

FORD'S E-BUSINESS STRATEGY

In the fall of 1999, Jacques Nasser, Ford Motor Company president and chief executive officer, announced a grand new vision for the firm: to become the “world’s leading consumer company providing automotive products and services.” Key to that dream was the transformation of the business using Web technologies. The company that taught the world how to mass-produce cars for the consumer market was going to become the leading e-business firm. Brian P. Kelly, Ford’s e-business vice president, described Ford’s plan to rebuild itself as a move to “consumercentric” from “dealercentric,” and stated that Ford would transform itself from being a “manufacturer to dealers” into a “marketer to consumers.”

Our consumer-connect business has a totally integrated strategy to reach the consumer in conjunction with our dealers at every touch point. . . . Ford continues to be at the forefront, integrating our global e-commerce activity from the consumer back through the entire supply chain, including linking our Customer Assistance Centers and in-vehicle communications.¹

New Web sites were launched for buyers and owners. In-car computer and communications services were announced that would bring travel, security, entertainment, and Web access to the motorist and an electronic connection between consumers and the Ford Motor Company. In February, the company announced it was purchasing Internet PCs for all employees, “to reach its vision of being on the leading edge of technology and connect more closely with its customers.” In March 2000, the company announced the creation of a business-to-business integrated supplier exchange through a single global portal, a joint venture with GM and DaimlerChrysler to create the world’s largest virtual marketplace. It seemed as if Ford had adopted the Dell model:

- Sell direct
- Mass-produce customized products
- Build to order
- Substitute virtual integration with suppliers for vertical integration

¹Brian P. Kelly, “Ford Motor Company: Inside the Company News Room,” 15 September 1999.

- All hosted and integrated on the Web

Nasser's vision was indeed bold, but in the six months following its public unveiling, the stock fell 7 percent. Even though Ford's 1999 earnings were the highest of any auto company—with revenues up 13 percent over 1998 and return on equity at 29 percent—the stock multiple was down below 8! Clearly, there were doubts that Ford could change. Unions, dealerships, suppliers, employees, new entrants, the laws of the land, and a 91-year-old infrastructure all stood in the way.

Industry

The auto industry was the world's largest, what Peter Drucker proclaimed “the industry of industries.”² It consisted of tens of thousands of firms giving employment to millions of individuals and generating revenues from the sale of new and used vehicles, parts, and service in excess of \$1.3 trillion. Not only was it one of the oldest industries, but it was also arguably the most fragmented. Critics said its purchasing activities had not changed much in 100 years, that its costs were excessive, and that its customers were thoroughly dissatisfied with automobile manufacturers and dealers.

The industry had undergone several fundamental transformations since its inception in the late eighteenth century. Ford's use of mass production was the first, followed by the rise of the Japanese auto industry and its commitment to lean production in the 1960s and 1970s. Could the Internet be the basis for the next big change? Would it delight the consumer? Would Ford survive the transformation?

History

The Ford Motor Company was founded by Henry Ford on June 16, 1903, in Dearborn, Michigan. Five years later, he introduced the Model T, and five years after that the Model T was being built on a revolutionary moving assembly line. In 1914, Ford produced 308,162 cars, which was more than all 299 other auto manufacturers combined. In 1919, Ford bought out the smaller investors and reincorporated the company in Delaware. Soon after began the construction of the River Rouge plant, the largest and perhaps the best-known industrial complex in the world: 90 buildings, 330 acres of windows, a plant that took iron ore in at the Lake Michigan end and rolled out finished autos at the other.³ From 1919 to 1956, the company was privately held by the Ford family, the Ford Foundation, and the Edison Institute. During that time, the company gave up most of the dominant market position it had achieved with the Model T. Stock was first offered to the public in 1956, trading on the NYSE under the symbol F.

²Peter Drucker, *The Concept of the Corporation* (New York: John Day, 1946).

³John A. Byrne, *The Whiz Kids* (New York: Doubleday, 1993).

As the twenty-first century began, Ford had produced 270 million vehicles. It was the number-one maker of trucks, the world's number-two maker of autos and trucks, and the industry leader in profitability. With 345,000 employees, it had car and truck operations in 38 countries. The company produced Ford, Mercury, Lincoln, Aston Martin, Jaguar, and Volvo autos. It also owned 33 percent of Mazda and 81 percent of Hertz, the world's largest auto-rental firm. Hertz rented vehicles in 140 countries. Ford Credit, operating in 36 countries, was the world's largest auto-finance company, with 16,000 employees and 9 million individual and corporate customers. Ford also owned Kwik-Fit Holdings, Europe's largest auto-repair operator, which had been acquired in 1999.

The E-Business Vision

In September 1999, Ford announced an ambitious Internet strategy that had been endorsed by CEO Nasser.

Nasser's vision is a sweeping one. He pictures the day when a buyer hits a button to order a custom-configured Ford on-line, transmitting information to the dealer who will deliver it, the finance and insurance units that will underwrite it, the factory that will build it, the suppliers that provide its components, and the Ford designers planning future models.⁴

The old "push" model built cars at maximum capacity and then shoved them to dealers, where aggressive selling and rebates unloaded the units consumers did not otherwise find attractive. The new "pull" model would build cars quickly in response to customer orders, at least for the more popular combinations. Unusual configurations would take longer. Cars would be built to order, dealerships would report problems immediately to the factories for quick changes, and suppliers would control inventories at Ford plants. The new "order-to-delivery" basis would generate a constant flow of consumer preference information to suppliers who would fill parts orders in real time without waiting for a purchase order.

Transformation of the Customer, Dealer, and Owner Relationships

Nasser's goal of becoming the world's leading consumer company required a fundamental change in the selling process; a new, continuous relationship between Ford and the customers; and a restructured and integrated set of processes from buyer through the supply chain. Nasser also had to address the role of the retail dealer. Any change in the buying process for autos and any direct company-to-consumer relationship had to either embrace the dealers and incorporate them into the process or circumvent them, risking an all-out fight because the dealers

⁴Jennifer Reingold, Marcia Stepanek, and Diane Brady, "Ford: Accelerating into the On-line Age," *Computing*, 9 March 2000.

controlled the market space between the consumer and the manufacturers. Disintermediating the dealers with technology and information was a tempting thought. Many buyers loved new cars, but hated the buying process. It seemed nobody loved automobile dealers and the public especially disliked automobile salesmen. In *Blown to Bits: How the New Economics of Information Transforms Strategy*, the authors characterized the retail auto dealership as “competitively disadvantaged in every component of their service bundle and faced with the melting of whatever glue held that bundle together . . . the dealers are doomed to deconstruction.”⁵ Not a pretty picture. They saw the dealership as the worst sort of compromise: as a physical distributor of new autos, they were less efficient than direct from-the-factory delivery or delivery from large regional distribution centers.

Its service levels are inferior to those of specialized repair chains. As a provider of unbiased product information its value is negative. Its finance offerings are overpriced. As a market maker in used cars, it exploits the ignorance and anxiety of its customers. However, eliminate the informational glue holding all these functions in a single, compromised business model, and the multiple businesses that emerge can evolve in radically different directions, each driven by its own, very different economics.⁶

As Nasser’s vision began unfolding, it became clear that the role of the dealer would be a central issue. In Brian Kelly’s words, “from dealercentric to consumercentric had an ominous ring for dealers.” Harold Kutner, group vice president of worldwide purchasing at GM and the company’s e-business thought leader, rejected the idea that people wanted to buy cars from dealer inventories. He said 70 percent of customers would want to custom-order and would be happier. Neither Ford nor GM seemed quite sure what to do with their dealers.

Dealers saw both hope and danger in Ford’s new directions. A more market-aware Ford could be producing vehicles much closer to what consumers actually wanted. One dealer noted, “As it is right now, they ask us how many Tauruses we expect to sell in a particular period—and then the cars just come. We don’t have any say about options, colors, etc. Sometimes I think Ford just makes whatever they have parts to make.” Faster cycle times would also help dealers. Dealers took ownership at the factory when a VIN-number (Vehicle Identification Number) was assigned—even before assembly was complete. But it could be anywhere from a week to five weeks before the vehicles actually reached the dealer.

The “consumercentric” aspect of the new strategy concerned dealers. One dealer with an aggressive Web-selling capability was suspicious of the selling practices on the Ford.com site: “Buyers can easily jump from my site to Ford.com, but if they hit the ‘back’ button, Ford’s got it fixed so they can’t get back to my site. I don’t know who the enemy is anymore.”

⁵Philip Evans and Thomas Wurster, *Blown to Bits: How the New Economics of Information Transforms Strategy* (Cambridge: Harvard Business School Press, 2000).

⁶Ibid.

Dealers were not convinced that the “lowest price on the page” type of selling encouraged by the Web was what buyers really wanted. “I took a call from a young woman who’d found the lowest price on CarsDirect. At that price, we’d be left with a \$150 margin. I told her I’d sell her the car at that price, but that she really didn’t want to do that. I told her that for a price that gives me a \$400 margin, I’ll give you a loaner when your car’s in the shop. You’ll go to the head of the line if something goes wrong with your car, and you can call me if you have a problem. She took my deal.”

Some dealers thought the Web would help them more than it would help Ford. As a dealer explained, “Fifty percent of my business will soon be Internet-related. I have a list of 5,000 names. We’ll use that list and what we know about those vehicles to fill up my service bays—we’ll target special mailings and notices to segments of that data base: people who need an alignment or an inspection, who have a vehicle about to come off lease, or who’re about ready for a new car.”

Buying the Dealers

In mid-1999, GM announced that it would begin buying up to 800 of its 7,700 dealerships over a 10-year period. Later, GM backed off from these targets. Ford had a similar program. Some dealers were bought outright; others were acquired by corporations aligned with Ford. A major dealer concern had always been that once a factory had a financial stake in one retail store, it would be tempted to play favorites in pricing, allocations, and promotions. In fact, there were state franchise laws protecting dealers from the unfair tactics of manufacturers.

On the other hand, many dealers were openly contemptuous of Ford’s ability to operate a dealership successfully. In March of 2000, a well-known East Coast dealership actively courted by Ford sold out to a private group. One dealer commented: “Hopefully, this is the end of Ford’s attempts to get a foothold here. As you are probably aware, the financial success of Carmax and Auto Nation has not been great. The same is true of Ford in areas where they have bought out or bought in to retail stores. Maybe it has something to do with the difference between a private individual with everything he/she owns tied up in a dealership, versus a dealership where the management on site has very little at stake.”

In 1999, factory-owned dealerships became a fighting issue among local dealers, the National Automobile Dealers Association (NADA), and state governments. NADA first accepted factory dealerships for membership in its organization and then reversed course in 2000. In 1999, 11 states adopted legislation to restrict factory ownership of dealers, bringing the number of states with restrictive legislation to 32.⁷

⁷Donna Harris, “Factory Feud,” *Automotive News*, 17 January 2000.

Franchise Laws

Relationships between automobile manufacturers and their retail franchises in the United States were governed by both federal law—through the Federal Trade Commission (FTC)—and by state law. The various states also regulated franchises, at differing levels. Even though the power to regulate interstate commerce was solely reserved to Congress, the states had the ability to regulate the commerce of franchises insofar as the commerce regulated was intrastate. For instance, the Commonwealth of Virginia had established general laws pertaining to franchises as well as specific laws that regulated franchises in certain industries, such as motor-vehicle manufacturing, distribution, and sales. Virginia law prohibited any motor-vehicle manufacturer or distributor from owning, operating, or controlling any motor-vehicle dealership or warranty or service facility, with a few exceptions (e.g., for up to one year during the transition from one owner or operator to another). Traditionally, in the United States, retail automobile dealerships had enjoyed substantial support in state legislatures.⁸

Texas, which had perhaps the most powerful franchise laws, closed down a Fordpreowned.com site in Houston, where Ford had been offering vehicles just off lease, at nonnegotiable prices. When a buyer chose a car, Ford transferred the item to a local dealer at wholesale prices; the dealer, in turn, sold the vehicle to the consumer at the agreed-upon price. The Texas Motor Vehicle Division said Ford was selling cars; Ford claimed the dealers were selling the cars. Of course, the laws could be changed and there were efforts in Texas to modify the franchise laws to make them more open to the “dot-com challenge.”

NADA's E-Business Site

In the spring of 2000, NADA created its own site to sell cars, and provided easy Web-page support to all its member-dealers. The new site gave buyers price information and referrals to three local dealers, without cost, thus cutting out the dot-com referral services.

After several years of fighting the on-line car-selling strategies of manufacturers and independent Internet players, the NADA next month plans to launch its own car-shopping Web site, which will offer consumers access to invoice prices of new vehicles, an on-line inventory of new and used vehicles, and links to used-car trade-in values and dealer Web sites. Eventually, the NADA hopes all 19,500 of its dealer-members, or about 90 percent of the nation's new-vehicle dealers, will be accessible through the portal NADAdalers.com.⁹

⁸One source estimated that retail auto dealers contributed 20 percent of all state sales-tax revenues; Warren Brown, “Internet Putting Car Buyers in Driver's Seat; Dealers Feel Impact of On-Line Research,” *Washington Post*, 28 February 2000.

⁹“Car Dealer Group Plans to Link Its Members with E-Commerce Site,” *Wall Street Journal*, 16 March 2000.

Traditionally, NADA had opposed the posting of invoice prices and had been seen as anti-Web by industry watchers. The trigger for change may have come from NADA's 2000 annual convention, where dealers saw dozens of dot-com referral sites being touted. Apparently, the dealers decided to take matters into their own hands.

Customer Assistance Centers and In-Vehicle Communication

Ford's plan to build a direct relationship with its customers was implemented with the Customer Assistance Centers and its In-Vehicle Communication products. There were three new consumer sites: BuyerConnection, where buyers could custom-order a vehicle, receive a quote from a local dealer, and apply for financing and insurance (the first national on-line "request-a-quote" system); DealerConnection, where buyers could find a dealer, review dealer inventories, see dealer service specials, and make appointments for service; and OwnerConnection, which was a virtual community of owners providing forums, maintenance schedules, and special offers from Hertz.

These early efforts met with some success. Ford was the first automotive manufacturer to include its family of brands on a single Home Page, allowing consumers single-click access to the Aston Martin, Jaguar, Volvo, Lincoln, Mercury, Ford, and Mazda brands. Ford.com was a leading automotive destination, with more monthly "hits" than any other manufacturer, according to MediaMetrix. DealerConnection was giving 35,000 quotes a month to Ford and Lincoln Mercury dealers. Ford had also signed exclusive relationships with iVillage, Digital Entertainment Network, Carclub.com, and Bolt.com referral sites.

Ford's in-dash computer project, ICES (Information, Communications, Entertainment, and Safety), was a cornucopia of high-tech devices and services: voice-activated access to concierge services (directions or a hotel reservation); turn-by-turn navigation systems; satellite radio (uninterrupted CD quality coast-to-coast); Internet access for news, stock quotes, and weather (and full Internet surfing, games, and downloaded music); collision notification; stolen-vehicle tracking; emergency road assistance; traffic information; hands-free phones; remote vehicle monitoring (including warnings such as "Excuse me, the radiator temperature is rising," the reporting of catastrophic failures to the dealer's computer, and "health checks" by the vehicle itself before a long trip); and wireless synchronization with "blue-tooth" technologies.¹⁰ ICES was targeting large groups of customers regardless of vehicle choice, not just buyers of luxury models. Monthly fees for the ICES telematics were expected to range from \$9 to \$30.

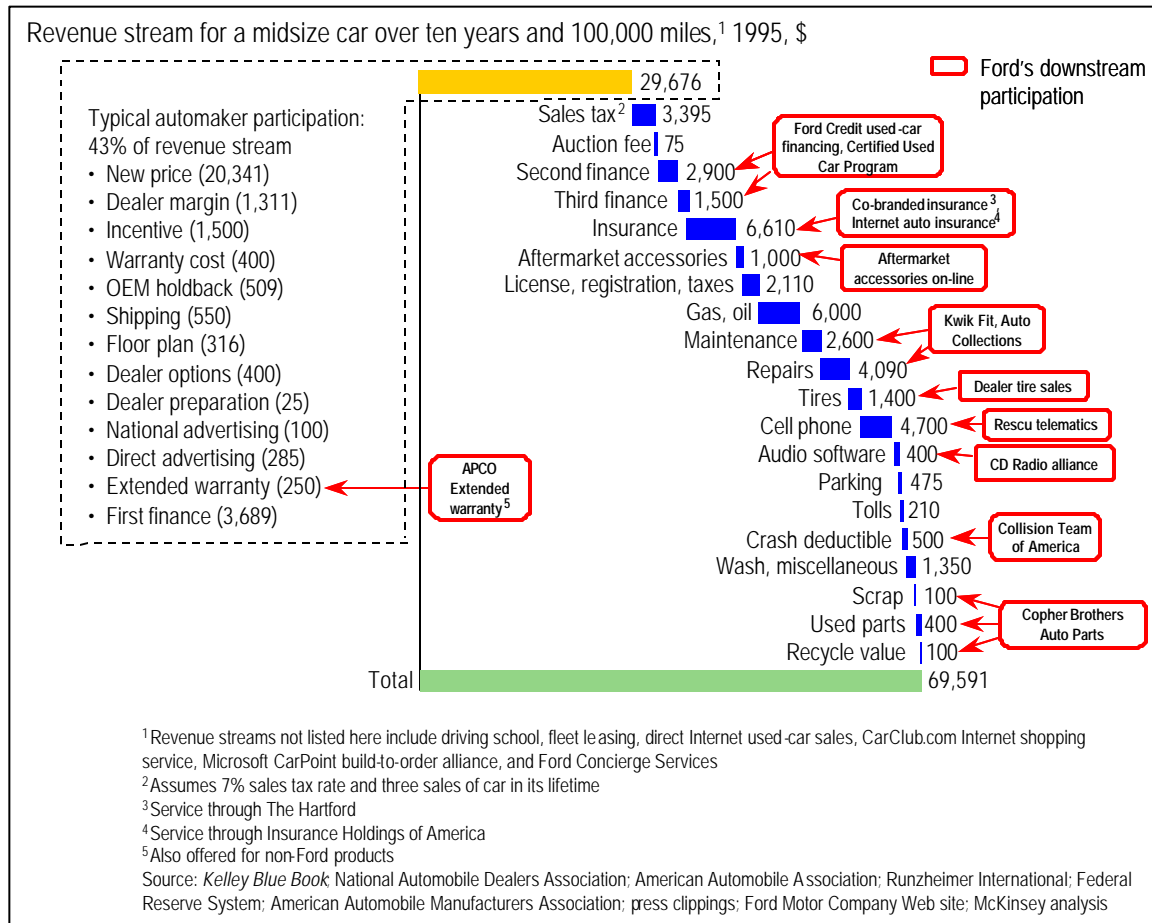
Ford's interest in ICES was not just as a means of building an enduring customer relationship. Ford had also been intrigued with the other 57 percent of the automobile revenue "downstream" from the first purchase. As shown in **Figure 1**, several of its acquisitions (e.g.,

¹⁰Also known as "open-wireless" technologies.

Kwik-Fit and the driving school for young drivers) would take Ford further into this business. ICES could be essential to this downstream business.¹¹

Figure 1

Examples of Ford Motor Company's Downstream Participation



Supply-Chain Integration: The Trading Hubs

On November 2, 1999, Ford announced the formation of AutoXchange, an automotive e-business integrated supply chain to be created and run by a newly formed joint venture with Oracle Corporation. The venture would initially facilitate Ford's \$80 billion in annual purchasing transactions with its more than 30,000 suppliers and \$300-billion extended supply chain. The two companies would create the world's first automotive on-line supply-chain network, and the

¹¹Lance Ealey and Luis Troyano-Bermudez, "The Automotive Industry: A 30,000-Mile Checkup," McKinsey Quarterly 1 (2000): 72-79.

world's largest business-to-business electronic network. It would also be the e-business backbone for warranty transactions and design collaboration. This new trading hub was expected to reduce Ford's purchasing costs dramatically and increase its operating efficiencies through an integrated Internet supply-chain system. "Thirty percent of a vehicle's cost comes after it leaves the assembly line."¹² Dealers typically carried 60 days' inventory, but with AutoXchange, "You really don't need more than 30 days," observed a Ford executive.¹³ Further, it would extend Ford's core business into a virtual e-business enterprise, allowing direct connections of the supply chain to the consumer to reduce Ford's time to market.

AutoXchange would use catalogs as well as on-line auctions for components and materials. Early applications would be the purchasing of production parts and nonproduction goods and services; next would be order tracking, financial services, and access to CAD drawings; later would come status of payments—a top priority for suppliers.

Nasser said suppliers would not be coerced into joining the exchange, but that they would see it as the only way to do business. GM's purchasing czar, Kunter, who had announced a similar system at GM called TradeXchange, used different words: "This will be a requirement for our supply base. For those who buy from us and sell to us, this is the only way we are going to do business." He said it would be a requirement by the end of 2001. One analyst¹⁴ estimated that an auto company could save \$3,000 on a \$22,000 sticker price using trading-hub purchasing, and that "anyone who is a middleman is toast" when companies start buying directly from suppliers.

AutoXchange would take a "small fee" from every transaction; first-year-revenue forecasts were \$200 million. In five years, revenues could be \$5 billion. The trading hub was to be spun off as a separate venture; some analysts estimated it might produce a market cap of \$100 billion. It was expected that Ford's suppliers would be able to invest in the venture.

There were also many concerns: the value of the long-established supplier relationships could be jeopardized and those first-tier suppliers could themselves become transformed in terms of their supplier relationships; smaller suppliers and new suppliers could be precluded from using the system through lack of knowledge.

While Ford and Oracle were busy with the AutoXchange rollout, GM and Commerce One were planning a very similar on-line marketplace, TradeXchange, which was expected to reduce GM's purchase cycles of 1-16 weeks to a matter of hours or days, and which would cut order-processing costs from \$100 an order to \$10. TradeXchange emerged within GM following a special study, led by Harold Kutner, as to what in the company would have to change "if GM were to do with cars as Dell does with computers." Kutner's answer: Everything! Vehicle design, factories, transportation—all would be transformed.

¹²Dave Nathanson, PricewaterhouseCoopers.

¹³Robert Rewey, group vice president for Sales, Marketing, and Service.

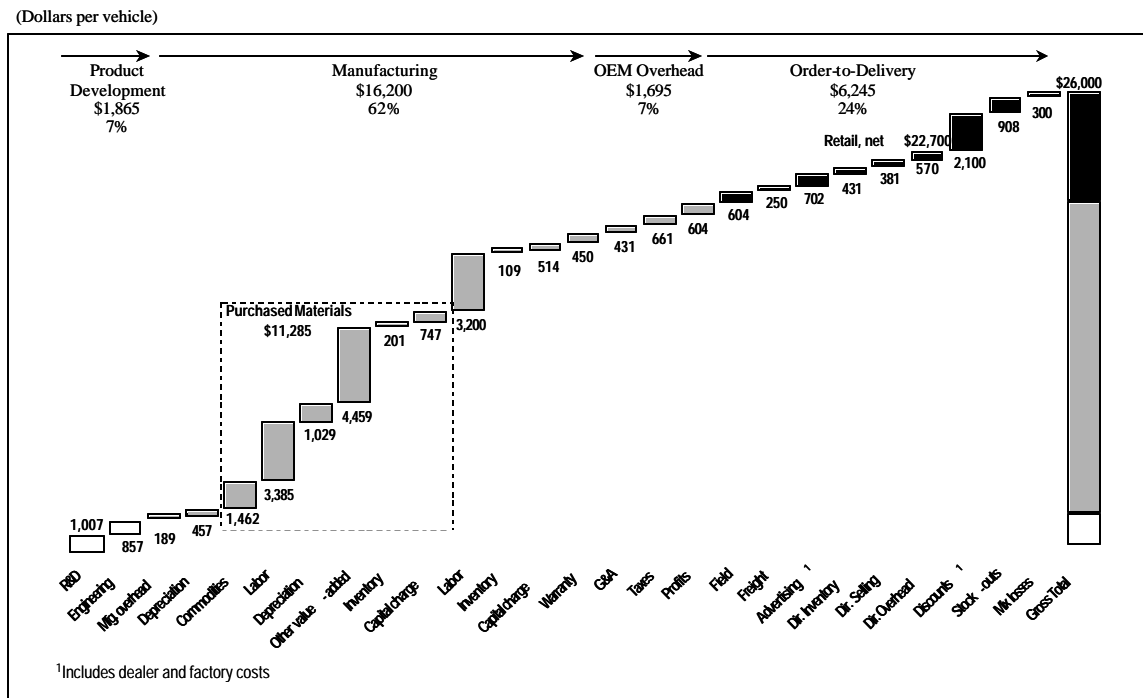
¹⁴Davis Garrity, global auto-research coordinator at Dresdner Kleinwort Benson.

Transforming the Supply Chain

As noted earlier, Nasser’s e-business vision for Ford was driven in part by the promise of major reductions in existing supply-chain costs, which included both real costs to the consumer and opportunity costs to the manufacturer. The latter included stockout costs (lost sales from not having the right vehicle in the right place), costs of suboptimal mix, and price discounts by the manufacturer and dealer that were a result of manufacturing vehicles based on the needs of the inflexible supply chain and the sales force, rather than the needs of the consumer. For example, as shown in **Figure 2**, a typical North American light vehicle selling at \$22,700 retail contained about \$2,900 of actual retail distribution costs (physical transportation, field-sales support by manufacturer, dealer floor-plan inventory, and bricks-and-mortar infrastructure of new-car sales/service).¹⁵ Opportunity costs to the manufacturer added another \$3,300, for a total order-to-delivery supply-chain cost of \$6,245.

Figure 2

Automobile Supply Chain Costs for the Typical North American Vehicle



Source: GS Research Analysis

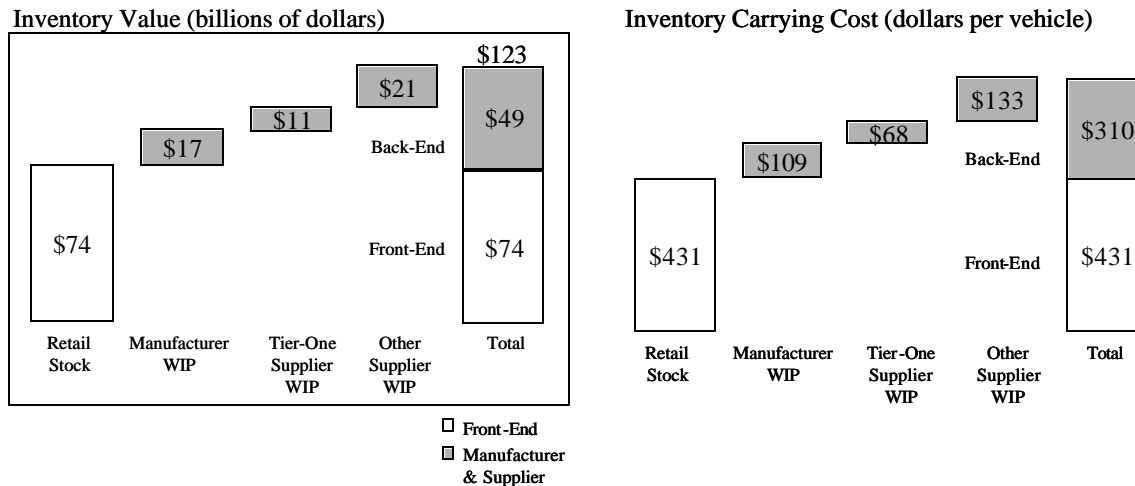
As **Figure 2** shows, dealer-inventory cost (\$431) was one of several components of the “order-to-delivery” cost at the end of the automobile supply chain. The North American automobile

¹⁵“eAutomotive: Gentlemen, Start Your Search Engines,” Goldman Sachs Research Department, January 2000.

industry supply chain carried an estimated \$123 billion of inventory. About 60 percent, or \$74 billion, of that inventory resided in the “front end” of the supply chain: new-car showrooms and the back lots of automobile dealerships. Another \$49 billion was held in the “back end” of the supply chain (at OEM manufacturers and suppliers), as indicated in **Figure 3**. Based on an 11 percent cost of capital, that translated into an estimated \$740 of inventory carrying cost on every new vehicle sold: \$430 at the front end of the supply chain and \$310 at the back end.¹⁶

Figure 3

Inventory Carrying Costs Add Almost \$750 to the Price of a Car in North America



Source: GS Research Analysis

Inventory costs were only one of the costs associated with the material component of the vehicle supply chain. Purchased materials were the largest component of cost for an automotive OEM manufacturer (and the single largest category of costs across the entire supply chain), amounting to about \$11,285, or roughly 50 percent of the retail sales price. The costs of procuring these materials included both *product-related costs* (*direct and indirect materials*), which were fairly easy to determine, and *process-related costs* (the costs of activities associated with procurement), which were less easy to determine. Such activities included needs identification, vendor selection and material ordering, review and approval, and inventory costs.

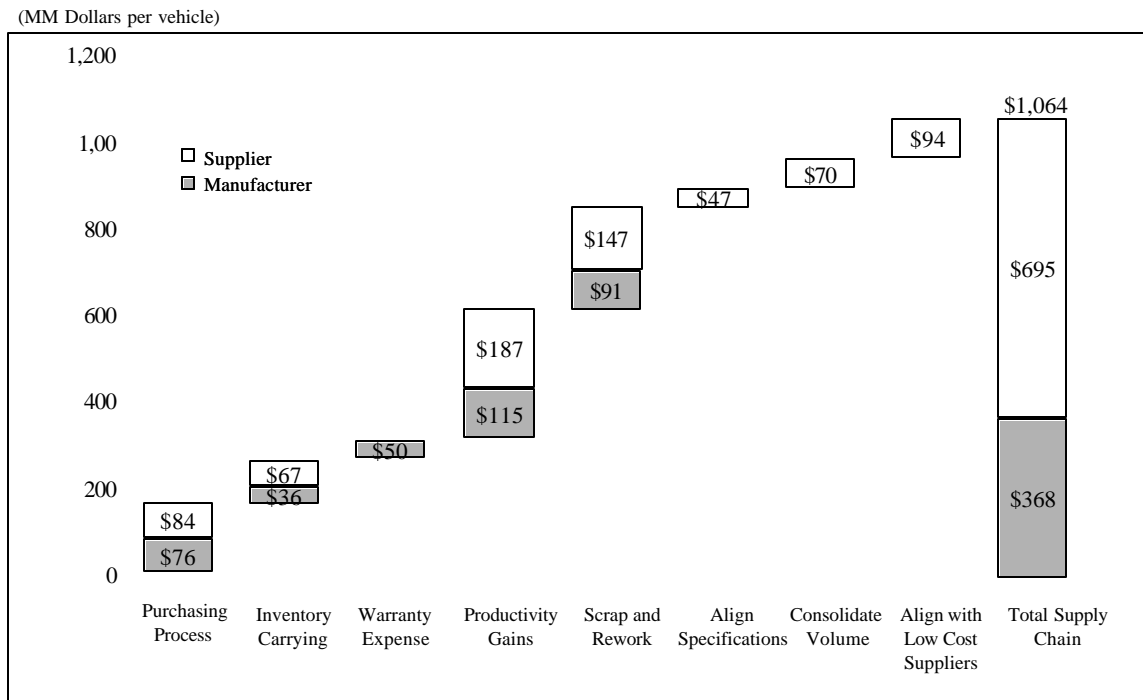
In pursuing their e-business vision, Ford executives acknowledged that the transformation of the business would start with B2B supply-chain initiatives at the “back end” of the chain, connecting the manufacturer with its thousands of suppliers, as noted earlier. By moving suppliers away from their EDI systems onto the Web, dramatic reductions in back-end supply-chain costs were possible. Web-enabled forecasting, planning, and scheduling processes

¹⁶Ibid.

could drive out work-in-process inventory at both suppliers and manufacturer; manufacturing productivity would also rise through improved asset utilization and reduced overtime. On-line procurement processes could eliminate much of the low value-added administrative work now associated with purchasing. A rich data base of on-line material requirements and transactions could enable material cost reductions by aligning material specifications, coordinating and leveraging volume scale across the entire supply chain, and consolidating the buy with cost-advantaged suppliers. If all these goals could be achieved, total back-end supply-chain cost savings of \$1,064 per vehicle were possible, as indicated in **Figure 4**.¹⁷

Figure 4

Potential Back-End Supply Chain Cost Savings



Source: GS Research Analysis

Back-end cost savings could be achieved without implementation of the full e-business model. But this was only part of the full story. The achievement of an on-line direct-to-consumer, make-to-order system that manufactured vehicles in response to specific customer orders would also significantly reduce front-end supply-chain costs. For example, implementing on-line direct sales of vehicles from central inventory points, without custom made-to-order production, could lead to estimated cost savings of \$1,048 per vehicle (split \$800 to the retailer

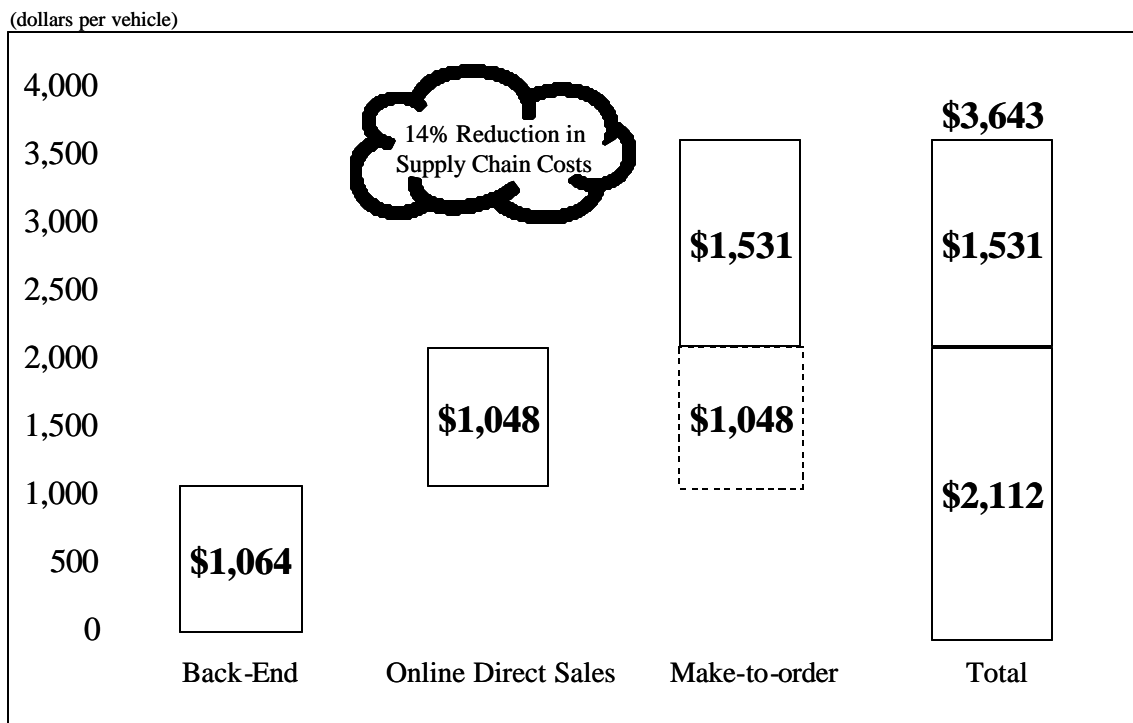
¹⁷Ibid.

and about \$248 to the manufacturer). These savings would come from reduced manufacturer and retailer vehicle safety stocks, reduced sales commissions, and lower retail infrastructure costs (rent, utilities, etc.), as well as lower freight and field-sales-support costs for the manufacturer.

The implementation of a true make-to-order system would have even greater economic implications, both in terms of cost reduction and revenue enhancement, by providing consumers with exactly the product they desired. It was estimated that a Web-enabled, build-to-order system could reduce distribution costs by almost \$2,600 per vehicle, as shown in **Figure 5**.¹⁸ About \$1,400 of these savings would be in physical costs such as freight, sales commissions, and advertising. The balance would be in “phantom” costs associated with the current “push” vehicle distribution/sales system, such as price discounts and stockout costs.

Figure 5

Savings Potential of Online B2B, B2C and Make-to-Order



Source: GS Research Analysis

Adding together all the supply-chain savings thus identified (back-end, on-line direct sales, and make-to-order) would produce an estimated total potential cost reduction of about \$3,643 per vehicle, amounting to 14 percent of total vehicle cost, as indicated in **Figure 5**.

¹⁸Ibid.

About \$1,500 of the savings would be embedded in revenue realization related to reductions in price discounts, stockouts, and model-mix losses, which were some of the hidden costs of the current “push” distribution/sales system. The benefits would flow to consumers in the form of the “car they always wanted,” but the manufacturer would still be getting an extra \$1,500 per vehicle. The remaining \$2,100 per vehicle would be a hard-dollar cost reduction, some of which could flow back to the consumer in the form of lower price.

February 2000: Private On-Line Purchasing System

Just as the dust was settling on Ford’s AutoXchange plans and GM was cranking up its plans for TradeXchange, the two companies, together with DaimlerChrysler, announced they were combining their efforts to form an even bigger business-to-business supplier exchange. The new enterprise was open to all auto manufacturers and their respective suppliers, partners, and dealers. Eventually, this marketplace could be expanded to encompass other industries. It would be the world’s largest virtual marketplace. The three companies would have equal ownership in the new venture. The new hub would host all the services of its predecessor hubs: catalog purchasing, bidding and price quotes, on-line sourcing and auctions, supply-chain-capacity planning, demand forecasting, production planning, and supply-chain transactions. The new system would give first- and second-tier vendors immediate access to sales data and dealer orders.

In March, Toyota announced its own trading hub, a joint venture with i2 Technologies and Toyota Motor Sales.

Analysts reported that the trigger for combining AutoXchange and TradeXchange was the investment bankers’ assessment that one big exchange would enjoy a bigger market cap than the sum of two or three smaller ones. Suppliers also argued against separate systems, as had been the case with EDI.

The volumes passing through the new hub could be huge: purchases of parts totaling up to \$250 billion plus double that with the purchasing volume that suppliers might bring. Such volumes would easily make this business larger than any other commercial activity on the Web. The hub was expected to cut costs (up to 10 percent over several years by making it easier for companies to bid and requiring fewer meetings), save time, and help build more cars on a custom-order basis. It would replace the elaborate networks of personal contacts and paper forms in triplicate that were a fixture of auto-industry purchasing. GM, for example, had 3,000 worldwide purchasing reps.

Other Roadblocks

There were many obstacles in Ford's path. Cars were not like computers, which had just a few components, snapped together quickly, offered limited variations, came in only one color combination, and could be shipped by UPS in two days. An automobile had thousands of parts produced by thousands of suppliers. Painting and color harmonization were major challenges. Just moving a finished car by rail from the factory to a dealer could take weeks.

Ford was not alone in seeking to become the leading marketer of automotive products and services. AutoNation claimed to be the "world's largest automotive retailer and the United States' second-largest provider of vehicle-rental services." The company was 83^d on the 1999 Fortune 500 list, and was *Fortune's* fastest-growing company. AutoNation controlled 400 automotive franchises in 23 states, representing 39 manufacturers' brands. It also operated 42 used-vehicle megastores in 13 states; the company owned National Car, Alamo Rent-A-Car, and CarTemps USA vehicle-rental companies, as well as a captive-finance company. At its autonationdirect.com site one could research a car, find a new or used car, value the trade-in, finance it, and insure it. AutoNation claimed it was selling two cars a minute, 24 hours a day, seven days a week.

On-line competition in the \$350-billion new-car market was fierce. Companies like AutoWeb, Carpoint (Microsoft), Cars.com, Edmunds.com, and Autobytel had built substantial dealer networks that attracted millions of visitors. Estimates were that half the buyers looking for a new vehicle visited a Web site at some point in the process. Many of these sites were well financed and were backed by well-connected individuals. CarsDirect.com, for example, claimed to be the first site "where consumers can research, price, design, order, and arrange for delivery of a new vehicle at their home or the office." Investors included Michael Dell, George Soros, Goldman Sachs, Morgan Stanley, and a bevy of venture-capital firms; an alliance with Banc One provided the consumer financing.

In January 2000, Amazon.com joined the fray by purchasing a stake in greenlight.com, a network of dealers offering local customer service. The deal would introduce Internet car buying to Amazon.com's 16 million savvy Internet shoppers and create serious competition for auto manufacturers.

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Note: In addition to the references cited in the footnotes, references for this case include interviews, published materials from the Ford Motor Company, and the following:

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Questions

1. What is Ford's e-commerce strategy? Specifically, is it trying to follow the Dell model? What are the chances for success?
2. In spite of its potential, Ford's PE multiple is only 7.9. Corning, another old U.S. industrial firm with strong family ownership and 1999 eps of \$1.93, saw its stock rise to \$190. Will Ford's new strategy lift its multiple?
3. What sort of person would buy a car on the Web? Why would they? How important will this segment become? Does this segment become more or less loyal to the manufacturer?
4. *Blown to Bits* argues that the dealers will be deconstructed by information. What sorts of new businesses might take their place?
5. How do the dealers fit into Ford's strategy? Does Ford really want them? Will they be disintermediated?
6. If you were a single-location dealer, what would you be doing now about Ford and the Internet? If you're a multiple-brand megadealer, what's your strategy?
7. As presently envisioned, will Owner Connection and in-vehicle communication services be of value to Ford's customers? Ideally, what could these services become? Is Ford in the best position to provide them? Will consumers pay?
8. How do Hertz, Ford Credit, and Kwik-Fit fit the e-commerce strategy? Can Ford cross-sell more effectively than the dealers?
9. Is the "New Hub" (the new joint purchasing company) a "bonus for suppliers"? Is it about growth, simplification, and speed, or is it just a ploy to squeeze the suppliers some more? In the end, *will* the suppliers be squeezed?
10. If AutoXchange is the key to fast mass customization and integrated supply chains, why would Ford join the venture with GM and Daimler? Why are they readying it for sale?
11. What would you be doing about Ford and the New Hub if you were a first-tier or second-tier supplier? Independently of the New Hub, how could a large supplier use the Internet to protect itself against the power of Ford and GM?
12. What should Ford do about the pure Web plays, such as Autobytel, CarsDirect, and Greenlight? What about AutoNation?

Multimedia Links

www.Yahoo.Autos.com
www.Ford.com
www.OwnerConnection.com
www.Carclub.com
www.BuyerConnection.com
www.DealerConnection.com
www.bolt.com
www.Wardsdealer.com
www.greenlight.com
www.autobytel.com
www.carpaint.com
www.autoWeb.com
www.carsdirect.com
www.Edmunds.com