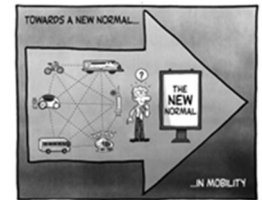
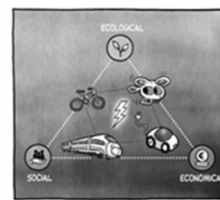
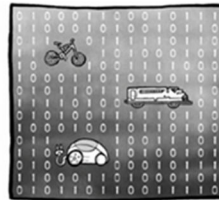


## FUTURE OF THE AUTOMOTIVE INDUSTRY



### Theses on conflicts and conflict resolution on the path to sustainable mobility

For many years, there have been complaints that the transition to sustainable mobility is not progressing, due to factors such as overly expensive electric cars, inadequate and user-unfriendly public charging infrastructure, a lack of seamless Mobility as a Service solutions, and problems with real-time data transfer. This is despite the fact that it is scientifically undisputed that this transformation is necessary in view of global megatrends such as urbanization, demographic change, digitalization, and, above all, decarbonization.

In this context, it is important to discuss how the implementation of new mobility concepts can be reinforced through regulations<sup>1</sup> and how the opportunities and challenges posed by increasing competition from technology and software companies as well as mobility service providers can be addressed.<sup>2</sup> However, this alone is not enough, because it is primarily conflicting interests that are hindering the necessary transformation towards sustainable mobility.<sup>3</sup>

What do conflicts mean on the path to sustainability? The core idea of sustainability is that we must not live today at the expense of tomorrow – in ecological, social, and economic terms. Sustainability goals are interdependent and lead to conflicts because every action can also have negative consequences and it is not possible to set clear priorities.

This also applies to mobility. Here are two theories on the conflicts on the path to sustainable mobility and possible solutions to these conflicts:

### Thesis 1: In everyday mobility, many unresolved conflicts hinder the transformation to sustainable mobility.

Many unresolved conflicts are hindering the transition to sustainable mobility, for example in the transition to electric mobility.

- social conflicts, e.g., over fairness and distribution in the event of competing uses between

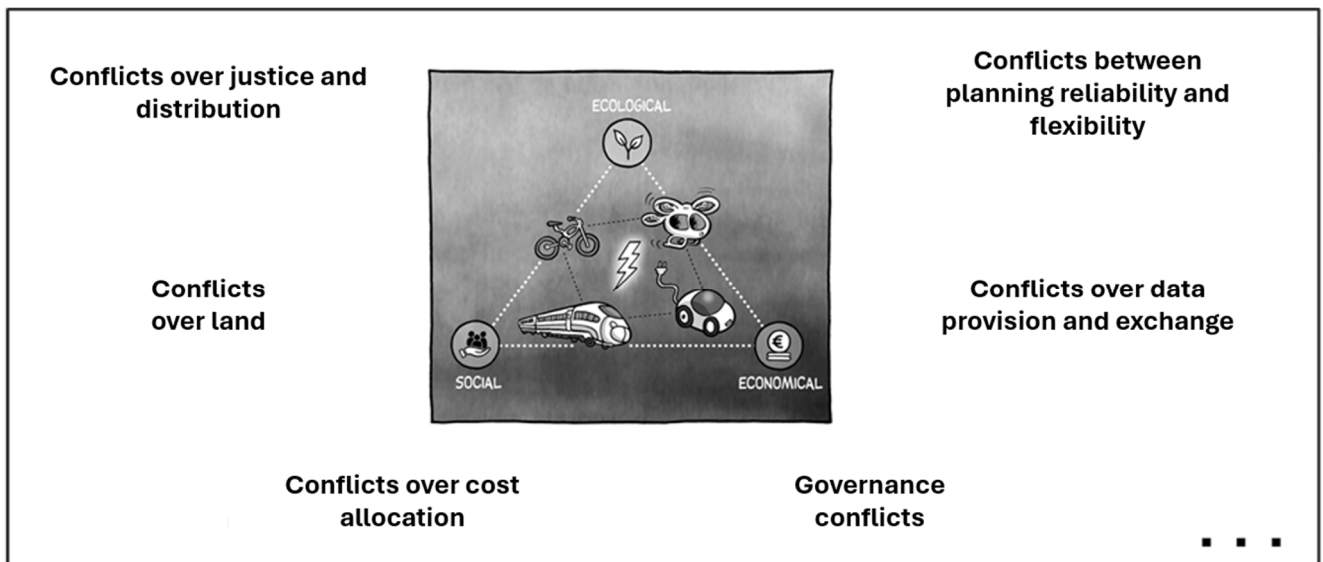
<sup>1</sup> See the discussions at the 15th Science Forum on Mobility, summarized in the conference proceedings: Proff, H. 2024. Next chapter in mobility Wiesbaden: SpringerGabler.

<sup>2</sup> See the discussions at the 16th Science Forum on Mobility, summarized in the conference proceedings Proff, H. 2024: New players in mobility. Wiesbaden: SpringerGabler.

<sup>3</sup> The position paper is based on discussions at the 17th Science Forum on Mobility and is summarized in the conference proceedings: Proff, H. (2026): Solving conflicts on the way to sustainable mobility, published by SpringerGabler.

residents, businesses, and visitors, especially in cities. Conflicts over land use, e.g., between open spaces with high recreational value and areas for energy and transport infrastructure (between urban planners and network and charging infrastructure planners), and conflicts over land costs vs. a levy on rent,

- governance conflicts between private-sector and public mobility solutions,
- conflicts over data provision and exchange, and also
- intertemporal conflicts between planning security and flexibility due to changing technical and economic optimal mobility options. Once a plan is made and implemented, flexibility for change decreases.



This means that the transformation of mobility is similar to foreign trade, where each country optimizes its own goals and thereby prevents trade, instead of growing together through trade and distributing trade profits.

One example is Mobility as a Service (MaaS), an integrated offering of various mobility services via a single platform. This mobility offering is considered socially and ecologically promising and is increasingly in demand by customers and urban stakeholders. Despite this potential, networks of different mobility providers (MaaS ecosystems) are not yet economically viable. The situation is similar with the charging infrastructure for electric vehicles. It enables lower-emission vehicles, which offers ecological advantages, especially in city centers, but favors owners of houses and apartments with their own parking spaces and is therefore not very social. In addition, electric vehicles are still quite expensive, at least to purchase.

## Thesis 2: Different approaches are needed to resolve the conflicting goals on the path to sustainable mobility.

When there are conflicting goals—such as those on the path to sustainable mobility—it is not possible to decide on one goal or to fully achieve several goals. Therefore, it is fundamentally important to

- continue to think boldly, bigger, and beyond system boundaries to create new options for action,
- continually review familiar and existing solutions, because often they simply have not yet been implemented, and
- also transfer solutions from abroad to the national context.

However, conflicts can vary in their persistence. The literature therefore distinguishes between resolvable conflicts of interest, which can be resolved within a company's hierarchy, through negotiation, or in competition, and irresolvable conflicts of interest, for which mediation solutions must be found as the lowest common denominator.

Competitive solutions mean new business ideas that promise profits. For example, attracting new customers for an integrated offering of different mobility services via a platform (MaaS), such as commercial customers who offer their employees a mobility budget, would bring more interaction to the platform and make the ecologically and socially sensible mobility solution more economical. New business ideas with economic potential can also arise from linking different economic sectors, e.g., energy, mobility, and automotive companies in bidirectional charging, where vehicles not only charge but can also use the charged electricity in the company or feed it into the energy grid, which promises additional revenue and increases the profitability of electric charging. The stock market is responding positively to such sustainable innovations. Der Einsatz von künstlicher Intelligenz kann ebenfalls Konflikte auf dem Weg in eine nachhaltige Mobilität verringern. Ein Beispiel sind „over-the-air updates“ Software-definierter Fahrzeuge, die die gesamte Wertschöpfungskette durch den Übergang vom Hardware-Fokus zu einem Software-Fokus verändern und damit den Lebenszyklus der Autos verlängern, was unmittelbar positive Auswirkungen auf die Umwelt hat. Eine ähnliche Wirkung hat auch die Zwei- und Mehrfachnutzung (second- or multi-use) von z.B. gebrauchten Autoteilen wie Batterien im Rahmen der Circular Economy.

The discussion about conflict resolution differs across various academic disciplines<sup>4</sup>:

- The basic tenor of the business discussion is that investments should be made in the transformation of mobility rather than in growth, because the transformation will open up new market opportunities and thus enable growth.
- Technically, solutions to conflicts are available: i.e., the technologies currently being developed can resolve conflicts on the path to sustainable mobility. Long-distance journeys are no longer a problem thanks to larger battery capacities and fast charging options. Commercial vehicles are also increasingly electric, the prices of electric mobility are falling, and ride hailing and sharing are being promoted.

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<sup>4</sup> These are the direct results of discussions at the 17th Science Forum on Mobility on May 15, 2025, in Duisburg in five different tracks (Mobility Management, Mobility Engineering, Urban Mobility, IT and Services for Mobility, and Competition and Support for Mobility), which are summarized in the conference proceedings: Proff, H. (2026): Solving conflicts on the way to sustainable mobility (published by SpringerGabler).

- From an urban planning perspective, however, many conflicts are not so easy to resolve. The problem is that people see “their” personal solution as the only correct one, which leads to constant conflicts of interest within cities — e.g., between more green spaces and more space for (electric) cars. While autocratic systems find it easier to restructure mobility, in Europe it is necessary to persuade people who do not act rationally to embrace change. This requires encouragement and experimentation, also in order to create greater acceptance.
- From an IT perspective, it is important to get started and view mistakes as learning opportunities. IT can therefore be seen as a mediator of conflicts on the path to sustainable mobility. In principle, almost anything can be programmed, but it also has to be done. The desire was expressed to become more courageous in Europe and try out more IT solutions.
- The transformation to sustainable mobility must be cost-effective, but this is possible. Decision support methods, such as multi-criteria assessments, are very important in order to address the conflicts on the path to sustainable mobility more comprehensively. Until now, economic considerations have dominated over ecological and social assessments.

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