IPTV Project Report

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# Introduction

In December of 2014 Columbus City Council submitted a Request for Proposal (RFP) to transition the City from analog TV to digital TV. The lowest bid for cable TV service to be provided to the City was approximately $50,000 a month. The goal was to consolidate the previous state of television delivery, in which 54 departments had non- IT sanctioned signals providing television service, while also achieving a cost savings and/or added efficiency. Because of the cost in the RFP, the IT director decided to implement IPTV independently; he felt it would consolidate the services and achieve a greater cost savings and added efficiency. This project was headed by the Information Technology Department of the Columbus Consolidated Government and was completed in a series of four phases. The project team consisted of Dr. Forrest Toelle (Project Sponsor), Karen Higgins (Consultant), David Gunnarsson (Subject Matter Expert), Jeremy Miles (Project Manager), and Shane Walker (Project Team Member). The team determined that WOW was the best available cable provider to partner with because of existing business relationships that did not require a bid.

# IPTV Plan

The project team developed a four-phase project plan, which included the following phases: Design, Integration, Deployment, and Maintenance and Operation. At each phase Karen Higgins would provide consultation to the team to help guide the project to successful completion. Ms. Higgins’ consultation rates were approved by the City Council on August 8th, 2017. Ms. Higgins’ main duties were to provide coordination and communication among various 3rd party vendors. However, if a cost savings would be realized during the project, the team had the contractual right to complete this project without any additional use or payments to any 3rd party including the consultant. The team used the Muscogee County School District as a point of comparison for the IPTV plan; this was mainly due to the similar nature of what the team was seeking to complete in terms of scope and technical requirements. It was also beneficial to the project team that the IT Director set up a system similar in size and technical requirements while he was the Chief Information Officer at the Muscogee County School District. The project was completed successfully, and the team implemented a very successful IPTV solution to every computer physically connected to the CCG network. This success saw a completion of the team’s goal of consolidation from hundreds of individual cable bills to a single, all-inclusive cable bill, while also increasing efficiency and lowering costs.

A few challenges were encountered by the project team. One of these challenges was finding a suitable consultant to assist with a project that had this type of scope and requirements. Ms. Higgins was found to be the most appropriate candidate because of her previous working experience on a project of this type with the IT Director while at the Muscogee County School District. Another challenge was whether a system of this type would comply with existing laws. For instance, this system takes one signal and splits it between many users. This may seem unlawful, but the City is a single entity and not any different from cable TV for home or business use.

The last challenge facing the team was the fact some departments and clubs preferred to pay for their own service. The fire department is an excellent example of this. The fire department collects money from members of the department to have a more premium and complete selection channels available to them because of the nature of their work at the various fire departments. The team determined for these situations the best way to proceed was to allow the departments to continue paying for their service while additionally providing IPTV service to any computers on the network in these locations.

# Technical Section

The nature of an IPTV system is not dissimilar to that of a common home TV network. In your common home application of adding TV service you would normally see that signal is connected to a residence and then depending on the needs of the occupants the signal is split between various rooms in the house by cable boxes. The IPTV system works in a similar fashion, just in a more scaled up way. A television signal is provided by WOW to the Citizens Service Center (CSC) where the signal is fed into a rack holding multiple streaming controllers. The signal is then sent to the 64 different buildings that IPTV service is provided too. From here any computer physically connected to the network can watch the channels provided on the network. The IPTV system is incredibly efficient. The team tested streaming every channel in high definition and found that the total bandwidth requirements of the system to be less than 5 Mb/s. This is less than 0.25% of the 2Gb/s total bandwidth available.

The IPTV system includes 10 programmable channels. These channels are the same for every user so while every user could have the ability to program their own channel, these changes would be reflected across the whole network. For that reason, the channels remain the same except for a case where the Emergency Management Services would like to broadcast announcements or similar programming. With that said, the City Manager has his own private channel that he can change with a virtual remote to be any of the channels the IPTV network receives from WOW. Along with the City Manager, some other department heads can program their own private channel as well.

The IPTV system represents success of the goal of added efficiency because the system eliminates the challenges of a traditional cable TV system. The IPTV system gets rid of the need for extra runs of wiring, while also being able to be used by all the computer monitors on the network. This is because of the low overhead needed to run the IPTV system. We are able to run the system on very low cost, low power devices such as Raspberry Pi’s, while also being able to use any size of type of monitor. IPTV is also capable of being streamed or casted from a computer to a device like an Apple TV or Microsoft Display Adapter for a TV. This streamlined system to provide TV service represents great achievement in terms of efficiency.

# Cost Savings

One of the three goals of the IPTV plan was to achieve cost savings. The previous TV solution used by the City cost $15,000 per month, while the RFP came in at $50,000 a month. The IPTV systems monthly cost comes in at $288.95. When we add in the cost of Ms. Higgins’ consultancy for the 4 phases of the project ($25,600) and the initial cost to purchase the equipment necessary ($37,575) we see a total of $63,175. When we compare that to the previous price being paid, we realize a payoff time of approximately 4 months, at which point we have paid for our up-front fixed costs and are only responsible for our quite low $288.95 monthly payment.

The comparable 10-year costs savings are even more dramatic. If we were to extrapolate the previous cost of $15,000 over ten years (120 months), we see our total cost would become $1,800,000. Every year the previous system would have cost $180,000 to continue operating. With the new IPTV system if we extend our startup costs of $63,175 over 10 years and add the monthly $288.95, we pay to WOW, the total ten-year cost of the new IPTV system is $97,849. The yearly cost of the new IPTV system with the startup costs included is $9,779 versus the old existing cost of $180,000.00. This realizes about a $170,000 a year savings for the City. It is fair to say the project team completed the goal of achieving costs savings.

# Conclusion

The IPTV project has been a success for both the City and the Information Technology department. We successfully completed our goal of increasing the efficiency that TV service is provided to users in the network while also consolidating the services into one, and a decrease in the overall cost of providing a TV service. The IPTV system is available to all users connected to the city network and represents a unique and custom cost-effective solution to the problem of several different and fragmented television systems being used by the various departments throughout the City.