

# Mississippi College Law Review

---

Volume 29  
Issue 3 *Vol. 29 Iss. 3*

Article 6

---

2010

## Automotive Symposium - April 16, 2010

Manfred Bischoff

Follow this and additional works at: <https://dc.law.mc.edu/lawreview>



Part of the [Law Commons](#)

---

### Custom Citation

29 Miss. C. L. Rev. 591 (2010)

This Article is brought to you for free and open access by MC Law Digital Commons. It has been accepted for inclusion in Mississippi College Law Review by an authorized editor of MC Law Digital Commons. For more information, please contact [walter@mc.edu](mailto:walter@mc.edu).

# AUTOMOTIVE SYMPOSIUM

APRIL 16, 2010

*Dr. Manfred Bischoff*

Ladies and Gentlemen, first of all, let me thank you for your invitation, which I was very happy to accept because—as some of you know—I have always had a very special relation and tight bond to Mississippi after spending my senior year, probably the most important year in my life, at Murrah High School, here in Jackson. But of course, this region is not only known for its hospitality, its charm, culture, and great people. The fact is almost every foreign automotive company that has come to the U.S. since the 1990s has chosen the “Southern Automotive Corridor,” and *Mississippi* is certainly part of it. Therefore, I would like to take the opportunity to discuss with you the “future of the automotive industry,” which is an important—and even an existential—question for all of us, for a company like mine, Daimler, as well as for an automotive location like Mississippi.

It is certainly true that over the past two years a degree of uncertainty has prevailed among the general public, but also within the industry. And this uncertainty is a result of a big pile of *unanswered* questions: How long will the recession last, and will we see a return to growth after it ends? Does the car or, more generally, individual mobility, have a future? If so, does this apply to all segments of cars? What is the drive system of the future?

Ladies and gentlemen, despite the fact that our industry has become drastically more complex and volatile, we—managers and political leaders alike—are forced to make decisions *today*. And these decisions will only be proved correct if our assumptions as to how the world will look in twenty or thirty years’ time are correct. Therefore, what we need is clear orientation.

For this reason, *any* responsible assessment of the future and the related decisions must be geared towards what I call “megatrends.” And by “megatrends,” I mean developments that perhaps do not take place from one day to the next, but are irreversible and also to a certain degree foreseeable. Let me illustrate my point based on six key megatrends.

## I. MEGATRENDS IN AUTOMOTIVE ENGINEERING

### A. *Geographical Shift in Sales: The Rise of Asia*

Ladies and gentlemen, no doubt, the last two years looked like doomsday for the automotive sector. Nevertheless, there are some rays of hope. These do, however, not come from our long-established sales markets, but from regions which nobody would have thought of fifteen years ago, certainly not with the growth rates we are seeing today. As recently as in the

year 2000, which is not really that long ago, 80% of demand for passenger cars came from the United States, Western Europe, and Japan. And what is the situation today, nine years later? Already, over 40% of passenger cars are being sold outside these markets. And according to all predictions, the demand for cars in those *new markets* is set to increase dramatically. But the dream that we could produce all the cars in Germany or Mississippi, which would then be sold in China, will most certainly remain just a dream.

While the incredible number of 13.6 million vehicles was *sold* in China in 2009, the *production* figure was even higher. And the top-selling model in China was not a Volkswagen Jetta or Santana—as one might have expected until recently—but the F3 made by BYD, in which Warren Buffet holds a 10% stake, an entirely Chinese company whose market share has reached 5% and continues to rise. Along with the reality that both the Chinese and also Indians are building vehicles of increasing quality, an additional fact must be considered: In political industries with an associated national symbolism—here I refer, along with the aerospace industry, in particular to the automotive industry—it has never been possible to sell something in the long run without allowing at least the big countries themselves to share in the added value. This hypothesis has also been proven right by the success of the South in attracting foreign automotive investments.

For this reason, one of the key challenges we face is the future geographical allocation of our industrial activities in relation to sales distribution. And the U.S. is in a good position because of its huge home market. Still, the reality is that the next ten years will see us become a much more *international* industry than ever before. This also raises a large number of other issues, which range all the way to the following: How willing are our employees—and, above all, our managers—to spend time working abroad? And there is another question as to how we incentivize and reward this willingness, as well as the question to what extent we have to integrate foreign leadership in our companies. This seems to be easy for Mississippi, but is more difficult for—for instance—Shenzhen.

### *B. Individual Mobility as Integral Part of Individual Freedom*

Ladies and gentlemen, especially the emerging markets, but also the example of the German reunification and the fall of the Iron Curtain towards Eastern Europe, demonstrated forcefully that individual freedom is a strong force and that individual mobility is an undisputed part of individual freedom. We, in the Western world, are used to it and take it for granted. For the emerging markets, for people coming out of poverty, it is something big, something they want to have as soon as they can afford it. This means that the wish for individual mobility is a trend, which is still there and even growing.

### C. Demographic Trend

Ladies and gentlemen, the *people* within our markets are also subject to foreseeable changes. To begin with, purely in *terms of numbers*, while the population of our traditional markets is stagnating or even shrinking primarily in Western Europe and Japan, it is growing drastically in other countries, foremost in Asia. And the world's population will reach 8 billion by 2025 and 9 billion by 2050. In other words, the rise of Asia, outside Japan, is reinforced by the demographic trend. Besides, demographic trends pose a specific threat to Germany by what I call "lack of engineers." According to recent OECD<sup>1</sup> studies, for every 100 engineers about to retire in Germany, there are only ninety young engineers available to take their place. This unhappy situation appears all the more unsettling when compared with the other OECD countries. That's because the average figure there is 190 young engineers (for 100 retirees). The concern for Germany can be a chance for the U.S.

If the necessary engineering education is developed in the U.S., especially in the South, there is an excellent chance for new employment. The real-time exchange of knowledge and information around the world that nowadays exists can certainly help us in building engineering centers of competence in the South, but also elsewhere. And many companies will have no choice but to take advantage of research and development capacities in locations where they are more readily available than in Germany, and this certainly offers opportunities for Mississippi if the preconditions are fulfilled.

### D. Finite Resources and Environmental Protection

Ladies and gentlemen, the close causal relationship between carbon dioxide emissions and climate change remains a controversial topic of discussion. Some of the headlines from the past few months include the following: manipulation of measurement results ("climate gate"); stable mean temperatures in recent years; and the sun's influence on our climate, which probably is greater than previously believed. And even if one accepts that carbon dioxide is the main cause of climate change, scientists tell us that, for example, Germany's ambitiously pursued target of putting 1 million electric vehicles on the road by 2020 will only reduce the country's carbon dioxide emissions by a truly tiny figure of 0.15%. And even that is *only* possible if all of the electricity is generated using renewable energy sources. Therefore, on the basis of the current German electricity mix, the effect would be scarcely measurable, which immediately poses the question of whether our efforts in relation to electric mobility are worthwhile at all. *In spite of this*, the strategic focus of the automotive industry on alternative drive systems is absolutely correct. Why? Because it is an undisputed fact that certain natural resources, such as oil, will become scarcer and more

---

1. OECD is the Organisation for Economic Co-operation and Development. See <http://www.oecd.org/>.

expensive in the foreseeable future, and will finally not be available any more—and combustion causes negative external effects. This growing concern not only alters the energy policy of countries around the world, but also quite specifically the wishes of our customers. And every marketing expert will confirm: “*Perception is reality.*”

Nowadays, who still wants to be regarded not just as being wealthier because he drives one of our cars—say an S-Class or an E-Class—but also as a “gas guzzler” consuming finite resources and pumping out harmful emissions? As a good friend of mine from New York once put it—he said—“Manfred, what I want from you guys is a 6.3 liter AMG with a label on the trunk that reads ‘Zero Emissions, Zero Consumption.’” And looking at our potential customers of tomorrow, it is easy to understand that this customer mindset is likely to prevail in the long term. Forty-four percent of young Western European men cite the environment as an important— or even very important—consideration when it comes to buying a car, and the figure among women is as incredibly high as 80%. Well, then, as you already know, our industry has reacted to this and is now pursuing a broad portfolio of drive technologies from optimized combustion engines—which dominate today and the years to come—all the way to the fuel cell and pure electric vehicle.

Please allow me to *briefly digress* at this point, as the question is frequently asked: Why don’t we, as the automotive industry, just concentrate on a *single* drive technology and really get it right? Well, the short answer is that we are not in charge of small start-up ventures, but must manage global enterprises. We therefore cannot put all our eggs in one basket and, if things don’t work out, lose a few million in venture capital and a couple of hundred jobs. I think you would agree that this is not an option. Therefore, we must think in very different scenarios and prepare ourselves for very different situations. The *long* answer to the question above involves looking in detail at the sheer number of technological unknowns and the complexities of the matters. Take, for example, the “energy storage battery.” For a moment, I leave aside hydrogen as energy storage.

1. How quickly can we solve the three conflicting factors of performance, service life, and charging time? When will lithium-air or lithium-sulfur batteries, for example, which offer even greater energy densities, become available? Or will we see other new battery technologies?
2. How quickly can we move down the cost curve once we start mass production?
3. When will ecological electricity be available?

If we look at the economy as a whole, we have to look wheel to wheel. But the car industry can only take care of the wheel part.

4. Will the infrastructure be ready in time without massive participation by the public sector?

5. What are the industrial and environmental policy measures of states? What will be the future laws on consumption and CO2 emissions? Subsidies for electric cars? Or even more dramatically, the possibility that the Chinese or the British or any other government will ban the use of combustion engines in some of its cities more or less “overnight”?
6. And then there is the significant issue of dependence on specific raw materials. You may be aware that 85% of the commercially recoverable resources of lithium—in other words, a raw material used in lithium-ion batteries—are located in very few countries in South America, for example, Bolivia. The situation is even more critical with the “rare earth elements” used to manufacture the permanent magnets fitted in electric motors. That is because virtually 100% of these are supplied by China, and the Chinese government is already in the process of introducing export quotas and selling the raw material in the form of finished products only. So, you can see that the switch to electric mobility also requires, among other things, that we are either willing to invest large sums in developing solutions that do not require these raw materials, or that we are in the position to establish and, most importantly, maintain, *long-term* friendly ties with all of the above countries—thus securing the supply relationships.

As a result, we are left with a whole range of *unanswered* questions, which the automobile industry *cannot* influence or answer on its own. This means that it is still almost impossible to predict how quickly electric mobility will succeed on the market, whether the market will split into solely urban transport (battery-powered) and inter-city transport (combustion engine, fuel cell), and how this split will happen. If you look at the serious studies of this topic, for Western Europe, they predict a share of electric vehicles that ranges from 14% to 50% for the year 2025.

So, how do we deal with this broad spread of predictions? Personally, I don't believe in the figure of 50%. However, an automotive company and also an automotive region must be ready for suitable products to meet a significant demand in this area. This means we have to acquire the necessary expertise and skills *today*.

#### *E. Customer Behavior*

Ladies and gentlemen, the fourth megatrend concerns the fundamental mindset of our customers regarding individual mobility. That's because in our traditional markets, and especially among young people—what I call the “iPod generation”—we are witnessing yet another change in behavior,

even though it remains to be seen just how strong or long-lasting it will be. However, the prestige associated with cars does appear to be changing.

I will exaggerate for a moment by asking the following question: “Is big ugly?” One example is the attitude of young Japanese to the “box cars,” which are aptly named because they look just like boxes on four wheels. Nevertheless, box cars enjoy great popularity among young people in Japan. A study released in Germany just four weeks ago also states that young people and young adults already rank cell phones ahead of the car on the prestige scale. According to another study, also in Germany, almost 50% of this age group does not regard the brand to be an important factor when buying a car. I believe this trend is not as strong in the U.S. outside California, but it is also there.

Ladies and gentlemen, especially the automotive industry in Western Europe and the U.S. with its focus on premium products and larger cars, must provide a clear answer to the question: What will the car actually stand for in the future? What elements must a vehicle fulfill to satisfy customer needs?

#### *F. Urbanization*

Another megatrend that will influence people’s attitudes to individual mobility is the significant increase in urbanization. Fifty percent of the world’s population already lives in major cities, and this figure will rise to two-thirds by 2050. In just five years, almost every fifth human being will live in a megacity with over 5 million inhabitants. Anyone who got stuck in traffic jams in Sao Paulo, Mexico City, Jakarta, or Shanghai knows that the average speed in these megacities is likely to be below ten miles per hour. In other words, even with electric cars—with batteries or fuel cells—we will still collectively be stuck in traffic.

To be quite honest, that is why I regard statements—such as that there are sixty-seven cars for every 100 Germans and only six for every 100 Chinese—as slightly misleading, to say the least, because the reality is that although countries like India, China, or Brazil have an enormous demand for individual mobility, in some places we easily reach the limits of the technically feasible in terms of traffic density. Therefore, it is essential that we prepare for this megatrend of urbanization and the need for inter-city mobility. And first steps, such as the “car-to-go” project of my company and car-sharing initiatives—can certainly become part of the answer.

## II. TECHNOLOGICAL PROGRESS

Extremely important for our industry—even though it is not a new trend—is the technological progress. Its importance cannot be overstated, because it is linked to a high degree of unpredictability and, also, it often progresses in leaps. In contrast to the fuel cell, whose technological development went at a steadier pace, the technological progress for batteries was extremely sudden and, as we know, did not originate from the automotive

industry at all. And it becomes clear why it will not be particularly easy for the Western automotive industry to catch up, if one bears in mind where the expertise and production centers for lithium-ion batteries are concentrated. China is the world market leader, followed by Japan and Korea. At present, 95% of the global supply of lithium-ion batteries comes from this region. In my view, this leads to a number of consequences for automotive companies and also for automobile locations.

*First of all*, it is obvious that more and more innovations will be incorporated in cars which were not invented in the classical automotive industry. And thus, we are confronted with the phenomenon that it is practically impossible for an automotive enterprise to be leading in *all* technologies at the same time. To put it simply, only the company will be successful which is able to identify very early technological innovations (regardless of where they take place), evaluate them, and adapt them as fast as possible for automotive manufacturing. To make it even simpler, we need to say “Bye” to the attitude “*If it was good, it would have been invented by us.*” It is therefore only logical that we at Daimler—as many others—started co-operations with what we believe to be the most competent partners: Tesla, Evonik, and, most recently, BYD. This is the only approach that will ensure long-term participation in this market. It would be sheer recklessness to proceed otherwise.

The *second* consequence for an automotive company such as ours is that we must now deal with innovation cycles, which are significantly shorter than those we are traditionally used to in our industry. This is because future innovation cycles will be defined by industries that have already learned to live by principles such as “*every six months, you have double capacity.*” Therefore, we must examine our own processes for research and product development to see how we can keep pace with this high speed of innovation—without diminishing our quality commitment in the process. It is certainly a difficult balancing act. From the perspective of an *automotive location*, I draw three conclusions.

*First*, we have to stay competitive in today’s technology, and today’s technology is combustion engines. And quite likely, it is to remain the technology of tomorrow, as well. I think that for the South it is important to establish and hold on to competitive advantages which go beyond cheap labor and subsidies. More and more, we need clusters of know-how, covering the entire range of the value-added chain of an automobile, and we need a climate that starts up with new technology approaches want to locate here.

*Second*, considering the trend to new technologies for the car, we/you have to do something. If we want to prevent important parts of the value-added chain from migrating elsewhere, we have to take national and regional initiatives for the car of the future. For example, a “pact for electric mobility” between universities and research institutes, the automotive industry with its suppliers, infrastructure and energy companies, and politics.

*Third*, politics will play an even more important role in the future. What will be the emission regulations? How much does the government subsidize the introduction of new technologies—for example, electric cars? What is done by governments to establish the necessary infrastructure or the electric drive? What are the priorities of politics with regard to emissions of cars, trucks, households, industry, and agriculture? And last but not least, how can it be avoided that the market mechanism is counteracted? How can we avoid, for example, that the government is subsidizing a company which has ruined its business with \$40 billion to the disadvantage of those companies that were successful. We have to take care that we still have a fair competition inside a market economy.

### III. CONCLUSION

Ladies and gentlemen, to sum up:

As automotive engineering enters its second century, it is certainly an industry beset by change—with the associated *consequences* for *companies*, as well as for *automotive locations*, such as Mississippi. The task for the management and the local politicians is to now seek or at least meaningfully assess answers to the outlined questions, and it should be clear that a large number of the basic questions cannot be conclusively answered at this point.

I have also outlined some of challenges faced by automotive companies. Taking the *example of Daimler*, entering into *external partnerships* will definitely be one of the major challenges. This is either because the required know-how is unavailable or is not yet in place within the company—for example, batteries—or because the necessary unit figures cannot be achieved without a partner—as, in our case, in the small cars segment. The ability to manage external partnerships successfully will, in my view, become a real competitive criterion. Those who master it will have an advantage. With regard to the overall strategy of my company and all the others, it can only be to manage the company in such a way as to ensure that even when *very different* economic and technological scenarios arise, the company is well positioned—stable in every respect and fit for the future.

What challenges do I see for a prospering automotive location like Mississippi? Well, let's look back to the *past*. How has Mississippi, which was long known as an economically challenged region, managed to turn itself around? Experts say that next to available land, infrastructure, low taxes, government support, etc.—above all, it had to do with people: with a motivated, high-skilled work force; with an exceptional mentality which can be described as “if it's broken, they are going to fix it”; permanent investments in training; and with universities having the right focus. Let me only mention the Center for Advanced Vehicular Studies at Mississippi State University. Well, the success factors of the past are still valid for a changing present and future. But considering that our industry is facing a paradigm shift, we certainly have to make one step beyond. I believe that

the automotive location will succeed which is best at bringing all stakeholders together to build a *cluster* of research expertise, production competence, and the availability of infrastructure. And for new automotive technologies, this again starts with things such as university education in, for example, electrochemistry. How many professors in Mississippi are doing research in that basic field of batteries? Well, my conclusion is that I am sure that Mississippi could be in a “pole position” if it does equally well in setting up a cluster for the new drive systems as it did for the automotive assembly and production.

Ladies and gentlemen, I wanted to address a few points in the short time available. I am certain that I have left many questions unanswered and am therefore looking forward to the discussion. Thank you very much.

