Creating an Electronic Parts Catalog

Felesia McDonald February 23, 2019

About Me



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- Who: Who is OEC and who are our customers
- What: What was the problem
- Why: Why was it a problem
- How: How did we solved it



• Who: Who is OEC and who are our customers

OEC Technology Company

- B2B / B2C eCommerce
- 1,300 Associates
- 45% Technology
- 16 Years and Going Strong
- Recognized Employer of Choice





Krakow, POL

Global Blue-Chip Customer Base



Comprehensive Integrated Suite

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One Dealer / One Workflow For All Transactions



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Dealers



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The Process for a shop using our applications



Auto Dealer Parts Manager Persona

Parts search process for a Parts Manager



Jay Thomas



Parts Manager, 10 years

Age: 54

30+ years in auto industry 20 years as a parts manager

Started in the warehouse pulling parts

Works 10 hours per day, 50-60 hours per week

Part search process:

Enters VIN Enter part number: complete part number Is taken directly to the part some epc's give quantity * Will click on the illustration to confirm it's the correct part and to identify additional parts that may be needed. For example; hoses, nuts and bolts * Creates part list as parts are selected Refers to D2DLink to check inventory

If parts are in stock pick-up or same day delivery

If parts need to be ordered next day delivery

Parts are then added to the cart Invoice created in the DMS system.

Pain points:

Inconsistent terminology

A customer comes in and asked for a bonnet. The parts person asks them to describe what they are referring to. "Where is it at?" in the front of the car? They are able to determine that the term bonnet is the same as hood.

Searching for other needed parts

Enters VIN with keyword search

* Takes them to all search results that

include that keyword

looking for

word hood

latch is located

other items are neede

* Illustrations are brought up

* They click on the illustration and

Once a parts person cornfirms that they have the correct part, they then search every angle of the illustration to determine if other parts are required. For example, does the part also need a cable or nuts and bolts. Through experience, they learn whch additional parts are needed and are able to inform the customer. The biggest complaints are that this process is time consuming and the illustrations don't provide the best view of the parts.

Quote from Jay:

"Once you become familiar with a car/part you learn the various items and related parts. When they can't find a part they have to call GM. If it's a super common related part they should almost be in the picture together."

day delivery * If parts need to be ordered next day

* Parts are then added to the cart

* Invoice created in the DMS system.

number Is taken directly to the part some epc's give quantity * The user then navigates to a specific * Will click on the illustration to confirm area and drills down to the part they are it's the correct part and to identify additional parts that may be needed. For * For example: if they are looking for a example; hoses, nuts and bolts hood latch. They enter the VIN and the * Creates part list as parts are selected Refers to D2DLink to check inventory * If parts are in stock pick-up or same navigate to the area where the hood * They are then able to determine if delivery

Keyword search no VIN

* Enter part number: complete part



• What: What was the problem?



Automotive data introduces 2 issues:

Complex data formats Inconsistent information architecture

Parts Search History



This is how dealers would search for parts prior to the creation of an electronic parts catalog

 OEM Part information was established when the first car was produced in the 20's....that same information architecture is still used today!

Parts Search History



Leafing through pages of data while customers wait.

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Data Standardization





Creating Super Groups Helped Map Multiple OEM Groups

Major Grp
00, 01
04
01
03
04, 05
02, 13
06
06, 07
08, 09
7, 8, 9, 11,12, 13
10, 11,14, 15
18, 21, AP

Before Data Normalization and IA

Part Categories 4-CYLINDER ENGINE ACCESSORIES AUTOMATIC TRANSMISSION Speedometer Driven Gear Transmission Mount and Support Transmission Oil Cooler BODY MOLDINGS-SHEET METAL-REAR CO ... > BODY MOUNTING-AIR CONDITIONING-AUDI ... > BODY WIRING-ROOF TRIM > BRAKES BRAKES-REAR AXLE-PROPELLER SHAFT-W ... > > COOLING SYSTEM-GRILLE-OIL SYSTEM FRAMES-SPRINGS-SHOCKS-BUMPERS > FRONT END SHEET METAL-HEATER-VEHIC ... > > FRONT SUSPENSION-STEERING FUEL SYSTEM-EXHAUST-EMISSION SYSTEM > INTERIOR TRIM-FRONT SEAT TRIM-SEAT B. > REAR GLASS-SEAT PARTS-ADJUSTER > > REAR SEAT TRIM-CARPET STARTER-GENERATOR-IGNITION-ELECTRIC... > WINDSHIELD-WIPER-MIRRORS-INSTRUMEN. >



• Why: Why was it a problem?

Our Objectives

- Ease of navigation to identify correct part
- Better organized data

How does that impact us at OEC?

OEC Products	Capabilities	OEM Data Types	
		Parts Catalog Text	
Densistink	Web Parts Catalog (eCat)	Parts Catalog Illustrations	
керанстик		VIN-Specific Vehicle Build Options	
	Parts Pricing	Parts Master	
	Comulation	Parts Catalog Text	
CollisionLink	Scrubbing	VIN-Specific Vehicle Build Options	
	Parts Pricing	Parts Master	
ConsumerLink	Same as RepairLink	Same as RepairLink	
Supply Chain	Parts Pricing	Parts Master	

Acquiring OEM Data





• How: How did we solved it

Creating Super Groups Helped Map Multiple OEM Groups

Super Group	Major Grp
Engine	00, 01
Transmission & Clutch	04
Cooling	01
Fuel, Exhaust & Emission	03
Brakes	04, 05
Electrical	02, 13
Steering	06
Suspension & Frame	06, 07
HVAC (Heating & A/C)	08, 09
Body (Exterior)	7, 8, 9, 11,12, 13
Interior	10, 11,14, 15
Miscellaneous / Other	18, 21, AP

How we arrived at a solution

- We created 26 APIs to read the data
- OEC's Catalog Services connect each API to OEC Applications
- APIs enable:
 - YMM (MyPriceLink, YMM eCat Navigation)
 - VIN Details: which is connecting the car's vin to all applicable parts
 - Parts Fitment
 - eCommerce Parts Catalog Navigation and Filtering
- APIs can be added: very extensible

Scalable Architecture Solution



Raw Data

Change Only (WDENSU24) and Reconciliation

(WDENSU25) Record Layouts (As of 11/24/2003)

Record Type 01 - Service Usage Records for RL3

01	W-DH	RAW-R	ECOR	D-OUT.					
	05	W-DR-RECORD-TYPE					PIC	X(02).	
	05	W-D	R-CH	ANGE-INDICA	ATOR		PIC	X(01).	
	05	W-D	R-US	AGE-KEY.					
		10	W-D	R-MAJOR-DIV	7		PIC	X(01).	
		10	W-D	R-BOOK			PIC	X(02).	
		10	W-D	R-GROUP-KEY	Υ.				
			15	W-DR-MAJON	R-GROUP		PIC	X(02).	
			15	W-DR-SUPLN	MN-GROUP	PI	C	X(02).	
			15	W-DR-MINOR	R-GROUP		PIC	X(03).	
			15	W-DR-SUB-0	GROUP		PIC	X(02).	
		10	W-D	R-UPC			PIC	X(07).	
		10	W-D	R-FCN-NAME-	ADDR		PIC	X(05).	
		10	W-D	R-FIRST-YR-	-USED		PIC	9(04).	
		10	W-D	R-DIVISIONS	S		PIC	X(09).	
		10	W-D	RIND			PIC	X(01).	
		10	W-D	R-MODEL			PIC	X(02).	
		10	W-D	R-PDIS-OTB	ND-NBR		PIC	S9(05) C	OMP-3.
	05	W-DR	-DLR	-COUNTRY			PIC	X(10).	
	05	W-D	R-AC	-COUNTRY			PIC	X(10).	
	05	W-D	R-SE	RIES-CODE			PIC	X(12).	
	05	W-D	R-BC	DY-STYLE-CO	ODE		PIC	X(08).	
	05	W-D	R-LA	ST-YR-USED			PIC	9(04).	
	05	W-D	R-PA	RT-NBR			PIC	X(08).	
	05	W-D	R-NE	GATIVE-RPO	OCCURS .	20	TIMES	PIC	X(04).
	05	W-D	R-PC	SITIVE-RPO	OCCURS :	20	TIMES	PIC	X(04).
	05	W-D	R-QU	ANTITY			PIC	X(02).	

Main Navigation

Main Navigation

	21			
	Stored Procedure	spAPIHierarchy		
	Description	List all groups in the given hierarchy		
		Country (three-character ISO)		
	Input	Language (three-character ISO code)		
		PreviousHierarchyID NULL		
		VehicleAttributeContext VARCHAR(MAX) NOT NULL		
		HierarchyID		
	Output	Description		
		HasNextLevel BIT NOT NULL		
	Data Sources OEM Catalog Data (Plus ACDelco for GM)			
	Conceptual Logic			
		CO		
	Comments	CT to start with two-character ISO for language – attribute will have three		
		characters of input – CT will read first two		
		VehicleAttributeContext includes YearMakeModelID or equivalent year / make /		
		model mormation.		
		OFC will continue to call this procedure until HasNextLevel is false		
9		Celo uni continuo to cui uno procedure unui riasivexteveris faise.		

Results: Reduced navigation



Creating the super groups



Part Categories			
Acc/Hardware/Customization	>		
Body	>		
Brake/Chassis/Steer/Susp	>		
Electrical	>		
Engine/Drivetrain	>		
HVAC	>		





Keyword search; Even the data being normalized, we are still looking at other ways to make it more efficient for the user to find the parts. One option that we are looking into is advanced keyword search **(auto complete and did you mean, synonyms)** functionality.



Appendix

Input and Output

VIN Input (Vehicle)

	· · · · · · · · · · · · · · · · · · ·
Stored Procedure	spAPIVINtoVehicle
Description	Procedure to return possible vehicles based on VIN provided.
Input	VIN
mpar	Country (three-character ISO code)
	YearMakeModelID
	MakeName
Output	ModelName
-	Year (four-digit)
	UsageID NULL
Data Sources	OEM VIN Data
	For (only), if VIN doesn't exist but VIN Pattern matches VIN (once or multiple
Conceptual Logic	times), use VIN Map to define YearMakeModeIID (YMM) if possible - if multiple VIN
	Patterns matched with distinct models all relevant YMM records are returned
	B1
	Country (an Input Attribute – above) is the 'Buyers' Country.
Commonte	If UsageId <> NULL then additional API should be called to return Attribute
Comments	information by passing in the UsageId (see spAPIVehicleUsageAttributes).
	Attributes returned would be used to populate @VehicleAttributeContext.(Confirm
	with CT and demonstrate)
	NOTE: This procedure returns a result regardless of catalog data.

Produces: Year/make/Model