

# Cloud Computing

PUEBLO COUNTY  
SHARED SERVICES  
PARTNERSHIP

BY DAN MAURO

One of the big expenses for counties is the cost of purchasing and supporting enterprise software. In 2007, when small municipalities were already struggling to survive on their shrinking revenue base, several counties in Colorado were informed by their property assessment management software vendor that a new version was being released, and their costs were going to increase substantially. By sheer necessity, the counties began looking for more cost effective options. At the Fall Assessor Conference of 2007, the assessors of the southern Colorado region were discussing their plight when the assessor for Pueblo County, Colorado, came up with the idea of sharing Pueblo County's internally developed property assessment management system.

The assessor contacted Pueblo County's Information Systems Department to see if the idea was feasible. After a couple of brainstorming sessions, it was determined that just making the software available as open source software would not be an adequate solution for small counties. Enterprise software requires substantial support, and the quality of that support directly determines the success of the software.

And thus, the idea of a shared service was born. For this project to be successful, Pueblo County would need to provide full-time support for the software, and that would require hiring employees. The county would have to come up with a business model and funding structure to support not only the shared services but also to help reduce Pueblo County's cost of providing the infrastructure necessary to host the shared software.

## THE CLOUD COMPUTING APPROACH

Pueblo County's approach was to eliminate all forms of duplication in the service delivery process in order to maximize the cost savings potential for each agency participating in the shared services partnership. It was decided that a cloud computing delivery method (Internet-based computing, whereby shared resources, software, and information are provided to computers and other devices on demand, like a public utility) would keep the hardware costs at a minimum. At present, Pueblo County offers the following hosted software services (SaaS) as part of the shared services partnership: property assessment management for assessor

offices, property taxation management for treasurer offices, geographic information service (GIS) data warehousing, GIS application server hosting, and Web-based query for the public to access information from the property management systems and the GIS system. Pueblo County's GIS services include hosting of data layers with multi-user editing capabilities and full featured ArcGIS server-based Web service hosting to make the map layers available to the public.

Currently, 13 elected offices in seven counties participate in the partnership, including Pueblo County's assessor and treasurer. User support for the project is channeled through Pueblo County's existing help desk system, which assigns work orders to one of four areas: application development for software issues, the assessor's office for assessor process questions, the treasurer's office for treasurer process questions, or GIS for GIS issues.

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Pueblo's system offers to host the data and applications for the shared service participants in a virtual infrastructure environment. Since Pueblo County already has robust disaster recovery abilities and relational database infrastructure for backing up data, the shared services participants do not need to invest in expensive safeguards for their databases. Access to the applications and data is provided through an Internet connection to a cluster of virtual machines.

## GETTING STARTED

The start-up cost for Pueblo County was mostly soft costs in productivity. Pueblo County put most new development projects on hold for approximately one year while its staff of seven developers made code and database changes to accommodate multi-agency use. About 75 percent of developers' time was spent on the project, and the remaining 25 percent was dedicated to mandatory Pueblo County business.

Pueblo County was already in the process of building out infrastructure to migrate to a virtualized environment. The only additional hardware expense incurred was to increase virtual desktop capacity by about 50 percent. The county was able to accomplish this with its existing budget, so no new funding was required.



The subscribing counties, mostly in Colorado’s San Luis Valley, obtained a matching grant for \$250,000 from the Colorado Department of Local Affairs office. This grant helped replace the aging desktop computers and printers within their organizations.

Pueblo County understood the financial challenges the small counties were facing and elected to keep the costs to the participating counties roughly the same as what they had been paying for annual support on their old software. The current price structure is to charge \$650 per month per user, which is less than what it costs Pueblo to deliver the same type of service to its internal users. Before the project, Pueblo’s cost for delivering software service to its internal users was \$840 per month (calculated based on technology department salaries and hardware maintenance costs). After adding 50 users from the other counties to the system, Pueblo’s cost has been reduced to \$750 per user per month. When Pueblo County is able to reduce its cost of delivering software services to the \$650 per month point, it will reduce the price structure so everyone shares equally in supporting the cost of delivering the services. The more users that participate in the shared services partnership, the lower the cost for everyone.

In 2010, Pueblo County will offset its total information technology (IT) budget of \$2.8 million (which includes three new shared services employees) with shared services revenue of \$400,000 — a 14 percent reduction. In the future, the county expects to reduce its overall IT expense by 25 percent or more.

## MANY FORMS OF COST SAVINGS

The main positive outcome of this project is cost savings, which comes in many forms. The partnership counties save by using cloud computing because they do not need to purchase and support expensive database servers. They do not need to spend time performing database backup operations. They do not need to maintain disaster recovery plans or offsite hardware. Pueblo County already has this entire infrastructure in place, but Pueblo County also saves by offsetting its infrastructure costs with revenue generated from the program. Pueblo has found that purchasing and supporting one large database server is more efficient than purchasing and supporting seven smaller ones; the same with the disaster recovery system.

Cost savings have also been achieved by combining the counties’ purchasing power. Instead of each county purchasing 10,000 paper forms for printing every few months, the counties jointly purchase 200,000 forms at one time, providing a savings for all. Pueblo County has also been able to save on its own operating system and relational database system software licensing, negotiating unlimited user licensing that includes all partnership agencies when possible. All the counties have realized database administration savings as well because Pueblo runs all seven counties in one database, substantially reducing administration costs for everyone.

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## IMPROVING PROCESSES

Before this project, smaller counties did not have the budget to use GIS for managing property information. But the partnership with Pueblo County’s well-developed GIS catapulted the GIS capabilities of the small counties forward. Each county now maintains its GIS data in Pueblo County’s centralized data warehouse and has access to the most current GIS applications through the virtual desktop system. Each county has customized online parcel viewing applications, previously unavailable from their vendors. And, by centralizing data, cross-jurisdictional property data is now available to all, allowing Southern Colorado’s communities to work together if there should be any future natural disasters that span large areas.

Furthermore, all counties now have a uniform approach to property assessment and sales analysis. If there is a lack of sales data in one county, staff can expand their search into neighboring counties to improve their sales analysis.

The partnership has given smaller counties access to automated features that were previously too expensive. For example, one county spent two and a half days last year in processing the first half tax payments for all the citizens that pay their taxes through their lending institution. This year, using the new system's mass payment feature, it took the same county only ten minutes to complete the same process.

Many improvements have been added to the software throughout the project due to the valuable input received by the different users. Each county contributes ideas about how to do things, and Pueblo County has modified both the assessor's and the treasurer's systems to make them better. Every participating agency, including Pueblo County, now has better software with improved support. The software belongs to the partnership, and everyone has feedback on how it works.

Pueblo County also achieved some economic development benefit from the program. The county was able to hire three additional full-time employees to support the program, adding money to the local economy.

## CONCLUSIONS

Thanks to Pueblo County's forward-thinking board of county commissioners, assessor, treasurer, and a very devoted soft-

### For Additional Information

#### The Groupsite for Pueblo County Shared Services

<http://pcss.groupsite.com/main/summary>

If you would like to download documents from this site, e-mail [mauro@co.pueblo.co.us](mailto:mauro@co.pueblo.co.us) for an invitation to join the group site.

#### Colorado Government Association of Information Technology

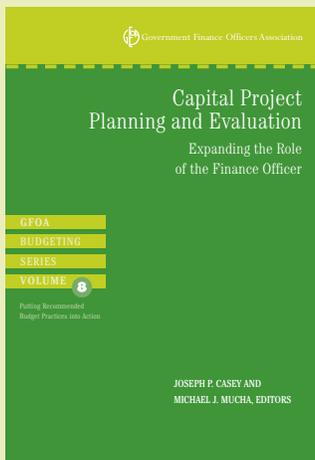
<https://cgait.groupsite.com/main/summary>

ware development team, this concept was able to become a reality. Projects of this scope and magnitude require executive-level support to be successful.

Pueblo County plans to expand this program in a couple of different areas. One will be to add additional partners to the property management systems. The other will be to expand Pueblo's service catalog offerings to include its other enterprise resource planning software products. The county expects to have its finance/payroll system ready for shared services use by the end of 2010, followed by its permitting system the following year.

Pueblo County is a member of the Government Shared Services Council (GSSC), a subgroup of the Colorado Governmental Association of Information Technology. The GSSC is made up of Colorado IT leaders who are dedicated to





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**GFOA Publications**

## Participating Agencies

- Pueblo County Assessor's Office
- Pueblo County Treasurer's Office
  
- Costilla County Assessor's Office
- Costilla County Treasurer's Office
  
- Conejos County Assessor's Office
- Conejos County Treasurer's Office
  
- Alamosa County Assessor's Office
- Alamosa County Treasurer's Office
  
- Saguache County Assessor's Office
- Saguache County Treasurer's Office
  
- Rio Grande County Assessor's Office
  
- San Juan County Assessor's Office
- San Juan County Treasurer's Office

promoting shared services among local governments. Pueblo County will also make its service catalog available through the GSSC's service offerings. This will be beneficial in spreading the word about the program and encouraging others to develop similar systems.

The county would like to be able to make its software suite as affordable as possible to other counties while continuing to lower costs for all participants in these difficult economic times. Each county that participates in the program brings in valuable ideas and different views of how to do the job. Pueblo County's goal is to provide continuous improvement to the system. It wants to be a leader in this type of service and show the country that government entities can form effective partnerships, implementing more efficient operations and reducing tax burdens on their citizens. |

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