

## Modernizing Communications and IT Systems: 4 Considerations for Government Agencies

The Los Angeles County Fire Department (LACoFD), one of the largest fire departments in the country, was relying on an outdated system of cathode-ray tube TVs on carts to relay critical information throughout its fire and control facility. Sharing reports from neighboring rooms required personnel to constantly rush between stations. The inconvenience cost valuable time and energy, particularly in large, crisis situations like wildfires or earthquakes.

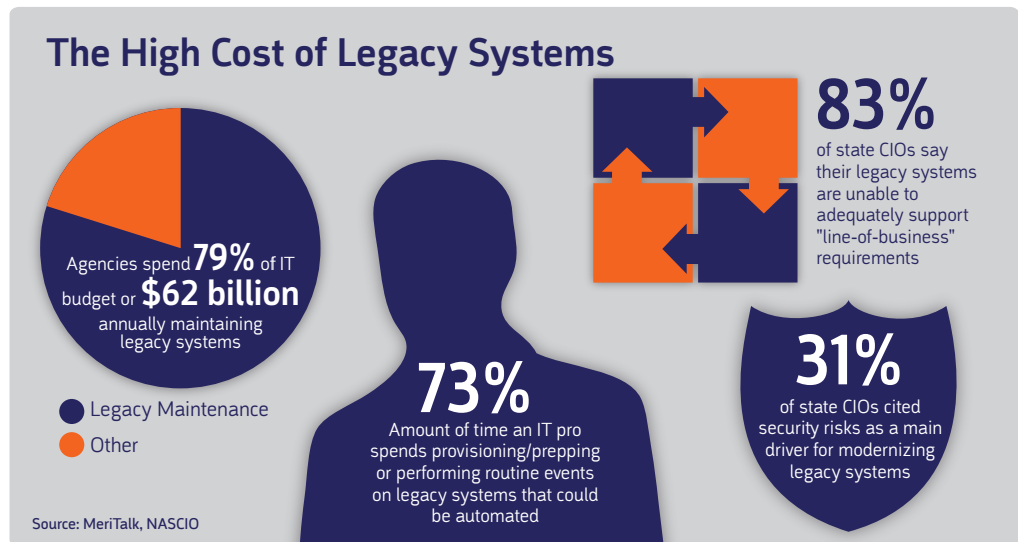
Recognizing the risks associated with this system, LACoFD modernized its communications infrastructure, and in doing so, avoided disaster. At the height of the notorious Station Fire, Los Angeles County's communications infrastructure at Mt. Disappointment was in jeopardy of burning. But thanks to LACoFD's updated communications system, including a 2 x 4 video wall with the ability to send and receive multiple cable-TV and satellite signals and also incorporate feeds from helicopters and aerial footage, the entire dispatch floor was able to quickly gain an overall perspective on the crisis. This enabled them to make on-the-spot decisions much more effectively.

The video wall allowed the dispatch floor, the emergency coordination center and the department operation center to share information so that resources around the county could be re-directed to put out the fire and save the communications infrastructure. "Had it gone up in flames, losing the site would have been catastrophic for all Los Angeles County operations," said Scott England, LACoFD telecommunication systems consulting engineer.

### The High Cost of Legacy Equipment

The LACoFD example notwithstanding, aging information and communications technologies may not seem like a catastrophic threat to a state, county or city, but they foster substantial financial, technical and programmatic challenges. According to a recent MeriTalk report, **agencies currently spend 79 percent of their IT budgets, or an average of \$62 billion annually, to maintain legacy IT systems.**<sup>1</sup> Productivity costs are also startlingly high, with a single IT pro spending 73 percent of his time provisioning/prepping for or performing routine events that could be automated.<sup>2</sup>

Despite these high costs, many agencies drag their feet when it comes to upgrading legacy infrastructure. Why? Because the process can feel overwhelming and can become mired in political and organizational challenges. And sometimes it's just plain easier to embrace the "if it isn't broken, then don't fix it," mentality, even when modernizing can provide significant cost and efficiency savings and mitigate the high risk of future system failure.



This paper offers useful guidance for IT decision makers who should be modernizing their communications and IT infrastructure. It examines why modernization is necessary, and walks readers through important considerations, such as:

- ▶ How to maximize your budget while ensuring you get the best solution
- ▶ How to address network security concerns to guarantee security parameters are upheld
- ▶ How to consolidate infrastructure to reduce costs and improve efficiency
- ▶ How to integrate and increase mobility in and out of the workplace

The paper also discusses some of the organizational and financial obstacles state and local agencies face in modernizing legacy infrastructure. It concludes by offering practical suggestions for overcoming these challenges.

### Modernizing Your Legacy Infrastructure Is Critical

In the National Association of State Chief Information Officers' (NASCIO) annual State CIO Top 10 priority list, modernization of legacy applications has been a top 10 technology priority for state CIOs for more than five years.<sup>3</sup> With 83 percent of CIOs stating that their legacy systems are unable to adequately support "line-of-business" requirements,<sup>4</sup> it is clear why modernization is an urgent issue that must be addressed. NASCIO reported that the situation is so critical that it is on par with a disaster event. According to NASCIO's report, "business-critical IT systems that shut down due to the lack of available support for obsolete hardware or applications, combined with the lack of planning for their replacement, presents just as much risk to state IT operations as a man-made or natural disaster."<sup>5</sup>

## Key Steps to Successful Modernization



In addition to supporting mission-critical business applications, replacing aging communications and IT infrastructure makes sense for cost, productivity and service-oriented purposes. For example, aging infrastructure:

- ▶ Is more expensive to operate and maintain
- ▶ Utilizes outdated workflows that reduce productivity
- ▶ Creates security issues due to the inability to meet changing security guidelines
- ▶ Offers a poor user experience because of slow, clunky interfaces that don't support web-based features or database technologies
- ▶ Can't always be supported or maintained—the employees with the expertise to manage these systems are approaching retirement and new workers do not have the appropriate skills
- ▶ Doesn't typically support new technologies such as cloud computing, consolidated infrastructures or strategies such as shared services or intra- and interagency collaboration

Delaying the inevitable need to modernize means risking the possibility of a catastrophic event in the near future. By modernizing now, state and local agencies can eliminate the costs and risks associated with aged infrastructure while increasing employee productivity and improving service delivery.

### #1 Consideration: Find the Right Solution, Then Think About Cost

In government purchasing decisions, cost is often the principal factor. While cost will always be an important consideration for any agency, it should not be the only factor when deploying an infrastructure or systems upgrade. To guarantee selecting the best possible solution that fully meets current and future needs, agencies must ask these key questions:

- ▶ What is the problem we are trying to solve?
- ▶ Do we have a real understanding of what is needed?
- ▶ What is the right way to solve it?
- ▶ How much will it cost to do so?
- ▶ Who has the best understanding of our IT and communications infrastructure?
- ▶ Who can integrate legacy systems with new technology for optimal performance?

Once these questions are answered, agencies can examine alternative solutions to see which ones meet all the criteria and then vet providers to confirm they have the knowledge and expertise for the work that needs to be done. This process will help ensure that the solution implemented is not just cost effective, but meets the business need at the best price.

By putting the cost question last, agencies can be more open to thinking about how to modernize their system for the best overall outcome. Selecting the least costly solution without making other considerations can lead to purchasing a solution that falls short of the agency's needs and may even end up being more costly in the long run, when additional fixes are required.

### **Tip: Communication is Key**

The protocol for most government agencies seeking to refresh or update legacy systems is to put out a bid and then select the provider who offers the least costly solution. However, this kind of process creates a communication barrier between the agency and the potential provider, making it difficult for both those bidding and those awarding the bid to know if the offering truly reflects the best solution at the best price. If agencies want to ensure they receive the right solution, they should meet with trusted providers beforehand so that they can understand what the agency is trying to accomplish and identify a realistic amount to spend. Providers can then offer a fully functional solution at the appropriate price.

For legacy system upgrades look for audio visual (AV) integrators who have an understanding of IT infrastructure and how to integrate legacy systems with new technology for optimal performance. Include AV integrators in the initial planning process with agencies as well as with IT providers so that the full scope of the project can be addressed from its onset.

## **#2 Consideration: Make Sure Your Network Remains Secure**

In the NASCIO report, 31 percent of state CIOs stated that a main driver for modernizing their legacy system was the security risk.<sup>6</sup> Modernizing legacy infrastructure and systems can significantly mitigate security risks, but only when a proper evaluation of the infrastructure is done to ensure it meets security parameters.

As part of any infrastructure renovation, it is important to determine if the agency has the right network security and infrastructure for the solution being implemented. Hiring a trusted and skilled service provider, one who can work with the network security officer as well as the solution vendor, is highly recommended.

Network security should always be a top concern and must be addressed as part of any upgrade or refresh. Finding a trusted, knowledgeable provider that can secure the network and work well with agency staff and vendors is crucial.

#### **Tip: Involve the Network Security Officer**

Working closely with the network security officer is key to ensuring that security risks are eliminated. A qualified provider should have a list of questions that can be addressed with the network security officer to determine if the agency has the right security and infrastructure for the new solution. Then, the service provider can make a level assessment of the network and its security levels and certify that the network meets all security and compliance requirements.

### **#3 Consideration: Consolidate and Optimize for Cost and Productivity Savings**

The enterprise business model of consolidating technology choices through standardization and/or shared information and services can create significant resource and equipment savings. This approach not only reduces costs through economies of scale, but helps break down traditional information silos, enabling agencies and departments to be more productive and deliver services more efficiently.

For users, consolidating and standardizing the technology implemented throughout an agency's facilities increases productivity. Employees are no longer left to figure out different technologies for each new environment. Familiarity with the equipment, regardless of which facility or room employees use, also provides cost savings by reducing training costs (employees only need to be trained on one system). Likewise, consistent use of one system over time increases efficiency because users become confident with a system and proficient enough to use its advanced capabilities.

In mission-critical applications, such as military or emergency operations centers, consolidation and standardization are crucial. It is imperative in these areas that no technology delays or difficulties occur like the kind users often confront when business technology changes from location to location. The ability to share information quickly across departments and agencies is vital. In these kinds of environments, consolidation provides secure access and quickly synthesizes information across all locations to generate fast and accurate decision making.

On the IT side, maintenance, troubleshooting and support are optimized when communications and IT infrastructure is consolidated and standardized. When the system is the same in every room, support technicians can:

- ▶ **Quickly troubleshoot and fix problems** because they develop an in-depth knowledge of the system
- ▶ **Improve security** because the number of devices vulnerable to attack decreases
- ▶ **Reduce overhead** in spare supplies because the same equipment is used in all locations
- ▶ **Streamline configuration and programming** because all rooms use the same code, eliminating the need to customize each room's tools and services

#### Tip: Choose the Right Mix and Match of Technologies

Creating a hodge-podge solution that combines old and new technology can end badly when there is not careful consideration of the ability of different technologies and products to interoperate. Mixing and matching technologies that weren't designed to integrate creates costly maintenance issues, both in staff or consultant time required to constantly maintain and tweak the system, as well as in the need to stockpile spare parts.

To avoid these kinds of missteps, vet both IT and AV providers to ensure they have a solid understanding of IT infrastructure and know how to integrate legacy systems with new technology while optimizing the performance of the overall infrastructure and protecting initial investments. Include AV and IT providers in all phases of planning to reduce problems down the road. When AV integrators are brought into the planning process from the start, they can make important recommendations for how the disparate technologies can interoperate.

Consolidating and optimizing technology solutions can be difficult to implement due to funding and organizational challenges. To succeed, agencies must develop clear standards of what technology will be used and how it can best be shared. To guarantee overall success, identify an advocate for consolidation, someone who will be there long-term and can oversee and enforce standards

## #4 Consideration: Choose Solutions That Embrace and Improve Mobility

A Forrester survey of government employees around the world revealed that 94 percent of respondents regularly work on laptops, 63 percent use smartphones and 18 percent own tablets.<sup>7</sup> The continued growth in mobile devices means greater demand from government employees and citizens for using mobile devices within government business processes.

Modernizing communications and IT infrastructure to meet this growing trend is crucial to improving productivity and providing better service. Enhanced mobility supports a wide range of government priorities, such as:

- ▶ **Creating government continuity** by eliminating the possibility of a single point of failure during an emergency
- ▶ **Improving citizen service** by allowing employees to be more responsive to citizen requests from any location
- ▶ **Enhancing public safety** by enabling first responders to use mobile devices with video and collaboration applications to increase situational awareness
- ▶ **Increasing workforce productivity** by allowing employees to work on the device they are most comfortable using
- ▶ **Creating cost savings** by sharing device costs with employees, many of whom are willing to assume some or all the hardware and monthly service costs in exchange for the freedom to work anywhere, anytime

### Tip: Upgrade to a Unified Communications Platform

Many state and local government agencies devote a significant portion of their IT budgets to deploying and operating communications systems, including email, audio conferencing, video, instant messaging (IM), web conferencing and telephony. Typically, each agency might have a portfolio of individual solutions, each serving different communication needs, which all have their own capital and operational expenses, maintenance contracts and internal support staff.

IT teams should be looking for cloud communications solutions that are less costly, easier to maintain and deliver a unified approach that supports important collaboration services and mobility trends. By upgrading to a unified communications platform that provides audio, visual and instant messaging capabilities, such as Lync® or RealPresence®, IT teams can quickly and affordably increase the availability of collaboration options for a more mobile workforce.





Agencies can't ignore mobility. In the Forrester survey, 3 out of 10 government workers admitted that they find “alternative ways” of using their devices for work when it is prohibited<sup>8</sup>. When agencies ignore mobility instead of embracing it, there is greater likelihood of sensitive citizen or government information being revealed due to a lack of security protocols and IT support. Ultimately, cost savings and improved productivity are lost when employees and citizens cannot collaborate effectively and efficiently.

**Overcoming Obstacles to Achieve Modernization**

Even for those IT decision makers who know modernization is a necessity, obstacles and challenges that hinder modernization efforts remain. Here are some of the key organizational and budgetary challenges decision makers may face, and some suggested strategies for overcoming them:

**The organizational culture is resistant to change.**

**Suggested Strategy:** Involve end-users early and often during business process reviews, improve communications with affected organization(s) at all levels—agency directors, finance officers, and end-users.

**Identifying and gaining funding sources is problematic.**

**Suggested Strategy:** Getting buy-in requires developing a strong business case for any new solution. When people can see the return on investment in cost and productivity savings as well as the risks (higher costs, lower productivity, and disruption of mission-critical services), they are much more likely to support an upgrade. Other innovative funding options may also include looking at bond issues, federal funding opportunities, public-private partnerships and outsourcing strategies.<sup>9</sup>

**Finding the right solution that fits the budget is tough.**

**Suggested Strategy:** There are several ways to manage the cost component once you know what needs to be done. For example, an agency can:

- ▶ **Scale solutions** so that additional hardware can be added as capacity needs increase over time. This will help limit upfront costs.
- ▶ **Future-proof the solution.** Implement a solution that is flexible, adaptable and has the ability for increased capacity.
- ▶ **Consider product warranties** when purchasing a solution. Using products from reputable manufacturers with long-term extended warranties will eliminate the need for additional yearly budget appropriations for maintenance.
- ▶ **Select the right procurement process.** There are a variety of cooperative purchasing programs available to state and local agencies that can be used to allow government agencies to go directly to the vendor(s) of choice without being required to bid out the project. This allows a trusted provider to sit down with the agency and work out the right solution and the right functionality at the right price.



**Implementation is difficult because there is a lack of adequate project management.**

**Suggested Strategy:** Lack of project/program management and adequate governance is a challenge when implementing the replacement of large communications and IT infrastructure. For the greatest success in implementation, there must be strong client communication with the provider(s) and an internal client advocate who can promote key processes by advocating for network security, consolidation and enhanced mobility solutions, all while working hand-in-hand with the provider to find the best solution at the best cost.

When internal project management talent is simply unavailable, outside consultants can be used to drive and manage change. Alternatively, cross-divisional and/or multi-agency advisory groups can be developed to help drive the project forward.

**Conclusion**

To meet primary mission goals and avoid catastrophic system failure, state and local agencies must address legacy infrastructure issues. IT decision makers can develop the necessary buy-in needed to implement change by identifying the risks of relying on aged communications and IT infrastructure and then creating a business case that outlines the return on investment for an upgrade or modernization program. Once buy-in is reached, guidance and challenge solutions presented in this paper can be applied. The suggestions and strategies will help an agency realize a successful upgrade that is able to meet current and future business needs while delivering significant cost savings, productivity improvements and better services to citizens.



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## References

<sup>1</sup> MeriTalk. "Innovation Inspiration: Can Software Save IT?" July 2013.

<sup>2</sup> Ibid.

<sup>3</sup> NASCIO. "2014 State CIO Top 10." November 5, 2013.

<sup>4</sup> NASCIO. "Digital States At Risk! Modernizing Legacy Systems." NASCIO 2008 Survey of the States. <http://www.nascio.org/publications/documents/NA-SCIO-DigitalStatesAtRisk.pdf>

<sup>5</sup> Ibid.

<sup>6</sup> Ibid.

<sup>7</sup> Cisco. "Bring Your Own Device: How Do State and Local Governments Address the Proliferation of Employee Devices?" [https://www.cisco.com/web/strategy/docs/employee\\_devices\\_final.pdf](https://www.cisco.com/web/strategy/docs/employee_devices_final.pdf)

<sup>8</sup> Ibid.

<sup>9</sup> NASCIO. "Digital States at Risk! Modernizing Legacy Systems." NASCIO 2008 Survey of the States.