DaimlerChrysler´s ‘‘Society and Technology Research Group‘‘ provides future-related navigation knowledge for strategic decision support. Scenarios form important instruments within this pursuit. This article presents the guiding principles of the group, including their transformation into concrete project work, as they emerged and have been proven by twenty years of business-related futures research.

# Futures Research at DaimlerChrysler: Stocking up with Plans and Visions*

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Successful decision-making requires thinking in advance about consequences. Taking consequences into consideration becomes more urgent and more difficult as the impact of a decision increases. When the situation is less transparent and the environment is complex decisions to be successful require a futures perspective even more.

This relationship of futures to decision-making is nothing new, but it is getting more and more effective in business and in other kinds of organizations. Big business projects are also not new, but the abilities to plan and implement huge projects have grown incredibily. As a consequence, both projects and organizations have escalated to scales not seen earlier. But even small and medium size businesses are confronted with strategic questions that reach years into the future. Obstacles to transparency have increased even more than the skills and instruments to understand the present. The acceleration and globalization of economic, information, ecological as well as societal and political processes suffice as illustrations of the reasons for this reduced transparency of the future.

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Taking a theatrical metaphor, serious futures research has to perform on a stage and deliver benefits, and be neither charlatanism nor apparatus lost behind the scenes. And the rows in front of that stage must not be or become empty. Futures research to be effective must have an attentive audience.

Due to these requirements and conditions, futures research within business organizations is rare. At DaimlerChrysler, there has been such a unit since 1979. As a lab unit of DaimlerChrysler´s Research and Technology department, the Society and Technology Research Group now has about 30 consulting researchers in Berlin, Germany, and Palo Alto, California, complemented by an outpost in Kyoto, Japan. Additional to the core group, about five Ph. D. students and about ten students and interns contribute to the work, as well as a network of external experts from universities and other knowledge pools that are consulted on specific projects. The group serves mainly DaimlerChrysler and its busines units, but works also to a limited degree for external customers from outside the automotive industry. The work is focused on the developments that will shape the markets of tomorrow. It is oriented towards the business environment in the mid and long term future, taking an interdisciplinary and international approach. In this way, the Society and Technology Research Group is an institutionalized, lively early warning system of global scope and network.

The mission is not to know in advance, but to think in advance, to fill the stock of plans and visions from which strategic decisions are drawn.

In this pursuit, scenarios have proven to be especially useful instruments. They are assumed to be well known to the reader. Beyond instruments and tools, some basic principles and guidelines have emerged from the interplay of conceiving, practising and reflecting futures research within a big company for more than twenty years. These basic principles illustrate the concrete work of the Society and Technology Research Group and highlight the specifics of futures research performed for and within business organizations.

These basic principles are
- Focus on the decision!
- Focus on the future!
- Strive for interdisciplinarity and internationality!
- Apply systems thinking!
- Maintain methodological pluralism!

- Interact with your clients!
- Work on multiple projects simultanously!

Following is a description of these basic principles.

**Focus on the decision!**

The tasks and decisions of the clients have an emphatic importance in the beginning and in the final stages of our projects on futures and business environmental research. The relevance of the outcomes and, thus, the acceptance and usefulness of our work depend on this decision focus. Business futures research is no end in itself nor needs just to be intriguing. It is both preparation and support for strategic decisions.

That focus translates into the concrete project work as follows:

- Most of our projects are directly commissoned, by DaimlerChrysler´s business units and sometimes by external clients. This leads to a well-defined orientation towards the customers or users of the research and their needs and demands. However, the mission of business research (preparing for product development), and especially that of futures research, requires contacts and studies that reach beyond the articulated present needs of the clients.

- A significant share of project resources is spent on the clarification and definition of the tasks and the necessary decisions of the users of the project results.

- Another significant share of project resources is spent on the transformation of the findings - scenarios, trends, dynamic patterns - into references and options related to the anticipated decisions.

- Project work is completed by parallel development of communication strategies and concepts.

**Focus on the future!**

This trivial sounding maxim is nevertheless indispensable. Our work´s reference point in time is the world of tomorrow, for which the strategies and decisions of today have to build success. Organizational and cognitive patterns suggest and support all too easily the implicit-— and therefore often unchecked - premise, that the future will be a prolongation of the past. It is not a small task

of business futures research to overcome this blockage to effective thinking.

That translates into concrete project work as follows

- The time horizon of a study has to be chosen and fixed in a well-considered way. This is especially true for the scenarios that are to be developed in the research group´s futures laboratories. A well chosen time horizon is an undispensable channel for studies and discussions.

- The assessment of change processes and process velocities is faciliated by specific time horizons. Diverging judgements can be made consistent more easily as well.

**Strive for interdisciplinarity and internationality!**

Complex problems do not end at the boundaries of the disciplines - they cross the borders. Innovation emerges where established disciplines touch or overlap in a new way. Because of historic achievements in the core areas of the established fields of competence, many of the continuing and developing problems and fascinating questions are on the periphery or in overlapping areas of the disciplines.

This is especially true for mature enterprises and other organizations, where not only the cooperation between disciplines is needed but also communication and adjustment across functions and divisions is a crucial precondition of success.

Similar considerations and experiences lead to the principle of internationality, not only of research goals and issues but also with regard to the researchers themselves. Culturally and nationally different and diverging points of view are needed to achieve a good understanding of the problems and questions that emerge from the ongoing globalization of the business environment. The worldwide scope of the company´s markets and market acitvities, and the internationalization of the company itself, require an international conceptual framework.

These principles translate into the concrete work of the research group as follows:

- Currently, more than fifteen disciplines are represented iin the Society and Technolgy Research Group. Economists and MBAs work with sociologists and physicists. Communications scholars do projects with engineers and psychologists. Historians describe the history of the future jointly with philosopers and political scientists. Many have multiple educational and professional backgrounds. The diversity of the academic competencies of the staff is one of the guiding principles of the group´s recruiting policy.

- Recruiting happens mainly through direct contacts, speeches and lectures at universities and other semi-public events as well as from a continous stream of applications. A permanent interest for new talents is communicated. Every year several researchers leave while about the same number enters the group.

– Similar conditions are pursued with regard to the researchers´ cultural backgrounds and the regionally influenced ways of looking at the issues. Presently, the staff is formed by members from Western and Eastern Europe, from North and South America, and from Asia. External cooperation and temporary working visits for international studies enrich the cultural diversity even more.

– Two offices are maintained continiously, in Berlin, Germany, and in Palo Alto, California. A part time outpost in Kyoto, Japan, completes the triangular presence. Despite the group´s origins in Europe, the office in the U.S. and the outpost in Japan are run by researchers with local backgrounds, following the principles described above.

- Larger project teams, especially those for scenario construction, include several to many representatives of the client organization or department. The principles of diversity mentioned above require client participation across functions and levels of hierarchy.

**Apply systems thinking!**

In their daily work, the specific departments and smaller units of organizations are only engaged with fragments of their relevant environment. A long-term view of possible environmental developments has to cross over the limits of these partial environments in looking for driving forces: for example, what will happen in the market for long range

commercial aircraft in ten years depends not solely on factors within that market itself. Even the economy depends on more than economic issues. Incidents at the fringe of the models of the world generate the most surprising and often the most consequential changes.

Systems thinking, understood as a more comprehensive view of factors and interrelations including loops and impact cycles, is one of the most powerful and creative approaches in futures research and in strategy development. This systems orientation regards the company as a part of or a subsytem of the business environment, to which it is connected existentially, not just via its sales and markets.

- Systems thinking in our concrete work means first and foremost that futures research is research on the business environment. The future development of the relevant factors, including all „trend breaks'' and discontinuities, stems not from those factors themselves but from the influencing conditions. Considering the future behavior and moves of the market actors, one comes to questions about taxation, working life, family cycles, life expectations and many more concerns. Systems thinking leads directly and inevitably to the need for interdisciplinarity.

- Scenario elements and variables are looked for and choosen deliberately to reduce the individual blind spots on the part of participants and clients that stem from their specific task or educational background.

- The core phase of many scenario building processes is formed by a systemic and above all systematic analysis of the interrelationships among the focal factors, e. g. in the form of a consistency analysis or a cross impact analysis.

- A subsequent analysis of systems behavior as whole, and its interrelationships, sometimes provides more useful insights than a simple derivation or calculation of system states.

**Maintain methodological pluralism!**

Proper problem solutions require proper methods. For a person who has only a hammer, every problem is a nail. Especially in social scientific problems and questions, every restriction to a single method leads to a loss of

options and insights. This is important in a business context, where more social scientific theories are in use than it is usually realized. And if the long-term environment related perspectives of the company are in question - as is the case in every effort of business futures reseach as we define it - then it is inevitable to confront oneself with the objects and issues of the social sciences, as difficult as they might be. Social scientific questions require methodological pluralism, as no single method is sufficient to give urgently needed answers.

Another reason necessitates a well equipped tool box: the varying amount of material and time resources in a specific project or assignment. Procedures and analytical methods that produce useful results in „big'' basic research and orientation projects are often inadequate where the demand is for support of an accelerated decision process.

- Accordingly the repertoire of the process models and methods employed by our research group is big. The methodological diversity springs also from the participating disciplines and professional backgrounds. For scenario building alone there are three primary types of procedures that are modified for the specific decision and research task. Additonally, there are expert interviews and workshops, sensitivity analysis, systems modelling, analyses projecting acceptance [market forecasts], as well as the advanced instruments of the empirical social sciences.

- Specific resources of the research group are dedicated to the development and testing of new methods and instruments of futures and environmental research. These activities form the group´s R&D field.

- In methodological development, modules or building blocks are striven for, that allow for an efficient tailored research and process design.

- Methodological cross-evaluation serves also as quality control, besides the peer check installed by parallel and changing project assignment (see below), besides the internal presentation and discussion of specific projects and besides the main instrument of quality control: customer satisfaction and the continuation of customer demand.

**Interact with your clients!**

There is no business environment and no future „as such.‘‘ Both get intelligible in study only with regard to the users of the results, that is, the „customers‘‘ of our futures research within the company. Therefore, the close and continous alignment with the clients´ needs and the integration of the clients into the project, especially in scenario construction and interpretation, are a core principle in our work. This participation is crucial not only for the quality and applicability of the content. The acceptance of the results, always fragile in futures research, is also fostered by the client´s participation. If intentions of organizational development or knowledge management are pursued through the development of scenarios in „structured communication processes,‘‘ the active participation on the client´s side is indispensable.

That translates into concrete project work as follows:

- Integrating the client into the project work is a standard feature in most of the futures research assignments. At least the beginning („What´s the focal decision ?‘‘) and the last stage („What does that mean for our strategy?‘‘) of a project are performed by a joint team. If there is definitely no chance for this, we consider very thoroughly whether the customer’s goals and expectations can be fulfilled. Transfer strategies that go beyond mere report writing, can help in this situation.

- Especially the options to act can only be derived from close dialogue with the client. An isolated discussion of the consequences on the client´s side carries the risk of missing the strategic richness of the multiple scenario approach.

**Work on multiple projects simultanously!**

A worldwide company, present in many markets with many products, comes up with a lot of questions for futures researchers that require a high degree of content flexibility. Over and above that, the striving for interdisciplinarity necessitates close communication and cooperation through the whole research lab. Working only in teams, working on several projects at the same time, and job rotation together have proved to be an adequate organizational mix to cope with those requirements. The Society and Technology Research Group has no fixed

departments, even if each of the researchers has some fields of competence where she or he has to stay up to date.

Simultaneously working in different teams, on different tasks, for different clients quickly widens the individual's competence and facilitates the discovery of new interrelations among trends in the business environment as well as in the transfer of futures research results among different divisions.

That translates into concrete project work as follows:

- The research group´s work is totally in the form of projects that have a starting point, an end and a budget. The well-known benefits are flexibilty and a sharp focus on results.

- Newcomers are acculturated in approach and methodology by working as juniors on several projects in parallel. Learning by listening, looking and doing in the context of concrete projects has proved to be the most effective and efficient way to integrate new members without overwhelming them or underchallenging them. Nevertheless, there is a set of documents describing the group and its approach as well as specific procedures. Newcomers are asked to attend to presentations given by colleagues to external visitors, etc.

- Even small tasks are performed by at least two researchers. Working alone is rare.

- Every researcher is engaged in several projects at the same time, in different teams and in different roles. Being project manager in one assignment, the same researcher has just a qualified supporting role in another one.

**Examples**

Some examples, diguised due to confidentiality requirements, might illustrate the work of DaimlerChrysler´s Society and Technology Research Group:

- For the strategic planning of a product division, the future of the relevant business environment in Europe has been described in three scenarios of the time ten years ahead. The scenarios are

anually updated, strategic options are mirrored in these scenarios, facilitating the consideration of opportunities and risks.

- At an aircraft component plant, medium-sized and run as a profit center, the group enabled the top management team to construct scenarios of their future business environment, from industry structure to regulations and holiday fashions. Decisions on acquistion effort and capacity changes were confronted with the perspective of the future scenarios.

- At a real estate investment company, the thorough analysis of the future regulatory and tax environment, in combination with economic prospects and the future aspects of alternative investment options and social security systems, lead to the development of more robust investment products, relying more on the „internal economics‘‘ of real estate objects than on their profile of (volatile) tax incentives.

- The tourism management of a large European vacational region orders every two years parallel scenarios of future tourism that are used for marketing positioning efforts as well as for the creation of new holiday products and services.

**Limits**

In general, the limits of futures research for and within business organizations are to be observed, too. Especially two insights are to be respected and to be maintained for serious and responsible futures research:

First, the time of crystal balls is gone, if they ever existed. But the demand for crystal balls is still alive. Anyone who delivers unconditioned forecasts is a charlatan, not much better than the rainmaker in fomer times. This is even true if the wider business environment and its long term perspective are under consideration.

Understood as „thinking in advance‘‘ to fill up the stock of plans and visions, asking „What might happen?‘‘ instead

of „What will happen?,‘‘ futures research can improve business decision processes significantly, even without defining the future.

Second: Futures research can improve strategic decisions, not however making them easier. It can not substitute for decisions. It strengthens the attention and the receptiveness to environmental change and delivers at best options and an assessment of chances and risks related to these options. To weigh these options and to choose among them in the context of business situation, strategy and resources, remains the task of the decision makers. Strategic decisions cannot be delegated.

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