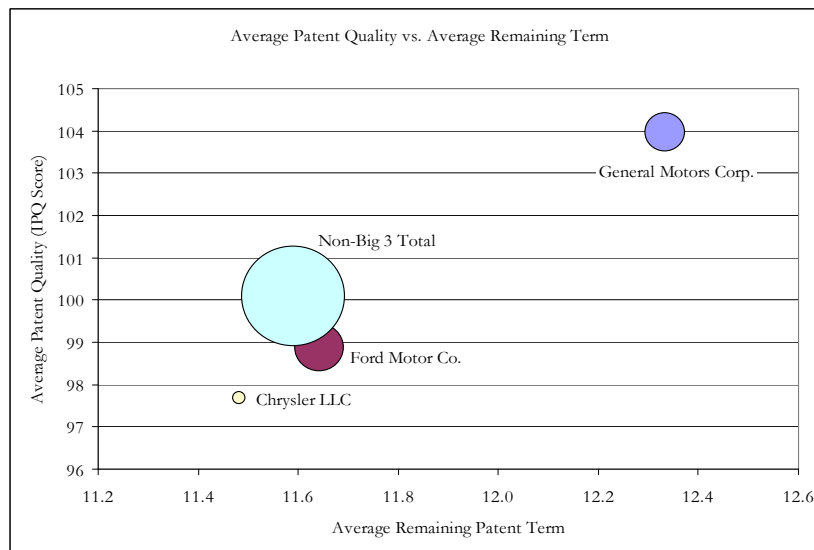


It's Not the Car: It's the Technology Which Drives It

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There are numerous bail-out and let-fail plans being debated on Capitol Hill for the ailing domestic automobile industry. Regardless of the decision made by the Federal government, consideration should be given to the key technologies held by the Big-3 and their significant potential to serve as a platform for growth and add further value to the economy. Such technologies can be identified and better understood through an analysis of the patent portfolios of the Big-3 as compared to the portfolios of the Top-15 global players within the automobile industry. To this end, a study was conducted using industry recognized PatentRatings®[†] analytics within the following four technologies: (i) emission control, mainly catalytic converters and related chemistry; (ii) fuel cells; (iii) hybrid/electric vehicles, mostly motor and battery innovation; and, (iv) emerging related technologies developed by these same firms but not strictly relying on automotive deployment including solar, wind and other green inventions. This review considered U.S. class and sub-class definitions as defined by the Patent & Trademark Office to group the above technologies and identify their ownership. A number of observations were striking:

1. GM has higher average quality[‡] and newer green technology/patents than the other fourteen manufacturers combined. In the following chart, the size of each circle is proportional to the number of patents represented, the horizontal axis represents the average age of each portfolio (recently issued patents have longer remaining terms), and the vertical axis represents the average patent quality (as measured by IPQ scores) of each portfolio.



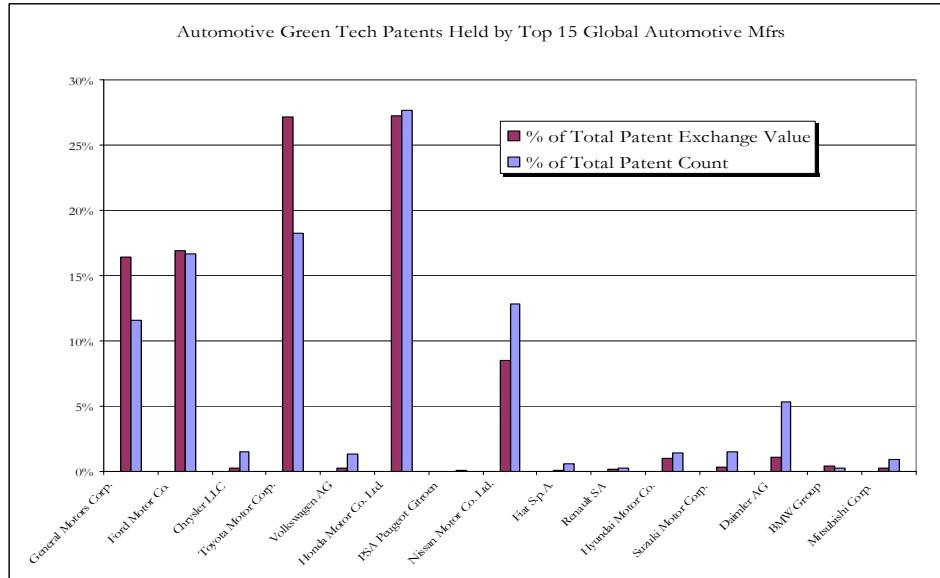
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[†] PatentRatings is a division of Ocean Tomo, LLC. The Ocean Tomo PatentRatings® system is the first proven, market-validated software platform for objectively assessing patent quality, relative valuation and competitive trends for patents, patent portfolios, companies and technology sectors.

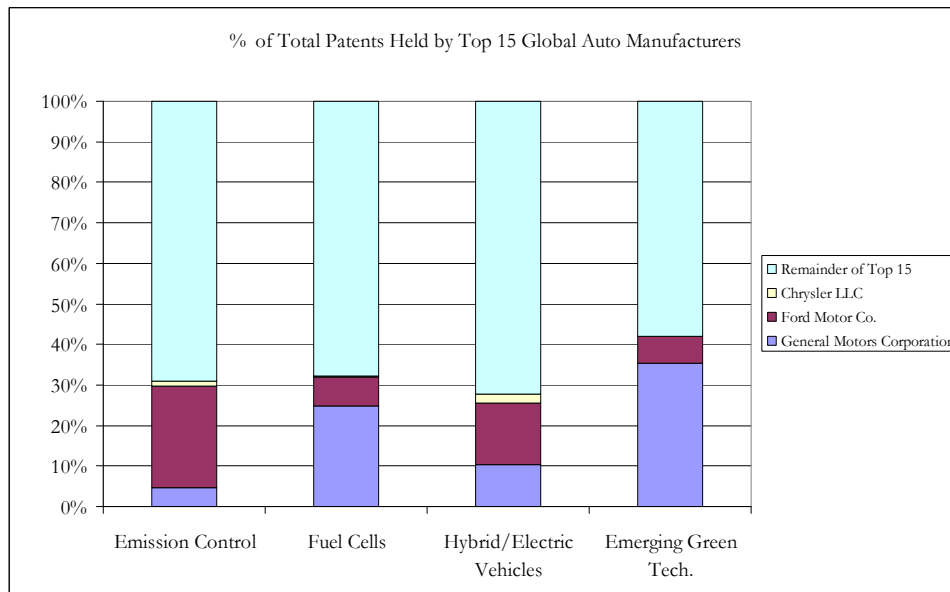
[‡] IPQ ® scores are statistically derived measures of patent quality based on an automated analysis of patent documents, file histories, and related information.

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- GM and Ford together hold approximately 1/3 of all green technology patents and related value[§] alone. The following chart illustrates the total number of patents and the total Patent Exchange Value represented by each company's green tech portfolio as a percent of the industry totals.



- GM has 70% of the patents in the emerging technology category. This domestic share increases to 85% if you add Ford.
- Ford owns nearly 30% of all patents with a similar related value measure in the area of emission control innovation.



[§] Patent Exchange Value (PEVTM) scores are a representation of relative patent value (not a market value). PEV scores start with IPQ scores and further consider the patent's age and technology obsolescence.

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Clearly, Detroit's Big-3 manufacturers own valuable green technology both in an absolute sense as well as relative to international competition. Any bail-out plan for the industry should focus and build upon this competitive advantage. During his first post-election interview on ABC's 60 Minutes, President-Elect Obama acknowledged that the government needs to provide assistance to the automobile industry, possibly in the form of a bridge loan, but that an aid package should only be provided on the condition that management, labor, suppliers and lenders come up with a plan focused on making the industry "sustainable". Commercializing key green technologies could benefit this requirement and help lead the United States towards further energy independence. Green automotive technologies are the building blocks for creating and improving alternative power plants and increasing fuel efficiency for standard or hybrid vehicles, both of which will decrease harmful emissions. The green intellectual property ("IP") owned by the Big-3 has a rightful place at the center of any government assistance plan.

If GM, Ford or Chrysler should fail, numerous of these key technologies would likely be lost to the United States. Also, green technologies pioneered by supplier manufacturers of the automotive industry; such as battery companies, are also likely to be lost. Indeed, the bankruptcy of any or all the Big-3 would create a historically unique opportunity for their foreign competitors to acquire a vast amount of crown jewel technology for a fraction of their real worth.

Our national defense would also be adversely affected. Retired Army General Wesley K. Clark recently noted in a New York Times Op-Ed that Detroit's, Automakers are developing innovative electric motors, many with permanent magnet technology that will have immediate military use. And only the auto industry, with its vast purchasing power, is able to establish a domestic advanced battery industry. Likewise, domestic fuel cell production –which will undoubtedly have many critical military applications – depends on a vibrant car industry." While Clark focused on national security and the development of military technologies, his views and sense of urgency are relevant to the discussion of intellectual property and the auto industry.

The point is that much of the privately-funded green and energy innovation in the U.S. will stall or likely never come to fruition if the domestic automobile industry fails. What other U.S. industry would have the private resources or an incentive to make the massive R&D investments required? If the U.S. is really going to address the importance of clean technology, climate changes, and energy efficiency, therefore, the future of the Big-3 technologies must be a priority within these Big-3 discussions and planning measures.

Paradoxically, one of the key Congressional players in this decision-making is from Detroit. Representative John Conyers, Jr. (MI-14) is the Chairman of the House Judiciary Committee, which has congressional responsibility for U.S. intellectual property legislation and oversight. Immediately after the election, Chairman Conyers announced his decision to move the Intellectual Property Subcommittee to the full committee, instantly elevating intellectual property matters, such as those surrounding the Big 3's green and energy technologies. This important step allows him and that Committee to fully explore the technology implications of any plan to save the Big-3, or the consequences of allowing them to fail.

Fortunately, the foundation for relying on innovation as a means to economic development and a basis for national policy already exists. The benefits of such do not discriminate and our innovation economy can be invigorated immediately, without long-term retraining of the middle class. Innovation as national policy is our leadership role to lose; if we do not recognize such we will suffer further from foreign economies who compete with us in manufacturing today but are already laying the seeds to compete with us based on IP rights tomorrow.

Innovation represents the very foundation of the United States as a country. Patent protection is provided explicitly by the Constitution and reflects the foresight of our founding fathers. Our policies, both public and private, must recognize, reward and build upon innovation and creativity. Doing so will create new products,

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services and related high paying jobs which will allow the US to remain a dominant force in the global economy. It is imperative that any plan to help the Big-3 be thoroughly entrenched in forward thinking concerning the valuable intellectual property held in the halls of engineering which failure would close.

In sum, the fate of the invaluable green and energy intellectual properties being developed by the Big-3 puts at stake more than the future of Detroit and the U.S. auto industry and should be approached as such.