

David Lim

UX/UI Designer





About Me

Experienced, motivated, seasoned, professional UX/UI designer with a record of success in developing prototypes, managing a creative team and offshore resources, creating workflows, created user personas, defined use cases and test cases based on user requirements, creating functionality requirement documents, and business requirement documents.

player with an eye for details.

- 7 years in the Automotive Industry
- Knowledgeable with Agile methodologies
- Managed a creative team and offshore resources
- Knowledgeable of UX Best Practices

My usability career history highlights that I am a self-initiator, driver, leader, motivator, and team









PA

KPA Connect

KPA Connect is a Dealership-centric content management system (CMS) that was created due to the demand for clients wishing to have more control of their content and SEO.

Before KPA Connect, websites were created from scratch using Adobe Flash with a **120-day turnaround**. With KPA Connect, we were successful in creating a website with a **30-day turnaround**.

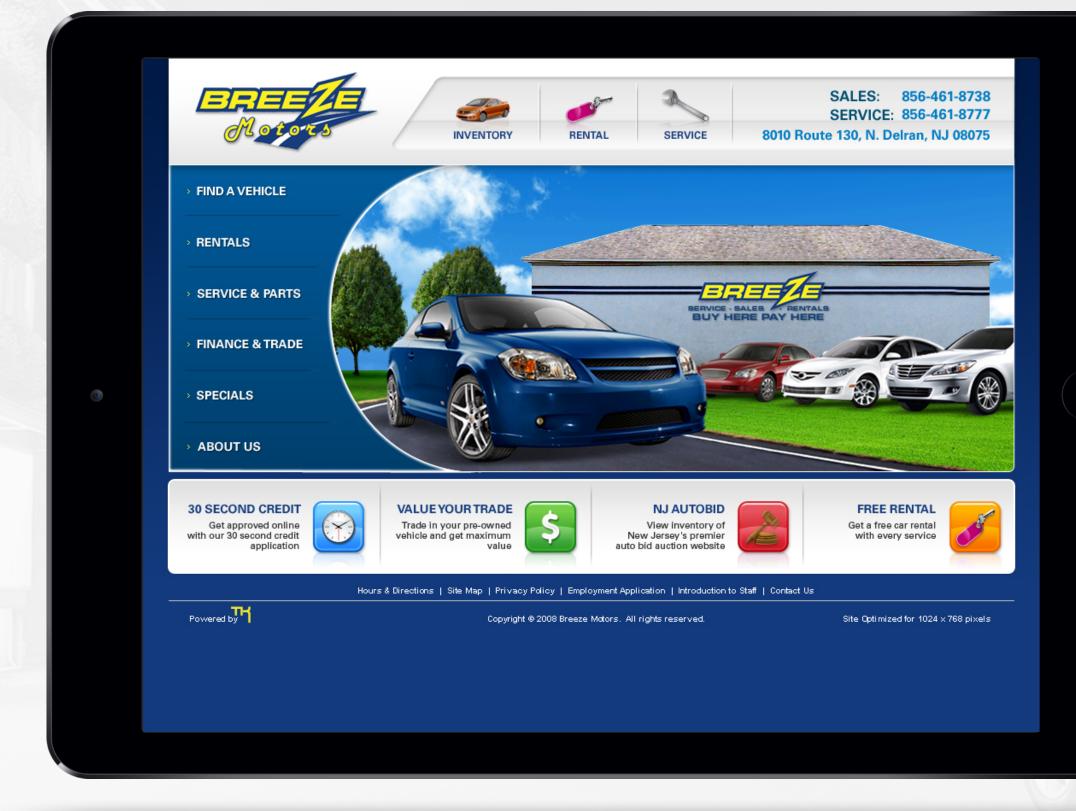
Clients no longer needed to contact Technical Support to add banners, buttons and change SEO. The Client now had the power to custom tailor their websites instantly.





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KPA





Pre-KPA Connect Websites

Flash Websites

- ✓ Content Not SEO-friendly
- ✓ Changes Take Time to Make
- ✓ User Forced to View Animations
- ✓ Non-Responsive
- ✓ Non-Mobile ready
- ✓ Custom made

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120-Day Turnaround

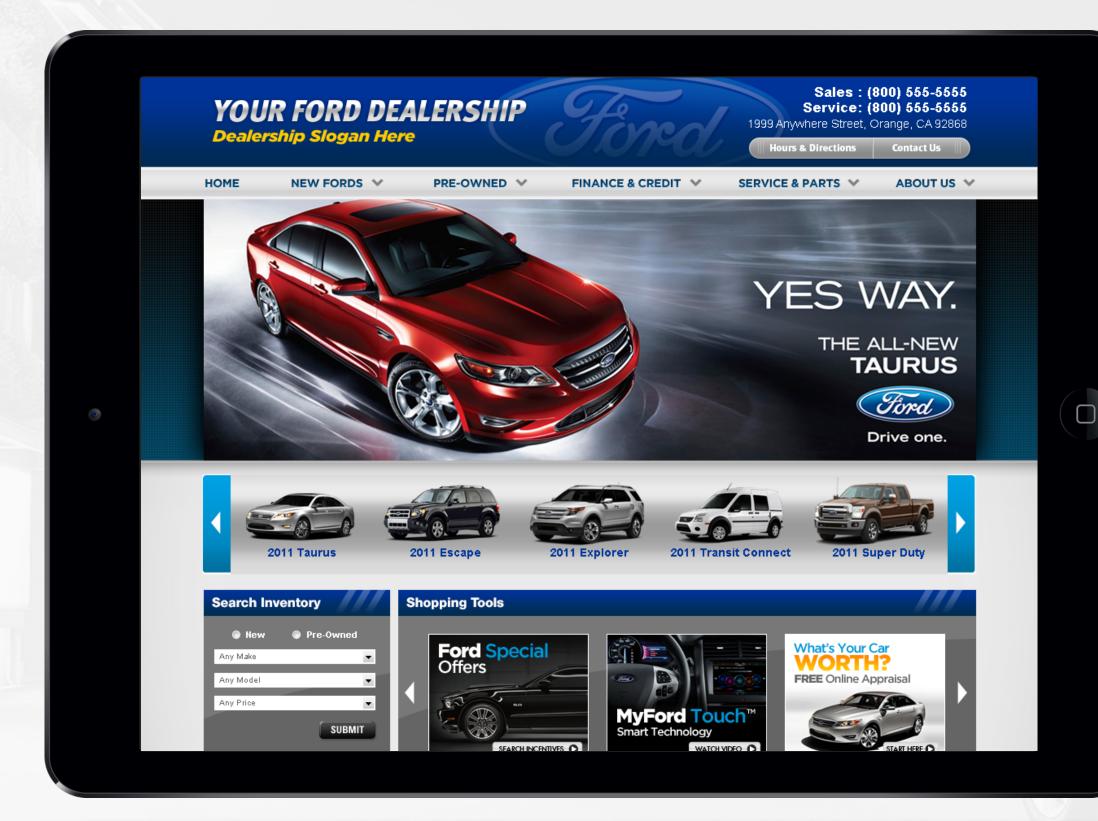
- ✓ Competition averaged 45 days
- ✓ Client change requests frequent
- ✓ Client frustration ensued over turnaround

Changes Difficult to Implement

- ✓ Dealer could not make changes
- ✓ Flash assets took time to make
- ✓ Assets could not be reused for other sites



KPA





KPA Connect Websites

CMS Websites

- ✓ Content SEO-friendly and searchable
- ✓ Changes Take Time to Make
- ✓ More Calls-to-Action

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- ✓ Chrome vehicle image feed
- ✓ Utilized pre-made template designs

30-Day Turnaround

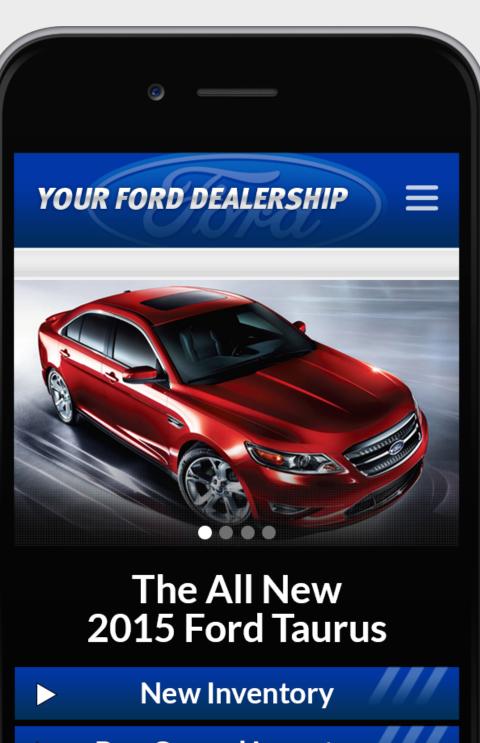
- ✓ Beat competition by 15 days on average
- ✓ Reduced client change requests
- ✓ Client frustration over turnaround reduced dramatically

Changes Easy to Implement

- ✓ Dealer can now make their own changes
- ✓ Dealer can utilize pre-made buttons and banners
- ✓ Dealer can also have customized assets for a nominal fee



KPA



- Pre-Owned Inventory
 - 30-Second Credit
 - Service Specials



KPA Connect Websites

Mobile Ready

- ✓ Utilizing CSS3 media queries
- ✓ Hide desktop browser specific modules
- ✓ Utilizes Foundation CSS Framework
- ✓ Show mobile-only specific modules
- ✓ Responsive design

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- ✓ Clients no longer need to subscribe to a separate mobile website service
- ✓ 20-30% decrease in mobile bounce rate with responsive platform

KPA

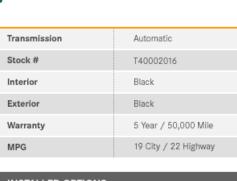
2012 Acura MDX with Technology Package

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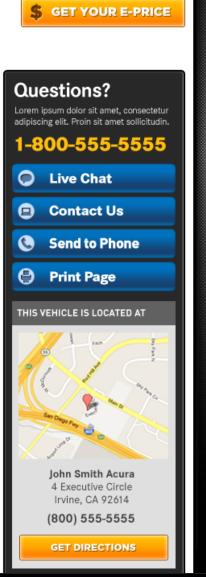
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MPC
SPECIFICATIONS
FEATURES
Bose Sound System
DVD Player
MP3 Player
Aluminum Kick Plates
First-aid Emergency Kit
Carpeted Floor Mat
Splash Guards



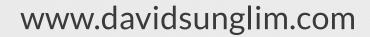
OUR PRICE

MSRP: \$59,995

 $\frown \smile \frown \smile$

\$49,995

YOU SAVE: \$10,00





Power Index Inventory

PII is a redesign of the inventory tool for car dealers on the KPA Connect platform. The redesign is intended to provide a more interactive site for consumers to search for a car and create an incentive for them to contact the dealership and ultimately purchase the vehicle.

KPA

BACK

2012 Kia Sorento EX

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🖸 SHARE 🖪 t 🖾 ...) 🚔 Printer Friendly

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			Email
	T		Phone
			Address
		4	Comments
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VIN:5XYKU4A22CG205418	Miles:5	City They	Rate % 5.9 Term
Stock #:120055	Exterior Color:Green	MPG MPG	60 mo.
Transmission:Automatic		20 Your MPG may vary 26	
			DEALER INFORMATION
SPECS STANDARD EQUIPMENT			North West Auto Group
			5012 Auto Center Blvd.
		[E Bremerton, WA, 98312
Technical Spec	s		Contact: Chuck Capps, Virgil
			Henning, or Josh Beckner
Summany			Email: Contact Lis

Previous Inventory

Lack of Calls-to-Action

- ✓ Missing Live Chat button
- ✓ Get-E-Price button should be more prominent
- ✓ Needs to have 30-second credit app button accessible

Inflexible Design

- ✓ UI is same for every dealer
- ✓ Cannot customize the UI for OEM compliance
- ✓ Cannot remove any unwanted modules

Lack of Media Options

✓ Dealer can only add few photos✓ No video option



KPA

2012 Acura MDX with Technology Package

NEW ACURA 2012

APR AS LOW AS 0.9%

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MDX



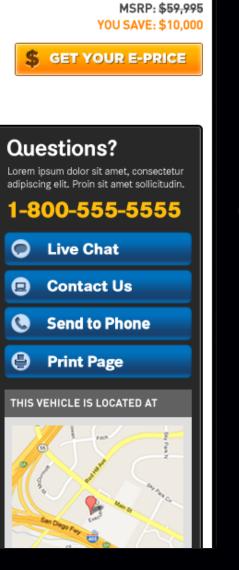


PHOTOS (12) VIDEOS (2)



Transmission	Automatic
Stock #	T40002016
Interior	Black
Exterior	Black
Warranty	5 Year / 50,000 Mile
MPG	19 City / 22 Highway

SPECIFICATIONS
FEATURES
Bose Sound System
DVD Player
MP3 Player
Aluminum Kick Plates
First-aid Emergency Kit
Carpeted Floor Mat
Splash Guards
INSTALLED OPTIONS



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\$49,995



Power Index Inventory

More Calls-to-Action

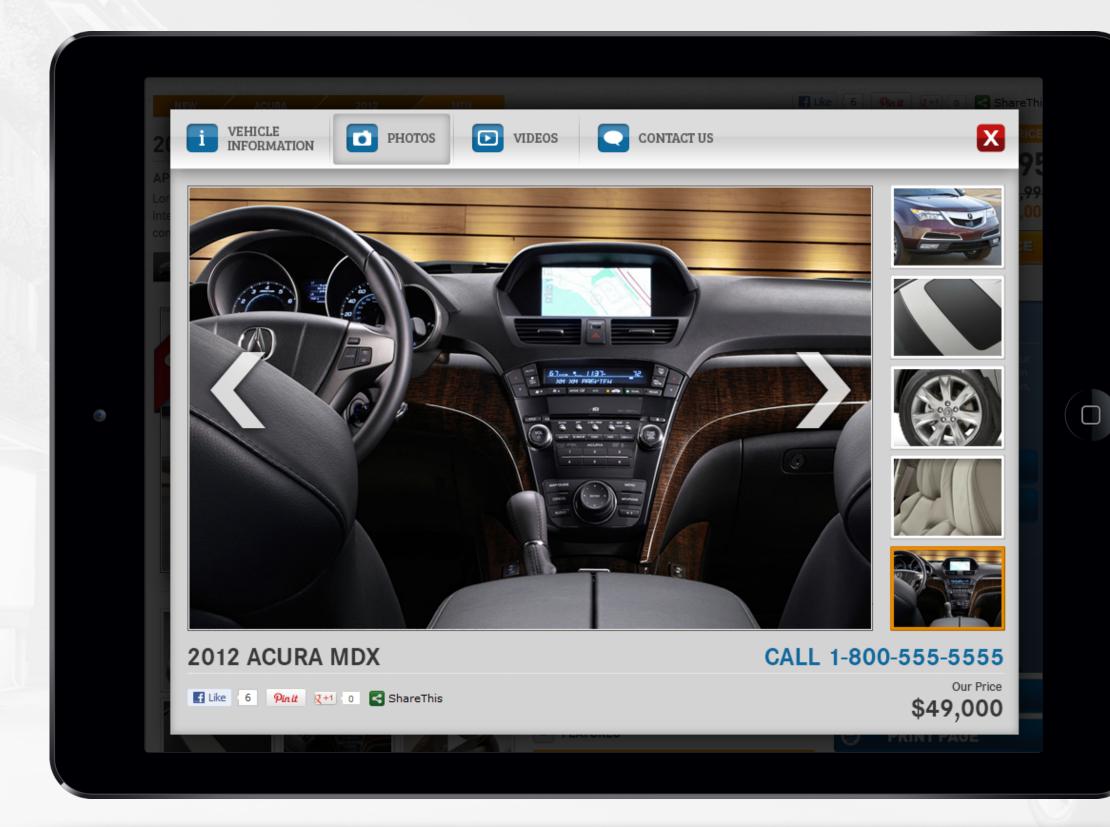
- ✓ Get E-Price button is more prominent
- ✓ Sale indicator on vehicle image
- ✓ More social media share links
- ✓ Send to Phone feature

Flexible Design

- ✓ Modular UI
- ✓ Customizable
- ✓ Utilizing XSLT templates
- ✓ Modules can be hidden if not needed



KPA



www.davidsunglim.com

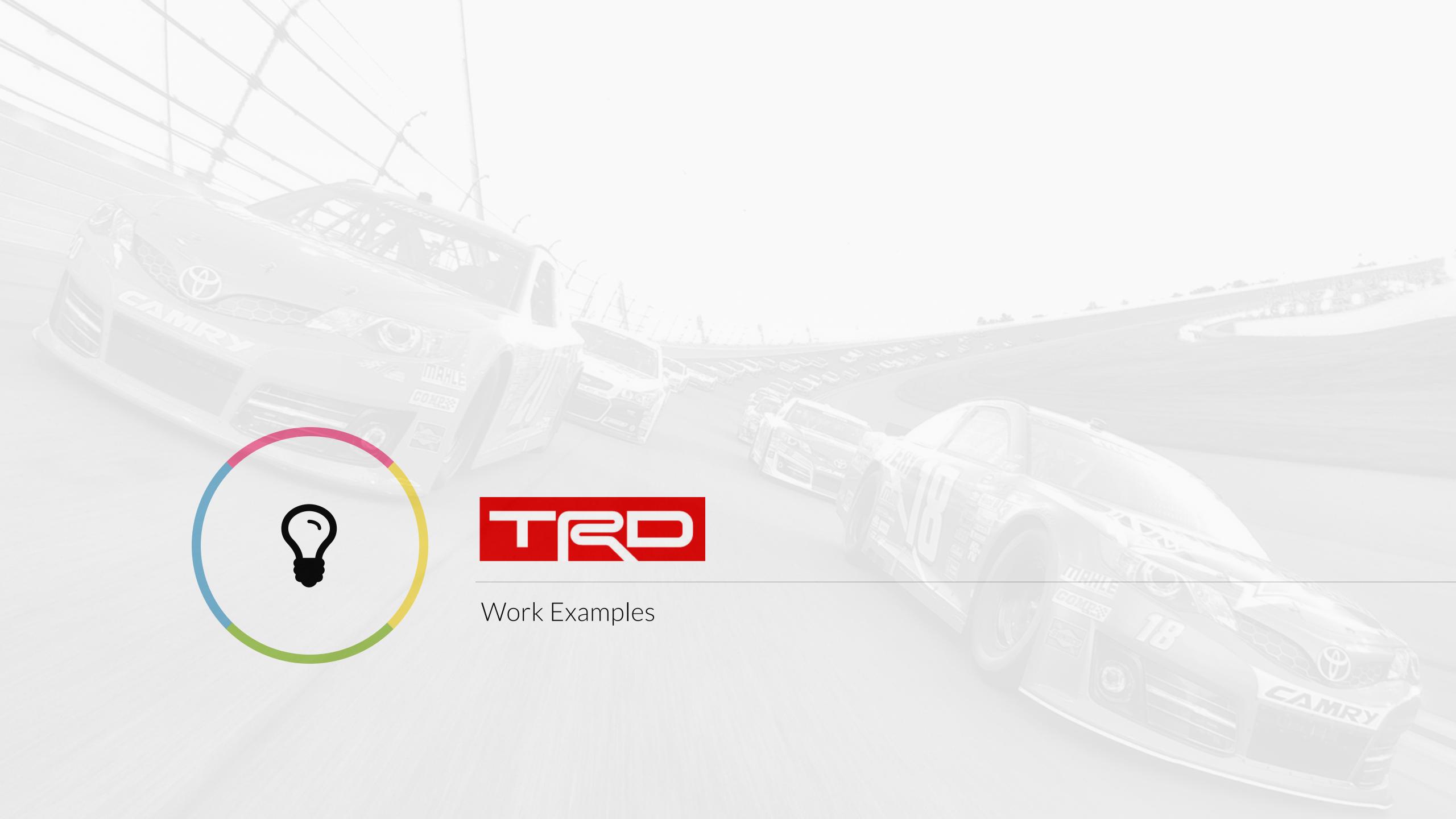


Power Index Inventory

Media

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- ✓ Dealer can upload unlimited amount of photos
- ✓ Videos can be uploaded using Dealer TV module
- ✓ Carousel navigation for photos
- ✓ SEO friendly tags
- ✓ Higher user engagement and retention



Vehicle Info 300 12200 Chassis # JGR Chassis # JGR Chassis # JGR Chassis # JGR Body Shocks Build (Inspection) Frame Heights 6 G 6 G Build (Inspection) Frame Heights LF US3P152111_13ChTest2 Build (Inspection) Frame Heights 6 G Ball Both colspan="2">Shocks UF US3P152111_13ChTest2 Build (Inspection) Frame Heights Meight 16.875 UF MR CG Height 16.875 Wreights Wreights Value 51.5% UF File 20BLACK4 PG CAP 464 09-24-1 UF Gap 4 PS 20BLACK4 PG CAP 464 09-24-1 File 20BLACK4 PG CAP 464 09-24-1 File 20BLACK4 PG CAP 464 09-24-1 File 20BLACK8 PG CAP 080 09-30-1 RF File 20BLACK8 PG CAP 08	-1	Vorcoltor								
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Chassis Tuner 2.0

Chassis Tuner 2.0 is the legacy software created by TRD that is used by Joe Gibbs Racing for setting up virtual race cars and running simulations within the application.

Monolithic

- ✓ Application was built "on-the-fly"
- \checkmark Simulation engine was integrated with application
- ✓ Difficult to distribute packages to users

Slow

- \checkmark Simulations can only be run one at a time
- ✓ Simulations can cause application to crash or run poorly
- ✓ Data Grid contains over 200 columns, which makes navigation cumbersome due to loading of all columns and data

Cumbersome UI

- ✓ Difficult for running comparisons of car setups
- ✓ Confusing navigation between setups
- ✓ Lack of persistent view of UI

David Lim ux/ui designer







Challenges

Redesigning an existing application that is widely used by TRD and JGR within a high-pressure environment had many challenges

Politics

- ✓ Teams had many users who each had different ideas of how the app could be improved
- ✓ Race car teams did not share info within their own organization and also to the Development Team

Accessibility

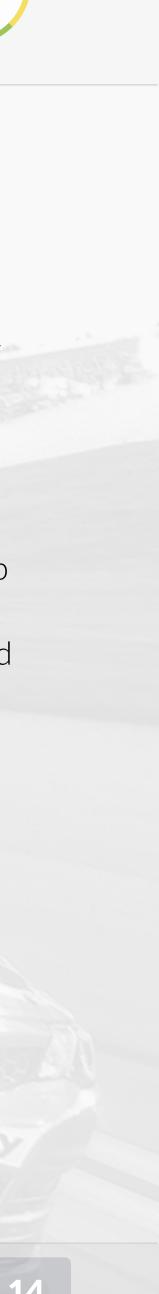
- ✓ All teams were based in Charlotte, NC
- ✓ Very difficult to gain access to users during races
- ✓ Users were not always receptive to change (status quo)

Poorly Developed and Documented

- ✓ Legacy software was poorly developed and documented
- ✓ Code was missing

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 \checkmark Reverse engineered certain portions of app





Daniel

AGE	35
OCCUPATION	Chassis Engineer
STATUS	Married
LOCATION	Charlotte, NC
TIER	1
ARCHETYPE	The Flash
Tech Savvy \times	Fast 🗙



"I have the need for speed!"

Motivations

Incentive	×
Fear	×
Achievement	×
Growth	×
Power	×
Social	×

Goals

- Need to be able to run simulations out of process
- Need to be able to run multiple simulations at once
- I need to be able to see the UI outdoors with legibility

Frustrations

- Having to navigate the Data Grid with 200 columns is excrutiating.
- Existing application is way too slow
- · Can't run multiple simulations at once

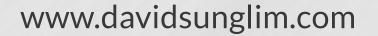
Bio

Daniel is a chassis engineer for Joe Gibbs Racing and is a power user for Chassis Tuner v.2.0. He has been with JGR for over 7 years and is highly proficient with CT v.2, Excel and Matlab. He is a speed demon and is easily frustrated with slow drivers and slow software.



Technology

IT & Internet	>
Software	>
Mobile Apps	>
Social Networks	>





Analysis

In order to create a compelling UI for Chassis Tuner v.3.0, I had to understand who the users were and how they used the existing application. Observation of existing users in their work environment was conducted to get a first-hand perspective on their objectives and specific tasks.

Analysis Tasks

✓ User Interviews
 ✓ On-site Observations
 ✓ User Profiles
 ✓ Task Analysis
 ✓ User Scenarios



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Event Information Ackerma Author RF 10000 F10001 BR H10 4D 1500lowLBJ 2 Lin Rate Car # Camber Shim Track Caste RF Spring 7.93 RF 6000 F06001 BR H10 4D 1500lowLBJ 20 Add Lin Rate Front Tread 61 1/2 📉 LR Nonlinear Spring on created Lin Rate y lukes on 03/21/2014 8:43 PM RR Nonlinear Sprin LR Spring RR Spring Vehicle Info Chassis # 06/12Chassis Type GR11 -0.5 LFUCA fv 🔹 ower Rall LF53P152111_13CltTest2 -1/2 Pitman/Idle Pitman (4. 🝷 Idler (4.25 Steering Box RF53P172611_13CltTest2 RF Centerlink LHS 15/16 - 1 RHS 15/1 • 16.875 Tie Rod Control Arm 9.125 Offset -1/2 56.5% LF File 208LACK4 PG CAP 464 09-24-13 Caster Slug 1620 LF Gap Front Slug 1/2 1 1/8 3300 Rear Slug 1/2 RF File 208LACK8 PG CAP 080 09-30-13 ... Add RF Gap 3.675 LF LCA 5/15/12 • FARB **RF LCA** 1546

Camber

Rear Tread

Pinion Angl

TB Length

RR Axle Off

TB Height

Block Heigh ruck Arm

TA Pos v3

TA Pos v4

FA Height

Oute

Oute

46

46

30

30

LS Tires

RS Tires

TA Slug



Usability Evaluation

From informal feedback sessions with existing users and stakeholders, to facilitated testing sessions, these evaluations helped identify sources of confusion, and judge how users respond to layout and navigation.

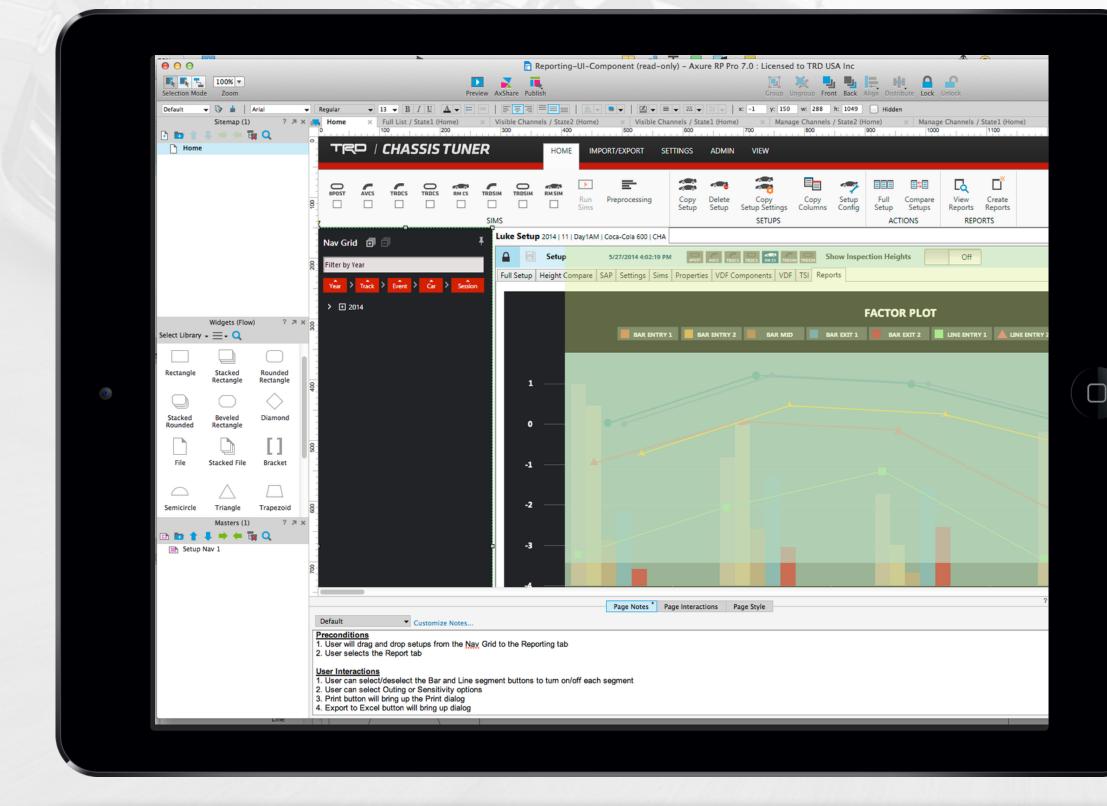
Evaluation Findings

- ✓ Each user may have a specific task and does not utilize more than 30% of the Application
- ✓ Tire engineers specifically look at tire data and only affect the tire section of the Application
- ✓ Springs users only create and upload springs and adjust linear rates
- ✓ Users were confused by CT v.2 reporting feature and how to export the findings to Excel
- ✓ Users were confused by the sheer amount of business logic that is implied
- ✓ Application did not allow users an easy exit or even a system status (simulations)
- ✓ To do setup comparisons, users needed to export the data to Excel and run comparisons manually









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Prototyping

These prototypes are developed before the final design, and can be used for user feedback, usability testing and stakeholder buy-in. Prototypes can range from low-fidelity, click-through mockups to high-fidelity, fully-interactive applications.

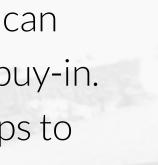
During the prototyping process, heuristic evaluations occurred by a third-party to ensure that we maintained consistency and standards, minimal design and other heuristics.

Prototyping Tools

✓ Axure Pro 7.0

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- ✓ Adobe Photoshop CC
- ✓ Adobe Illustrator CC
- ✓ Microsoft Powerpoint
- ✓ Microsoft Visual Studio









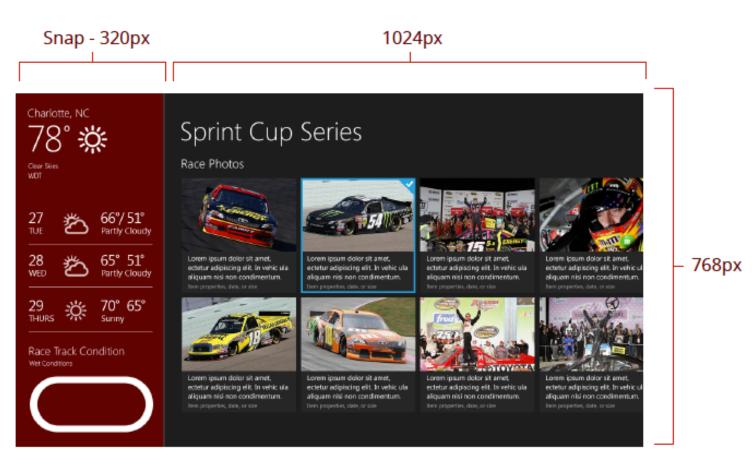
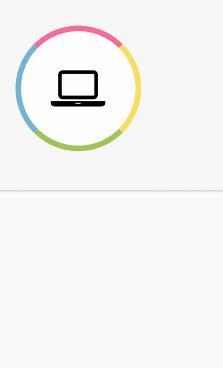


Fig. 1.2 Example Windows Metro App with Snap

Windows 8 requires a basic minimum resolution of 1024 pixels by 768 pixels for Metro apps.
The resolution that supports all the features of Windows 8, including multitasking with snap, is
1366 pixels by 768 pixels. These specs are the minimum screen resolution that supports all the features of Windows 8 on a useful physical size. The Snap requires a width of 320 pixels.



Visual Design

During the visual design phase, I applied artwork and graphics to the interaction design.

A Visual Style Guide was created to assist developers to take into account the capabilities and constraints of the target platform and user display constraints.

- ✓ Visual Theme Exploration
- ✓ Screen Renderings
- ✓ Graphical Interface Elements
- ✓ Icon Designs

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- ✓ Style Guides
- ✓ HTML/CSS/XAML Templates







Import/export Settings Admin BPOST AVCS TRDSM	
AVCS TRDCS TRDSIM TRDSI	
BPOST AVCS TRDCS TRDSIM	
Setup Setup Configuration Setup Selected Setups as Text Setup Setu	
SIMS SETUPS ACTIONS REPORTS	
Nav Grid • 14Tex2_11 Qualifying 2014 Car 11 Qual R2 Tex	
I 4Tex2_11 Qualifying VehicleDefinition created by JAdkins on 12/ 12/15/2014 3:17:20 AM	
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Grouped by: Year > Track Certainto C	0 Camber
Name Output for Setup for Charlotte from 05-10-2014 RF RF 450-F04537 750U-125D -312F 00_P0_84 Camber 7 ✓	-6.5 V Toe
Tex Notes Setup for testing at Charlotte Rate 500 500 Camber Shim 3/8	1/2 Rear Tread
Cha Session Day1AM Run # Draft FL 500 500 Caster 875	0 Pinion Angle
Baseline 2016 Car_posBRgap v7 Track Charlotte Year 2014 FL Over. 12.3 12.3 Toe 0	0.125 TB Len/ W. Offset
Baseline 2016 Car_posBRgap v7 3 Event Coca-Cola 600 Car # 11 Offset 12.3 12.3 Front Tread 61.503 ✓	TB Height
14CLT2_18 Qualifying Vehicle Info MR 0.481 0.481 Wheelbase 110,009 Bump Slug -1/2 - <th>110.003 V Rear Assembly</th>	110.003 V Rear Assembly
14CLT2_20 Qualifying Rear Lin. 283 1467 Bump Shim 0	0 Axde
14CLT2_11 StartRace Chassis Type Setup for Charlotte from 05-10-2014 LR NL 1819 (0.75x1.125-808x8)(2.75x1.0-70x8	0 Block Heights
14CLT2_18 StartRace Body 2014 Body - 4in splHgt, 8.00spoller RR NL 1978 (0.75x1.125-80x8) + (2.75x1.125-80x8) + (0 V Truck Arm
14CLT2_11 Qualifying Engine Nominal_2013	TA Pos v4
14CLT2_20 StartRace Tank Fuel 3234 CG Height 0.00 FI Over 123 123	TA Height
Baseline 2015 Car_posBRgap v7 Setup Frame Heights Post CSOP Adjustments Inst. Hgt. 0 0 RF Spindle R153.B-12/06/12	TA Slug
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Baseline 2015 Car_posBRgap v7 3 6 8 6 8 Lower Ball Joint 0	0 Rate
	dler (4.25 938s
If File B090 20 005 11-167 03-11-14 Steering Box 0	LR Link Type
Atl 940 763 Cross 54.00% Rear Shock Btm Gap 2 2	DD Slider Ext /Coor
14Atl_11 RaceStart FARB Proload 0.00 Tie Rod 0	•
14Atl_18 RaceStart FARB Upper Control Arm	Tires
14Atl_11 Qualifying 3 Aerodynamics Rate 2000 Arm Clock 0 Control Arm 95	9.125 Set TRD_D46
14Atl_20 StartRace 938s 12/36 Offset -0.25	-0.5 Tire Notes
14Atl_18 Qualifying Tape 0 Drag Offset 0 RF Link Type Std RF Drop Link Length -3 1/2 Caster Slug -0.375 Sooiler 0 Front DE Offset 0 RF Slider Ext/Cmp 0	-3/8 Track
14Att]20 Qualifying	0.5 Date
Las Rear DF Offset 0 Shocks Rear Slug 0.375 Skirt Lengths Skirt Heights Skirt Heights Skirt Heights Skirt Heights Skirt Heights	0.5 Target Lap
14Veg_11_Qualifying LF 14Tex1_LF67P601019 Lower Control Arm	Tire Files
14Veg_11_RaceStart 0 0 835 937 RF 14Tex1_RF67P611619 LF LCA L66E_str-05/15/12	Setup Pressure
14Veg_18_RaceStart 0 0 940 763 LR 14Tex1_LR51P270324 RF LCA R66E - 05/15/12	Outer
Service is not running Splitter Heights L 0.51 C 0.51 R 0.51 R 0.51 R 14CLT2_RR56P609400 Front Lat Offset 0	0



Chassis Tuner 3.0

Improvements were made based on all analysis, design, testing and feedback.

Cloud Based

- ✓ Application rewritten for MS Azure services
- ✓ Users no longer have to share USB drives to share data (setup packages)

Speed Improvements

- ✓ Multiple simulations can be run at once and out of process
- ✓ Application no longer crashes when running simulations
- ✓ Users benefit from a 400% increase in productivity

Increased Usability

- ✓ Easier to run comparisons and duplicate setups
- ✓ New Nav Grid pane to allow for click-and-drag functionality
- ✓ Reporting UI enhancement and export data to Excel
- ✓ Parts server allows for sharing of parts across users







THANK YOU

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