The Auto-Tech Mashup and the Birth of the Mobility Industry

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The people who assign SIC codes to America's businesses must be feeling a little sick themselves these days. The whole idea of a "standard industrial classification" feels a bit slow and archaic somehow in a massively connected economy where brands and entire industries now are constantly reinventing themselves.

This idea of reformulating companies as something larger than a mere business may have begun in the 1970s, when Penn Central famously failed in its attempt to solve the railroad's problem by becoming an even bigger railroad. Businesses in that industry subsequently realized that, to be competitive, they needed to position themselves as entities much larger and more all-encompassing: "transportation companies" that embraced intermodal shipping and more comprehensive logistics services.

This rebranding juggernaut gathered steam as airlines, hotels, restaurants and tourism destinations combined and collaborated to create the hospitality industry. Suddenly airlines were offering hotel and car rental packages, hotels provided airport baggage check-in and, as reported by Food Republic, airlines began bringing in superstar chefs "from the top of the food chain to revolutionize in-flight dining."

More recently, electronics companies like Sony have transformed themselves into entertainment companies with movie studios, and entertainment companies like Disney have carved out a huge niche in the retail arena. Amazon this year will begin producing original motion pictures for theatrical release and streaming, broadening its books and marketplace brand to a more inclusive entertainment category.

None of these suddenly enlarged, repositioned organizations, however, can aspire to the re-imagining that currently is shaking up America's automobile industry. The rapid proliferation of high-tech devices in cars and trucks is a trend that is trumpeted daily in news media and trade publications, but what's happening in the relationship between Detroit and Silicon Valley goes well beyond adding blind-spot detectors and streaming video to vehicles. Automotive leaders now seem to be blazing a new route for the industry, declaring that they no longer consider themselves just car companies, but rather "mobility companies." The rebranding echoes railroads, hotels and movie companies; but its impact on daily life is much greater, because it drives auto companies directly into the high-tech sector in a convergence of America's two signature industries.

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A Palpable Shift in the Role of the Automobile

This reboot was publicly initiated by Ford Motor Co. CEO Mark Fields in January, 2015, during the opening of a new research and innovation center in Palo Alto at the heart of Silicon Valley. Fields told reporters, "At Ford, we view ourselves as both a mobility and an auto company, as we drive innovation in every part of our business."

In the auto industry, this elevation of mission from building cars to becoming a mobility company is not simple posturing or repositioning. It's a palpable shift in the role of the automobile in American life. This new identity is a response to four societal trends:

1. **Urbanization:** Younger, older, single, childless consumers who are migrating to large urban centers have very different preferences, personal tastes and transportation needs than consumers of previous generations. All automotive marketers are confronting this new reality.

2. **A tech-oriented generation:** Millennials show much less interest in obtaining a driver's license than their older siblings or parents did. They do most of what they need to do online, so personal and mobile tech are more important to them than autos. Last year, Fast Company reported on this trend, observing,

   > *"Today…older teens and young adults don't need cars to achieve a sense of self and freedom. This generation's coming of age consisted of graduating from the Internet and CD-ROM computer games to hand-held mobile devices where they're establishing identities, relationships, and individualism online all day long—as much as, if not more than, in the real world."*

   Millennials are open to ride-sharing, they are in debt and very price-sensitive, and they demand a "touch of the button" in-car experience that is consistent with the tech they have grown up with.

3. **The environment:** Government regulations setting strict mileage and emissions standards in North America and Europe have compelled automakers to embrace the technology sector to find ways to meet these goals. At the same time, they have recognized the younger consumer's simultaneous appreciation of all things green and aversion to anything tagged with the label of "polluter" or that is perceived as inefficient technology.

4. **Connectivity:** Enabled by the Internet, mobile technology and broadband, cars will be able to talk to one another, to the roadway, to the driver, to service and maintenance systems, to insurance providers and every other player in the automotive ecosystem. This capability presents a vast opportunity for automotive marketers and marketers in general, with the potential for the car to become an advertising platform.

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The Convergence of Tires and Tech

Spurred by these trends, we are witnessing a mashup of the automotive and technology sectors. This convergence also comes in response to disruptions by new technology players in the auto industry, led by companies like Tesla, Google and—if media speculation is accurate—now Apple. The roots of these companies most certainly are in Silicon Valley, rather than Detroit, but they have sprouted revolutionary electric and driverless vehicle technology that has required traditional auto companies to accelerate their own tech innovation. From a branding and reputation standpoint, the auto industry no longer is a place for old-line, Rust Belt manufacturers. Consumers expect to be buying

and driving much more than a car; they want a flexible, mobile technology center. Similarly, Wall Street is set to reward tech innovation and punish laggards who are slow to not just adopt but also initiate advancements in vehicle-based tech.

Auto companies have come to realize further that, in the future, consumers will want an evolved set of transportation choices to fit their lifestyle—wearing and changing vehicles in the same way they wear and change their other mobile technology. They may seek out one car for tooling around a gated community, an electric or fuel-cell vehicle for moving around town, a driverless vehicle to transport them over long distances and mass transit for commuting. Such vehicles must meet both the demands of transportation and technology in equal measures.

As reported by Marketing Daily, Robert Passikoff, CEO of customer loyalty and engagement metrics firm Brand Keys, points out that "auto brand identity is driven by technology and 'right brand for me,' more than by even 'drivability,' durability, reliability and safety. But only 35% of cars have it right now, and everyone is playing catch up."

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For all these reasons, automotive marketers are connecting their businesses to the larger realm of transportation, which they envision as a comprehensive ecosystem that connects the car via its technology with other vehicles, the road, the home, the workplace, family members, travel spots and other destinations. In effect, this vision represents the next stage of the Internet of Things: the Internet of Transportation.

Even more, car companies are expanding their canvas to include other modes of transportation, just as manufacturers of TV sets and radios broadened their scope to include other forms of entertainment. Automakers see that the technology they are developing for cars can enable a larger transportation framework, so the next revolutionary mass transit and personal transportation systems—whether pneumatic pods or express-lane commuter trains—are certain to carry the stamp of automotive logos.

In fact, current trends suggest that, for a new generation of consumers, the vehicle itself is becoming less important than the technology it carries. Increasingly, young car buyers who were born with buds in their ears view the cars they want not as vehicles equipped with ever smarter technology but, rather, very smart technology packaged in an automobile.

Autonomous vehicles are further reinforcing the focus on tech. They will make traveling much less of a driving experience and more of an opportunity to transport and use personal technology in various locales and situations. Latest seat concepts for autonomous cars show swiveling seats for both drivers and passengers, allowing them to face each other while traveling to play games, chat and take photos.

Other clues to the importance of mobile tech over turbochargers is an emerging trend enabling the personal technology built into vehicles to be used beyond the vehicle itself. For instance, at the 2015 Consumer Electronics Show, HERE navigation—a unit of Nokia—displayed the results of its partnership with BMW that produced "Intelligent Drive." As described by CBS News, it consists of "cloud-based services that start before you get in the car and keep going after you get out. (It) syncs mapped routes between your mobile phone and the dashboard nav, recommends where and when to fuel up and park, and helps you get from your spot to your final destination on foot."

At the same show, Audi offered a rear-seat entertainment system that provided two HD tablets that can also be used outside the car as tablets.

A Power Plant in Your Driveway

Personal devices are not the only in-vehicle technology that will be used beyond the car. The groundwork is being laid for making standard passenger vehicles serve as renewable power sources for technology in our homes.

Honda recently announced the Honda Power Exporter CONCEPT, which the company describes as "a concept model for an external power feeding device that enables AC power output from the FCV (fuel-cell powered car) with maximum output of 9 kW. This FCV can function as a small-sized mobile power plant that generates and provides electricity to the community in times of disaster or other events."

The military has considered similar applications of excess power from its fuel-cell powered vehicles to provide electricity for camps. The Army Capabilities Integration Center has noted, "Military systems operate within power networks—on individual vehicles, within a base camp and often, connected to the local grid. A ground vehicle could be a net generator or consumer at any given time."

Like removable tablets and on-foot navigation, these strategies put in-vehicle technology to use even when the car is not moving, especially in times of natural disasters. While such applications likely will remain convenient secondary benefits of electric vehicles, rather than the driving market force for creating them, they reflect much of the current thinking of transforming vehicles into a support system for technology.

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Will the Auto Industry Become Extinct?

It seems, then, that the looming question is, will cars evolve from simply serving as ways for us to travel to a destination to primarily become a delivery system for us to add mobility to our technology for the purpose of applying our tech in various locations. Technology-delivered health care, smartphone-powered city walking tours, computer-based artwork of various locales, tech-generated entertainment all could become primary motivators for climbing into a car as a way to enable the technology within it.

Will the auto industry as we know it disappear over the next decade, replaced by a "fast-mobile technology industry" or some other term that reflects the primacy of tech over tires? When we consider what technology looked like 10 years ago—no Twitter, no iPhone, no iPad—it's reasonable to anticipate that the industry populated by automobiles will be something quite different 10 years from now. Five developments may lead us in that direction:

1. **Technology Is Driving Purchase Decisions.** According to a NASDAQ report, "the advanced technology embedded in today's vehicles is among the biggest driver for sales of new cars and trucks. With the average car on the road at 11.4 years old, many folks are feeling a bit of 'backup camera envy' - and they're heading to their local dealers with open checkbooks." Tech ranks above the vehicle itself in the consumer's image of the automobile, and that has huge implications for both consumer tech brands and auto brands. Who does tech better? Which leads us to…

2. **Automakers Need Tech Firms if Vehicle Technology Is to Actually Work.** While technology sells, it's increasingly bringing down quality and customer satisfaction scores. According to J.D. Power, "Automakers are trying to give consumers the new features and technology they want without introducing additional quality problems into their vehicles," said David Sargent, vice president of global automotive at J.D. Power. "However, almost all automakers are struggling to do this flawlessly with some consumers indicating that the technology is hard to understand, difficult to use, or simply does not always work as designed." This is why we see players like Apple and Google directly competing in the in-vehicle technology space.

3. **Silicon Valley Is Becoming America's Next Motor City**. Ford Motor Company's expansion in Silicon Valley is the latest example connecting automakers to the nation's technology heartland, joining BMW and the Renault-Nissan Alliance, among others. That's not to say, however, that Detroit is being passed by. In fact, the Motor City is

equal to that of Silicon Valley in terms of tech industry jobs, according to a recent Automation Alley research study. Combining those jobs with its history in automotive, Detroit's drive to work with the Valley will lead to a massive shake-up in the auto industry.

4. **Consumer Behavior Is Disrupting Dealership Structures.** Consider this. A car or truck is sold every 5 minutes on eBay via mobile. Toyota is experimenting with online buying that allows no-nonsense Millennials to purchase and arrange financing for a new model online before finalizing the sale through the dealer. Tesla continues to fight dealer franchise laws to sell direct to consumers and wants to disrupt the current retail model. Convenience is king, and the mobile experience reigns the kingdom.

5. **Autonomous Driving Will Antiquate Conventional Cars.** Google predicts that by 2025 we will see fully autonomous vehicles arrive in meaningful numbers. And, according to Boston Consulting Group, 44 percent of Americans said they would be likely to consider a self-driving car purchase in the next decade. The ability to multi-task on the commute to work, potentially lower insurance costs, and additional safety benefits (Google has claimed its self-driving cars perform better than humans in tests) were features they found most appealing. And they're willing to cough up about $5,000 for the right technology. This leaves a lot of unanswered questions that could disrupt our transportation sector: Will we need driver's licenses? Will we purchase vehicles, rent them or just hail a pod?

We already are witnessing a number of specific innovations that capitalize on the trend of viewing cars as mobility systems for technology:

- Traditional automakers in Europe and America are making rapid progress toward the development of autonomous vehicles. Germany is planning a pilot program to run driverless cars on the autobahn between Munich and Berlin next year, and Google is hurriedly preparing its own autonomous car.

- OnStar has introduced 4G LTE that in effect converts the entire car into a mobile hotspot powered by the vehicle.

- Gesture-driven entertainment and communication systems are being incorporated into dashboards to make the use of tech easier inside vehicles, as well as systems that boost signals to passenger mobile phones from an external antenna.

- Elon Musk, a founder of Tesla Motors, PayPal and SpaceX, is moving forward with his open-sourced Hyperloop transportation system that would propel people in pods through tubes at speeds up to 700

miles per hour, using magnets to automatically accelerate and brake the vehicles. He will be building a test track for companies and student teams to test their pod designs. If successful, the Hyperloop would become a new mode of transportation employing technology to compete with cars—a system that is all about technology and mobility without the automobile.

What Convergence Means to the Tech Sector

What the convergence of the automotive and technology sectors means to automakers is becoming clear, but what will it mean to the future of technology companies? Right now, we are in the early days and on the leading edge of the market potential for technology to capitalize on the automotive market.

At the least, it's obvious that technology companies have become indispensable partners for automakers. In 2012, the average new car operated with 100 million lines of software code. We can barely imagine how that figure will increase exponentially for driverless, connected and space-age vehicles. For American vehicles, that's code that is created largely in Silicon Valley and transported to vehicle hardware across the nation.

Auto companies now are actively investing in technology ventures to keep pace with and benefit from the latest tech. For example, in 2013 Ford acquired Livio, gaining access to its technology for porting broadcast and streaming music services into vehicle stereo systems and integrating apps into the car's display.

For its part, Silicon Valley is increasing its venture investments in automotive companies. Autotech Ventures, for instance, invests in early-stage transportation startups.

This mashup of autos and tech may become a threat to Detroit's traditional position atop the automotive market as tech gains a greater proportion of the resources and attention. Marketers and engineers in Detroit will be tasked to protect their territory and invest in the region's heritage as the car capital of the world by growing more of their own technology capabilities and retaining the most tech-savvy talent.

Ford's Mark Fields, in fact, told executives at the 2015 North American International Auto Show that one of the main motivators for setting up shop in Silicon Valley was to gain access to the technology talent there.

The Next Leaders and the Next Issue

In the past, the true visionaries of the auto industry have been those leaders who innovated manufacturing methods, vehicle designs, safety and comfort features—Henry Ford, Carroll Shelby, Preston Tucker, Lee Iacocca. In the future, the visionaries are likely to be those who best adapt the car to its new role in supporting technology.

Elon Musk is an early example of this relocation of automotive leadership. He is among the first technology-based business leaders to enter the automotive sector, with his wildly successful Tesla electric vehicles. Leaders are likely to emerge also from the Googleplex in Mountain View as Google builds its autonomous vehicle and enters the marketplace in coming years. Other innovators are certain to arise from the other major tech players, like Apple and Microsoft, as well as from overseas in places like Germany and China where autos and tech are coming together in new ways for traditional markets.

Whoever leads this convergence will quickly face a challenge that has proved to be the most unyielding roadblock to progress in the tech sector: data security. In February of this year, Democratic Sen. Edward J. Markey of Massachusetts released a report on the security of in-vehicle technology, based on information gathered from 16 automakers. The Markey report cited serious lapses in security and privacy that impact nearly every vehicle using wire technology.

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Markey's office found "a clear lack of appropriate security measures to protect drivers against hackers who may be able to take control of a vehicle (or) collect and use personal driver information." Equally disturbing was the fact that technology was gathering huge amounts of data on such parameters as the location of vehicles, where they parked, distance and driving times, and vehicle diagnostic data. At least nine of the carmakers used outside companies to collect this data, making drivers even more vulnerable to potentially dangerous situations.

The security of personal information in the form of location and driving habits is sure to become an issue that rivals the theft of information from credit cards, and federal regulations likely will be developed to avoid the misuse of this data.

The Marketer's Role

In the end, the role of the car vs. the computer will be determined by consumer preference. Are consumers ready for a computer on wheels, or will they continue to want a travel experience on wheels. Most likely, they will demand both, a "no-compromise solution" that produces a car driving experience with maximum technology and safety at a good price.

It's unlikely that consumers will seek a totally technology- and Internet-enabled automotive experience or that the auto industry will cease to exist. Cars still need to be manufactured, and the complexity of that process—given an increasingly complex supply chain and endless lines of code—will ensure that a substantial segment of the auto industry as we know it will continue to exist. We can expect, however, that cars of the future will operate like computers and the role of the human driver will be diminished. This is a significant shift and will require a tremendous amount of education, government cooperation and consumer marketing.

The marketer's role in all this will shift as dramatically as the auto industry itself:

- The car will become a rich, vast and expanding platform for marketers who use the data it collects in a sensible and legitimate manner.

- The car of the near future will enable more productivity, uptime and consumption for its drivers, advantages that marketers can leverage with communications targeted to the driver in a wireless-environment.

- Consumer devices and content of all kinds will have the ability to link to cars, creating an opportunity for marketers to extend their brands.

- Talent for marketing and communications talent in Silicon Valley will be in greater demand—and more expensive—than ever before.

- Consumers will continue to seek out a personal connection with their cars and an exciting driving experience, goals that marketers can shape with communications that recognize the very different interests and needs of the new car shopper within the context of connection and excitement.

Technology development has leaped from the desktop to the shirt pocket and now to the highway. Going forward, the most exciting new turns in tech are sure to be those along the path of its convergence with the auto industry. It's a reboot that will start new enterprises, new devices and new opportunities in a blended landscape of vehicle and virtual innovation.

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