
Lessons Learned

Jack Opiola
D'Artagnan Consulting

Agenda Item #8c
TAC Meeting #15, September 16, 2016
San Diego, CA



Lessons Learned

- ◆ Pilot Test Preparations
- ◆ Recruitment
- ◆ Enrollment
- ◆ Testing
- ◆ Initial Pilot Test Operations
- ◆ Vendors' Points of View



Pilot Test Preparations

- ◆ Compression of Schedule
 - ◇ Compression of 12 months to 6 months had impacts:
 - Required prioritization of technical integration of reporting methods and functionality
 - No full system dry run test before launch
 - Shorter timeline confined multiple ways to recruit
 - ◇ Preparation and vetting of technical design documents with vendors during procurement allowed easier transition into setup



Pilot Test Preparations (continued)

- ◆ Coordination and Parallelism of Work
 - ◇ Weekly vendor coordination meetings helped build cohesion efforts and sharing of experience; but,
 - ◇ Open forum among competitors may have dissuaded full transparency
 - ◇ Collaborative document reviews provided full visibility throughout the integration and testing process
 - ◇ In a live system, all standards, policy choices, and inputs should be decided and communicated to vendors as early as possible to minimize coding in a production environment



Recruitment

- ◆ Highest number of volunteer signups occurred in conjunction with coordinated and tightly organized outreach: local meeting, press, and social media or combination thereof
- ◆ Recruitment by specialty groups and demographics requires greater communications and public information tailored for each specific group
- ◆ DMV flyers and PSA were cost effective
- ◆ For social media to work most effectively:
 - ◇ Develop and apply over 3-4+ months
 - ◇ Feature dynamic response and engagement with commenters



Enrollment

- ◆ Rate of enrolling volunteers (48.7% conversion rate) was good, but could have been more effective and faster; in a live system you would use redundant communications.
- ◆ Rolling batches was workable approach for a large pilot test and reducing volume of inquiries for call center and vendors
- ◆ Enrollment for some methods (smartphone, telematics) required multiple steps for volunteers and in the future should be a more integrated process from the start



Testing

- ◆ Testing sequence (unit >integration>end-to-end) reduced the number of design flaws and issues found later
- ◆ Establish user interface guidelines in the system requirements documentation
- ◆ End-to-end testing with a larger set of participants prior to “go-live” would provide more opportunities to help refine participant experience
- ◆ Leveraging existing, mature technologies and systems helped to ensure a comparatively smooth pre-launch technical qualification and interface validation process
- ◆ In a real system, reducing time for testing could put revenues at risk
- ◆ GIS systems to distinguish public/private roads are less than perfect and require constant development and refinement



Initial Pilot Test Operations

- ◆ User experiences with initial invoices vary by vendor
- ◆ Latent bugs caused issues with some vendors; expect challenges with emerging technologies
- ◆ For real system roll out, start slow and expect longer development times for newer approaches
- ◆ Use a single brand by Account Manager regardless of mileage reporting method

DriveSync Road Charge Monthly Statement
NOT A BILL - SIMULATED PAYMENT COMPLETE

Client: **azuga**
Statement Period: **May 5, May 31, 2016**

MONTHLY STATEMENT ROAD CHARGE

Statement No & Date

Account Holder	azuga inc
Number of Vehicles	1
Account Type	Plug-in Electric With Location
Usage Customer Number	azuga006

Road Charge Details For May

Item	Rate	Amount
Mileage Fees for May	\$0.20	\$0.20
Fuel Tax Credit for May	\$0.18	-\$0.18
Net May Road Charge (Mileage Fees - State Fuel Tax)	\$0.02	\$0.02

Vehicle Activity

Vehicle	Miles	Power Charge	Power Charge Rate
CA1	100	\$0.02	\$0.02
CA2	100	\$0.02	\$0.02
CA3	100	\$0.02	\$0.02
CA4	100	\$0.02	\$0.02
CA5	100	\$0.02	\$0.02
CA6	100	\$0.02	\$0.02
CA7	100	\$0.02	\$0.02
CA8	100	\$0.02	\$0.02
CA9	100	\$0.02	\$0.02
CA10	100	\$0.02	\$0.02
CA11	100	\$0.02	\$0.02
CA12	100	\$0.02	\$0.02
CA13	100	\$0.02	\$0.02
CA14	100	\$0.02	\$0.02
CA15	100	\$0.02	\$0.02
CA16	100	\$0.02	\$0.02
CA17	100	\$0.02	\$0.02
CA18	100	\$0.02	\$0.02
CA19	100	\$0.02	\$0.02
CA20	100	\$0.02	\$0.02
CA21	100	\$0.02	\$0.02
CA22	100	\$0.02	\$0.02
CA23	100	\$0.02	\$0.02
CA24	100	\$0.02	\$0.02
CA25	100	\$0.02	\$0.02
CA26	100	\$0.02	\$0.02
CA27	100	\$0.02	\$0.02
CA28	100	\$0.02	\$0.02
CA29	100	\$0.02	\$0.02
CA30	100	\$0.02	\$0.02
CA31	100	\$0.02	\$0.02
CA32	100	\$0.02	\$0.02
CA33	100	\$0.02	\$0.02
CA34	100	\$0.02	\$0.02
CA35	100	\$0.02	\$0.02
CA36	100	\$0.02	\$0.02
CA37	100	\$0.02	\$0.02
CA38	100	\$0.02	\$0.02
CA39	100	\$0.02	\$0.02
CA40	100	\$0.02	\$0.02
CA41	100	\$0.02	\$0.02
CA42	100	\$0.02	\$0.02
CA43	100	\$0.02	\$0.02
CA44	100	\$0.02	\$0.02
CA45	100	\$0.02	\$0.02
CA46	100	\$0.02	\$0.02
CA47	100	\$0.02	\$0.02
CA48	100	\$0.02	\$0.02
CA49	100	\$0.02	\$0.02
CA50	100	\$0.02	\$0.02
CA51	100	\$0.02	\$0.02
CA52	100	\$0.02	\$0.02
CA53	100	\$0.02	\$0.02
CA54	100	\$0.02	\$0.02
CA55	100	\$0.02	\$0.02
CA56	100	\$0.02	\$0.02
CA57	100	\$0.02	\$0.02
CA58	100	\$0.02	\$0.02
CA59	100	\$0.02	\$0.02
CA60	100	\$0.02	\$0.02
CA61	100	\$0.02	\$0.02
CA62	100	\$0.02	\$0.02
CA63	100	\$0.02	\$0.02
CA64	100	\$0.02	\$0.02
CA65	100	\$0.02	\$0.02
CA66	100	\$0.02	\$0.02
CA67	100	\$0.02	\$0.02
CA68	100	\$0.02	\$0.02
CA69	100	\$0.02	\$0.02
CA70	100	\$0.02	\$0.02
CA71	100	\$0.02	\$0.02
CA72	100	\$0.02	\$0.02
CA73	100	\$0.02	\$0.02
CA74	100	\$0.02	\$0.02
CA75	100	\$0.02	\$0.02
CA76	100	\$0.02	\$0.02
CA77	100	\$0.02	\$0.02
CA78	100	\$0.02	\$0.02
CA79	100	\$0.02	\$0.02
CA80	100	\$0.02	\$0.02
CA81	100	\$0.02	\$0.02
CA82	100	\$0.02	\$0.02
CA83	100	\$0.02	\$0.02
CA84	100	\$0.02	\$0.02
CA85	100	\$0.02	\$0.02
CA86	100	\$0.02	\$0.02
CA87	100	\$0.02	\$0.02
CA88	100	\$0.02	\$0.02
CA89	100	\$0.02	\$0.02
CA90	100	\$0.02	\$0.02
CA91	100	\$0.02	\$0.02
CA92	100	\$0.02	\$0.02
CA93	100	\$0.02	\$0.02
CA94	100	\$0.02	\$0.02
CA95	100	\$0.02	\$0.02
CA96	100	\$0.02	\$0.02
CA97	100	\$0.02	\$0.02
CA98	100	\$0.02	\$0.02
CA99	100	\$0.02	\$0.02
CA100	100	\$0.02	\$0.02

INVOICE
NOT A BILL - simulated payment

EROAD Inc., 7618 SW Mohawk Street, Tualatin, OR, 97062
EROAD Federal Tax ID number: 99-0381753
Phone: 1-971-309-3132 / Nina Eber

Billing Address
CA Pilot EY
3234 CA test lane
Tustin, CA, 92680

Invoice Number: CA Pilot EY
Invoice Date: 07/15/2016
Invoice Period: 07/15/2016

CA Road Charge Pilot Program - April 2016
Vehicles: CA222, CA444, CA555, CA333, CA11, CA666

CA ROAD CHARGE	Total distance	Taxable distance	Rate	Refund
California	252.3	213.8	5 per mile	
Out-of-State	37.0	0		
Unlimited/mileage	0	0		
FUEL TAX CREDIT*				
	Total distance	Average Feet	MPG	Refund
	252.3	2		

The estimated fuel taxes paid are: \$0.00

CA Road Charge	Amount
CA Road Charge	3.20
CA Fuel Tax credit	(4.11)
TOTAL	(0.26)

Invoice # 1
Date 07/15/2016

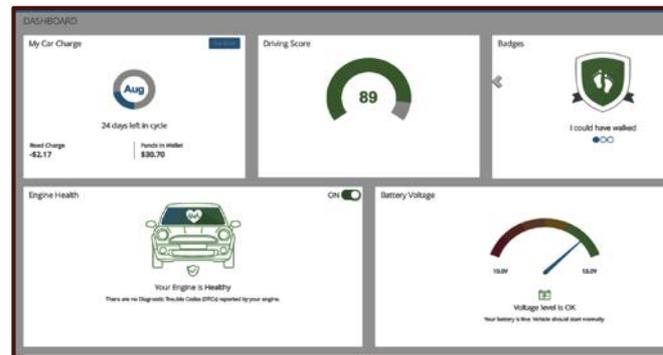
Amount \$18.00
Amount Paid \$18.00

Vendors' Point of View

Commercial Account Managers – Azuga and IMS



- ◆ User experience is just as important as the technical validation
- ◆ Don't underestimate the importance of engaging participants throughout the enrollment process
- ◆ Value added services are important to participants – Account Managers state that approximately 80% chose them based on features offered.



Vendors' Point of View (continued)

Value Added Services



- ◆ Road Charge Details
- ◆ Visual Trip Logs
- ◆ Achievements (Badges)
- ◆ Safe Zones
- ◆ Vehicle Health
- ◆ Battery Voltage
- ◆ Find it Forward
- ◆ 2MyCar
- ◆ Mobile app



- ◆ Trip IQ
- ◆ Urgent.ly (smart roadside assistant)
- ◆ Top Driver
- ◆ Advance Driver Coach
- ◆ Vehicle Diagnostics
- ◆ Repair Pal
- ◆ Incident Assistant
- ◆ Find My Drive
- ◆ Multiple Vehicle support

Vendors' Point of View (continued)

California State Account Manager – Arvato



- ◆ End-to-end testing in Sacramento was very helpful to detect weaknesses from the users' points of view
 - ◇ User interface needs to be as simple and easy to understand as possible
 - ◇ More time between testing week and the launch date would have been ideal
- ◆ Availability of mileage reading sites are necessary for manual methods
- ◆ For a live system, a protocol will be necessary for communications with off-line vehicle owners

Vendors' Point of View (continued)

Heavy Vehicles – EROAD



- ◆ Open communications and detailed documentation allowed on-time implementation despite tight timeframe
- ◆ In-depth testing ensured complete review of program and was key to successful start of the pilot
 - ◇ 3,920 miles travelled during end-to-end testing week
 - ◇ 14 state line crossing events
 - ◇ Fleet running time of 122 hours
- ◆ Value added services for participation:



IFTA

EROAD Inc., 7018 SW Mohawk Street, Tualatin, OR, 97146
EROAD Federal Tax ID Number: 99-0927193
Phone: 5 03 589 5332 / Fax: 503

Billing Address:
CA Pilot 01
1000 CA Road Lane
Fostergrad, CA 95105

Invoice Number: 00000001
Invoice Date: 4/5/2016
Invoice Month: April 16

CA Road Charge Pilot Program – April 2016

Vehicles: CADILLAC, CADILLAC, CADILLAC, CADILLAC, CADILLAC

CA ROAD CHARGE	Total Distance	Traveler Distance	\$ per mile	Total \$
1. CADILLAC	272.3	272.3	0.000	0.00
2. CADILLAC	272.3	272.3	0.000	0.00
3. CADILLAC	272.3	272.3	0.000	0.00
4. CADILLAC	272.3	272.3	0.000	0.00
5. CADILLAC	272.3	272.3	0.000	0.00
Total Distance	1361.5	1361.5	0.000	0.00
Average Fuel	122.0	122.0	0.114	13.91
CA Road Charge				13.91
CA Fuel Tax				13.91
CA Fuel Tax				13.91



Questions?

Thank you!

