96-Gallon Cart Program 6 Sigma Projects to Reduce Service Request Cycle Time

Solid Waste Division Team

MAC Team

TJ Knotts
6 Sigma Master Black Belt
MacAllister Machinery Co.

Historical Perspective

96-Gallon Cart program put in place a few years ago in SW District 12, then expanded over time to include "cart islands" in other solid waste districts.

Efficiencies were gained in routes using carts and automated trucks, but over time problems began to occur in 3 areas: placing new carts, replacing stolen carts, and cart maintenance.

Many Cart Service Requests began to come in through both solid waste and the MAC requesting new carts/additional carts, replacement carts, and maintenance on existing carts.

Resulting in:
Number of Service Requests increasing
Service Request cycle times increasing

Situation as of January 2009

- Averaging 558 Cart SR's per month
- Average SR resolution cycle time for New, Stolen, and Other is about 135 days (Avg. Jan-08 thru Jan-09)
- Average number of callbacks on these SR's is about 142 per month
- People are becoming frustrated & No one is happy
- Form two 6 Sigma Teams

Team Members

Solid Waste Team	MAC Team	Other Participants
John Williams	Carnie Sillery	John Workman (took over for John Williams)
Carnie Sillery	Juliana Fashanu	James Edwards (helped Plan & Develop new Section)
Juliana Fashanu	Gary Huddleston	Adie Gains (Cart Maintenance Supervisor)
Gary Huddleston	John Williams	Steve Hardiman (Help with policies)
Scott Hendrickson	Chris Pichereau	Steve Quick (President, AFSCME Local 725)
Marlon Wright	Sarah Taylor	
Nila Richmond	Joyce McLamore	
Shawn Brock	Brenda Woodson	
Charles Brown	William Johnson	
John Spidle	Marlon Wright	
Earl Henton	Nila Richmond	
Jerry Guest	Van Hemmerlein	
Thomas Williams	Michael Rowland	
Walter Searcy		

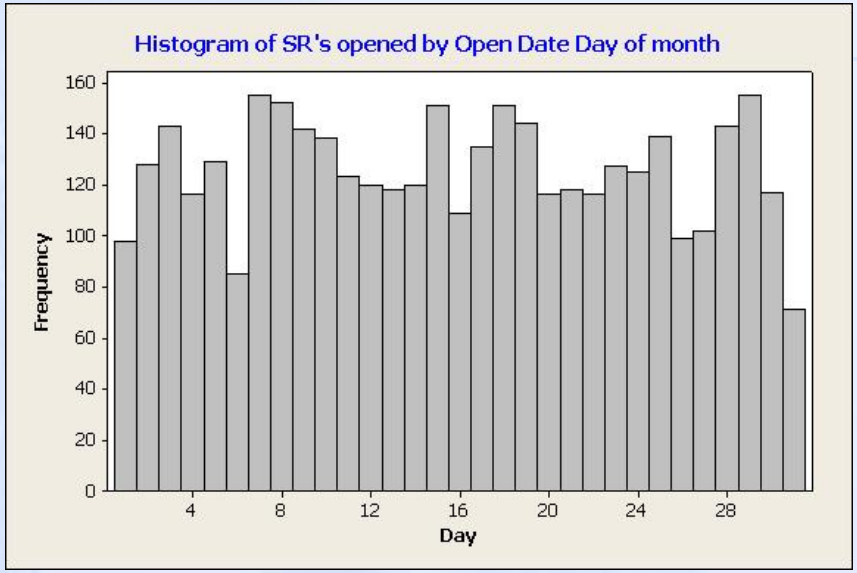
Initial Phases of Projects

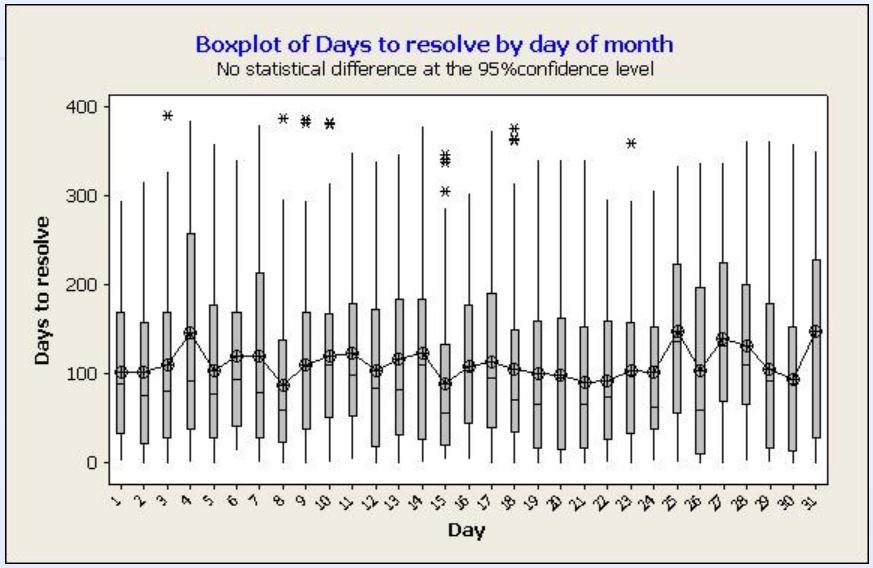
- Chartered two teams – Solid Waste & MAC
- Each team met every other week for 1.5-2 hours per week
- Went through the DMAIC process, creating a SIPOC
- Created an As-Is process flow chart for each team, then consolidated into one process map
- Performed a stakeholder analysis and set a communication plan
- Analyzed the Service Request data
- Performed Pareto Analysis & Root Cause Analysis
- Generated solutions & Prioritized for implementation
- Then combined the teams to implement solutions

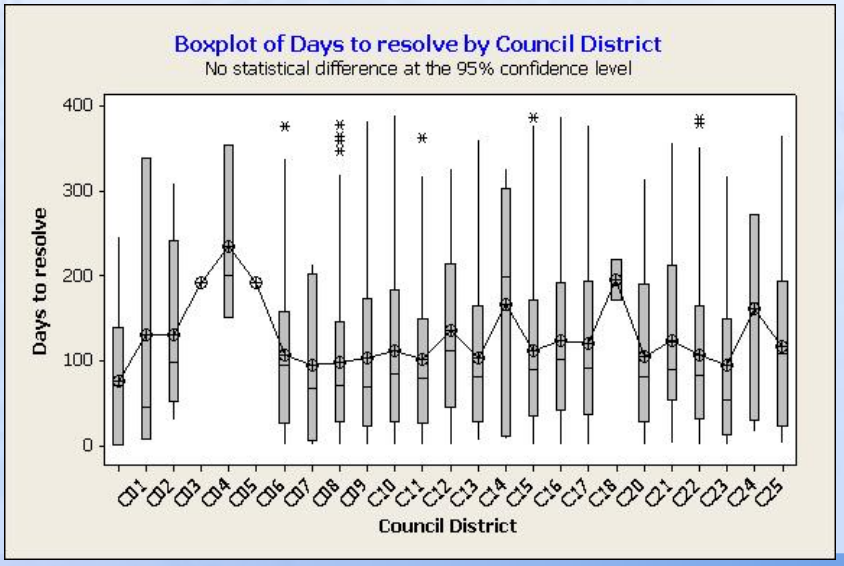
Initial Data and Process Flow Chart Items of Interest

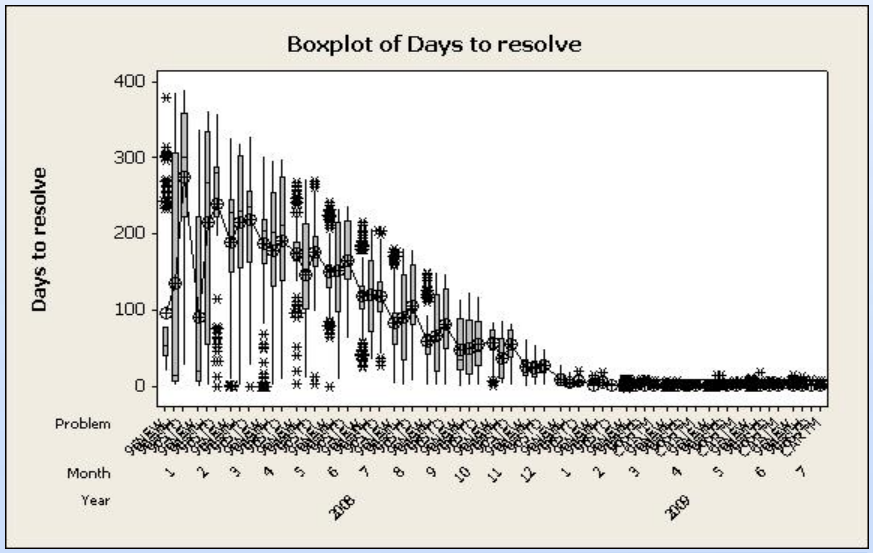
- Solid Waste Division was making good decisions to reduce cycle time (days to resolve service requests) prior to the team starting
- There was a slight difference between data from Hanson and data from Siebel for same time period
- Process flow was cumbersome
- There were steps on the As-Is flow chart that stood out as problem areas
- Performed root cause analysis using an Ishikawa Diagram

Analysis of Data









Root Causes

Solid Waste Team

- No organizational structure in place
  - No full time assigned personnel
- No SOP's
- No full time assigned equipment (vehicles)
- Equipment/storage space sometimes inadequate
- Too many entry points – way complaints come in
- Report duplication – writing on log
- Not always good data coming from MAC
- Incorrect address coming through to Hansen
- Returning to same location multiple times
- "Worry about it later" attitude when program originated
- Program expansion
- Magnitude of program

MAC Team

- Can't change codes once selected
- 80% correct address will be passed through interface
- CSR's have a tendency to choose first code in drop down menu
- Drop down menus are alphabetical
- Can't change comments once SR is closed
- Lots of computer resources used when using maps
- Massive reports being run during the day
- CSR's not updated when policies change
- MAC Binder not being updated by SW
- Smart scripts not updated
- Maps need to be updated

Voice of the Customer

Voice of Customer	Customer Issue	Critical Customer Requirement
Landlord/Residents		
Gimmy a cart	Would like cart before next trash day	0-7 days (really 0-3 days)
Don't want to pay for a cart	City made us use carts, we shouldn't have to pay for it	
Unfair volume with cart	Hand thrown trash will pick-up more trash than automated cart routes	Smaller volume of trash picked up than other areas
Senior citizens – cart too big to handle		Need multiple cart sizes
What are the cart trash rules?	Don't know the rules	Need to know the cart rules
Solid Waste		
I'll check it out	I'll investigate	Feedback on when things completed and resolution of complaint needed
Cart is serviceable	Cart found to still be serviceable	
Been there already	We've investigated the complaint already	
It's been delivered	We've delivered the cart already	
Council Member/Neighborhood Liaison/Neighborhood Association		
Get it done ASAP		Couple hours – same day
Service level expectation	Don't know how soon things can be done	Needs feed back on service levels
What's going on in my area?	Changes to trash program in area	Needs feedback when changes happen to cart program
Just pick up the trash		Couple hours – same day
When can you…?	Don't know how soon things can be done	Needs feed back on service levels
What's happened at address…….- history	History of SW dealings at an address	Background on address
Mayor's Office		
Indy Stat – city goals and how are we doing		Data for statistics kept by City
Jane @ The Star (Writes a neighborhood column)		
Looking for information		Wants updates on cart program changes and specific complaint resolutions

Solutions for Efficiency/Sustainability

Solid Waste Team

- 66 solutions defined in 10 groups (i.e., Technical/IT, Eq./Personnel, Cart tracking)
- Groups prioritized and top 4 groups chosen for implementation (34 solutions)
- As of 8/7/09, 28 solutions implemented
- Within 3 months, 3 more will be implemented
- 3 others are longer term due to budget/technology constraints

MAC Team

- 32 solutions defined in 8 groups (i.e., Technical/IT, Policy, Training/Education)
- Groups prioritized and top 4 groups chosen for implementation (19 solutions)
- As of 8/7/09, 11 solutions implemented
- Within 3 months, 6 more will be implemented
- 2 others are long term due to budget/space/technology constraints

Example Improvements

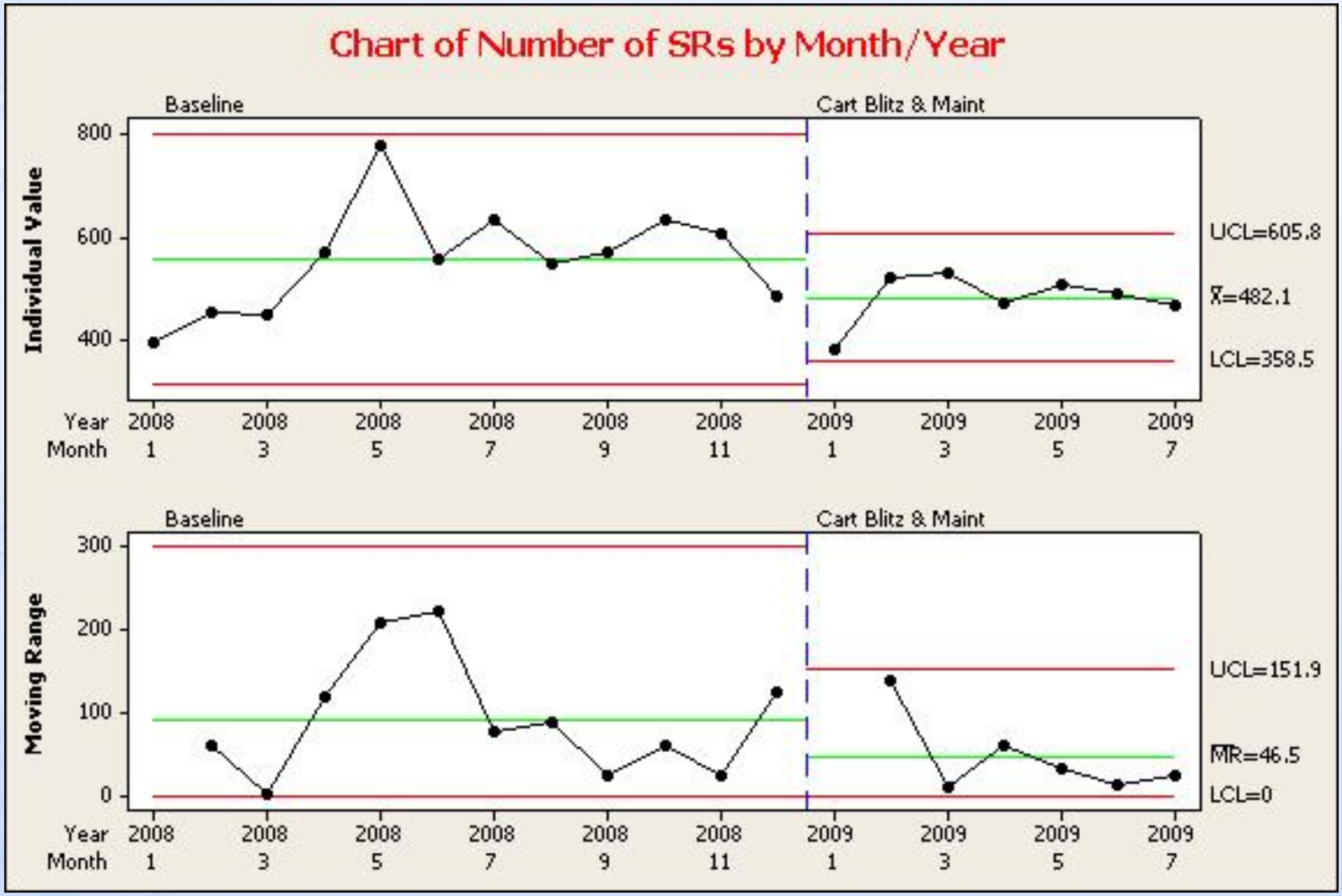
Solid Waste Team

- Assigning full time employees/equipment/space for cart maintenance (2 crews)
- Printing daily cart maintenance logs directly from Hansen
- Fixing the trucks to reduce the possibility of damaging carts
- Comprehensive cart policy binder with SOP's, rules, policies, etc.
- Reducing the number of SR entry points
- Being proactive in cart maintenance
- Tag attached to cart after inspection

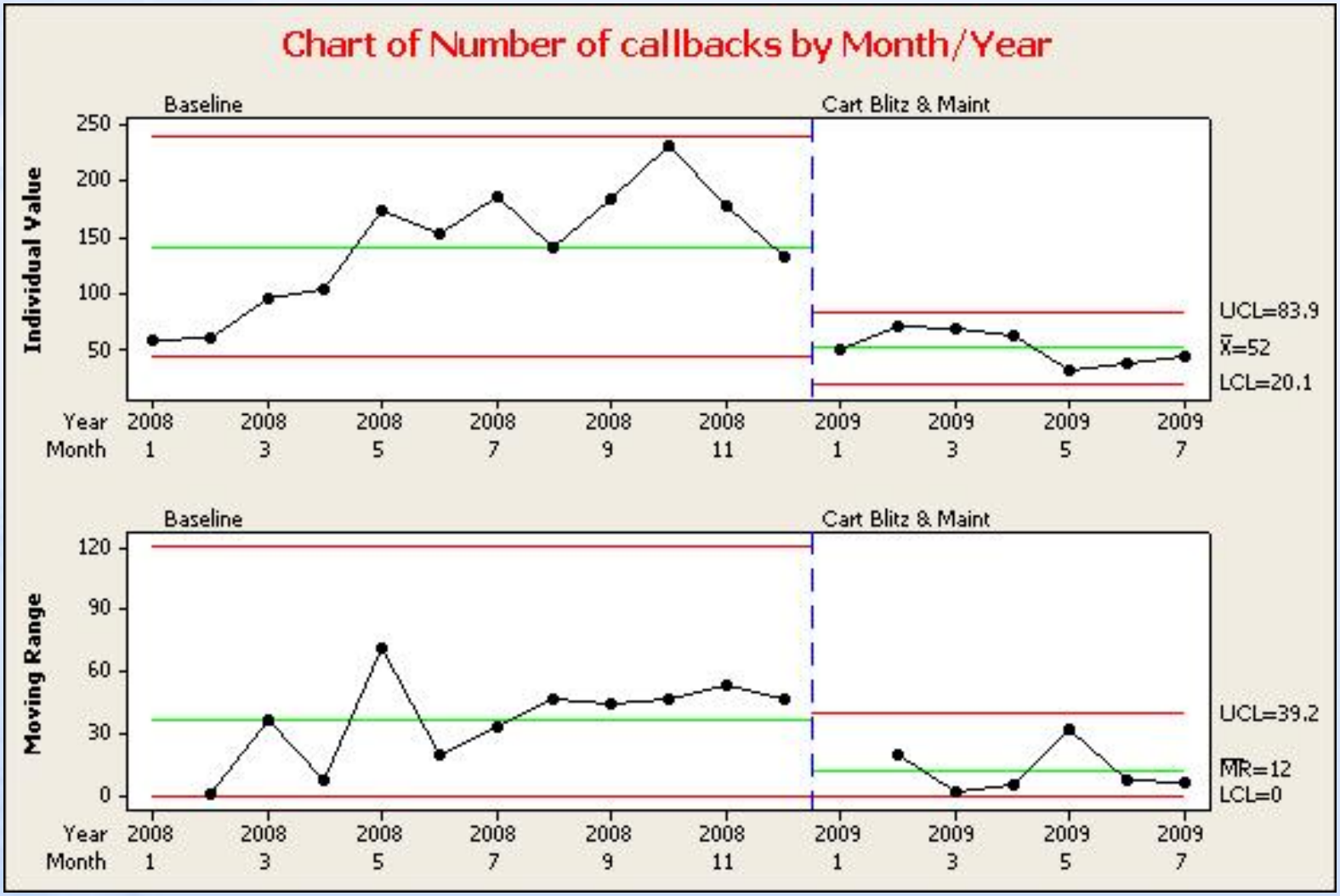
MAC Team

- Changes to Siebel that allow reopening SR without changing completed date
- Training on Siebel for flexibility
- Holding regular informational meetings with solid waste and stakeholders
- Using color coded paper system for updates

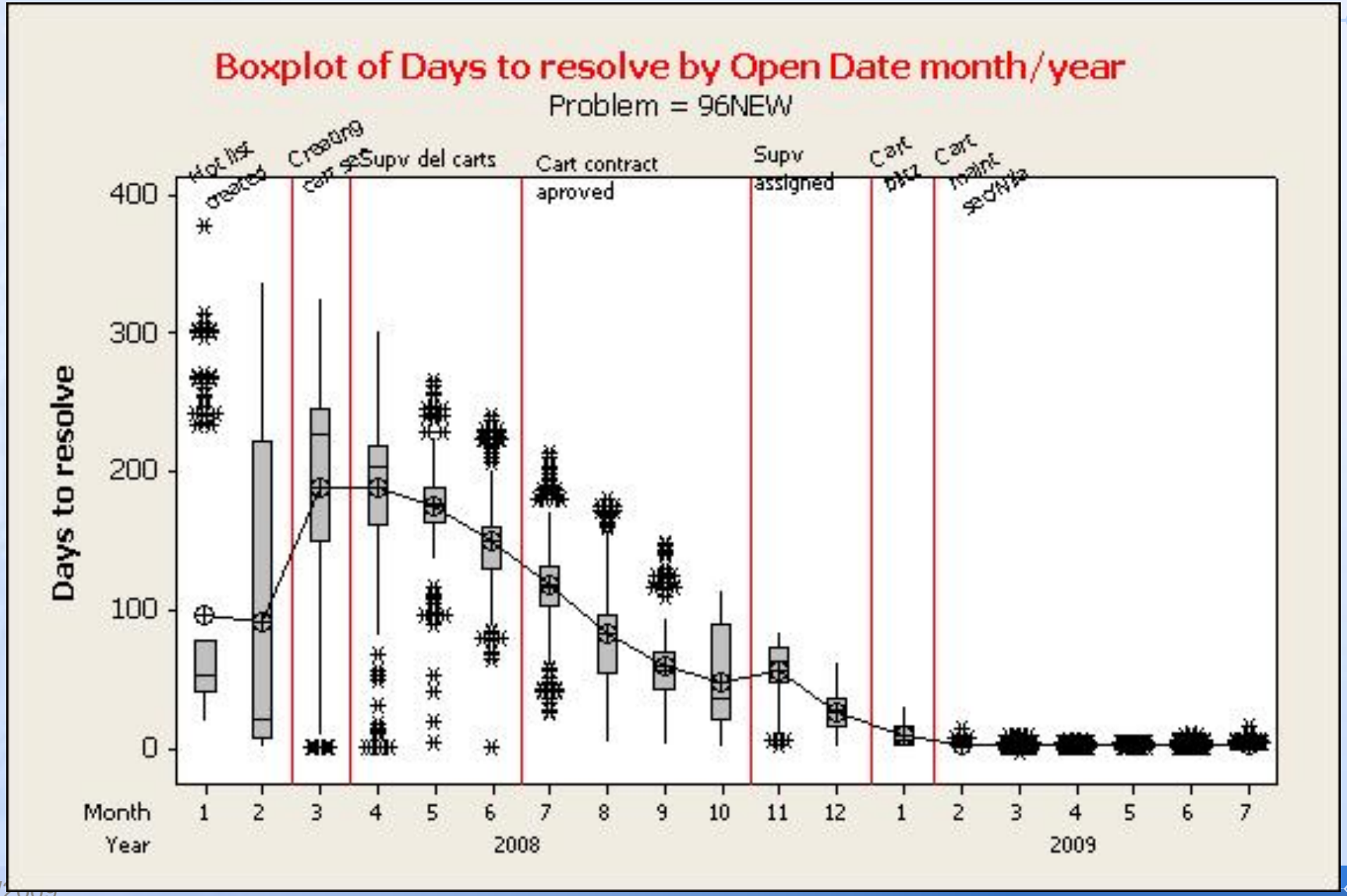
Number of SR's Received



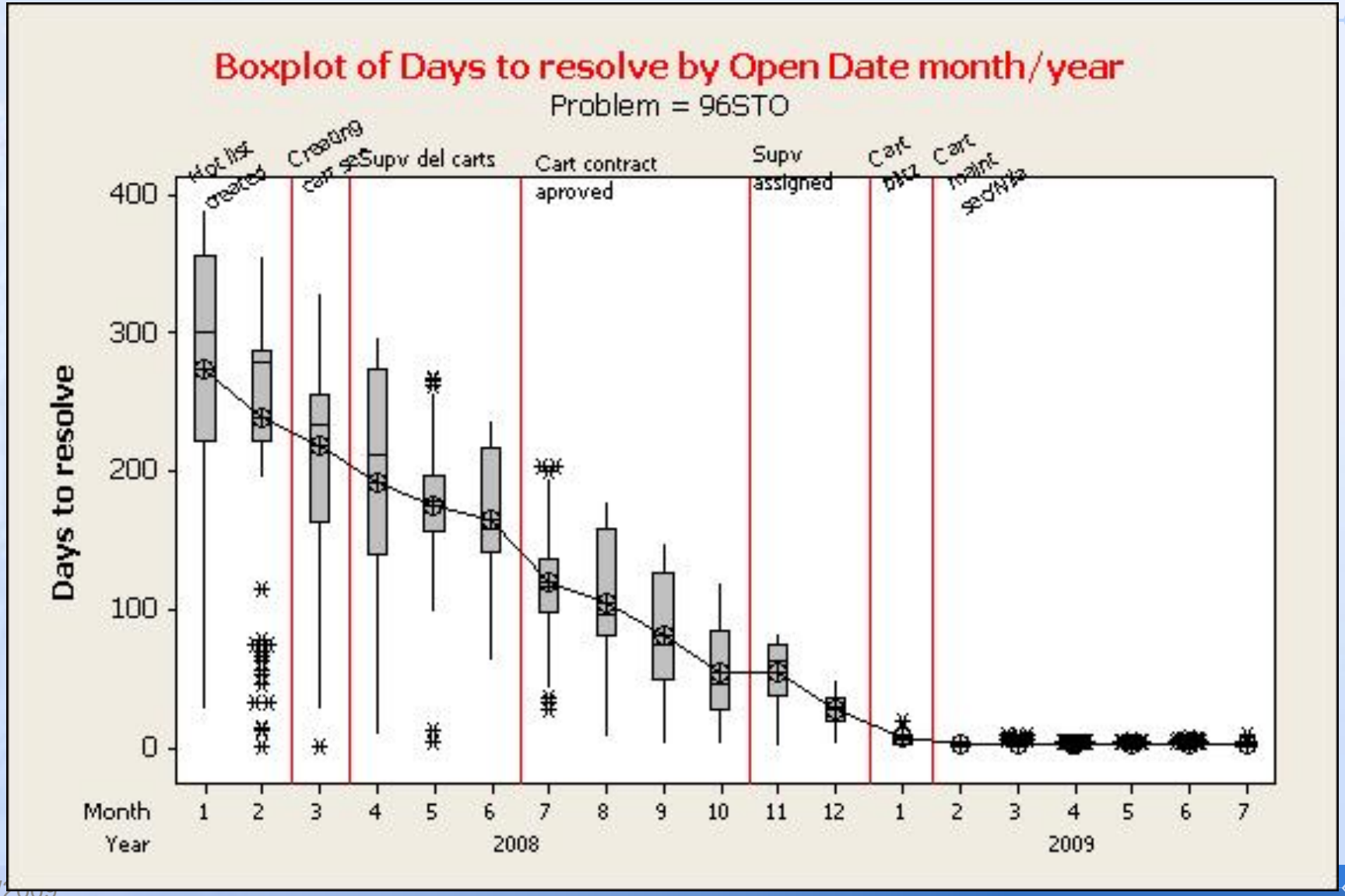
Number of Callbacks Received



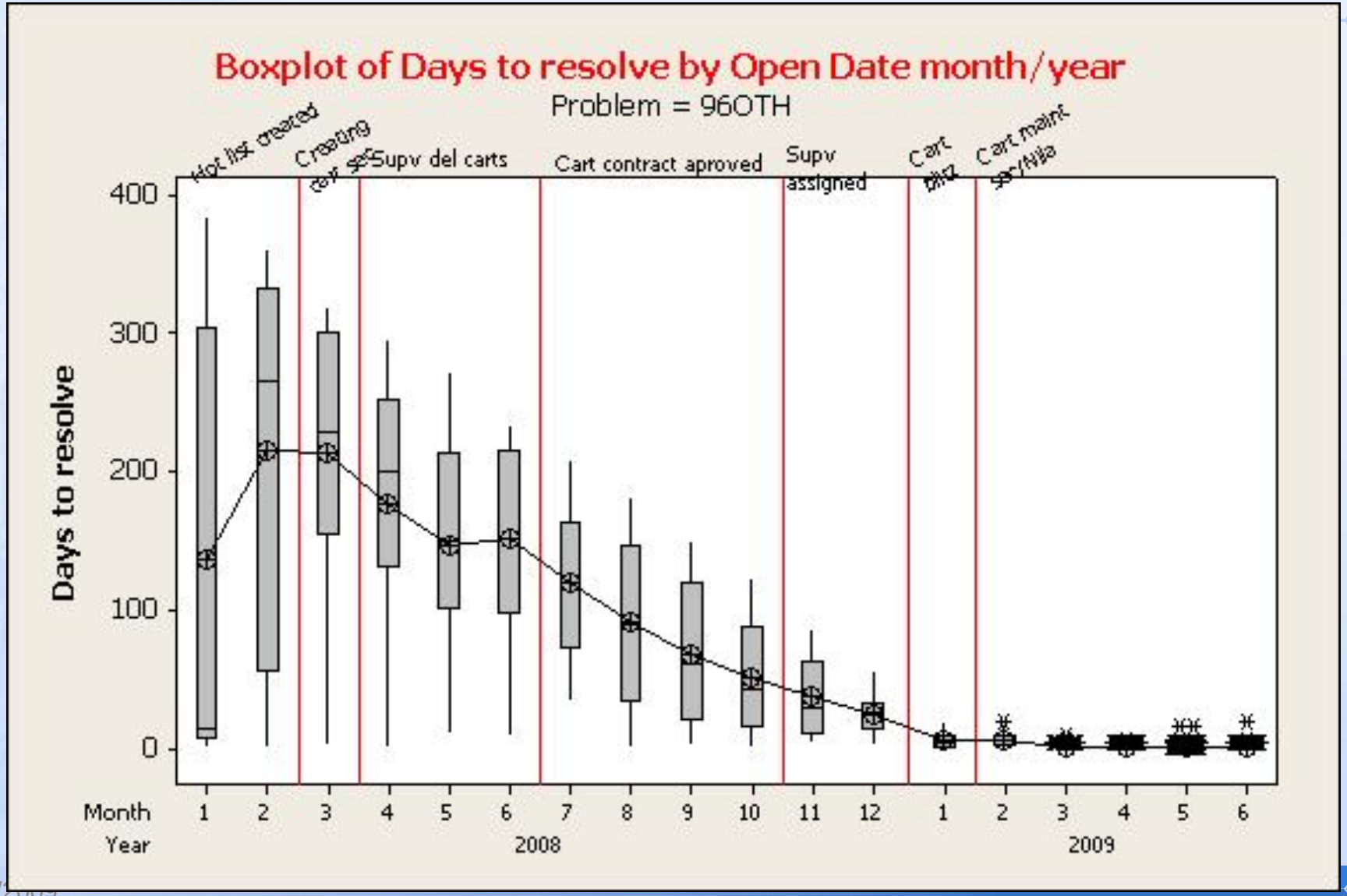
Days to Resolve - New



Days to Resolve - Stolen



Days to Resolve - Other



Results

Measure	Jan-08 – Jan-09	Feb-09 – July-09	Reduction
Average number of SR's	558/month	484/month	13.3%
Average number of call backs	141.7/month	53.3/month	53.3%
Cycle time for New carts	120 Days	1.5 Days	98.8%
Cycle time for Stolen carts	142 Days	1.7 Days	98.8%
Cycle time for Other carts	154 Days	1.4 Days	99.1%
Process flow step reduction	139	109	22%

Other Questions??