

# **Repositioning in the automotive world**

## **The challenges facing the global auto industry – the call for a new paradigm**

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The automobile industry worldwide is currently faced with a number of challenges. Some of these challenges are not really new. By this, I mean that the challenges of ever more safety and ever less environmental impact exist since quite a number of years. But these demands have become even more challenging than in the past; global warming and the false impression that the transport sector is the main responsible is just one example. We are also often faced with contradictions, and because of that engineering needs new technologies or new materials; this not only results in ever more product complexity, but also ever more costs.

In addition, we are since the recent past also faced with new, completely unexpected challenges. The current economic crisis has had, and continues to have far-reaching effects on the auto industry and the way it operates globally. And the ever increasing globalisation of the auto industry as well as of the automobile markets is also a very important factor to be taken into account.

All these challenges combined call for a new paradigm for policy makers as well as for the industry. The whole transport system must be re-positioned. We need to recognize, once and for all, that transport is composed of various elements, all working together; the vehicles, the fuels they use, the roads they use, and the way they are used by the consumers. All these elements must be treated as a single, all encompassing system. This is what we call the integrated approach and I will come back to this point later.

Demands for safety and environment will not diminish, quite on the contrary. Interestingly enough, these market pressures are spreading very rapidly towards markets where it was not expected to happen so quickly. I recently read a press article, in which an auto executive explained how he originally expected that China would be a market that would have gone through ABS for a number of years and then progressively move to electronic stability control; but he later on realized that the market in China is moving rapidly from standard ABS applications to the ABS/ESC combination, quickly going to the highest levels of sophistication.

Does that mean that the same safety and environmental requirements will ultimately prevail over the world? Unfortunately, I think the answer is negative, in spite of all our efforts to harmonize requirements and technology. There will still be marked differences from one country to another, due to different public policies, due to different local conditions, due to different infrastructures, due to different economics, and so on.

In any case, the demands for ever more technology will continue and even increase. Even the smallest cars on the market today carry levels of equipment, sensors, electronics and computer power which could not be imagined just a few years ago. Last but not least, the constraints regarding CO2 reduction and fossil fuel conservation call for the development of radically new propulsion systems, but at the same time, the internal combustion engines will continue to be in place for many years to come, as a well proven technology. These engines

have undergone, and are continuing to undergo tremendous improvements. As just one illustration of these efforts, in 2009, automakers in the US supported the U.S. National Program to reduce CO<sub>2</sub> by 30% through 2016. In addition, billions of Euros are invested in the research and development of new propulsion systems, from alternative fuels to hybrids, to battery electric cars, to fuel cells or to hydrogen to just name a few.

There is clearly a wide variety of technical scenarios, depending on the local situation. "Conventional" combustion engines using liquid or gaseous fuels will still continue to play a major role for the near to medium term. But here as well, we are facing a rather large variety of possibilities, looking at the various fuel types under consideration, including alternative biofuels.

Other types of propulsion will also gradually come up, first in niche markets, and may well in the end constitute a large part of the transport in urban or sub-urban areas. This situation again creates another challenge in that a certain market fragmentation is probably unavoidable, whether we like it or not. This fragmentation will unfortunately also increase the cost pressure, because development costs will automatically be spread over fewer vehicles using that particular technology.

It is obvious that the industry needs to position itself in such a way that it is able to contain these cost increases; part of the needed approach will be in the form of coherent fiscal government policies in order to keep the new technologies affordable for the average consumer. In this respect, one could cite the example of electric vehicles which, at least during their introductory phase will need supporting measures in order to partly offset the increased costs; interesting to note is that several governments, such as France, have recognized this fact and have taken the necessary steps to help shape the demand for these new technologies.

When it comes to safety, dramatic improvements have been achieved. There are today more vehicles on the road than before and as a consequence there is today a higher accident risk than before; but as confirmed by accident statistics, there is today a lower number of fatalities and injuries than before. The crashworthiness has been remarkably improved, with features such as safety belts with pre-tensioning and energy absorption, frontal and side airbags, energy absorbing front, side, and rear structures, pedestrian protection measures, etc. In parallel to that, also the active safety of vehicles is changing completely. We have seen in the past years the introduction of better braking systems, of ABS, of ESP, of high performance lighting systems, and so on. Advanced Driver Assistance Systems are now available, such as collision mitigation or even avoidance systems and lane departure warning systems. Further dramatic improvements are on their way with Intelligent Transport Systems, entailing multi-way communication and interaction between vehicles, or V2V and between vehicles and Infrastructure, or V2I.

All that shows that vehicle design and performance levels have undergone not only evolutionary, but also revolutionary changes and this will not stop.

However, improving the vehicle is only part of the whole story. I always use the comparison with a lemon: at the beginning, a low hand pressure is sufficient to extract a lot of juice, but in order to squeeze out the last few drops, you need a lot of force. The same applies to vehicle technology: previous technical improvements were, maybe not easy, but at least achievable; we are however reaching the point, or perhaps we have already reached it, where further technical improvements require huge investments in the research and development, and increased product costs. These costs may well become unsustainable in many markets, meaning that the latest and most sophisticated technologies may well, at least for some time, be reserved to a few markets, while others would need to wait till these costs have been sufficiently reduced. This has another perverse effect, namely that fleet renewal is slowed down when new technologies are not affordable. When one realizes that the large majority of pollution comes from a small minority of vehicles, namely the oldest ones, it is rather easy

to understand that new technologies do not necessarily translate in fast improvements of the fleet on the road.

Now coming to the ongoing economic crisis: the crisis we are facing has very strongly exacerbated the general need for the auto industry worldwide to re-invent itself. Clearly not all regions are affected to the same extent, with some winners, but unfortunately also with several losers. Especially the so-called "traditional" markets are among the losers, and these are precisely those where the focus has been for a very long time. New players have now entered the field and this needs an adequate response. A "traditional" manufacturer, if you allow me this term, concentrating all his efforts on his home market, is in my opinion doomed to stagnation at best, or to failure at worst. The current laws of the economy call for continuous growth, if only in order to safeguard the future investment needs, and this again calls for increased globalization in order to reach a balance of the complete picture.

I think the examples of the new emerging markets, such as China, such as India and several others, do not need further explanations. Manufacturers are clearly re-positioning themselves to be able to respond timely to the new trends, but this needs a complete re-thinking of the way we worked in the past. The tastes of a Chinese consumer are not necessarily the same as those of a European consumer, and this brings again another challenge: in order to be successful on these new markets, we cannot afford to give traditional answers to non-traditional questions.

All in all, we are faced with a combination of challenges: ever more product sophistication to meet the technical demands; ever more globalization, while at the same time diversifying the products offered on the various markets; and a sluggish economical situation which makes everything more difficult to fulfil.

This is why I think it is high time to change our basic paradigm. The whole concept of transport must be looked at in its entirety. When it comes to the vehicle specifications, we must ensure that there are no conflicting requirements resulting in a waste of energy, of time, and of money just in order to try to resolve these conflicts. This does not mean that safety must be compromised in order to improve the environmental performance, but rather that all factors need to be taken into account. Does it really make sense to require the utmost sophistication for new vehicles, when these do not meet the consumers' demands and therefore simply stay on the parking lots at the manufacturing plants and when old, outdated, unsafe and polluting vehicles stay on the roads much longer than they should? Does it really make sense to require this utmost sophistication and cost, when a much more cost efficient approach is readily available but the political will is missing?

The transport is a system, and all factors in that system must be looked at. When it comes for instance to the CO<sub>2</sub> issue, we will in the next few weeks publish a study showing, with concrete figures, what kind of reductions can be obtained through such an integrated approach. There is of course the vehicle itself, but that needs to be accompanied by political measures to ensure that the better vehicles enter the market as quickly as possible, and in sufficient numbers to really have an influence. There is also the question of the fuel infrastructure itself, since the coming new fuels, such as biofuels, electricity, compressed natural gas, hydrogen, etc, will need to rely on a good distribution network. There is of course the question of the fuel quality itself; just looking at today's gasoline and diesel, there is quite some difference between the various qualities offered on the market; modern sophisticated emission control equipment in the vehicles need high quality fuels in order to function efficiently; vehicles and their fuels are therefore to be treated as a system. In addition, better quality fuels will also improve the functioning of vehicles currently on the road, and may therefore have an immediate benefit on our environment, without having to wait for the replacement of the current park, which may take at least 10 to 20 years.

There is the question of the road infrastructure and the general issue of congestion. Several studies are available to give concrete numbers on something that everybody experiences in

his daily life: congestion creates unnecessary pollution and fuel consumption. Simply trying to reduce the number of vehicles on the roads is not a correct political answer to a more complex phenomenon. Instead, ways and means must be found to improve traffic flow, through a more efficient infrastructure, through better information systems to the drivers, through a better organization of transport. The study we are about to launch will give some concrete examples as to how sometimes very simple measures can yield huge benefits. There are finally the drivers themselves who need to better understand the basic concepts of ECO-driving and make sure that they use properly the technology offered to them. The auto industry has shown over the past its capacity for innovation and adaptation and it will continue to do so. The difficulties ahead and the absolute need for society to maintain and further improve mobility, however now call for a new paradigm. I firmly believe that an integrated approach is the only solution to an economically and socially viable sustainable mobility.

Thank you very much for your attention.