits for SBA?

 First and foremost, it is speed to execute. In the traditional model, you need to acquire hardware, software, do the installations, configure it, and now you’re able to start “building a solution for the business.” This changes in a cloud environment. Your ability to start building that business solution is reduced to hours, not months or quarters.

The second benefit comes from the cloud’s capacity to scale up and scale down based on demand. Having this ability is critical given SBA’s unique mission. Whether we are responding to a natural disaster or standing up economic recovery programs in the wake of a global pandemic, the cloud infrastructure provides the flexibility that enables mission delivery.

Third, from a purely financial management standpoint, the cloud allows us to move away from a capital expenditure model to an operational expenditure model. We no longer have to make significant investments in refreshing hardware every five or seven years.


What were some of the challenges in migrating to the cloud?

 Moving towards a cloud environment requires a shift in mindset. It’s a paradigm shift going from an asset procurement model to a consumption model. You need to look at your infrastructure in the same way that you look at a utility at your home. It’s like a light switch—when you turn it on, charges are incurred. There’s also a change management aspect to consider; what may have taken months before can be done almost overnight in a cloud environment.

The benefits far outweigh these adjustments. We have extensively leveraged cloud-based solutions across SBA to scale up rapidly to respond to the exponential increase in demand. Broadly, these capabilities include secure network connectivity, virtual onboarding, cybersecurity, email-based

customer service, citizen portals, virtual desktops, solution platforms, reporting, analytics, and dashboards. Secure, cloud-based solutions have increased our flexibility and agility to deploy solutions and address mission needs. It has also allowed for the creation of new innovative solutions that can combine services and deliver outcomes previously inconceivable.

What are the benefits of developing a robust technology strategy?

 COVID-19 global pandemic underscores the critical role IT plays in all we do. In fact, organizations that invested in modern technologies prior to the pandemic were better able to respond to changes brought on by the pandemic. We saw it within SBA. In areas where we had modern solutions in place, we were able to pivot quickly in the wake of the COVID-19 response.

It’s about delivering improved citizen services using tools like automation or technology, such as artificial intelligence and machine learning. Using these tools can transform mundane functions into value added work. The SBA administrator




recognizes the strategic importance of being technology driven—which is the ability to swiftly adopt innovative, technology-based solutions to scale, and secondly, deliver capital efficiently to America’s small businesses.

In the wake of this pandemic, SBA staff peaked to nearly four times the staff size pre-pandemic. With the maximum telework policy in place, most SBA staff continued their work virtually. With the surge in staffing, the need for laptops went up significantly. Given the global supply chain disruptions, laptop availability was constrained. Recognizing the importance of the new surge staff becoming productive quickly, we accelerated the implementation of the virtual desktop solution in the SBA cloud that allowed the staff to access the SBA network and applications using their personal computer. This modern solution was secure, scalable, cost effective, and quick to implement, establishing a new precedent in federal IT.

Email based customer service inquiries for the various SBA programs increased exponentially almost overnight. Within a week, we implemented a modern cloud-based case management system to help manage the burgeoning caseloads. Modern technologies such as Natural Language Processing, together with automation, provided an insight into customer sentiment and support trends.

Would you outline for us your leadership approach?

 My leadership approach follows five principles. These are in no order of priority. The first principle consists of six words: “Think big, start small, iterate rapidly.” The second principal is challenging the status quo. Third principle is about empowerment. Fourth principle is about learning by doing and demonstrating value. And last, it’s about being inclusive.

Let’s explore each one of these principles. “Think big” is having a grand vision and setting out to achieve it. You must have a vision that you believe in, which stretches you and your team to aspire. “Start small” means finding a business case where you can apply the vision on a smaller scale to demonstrate what you can achieve. “Iterate rapidly” when you’re starting small, you’re doing it in a controlled manner and you’re learning from it. You continue to iterate rapidly and then scale up. These six words are foundational to my approach to leadership.

Leaders challenge the status quo. It is not about simply challenging something just for the sake of it. It requires a shift in mindset resting on the inherent belief that there is a better way to do something: to deliver better value to the



agency and to its mission. Once you have developed a grand vision, then you must empower your team to achieve it. You give them the latitude to drive towards the goal. An effective leader learns by doing and works to demonstrate value. It is wonderful to absorb knowledge, attend events, and participate in webinars. These things can inspire and motivate, but there is no substitute for doing things yourself—putting knowledge to work. It’s all about learning by doing.

The second side of this is demonstrating value. In the case of technology, it’s not about the latest gadget or innovation. It is about finding ways or using technology to meet the mission needs of the agency. That is how to demonstrate value. The final principle centers on being inclusive across multiple dimensions—within teams and amongst sectors and people—as a condition of achieving a leader’s grand vision.

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