

**FLORIDA LOCAL GOVERNMENT INFORMATION SYSTEMS ASSOCIATION  
TECHNOLOGY ACHIEVEMENT AWARD PROGRAM**



**Name of Nominee(s):** Craig Dunn

**Nominee's Jurisdiction(s):** City of Longwood

**Submitter Name:** Craig Dunn

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**Submitter City & Zip Code:** Longwood, FL 32750

**Submitting for Individual Achievement Award**

**Jurisdiction Size:**

Please note that the jurisdiction size will be determined utilizing the latest information from the Bureau of Economic and Business Research (BEBR bebr.ufl.edu). For special districts, size is based on customer base and not population.

- Innovative Leadership in Management of Information Technology**
- Innovative Use of Technology to Service the Internal Operation of the Jurisdiction**
- Innovative Use of Technology to Service the Public**

**Submitting for Collaborative Achievement Award**

**Please list the Organizations**

City of Longwood

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**Description:**

Please describe the significant achievement in no more than three pages (excluding any photographs, samples or examples). As much as possible please provide detailed measurable results or observable advancements.

## **FLGISA Individual Achievement Award Submission**

**Award Classification:** Innovative use of technology to service the internal operation of the jurisdiction

**Award Category:** Jurisdiction with populations from 0 – 20,000

**Jurisdiction:** City of Longwood

**Submitted By:** Craig Dunn (IT Director)

### **Background and Introduction**

In 1997 the City of Longwood added their first IT employee to service the information technology needs of the City. At that time there was no city-wide computer network, servers, email, databases, backup systems or even a website. Since that time the City has implemented many complex technologies including a modern computer network, a datacenter, IP telephony and much more. Since the City hired its first IT employee in 1997, the technology footprint at the City has increased exponentially however the IT headcount has remained at one for nearly 17 years.

In recent years the perfect storm of sorts impacted the City. The financial impact of the Great Recession, the tremendous amount of technology support responsibilities foisted upon one employee and an increasingly complex and challenging desktop environment posed great challenges to the City. The City needed to think strategically to address these tremendous challenges. Was there a technology or other solution that would be financially viable for the City while at the same time aid the one IT employee in supporting the desktop infrastructure and the ever increasing need for technology support?

The City decided leveraging virtualization was the best path to address these challenges. It is quite common for municipalities to utilize virtualization for servers and other technology normally housed in the datacenter. Organization-wide desktop virtualization is a venture most municipalities do not take on. However, the City decided to implement virtualization for its production servers, VOIP unified communication system and desktops. The all-inclusive virtualization strategy included physical servers, a storage area network and backup system designed for virtualized environments.

The following details the justification and reasoning applied to making the decision to deploy desktop virtualization at the City. The positive financial outcome, impact on existing IT staff and ability to better manage the desktop needs of the City are the reasons to award the Individual Achievement Award for Innovative use of technology to service the internal operations of the jurisdiction.

### **Financial Outcome**

When considering the viability of virtual desktop computing, the financial aspect of the project was a tremendous factor. It was necessary to create a cost analysis for both a traditional and virtual desktop computing environment. The cost analysis included a five year period which is quite common for many IT capital projects.

The table below outlines the five year costs for a traditional desktop computing environment which includes replacing a portion of the City's desktop computers each year, the addition of a desktop support employee and desktop management software applications.

Year	Desktop Computers	Desktop Support Employee	Desktop Management Applications	Total
Year 1	\$ 33,330	\$ 55,000	\$ 1,000	\$ 89,330
Year 2	\$ 33,330	\$ 56,650	\$ 1,050	\$ 91,030
Year 3	\$ 33,330	\$ 58,350	\$ 1,103	\$ 92,782
Year 4	\$ 33,330	\$ 60,100	\$ 1,158	\$ 94,588
Year 5	\$ 33,330	\$ 61,903	\$ 1,216	\$ 96,448
<b>Total Cost for 5 Years</b>				<b>\$ 464,178</b>

The table below outlines the five year costs for a virtual desktop computing environment which includes the capital lease payments for the cost of implementing a virtual desktop infrastructure, the Cisco SmartNet coverage to ensure all of the equipment included in the project will remain operational throughout the duration of the project and the licensing maintenance for the virtualization software.

Year	Capital Lease Payments for Project Infrastructure	Cisco SmartNet Coverage for Infrastructure	Vmware Licensing	Total
Year 1	\$ 50,835	\$ 12,510	\$ 4,134	\$ 67,479
Year 2	\$ 50,835	\$ 12,885	\$ 4,341	\$ 68,061
Year 3	\$ 50,835	\$ 13,272	\$ 4,558	\$ 68,665
Year 4	\$ 50,835	\$ 13,670	\$ 4,786	\$ 69,291
Year 5	\$ 50,835	\$ 14,080	\$ 5,025	\$ 69,940
<b>Total Cost for 5 Years</b>				<b>\$ 343,435</b>

Thus, the analysis concludes choosing the path of desktop virtualization would save the City approximately \$120,743 over the five years of the project. Obviously staff time is still involved in managing the virtual desktop environment, but the time required can be absorbed by the existing IT staff and not require additional headcount in the IT department.

### **Impact on Existing IT Staff**

Virtual desktop computing has a very positive impact on existing IT staff. Current IT practices for managing desktop computers involve Windows Updates, application updates, new software installations, registry pruning, periodic clearing of temporary files, reviews of log files, installation of software for new peripherals, malware scanning, troubleshooting hardware issues, driver updating and more. If one hour per month was allocated to effectively manage each desktop computer that would add up to over 1200 hours per year just in routine maintenance tasks. Comparatively it takes about 10 hours per month to maintain the gold images and recompose the desktop pools each month for a total of 120 hours per year to maintain the virtual desktop environment. So, effectively managing a virtual desktop environment takes approximately ten percent the amount of time versus a traditional desktop computing environment. In addition, when a traditional desktop is added to the network, that machine would require 12 hours per year of maintenance to effectively manage the machine. In a virtual desktop environment there is no additional time required to manage the new desktop.

### **Ability to Better Manage Desktop Computing**

The previous paragraph detailed many of the tasks required to effectively manage a desktop computer system. In most cases a desktop support employee would see each desktop computer once per month when performing the monthly maintenance tasks. This support model works effectively until there is a network-wide issue that impacts many or all users on the network. The one desktop support employee simply cannot address all client computers at one time or even in one business day or week. While users impacted by a network-wide issue wait for the desktop support employee, they are not able to perform their work tasks and the mission of their department and the City are negatively impacted. For example, in today's computing environment sophisticated malware and viruses can very easily be introduced into a computer network and infect many or all users. In a traditional computing environment the one desktop support employee would be overwhelmed and it could take some time to completely resolve the issue across all impacted desktop computers and add the concern of reinfection as infected machines re-infect cleaned machines. In a virtual desktop computing environment the desktop pools could be recomposed in less than an hour and the malware is effectively purged from the environment.

Another example of the effectiveness of virtual desktop computing is dealing with troubleshooting of desktop computers. In a traditional environment an issue must be analyzed using troubleshooting skills requiring time and could even force the desktop support employee to reimage the desktop computer. When the same scenario is applied in a virtual computing environment the troubled desktop is simply recomposed back to the most recent snapshot and the user is back in operation in about 20 minutes time. Most likely time is saved by the IT employee and the impacted user has access to their system quicker than in a traditional desktop environment.