Driving Delivery Productivity Using ArcLogistics Route, ArcView GIS and Tracking Analyst Extension

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Without automatically capturing driver productivity data, valuable performance information may be ignored. Utilizing Palm Pilots, ArcLogistics Route, Fleet Monitor, and ArcView Tracking Analyst in a beverage distribution environment allowed the distributor to take total control of the delivery fleet. Planned versus actual data is captured daily and analyzed to control delivery cost. The dispatcher has real time tracking and visibility of all drivers. The tracking server screen displays alerts when a driver moves out of his area, is running late, reports an inconsistent location, or has been stationary for too long.
Project Objectives

- Know the position of all equipment in your fleet at all times.
- Use that information to improve routing efficiency, and reduce returned stops (Missed Time Windows).
- Reduce/Eliminate Overtime and lower fleet costs.
- Reduce driver time at retail, driver check-in, and at reconciliation.
- Use daily cost based analysis to examine delivery service costs.
- Improve customer service.
- Increase communication between sales and operations.
Components of VIP Track

VIP Beverage System

ArcLogistics Route

Distributor

VIP Track

FleetMonitor
Alerts

Replay
E-Mail

GPS Reports
Directions

Customer Link
ReSequence

VIP PalmOrders

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VIP PalmOrders

VIP Beverage System
ArcLogistics Route - ALR

- Multiple Routing Styles
  - Dynamic
  - Static
  - Hybrid Combination
- Unlimited Specialties
- Multiple Seed Points
- Delivery Sequenced Based on Time Windows
- Maximizes routing to reduce cost
- Provides data necessary for GPS tracking
ESRI Fleet Monitor

- Real Time Tracking
- Activity versus Planned Route
- Route Detail
- Updated ETA’s
- Position Alerts
Alerts

- Out of Route
- Position Inconsistent
- Not Moving
- Time Window Violation
Out Of Route

- Outer boundary for a route
- Variable value
- Traces the route shape
- Truck should never be outside route shape
- GeoFence
Out of Route
Position Inconsistent

- When the user checks “Here,” system sends the current coordinates and checks with the ones on file.
- If the vehicle is not within the tolerance, an alert is triggered.
Position Inconsistent
Not Moving

When the vehicle is “Gone,” within 10 minutes the vehicle should be:

- Here at the next account or
- More than _ mile away or
- Here at Lunch/Break or
- Delayed
Not Moving
A time window violation alert is:

- When you are scheduled to arrive before the window(s) open.
- When you are scheduled to arrive after the window(s) close.
- When you are scheduled to arrive after the first window closes and before the second window opens.
- Given a user-defined grace period.
Time Window Violation
Route Replay

- Route replay is available for route information from previous days.
- Allows for route verification.
- Replay information is available for 90 days.
Replay

- See a route replayed on your PC.
- Average of 80-90 position fixes per route per day.
- Replay screen includes original route and stops.
- Control the replay “VCR” style.
- If it happened, you can replay it.
- If you notice a suspicious action, you don’t need to start watching to see if it happens again. You can go back in time and see if it happened in the previous 90 days.
Replay Demo
VIP Delivery Palms
Symbol PDT 1700/1800

- Paperless invoices
- GPS Tracking
- Built in RF scanners
- DEX capable
- Reduced Check-In Time
- Reduced Reconciliation Time
- Directions
- Calculates actual deal levels
- Server Re-sequence
GPS Palm Features

- Need Directions
- E-Mail
- Manual Re-sequencing
- Server Re-sequencing
- Instant Message (Break Message)
Need Directions

- Driver can request directions from anywhere to any account on his route.
- Does not need to know where he is.
- Directions arrive within 1 minute.
Need Directions

Start on I-65 S heading SOUTH EAST.
Driving 35.33 miles, then bear RIGHT onto Ramp.
Driving 0.14 mile, then bear RIGHT onto N USHY 31.
Driving less than 0.1 mile, N USHY 31 becomes USHY 31.
Driving less than 0.1 mile, USHY 31 becomes N USHY 31.
Driving 0.18 mile, N USHY 31

Driving less than 0.1 mile, STHY 11 becomes Jonesville Rd.
Driving 0.14 mile, then turn RIGHT onto W Jonathan Moore Pike.
Driving 1.81 mile, trip ends on W Jonathan Moore Pike.

The approx. total travel distance is: 45.01 mile(s)
The approx. total travel time is: 55 minutes

DONE
Electronic Mail

Send and receive
- Short messages
- Group messages
- AS/400 generated e-mails
Electronic Mail

You have mail.

Subject: Cash Pickup

Please stop at ABC Liquor on 54th Street and pick a check for $1000.00.

Thank You,

Transportation Manager
Manual Re-sequence

- Change delivery sequence
- See time window violations
- See ETA’s
- See updated information based on new sequence
- Automatically updates Tracking Server
Manual Re-sequence

<table>
<thead>
<tr>
<th>S#</th>
<th>Acct Name</th>
<th>ETA</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>FRAN'S</td>
<td>10:23 am</td>
</tr>
<tr>
<td>3</td>
<td>MOOSE LODGE</td>
<td>11:29 am</td>
</tr>
<tr>
<td>4</td>
<td>NEW JAPAN</td>
<td>11:52 am</td>
</tr>
<tr>
<td>5</td>
<td>THE CORK</td>
<td>1:00 pm</td>
</tr>
<tr>
<td>6</td>
<td>BIG RED LIQUOR</td>
<td>1:13 pm</td>
</tr>
<tr>
<td>7</td>
<td>CVS/PHARMAC</td>
<td>2:31 pm</td>
</tr>
<tr>
<td>8</td>
<td>JAY C FOODS #</td>
<td>3:01 pm</td>
</tr>
<tr>
<td>9</td>
<td>HARRISON LAKE</td>
<td>3:54 pm</td>
</tr>
<tr>
<td>10</td>
<td>MORGANTOWN</td>
<td>4:49 pm</td>
</tr>
</tbody>
</table>

Move From S# To S#

Name: NEW JAPAN
Address: 3820 25TH ST
Arrive: 9:07 am
Service: 8 min
Depart: 9:15 am
Wait: 0 min

Start | Stop
TW1   | 9:30 am | 1:00 pm |
TW2   | 4:00 pm | 6:00 pm |

DONE
Server Re-sequence

- Server optimization of a route while in progress
- Creates the best possible route
- Updates the Tracking Server and Delivery Palm
Server Re-sequence

<table>
<thead>
<tr>
<th>Accounts</th>
<th>Functions</th>
<th>Route</th>
</tr>
</thead>
<tbody>
<tr>
<td>P 0 NEW JAP</td>
<td>Manual Resequence</td>
<td></td>
</tr>
<tr>
<td>P 0 MOOSE</td>
<td>Server Resequence</td>
<td></td>
</tr>
<tr>
<td>P 0 JAY C FC</td>
<td>Need Directions</td>
<td></td>
</tr>
<tr>
<td>P 1 JAY C FC</td>
<td>Time</td>
<td></td>
</tr>
<tr>
<td>P 0 CVS/PHI</td>
<td>Poll</td>
<td></td>
</tr>
<tr>
<td>P 0 BIG RED LIQUORS #13</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 0 HARRISON LAKE COUNT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 0 MORGANTOWN PACKAG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 1 MORGANTOWN PACKAG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 0 JOE'S SPORTS BAR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS 689 BTL45 KG0 MI0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

# Account Name

- V 0 FRAN'S 9:11
- P 0 THE CORK
- P 0 MOOSE LODGE
- P 0 BIG RED LIQUORS #13
- P 0 CVS/PHARMACY #6792
- P 0 JAY C FOODS #8
- P 1 JAY C FOODS #8

User Prompt

- Server Side Resequence complete.

OK
Instant Message/
Break Message

- Sent instantly
- Received as soon as the Palm is in the cradle
- Can be read in the PalmOrders application
Instant Message/Break Message

Processing

Please Wait

Reading Message Number...
1 of 1

User Prompt

ℹ Please Call J Lupear
555-1212 now.

OK
Customer Link

- Live ETA’s for every order
- Available on the web
- Can be included in system generated e-mails to customers as a link
Web Based ETA Form

Account ETA Page

Please enter account number to find out the Estimated Time of Arrival (ETA) for a specific account.

M0866001

ETA
Live ETA

The ETA for account M9866001 is

08:48

Back
VIP Tracking Reports

- Driver Check-In Report
- Driver Utilization Report
- Route Performance/Cost Report
- Actual vs. Planned by Load
- Actual vs. Planned by stop
- Time Window Exceptions
- Customer Delivery Cost Report
- Off Day Delivery Report
Future Development

- DOT Log
- Automated Data Update.
- Vehicle Monitoring Interface
Summary

- Knowledge
- Positive control over field assets
- Activity based costing
- Enhanced communication
- Increased productivity
- Drivers see it as a valuable tool for them as well
- Improved customer service