

**May 29, 2015**



## **The Stealth Shopper Approach:**

Driving Force Dealer Mystery Shopping Services  
to TOYOTA MOTOR SALES, U.S.A.

Prepared by

**DRIVING FORCE**

## Overview: Why Driving Force?

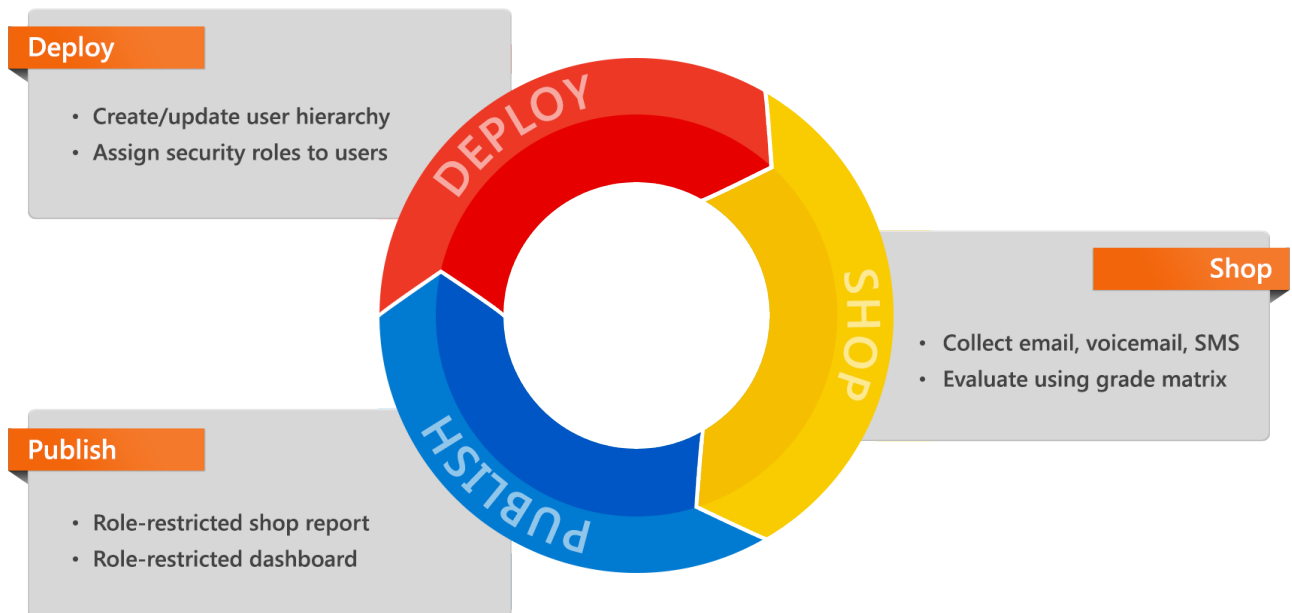
*“Driving Force has developed the finest outsourced digital mystery shopping platform for car dealers.”*

- Automotive Website Awards, January

- **Focus:** Driving Force works exclusively with car dealers
- **Experience:** Driving Force has been conducting digital mystery shops for 13 years
- **Vision:** Driving Force is already doing what TMS/USA needs, and we identified the value of digital mystery shopping 7 years ago when Stealth Shopper was developed

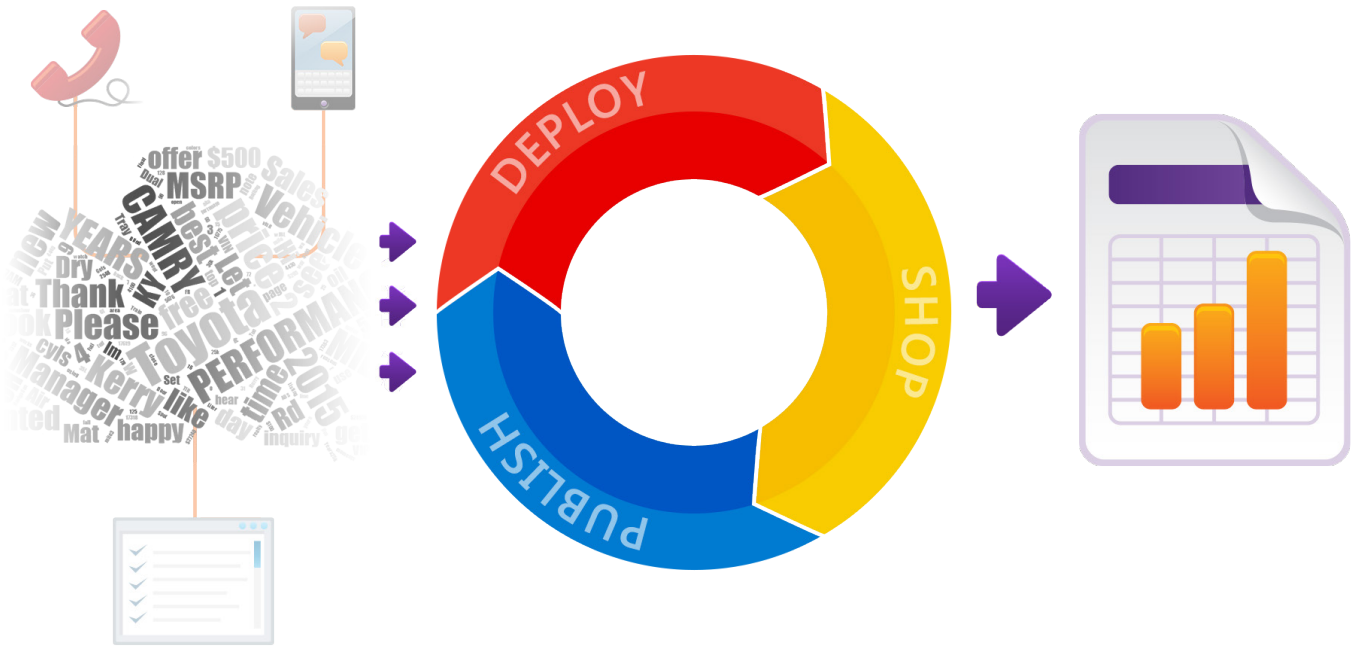
## System Design

### Stealth Shopper Approach



- **Deploy:** gather dealer information, user permission and roles, evaluation criteria
- **Shop:** submit leads, track and evaluate responses, produce a grade
- **Publish:** release reports to ELMS active users, providing access to single shop reports and aggregated dashboards restricted by user permission and roles

## Stealth Shopper Goal



Stealth Shopper converts the often messy and indecipherable process of lead generation, internet marketing and sales into an organized, elegant, and useful body of data.

## Deployment

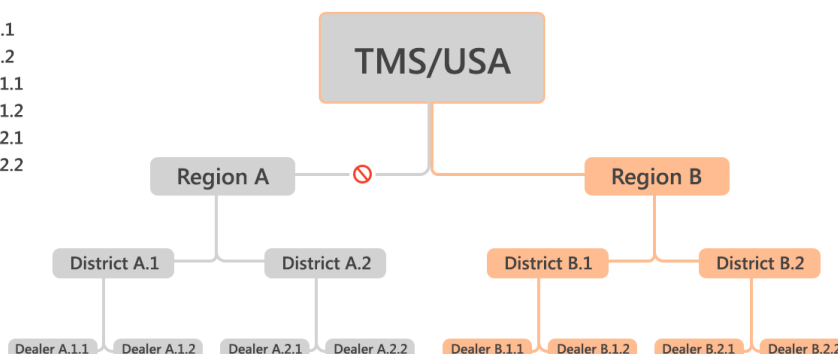
### Dealership Hierarchy and Application Security

- Dealership hierarchy
  - ❑ Dealerships arranged into districts
  - ❑ Districts arranged into regions
- Applications security
  - ❑ Role-based security: limits the actions that a user can perform and the aggregation scope of dashboards
  - ❑ Record-level security: limits the records that the user can access by mapping individual users onto the dealership hierarchy

## Region-Level User Access

Mapped to: **Region B**

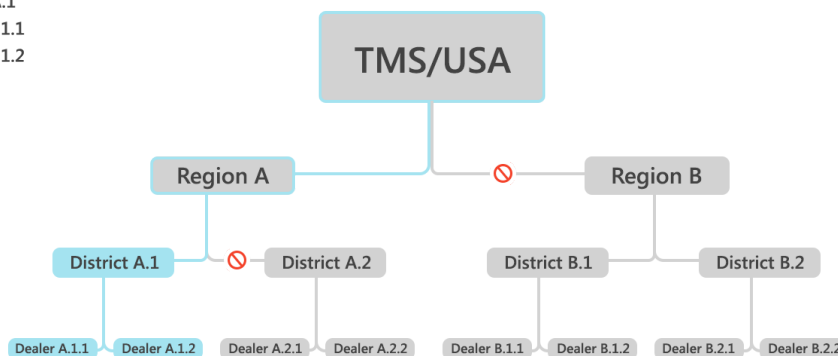
May access: Region B  
District B.1  
District B.2  
Dealer B.1.1  
Dealer B.1.2  
Dealer B.2.1  
Dealer B.2.2



## District-Level User Access

Mapped to: **District A.1**

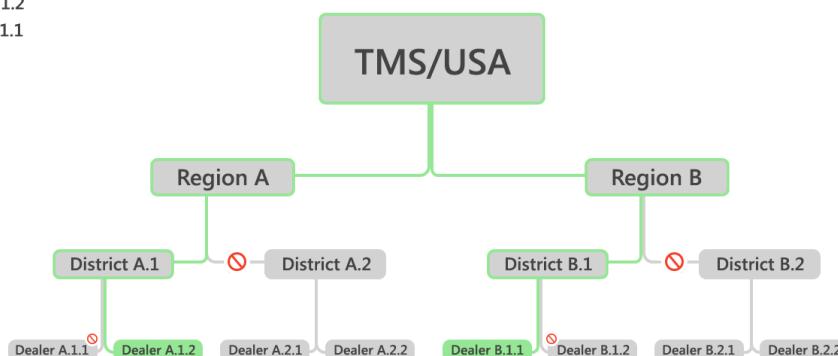
May access: District A.1  
Dealer A.1.1  
Dealer A.1.2



## Dealer-Level User Access

Mapped to: **Dealer A.1.2, Dealer B.1.1**

May access: Dealer A.1.2  
Dealer B.1.1



Note: TMS/USA desires the ability to map a dealer to more than one dealership without granting district-level access

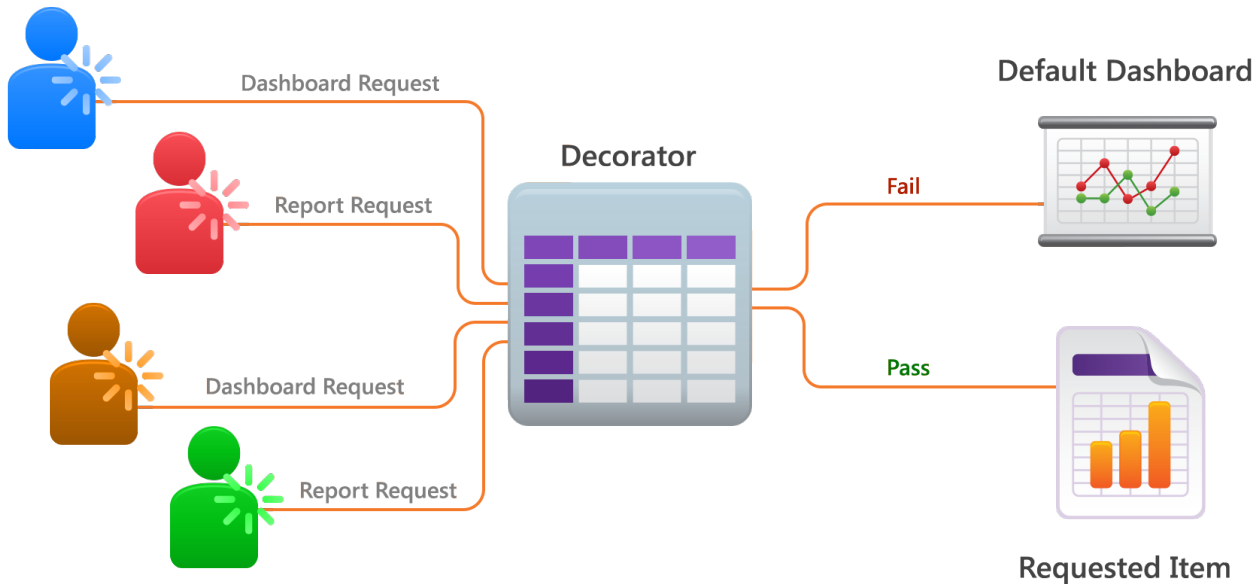
## Batch Utility

- Automatically create hierarchy of dealerships
  - Will run prior to project launch and prior to each round of shops thereafter
  - Syncs ELMS and Stealth Shopper dealership and user data
- Though the updates will be automated, manual updates will be supported

Note: ELMS active user file contains regional, district and dealership hierarchy, in addition to users

Note: TMS/USA does not want national/regional/district/dealer users to manipulate the TMS/USA hierarchy manually from within the Stealth Shopper back-end

## Security Decorator

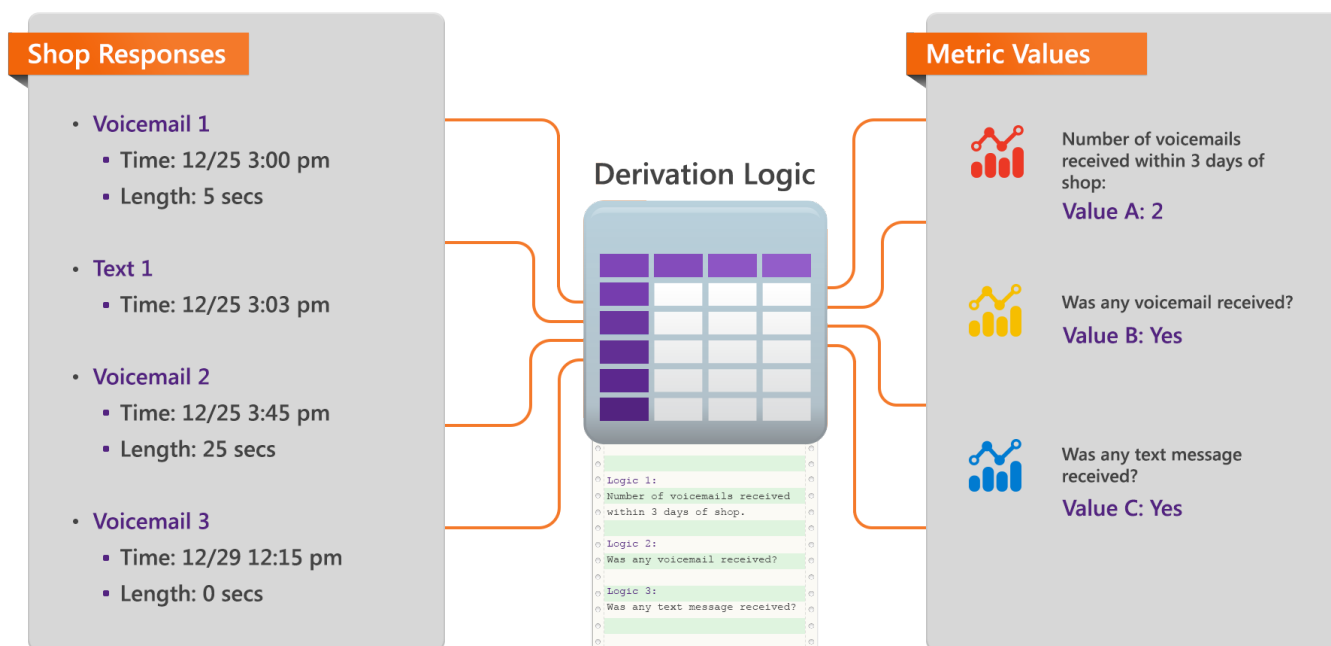


- Every request for dashboard or shop report is filtered through decorator
- If the user is not mapped to the requested record(s), the result set will simply be empty and they will be redirected back to their default dashboard

## Metrics

- Automatic vs. Manual Data Points
  - ❑ Automatic: Any datum that can be derived exclusively from system generated characteristics of a response, e.g. “Response time” and “Voicemail length”
  - ❑ Manual: Any datum that requires analysis by a grader, e.g. “Email response type” and “All form factors supported?”
    - » Most email response metrics require at least classification into our standard email response types: Automated, Non-priced, Priced, Manager, Follow-up
- Definition: Single value derived from the data points on all responses to a given shop, e.g. “Voicemail first, then email?” and “Sent priced response?”
  - ❑ Each email, voicemail, and text message creates many data points
  - ❑ Derivation logic is defined for a given metric
  - ❑ A value is produced for the metric
- Metrics are configurable; we can create metrics to track any qualitative aspect of the response process

### Metric Logic Example



## The TMS/USA Grading Matrix

- Conditions: Metrics describe the lead response process, not interpret it. We use conditions to convert metrics into point values
- Matrix:
  - Set of conditions that define scoring system
  - Determines which data points to collect

### Grading Matrix Concept and Example

Matrix Concept	Metric	Values and Grades			
<ul style="list-style-type: none"> <li>• Condition 01               <ul style="list-style-type: none"> <li>• Value 01</li> <li>• ...</li> <li>• Value <math>n</math></li> </ul> </li> <li>• ...</li> <li>• Condition <math>n</math> <ul style="list-style-type: none"> <li>• Value 01</li> <li>• ...</li> <li>• Value <math>n</math></li> </ul> </li> </ul>	1 <sup>st</sup> price response time	V=<15 min G=30 points	V=>15 & <30 min G=15 points	V=>30 & <60 min G=5 points	V=>60 min G=0 points
	Voicemail 1 <sup>st</sup> , then email?	V=Yes G=10 points	V=No G=0 points		
	Sent manager response?	V=Yes G=10 points	V=No G=0 points		
	Email and voicemail on 2 <sup>nd</sup> day?	V=Yes G=10 points	V=No G=0 points		
	1 <sup>st</sup> voicemail time	V=<15 min G=30 points	V=>15 & <30 min G=15 points	V=>30 & <60 min G=5 points	V=>60 min G=0 points
	Valid voicemail percentage	V=100% G=20 points	V=<100% & >75% G=15 points	V=<75% & >0% G=10 points	V=0% G=0 points
	Vehicle availability mentioned?	V=Yes G=10 points	V=No G=0 points		

## Shop

### Shop Process

- Data collection: determine shop criteria, create shop records, assign to shoppers
- Evaluation: verify authenticity of messages and collect data points for each message

### Additional Recommendation: Text Messages

- Each day cell phones are checked 150 times
- SMS messages are read within 3 minutes
- Response rate for SMS as high as 8 times that of email



- Mobile marketing sales expected to climb to more than \$400b this year

## **Additional Recommendation: Responsive Email Views**

- Few dealers consider responsive email design, even though billions of emails are opened on mobile phones and tablets every year
- We can grade response follow up based on the responsiveness of email

## **Publish**

### **Reporting**

- Shop report
  - All data collected for a single shop
  - National/regional/district users access shop reports by district, reports contain all responses, metrics and data points are retrieved for each dealer
  - Dealer user shop reports contain responses, metrics and data points for a single dealer
- Dashboard
  - Aggregated shop data
  - Users choose time period
  - Dashboard allows reporting and navigation only at authorized hierarchy level(s)

Note: TMS/USA desires that Driving Force announce grade collection via email each month

## **Third Party Integration**

- Direct: reports are viewed within Stealth Shopper back-end by direct login or 3rd party authentication
- Frame-in: reports are loaded within a 3rd party system
- Web service: reports and dashboard data will be queryable/downloadable in common data exchange formats (JSON, XML, CSV), allowing ELMS provider to remove live lead metrics

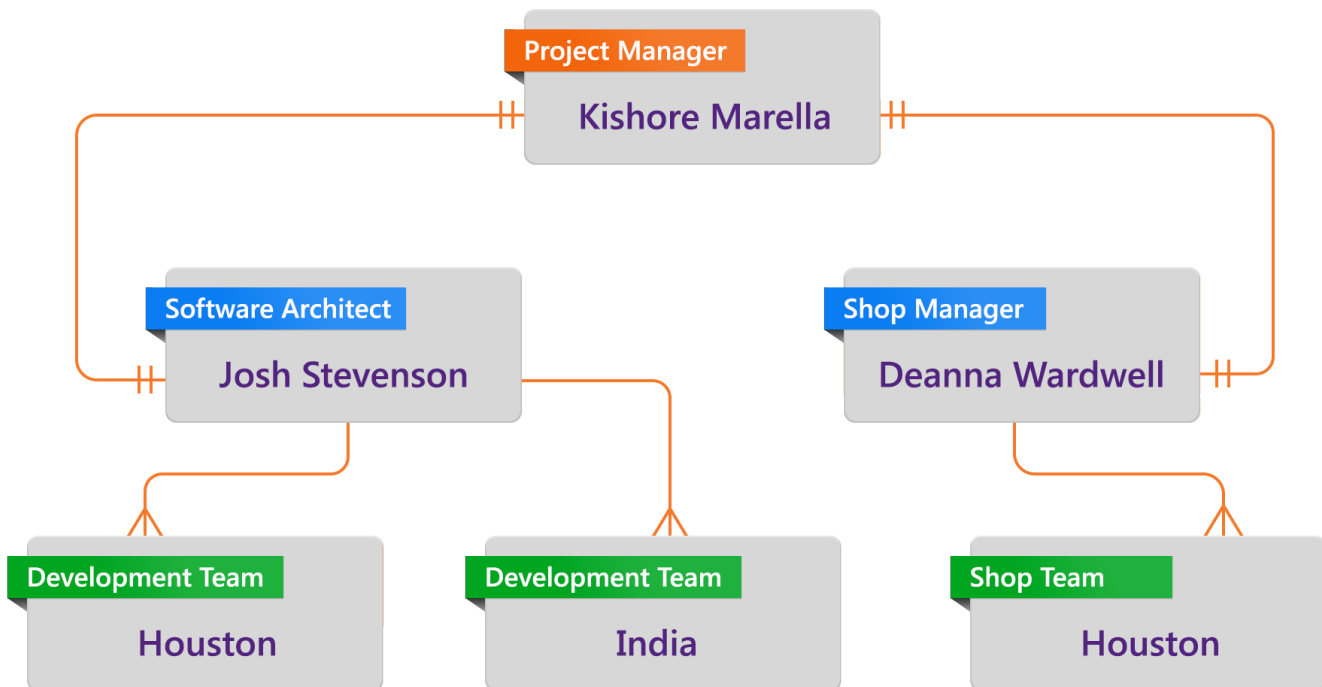
## Training

- How-to videos
- Documentation
- Support

## Consultation

- Contextualize shop results
- Ensure integration of shop results data with other data analysis efforts
- Provide ideas and recommendations for process improvement
- Revise and refine shop criteria

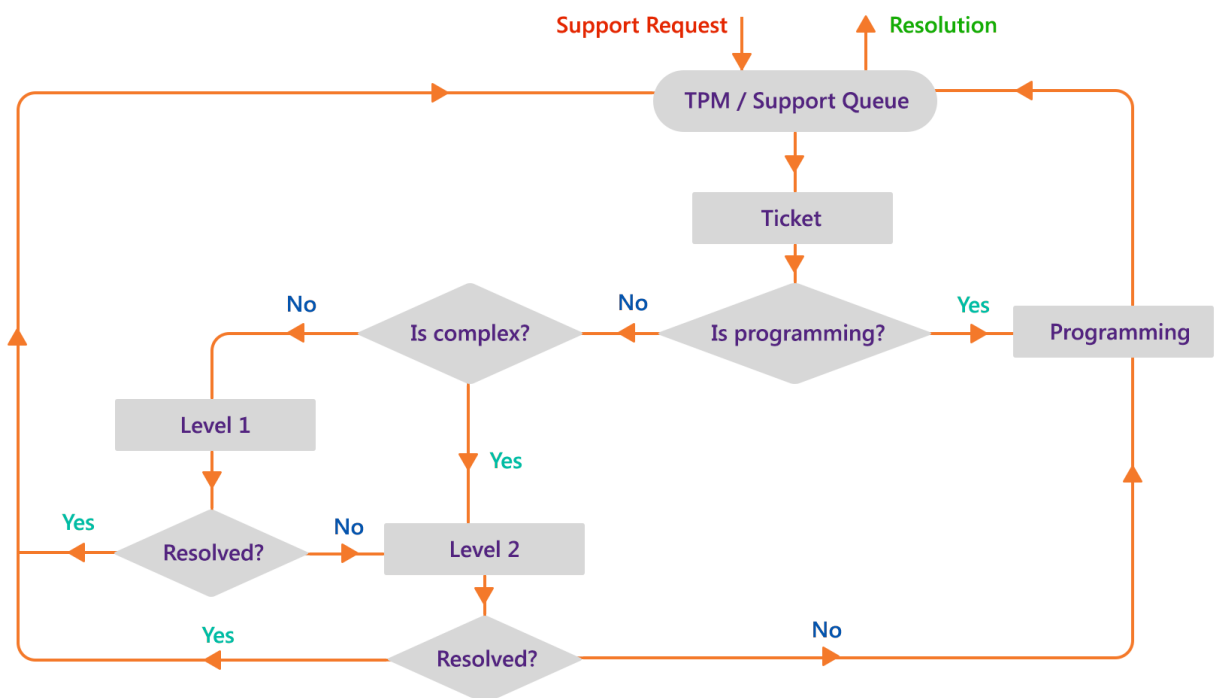
## Project Management



## Project Team

- Project Manager: Kishore Marella
  - Will field: feature requests, support issues, training inquiries, administrative communication
  - Leaves of absence: expected and unexpected
- Team Lead - Software Architect: Josh Stevenson
  - Development Team - Houston: Design, R&D, and Development
  - Development Team - Hyderabad: Development only
- Team Lead - Shop Manager: Deanna Wardwell
  - Shop Team - Houston: 3 dedicated shoppers/graders, 2 dedicated reviewers

## Issue Tracking



- Support requests will be classified as one of 3 levels of technical support:
  - Level 1: General support issues (due date and priority assigned)
  - Level 2: Escalation from Level 1
  - Programming: Escalation from Level 2
    - » If escalated to Programming, issue will either be resolved, or we will respond with a meeting request or a proposed change order timeline

- Issues managed using our internal tool, Taskmanager
  - ❑ TMS/USA can send requests or issues to [toyota@drivingforceauto.com](mailto:toyota@drivingforceauto.com)
  - ❑ Emails sent to support go into a dedicated support queue where our Project Manager reviews each one and assigns priority level and tasks to Level 1 or Level 2 support
  - ❑ ETA for issue resolution is communicated to TMS/USA
  - ❑ Any task not completed 3 days after due date is automatically elevated to immediate priority

## Subcontractors

- Interactive Tel
  - ❑ Provides telephony (i.e., tracking phone numbers)
  - ❑ Stores physical voicemail recordings
  - ❑ Transmits text messages to our system
- Litmus Software
  - ❑ Renders raw email messages as device-specific images
  - ❑ Hosts images in Microsoft Azure Cloud

## Test Plan

- Methodology
  - ❑ Data environments: Development, QA, Production
  - ❑ Test Driven Development: testing scripts must pass development and QA before deployment in production
- Release
  - ❑ 2-week advance notice for regularly scheduled updates
  - ❑ Updates applied during off-peak hours (e.g., 2 am CST)
- Technical Deployment
  - ❑ We will develop, test, and deploy all software-related launch requirements prior to pilot shop
  - ❑ Pilot shop will be performed against QA to ensure no issues affect production software

- ❑ Issues that arise as a result of pilot shop will be escalated to programming with highest priority and resolved by project launch

## System Information and Reporting UI

### System Information

- Application Stack
  - ❑ DBMS: SQL Server 2008 R2
  - ❑ Servers: Windows Server 2008 R2, IIS 7.5, Microsoft Azure Cloud
  - ❑ Development Frameworks/Tools: SQL Server Management Studio 2013, Visual Studio 2013, .Net Framework 4.5, ADO.NET, C#, Entity Framework 6.1, ASP.NET MVC 5.1
  - ❑ Primary Javascript Libraries: jQuery, jQuery UI, Bootstrap, jScrollPane, moment
- Network Security
  - ❑ Authentication: form inputs authenticated client-side (Javascript) and server-side to prevent common data attacks
  - ❑ All database communication is parameterized, audited, and logged
  - ❑ SSL: client access requires SSL, ensuring that authentication and other data is encrypted
  - ❑ FTP: anonymous access disabled, account lockout thresholds enabled
- Data Availability
  - ❑ Automatic Backups
    - » We can restore to any point in time up to the corruption/loss
    - » Transaction log backups every 30 minutes
    - » Full backups twice daily
  - ❑ Database Failover Strategy
    - » Database mirroring to ensure the availability of our application databases
    - » Automatic failover occurs when the primary database server becomes unresponsive
    - » Mirror server serves data to our applications until the primary SQL Server

instance recovers and syncs

- ❑ Secondary Backups

- » Weekly backups are exported to Microsoft Azure to provide data safety even in case of complete server failover failure

- Scale

- ❑ Server architecture planned with storage and scalability in mind
- ❑ Storage is not a practical concern: 2 years of the TMS/USA shopper project will create around 10GB of data, but our server ecosystem can accommodate many times that without performance loss
- ❑ Expected additional request bandwidth: 20,000 full page and 200,000 ajax requests per month
  - » We already accommodate millions of page requests and tens of millions of database requests per month

## Reporting UI

The following pages contain various views of the Stealth Shopper UI that expose the functionality of the dashboard and shop reports at national, regional, district, and dealer levels.

## Area Dashboard: Overview

### Toyota Motor Sales USA Dashboard

#### Choose a Report

- Boston Region
- Central Atlantic Toyota
- Chicago Region
- Cincinnati Region
- Denver Region
  - District 1
  - District 2
  - District 3
  - District 4
  - District 5
  - District 6
- Gulf States Toyota
- Kansas City Region
- Los Angeles Region
- New York Region
- Portland Region
- San Francisco Region
- Southeast Toyota

View Dashboard

#### All Regions

Overview Region Detail Metric Detail

#### Highlights

Average grade: **75.8% (152/200)** Highest grade: **93.5% (187/200)** Lowest grade: **28.3% (57/200)**

Change over time: **+15%**

Best overall metrics:

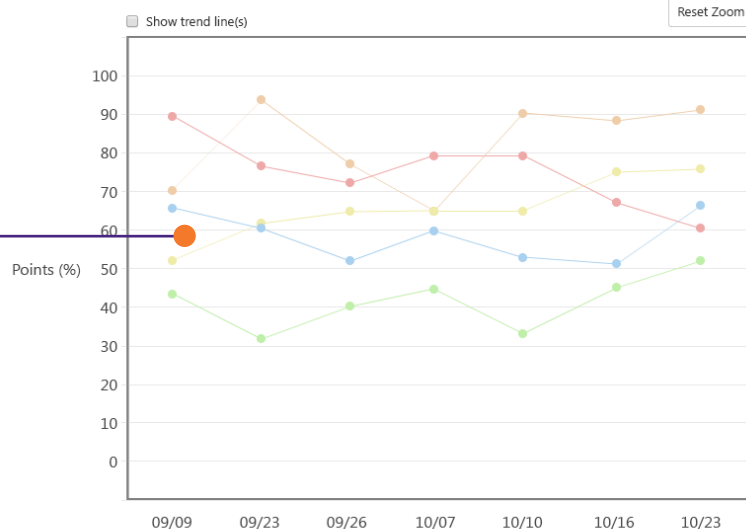
- First Personal Response Time

Worst overall metrics:

- Vehicle Availability Mentioned
- Video in Email

#### Grades Over Time

- ☒ Boston Region
- ☒ Cincinnati Region
- ☐ Kansas City Region
- ☐ Portland Region
- ☒ Central Atlantic Toyota
- ☒ Denver Region
- ☐ Los Angeles Region
- ☐ San Francisco Region
- ☒ Chicago Region
- ☐ Gulf States Toyota
- ☐ New York Region
- ☐ Southeast Toyota



#### Metric Grades

- A** Email & Phone on Second Day
- B** First Personal Response Time
- C** First Phone Response Time
- D** 7-day Email Follow-up Count
- E** Vehicle Availability Mentioned
- F** Manager Follow-up
- G** Alternate Suggestions Count
- H** 7-day Phone Call Count
- I** Phone First, Then Email
- J** Quoted a Price
- K** Salesperson Asked Questions
- L** Valid Voicemail Percentage
- M** Video in Email

Export CSV

Region	A	B	C	D	E	F	G	H	Grade
Boston Region	30	185	165	60	50	10	20	60	65.0% (910/1400)
Central Atlantic Toyota	10	120	150	40	20	0	0	50	47.9% (670/1400)
Cincinnati Region	10	105	30	70	30	20	0	20	29.6% (415/1400)
Denver Region	10	165	100	65	0	40	40	75	44.3% (620/1400)
Gulf States Toyota	10	145	140	50	20	20	0	75	48.6% (680/1400)
Kansas City Region	40	175	175	40	10	10	0	70	53.2% (745/1400)
<b>Average</b>	<b>18.3</b>	<b>149.2</b>	<b>126.7</b>	<b>54.2</b>	<b>21.7</b>	<b>16.7</b>	<b>10</b>	<b>58.3</b>	<b>48.1% (4040/8400)</b>

Aggregated scores for selected date range, with highlights

Site Map: Navigate to national/regional/district/dealer dashboard or shop report (as appropriate) based on user permissions

Interactive Graph: Compare regional/district/dealer grades over time

Interactive Chart: Aggregated metric and final grade totals by region/district/dealer for selected date range

Dealer Dashboard: Metric Detail

Toyota of Muskegon Dashboard

Most Recent Shop

Site Map: Navigate using quick links to historical dashboard data

Dashboard Views

- Last 3 months: 07/23 - 10/23
- Last 6 months: 04/23 - 10/23
- Year-to-date: 01/01 - 10/23
- Last 12 months: 10/23/13 - 10/23/14

Recent Shops

- 10/23/2014: District 1 - 2013 Toyota Corolla (used) [View Shop](#)
- 10/16/2014: District 1 - 2015 Toyota Camry
- 10/07/2014: District 1 - 2015 Toyota Highlander
- 09/26/2014: District 1 - 2014 Toyota Prius (used)
- 09/23/2014: District 1 - 2015 Toyota Yaris
- 09/09/2014: District 1 - 2015 Toyota Avalon
- 08/21/2014: District 1 - 2015 Toyota Sienna
- 08/16/2014: District 1 - 2011 Toyota Tacoma (used)
- 08/06/2014: District 1 - 2015 Toyota Tundra
- 07/23/2014: District 1 - 2015 Toyota Venza

Static Chart: Metrics table for selected dealer by shop date

Toyota of Muskegon

Sep 9, 2014 - Oct 23, 2014

Overview Metric Detail

Metrics

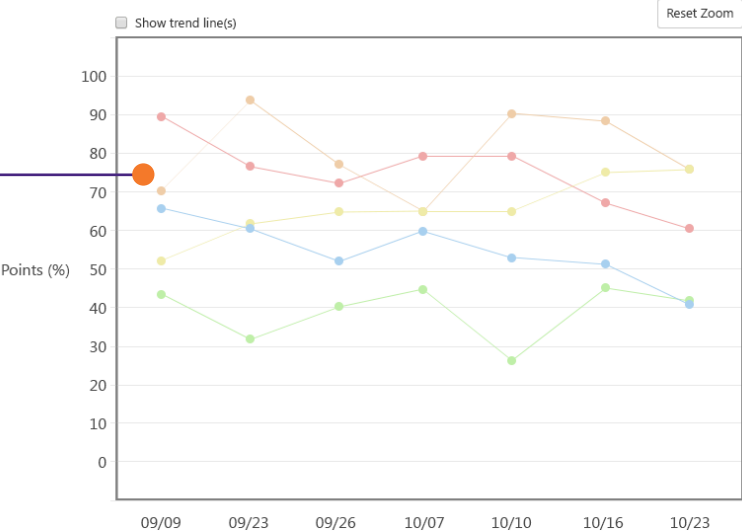
Export CSV

Metric	02/16/15	02/24/15	03/06/15	03/20/15	04/10/15	Avg. grade
7 Day Email Follow-up Count	10	20	10	10	10	9.29
7 Day Phone Call Count	5	10	10	20	20	10.71
Alternative Suggestions Count	10	10	10	0	10	5.71
Email And Phone On Second ...	0	0	0	10	0	1.43
First Personal Response Time	30	30	30	25	30	23.57
First Phone Response Time	20	30	0	30	0	14.29
Manager Followed Up?	10	0	10	10	10	5.71
Phone First Then Email?	0	0	0	10	0	2.86
Quoted a Price?	10	10	10	10	10	7.14
Salesperson Asked Questions?	0	0	0	10	0	1.43
Valid Voicemail Percentage	0	10	5	10	10	6.43
Vehicle Availability Mentioned?	0	0	0	0	0	0
Video In Email?	0	0	0	0	0	0
Totals	95	120	85	145	100	

Metrics Timeline

- ☒ 7-Day Email Follow-u...
- ☒ Email & Phone on Sec ...
- ☐ Manager Followed Up
- ☐ Video In Email
- ☒ 7-Day Phone Call Cou...
- ☒ First Personal Respons ...
- ☐ Phone First, Then Email
- ☐ Vehicle Availability Me...
- ☒ Alternative Suggestio ...
- ☐ First Phone Response T...
- ☐ Valid Voicemail Percen...
- ☐ Quoted a Price

Interactive Chart: Compare shop metric trends of dealer over time





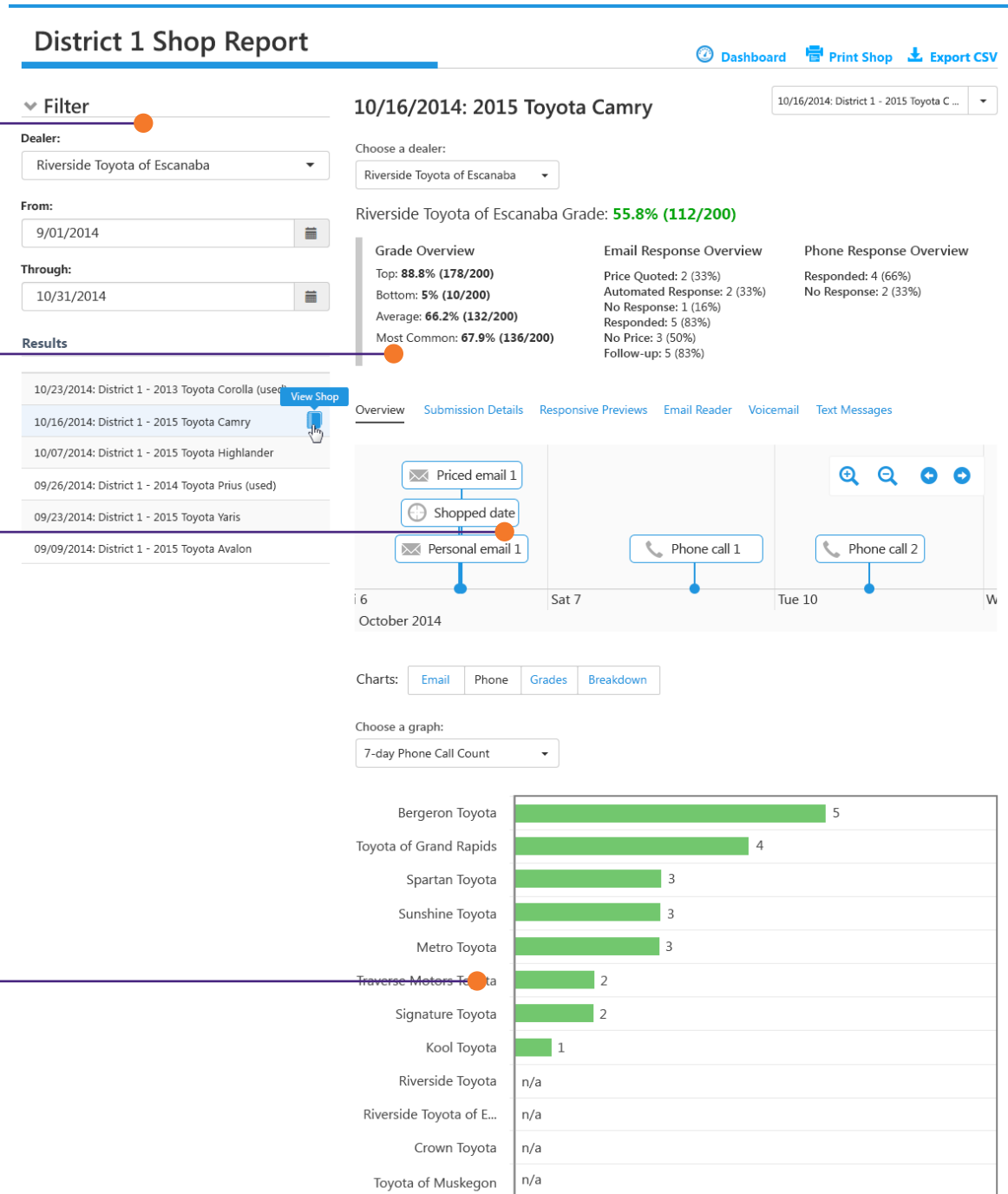
## Area Shop Report: Phone Metrics

Site Map: Searchable shop report history, with search restricted to district-level permissions

Highlights of selected shop

Timeline: Sequence of events plotted on a timeline to reveal the complete follow-up process followed by the dealer

Interactive Chart: Comparison bar chart of dealers in the district and selected phone metric



Dealer Shop Report: Overview

Site Map: Searchable shop report history

Shop details

Timeline: Sequence of events plotted on a timeline to reveal the complete follow-up process followed by the dealer

Static Chart: Overall grade and per-metric grades for the selected shop

Screenshots of completed web form and confirmation of submission

Toyota of Muskegon Shop

Dashboard

Filter

From: 9/01/2014

Through: 10/31/2014

Results

10/23/2014: District 1 - 2013 Toyota Corolla (used)

10/16/2014: District 1 - 2015 Toyota Camry

10/07/2014: District 1 - 2015 Toyota Highlander

09/26/2014: District 1 - 2014 Toyota Prius (used)

09/23/2014: District 1 - 2015 Toyota Yaris

09/09/2014: District 1 - 2015 Toyota Avalon

10/16/2014: Toyota Camry

Shop Time: 11:16:45 AM

Email: charles.tack@ardoniatravel.com

Phone: 231-443-7890

Vehicle: 2013 Toyota Corolla (used) S

VIN: 2T1BU4EE4DC978263

List: \$17,830

Quote: \$16,370

Price Type: n/a

Overview

Responsive Previews

Email Reader

Voicemail

Text Messages

Priced email 1

Shopped date

Personal email 1

Phone call 1

Phone call 2

Overall grade: 47.5% (95/200)

Metric	Grade
7 Day Email Follow-up Count	10
7 Day Phone Call Count	5
Alternative Suggestions Count	10
Email And Phone On Second ...	0
First Personal Response Time	30
First Phone Response Time	20
Manager Followed Up?	10
Phone First Then Email?	0
Quoted a Price?	10
Salesperson Asked Questions?	0
Valid Voicemail Percentage	0
Vehicle Availability Mentioned?	0
Video In Email?	0
Totals	95

Comments

No inventory. Requested price from dealer. Quote based on different vehicle.

Form Submission

Confirmation Page

DRIVING FORCE

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## Responsive UI examples



### Toyota of Muskegon Shop

#### 10/16/2014: Toyota Camry

Shop Time: 11:16:45 AM  
Email: charles.tack@ardoniatravel.com  
Phone: 231-443-7890  
Vehicle: 2013 Toyota Corolla (used) S  
VIN: 2T1BU4EE4DC978263  
List: \$17,830  
Quote: \$16,370  
Price Type: n/a

Overview

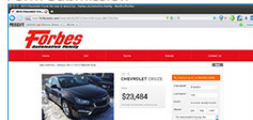
Overall grade: 47.5% (95/200)

Metric	Grade
7 Day Email Follow-up Count	10
7 Day Phone Call Count	5
Alternative Suggestions Count	10
Email And Phone On Second ...	0
First Personal Response Time	30
First Phone Response Time	20
Manager Followed Up?	10
Phone First Then Email?	0
Quoted a Price?	10
Salesperson Asked Questions?	0
Valid Voicemail Percentage	0
Vehicle Availability Mentioned?	0
Video In Email?	0
<b>Totals</b>	<b>95</b>

#### Comments

No inventory. Requested price from dealer. Quote based on different vehicle.

#### Form Submission



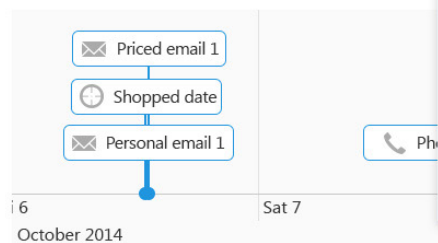
### Toyota of Muskegon Shop

#### 10/16/2014: Toyota Camry

Shop Time: 11:16:45 AM  
Email: charles.tack@ardoniatravel.com  
Phone: 231-443-7890

Vehicle: 2013 Toyota Corolla (used) S  
VIN: 2T1BU4EE4DC978263

Overview Responsive Previews Email Reader Voicemail T



Overall grade: 47.5% (95/200)

Metric	Grade
7 Day Email Follow-up Count	10
7 Day Phone Call Count	5
Alternative Suggestions Count	10
Email And Phone On Second ...	0
First Personal Response Time	30
First Phone Response Time	20
Manager Followed Up?	10
Phone First Then Email?	0
Quoted a Price?	10
Salesperson Asked Questions?	0
Valid Voicemail Percentage	0
Vehicle Availability Mentioned?	0
Video In Email?	0
<b>Totals</b>	<b>95</b>

#### Comments

No inventory. Requested price from dealer. Quote based on different vehicle.



Form Submission



Confirmation Page

Sidebar Navigation

Choose a Report

- Boston Region
- Central Atlantic Toyota
- Chicago Region
- Cincinnati Region
- Denver Region
  - District 1
  - District 2
  - District 3
  - District 4
  - District 5
  - District 6
- Gulf States Toyota
- Kansas City Region
- Los Angeles Region
- New York Region
- Portland Region

View Dashboard

Filter

Dealer:

From:

Through:

Results

- 10/23/2014: District 1 - 2013 Toyota Corolla (used)
  - View Shop
- 10/16/2014: District 1 - 2015 Toyota Camry
- 10/07/2014: District 1 - 2015 Toyota Highlander

Dashboard Views

- Last 3 months: 07/23 - 10/23
- Last 6 months: 04/23 - 10/23
- Year-to-date: 01/01 - 10/23
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Recent Shops

- 10/23/2014: District 1 - 2013 Toyota Corolla (used)
  - View Shop
- 10/16/2014: District 1 - 2015 Toyota Camry
- 10/07/2014: District 1 - 2015 Toyota Highlander

## Dashboard and Shop Report Navigation


### Main Navigation

[Overview](#) [Submission Details](#) [Responsive Previews](#) [Email Reader](#) [Voicemail](#) [Text Messages](#)




### Sub-navigation

Charts: [Email](#) [Phone](#) [Grades](#) [Breakdown](#)

## Header Quick Links

 [Most Recent Shop](#)

Sep 9, 2014 - Oct 23, 2014 ▾

 [Dashboard](#)  [Print Shop](#)  [Export CSV](#)

10/16/2014: District 1 - 2015 Toyota C ... ▾