Case Study
City of Grand Rapids

The City of Grand Rapids has been providing a PAYT Program (Pay As You Throw) to City residents since 1973. The PAYT Program is an industry wide term used to describe kerbside solid waste collection services where users are charged a rate based on how much waste they present for collection. Previously, the City had been charging customers for bags, tags and stickers which were purchased in designated shops within the municipality. In conjunction with this the City also applies a property tax millage to every household.

For reasons which are outlined in this study the City has moved away from the PAYT bag and tag model to the latest technology in electronic RFID bin based PAYT program.

BUSINESS STRATEGY

Pricing Structure

Previously, the City had been charging residents $1.50 for the disposal of a 30 gallon City refuse bag or the same amount for a tag which the resident fixes to a non-City provided 30 gallon plastic bag. The City estimated that its operational costs for the disposal of a 30 gallon bag was $2.71 and to bridge the gap between this and the cost charged to the resident, the City applied a refuse property tax millage which added an additional $1.21 per collection.

The new PAYT program eliminated the property tax millage as collections are charged directly to customer accounts allowing the City to reduce its charge and pass on a direct saving to the customer. This has mainly been achieved by removing over $1 Million in costs to print, distribute and administer bag and tags. products."

Objectives

Allow the City to manage and track its waste disposal operation.

Significantly reduce medical and worker's compensation costs from injuries inflicted on City employees from refuse improperly placed in plastic bags. The City previously expended $300,000 per year for injuries caused by hazardous items in plastic bags and repetitive motion back injuries from lifting hundreds of bags each day.

Remove a significant problem identified by neighbourhood associations of loose rubbish from torn bags left unprotected from the elements and animals. Storing trash in bins will significantly reduce loose trash in neighbourhoods.

Continue to provide free refuse services to income qualifying households.

Eliminate the persistent and difficult problem of stolen and counterfeit tags.

Offer three bin sizes—35 gallon, 64 gallon, and 96 gallon, delivered free of charge to residents. The charges will be applicable to the size of the bin
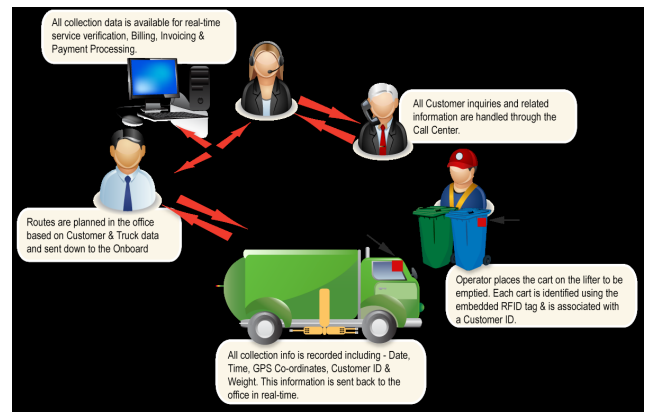
TECNICAL SOLUTION

Pricing Structure

The City's customers were supplied with a bin, the size of which the customer chooses when registering for the service using the AMCS web portal, fitted with a unique RFID tag that was then assigned to the customer's account.

Together with on-board systems on each collection vehicle, which records every RFID tagged bin emptied, and an office database which stores every collection, the City is be able to charge for every collection directly on a customer's account.

This approach to waste collection required a platform to support multiple charging options, based on bin size, multiple payment methods including web, phone and cash/cheque and most importantly seamless integration between the back office platform and the on-board technology platform.

Deliverables

The City officially approved the RFID PAYT program in April 2012. The program was made up of a number of projects all of which needed to be delivered on time and within budget. The projects can be broken out into the following areas –

Hardware Installations

Each collection vehicle was fitted out with RFID reading equipment to record every collection. Further to this, on-board computers were also installed on each vehicle to manage daily routes and transmitting collections in real time to a back office database.

Customer Database

Before this project began the City had two separate databases of customers, one was a database of Recycling customers which consisted of over 40,000 individual properties and associated RFID bins and the second was a database of customers who use Rubbish Bins which consisted of approximately 12,000 properties and associated RFID bins. Part of the vision for the new PAYT program was to merge the two into one master database which would also include all potential customers within the City boundaries.

The inclusion of all properties within the City was taken as the City had no
way of knowing which customers were utilizing bags and a method was required to allow them to sign up to the new program, to facilitate this the properties were included in the master database.

Customer Portal

A facility was required to allow new and existing customers access to their account through a Web Portal. The new customer portal allows customers to sign up to the new program if they weren't already a customer. It provides customers with the ability of putting credit on their account by making real time credit /debit card payments. The portal also displays historical information relevant to the customer account such as previous collections and previous payments and charges.

Automated phone payment facility

This function allows customers who don't have access to the internet to check the status of their account and also to make real time payments to their account.

Account management software

This solution which is a web based application, designed specifically for the Waste Industry, enables the City's call centre staff to manage accounts and answer customer queries. The application also enables the City to set charging rates for collections and service fees based on schedules. The City's customer care team are able to view customer accounts and see each customer's collection and transaction history.

Operations / back office management software

This solution allows the City to manage routes, monitor and report on collections and manage RFID bins.

THE BUSINESS CASE

Benefits

Reduced Administration Overhead – by providing residents with multiple payment channels the overhead of producing invoices, collect monies by cash/cheque and chasing bad debt has been greatly reduced.

Revenue Assurance – The solution ensures the City only collects bins that belong to it. This ensures that extra collections only occur for valid residents and human error is removed from the process.

Bad Debt Reduction – Through the use of multiple payment channels and customer balances the solution enables the City to control service to those that have paid and deny service to those who haven't. This helps to influence customer behaviour and ensures bills are paid on time. Where persistent bad debt exists RFID quickly enables the City to restrict service.

The PAYT solution helps the City account for the varying recycling and waste behaviours of its residents and enabled the introduction of a level of equity into the collection process. It also enabled the City to implement a PAYT program that will increase diversion rates and reduce the amount of waste heading to landfill.

Service Verification – The City can accurately measure presentation rates and understand whether missed pick-ups were legitimate, removing the need to send out trucks again and minimise costs. It also helps to accurately charge residents for extra pickups and bulky items.

Results

The electronic RFID bin system maintains the model of the bag and tag system, as residents are only charged when they place their bin at the kerb and as the bins are able to hold more refuse than the 30-gallon bags, residents are able to lower their refuse costs.

The City currently offers a recycling bin program called RecyclePerks which provides an incentive for customers to recycle more and customers who have signed up to the new PAYT bin program have been integrated into this free program encouraging residents to reduce their refuse disposal and increase their recycling.

The City has reduced its carbon footprint by utilising reusable bins made locally by Cascade Engineering of recycled plastic which has a net effect of taking over 1 million plastic bags from the waste stream each year.

The bin system permits the City to become cleaner and more efficient and by reducing its costs the City saves taxpayers by providing a less expensive collection system.