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The Domestic Automotive manufacturers' activities towards Advanced Safety System Rollout as contributing to Globalization via coupled self-interest

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Abstract

This paper presents my observations on the global technological involvement of the U.S. domestic automotive manufacturers and what I believe may be some of the likely relevant driving forces behind the activities. This activity encompasses actions performed by a diverse group of interested (national and international) parties including academics, business leaders, government leaders, and the military. Although technological development and production is an important aspect of vehicle delivery which the domestic automotive manufacturers have been struggling with for years, the 'rollout' of vehicles with new highly advanced safety systems and a great deal of potential liability becomes even more challenging, particularly when executing it across a range of global markets. During a time of turbulent global activity, changing market trends and priorities may be more efficiently exploited not through the U.S. policy of domestic outsourcing but through global coupling, that is, forcing the common technological markets to subsist by contributing to each others self-interest. However, activities related to an endeavor of this magnitude sometimes require investments which cannot afford to be lost, forcing costly strategic and tactical methodologies with built-in fail-safes.

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1.1 Introduction

What are the likely global needs being addressed? One potential answer is advancing humanity through factors (including but not limited to) global interoperability and international coupling, peace keeper status through strategic alliances, gaining trust of developing and third world nations, and combating detrimental global trends (warming, extremism, dictatorships, etc.).

Additionally, why the likely need now considering the entire course of history?

- 1) Maintaining U.S. world super-power status has likely become more difficult with the shift in economic power away from the U.S. and towards Asia (population, production/manufacturing strengths, strong 'nationalistic capitalism', increasing strengths in regional alliances, etc.). The U.S. has likely also estimated the future global importance of Africa after the 'BRIC emergence' and would like to capitalize on their future supply/demand. The inability of the U.S. government to effectively balance domestic tranquility while furthering international strength through traditional government paths has created the necessity for a 'non-traditional' approach.
- 2) The timing likely coincides with a cost/benefit analysis performed with regards to strategically imposing/supporting U.S. interests towards global tranquility.
- 3) The timing likely also coincides with a number of emerging technologies which the domestic automotive manufacturers are 'heavily invested in' but can't rollout in the fashion they would like. Thus, the move away from influence peddling via U.S. congressional politics towards facilitating globalization through international alliances has likely been seen as the least liable method for supporting advancement.
- 4) International events have likely 'opened the door' for a 'long-term campaign' where many of the desired outcomes have not only been justified but indirectly initiated. The domestic automotive industry, being a significant contributing factor towards integration, has been established as not only a source of U.S. car producing ingenuity but a key U.S. economic interest integrated into the world peace-keeping mission.
- 5) For the domestic automotive manufacturers, increasing levels of commitment 'to the cause' likely leads to increasing levels of support from those 'leading the cause'. Thus, there also likely exists an increasing level of local support for those regions where the significant contributors have established themselves.
- 6) What is likely leading the technological cause and what is the 'end game'? Is 'the cause' the originators of the technology who are able to find ways to benefit under even those most 'apparently damaging circumstances'? Is it those supporting the domestic automotive base who have realized that foreign markets hold the key to long-term self-interest? Is it those who don't necessarily support the domestic automotive manufacturers but feel enough sense of nationalism to purchase vehicles from countries whom we have established strategic alliances with or from those countries they would like to initiate alliances with? What about the possibility where we might like to weaken alliances as our global interest is evolving?

The 'end game' is likely only going to be learned over the course of time and by carefully observing what is transpiring as history is unfolding. Note that those in charge are not only adept at controlling information sources, but precisely how that (mis)information is (un)released. With respect to the automotive industry, it can likely be said that once incomprehensible structural changes have occurred which have allowed the domestic automotive manufacturers to become far more competitive globally with their international counterparts. Technologies which might never have been applicable towards automobiles are now being used by drivers around the world contributing to a safer driving experience. Fuel economy standards have been significantly raised (see tables one and two) within the U.S. [1],[2], fuel efficient vehicle technology has been advanced significantly, the move to alternative energy sources has been targeted as a 21st century priority, and the world has been put on notice that global warming is a world-wide issue which needs to be dealt with sooner rather than later.

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Combined Passenger & Lt. Truck	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7	21.0	21.6	22.2

Table 1: Combined Fuel Economy Standards for Passenger Cars & Light Trucks Model Years 1997- 2007(mpg).

	MY Baseline	2017	2018	2019	2020	2021	2022	2023	2024	2025
Passenger Cars	2008	40.1-	41.6-	43.1-	44.8-	46.8-	49.0-	51.2-	53.6-	56.2-
	2010	39.6	41.1	42.5	44.2	46.1	48.2	50.5	52.9	55.3
Light Trucks	2008	29.4-	30.0-	30.6-	31.2-	33.3-	34.9-	36.6-	38.5-	40.3-
	2010	29.1	29.6	30.0	30.6	32.6	34.2	35.8	37.5	39.3
Combined	2008	35.4-	36.5-	37.7-	38.9-	41.0-	43.0-	45.1-	47.4-	49.7-
	2010	35.1	36.1	37.1	38.3	40.3	42.3	44.3	46.5	48.7

Table 2: Estimated Average Required Fleet-Wide Fuel Economy (mpg) under Footprint-Based CAFÉ Standards for 2017-2125.

As a means to the ‘end game’, the automotive industry (or more precisely those directing its path) have chosen strategically significant locations to base suppliers of the 21st century advanced vehicle safety technologies. Behind those suppliers it has apparently lined up enough of our world allies to ensure the rollout of the technology while attempting to preemptively mitigate those factors which may interfere with its successful adaptation. Our national community and the international-friendly community have both played an integral role including those in academia, government, business, military/defense, etc.

2.1 Historical setting

Consider the location of the Midwest United States where the domestic automotive industry has been based through the industrial age and has contributed to the U.S. becoming a global superpower. The industrial age has contributed to a thriving middle class and affluent upper class. During this time, the U.S. military has established itself as one of the world’s major peace keepers during global conflicts.

2.2 Automotive recognition of need for change

The automotive industry, seeing diminishing prospects for domestic profitability becoming more likely beyond the 1980’s and 1990’s, realizes that one key to enduring success is an increased global presence in conjunction with improved profitability achieved through maximized efficiency. The U.S., understanding that maintaining superpower status will require increased global involvement, increases peace keeping measures in areas chosen to be strategically advantageous to promote causes and ensure that past sacrifices are built on.

Another key to advancing the status as a world superpower is facilitating the development of those automotive technologies which will advance humanity, promote global interoperability and international coupling, assure world-wide peace keeper status through alliances with other world powers, and gaining the trust of developing nations.

The domestic automotive industry also realizes that advancing globalization is likely going to be resisted in a number of significant ways including (but not limited to) labor group disapproval, those opposing the foreign policy ramifications of a global economy, those believing that cooperation with nations who typically support questionable trade practices contributed to by ‘nationalized capitalism’ should be avoided, etc. In an effort to either:

- 1) reduce the appearance of contributing to the special interest ‘game’ of politics, or
- 2) remove their footprint (as much as possible) from the political process, or
- 3) focus their resources in what is believed to be a far more ‘beneficial’ investment of capital,

or possibly some other reason, the domestic automotive manufacturers begin rethinking contributions to entities such as political action committees, lobbying groups, and special interest groups, in favor of investing in/investment from those overseas business interests which will further the global cause. Consider that the

purchasing of foreign automotive manufacturers, the collaborative partnerships established between foreign and domestic automotive manufacturers, and the alliances formed between the governments enabled by the major automotive players in the specific regions are all significant in the continuing development of the global economy. Also consider what the early stages of this globalization likely were as foreign based automotive manufacturers began building significant numbers of production facilities in the United States (see table three) starting around 1978 [3].

YEAR	COMPANY	LOCATION
1978	Volkswagen	New Stanton, Pennsylvania
1982	Honda	Marysville, Ohio
1982	Honda	Russells Point, Ohio
1983	Nissan	Smyrna, Tennessee
1984	Mazda/AutoAlliance	Flat Rock, Michigan
1984	NUMMI/Toyota/GM	Freemont, California
1985	Honda	Anna, Ohio
1985	Mitsubishi	Normal, Illinois
1986	Toyota	Georgetown, Kentucky
1986	Toyota	Cambridge and Woodstock, Ontario
1989	Honda	East Liberty, Ohio
1989	Subaru	Lafayette, Indiana
1994	BMW	Greer, South Carolina
1996	Toyota	Princeton, Indiana
1996	Toyota	Buffalo, West Virginia
1997	Nissan	Decherd, Tennessee
1997	Mercedes-Benz	Vance, Alabama
2001	Toyota	Huntsville, Alabama
2001	Honda	Lincoln, Alabama
2003	Nissan	Canton, Mississippi
2003	Toyota	San Antonio, Texas
2005	Hyundai	Montgomery, Alabama
2007	Toyota	Lafayette, Indiana
2008	Honda	Greensburg, Indiana
2010	Toyota	Blue Springs, Mississippi
2010	Kia	West Point, Georgia
2011	Volkswagen	Chattanooga, Tennessee

Table 3: Partial timeline at which some foreign based automotive manufacturers began production within the United States.

2.3 Basis for global expansion

Technological advancement (particularly enhanced sensory, processing and control power in reduced packages/footprints) creates the potential to move many of the technological capabilities of the military into automotive applications. These military capabilities (including but not limited to wireless communication systems, imaging systems, high-speed networks, embedded systems, data storage and retrieval, advanced actuation capability, fault-tolerant systems, etc.) have the potential to support development of the first generation of automobiles which exploit ‘situational awareness’.

The entities driving this movement also understand the long term implications of technological advancement in this area. Advanced safety system technology taken to the public transportation level can be further exploited by those in the defense arena. Fully autonomous systems incorporating true artificial intelligence may be available a lifetime earlier due to the synergy between those public and private institutions. Also consider the potentially limitless benefits gained through knowledge of safety systems which are adaptable and self-maintaining as it relates to industries such as aerospace, defense systems, the medical community, telecommunications, etc.

2.4 Supportive coordination of regional domestic self-interest

In addition, U.S. regional economic policy is initiated in a direction which promotes regional self-interest while realizing that capitalistic market forces will assure that mutually beneficial behavior is observed. For example, with the ratification of the North American Free Trade Agreement (NAFTA), the way in which the exchange of goods and services occurred between the U.S., Canada, and Mexico changed drastically. Equally dramatic was the way in which business opportunities became far less restricted through factors including (but not limited to) significantly fairer investment opportunities, greater intellectual property security, and reduced restrictions on automotive parts requirements. According to a report by the U.S. Department of Commerce International Trade Administration, from 1992 to 2002, U.S. motor vehicles and parts firms increased exports to Canada by 87% and increased exports to Mexico by 126%, while in 2002, U.S. firms captured 67% of Mexico's total automotive import market and 77% of Canada's total automotive import market [4].

Internationally, regions are also (dis)organizing in a way to promote their own self-interest. Consider the establishment of the Euro-zone, the 'breaking up' of the U.S.S.R., the emergence of India and Asia, along with the numerous free trade agreements which are being established by countries around the world.

2.5 Supportive coordination of regional technological self-interest

On the domestic front, small businesses sometimes originating from academic and/or military affiliations are beginning to appear in regions where the technological developers have a strong and well-rounded base of support. Particularly on the west coast (California) and the east coast (northern Atlantic), technological in-roads are being made in the areas which will provide the starting point for viability and credibility on a national scale. As these companies are gaining further exposure and significance, commercial interest starts increasing and some are purchased by/merged with 'common interest' businesses wishing to maximize their business footprint.

2.6 Globalization, from dream to reality

At this point, the domestic automotive manufacturers see that 'the writing is on the wall' and facilitating globalization will be more readily workable with a leaner national workforce and a smaller national manufacturing footprint. Additionally, disassociating specific technologies from a single automotive manufacturer will make them more attractive in the global market along with potentially decoupling future sources of liability. Thus, it is decided that select corporate entities should be spun-off from the corporate governance to further facilitate the 'leaned out' business model as well as the 'collaborative' effort of the technological rollout. For example, in 1999 General Motors announced that it was going to be spinning-off its parts making operations which resulted in Delphi's establishment. Less than a year later, Ford Motor Company formally decided that it too would spin-off its parts making operation, resulting in the establishment of Visteon. It should be noted that the very complex considerations leading up to these choices had likely been under deliberation for a considerable period of time. Automotive suppliers which are not primarily affiliated with a single automotive manufacturer also begin (or have been) performing research in conjunction with automotive/military/aerospace branches to further the advancement of a robust production safety system.

2.7 Coordination of efforts amongst relevant entities

The initial stages of publicly promoting this technological migration are initiated through collaborative efforts amongst those public and private entities of the government, military, business, and academia (just to name a few). Concurrent efforts are also established in different regions around the world. In the U.S., federal law is passed and funding is established for information gathering. As a specific example, in 1995, the Crash Avoidance Metrics Partnership (CAMP), headed by General Motors and Ford Motor Company, filed written notifications with the U.S. Attorney General and Federal Trade Commission disclosing (1) the identities of the parties and (2) the nature and objectives of the partnership, for reducing any potential liabilities resulting from antitrust[5]. The primary bodies overseeing transportation (the Department of Transportation and the National Highway Traffic Safety Association) also establish an 'authoritative repository' for information dissemination.

The commercial automotive manufacturers continue to invest huge amounts of resources into supporting the design and development of these technologies.

2.8 Making the case through broader applications

Understanding that generating acceptance of the technology will be less difficult with reduced cost and a wider range of transportation (private and commercial) applications, the push is made to publicize the benefits to the commercial trucking industry. Parallel development is begun with the specific needs of the commercial trucking industry in mind. Because the potential cost savings (primarily related to vehicle price and insurance rates) gives the commercial trucking industry's rollout greater financial appeal, global advancement becomes more likely and commercial trucking companies around the world become involved in extended trials where operators are using them for logging and evaluating their operational characteristics. One of the key preliminary documents relating to these commercial vehicle safety systems being 'overseen' by the Federal Motor Carrier Safety Administration was published in July of 2005, covering aspects of the systems related to concept of operations and voluntary requirements for large trucks greater than 10,000 lbs. [6]. It should be noted that there weren't any specific performance tests included in that document. Subsequent investigation has been performed in Europe for the European Commission and in the U.S. by the Department of Transportation (IVBSS).

2.9 Supporting the case through broader collaboration

Prior to the domestic rollout, intellectual property licenses are purchased which allow the technology to be utilized in a controlled experimental environment under a wide range of environmental conditions and dynamic driving states. For example, the company Assistware licensed its Safetrac lane tracking technology to the Visteon corporation in 2002[7]. Consider that at this point, the effort is no longer being contributed to domestically solely by the Big Three, but also by corporations based in countries including (but not limited to) Asia, Europe, etc. Publications are also being released in which companies and theoretical authorities are presenting their versions of how the technology may be implemented in the marketplace, many of which potentially rely on 'tried and true' theoretical principles [7], [8]. Finally, consider that the 2004 Automotive Congress was held in Detroit, Michigan, and many of the principle 'players' in the global advanced safety system rollout were contributors and/or presenters.

2.10 Following the technological lead of the international community

Interestingly enough, while the United States is still in the final preparative stages of releasing many of these advanced technologies into production primarily in their high-end vehicle segments, there are automotive manufacturers around the world which have already released some of the advanced technologies (potentially) in select markets and are likely on their second and third generation systems. It should be noted that these auto manufactures tend to be located in countries where there is a strong nationalized industrial base or whose potential legal liabilities might be significantly different than those auto manufacturers based in the U.S. Consider the information contained within table four, which gives a potential timeline for automotive production systems incorporating lane monitoring [9].

YEAR	COMPANY	VEHICLE
2001	Nissan	Cima
2002	Toyota	Cardina, Alphard
2003	Honda	Inspire
2004	Nissan Toyota	Infiniti FX, Crown Majesta
2005	Nissan Citroen Audi	M C4, C5 A4
2006	Toyota	Lexus LS 460
2007	General Motors BMW	Cadillac STS, DTS, Buick Lucerne 5 series, 6 series
2008	Ford(Volvo)	S80, V70, XC70 executive cars
2009	Mercedes-Benz Fiat	E-class Fiat

Table 4: Partial timeline at which some automotive manufacturers began production with lane monitoring systems.

2.11 Expanding purpose and initiating safeguards

During this period, it also becomes painfully obvious to those promoting the humanitarian advancement that leading the cause will not be universally welcomed and in fact, rejected by many around the world. Thus, particular locations with a strategic relevance will be identified as primary targets for rolling out the enabling technologies. These locations are heavily invested in with huge amounts of resources by the automotive manufacturers and their supporters as a way of advancing the cause and assuring self-preservation. These locations are also invested in heavily by other high-tech superpowers as well as by the U.S. government.

Consider that safeguards for protecting ‘the system’ also need to be put into place (possibly including but not limited to):

- 1) International Standards for fundamental functional and performance requirements for the systems. Consider what the potential pros and cons for publishing a standard which is unintentionally lacking. Also consider what the potential pros and cons for publishing a standard which is intentionally lacking.
- 2) International cooperation for assuring controlled involvement and rollout. Consider what the potential pros and cons of having an international coalition where the traffic and control devices from country to country possibly facilitate/impede certain implementation technologies and/or methodologies.
- 3) Responsible oversight and control of/for those involved with the safety systems.
- 4) Security for those entities involved in the advancement.
- 5) Public trials and/or Field Operational Tests for trust/comfort/appeasement/testing.
- 6) Commercial and/or non-commercial vehicle intricacies.
- 7) Potentially ‘misleading and/or incomplete and/or extraneous’ information related to rules and/or regulations.
- 8) Risk management for certain ‘uncontrollable’ situations including (but not limited to) public information/elaboration (or lack thereof), ‘responsibility blurring’, etc.

3.1 What does the domestic automotive industry really have to gain?

Consider the pros and cons for the automotive industry of being involved with a movement towards global interoperability. For a number of decades, the U.S. domestic based automotive manufacturers have been losing market share to their more efficient foreign (German, Japanese, Chinese, Korean, etc.) counterparts as a result of factors including (but not limited to) vehicle cost, vehicle quality/reliability, etc. One of the reasons for this could be attributed to the reduced overhead cost of manufacturing/production in those countries where the legacy cost/standard may be much below that of the United States. There are also benefits to producing vehicles in the markets where they will be sold rather than building them domestically and shipping them abroad. With increasing influence in a foreign market comes the enhanced ability to ‘be affected’ by that influence. The

enhanced coupling within the global economy mandates that factors including (but not limited to) national defense, foreign policy, fiscal and monetary policy, take into account the factors affecting the global self-interest. Also, it becomes more possible that (intended and unintended) fluctuations in foreign markets have a significant effect on domestic policy making. Consider a specific example shown in table five in which General Motors has established/discontinued brands/affiliations in several countries which have become very significant to the United States over the past decade [10].

Year established/discontinued	GM Brand/Affiliation/Subsidiary
2002 (est.)	China Wuling (brand)
2005 (disc.)	Italy Fiat (affiliation)
2006 (disc.)	Japan Fuji Heavy Ind. (affiliation)
2006 (disc.)	Japan Isuzu (affiliation)
2008 (disc.)	Japan Suzuki (affiliation)
2009 (disc.)	Toyota (NUMMI) (subsidiary)
2010 (disc.)	Dutch Saab (subsidiary)
2010 (est.)	China Baojun (brand)
2011 (est.)	China Jiefang (brand)
2011 (disc.)	South Korea Daewoo (brand)

Table 5: Some recent changes to General Motors corporation brands/affiliations in recent years.

3.2 The necessitated shift in influence peddling

Thus, the process of attempting to direct policy through a democratically established system of checks and balances for the republic has become ‘shaded’ by the (in)convenient response of local markets to foreign policy/market fluctuation. Also, consider the possibility that a technology is so litigiously contentious, it needs to be initiated in a foreign market due (in-part) to superior control over the various sources of uncertainty. The domestic automotive manufacturers technology rollout might possibly benefit from this via a ‘wait and see what happens abroad’ attitude or through introducing their versions of the technology in the markets with the reduced uncertainty.

3.3 Long-term global benefits through wise domestic planning?

Helping to bring other strategically significant areas of the world onto the world scene doesn’t (at first glance) appear to have immediate payoffs for the domestic automotive manufacturers. Sure, selling more cars in strategic foreign markets does indeed contribute to a corporation’s bottom line. The cooperation that needs to be maintained in assuring continued mutual success keeps the communication paths open while stimulating self-interest. Getting foreign nations to recognize the benefits that U.S. international policy can have on pro-representative nations helps the overall goal. It is also possible that ‘raising the standard/cost of living by stimulating a foreign countries living-wage’ has the positive domestic result of (if on a large enough scale) increasing the value of the dollar relative to the foreign countries unit of currency and over the very (very long and carefully managed) haul, improving domestic DEBT/GDP ratios?

Coupled with the ‘devaluation’ in U.S. currency through repeated quantitative easings, domestic stimulus packages (although important for domestic tranquility), long-term (ten year plus) Office of Management and Budget projections for huge national debts, and record low interest rates, the value of our products to those products generated around the world becomes less ‘unappealing’. Consider also that this quest for global resource ‘oversight’ has the added benefit that, as costs for ‘resource management’ increase adding astronomically to the national debt, and as foreign nations are enticed to both purchase our national debt as well as investing heavily in goods and/or services left vulnerable by a weakened economy, the coupling within alliances is increased as well as continuing to reduce the ‘unattractiveness’ of our products to foreign markets.

3.4 Potential pitfalls with the long-term domestic plan for global interest

Consider now what happens when those countries who are investing heavily in our long-term national debt see the value of their investments ‘diminishing’ because of the dollar’s devaluation. Also consider that much of the trust in U.S. global policy is based on the fact that security is not necessarily established through the value of a piece of paper with the picture of a deceased president but in the peacekeeping might of a world superpower which continually finds *creative ways* to gain trust in and support for the fact that *our way of freedom* is the least objectionable (least untrustworthy) from the set of available options across the broad spectrum of peoples around the world.

Consider also the potential drawbacks for the U.S. should the foreign nations getting drawn onto the global stage realize (and have grown tired of the fact) that this ‘race to the top’ is now as much about gaining control of global resources and that such an colossal undertaking typically has a fail-safe method incorporated into the global strategy. Table six lists some approximate figures for U.S. Foreign Economic and Military Aid by country for years ending September 30 (in obligations) [11]. Table seven lists two significant foreign holders of treasury securities with approximate amounts between 2000 and 2012.

Country	2001	2005	2006	2007	2008	2009
Afghanistan	106	2252	3739	5812	8892	8764
Egypt	1716	1563	1787	1972	1492	1785
Iraq	-	9482	10563	7931	7452	2256
Israel	2839	2714	2544	2508	2425	2432

Table 6: U.S. Foreign Economic and Military Aid by Major Recipient country (in millions of dollars).

Date	Japanese holding amount (billions)	China (Mainland) holding amount (billions)
Dec 2012	1111.2	1220.4
Dec 2011	1058.1	1151.9
Dec 2010	882.3	1160.1
Dec 2009	765.7	894.8
Dec 2008	626.0	727.4
Dec 2007	581.2	477.6
Dec 2006	622.9	396.9
Dec 2005	670.0	310.0
Dec 2004	689.9	222.9
Dec 2003	550.8	159.0
Dec 2002	378.1	118.4
Dec 2001	317.9	78.6
Dec 2000	317.7	60.3

Table 7: Two major foreign holders of Treasury Securities for years 2000 through 2012 [12].

3.5 Domestic policy failure or ‘stroke of genius’

Is there truly a safeguard for failure to the system as it has been established? Consider a possible source of failure, that those (out of control) in this country fail to realize that those in control have certain obligations to maintain. Are the obligations to ‘the constitution’, ‘the union’, ‘democracy’, ‘freedom’, ‘the republic, one nation under God’, ‘domestic tranquility’, ‘domestic safety and security’, ‘international safety and security’, ‘world peace’, ‘world harmony’, ‘world preservation’, or something along the lines of ‘preventing self-implosion’. What about the possibility that the only obligation of those in charge is to ‘those in charge’?

When the success/failure of the domestic automotive manufacturers is considered, it is important to take into account the ‘new set of globally relevant criterion’ for evaluating relative success and/or failure, with the first being ‘domestic sacrifice’. The trend may be justified as becoming ‘lean and mean’. A corporation which is failing for it’s stockholders, is failing for it’s employees, is failing for its customers, is failing for it’s business partners, has little importance in the ‘domestic economy’. These companies may be broken up and

‘absorbed’, merged with, or allowed to file for bankruptcy protection (just to name a few options). However, in the global economy, companies with negligible domestic value can have a great deal of international appeal. Consider all the previous reasons why a foreign based company might have interest in a struggling U.S. auto maker. On the other end of the spectrum, consider all the reasons why a highly successful domestic automotive manufacturer might be able to generate foreign investment interest for the brands it has amassed during the boom times of its existence. Consider also that this ‘bloated’ status may be contradictory to the ‘lean and mean’ trend which could be the model for the future. Consider finally the case where an automotive manufacturer has had enough direction and foresight to establish international relationships with foreign companies which (by their very existence) contribute to the global coupling.

Thus, for failing companies wishing to survive or for ‘top-heavy’ companies wishing to ‘lean out’, what is the key to justify the thinning of the ranks from the top down? It may need to start with circumstances beyond the control of those in charge. For a complete overhaul to a domestic automotive system needing refocusing, only a large-scale domestic economic event might have enough impact.

3.6 Domestic policy rationale for technological globalization

First, what are some of the likely significant aspects/mitigating factors which have potentially been considered?

- 1) That technological rollout with world-wide advancement may be initiated by those controlling forces with enough foresight to recognize the necessity and enough power to oversee its occurrence?
- 2) That a successful rollout involves a comprehensive approach involving government(s), corporation(s), and academia, as applied towards a unified global benefit?
- 3) That coinciding with the rollout is a widespread lean-up in an industry which may potentially be possible only when an event outside the sphere of control of that industry is directly responsible for its occurrence and/or indirectly responsible for its lack of prevention?
That ‘lean-up’, domestic sacrifice and open-mindedness will be welcomed more readily by some groups within a corporate (global) organization than by others?
- 5) That ‘lean-up’ combined with domestic sacrifice can be implemented in a number of globally beneficial ways?
- 6) That rollout includes both those aspects that support the legitimate contribution and endorsed benefits as well as the ‘unsanctioned actions/costs’?
- 7) That rollout includes safeguards which assure that ‘the cause’, and to a lesser degree the technology, will, under any and all circumstances, move forward?

3.7 Technological Globalization supporting ‘world peace’

In addition to what has been previously described, consider also that focusing investment in strategically selected locations may also take into account factors besides those which are typically associated with capitalism and free market systems. Consider the potentially relevant factors including (but not limited to) a locations regional stability and moreover, volatility, its historical religious foundation, and its proximity to other (un)related resources.

Thus, what might go into picking out an international location for establishing an enabling technology which might provide the most benefits with the least number of drawbacks? Should it potentially:

- 1) be in a country which is considered a military ally?
- 2) be in a country which is considered to be of geographical significance?
- 3) be in a country which is considered to share common beliefs regarding liberty and freedom?
- 4) be in a country where people of that nationality have been subjected to large scale ‘inhumane crimes’?
- 5) be in a country which receives huge amounts of U.S. foreign economic aid?
- 6) be in a country which has very significant historical importance?
- 7) be in a country which is located in one of the most war-torn areas of the world?
- 8) be in a country which is considered to be regionally significant?
- 9) be in a country where some of its neighbors have been/currently are battling religious extremists which have caused the U.S. and its allies ‘undue grief’ for a number of decades?

- 10) be in a country where that region's primary source of revenue comes from one of the most important resources for the U.S. economy, namely oil?
- 11) be in a country where that region's primary source of revenue comes from one of the most significant contributors to global warming?
- 12) be in a country where one of its neighbors has publicly denounced it in a way which leads some to believe that its has a very perilous existence?
- 13) be in a country in which many of its neighbors have, for a number of decades, been one of the largest sources for regional instability and a continuous source of necessary attention for the U.S. and its allies?
- 14) be in a country which receives huge amounts of U.S. foreign military financing?

4.1 How did/didn't the domestic automotive manufacturers gain this foresight?

Consider first the significance of the automobile in our nations 'mobility movement'. A likely partial chronology includes (but is not limited to) walking, horse, horse drawn two/four wheeled device, two-wheel non-motorized non-horse powered, train, four and two wheel motorized (which advanced technologically over a significant and extended period of time), 'motorized' aerial movement, and 'motorized' space movement.

Consider also the likely importance of the automobile to the industrial age: demand for automobiles leads to supply originating with hand-assembly around the early 1900's; increased demand for automobiles creates competition amongst early manufacturers of automobiles; enhanced (inter)national recognition necessitates large-scale production; large-scale production needs lead to the assembly line; still increasing demand and increasingly efficient production methods (both inside and outside the automotive arena) contribute to a 'living wage' and/or 'wage disparity'; demand combined with ingenuity and entrepreneurial spirit in both the automotive and non-automotive sectors fuel the industrial age.

Consider that starting early (but continuing throughout) America's history, the automotive industry has likely played a fundamental role in national defense including (but not limited to):

- 1) the potential establishment of a method for mobility beyond that of foot or relying on horses, allowing conflicts to be initiated/resolved more readily.
- 2) the potential establishment of a method for mass production which, while geared towards the automotive industry, could potentially be transformed into a system for mass producing tools of peace/war.
- 3) the potential fueling of a capitalist based society where investing in and producing tools useful to society and contributing to a strengthening U.S. economy promote individual wealth, U.S. strength, a sense of nationalism, and continued advancement.
- 4) the potential establishment of divisions within some automotive manufacturers geared towards non-automotive segments including defense, aerospace, combat, etc.
- 5) the potential diversification of corporations with the intent of producing systems for a varied group of clients including the military, automotive, health-care, appliances, etc.
- 6) the potential migration of military/aerospace specific suppliers towards the automotive industry and the converse.
- 7) the potential 'grateful welcoming' by the automotive industry of discharged/retired military personnel into all positions, but most significantly, upper level management positions, as well as the support of military causes by many in the automotive industry.
- 8) the potential need to expand the breadth of protection for American interests as the domestic automotive industry began the push towards globalization.
- 9) the potential benefits of having public corporations geared towards manufacturing high-end mobility devices incorporating advanced propulsion systems based on complex electrical/mechanical technologies, being marketed to/for the general public with those architectures serving (in many cases) as the basis for subsequent ground combat systems.
- 10) consider the potential relationship(s) between: the A.M.C. Jeep and that used by the military during international military campaigns; the military H.M.M.W.V. and the General Motors H2 and H3 Hummers; the military vehicles potentially incorporating Ford truck technologies.

4.2 How did/didn't Michigan politics potentially shape the domestic auto manufacturers' direction?

Consider the stream of significant Michigan politicians in recent years (including but not limited to):

- 1) Chairman of the U.S. Senate Intelligence Committee Mike Rogers.
- 2) Chairman of the U.S. Senate Armed Services Committee Carl Levin.
- 3) 2008 Republican presidential nominee Mitt Romney (and his father, former Michigan Governor George Romney).
- 4) 2000 Department of Energy Secretary (and former U.S. Senator) Spence Abraham.
- 5) Former Michigan Governor and Michigan Attorney General (mentioned as a potential 2012 cabinet appointee for President Obama) Jennifer Granholm.
- 6) U.S. House of Representatives senior ranking member and long-time Energy and Commerce chairman John Dingell.

4.3 How did/didn't Macomb County (specifically) and Southeastern Michigan (generally) potentially play a role in 'being prepared' for this globalization?

Consider first all the things which likely need to be taken into account both prior to and after the U.S. government decided to bail out GM (directly) and Chrysler (directly) and Ford Motor Company (indirectly). Start by considering the likely relevance of GM to the world stage:

- 1) For the vast majority of the 20th century, the world's largest automotive manufacturer.
- 2) The only domestic auto manufacturer to have the capabilities to get the EN-V electric vehicle into production and then abandon it even quicker than it was brought about.
- 3) The only domestic auto manufacturer to have the capabilities to get a system like ONSTAR into production vehicles before the rest of the domestic automotive manufacturers.
- 4) The only domestic auto manufacturer to have the capabilities to get a vehicle like the Chevy VOLT into production at the time it did.
- 5) The one domestic automotive manufacturer to establish significant early partnerships with Chinese automotive manufacturers, furthering global coupling between Chinese and U.S. technologies.
- 6) The domestic automotive manufacturer to establish the largest 'brand presence' in China.

Locally, Macomb County is the home to the GM Technical Center and a significant GM supply base. Also, GM's spin-off Delphi has its world headquarters located just a 'stones throw' away in Troy.

Now, consider the likely relevance of Ford Motor Company to the world stage:

- 1) For the vast majority of the 20th century, the world's second largest automotive manufacturer.
- 2) The last company among the domestic automotive manufacturers to be taken public.
- 3) The only domestic automotive manufacturer to also have a namesake giant in the health care industry.
- 4) The only domestic automotive manufacturer to start large-scale purchasing of smaller (yet very significant) automotive manufacturers (Volvo, Jaguar, Land Rover, etc.) during the 'boom times' of the 1990's.
- 5) The domestic automotive manufacturer to go through (probably) the most publicized legal battle of the late 20th/early 21st century (Ford-Firestone tread separation/rollover).
- 6) Although not based in Macomb County, it does have its base of operations established in Dearborn, Michigan, which is 'a little more than a stones throw' from Macomb County.
- 7) The domestic automotive manufacturer to most significantly contribute to globalization via the selling of its prestigious brands Volvo (which was purchased from a Swedish company) to a Chinese company and Jaguar/Land Rover (both of which were purchased from companies in the United Kingdom) to company from India.

Locally, Macomb County has likely been the home to more 'Ford assembly/manufacturing/ pre-production' locations than any other automotive manufacturer. Ford is likely also the largest private property owner in the county (including open and closed Ford/Visteon/Romeo Proving Grounds locations). Ford is also at least the second largest health care providing facility in the county (second only to possibly, St John's).

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Now, consider the likely relevance of Chrysler to the world stage:

- 1) During modern times, the first domestic automotive manufacturer to receive a bailout from the U.S. government during the 1980's.
- 2) A company that during the 1990's and 2000's was involved in a 'merger of equals' with Daimler-Benz and subsequent German selling and then a 'short-lived transfer' to the equity capital firm Cerberus.
- 3) The domestic automotive manufacturer to get a U.S. government overseen purchase by Fiat.

Locally, Chrysler at one time likely had more facilities in the state of Michigan than any other domestic automotive manufacturer. Macomb County is also the home to a very sizable number of Chrysler assembly/manufacturing/pre-production' locations and the Chrysler Technology Center is located just a 'stones throw' away in Auburn Hills.

Consider that the supply base which generates it's livelihood from the southeastern Michigan located automotive companies likely has a significant footing in Macomb County and moreover, the quad-county (Macomb, Oakland, Wayne, Washtenaw) area . Consider also the significant contribution to the local and state economies in revenue from property taxes, business taxes, health care contributions, local community economic stimulus, etc. Although the automotive industry's local domestic impact has diminished significantly in recent decades, make no mistake about it, this industry is without a doubt the driving force behind the success and/or failure of this region.

Thus, when the U.S. government is planning for a bailout of the domestic automotive industry, 'it' potentially takes a significant number of preparatory steps to assure that it has:

- 1) brought to light and effectively dealt with any of the potentially compromising past and/or present activities of the industry,
- 2) hindered any further compromised conditions from potentially arising,
- 3) promoted an environment of *stability* within the region where negative publicity is much less likely to originate from, and
- 4) establish a contingency plan for containing any unforeseen events.

What are some of the things that may potentially need to be done to 'clean things up regionally'? Consider first that Macomb County has had as its governing structure a large body overseeing the county activities. This has until just recently been in contrast to the governing structure of Oakland and Wayne counties in which the top position is the county executive. Consider that two of the long standing figures within the Macomb County government were Sheriff Bill Hackel and county prosecutor Carl Marlinga. Now consider that in about the last decade, Macomb County has had a couple of significant events occur involving these two. Both Bill Hackel and Carl Marlinga had very serious legal troubles occur at almost the same point which led to the loss of their positions and a 'dark shadow' being cast over the 'state of justice' within Macomb County. After a short series of legal wranglings and a significant change to the governing structure, an overwhelming election win for the then sheriff made Mark Hackel (the son of Bill Hackel) Macomb County executive. Destabilizing for a county, which at the end of 2008, had a significant 'long time source of stability' bailed out by the U.S. government? That answer probably depends on your viewpoint. However, consider that although the 'old guard was ushered out' and 'the new guard was ushered in', their viewpoints were likely very, very similar. Consider also the potential prospects for interest in supporting the 'status quo' after the changeover.

Thus, just prior to the automotive bailout by the U.S. government, there was a series of changes to the law enforcement 'establishment' followed by an 'intended shakeup' to the governing structure and, just after the bailout, a formal restructuring to the body overseeing Macomb County. In the pre-bailout changeover, both the long-time 'law enforcement chief' and the long-time 'chief criminal prosecutor' lost their positions due to 'behavior which apparently warranted their removal from their positions'. Consider also that although (I suspect) both had previously untarnished records for their respective positions, there was likely 'significant knowledge of unscrupulous activities within the county which had gone on over the years' as well as 'significant questionable occurrences' which each had been involved with but which had not found their way to the 'public's awareness'. Thus, it appears that the U.S. government likely 'caught a break' with the 'shakeup' as the newly elected officials would potentially have had far less 'accountable exposure' to 'potentially unethical occurrences' and thus be far less of a liability.

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Consider also what was likely going on within the ‘public establishment’ of Macomb County as this entire situation was unfolding. What must the assistant prosecutors and supporting staff, the county judges, the deputy sheriff’s and other law enforcement agents, the related county employees, etc., be thinking as their once ‘infallible system’ was being exposed? Whatever was going on in their heads, I suspect there was potentially a sense of disbelief along with a strong sense of urgency to prevent whatever had led to the fall from grace from occurring again. Again, what a fortuitous break for the U.S. government.

The significant power of the Big Three in Macomb County cannot be disputed. However, consider how the power base has expanded and diversified in recent decades. The following company locations have been established within the Southeastern Michigan region including (but not limited to):

- 1) Toyota Technical Center, located in Ann Arbor, MI, established in 1977.
- 2) Continental Automotive and Seimens Automotive, both with locations in Auburn Hills MI, and TRW Automotive, with a location in Livonia MI, and Takata Inc., with locations in Auburn Hills and Farmington Hills MI, and Denso Corporation, with a location in Southfield MI, all established significant facilities around the turn of the 21st century.
- 3) Delphi Corporation, located in Troy, MI, established in 1999. Note that Delphi has established a number of technical centers throughout Michigan.
- 4) Visteon Corporation, located in Van Buren, MI, established in 2000. Note that Visteon has a number of technical centers throughout Michigan.
- 5) Hyundai-Kia American Technical Center, located in Superior Township, MI, established in 2005.
- 6) Bosch Research and Technology Center, located in Plymouth Township MI, established in 2005.

4.4 The likely support for advancing global coupling as ‘understood’ by the U.S. military

Consider what the likely precursor to advancing global coupling was as ‘understood’ by the U.S. military. Some likely candidates may include:

- 1) the likely establishment of a military to protect U.S. national security, both at home and abroad.
- 2) the likely willingness of the U.S. government (via the military and diplomats) to accept the lead role of world peace-keeper during the outbreak of global unrest in the early to mid portion of the 20th century.
- 3) the huge sacrifices (investment) in ‘blood and treasure’ given up by this country during (but not limited to) WWI and WWII.
- 4) the likely willingness of the U.S. government to provide foreign aid to strategic countries in need, particularly after WWII.
- 5) the likely broader foreign acceptance for the establishment of foreign embassies, military bases and outposts world-wide amongst ‘not western unfriendly’ countries.
- 6) the likely broader recognition for needing to establish U.S. foreign embassies and military bases near strategically significant ‘hotspots’ around the world.
- 7) the likely broader domestic recognition that foreign nation (U.S.) endorsed economic incentives could be used to enhance global support for western beliefs and principles.
- 8) the likely broader domestic recognition that foreign union (U.S.) endorsed economic collaborations could be used to advance western beliefs and principles.
- 9) the likely broader domestic recognition that increased world-wide peace-keeping responsibilities require increased world-wide peace-keeping resources typically demanding costly strategic and tactical tools.
- 10) the likely broader domestic recognition of increased world-wide peace-keeping responsibilities justifying increased world-wide peace-keeping independence potentially allowing for questionable strategic and tactical methodologies.
- 11) the likely ‘transfer of focus’ from protecting our national security at home to protecting our national security and interests abroad (and in the process, reducing our susceptibility at home).

5.1 Multiple approaches to a common globalization goal

The possibly significant contribution to (and control of) events occurring in (and around) Macomb County by the domestic automotive manufacturers (and its supporters) has already been generally touched on as

well as the importance of the automotive industry to the regional and global economy. However, if you are not a card carrying union member, not a die-hard domestic automotive supporter, or not even one who sincerely believes that the Big Three makes the best automobiles in the world, and who was potentially exposed to idealistic philosophies like “at least one car from your employing manufacturer” or “competitive vehicle parking”, how could you still support the domestic economy without owning a vehicle from one of the Big Three? Consider the fact that the Toyota Motor Company has advertised its Toyota Camry as the top selling mid-size automobile in the United States for many, many years. Is this possible solely because of the fact that U.S. auto consumers recognize the immense value in owning a Camry? Is this also possibly contributed to by the fact that Toyota has a significant number of auto manufacturing and production facilities located within the United States and not long ago constructed the Toyota Technical Center in Ann Arbor, Michigan? Or consider the potentially more globally relevant fact that Japan is one the largest investors in U.S. treasury debt. Consider also the significance with the dubious distinction that Japan has one of (if not) the highest DEBT/GDP ratio for nations in the industrialized world as well as the fact that it has a significant U.S. military presence in the form of U.S. marine bases. What about the possible motivation among Americans due to our role in the bombing of Hiroshima and Nagasaki near the end of WWII?

Consider also Toyota’s potential drifting from the ‘global circle of influence’ as the U.S. attempts to hasten China’s entry onto the world stage in an effort to increase U.S. strengths while simultaneously reducing U.S. weaknesses. However, recall the long-standing relationship between the U.S. and Japan as well as the geographically significant location that Japan holds relative to China along with its important location in the Pacific Ocean.

6.1 The automotive industry and recent history - how bad has it really been?

For the time period from 2008-2013, consider some of the potential activities related to General Motors. At the end of the Bush administration (around August 2008), the bailouts were announced not for the Big Three but primarily for General Motors and the financial sector. Just prior to the bailouts, Macomb County decided to replace it’s board government format in favor of the more traditional county executive format, allowing a new set of/format for leadership to be ushered in. General Motors was split into OldGM (with the undesirable plants and products and legacy costs and outdated agreements and other liabilities, etc.) and NewGM. NewGM started purchasing important Delphi business units and continued pushing expansion into its strategic foreign markets. It also started production of its Chevy Volt and Cadillac/Buick Advanced Safety System equipped vehicles as well as blocking the sale of Saab to a Chinese company while later allowing it to be sold to a company within the European Union. Since around 2011, GM has returned to very significant profitability with consistently increasing (year to year) market share.

Consider that Ford Motor Company has gone a slightly different route. While it didn’t receive the same bankruptcy protection from the U.S. Treasury that General Motors and Chrysler did, it has still received many of the benefits afforded to the other two. Ford decided to pursue a colossal loan backed by many of the valuable resources which it owned. It earned many of the allowances which were achieved by GM and Chrysler through similar battles with its collective bargaining unit, its creditors, and automotive dealerships (just to name a few). Much of its legacy overhead costs were reduced and many of its unprofitable units were dealt with accordingly. Since around 2011, Ford has also returned to very significant profitability with consistently increasing (year to year) market share.

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