

## A Primer on Platform Paradigms

There is a lot of discussion in the automotive media about what models the various OEMs are adjusting, adding, or deleting within their various "platforms."

For instance, last week GM CEO Rick Wagoner announced that the central component of GM's North American turnaround strategy will be more funding for product development - \$1 billion more per year. In today's business climate, "product" means "platform," and platforms are where the real development action takes place.

Every OEM loves coming up with a big winner in a single model: Chrysler 300C, Mazda3, and Toyota Sienna to name a few. A winning model can attract a lot of attention and, more importantly, significantly higher sales and profits. However, as important as individual models are to any OEM, the Holy Grail is a winning platform from which a dozen or more vehicles can be successfully spun off.

It may be a bit of an exaggeration but I believe that in many ways a single platform can make or break a company's fortunes.

A great deal of media attention has been devoted to platforms in recent years, but the term remains essentially ambiguous. Moreover, references to specific platforms are

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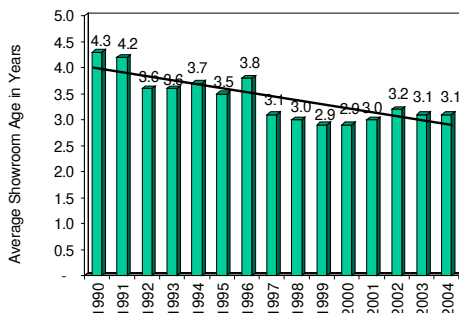
*Every OEM loves coming up with a big winner in a single model...*

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often wrong or misleading. I was told once that the term originated from design studios where designers literally started with a plywood "platform" upon which they built clay models. Vehicles related to the original model were referred to as coming from the same "platform." Over time, the word "platform" has come to mean the fundamental engineering from which various vehicles are derived. At

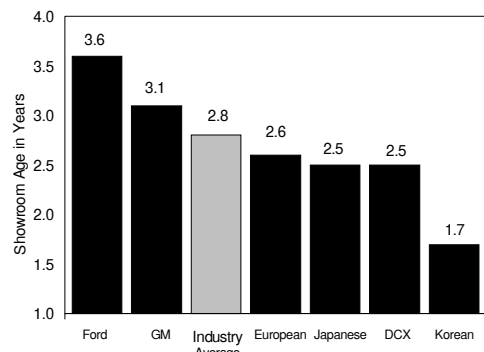
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Average Showroom Age



Source: Merrill Lynch

Relative Freshness of Product Line by Manufacturer



Estimated Showroom Age, 2006-2009 Model Year Average

Source: Merrill Lynch

# Observations - "A Primer on Platform Paradigms"

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least that was what one engineer in Detroit once told me when I asked the stupid question, "What is a platform?" It would be interesting to know whether this is the origin of one of the most popular terms in the automotive lexicon.

Platforms are often described as "shared" when the vehicles they underpin are only tangentially related, such as the Lincoln LS and Ford Mustang (which share a floorpan), or the Chrysler 300 and the previous-generation Mercedes-Benz E-Class (which share transmission and suspension components). It takes a good deal of discretion to determine which vehicles are indeed related to each other. We have always thought that the most important elements in establishing shared origins are those related to the basic engineering structure such as floorpan and unit-body construction.

The term "platform" has been around for a long time. With the wholesale switchover to unit-body architecture (i.e., the elimination of separate body and frame elements) which occurred in the 1970s, cars became more expensive to develop. Instead of body and frame being designed separately, with clear delineations between performance and styling requirements, a modern vehicle has its shape dictated by designed-in "hard points" - stressed joints and structural

members which form the core of the unit-body. The distance relationships and bracing qualities of those joints manifest as objective and distinguishing individual vehicle qualities (such as structural rigidity and crash-test performance).

In many cases, fixed relationships between various hard points have made it possible to identify platform sharing across vehicle and corporate lines. Chrysler's K platform, introduced in 1981, possessed a number of

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distinctive proportional relationships, making it easy to spot the myriad platform variants spawned from the original Dodge Aries and Plymouth Reliant. In like fashion, similar rooflines, beltlines, front/rear overhangs, and other proportional relationships make it clear that the Chevrolet Trailblazer, GMC Envoy, Buick Rainier, Saab 9-7X, and Isuzu Ascender are all

variants of the GMT360 platform.

It is the goal of stylists and engineers to provide suitable differentiation between vehicles sharing the same underpinnings. Some efforts are very successful; few non-enthusiasts would guess that the Lincoln LS and Jaguar S-Type are close siblings; likewise with the GMT360 clones and the Chevrolet SSR. In other cases, such as that of the Nissan FM platform (Nissan 350Z, Infiniti G35, M35/45, and FX35/45), shared heritage is clear but differences in height, length, wheelbase, and engine configuration limit overlap between the products. With the use of computer-aided design and modeling tools, platforms have become truly modular, growing and shrinking to meet the demands of different vehicle segments. It is rare today for a mass-market vehicle to ride on a unique platform.

One of the benefits of sharing platforms across segment lines (in terms of both size and price) is that the structural attributes necessary to ensure competitiveness at higher sticker values trickle down to the budget consumer. For example, the levels of body rigidity,

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**New and Exciting**

**Tried & True**

**Long in the Tooth**

**War Horses**

**New to Two Years Old**

**Three to Four Years Old**

**Five to Eight Years Old**

**Nine Years and Older**

# Observations - "A Primer on Platform Paradigms"

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driveline isolation, and subjective refinement that are segment-appropriate in a \$44,000 Chrysler 300C are apparent and appreciated in a \$28,000 Dodge Magnum SE. Likewise, a Mazda3 GX at \$16,295 exudes the same 'expensive' feel as a

layers of design cost, this sort of platform differentiation makes great business sense. In fact, an automaker could be evaluated on the successes or failures of its efforts in this arena.

I've always wondered whether this was mostly talk or whether in actual fact these product announcements actually make a difference in the market place. To test the theory, we took all the Canadian sales data back to 1990 and divided every automaker's "platforms" into broad age categories to see if sales were shifting with this proliferation of models.

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\$38,000 Volvo S40 T5 AWD - minus the content. Vehicle manufacturers from all corners of the globe essentially try to develop platforms with very high levels of built-in quality and then subjectively remove content to achieve price points.

One of the constant themes in the sector today is the notion that the OEMs are spinning off more and more vehicles from individual platforms and that this has resulted in higher and more profitable sales. Go to any auto show and virtually every OEM is extolling the virtue of the number of new models they will be offering over the coming year or years and how wonderful this will be for the consumer and how much it will mean to the OEM's sales performance.

The very simple system we developed is comprised of four categories. The first category we call "New & Exciting" which are any platforms that are zero to two years old. The second category we call "Tried & True" which are platforms that are three or four years old. The third category we call "Long in the Tooth" which are platforms that are five to eight years old. And the last category we call

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Given that each vehicle generation brings additional

## Canadian Passenger Car & Light Truck Platforms - Sales Weighted

	New & Exciting New to Two Years Old		Tried & True Three to Four Years Old		Long in the Tooth Five to Eight Years Old		War Horses Nine Years and Older	
	Sales	Market Share	Sales	Market Share	Sales	Market Share	Sales	Market Share
1990	389,348	30.3%	195,478	15.2%	238,461	18.6%	461,496	35.9%
1991	265,473	21.0%	318,216	25.1%	224,487	17.7%	457,654	36.2%
1992	234,668	19.5%	285,892	23.7%	211,239	17.5%	472,080	39.2%
1993	286,480	24.6%	151,610	13.0%	288,778	24.8%	437,372	37.6%
1994	302,769	24.7%	142,835	11.7%	296,353	24.2%	482,504	39.4%
1995	324,105	28.7%	187,726	16.6%	207,112	18.3%	410,696	36.4%
1996	399,405	34.1%	179,035	15.3%	284,746	24.3%	309,203	26.4%
1997	591,849	42.7%	216,815	15.6%	181,657	13.1%	397,304	28.6%
1998	536,677	38.6%	263,984	19.0%	227,216	16.4%	360,946	26.0%
1999	623,256	40.1%	452,970	29.2%	185,792	12.0%	291,695	18.8%
2000	423,998	27.4%	518,943	33.5%	348,962	22.5%	256,536	16.6%
2001	474,951	30.2%	423,223	26.9%	410,551	26.1%	261,774	16.7%
2002	490,049	28.8%	359,233	21.1%	569,116	33.4%	284,208	16.7%
2003	446,546	27.9%	359,680	22.5%	573,700	35.9%	219,465	13.7%
2004	507,693	33.4%	352,555	23.2%	401,788	26.4%	259,877	17.1%

Source: DesRosiers Automotive Consultants Inc., CVMA and AIAMC

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"War Horses" which are platforms that are nine years and older. Each age category has been calculated back from the model year of the platform introduction, and all of our historical sales data back to 1990 has been adjusted to reflect these four broad categories.

When examining the combined passenger car and light truck sales-weighted numbers, it becomes clear that increased competition has paid great dividends for the consumer. Many pundits have reached this conclusion anecdotally, but the actual figures are proof-positive that the trends of shorter product-cycles and higher consumer expectations are becoming firmly entrenched in the automotive sector. The best evidence is the long-term sales deterioration of vehicles derived from "War Horse" platforms. The percentage of "War Horse" platform purchases was consistently over 35 percent during the early 1990s, but it has declined to a level well under 20 percent during the past four years. Because of this, showroom age has certainly declined.

The data also shows what would have to be a disturbing trend for the OEMs in that sales of what we call "New & Exciting" models from relatively recently announced platforms are not taking significantly more market share in Canada. "New & Exciting" typically captured 20 to 25 percent of the market a

decade ago and today they are capturing only an additional three to five percent share points. Given the proliferation of models, one would expect a much bigger bump in market share. This is because a lot of new models are spun off of middle-aged platforms, and the consumer apparently sees through this and doesn't embrace these vehicles to the degree they embrace new models on new platforms.

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*Add value to your product line-up and you will sell more vehicles.*

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Also evident in the data is the fact that outdated product is no longer allowed to languish unattended. Industry-wide, platform cycles have been tightened. Nearly 40 percent of new vehicles hitting the road in 1992 were based on decade-old platforms first released in 1983 (or earlier), while just 13.7 percent of 2003 models were based on decade old platforms (i.e., first released in 1994).

The greatest sales growth has been in the middle aged segments, "Tried & True" and "Long in the Tooth," comprising a range of vehicles based on platforms which were between three and eight years old at the time of purchase. "Tried & True" platforms regularly tracked at around 15 percent of the sales-weighted new vehicle fleet for most of the 1990s, but that number has settled at

roughly 22 percent in the past three years, peaking at 33.5 percent in 2000. Similarly, from a semi-regular 18 percent through much of the previous decade, "Long in the Tooth" platforms have grown in market share for a number of years. Platforms dating between five and eight years old have not accounted for less than 26 percent of sales since 2000.

In conclusion, Canadian consumers are not embracing a lot of the "New & Exciting" products that are being introduced by the OEMs. Canadian consumers are also rejecting a lot of the "War Horses" that were, for most of the early 1990s, the most popular platforms. Today they appear to be buying vehicles that are middle aged, from a platform perspective. This is likely where the value for money is in the Canadian market, and it reflects the very conservative purchasing habits of the consumer. The lesson: don't drink the 'kool-aid.' A pile of new models may not rescue the market. Add value to your product line-up and you will sell more vehicles.

Next month, I'll look at market shares of the various OEM's within each of these four categories. It will be interesting to see whether some of the "spin" we've heard at the last few auto shows has actually played out in the market. **DAR**