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Detroit's Dilemma: Toyota's 'lean production' system leaves American auto makers in the dust

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DETROIT'S DILEMMA

Toyota's 'lean production' system leaves American auto makers in the dust

James Womack is co-author of "The Machine That Changed the World" (Scribner) and the recently released "Lean Solutions" (Free Press). He is president and founder of the Lean Enterprise Institute, a nonprofit research and education organization in Brookline, Mass. On Nov. 22, after a speech at the National Press Club, Ford Motor Co. Chairman Bill Ford told the media, with apparent earnestness, that his company "can compete with Toyota, but we can't compete with Japan."

This is an old myth. Ford's competitive problem, according to its chief executive, is driven by the unfair advantages that the Japanese government allegedly bestows on its auto companies - government-funded health care for workers, government support for the pension system and subsidies to develop the batteries needed for hybrid vehicles.

What makes this claim so extraordinary is that Japanese companies, led by Toyota Motor Corp., are thrashing Ford by building vehicles in North American factories with North American-made parts and North American workers, who receive American-style wages and health benefits. And increasingly, these Japanese brand vehicles are engineered in America by Americans.

Consider a few facts about Toyota. About 65 percent of the vehicles the firm sells in North America it assembles in North America, and it would assemble a much higher proportion here if it could only keep up with its rapid sales growth. Toyota will open its seventh North American assembly line in Texas next summer and an eighth line in Ontario in 2008. It may start assembling vehicles at a Subaru plant in Indiana in 2009, and it is said to be looking for yet another assembly location. In addition, it has three engine manufacturing plants and is looking for a site for a fourth. By the end of the decade, Toyota will be able to assemble about as many cars as Chrysler does in North America, and it is closing in on the capacity Ford will have after plant closings that are widely expected to be announced in January.

In fact, thanks to hiring by Japanese, Korean and German auto makers, total employment in the U.S. motor vehicle industry over the past decade has held steady at about 1.1 million.

So the problem is not Japan Inc. In fact, that country has been a striking industrial failure over the last 15 years. The latest firms to slide down the competitive slope are the big Japanese consumer electronics makers such as Sony Corp. and Panasonic, which are losing out to fast-rising Korean, Taiwanese and Chinese rivals. The electronics giants



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are following the downward path of most Japanese auto firms, which have either fallen into foreign hands (Nissan Motor Co. Ltd. and Mazda Motor Corp., the latter now controlled by Ford) or dramatically lost market share (Mitsubishi Motors and Isuzu Motors Ltd.).

The real problem for Ford, and the one that presents a dilemma for American society, is that an industrial-social system pioneered in Detroit in the 1930s has given way to another industrial-social system pioneered by Toyota in the post-World War II era. The irony is that Toyota based the production side of its system on ideas adapted from Bill Ford's great-grandfather Henry. While Detroit's executives have studied the Toyota model, they still have not mastered it or figured out how to pay for the generous (and largely unfunded) pension and health care promises inherited from their predecessors.

There were two elements to the Detroit system. The mass production part, pioneered by Henry Ford in 1914, replaced craft workers with assembly lines. It was so successful that Ford was able to pay decent wages and still dominate the U.S. auto industry, along with General Motors and Chrysler.

The Big Three's hold on the U.S. market seemed so secure by 1948, that they struck a deal with the United Auto Workers that added a new element to the Detroit system: high wages and generous benefits. The car-making business had become a tight oligopoly, with investment barriers for entry so high that no domestic firm could afford to join the club. On the labor side, the UAW held a monopoly. Thanks to rising demand for cars, there were plenty of profits to go around. Periodically the three vertically integrated companies and the union engaged in a bargaining ritual to determine how to split the loot. As long as improvements in mass-production offset the ever-higher wage rates by reducing the number of labor hours per vehicle, the cost of cars for consumers held stable.

The threat to this cozy arrangement came when foreign firms started investing in U.S. production facilities, beginning with Honda in Ohio in 1982, followed by Toyota in a joint venture with GM in California in 1984, and then Toyota again in its massive Georgetown, Ky., complex in 1986.

If any government helped the Japanese at that time, it was the American government. When the Reagan administration came up with the Voluntary Restraint Agreement in 1981, it limited the number of imported Japanese cars sold in the United States for a period of years. Because consumer demand for Japanese cars then was greater than the supply, profit margins on the cars Japanese firms were allowed to sell soared. The Japanese companies then used those enormous profits to invest in North American factories and develop pricier up-market brands such as Lexus.

The Japanese auto makers had an outlook different from that of the Big Three. The purveyors of the old Ford-GM-Chrysler-UAW system assumed that all production laborers in the industry, including workers making parts, should be paid the same rate. The corporate and union leaders further assumed that their position was impregnable and that they could promise to pay defined-benefit pensions and other benefits decades into the future.



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The architects of the new Toyota-Honda system assumed that production labor would be paid different rates, as it was everywhere else in the world. Final-assembly workers would receive a premium, and less skilled employees of parts makers - not owned by the car companies - would work for prevailing market wages. These Japanese firms also assumed that in hyper-competitive markets, no firm could commit to benefits decades ahead. Better to base pensions on defined contributions made during work years rather than by guaranteeing payments in the far future.

These were ominous trends for Detroit, and its response - further investments in automation - didn't make economic sense. (Remember when GM Chairman Roger Smith thought that all factories were to be run by robots?) The Toyota secret was designing and making cars and purchasing parts in more efficient and creative ways.

This new Toyota system - which John Krafcik, my former colleague at the Massachusetts Institute of Technology and now the director of product strategy for Hyundai, labeled "lean production" - uses less human effort and less capital to design products faster and with fewer defects.

What's more - and this best describes Bill Ford's problems - the leading Japanese car companies are making more money than their U.S. competitors not only because of lower costs, but because their lean design, production and purchasing system is turning out vehicles so desirable that Toyota and Honda can charge higher prices for products in the same segment of the market. Indeed, these Japanese companies are giving wages and health packages to current workers in North America similar to those provided by their U.S. rivals, but they're selling vehicles today for \$2,500 more than comparably equipped cars made by Ford and GM. This revenue difference, more than the production cost issue, lies at the real heart of Motown's problem.

Ford and GM have tried to embrace lean production methods, but as their market share shrinks, the legacy of the past looms larger. The U.S. firms need to shed large numbers of employees, but the main way to do that under "lifetime employment" union contracts has been to encourage early retirement. This has solved one problem - too many active workers. But it created a second - too many retired workers for the active workers to support.

It's little wonder that money-losing Ford doesn't have the funds to invest in new technologies and is asking Washington for help. Meanwhile, Toyota is generating such enormous profits (more than \$9 billion worldwide this year) that it can invest in new products and new technologies at a level far exceeding anything Japan Inc. could throw into the equation.

This is not to say that Washington shouldn't throw Ford a bone, such as tax credits for additional research on energy efficiency. Everyone needs to do his part to address the greenhouse gas issue. But that sort of government goodie won't save the American-owned auto industry.

The bigger question is how to cope with the pension and health care commitments of U.S. companies on the road to financial ruin. This is not only a government policy issue,



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but a societal one. U.S. auto companies, and many other firms, are suffering from the same syndrome that is afflicting Social Security: There are too few workers in the post-baby boom generation to support the benefits promised long ago to the boomers.

One approach would be to stand back and let the auto companies fail. A bankruptcy judge could then explain that the promises made to retirees are much more extravagant than what most other Americans are getting. The judge could then call the deal off and pay out pension benefits at maybe 50 cents on the dollar.

Another alternative would be to transfer the obligations to the government. This would ease the pain of a generation caught in a historic industrial transition. But how can the government take on such a burden when it is already saddled with war costs and budget deficits?

But no amount of government assistance can rescue U.S. auto companies unless they become better competitors. In fact, Ford had it exactly backwards when he spoke to reporters last month. Japan isn't his problem; Toyota is. And the answer for his company, like the challenge to it, lies here at home.