

How to bring back the Big 3

Detroit's automakers may be portrayed as dinosaurs, but their survival and return to global leadership is vital to the U.S. economy.

By Jeffrey Sachs, contributor

NEW YORK (Fortune) -- The Big 3 automakers remain at the edge of the abyss. One misstep and they will be plunged into bankruptcy, with consequences as unpredictable as the post-Lehman meltdown.

The emergency loans last December to GM and Chrysler enabled the companies to stagger into the Obama era, but just barely. Their factories are closed, consumers on hold and balance sheets in a shambles. GM ([GM](#), [Fortune 500](#)) and Chrysler sales in January were down by around one-half compared with a year earlier and Ford's ([F](#), [Fortune 500](#)) were down by around 40%. The situation is dire and President Obama has put his top economic advisors in charge of the sector.

Yet the struggle to preserve and resurrect these companies is as vital as ever to the U.S. economy, and even to our environmental future. The Big 3 are not just another industry segment. They are world-leading organizations that can reassume that role in technology and markets with an appropriate public-private partnership over the coming decade. If the Big-3 challenge were as depicted in the press, their failure would not only be foreordained, but without much societal loss. They are widely depicted as thickheaded dinosaurs who clung to outmoded and outsized SUVs, caved to absurd union demands, denied climate change - and thereby lost, big time. Every blast has some truth, but this one is more misleading than accurate.

The SUV era was a societal decision, not just a company decision. The American public, politicians, drivers, and companies all clung to the belief in low gasoline prices, and at a policy level, to low gasoline taxes. We twice elected an administration that denied climate change, and Congress repeatedly rejected national actions on fuel efficiency. The high-mileage breakthroughs of Toyota ([TM](#)) and others emanated from national policies in Japan and Europe that pushed high-mileage vehicles with stiff gasoline taxes for decades. And indeed abroad, GM and Ford sell their own fuel-efficient compact automobiles and do so very competitively. Their downfall was in the home market. The burdens of health care that cripple the Big 3 are similarly societal decisions as much as collective-bargaining outcomes. The idea of saddling our firms with soaring and uncontrolled health-care costs is a policy failure, not a company mistake. Our global competitors have public financing of health care, and get much more care per buck of health care than does the bloated, inefficient, private-insurance system of the United States. One can continue down the list, and include state laws that protect auto dealers and virtually block the elimination of unwanted brands, another example of misguided policies that have contributed to the Big 3 crisis.

Two overarching considerations, however, should shape our thinking:

First, the global macroeconomic and financial crisis is so staggering that even the healthiest auto companies have their backs to the wall. Global auto sales are in a free fall, pushing Toyota to its first losses in history. This would be a near-death experience even for companies with stronger balance sheets. All over the world, the industry is receiving state aid.

Second, and perhaps most important, however, is that the Big 3 have a future as industry leaders in 21st century transport, but can't get there on their own. We are entering a new age of Sustainable Capitalism, in which our most central technological systems - in energy production and use, building codes, land use, food production, water management, and ecosystem conservation - will be fundamentally overhauled to reflect the dramatically intensifying scarcity or degradation of environmental resources. In every major sphere of the economy, new technologies will replace existing technologies in order to reconcile high living standards with environmental sustainability and national security (for example, related to Middle East oil).

The central economic insight is that a major technological overhaul at the societal scale is inherently a public-private activity. The automobile age of the 20th century, built on the internal combustion engine, was a century-long partnership of industry and society, whether in road building, the interstate highway system, the gasoline tax, the choices of public investments in mass transport (or their absence!), automobile safety standards, pollution control and more.

The private sector was a major innovator, but public financing, public R&D, and extensive regulation also worked hand in hand. The result was to turn America into an automobile-based society, something that companies alone, with their customer demands, could not have accomplished. Much good came out of this, but also enormous societal costs, many of which are now in urgent need of rectification.

This public-private technological pattern has similar histories in aeronautics, telecommunications, space technology, medical care, computers, the Internet, navigational advances (such as GPS and radar), genomics, agriculture and plant breeding, and much more.

From the viewpoint of economic theory, the dual role of the public and private sectors is not surprising. Knowledge is the classic public good, whose benefits (and sometimes external costs) spill over far beyond those captured by an inventor. The case for public provision of R&D, regulation, and complementary infrastructure, is therefore powerful, and has been a secret of success of American innovation, often in the long legacies of the public-private partnerships developed during wartime.

A new technological era

We are now, necessarily, at the cusp of a new technological era in personal transport.

Auto technology is being fundamentally overhauled for the first time in a century, fittingly on the 100th anniversary of the 1908 Model T, which brought inexpensive, mass-ownership, internal-combustion-based transport to the world. All over the world today, the automobile is going electric. Electrification results from the convergence of three basic forces: the need to overcome costly and insecure oil, the need to confront climate change, and the opportunity to harness the microelectronics and nanotechnology revolutions to modern transport. The hybrid technology will be the bridge, but certainly not the end-point, to electrification.

Electrification will arrive through plug-in hybrids such as GM's forthcoming Chevy Volt, hydrogen-fuel-cell powered cars such as in GM's concept car the Chevy Equinox, and all-battery cars for small-load city driving. The main point is that such automobiles, while the cars of the coming decade, cannot make it on their own, even with the best management and engineering in the private sector.

Plug-in hybrids and fuel-cell vehicles depend on technologies that have been proven in concept but not yet commercialized at scale with the needed high performance, reliability, low cost and consumer acceptance. The transformation from concept to commercial scale is a transition fraught with heavy costs, learning and benefits that spill over far beyond a company's product line. It is also a transformation that requires major complementary investments in infrastructure and public policy.

The plug-in hybrid, for example, requires a new generation of high-performance batteries, presumably lithium-ion batteries in the first go of it. The scaling up of battery production to meet the demanding specifications required for a mass market will require major R&D investments by the public sector alongside industry. The power grid needed to recharge millions of automobiles each night will also require heavy new public investments of the kind included in the fiscal stimulus legislation. And the power generation to produce the electricity for a new fleet of vehicles must itself be clean, generated by wind, solar, nuclear or clean coal (with the CO₂ captured and sequestered). The public investment demands for a fuel-cell fleet are probably even more demanding, including the R&D for the fuel-cell itself and an entire new infrastructure for hydrogen transport and filling stations in major cities and along interstate highways.

In addition, the new cars are likely to be quite expensive at the start (perhaps \$10,000 more than conventional vehicles with comparable driving performance), and of course inherently with unknown reliability over time. Later on, their costs will come down significantly, to the point where the lifetime costs of the car itself plus fuel consumption will compete with conventional vehicles.

All of this suggests that the technological overhaul will also require public policies on the demand side - for example, targeted public procurement of the new vehicles for government fleets, tax rebates for early consumers, special credit facilities, and so forth. High gasoline taxes were the handmaiden of hybrids and other high-mileage vehicles in Europe and Japan, and we'll need similar demand-side incentives in this round of change as well.

The fascinating thing is that GM, and perhaps the other companies as well, stand to be in the global forefront of the new technologies, on par with Toyota if not ahead, but only if the Big 3 survive the immediate crisis and have a public partner during the technological overhaul.

The giant U.S. market will of course be a crucial advantage, as will be the massive technological capacity within the companies as well as in the U.S. economy at large. And GM is already at the engineering forefront of ways to marry electric vehicles with a dazzling array of microelectronics, new materials, and information technologies, to produce not only clean, high-mileage automobiles, but much smarter ones as well, with vehicle-to-vehicle communications, and computer-and-GPS-based driving, parking, and collision control.

Getting from here to there will not be easy. The companies or public sector could step on a financial landmine at any time. Public scorn and poorly thought-out regulatory demands could overwhelm the technological overhaul. And of course, the companies will need to compete vigorously with potential new entrants. The incumbents have enormous organizational, production and technological advantages, but public policy should not guarantee their incumbency.

Last month the Obama Administration signaled that it is likely to give a go-ahead to California and other states to set state-level regulations on mileage. This is an example where policies need to be coordinated, so that state and federal regulations mesh with national strategies to bring about the needed technological changes, without imposing inadvertent costs or complications that impede rather than speed the changes. GM had it just right when it responded to the new administration policies by noting that we need "a comprehensive policy discussion that takes into account the development price of new technologies, alternative fuels, and market and economic factors."

Indeed, we need an integrated national policy, one that helps the Big 3 to surmount the current drought of auto sales, clean up their balance sheets, and then make the decade-long investments in creating the new clean and smart electric cars of the 21st century. Obama campaigned on a pledge to have 1 million plug-in hybrids on the road by 2015, a worthy and achievable call to action. This is a new industrial policy of the highest priority, a pathway to international competitiveness, technological leadership, energy security and environmental sustainability.

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