

Sustainable urban transport – the contested role of car manufacturers

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Abstract

Unsustainable urban transport is often linked to an unhealthy overdose of cars and road traffic. Due to the imperative of corporate social responsibility the car industry can no longer ignore this scapegoat role. This paper identifies two strategic options car manufacturers can espouse to tackle this challenge: (a) anticipating external developments and trends (corporate foresight) and (b) participating in policy making and agenda setting. While the first option aims at increasing economic objectives, i.e. preparing for changing market conditions, the latter can help achieve corporate responsibility objectives if based on principles of sustainable development. Drawing on selected examples of anticipating and participating activities of the automotive industry and their respective opportunities and limits, this paper will explore how these activities, if based on sustainable development principles, can help companies adopt a more favorable role and strengthen the cooperation of the public and private sectors in the quest for sustainable development.

Keywords: sustainable urban transport, car manufacturers, corporate foresight, participation in policy making.

1 Introduction

During the last decades, several cities have famously advanced in introducing massive traffic demand management measures, safeguarding their success by similarly ambitious pull measures (e.g. Singapore, Hong Kong, on a smaller scale London, Seoul, Paris). It seems that these cities have initiated a fight against cars but, looking at the actual results, they have actually improved the lot of the (remaining) cars: traffic is flowing more freely, and congestion, accidents and pollution have been significantly reduced. Research has shown that the stake



of car manufacturers in shaping these policies was minimal to non-existent [1]. It seems like they missed a chance to influence a policy initially designed at restraining car ownership and use. In order to get involved successfully in urban transport policy making, companies a) need to know in advance what kind of policies might be initiated and b) need receive a chance and then accept the opportunity to participate in policy making. Whereas major car manufacturers have a long tradition of forecasting and foresight, participation in policy making has been restricted to traditional lobbying, i.e. interfering at a stage where major policy strands are already fixed. The benefits of active involvement are obvious: Car manufacturers would be able to recognize the societal benefits of policies earlier, react to possible limitations on their products early, and significantly improve their public standing by fostering policies that increase the quality of urban life. Benefits would also arise on the public sector or planners' side. This paper will explore the opportunities and limits of corporate foresight for urban mobility policies and of private sector stakeholder involvement in the early stages of the policy making cycle.

2 Cars and car manufacturers as scapegoats of the sustainable urban transport debate

Resource scarcity, climate change, and emerging markets' rapid urbanisation and motorisation lately have intensified the long-standing debate about (un)sustainable urban transport [2]. The research community widely agrees on methods and measures of sustainable transportation, but there are significant disagreements on the implementation side [3]. These disagreements are often based on ideologies, hinged on opposing ends of the (anti-)motorization debate. This paper seeks to take a neutral stand, intending to free the debate from its dogmatic tones and to open it up for flexible, rational solutions that can benefit opponents and proponents, private sector, public institutions and citizens alike.

To start, it should be recalled that "sustainable urban transportation involves the provision of accessibility and the generation of wealth by cost-effective and equitable means, while safeguarding health and minimizing the consumption of natural capital and emissions of pollutants" [4]. This and other definitions [5] highlight the triangle of economical, social, and ecological development in sustainable urban transportation. Consequently, international transport research widely agrees on the following mix of measures to reach these goals: "The sustainable mobility approach requires actions to reduce the need to travel (fewer trips), to encourage modal shift, to reduce trip lengths and to encourage greater efficiency in the transport system" [6]. These measures aim at achieving higher levels of *mobility* and *access* with less *traffic* [7]. This paradigm is based on the insight that mobility and access are desired outcomes of urban development but motorised road traffic in particular jeopardises long-term sustainable development [8] by causing a wide range of problems:

In the face of this plethora of problems, how can the car retain its place in sustainable cities? In the past, conflictive interests and a lack of knowledge have often led to a neglect of one or two aspects of the sustainability triangle. Only an



integrated strategy of transport policy, land-use planning [10] and technical improvements on the vehicle side can possibly achieve sustainable development in a balanced manner and can cope with the complexity of the urban mobility challenge while overcoming seemingly inevitable development patterns like the widely mentioned parallel growth of incomes and vehicle ownership [11]. This would make possible the claim “not to prohibit the use of the car [but] to design cities of such quality and at a suitable scale that people would not need to have a car” [12]. Therefore, effective governance is a major consideration when building a sustainable urban transportation system [13].

Table 1: Problems in cities related to cars [9].

| Environmental | Economic | Social |
|--|---|---|
| <ul style="list-style-type: none"> ▪ Toxic air emissions ▪ Photochemical smog ▪ High greenhouse gas contributions ▪ Loss of forest and rural land ▪ Greater storm water problems from extra hard surface ▪ Noise pollution | <ul style="list-style-type: none"> ▪ Oil vulnerability ▪ Depletion of resources ▪ Costs from accidents and pollution ▪ Congestions costs ▪ High infrastructure costs in new sprawling suburbs ▪ Loss of productive agricultural land ▪ Loss of urban land to asphalt ▪ Obesity and other health impacts | <ul style="list-style-type: none"> ▪ Loss of street life and community ▪ Loss of public safety ▪ Accessibility problems for those without cars and those with disabilities (social mobility divide) ▪ Road rage ▪ Neighbourhoods cut up by roads |

Achieving sustainable mobility in cities neither will nor can rely on optimizing urban structures, car alternatives (pull measures) or vehicle technology (efficiency measures and regulation) alone. Even zero-emission vehicles will ease only a few of the above mentioned burdens of the automobile society. They will not reduce congestion levels, land use, accident rates, infrastructure costs, or the loss of “urbanity” [14]. Rather, there is wide agreement on the necessity to combine push and pull measures as experience has shown that vehicle owners rarely change travel behaviour and leave behind their cars unless there are significant disincentives to using a car. This insight adds demand management measures to the sustainable transport policy agenda, either by internalizing externalized costs caused by motorized traffic or winning back urban space to the “people” or other modes of traffic (push measures) [15].

Undisputedly, individual mobility will always remain a desired element of modern life, and motorised individual mobility will be a necessity in certain situations and geographical contexts; therefore, the car will not and cannot be eliminated from the urban (and even less the rural) environment. At the same time, “there is an increasing willingness to deal with the adverse impacts of mobility while acknowledging its benefits” [16] which includes, among others, controlling the unrestrained growth of car ownership and land consumption by roads. Along with the Corporate Social Responsibility (CSR) debate, which puts

businesses' ethical, social, and environmental performance into focus, the public wants to see this sincere willingness on the car manufacturer's side as well. Slowly, more public attention is being drawn to the untapped potentials of car manufacturers' responsibilities to advance the sustainable mobility paradigm beyond mere product innovation measures [17]. The sustainable transportation debate seeks car manufacturers to become true mobility service providers and to include aspects like seamless mobility, accessibility, and public and non-motorized transport modes in their portfolios.

This paper will explore briefly how car manufacturers – who are currently showing efforts mainly on the technical side – can show this willingness, too, by setting trends and shaping policies instead of merely reacting to them and thus escape the scapegoat role they have long assumed in the sustainable urban transportation debate.

3 Setting trends and shaping policies: OEM strategies to escape the scapegoat role

Traditionally, the role of car manufacturers in urban transportation planning has been a marginal one. As two independent systems – the planning sphere and the car manufacturing and distribution sphere – they had only few if any points of interaction. However, during the last decades, the amount of interaction has grown as emerging demand management measures and other regulations in urban transport have forced vehicle manufacturers and owners to adhere to standards (fuel/emission standards), limits (speed limit zones, bans on vehicles) or financing measures (toll roads, congestion charging zones). Likewise, increased environmental awareness has become an important factor in the vehicle purchase process and has made car manufacturers a central target of public attention, at least in the OECD markets. Adherence to laws and regulations is a minimum requirement for public acceptance and technological innovation for competitiveness. But experience has shown that this approach is not sufficient to free car manufacturers from their scapegoat role in urban transport development. Long-term success is only possible with a pro-active approach of setting trends and, if possible, shaping policies. Proactive participation and foresight has the power to inherently change the way the public, i.e. political bodies, customers, stakeholders, perceives cars and car manufacturers and thus significantly boost their economic performance.

The paper will now take a closer look at two strategies, foresight and participation, that car manufacturers can espouse in order to play a more proactive role in the future development of urban transport. As mentioned above, product innovation and technological advances are considered essential but insufficient for sustainable business development and are therefore not referred to in detail in this paper.

3.1 Corporate foresight

“The objective of foresight is to identify opportunities for science and technology to address challenges facing society” [18]. This general description



of the function of foresight can be modified: “The objective of *corporate* foresight is to identify opportunities for corporate research, development and innovation to address challenges facing society.” Therefore, any corporate research and development activity should not only serve their own economic interests and appeal to customers but benefit a wider range of society and its problems. The challenge is to address those problems which traditionally do not lie within the range of corporate objectives. Since the overall objective of sustainable development is achieving and retaining a high quality of life, in this case of urban life, more aspects than just environmental soundness of vehicles need to be addressed by car manufacturers.

Even though the future cannot be predicted – only possible and probable future scenarios can be drawn – and even though it is not clear “to what extent [...] further development is shaped by self-propelling mega-trends on the one hand and by planned interferences on the other” many future researchers and strategic planners are convinced that the future “can significantly be influenced” and “consciously be directed” [19]. Nonetheless, the fast dynamics of change make it increasingly difficult to assess even the near future. This challenge makes it even more important for dynamic business sectors like the automotive industry to analyse outside developments thoroughly and continually as well as to set trends themselves.

In order to shape the future and set trends, the future or “possible futures” must be known first. Future(s) studies (also: foresight studies) have evolved as a proper, though not yet widely acknowledged, scientific discipline with a standard set of methods. One central input or method of foresight studies and strategic planning is *environmental scanning*, i. e. a continual scanning of the changes and trends in the so-called STEEP sectors (society, technology, economy, ecology, politics) [20]. Key elements of environmental scanning are database and literature reviews, commissioned expert essays, key person tracking and conference monitoring. As organisations tend to view the world outside only as it relates directly to their business concerns it is the job of future analysts to engage their organisations in adopting a more holistic view. Experience has shown that “automotive companies, for example, may fall into monitoring only vehicle and transportation trends, ignoring or downplaying developments outside these two areas” [21]. Investigations among corporate foresight departments in various businesses have shown that there is a clear ranking among the STEEP sectors: Technology and economy rank on top, politics rank lowest [22]. The ranking in the automotive sector likely follows this pattern. Therefore, holistic environmental scanning becomes essential as trends outside the direct business concerns might influence corporate strategies. For example, the current global water crisis (water shortages and a lack of water and sanitation services) lies outside the typical automotive sector market research area but in the future might have implications for vehicle production sites and human resources.

Another core method of corporate foresight is *scenarios*, the most common method of futures research. From a wide range of influencing factors they develop one or more consistent pictures of the future. They often draw on insights generated by environmental scanning exercises and address strategic

challenges of a company or sector. There are two directions of scenarios: More common are forward scenarios which extrapolate the present into several possible futures. They are of a descriptive and often quantitative nature. Less often used are backcasting scenarios, which assume a desirable future and then trace back the path to arrive at this point in the future. It is of a normative and qualitative nature and serves as a strategy tool per se.

In addition to environmental scanning and scenarios, the core of future research methods used in corporate foresight consists of:

- Creativity methods (e.g. future labs)
- Expert interviews (e.g. Delphi)
- Systems thinking (e.g. System Dynamics)

In corporate foresight, these methods are then integrated into a framework comprising the following activities: *Framing, Scanning, Forecasting, Visioning, Planning, and Acting* [23].

For a more extensive overview on futures research methods readers may refer to the Futures Research Methodology of the Millennium Project [24]; for the application in corporate foresight please refer to the empirical study of Burmeister and Neef [25] and the strategic sourcebook of Bishop and Hines [26].

Futures research can clearly be distinguished from market research. Market research uses quantitative (usually linear) forecasts, attends to shorter time horizons (five to ten years) and looks only at trends directly relevant for the automotive market. Future research works with a broader range of possible future developments (derived from the methods named above, like scenarios or Delphis), looks farther into the future – the normal horizon for future studies at the point of writing this paper are the years 2030 to 2050 – and scans developments in all sectors and scientific disciplines. It is thus able to anticipate future developments that cannot be detected by a mere extrapolation of present trends. The actual asset of future research is that it enables organisations to initiate necessary change processes early.

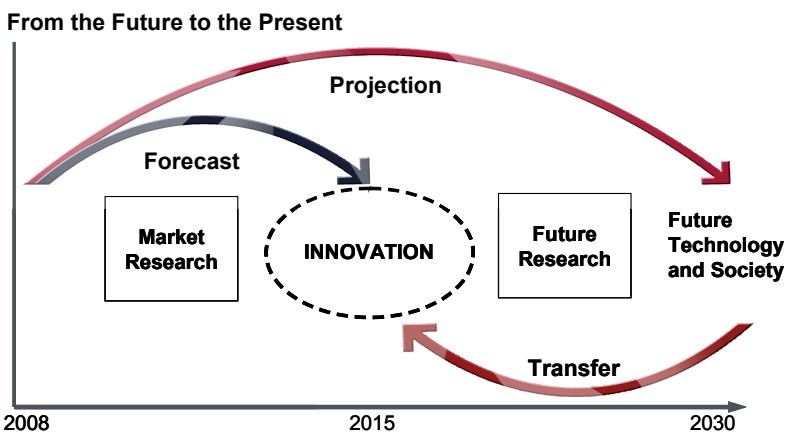


Figure 1: Market and future research.

Both market and future research are able to provide appropriate input for mid-term innovations that enable the corporation to thrive (and sometimes survive) in future dynamic environments. Innovations based on such inputs can range from mere gradual technology improvements to technological evolutions or strategic revolutions. Ideally, the communication of desirable innovations is followed by the initiation of the implementation process (transfer) which is then usually handed over to R&D and/or innovation management departments.

Most of the larger car manufacturers today have implemented foresight programmes, be it internally through own foresight or future research departments or externally through permanent consultants. Ideally, they are allowed to play the role of the “court jester” of a corporation and can hint at trend reversals and “inconvenient truths” early and repeatedly. Depending on their integration and standing in the corporate organisational structure future research departments can affect R&D programmes and business strategies in a way that aligns them with expected and, even more importantly, desired future developments.

The following examples of corporate foresight projects, randomly chosen, illustrate the scope of foresight activities in the automotive industry:

- **Environmental scanning database:** Volkswagen has developed and regularly updates its own environmental scanning database. It is categorized along the STEEP sectors and allows users to search for trends according to certain criteria and keywords. The database includes trend descriptions with sources and citations, forecasts, original references, rankings along criteria like short-/mid-/long-term trends and geographical areas, and a link to other Volkswagen research tools, including patent analysis instruments. The database serves as a resource tool for investigations on topics as needed, as a basis for new strategic foresight projects and helps to detect trend reversals early.
- **World Scenario Check (WSC):** The WSC was developed by Volkswagen to compare global scenarios and studies from a wide range of topics and authors/institutions in order to extract a common understanding about future developments. Updated every two years, these core megatrends serve Volkswagen as a base for corporate and research strategies as well as an input for innovation projects. The thoroughly indexed summaries of selected current global studies and scenarios are an additional reference base for environmental scanning. Additionally, the WSC generates a minority report from issues that are mentioned frequently but not based on a majority rule. These minority issues are similar to what is otherwise known in futures research as weak signals or emerging issues. Pursuing minority trends can be risky but if successful guarantees a unique selling point for companies.
- **Scenario study “The future of mobility – scenarios for 2025”** (Zukunft der Mobilität – Szenarien für das Jahr 2025) by ifmo (Institut für Mobilitätsforschung/Institute for mobility research): ifmo, a think tank financed by German car manufacturer BMW and other transport related companies, compiled the valuable report “The Future of Mobility” to provide a comprehensive overview of German mobility futures for 2025.



Forecasting possible developments – some of them strongly deviating from present paths – it invites a rethinking business strategies and innovation patterns. It also contains recommendations for policy makers how to change policies towards a mobility friendly future that benefits society, economy and ecology. Even though the methodology of this report has been criticised for various reasons it is still widely used in corporate foresight and public policy making due to its inherent decision-making relevance

These are just a few examples from a wide range of activities of car manufacturers to explore future developments. They differ in scope, purpose, methodology, and topics and always reach beyond the traditional scope of automotive market research. Thus, they ensure that the major strands of the global sustainability debate are not lost to the car manufacturer's view. Foresight activities allow companies to detect areas where new or adapted products and services will be needed and to set and shape trends according to their corporate strategy instead of merely aligning strategies with trends. In order to promote corporate foresight on a broader base, detailed evaluation and follow-up of foresight activities are still needed. Evaluation reports could serve as a proof for the effectiveness of corporate foresight activities.

3.2 Participation in policy making

Despite efforts to comply with increasing regulations concerning cars and traffic, car manufacturers still remain the preferred scapegoat of the urban transport debate. It is assumed that, if they participated actively in transport policy making they could not only influence and forecast policies and thus be better prepared for their own product developments, but they would also have a veritable chance to escape their scapegoat role and improve their public standing.

Another obvious reason to get involved in urban transport policy making is “that present-day urban transport decisions, especially major infrastructure decisions, can have large long-term effects on urban development and on future transport patterns” [27]. This is even more true for the emerging economies – an important growth market for car manufacturers – where “the future urban form and transport patterns of many of the cities [...] will probably be substantially influenced by choices made during the recent period of very rapid growth” [28]. The following paragraphs will explore the opportunities and limits of private sector participation in urban transportation planning.

Participation is the process through which stakeholders are involved in decisions that affect their lives. In urban and transport planning, the term “stakeholder” usually refers to the residents of a projected area. A broader definition of stakeholders comprises the private sector, public sector and other institutions that might be affected by a decision or policy. Participation has become more and more common in urban planning processes (therefore the communicative tendency of urban and transport planning), because planners and governments have recognized the opportunity to promote consensus when involving a larger public, but also because it has become a legal requirement in many planning processes. “When people are not involved in the creative process, the absence of their views can lead to future problems” [29].



The amount of public participation conceded in urban planning processes can range from minimum to maximum involvement [30]. There are basically two directions of private sector participation in urban (transport) planning. The traditional approach is to follow an invitation by decision making bodies to participate e. g. in public hearings, community planning weekends, citizen advisory committees, citizen juries and review panels, or negotiated rule making and mediation processes [31]. These forms of participation are usually directed at and designed for citizens and less for the private sector. Participation processes that formally invite the private sector to give their opinions are mostly found on the national or supra-national level. In contrast, opportunities for the private sector to get involved in policy making on a local level are rare or not promising enough to encourage participation.

Instead, some companies are beginning to expand into another direction of participation: pro-actively initiating forms of participation and involvement. Even though these kinds of activities usually start on a national level addressing more general topics and aim at opening up general discourses and influencing public opinion (market transformation), they can attract the attention of decision makers and may eventually influence their decisions. This may even reach the point where authorities include corporations in the decision-making process, at least – in order to avert democracy deficits – in a consultative manner.

Such self-initiated involvement in public matters is clearly to be distinguished from private sector investments in transportation projects (e. g. public-private partnerships, concessions) as well as from traditional “lobbying”. Lobbying typically steps into place after a political agenda has been set or a decision has been made; then lobbyists try to win back some of their stakes. “Lobbyists” are regarded by authorities as intruders or even trouble makers, less as rightful and welcome stakeholders, mainly due to the democratic deficits of their practices and to the strong bias of the goals they pursue. The participatory activities referred to here take place in the front end of the policy making process. They aim at shaping discourses and setting agendas, thus placing a company in the middle of society and its concerns. They can take on the following forms:

- public discussion forums
- (local) initiatives and action groups, associations
- cooperation activities
- sponsorship, foundations
- research projects, publication and lecture series

The following examples of involvement in public matters (co-)initiated or promoted by car manufacturers may illustrate the scope and purpose of such pre-participation activities:

- PSA Peugeot Citroen “Institut pour la ville en mouvement”/“**City on the move**” (IVM) [32]: The IVM, sponsored by the Peugeot Citroen foundation, creates projects that regard equitable and fair transportation systems, intermodality, and urban mobility culture. PSA Peugeot Citroen is involved in this issue because “it is aware of the risks and opportunities linked to the challenges urbanised communities are confronted with.” As the world’s sixth largest automotive manufacturer, it claims to “fully assume its

responsibility as a major player in city life” and devotes its various activities “to the betterment of the ‘City on the Move’.”

- **“Cities for Mobility”** (CfM) [33] is a global network of cities on questions of urban mobility. Over 350 communities, companies (among them Daimler and Porsche as major sponsoring partners), research institutions and civil society organisations from more than 50 countries participate in the network. CfM enables members from the automotive industry to engage in meaningful local projects based on sustainable transport principles.
- **World Business Council on Sustainable Development** (WBCSD) [34] runs a sector project on mobility. The widely acknowledged report “Mobility 2030 – Meeting the challenges to sustainability” [35] is not only a welcome resource for strategic planning and research regarding the future of mobility but also offered a chance for car manufacturers to participate in preparing the report. The skills, expertise and networks that emerged from the work on the report still benefit those who participated. More recently, the WBCSD initiative Mobility for Development (M4D) addresses the specific mobility needs and business opportunities in developing countries, based on the concept “Bottom of the Pyramid” developed by C. Prahalad [36].
- **Annual environmental forum of UNEP and Daimler** [37]: Each year, Daimler hosts an environmental forum together with the United Nations Environment Programme in a German city. This year’s mixed audience focused on issues in the field of global climate changes and the corresponding worldwide transport aspects and regulatory perspectives for fuel economy in passenger cars. Even though the forums focus on technological innovations in sustainable development, they also discuss some more far-reaching concepts for sustainability that help to manage the world’s growing demand for mobility, e.g. traffic infrastructure or CO₂-regulation in the transport sector.

The greatest challenge for car manufacturers is to get their involvement down to a local level. Here, opportunities are rare, and car manufacturers, usually not regarded as local, but as global players, are not expected or even welcome. There is an explicit need to investigate additional opportunities for the private sector to participate in urban decision making. However, the more general, communicative activities listed above can already paint a more positive picture of car manufacturers in the public and among professionals and decision makers. Even more importantly, they help car manufacturers detect signs of change early and strategically prepare for future challenges.

As for all participation activities, the private sector needs to fulfil the following requirements for successful involvement: adherence to sustainable development principles, clarity of objectives, high expertise in the subject matter (i. e. urban transportation), openness for alternative strategies and business models, willingness to cooperate and high level of engagement. In conclusion, it has become clear that there is room for improvement in both the private and public sectors. Together, they have to find ways of interacting effectively and

improving the condition of those affected by a policy or commercial good or service.

4 Conclusion

If the burdens of mobility are to be tackled effectively and at the same time high living standards are to be maintained, communities need to reduce traffic while at the same time guaranteeing higher accessibility and mobility levels. To reach this goal they will likely employ demand management measures, including infringing car ownership and use or road infrastructure. Anticipation and participation activities enable car manufacturers to forecast future changes and limitations and – therefore the term strategic foresight – to adapt their business strategies to changing urban environments. The current burdens of car-based mobility call for a shift from selling cars to providing mobility, i. e. a shift from mere manufacturing to service delivery. Integrated mobility services are the future of the mobility sector and will require cooperation between mobility manufacturers and providers on the one side and communities on the other side in order to cater to the needs of urban citizens as effectively and efficiently as possible. Car manufacturers can get ready for the era of integrated mobility services by closely scanning future developments and sincerely initiating discourses about sustainable mobility that are free of ideology and bias and conducted in a goal-oriented manner. As time progresses and governance patterns change, room for more direct involvement in local transport planning may open up and afford new opportunities for innovation and cooperation to the private *and* public sector.

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