

Value Delivery Through Customer Integration In The Automotive Supply Chain

- Rajiv Puri and Sandeep Kumar

Executive Summary

The authors expect the advent of green-field areas such as telematics and embedded systems to result in an integration of the customer into the automotive supply chain. The capture of customer life cycle and vehicle life cycle is transcending from the realms of imagination to reality with new technological advances. The automotive industry has witnessed frenetic activity on the supply side resulting in path breaking concepts and processes such as JIT, VMI and collaborative product development. The next wave of activity will focus on customer management on the demand side. As global consolidation and over-capacity continues in the industry, automotive companies seek to enhance value delivery through innovative and path breaking customer services. The authors take a look at the emerging possibilities and the trends in this area.

Industry Points Towards The Customer

The automotive industry continues to evolve and innovate. Supply side processes have been rationalized and inefficiencies driven out to the extent that questions are being raised whether such a lean supply chain can absorb demand shocks. The Internet has ushered in collaboration and visibility down the chain from component manufacturer to the OEM's. Movements on the demand side are also well and truly on with customer facing portals such as GM Buypower, Ford Direct etc.

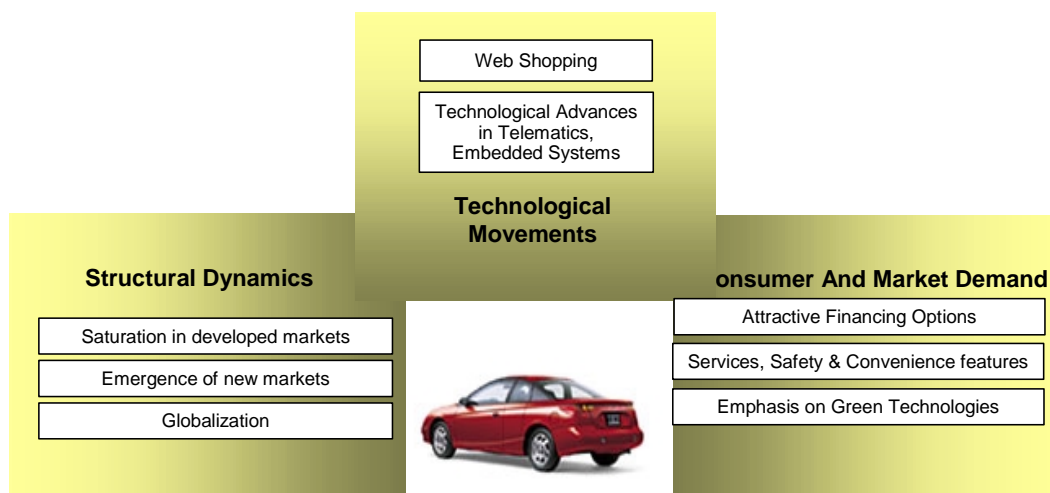


Exhibit A: Trends in a fiercely competitive automobile market

Global consolidations and merger and acquisitions activity is also resulting in an oligopolistic industry structure where ownership of the customer assumes significance. Environmental trends also suggest a consumer shift towards greener cars and more safety and convenience devices.

A very significant happening is the movement of OEM's from assemblers to brand owners and brand managers. This is resulting in a change in the industry structure itself with the emergence of new entities like the 0.5 Tier Company, an example being Magna Corporation. OEM's are increasing concentrating their efforts on managing the brand through closer interactions with the customer.

Achieving A Customer Lock-In

The customer has never had it so good! In a depressed market with global over-capacity, automobile majors are falling over each other to offer more and more features at lesser cost. More value for money, certainly. Customer preferences and changing life styles are also dictating a shift in the needs and features demanded. Convenience and safety features are well and truly in. A case in point is the growing demand for telematics devices – devices that offer navigational, rescue and emergency services, remote diagnostics and so on.

THE KEY DRIVERS FOR TELEMATICS

- Safety and Security.
- New Lifestyle Requirements.
- Brand Differentiation
- Loyalty And Customer Relationship Management.
- Mobile Networking

The growing demand for Telematics, or location-based emergency, navigational and information services has some market analysts forecasting a subscriber base in excess of 10 million by 2004!!!

- Professionals in the developed countries are highly mobile and spend a significant part of the workday in a vehicle (Men now spend nearly an hour and a half everyday behind the wheel; women spend about an hour)
- Mobile safety and security
- The younger generation of motorists now entering the automotive market in the 15-35 year age-group have been nurtured on electronics and linkage to the Internet

NEWS FROM THE INDUSTRY...

- Onstar service is standard or optional on most Buick, Chevrolet, GMC, Oldsmobile, Pontiac and SAAB models.
- ATX Technologies provides IVIS to Ford, Lincoln-Mercury, Mercedes-Benz, Nissan/Infiniti and Jaguar automobiles.
- Autodesk and Targa Services under the Targa Connect brand will soon be available in the brand-new Alpha Romeo 147 car.
- Cross Country Automotive Services with WirelessCar of Irvine, CA on all new BMW 7 Series cars and are optional on all other new BMWs.
- WirelessCar, (co-founded by Ericsson, Volvo and Telia AB) provides telematics services through its Universal Telematics Network.
- Viasat SpA (FIAT and Telecom Italia Group) provides GPS-based telematics services to more than 60,000 vehicle owners in Italy

Exhibit B: Why Telematics?¹

The automobile industry appears set for large-scale customer facing initiatives. The imperative – “Lock in the customer”. And why not? Look at the following facts –

1. Vehicle churn over the customer life cycle is on the decrease – meaning that the average customer today holds onto a car much longer than in the past.
2. As margins on new car sales disappear in the face of depressed demand with the introduction of schemes such as “Zero down payment, Zero Interest, Zero installments over a year”, manufacturers look at the downstream revenue possibilities. A quick and dirty study would reveal that roughly 50-55% of the revenue opportunities lie post-automobile purchase over a 10-year/100,000 mile horizon. Sufficient justification for

¹ The content for the above graphic is sourced from secondary research through industry news and published research.

- automobile companies to focus on the service and support components across the vehicle life cycle.
3. Integration of manufacturer, dealer and service agents through web-based services like myAutogarage.com.

Now, consider a case where a customer has bought a car with an air pressure sensor. A timely alert signals the customer of the need to check the pressure. A closer look reveals that if the customer had not reacted to the alert, there was a risk of a tire blowout and a possible accident. One such incident is sufficient to ensure customer delight and total buy-in.

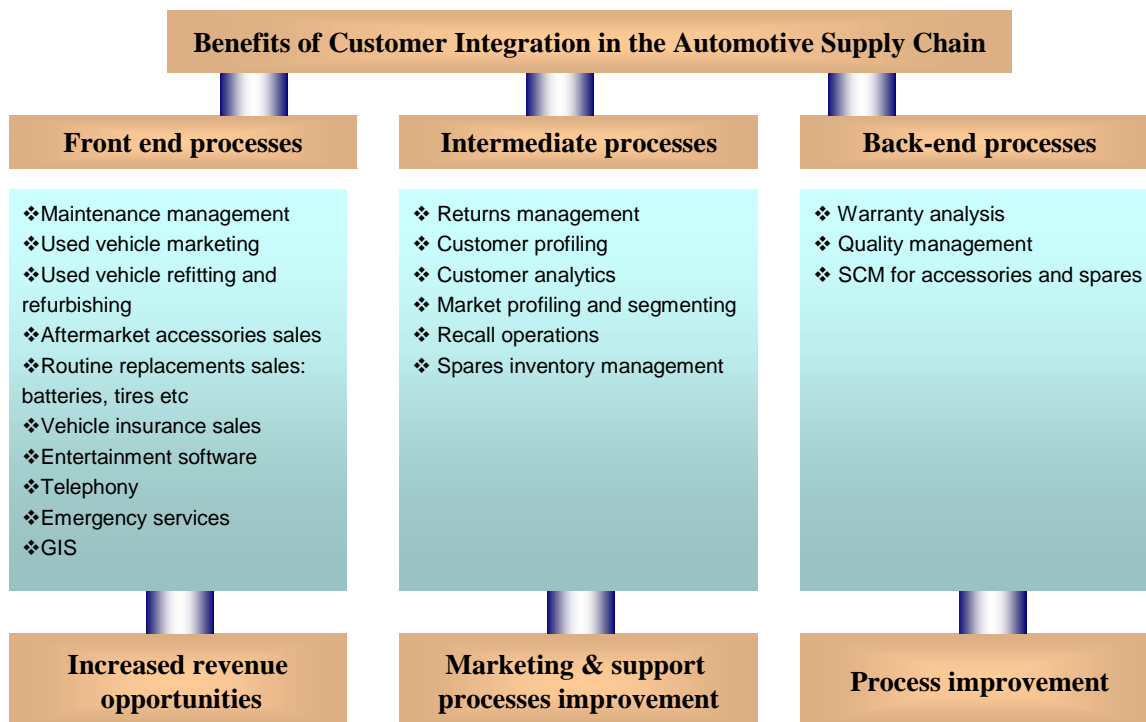


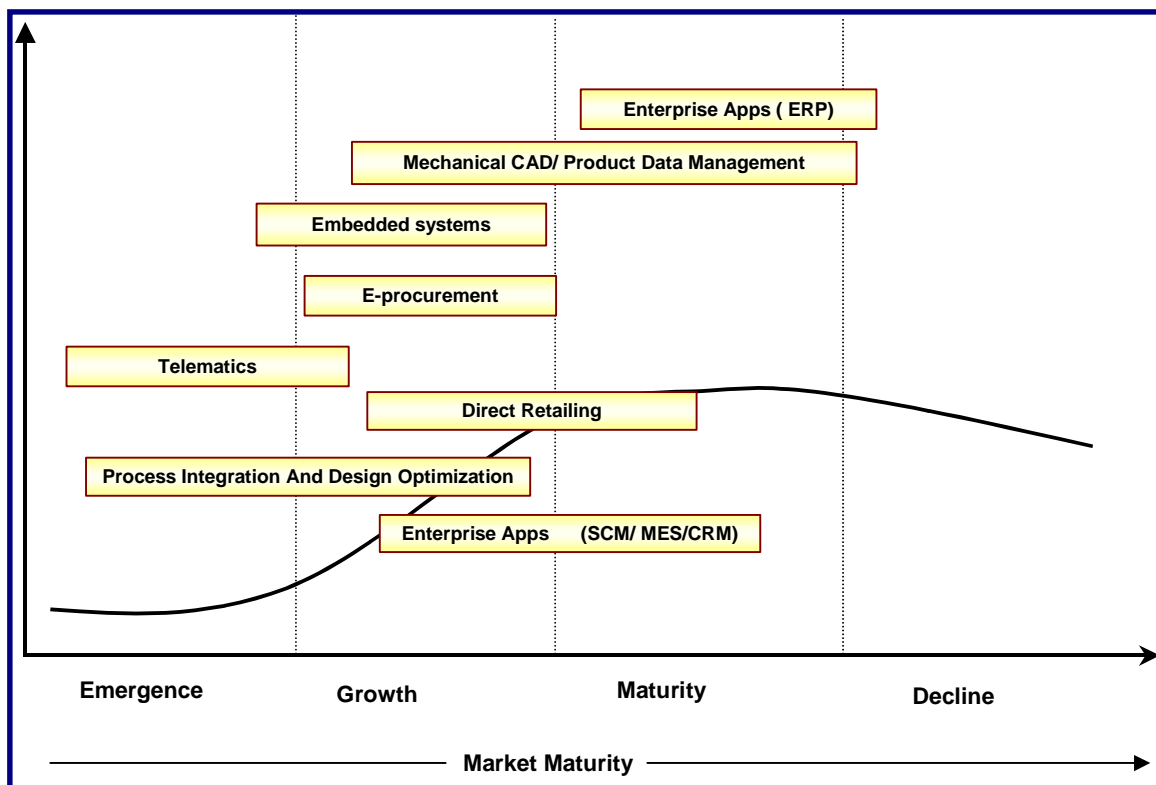
Exhibit C: Benefits of Customer Integration

The integration of the customer into the automotive value chain can bring forth multiple benefits. Some of these have been classified and listed in the graphic above. As can be readily inferred, the front-end processes show great promise and today chart a strategic imperative to grow revenue and business operations.

Technological Advances Aim At Customer Integration

A look at the major technological advances in the industry reveals the customer bias. A research study by the authors identified several IT opportunity areas and mapped their maturity on the technological maturity curve.

Exhibit D: Application Maturity Model



Among the identified areas, the growth areas in the future lie in the space of telematics, embedded systems (including sensor applications), direct retailing and process integration and design optimization². A common feature of all these technological areas is the emphasis that these are placing on customer application areas.

Telematics and its major applications have already been touched upon in the previous section. Embedded systems and sensors are becoming more and more intelligent and advanced. They provide the central nervous system of the car that can detect any malfunctions and abnormalities and signal alerts to the customer in time. Manufacturers of luxury and high performance automobiles position sensors and embed chips in engine and transmission, steering, and active suspension to electronically control and monitor the performance. Applications could range from preventing failure to predicting part failure and analyzing impact on meshed parts.

² PIDO (Process Integration and Design Optimization) is a class of IT tools and processes that help manufacturers in digital prototyping and in simulation

Direct retailing is catching on with leading manufacturers providing informational and advisory services on-line apart from enabling custom order taking. Among enterprise applications³, customer relationship management applications are increasingly being sought and explored.

Envisioning The Future

The future lies with the customer. The extent of integration that companies can manage in their demand-supply chain will determine the leaders in the automobile market. Value driven services will rule. CRM applications will tie in with telematics advances to enable automobile manufacturers to develop more and more interaction points. The scenario below is an illustration of how automobile companies will manage issues such as product returns/ recalls, provide on-line diagnostic services, loyalty based schemes, predictive maintenance services, etc.

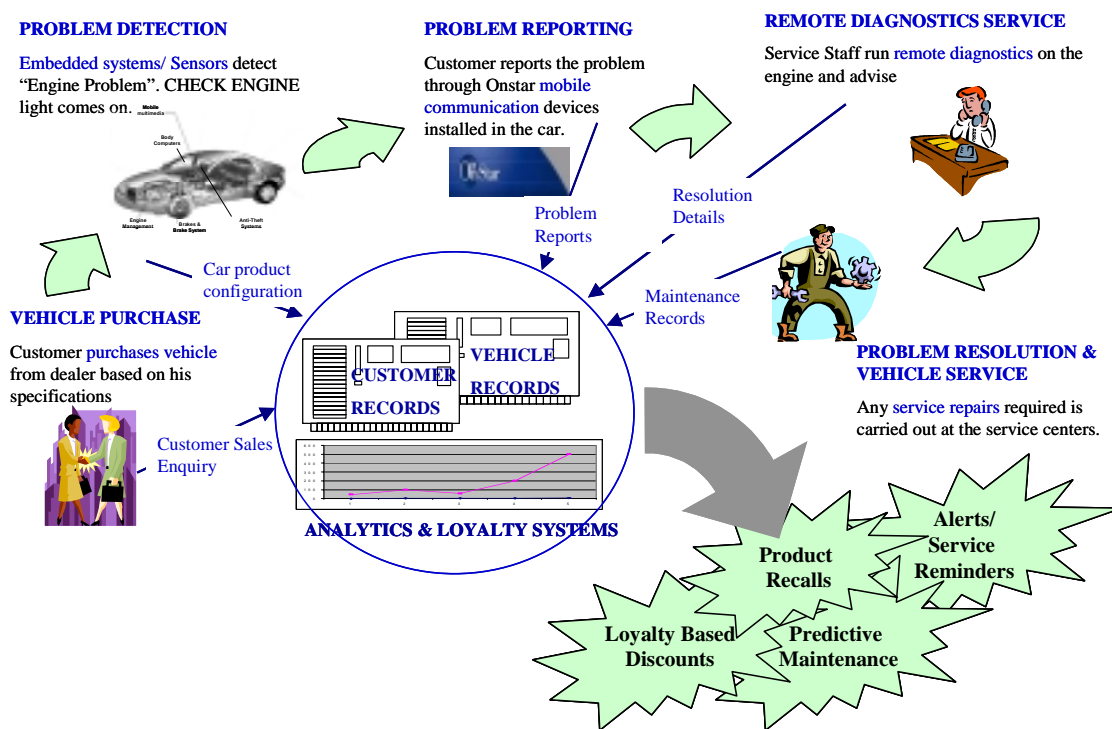


Exhibit E: Crystal gazing – Looking at the Future

In the example above, the embedded systems and in-built sensors help generate an early warning for an impending engine problem. The customer can contact the service center through the "Telematics" system⁴ installed in the car and report the problem. Service staff can run on-line diagnostics through telematics devices and monitor the problem. Advice on whether to pull up

³ In the graphic on the application life cycle in the previous page, MES refers to Manufacturing Execution Systems, SCM to Supply Chain Management, and CRM to Customer Relationship Management.

⁴ The use of "Onstar" in the graphic above is purely illustrative.

and wait for roadside assistance or to continue till the nearest service station could be forthcoming. The problem would be services and service logs be maintained. All the data would find their way into the back-end databases containing vehicle records and customer records. Periodic reports are generated on running analytics on these databases that could indicate that a particular problem exists with the multi-point injection pump for that particular model. The incidence of the same being high, the company could decide to take some form of corrective action – possibly in generating product recall alerts communicated through e-mails/ mobile phones/ telematics devices based on the customer information stored in the customer databases. All of this translates into a positive experience for the customer exuding conviction that the manufacturer’s sales cycle does not stop with the physical handover of the vehicle but rather continues through the entire life cycle of the vehicle.

Looking Ahead...

Our expectation is that front-end systems will integrate tightly with back end systems storing customer and vehicle life cycle records. In-vehicle sensors and monitors will transition from being luxury services to basic services. Intelligent devices will proliferate and will talk to back-end systems. Enhanced customer service, problem prediction and resolution will be the key to marking a larger share of the “*customer life cycle*”. Data analytics and decision support systems will pro-actively result in service alerts, product recalls and predictive maintenance capabilities. All of which indicating a “convenience” theme for the customer and enabling the automobile manufacturer to support the customer throughout the “*owning and operating*” cycle.

Authors

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