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Foresight Toolbox for Small and Medium-sized Enterprises

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Purpose

“Foresight-Toolbox für den Mittelstand” is a research project to evaluate the specific needs of and identify suitable methodological approaches for strategic planning in small and medium-sized enterprises (SMEs). The project’s centrepiece is a web-based toolbox at www.zukunft-im-mittelstand.de, which participants may use to create foresight processes and which includes downloadable descriptions of methods and various tools. User habits and stored processes are the empirical base for the present research. Also, ten qualitative issue-focused interviews with various-sized SMEs from different industries completed the insights gained from SME-specific future-oriented work.

Meeting the Needs of SMEs

The present research aims to evaluate the specific needs of and identify adequate methods for foresight and strategic planning in the context of SMEs. According to an earlier research project implemented by Z_punkt The Foresight Company, “Corporate Foresight im Mittelstand” (2008), innovative and successful enterprises use systematic foresight and future-oriented work methodologies more often than less innovative and successful enterprises. Based on this empirical finding, the current project focuses on the perspective of SMEs to develop foresight instruments that match the requirements of SMEs. Our main hypothesis suggests that selection and combination of foresight methods differ according to the indicators enterprise size and industry. The procedure contains both quantitative analysis and qualitative analysis.

Quantitative and Qualitative Research Combined

The web-platform www.zukunft-im-mittelstand.de provides a set of 17 different foresight methods to create individual foresight processes. User habits are evaluated based on the main variables size (number of employees) and industry (manufacturing, service or retail). Individual methods and combined processes are analysed in two different steps. The quantitative data analysis focuses on the following questions:

- What describes a typical SME foresight process?
- What is the methodological preference?
- Which methods or processes are used to reach specific aims?



- What preferences can be determined based on size and branch?

Qualitative Research

The quantitative data analysis is supplemented by qualitative interviews with decision-makers of ten SMEs of different sizes and industries. Using the methodological approach of problem-centred interviews, a semi-narrative, guideline-based interview technique, the participants explain their practices of strategic planning, specific needs and requirements, and typical problems and solutions of foresight practice. The findings of the qualitative research are enriched by case studies and interpreted in a comparative study along the following lines:

- What is the relevance of foresight and strategic planning in general?
- Which methods or processes are used to reach specific aims?
- How can foresight and strategic planning be integrated into an enterprise's structure and decision-making process?
- What approaches can be identified based on size and industry?
- What would define an ideal process in the specific context of SMEs?

Web-based Foresight Toolbox

The Foresight Toolbox, as the centrepiece of the project, has been online at www.zukunft-im-mittelstand.de since July 2009. Access is free and enables individuals to design foresight processes using downloadable explanations and tools that support strategic practice. The toolbox concept includes 17 different foresight methods structured in five logical steps. For each method, simple and expert versions are available, which differ with regard to complexity and effort necessary. The offered selection of methods represents the state-of-the-art of science-based futurology and fulfils the requirements of strategic planning in the context of SMEs.

In principle, there are no restrictions regarding the combination of methods for foresight processes. All methods can be mixed with each other, however, participants are provided with information on the best possible combinations. In addition to full foresight processes, users may also download individual methods or tools that they find interesting and useful for their specific requirements.

Based on the Foresight Toolbox, decision-makers should be able to perform a professional process of strategic planning in pursuit of various business aims. The Foresight Toolbox conveys both methodological knowledge and competence for implementing and communicating future strategies.

First Step: Defining Aims and Focus of the Foresight Process

In technology foresight practice, foresight processes begin with the definition of specific goals and aims. This first step designates and limits observation scope and structures the following process. The toolbox offers a set of four different objectives that comprise the different fields of strategic relevance, including the level of products or services and organisational development or market dispositions:

- *Find future strategies*
- *Develop ideas for innovations*

- *Open new markets / target groups*
- *Early detection of changes in markets*

Furthermore, the platform provides a checklist with guiding questions to create the framework conditions for a successful foresight process.

Second Step: Research

In the second step, relevant empirical data on the future has to be researched. Different observation scopes focused on various aspects of the organisational environment are offered. Methods include observation techniques, for instance the STEEP observation scheme, and use a large number of data sources ranging from online and media research to Delphi surveys. The obtained data is the basis for the next process steps. The Foresight Toolbox contains four research methods:

- **Environmental Scanning:** Examine environmental frameworks and drivers
- **Market Scanning:** Examine customer needs and market trends
- **Context Scanning:** Examine the immediate context of product use
- **Competition Scanning:** Examine strategies and changes concerning competitors

Third Step: Analysis

The analysis stage aims to transform the obtained data into future-relevant information. The interpretation process is framed by four different business-related categories. Analysis aims to achieve a basic understanding of trends, drivers and shaping factors concerning future business development. It also gives an insight into potential impacts and uncertainties as well as into the constellation of relevant actors that have an influence on future development. The Foresight Toolbox offers the following analysis methods:

- **Impact Analysis:** Identify the most powerful factors

- **Uncertainty Analysis:** Recognise incalculable future developments
- **Stakeholder Analysis:** Detect the most influential actors and their strategies
- **Trend Analysis:** Understand the signs and drivers of change

Fourth Step: Projection

Projections are used to transform analysis results into concrete constructions of the future. The proposed methods vary in their level of concretisation, from practice-oriented to more abstract approaches to different futures. Being aware that the projection step is at the methodological heart of scientific foresight practice, the Foresight Toolbox has been designed to translate science-based approaches and make them relevant and understandable for SMEs. According to the specific application context, the methods refer to normative or descriptive aspects of future construction. The Foresight Toolbox contains five projection methods:

- **Scenario Technique:** Develop alternative visions of the future
- **Roadmapping:** Map milestones of future developments

- **Trend Extrapolation:** Describe predictable future developments
- **Visioning:** Develop desirable futures and define objectives
- **Backcasting:** Retrace the path to a desirable future

Fifth Step: Implication

The final process stage is (ideally) closely linked to the first step of defining aims and closes the circle. Here, the results and gathered findings have to be applied, implemented and translated into strategic decisions, innovations or organisational change processes. The four implication methods include practical tools for decision-making and the internal communication of results:

- **Strategy Development:** Identify options and determine the best strategy
- **Development of Product Ideas:** Create and select innovative ideas
- **Portfolio Development:** Make own areas of business future-proof
- **Assessment of Market Potentials:** Describe future markets and assess their volume

State of Research

The research project is still in progress. This brief is only able to provide a short overview of the interim results of our quantitative and qualitative research.

800 Participants So Far

Between July 2009 (when the platform went online) and February 2010, some 800 participants used the Foresight Toolbox. A majority downloaded selected individual methods. In addition, some 180 completed foresight processes were saved.

An evaluation and analysis of user habits, stored processes, popularity of individual methods and tools and focus group-related priorities will follow in February or March 2010.

Comparative Study Based on Qualitative Interviews and Case Studies

The ten qualitative interviews were conducted between November 2009 and January 2010. In addition to the case studies of each participating SME, typical features, characteristics and significant variations were analysed in a comparative study based on the factors size and industry. Please find below a brief outline of the comparative study.

Size and Industry Matter

In the following, we present preliminary results from the study. To put it most concisely, the organisational features 'business size' and 'type of industry' make a difference. We have organized our brief summary of how size and industry affect foresight activities along six factors: foresight relevance, time horizon, objectives and perspective, knowledge sources, securing strategic decisions and implementation of foresight results.

Size Makes a Difference

Strategic Planning vs. Ad Hoc Decision-making

Foresight relevance – Regardless of business size, all decision-makers consider strategic planning to be very relevant. Exact definitions of strategy, however, differ. Larger enterprises may specify objectives and goals for strategic work, smaller firms more often act under the requirements of the situation.

Time horizon – The time horizon of foresight and strategic planning increases in line with organisation size.

Consideration of Non-economic Factors Grows with Size

Objectives and perspective – All businesses focus on the economic aspects of their environment. Larger enterprises are more likely to also include more secondary aspects in their observation scheme. Social development, demographic change and political and legal frameworks acquire special relevance for enterprises that participate in transnational business networks.

Internal Sources and Social Networks Most Important Knowledge Sources

Knowledge sources – Independent of size, all participants use internal knowledge from all hierarchy levels as the most important knowledge source for their future-oriented work. Some of the larger firms already have experience with bringing in different forms of external consulting.

For all participants, the most important data comes from publicly available sources (general or business media) and formal or informal social networks.

Decision-making Based on Personal Experience

Securing Strategic Decisions – Only some larger SMEs have a developed monitoring system or access to continuous foresight updates. Most of the participating decision-makers rely on personal experience or even intuition or “gut feeling”. Only a minority of SMEs systematically have alternative options in place in the event of strategic failure.

Foresight Characterised by Conserving Resources and Short-term Implementation

Implementation of foresight results – Foresight in the context of SMEs is mainly characterised by conserving financial and personal resources and short-term implementation. Short decision-making processes make it possible to transform strategic positions efficiently into action. However, smaller enterprises are greatly limited with regard to changing management processes.

Manufacturing Has an Edge over Service and Retail Industry in Use of Foresight

Foresight More Advanced

Foresight relevance – SMEs have a large variety of foresight approaches. In general, businesses in the manufacturing sector have a longer tradition and a more advanced approach to systematic future-oriented work than service or retail enterprises.

Time horizon – Machine building companies, in particular, show a higher tendency for long-term strategic planning. Service enterprises often set time perspectives according to their projects’ time horizon. Due to the SMEs’ specific short-term strategies, most decision-makers emphasise the importance of anticipating disruptive events or breaks in long-term market developments.

Broader Scope of Factors Considered

Objectives and perspective – Businesses show a comparable level of systematisation across all sectors. That said, manufacturing companies tend to see themselves as active parts of the entire value chain. Hence, their observation patterns differ in that more secondary factors are included.

More Systematic in Utilizing Internal Knowledge Sources

Knowledge sources – Here, manufacturing companies also show a more systematic approach to using internal knowledge sources. Some have developed pay and incentive systems for product innovations or innovative technological solutions. In the service and retail sector, where problem-solving skills are used in personal interaction, knowledge is limited to individuals.

Coping with Uncertainty Easier for Manufacturing

Securing Strategic Decisions – Securing is defined as the key problem of foresight-based decision-making. Foresight methods in the SME context aim to reduce uncertainty to manageable levels. Small firms in the service sector argue that strategic work has to be measured by future reality and consider this a criticism of foresight efficiency. Decision-makers from manufacturing enterprises find it easier to accept the fact of an unknown future.

Implementation Varies with Corporate Culture

Implementation of foresight results – Regardless of industry, structures and routines for implementation and internal communication vary according to corporate culture.

Sources and References

www.zukunft-im-mittelstand.de

About the EFP: Policy professionals dealing with RTD, innovation and economic development increasingly recognize a need to base decisions on broadly based participative processes of deliberation and consultation with stakeholders. Among the most important tools they apply are foresight and forward looking studies. The EFP supports policy professionals by monitoring and analyzing foresight activities and forward looking studies in the European Union, its neighbours and the world. The EFP helps those involved in policy development to stay up to date on current practice in foresight and forward looking studies. It helps them to tap into a network of know-how and experience on issues related to the day-to-day design, management and execution of foresight and foresight related processes.