ITONICS

Whitepaper

Weak Signals, Hypes or Trends – Identify Innovation Opportunities and stay ahead of your Game

Content

Abstract

An organization that has no precise idea of the future does not have a future. The future can of course only be understood and planned to a limited extent. With the right trend management methods and tools, however, companies can prepare for presumed surprises, make informed decisions and thus remain competitive.

This whitepaper provides an overview on the topic of trends – from definition of the term to the latest methods for the individual phases of the trend management process. A review of the existing literature shows that the concepts used for trend management are already established. The picture is more differentiated when looking at the trend management process. In the phases "definition of information sources", "trend research and identification" as well as "trend rating", the literature available already offers a sound set of methods. The literature found for trend description or documentation as well as for trend visualization and communication is less extensive, however. The approaches and methods identified are more often drawn from practice. Some methods have also emerged for deriving strategic fields of action. Universal approaches like the scenario analysis followed by an opportunity space development are highly complex, however, and require extensive methodological know-how.

A dedicated trend management software accelerates the trend management process, integrates the individual phases and offers problem-solving potential for many identified weak points.

1 Innovate and grow with Trend Management

Change is the new normal – evolving markets, new demands, standards and values as well as ever shorter product life cycles require a high level of adaptability on the part of the companies. Companies who can quickly identify changes and even weak signals in their environment and react to them before the competition does will gain a decisive competitive edge (Pillkahn, 2007). However, given the complexity and the fast pace of their market environment, companies are in many cases no longer able to understand it in sufficient detail. Additionally, due to the information overload, it is becoming increasingly difficult to actually identify important changes. As a consequence, companies are forced to react with short-term solutions rather than act with foresight in their ecosystem.

"We cannot fully foresee the future, but we can make our organizations, our ways of thinking and our systems more 'fit for evolution'!", says Matthias Horx, expert on future trends (Horx, 2010).

This is not so much about predicting when, where and how which trend will materialize. From the companies' perspective, however, it is essential to identify, interpret, understand and react to the corresponding signals or disruptions in their environment early on.

This paper therefore addresses the principles of trend management – from the term 'trend' to the latest methods applied in the individual phases of the trend management process.

Understanding trends and their characteristics and working with trends forms the basis for shaping a trend management that is 'fit for evolution", thereby in turn laying the foundation for targeted growth and innovation.

2 What is a Trend?

"A trend is something that comes. Perhaps. Perhaps not. In any case, it has not yet fully materialized and only very few people are aware that anything is coming at all",

that is how Anders Björk, a self-proclaimed ideas hunter, describes what he considers to be a trend (Björk, 2016).

So-called "weak signals" are the first signs of change.

According to Ansoff (1975) there are different stages of signals. The signal strength grows the more we know about the context from which it emerged. Weak signals, in this context, refer to the simple observation of discontinuities or changes – you notice something, but you don't know what it means and where it comes from. Once you understand the forces that led to the change, its evolution over time and the direction of the change, the weak signal grows stronger resulting in an observable trend.

Hypes, by contrast, are collective and often spontaneous fads that disappear after a short period of time.

The "iceberg model" by Buck et al. (1998) follows a similar logic. In this model, trends are merely the visible peak of a much larger underlying value pyramid (see Figure 1). This very graphic illustration shows that trends are the result of hidden value shifts caused by new – often unconsciously emerging – needs, fears, motives or feelings (Buck et al., 1998; Horx, 2010; Liebl & Hermann, 1996).

Figuratively speaking, the difference between weak signals, hypes and trends is how much you know about the size of, and the forces acting on, the iceberg below the waterline.

If the invisible part of the iceberg is very small, this is more likely to be a hype that will vanish quickly. If we observe a trend with a solid foundation and understand the forces that led to its creation, we can a) assess whether and for how long the trend will last and b) understand why we are observing this trend.

Linking this approach with the trend hierarchy – consisting of megatrends, macrotrends and microtrends (see info box page 5) – will give a differentiated picture of the iceberg model.

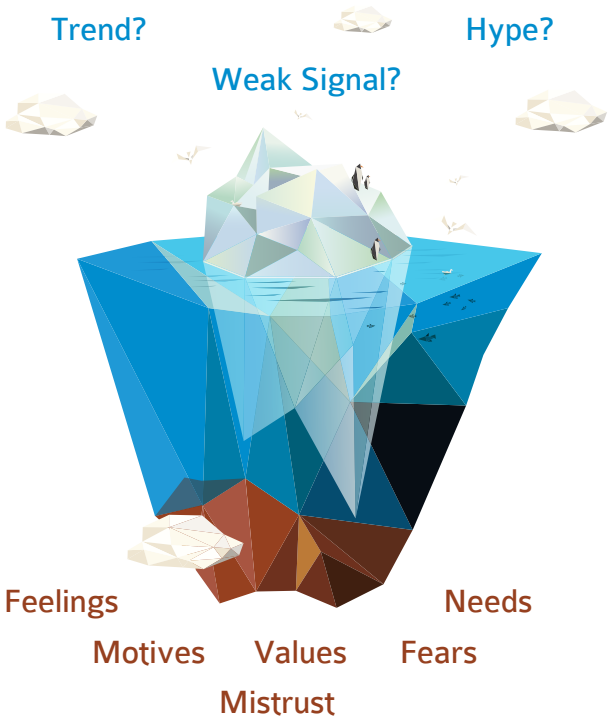


Figure 1: Iceberg model

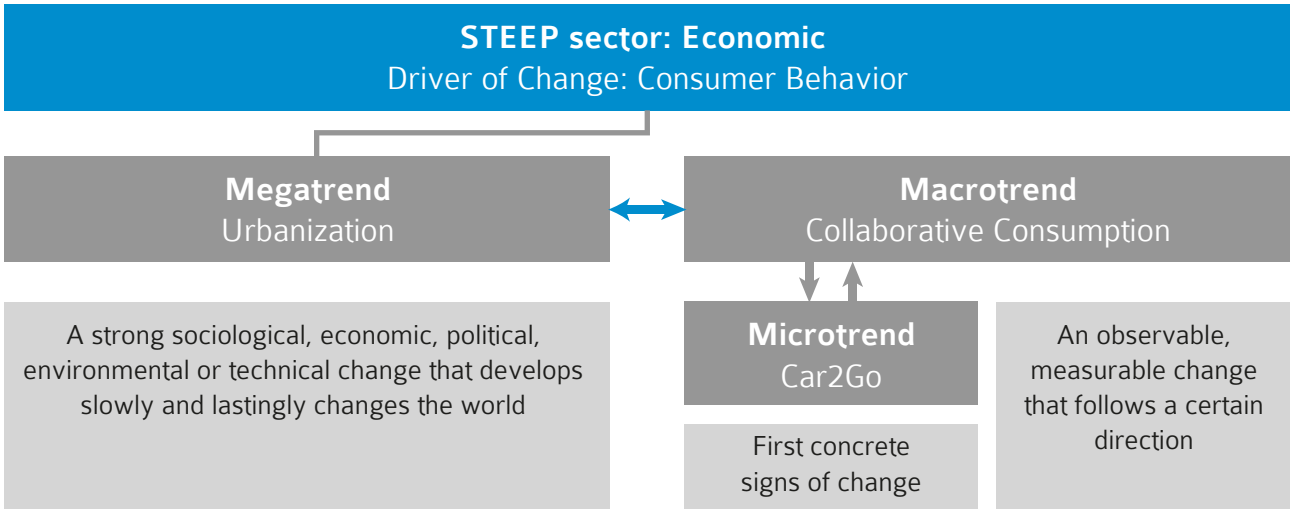


Figure 2: Trend hierarchy

A fad or hype is thus the observation of an iceberg tip without foundation or the observation of a trend without an underlying hierarchy. This observation is of a limited duration and therefore has no significance for the corporate strategy. If, however, we can time and again observe new microtrends emanating from a higher-level macrotrend, and if this macrotrend is based on an existing megatrend, we can rightfully assume that these trends will mutually reinforce one another and possibly change markets and business models permanently (see Figure 2). Trends can generally be systematized along the so-called STEEP sectors (acronym for Sociological, Technological, Economic, Environmental and Political Change).

	Megatrends	Macrotrends	Microtrends
Description	Major sociological, economic, political, environmental or technological changes	Observable changes pointing into a specific direction	First concrete signs of emerging trends
Effect duration	25 - 30 years	5 - 10 years	3 - 5 years
Scope	Impacts all walks of life worldwide	Widespread, but do not necessarily influence all stakeholders and regions	Frequently limited to certain regions and markets
Examples	Urbanization Climate change Digitization Individualization	Shoppertainment Quantified self Collaborative consumption Cyber crime	Bicycle culture Snackables Home robots Mobile recruitment

Figure 3: Megatrends, macrotrends and microtrends

3 Trend Management

To be able to identify changes and assess their relevance for a company, you need a systematic approach in the framework of a holistic trend management. The goal is to identify, describe and rate trends as well as document the trend knowledge and derive strategic fields of innovation for the corporate innovation management (see Figure 4).

The structured documentation of trend knowledge, in particular, is one of the key tasks of trend management because without a continuous documentation it is not possible to save and update trend knowledge and make it available for corporate innovation management.

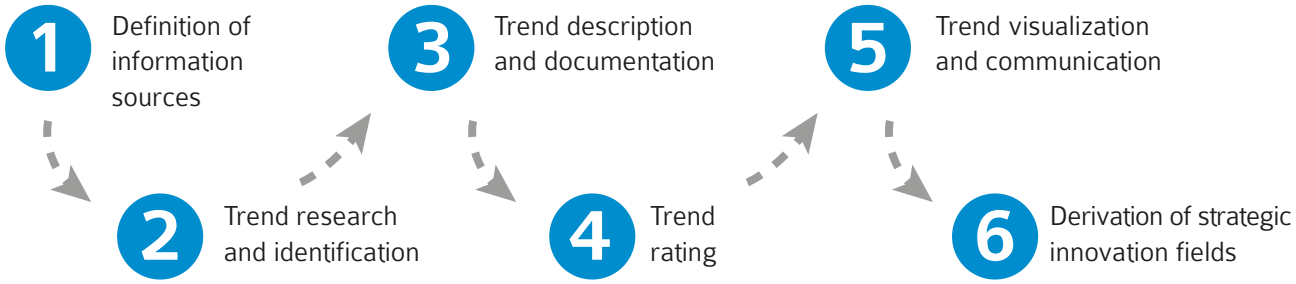


Figure 4: Trend management process (following Durst et al., 2010 and Köpernik, 2009)

3.1 Definition of Information Sources

This phase is concerned with the question: Where should trends be researched? For the identification of the search field a general distinction is made between external and internal sources of information as well as between primary and secondary sources of information. Figure 5 provides examples for the main types of information sources for trend management. Information from external sources such as trend or patent databases or congresses, conferences and trade fairs is regarded as being more robust and reliable because it is not limited to the internal (subjective) view of the company.

	External	Internal
Primary data	› Customers › Congresses, conferences, trade fairs › Media (e.g. news, RSS feeds) › Competition	› Employees › Internal network of experts
Secondary data	› Industry reports and statistics › Patent databases › Publications › Trend databases	› Internal documents (e.g. sales reports) › Internal databases (e.g. ideas databases)

Figure 5: Trend management process (following Durst et al., 2010 and Köpernik, 2009)

The external perspective shows trends and technologies which companies do not yet or not yet fully have on their radar. Primary and secondary information sources can be used to this effect. Internal sources are in most cases more quickly accessible and available at lower cost, but often only offer a limited view of the company's ecosystem. Internal sources are first and foremost used for incremental innovation, i.e. the optimization of existing products, services or processes. Here, too, a distinction is made between primary and secondary information sources.

Consequently, a balanced mix of internal and external information sources is essential for defining the search field to maintain a rational view on the company, on the one hand, and minimize scattering losses due to irrelevant information, on the other.

In short, the collection of primary and secondary data varies considerably with regard to availability, costs, quality and reliability.

3.2 Trend Research and Identification

The underlying data base materially influences the choice of methods for trend research and identification. Qualitative methods are in particular used for the analysis of expert interviews, discussions or customer opinions (see Table 1). These include unstructured methods such as brainstorming or intuitive confrontation. The Delphi method is frequently used to forecast technical, economic and sociological developments. It involves a systematic, multi-level process of sending questionnaires to a panel of experts.

Table 1: Selection of qualitative trend identification methods

Method	Brief description
Brainstorming	Preparation of an unstructured, intuitive trend overview (usually in a group)
Delphi method	Method used to forecast technical, economic and sociological developments (Horx et al,. 2009; Vorgrimler & Wübben, 2003)
Drivers of Change Card	Physical set of cards with drivers from the fields of "Environment" and "Social & Individuals". Workshop-based method used to draw attention to changes and trends (Arup 2016)
Intuitive confrontation	Expert discussion where the participants are confronted with extreme pictures that stimulate the imagination and invoke manifold associations
Trend Relevance Map	Method for selecting and organizing trends; trends are evaluated on potential and relevance criteria; the result of this method are so-called trend relevance clusters
TrendIT Tool	Physical set of trend cards; workshop method to convey different macrotrends and microtrends; in addition to a trend description, the trends are also assigned to their drivers of change and short application examples are presented (Lacuna 2017)
Trend scouts (external and internal)	Institutionalized continuous search for relevant trends by internal or external trend scouts

A series of qualitative methods relies on haptic tools (e.g. physical set of cards) such as the Drivers of Change Cards or the TrendIT Tool. At trade fairs, conferences and congresses, companies frequently use external or internal trend scouts to spot industry-specific trends. To simplify and structure the work of the trend scouts, mobile applications such as the ITONICS Inspirator are frequently used. It serves to collect information about different trends that is relevant for a company anytime while on the go.

Quantitative methods such as clustering or topic mining are used to aggregate information from trend, patent or publication databases. More conventional statistical methods such as smoothing, projection or growth models are used to estimate relevant variables over an observable period of time.

Correlations and/ or interactions between several relevant factors or trends are examined by means of cross impact analyses or input-output models, for example (see Table 2).

Table 2: Selection of quantitative trend identification methods

Method	Brief description
Cluster analysis	Quantification of the similarity between elements by means of similarity or distance parameters; followed by cluster formation using appropriate clustering algorithms
Cross impact analysis	Analysis and presentation of interactions between several relevant factors; consideration of the probability of occurrence of events
Smoothing	Estimation of relevant parameters going beyond an observable period of time by means of statistical smoothing techniques
Input-output models	Analysis of economic interdependencies based on comprehensive models with many variables and statements about the relationship between these variables; estimation of model parameters from measured values by way of statistical methods (e.g. structural equation modeling)
Projection	Estimation of relevant parameters beyond an observable period of time by means of statistical extrapolation methods
Topic mining	Identification of abstract "topics" in a large collection of documents using Natural Language Processing (NLP) and machine learning
Growth models	Analysis of the development of relevant variables over time; estimating the variables with assumptions of their growth behavior (e.g. constant, exponential, limited or logistic growth)

3.3 Trend Description and Trend Documentation

It can sometimes take up to several years between the first identification of a trend and its actual applicability. That is why systematic trend documentation is a critical element of a successful trend management. In practice, the documentation of trends or of the so-called trend knowledge is frequently unsystematic because trends are in most cases administrated by different persons or departments. The literature provides little information on how a trend should be documented. A set of characteristics for trend description and trend documentation has nevertheless emerged from practical application (see Table 3). Trends are frequently documented in the form of trend profiles using static tools, e.g. PowerPoint or Excel. In this case, any updating of the trend information is only possible with a high level of manual effort. Collaborative processing of the trend information is virtually impossible. Progressive companies therefore use dedicated trend management software to continually keep trend information up to date.

Table 3: Characteristics for trend description and trend documentation

Characteristics	Description
Name	Name of the trend
Content	Description of the trend
Classification	Megatrend, macrotrend, microtrend
Field of action	STEEP/ V – societal trends (S - Society), technology trends (T - Technology), economic trends (E - Economy), ecological trends (E - Ecology), political trends (P - Political), value trends (V - Value)
Markets and industry sectors	List of the markets and industry sectors that are materially impacted by the trend
Region	List of regions relevant for the trend
Drivers	Drivers that influence the trend
Interaction	Effect on other trends and developments
Technologies (where applicable)	Description of the technologies that enable the trend
Applications	List and description of current and cross-industry applications of a given trend

3.4 Trend Rating

Only a meaningful rating makes it possible to assess the actual relevance of a trend for a company (Pillkahn, 2007). A great variety of criteria has been discussed and described in the trend management literature. An overview on these criteria is shown in Table 4, p. 10.

Table 4: Criteria for trend rating

Criterion	Description	Source
Attractiveness/ desirability	How attractive and desirable is this trend for the company?	(Schatzmann et al., 2013)
Direction of impact	Is this trend an opportunity for the company or rather a future threat?	(Fink & Siebe, 2011) (Schatzmann et al., 2013)
Strength/ intensity of impact	How strongly is the company affected by the developments resulting from this trend?	(Fink & Siebe, 2011) (Horx, 2016) (Gausemeier et al., 2010) (Schatzmann et al., 2013)
Probability of occurrence	How high is the probability that the trend will actually occur?	(Fink & Siebe, 2011) (Gausemeier et al., 2010) (Schatzmann et al., 2013)
Duration/ time horizon	For which period of time or until when will the trend be relevant for the company?	(Horx, 2016) (Gausemeier et al., 2010) (Schatzmann et al., 2013)
Market potential	Which opportunities for the company will arise from this trend?	(Gausemeier et al., 2010) (Durst et al., 2010)
Sustainability	For how long will this trend last and have an effect?	(Durst et al., 2010)
Maturity	How mature is this trend, what stage has it reached?	(Gausemeier et al., 2010)
Relevance	How relevant is this trend with regard to the company or the industry sector?	(Horx, 2016) (Gausemeier et al., 2010) (Schatzmann et al., 2013)

To avoid a subjective rating of trends by individuals, collaborative trend rating has become an established practice for this phase of the trend management process (Durst et al., 2010). Especially in collaborative settings, companies can benefit from a trend management software. It allows for a rating of trends by various employees and also by external experts, as applicable, that is independent of time and place. An algorithm then computes the average rating. Depending on the rating result, the trend can then be assigned to an action phase (see Figure 6, S.11).

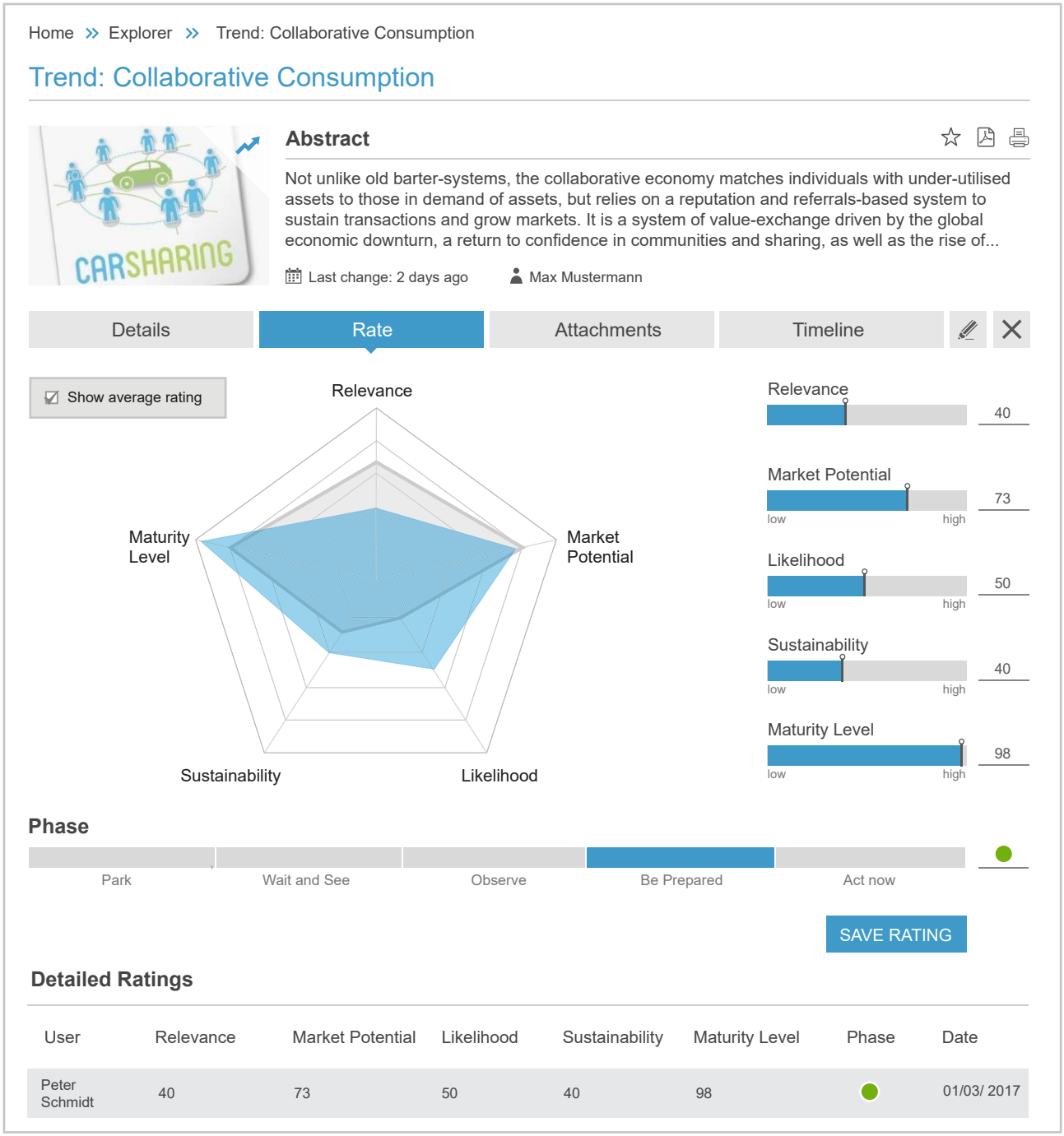


Figure 6: Collaborative trend rating

3.5 Trend Visualization and Trend Communication

The right visualization form of the current trend landscape forms the basis for a targeted analysis and communication. Trend maps or trend radars are used to this effect.

With the help of software, these tools visualize the complex interaction of relevant trends in an aggregated way.

3.5.1 Trend Maps

A trend map visualizes relevant trends and the links between them and shows which STEEP sector these changes are to be assigned to. Horx, together with the Zukunftsinstitut, developed such a trend landscape on the basis of the most common megatrends (Zukunftsinstitut, 2016). Another example is the trend map by Lacuna that visualizes relevant trends and their relationship among each other (Lacunaradar, 2017) (see Figure 7).

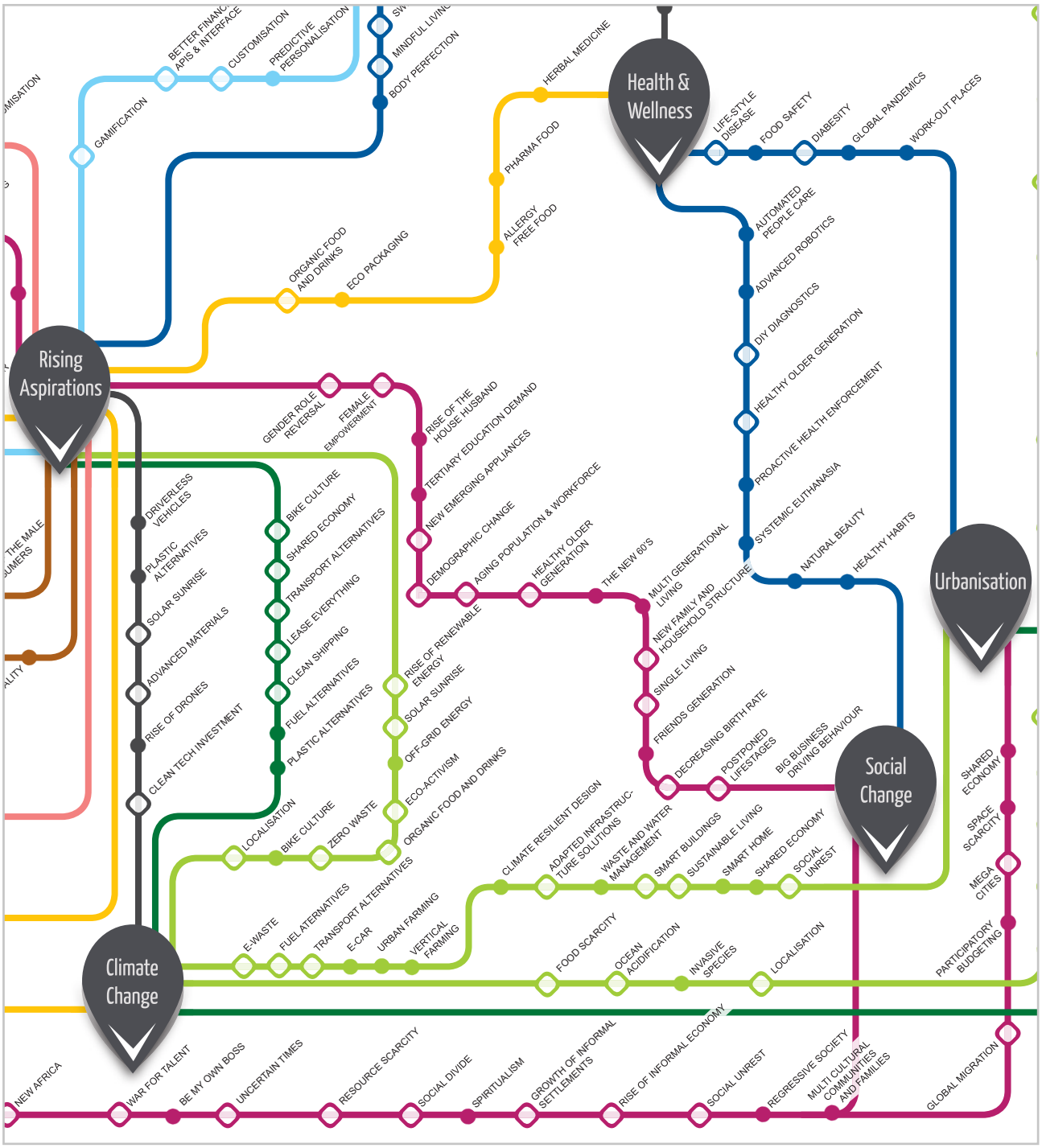


Figure 7: Trend map by Lacuna (excerpt)

3.5.2 Trend Radars

Radars represent a popular management tool and are used much more frequently for the visualization of trends and trend knowledge than trend maps. As trend radars have evolved over time and in many different ways from the practical work with trends, almost nothing in this regard can be found in the literature. Generally, radars can map five dimensions: the classification into a radar segment, the distance from the center point as well as the size, color and form of the data points. Each data point in the radar represents one trend. In practice, trend radars are frequently documented in static documents prepared on the basis of Excel or PowerPoint and cannot be dynamically analyzed according to different criteria. A trend management software with its numerous filter options allows for a quick visual analysis of the data available. A user can – depending on the intended application – create a collection of trends and then visualize them individually based on selected characteristics or ratings (see Figure 8).

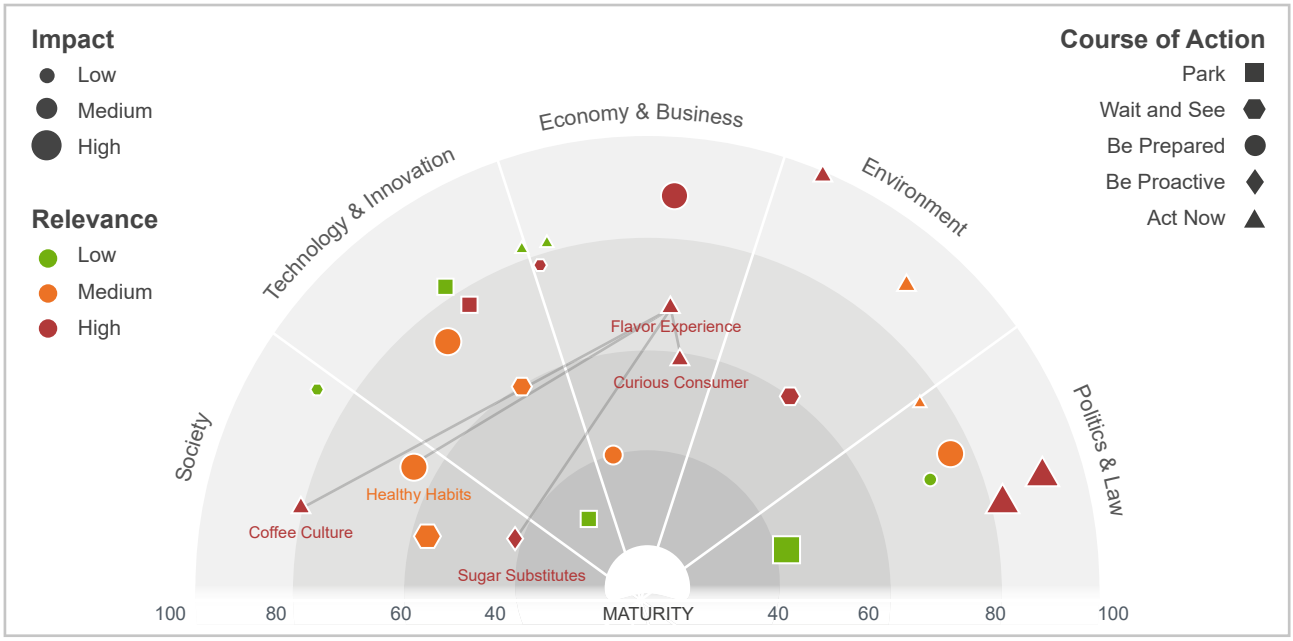


Figure 8: Visualization of trends in ITONICS Radar

3.5.3 Trend Reports

Trend reports are used to communicate trends and trend knowledge within companies. The main goal is to inform people who are not involved in the trend management process about certain changes. The trend reports provide detailed descriptions of trends and their effects on the basis of applications and examples and give an estimate about the relevance, potential and probability of occurrence of trends. Frequently, trend reports include dedicated case studies explaining where and how a trend will have an impact and which potential can be leveraged in that specific case. Trend reports can also be purchased from external consultancies like for example Gartner, Accenture, Boston Consulting Group or TrendOne.

3.6 Derivation of strategic Innovation Fields

The aim of this phase in the trend management process is to understand trends and trend phenomena in detail and derive concrete, company-specific innovation fields for innovation management.

A very simple but quite useful workshop tool in this phase is the Consumer Trend Canvas by TrendWatching (TrendWatching, 2014). This canvas consists of the two sections 1. Understand and 2. Apply (see Figure 9).

In the first section, a detailed trend analysis gives a deeper understanding of the change observed. The inspirations (application examples) additionally underscore the level of maturity of a trend.

The more application examples found, the more established the trend. The inspirations show, for example, whether a trend is specific to one industry segment or observed industry-wide. The second section of the canvas is dedicated to the applicability of the trend. In a first step, it is determined how and where the trend is to be incorporated into one's own business. Here, the canvas differentiates between short- to medium-term areas, e.g. product or service development, and areas that could be impacted in the long term, e.g. the business model. The detailed analysis of a trend and its impact on one's own business is then used as the starting point for a purposeful ideation.

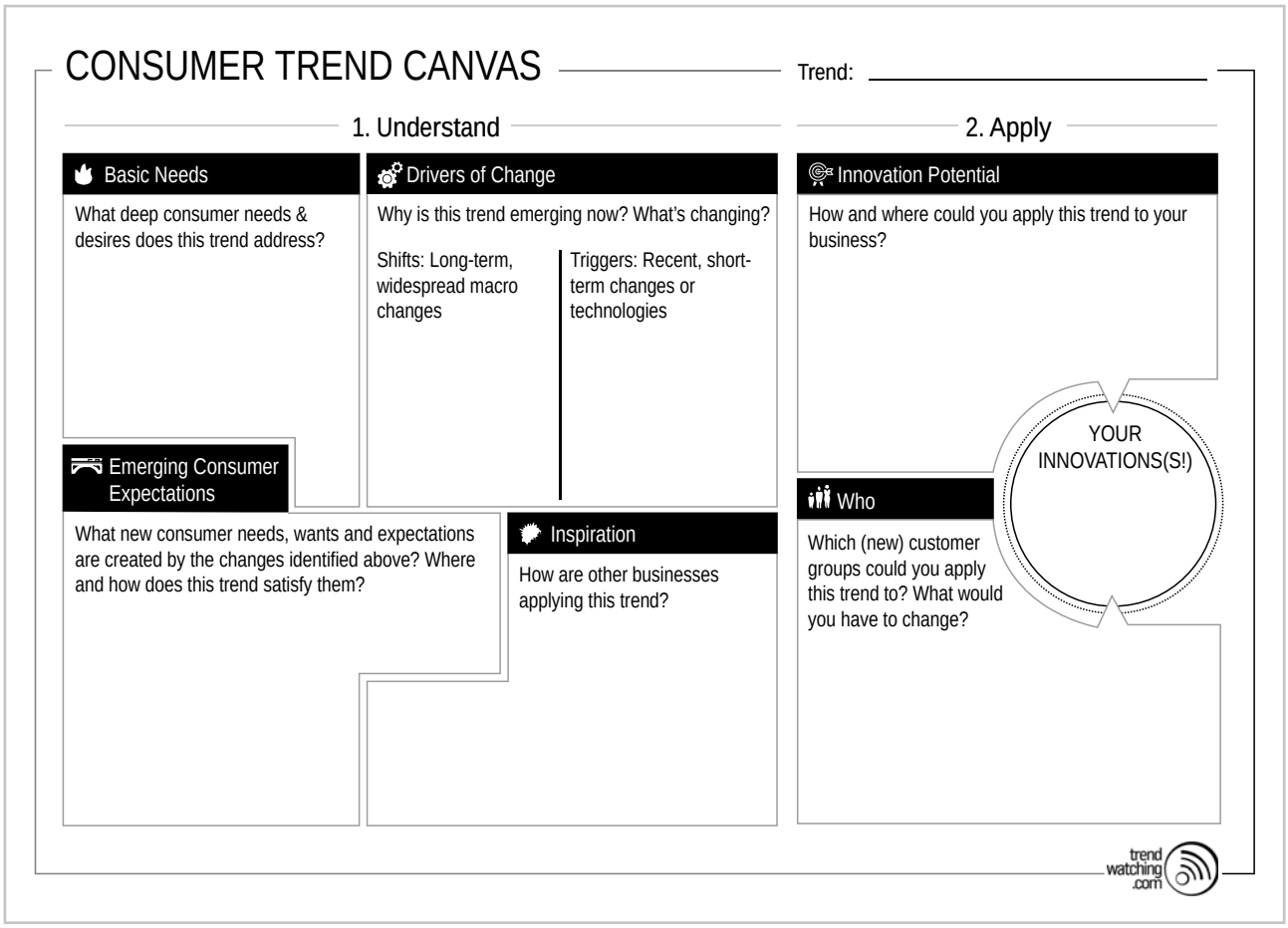


Figure 9: Consumer Trend Canvas (see TrendWatching, 2014)

The Consumer Trend Canvas only addresses the analysis and application of consumer trends. This two-part approach of analysis and application is also used by other, more universal, approaches for determining innovation fields. Durst & Durst (2016) describe their integrated innovation management approach with the words "where to play and how to win". "Where to play" refers to the comprehensive analysis of a company's environment, the preparation of future scenarios and the derivation of innovation fields (so-called opportunity spaces) and "how to win" refers to the purposeful development of ideas (ideation) within an opportunity space and their implementation.

In this context, scenarios are used as a tool to develop a common understanding for potential futures. They help companies imagine different variants of the future, explore the different scenarios and challenge possible changes in relation to their own business model (Schwartz, 1991). A scenario thus opens the space for new opportunities and is as such company-neutral.

In trend research, the following scenarios are most frequently used:

- **Trend scenarios:**
  they represent a prolongation of present developments into the future. Trend scenarios show what will happen if everything continues much as before.
- **Extreme scenarios:**
  creation of two opposed scenarios. Usually a comparison of one positive and one negative extreme scenario (Albers et al., 1999)
- **Contrast scenarios:**
  comparison of the present with the targeted (desired) scenario. The goal is to find ways and means to achieve the target scenario (Wopp, 2006).

Existence-threatening scenarios, in particular, offer attractive fields of innovation and support the transformation of existing business models.

Quantitative and qualitative approaches are used for constructing a scenario. Quantitative approaches usually rely on mathematical models while qualitative approaches rely on narrative-literary processes (Kosow and Gaßner, 2008).

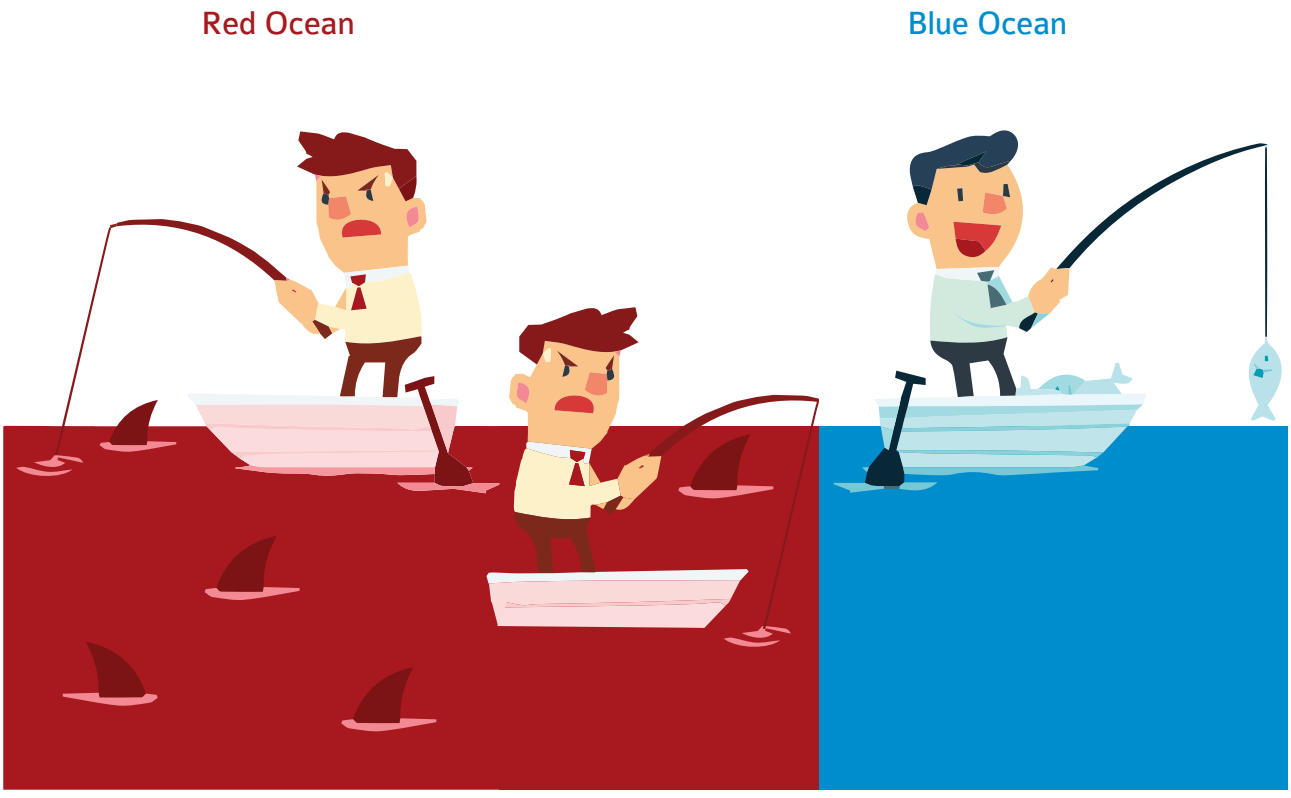
The quantitative construction of scenarios is mainly used in fields such as demography, economy and the military where robust data compilations with a sufficiently long history are available. These data are then statistically projected into the future and transposed into scenario clusters after consistency analyses. This type of scenario construction strongly benefits from software support (see Durst et al., 2015).

Qualitative processes use creative techniques, intuition and implicit knowledge. These processes are frequently used in workshop settings and exhibit a rather low level of formalization. Questions such as "What would happen if a certain trend materialized?" usually guide this type of scenario construction. The final scenarios describe the world the way it could look like tomorrow based on qualitative information (Wördenweber, 2012; Mandel & Okhan, 2013; Wurst, 2001; Albers et al., 1999).

Only the interpretation of a scenario from the perspective of an individual company allows deriving specific fields of innovation (so-called opportunity spaces). In this framework, opportunity spaces are not final solutions, products or ideas, but a field of innovation in which a company can innovate.

To tap opportunity spaces within a scenario, you can use inspirations (existing applications) from your own line of business or from other industry sectors. How do other companies prepare for future scenarios? A critical examination and analysis of various applications allows unlocking a whole new range of opportunities which in turn enable incremental and radical innovation (Miller, 2002).

Fields of innovation can also be developed by way of the so-called 'blue ocean strategy'. 'Blue oceans' are markets that are currently characterized by little or no competition while 'red oceans' are saturated markets with a high level of competition. The blue ocean strategy aims at creating one's own blue oceans instead of trying to beat the competition. To create a blue ocean, or new field of innovation, you need to reconsider your business model and redefine the target market and target groups, as applicable (Kim & Mauborgne, 2004).



4 Conclusion

The literature review showed that the terms used for trend management are already established. The trend hierarchy consisting of megatrends, macrotrens and microtrends has been described in detail and there is wide consensus about the characteristics of trends. The picture is more differentiated when looking at the trend management process.

A solid understanding of the individual phases is already available and the literature offers a set of methods that can be applied in the individual phases. These include, in particular, the phases "definition of information sources", "trend research and identification" as well as "trend rating". Not much literature can be found on trend description and documentation as well as on trend visualization and communication. The approaches and methods identified rather stem from practical applications. Several methods have emerged for deriving strategic fields of innovation. Universal approaches such as the scenario analysis followed by an opportunity space development are highly complex and require extensive methodological knowledge.

A dedicated trend management software accelerates the trend management process, integrates the individual phases and offers problem-solving potential for many weaknesses identified.

The first five phases of the trend management process, in particular, benefit from digitization.

Big data applications support the trend research and identification phase by automatically analyzing large data volumes. Weak signals and trends can thus be monitored without major manual effort.

Trend databases are used for the structured storage of trend knowledge and allow for a dynamic updating of the content. The digitization of trend management is in particular suited for collaborative trend rating processes. Via a web-based platform, distributed experts can be flexibly involved in this phase of the trend management process – anywhere and at any time. If the trends have been described and evaluated according to certain characteristics, the software can perform visual analyses on the fly. Countless filters and zoom functionalities enable a targeted "trend browsing" and allow for an intuitive handling of large data volumes.

The prioritization of trends and their interlinking constitute the basis for determining fields of innovation.

In this context, a trend management software offers the opportunity to assign inspirations and/ or applications to certain trends. In addition, complex scenarios can be quickly simulated and updated. For the interpretation of the scenarios and the derivation of strategic fields of innovation, however, the software plays a rather subordinate role. Here, workshops continue to be the method of choice.

Literature

Albers, O., Broux, A., & Thiesen, P. (1999). ***Zukunftswerkstatt und Szenariotechnik: Ein Methodenbuch für Schule und Hochschule.*** Weinheim: Beltz.

Ansoff, H. (1975). Managing surprise and discontinuity strategic response to weak signals. In: ZfbF (Hrsg.), ***Economics working papers 176.*** (Bd. 607). European Inst. for Advanced Studies in Management; 129-152.

Arup (2016). ***Drivers of Change.*** Accessed on 5 Jul 2016 at http://www.driversofchange.com/tools/doc/

Björk, A. (2016). ***Was ist ein Trend?*** Accessed on 4 February 2016 at http://www.bjoerk.de/was-ist-ein-trend.

Buck, A., Herrmann, C., & Lubkowitz, D. (1998). ***Handbuch Trendmanagement: Innovation und Ästhetik als Grundlage unternehmerischer Erfolge.*** Frankfurt: Frankfurter Allgemeine Zeitung GmbH.

Durst, C., Durst, M., Kolonko, T., Neef, A., & Greif, F. (2015). ***A holistic approach to strategic foresight: A foresight support system for the German Federal Armed Forces.*** Technological Forecasting and Social Change, 91-104.

Durst, C., Durst, M., Volek, A., Greif, F., & Brügmann, H. (2010). Zukunftsforschung 2.0 im Unternehmen. ***HMD - Praxis der Wirtschaftsinformatik 282,*** 48(6), 74-82.

Durst, C. & Durst, M. (2016). ***Integriertes Innovationsmanagement – Vom Umfeldscanning zur Roadmap.*** In: Abele, T. (Hrsg.). ***Die frühe Phase des Innovationsprozesses – Neue, praxiserprobte Methoden und Ansätze.*** Stuttgart: Springer Gabler, 217-233.

Fink, A., & Siebe, A. (2011). ***Handbuch Zukunftsmanagement-Werkzeuge der strategischen Planung und Früherkennung.*** Frankfurt/Main: Campus Verlag.

Gausemeier, J., Brink, V., & Buschjost, O. (2010). ***Die Innovations-Datenbank.*** In: Gundlach, C., Glanz, A., & Gutsche J. (Hrsg.): ***Die frühe Innovationsphase: Methoden und Strategien für die Vorentwicklung.*** Düsseldorf: Symposion Publishing GmbH, 471-488.

Horx, M., Huber, J., Steinle, A., & Wenzel, E. (2009). ***Zukunft machen: Wie Sie von Trends zu Business-Innovationen kommen.*** Frankfurt am Main: Campus Verlag.

Horx, M. (2010). ***Das Zukunfts-Geheimnis.*** Accessed on 2 February 2016 at http://www.horx.com/Zukunfts-Geheimnis.aspx

Horx, M. (2016). *Ausführliche Einführung in die Trend- und Zukunftsforschung.* Accessed on 2 February 2016 at http://www.horx.com/Einfuehrung.aspx

Kim, C. W., & Mauborgne, R. (2004). Blue Ocean Strategy. *Harvard Business Review,* Januar/Februar, 76–84.

Köpernik, K. (2009). *Corporate Foresight als Erfolgsfaktor für marktorientierte Unternehmen (Dissertation).* Berlin: Freie Universität Berlin.

Kosow, H. & Gaßner, R. (2008). *Methoden der Zukunfts- und Szenarioanalyse.* Überblick, Bewertung und Auswahlkriterien. Accessed on 2 Mar 2017 at https://www.izt.de/fileadmin/publikationen/IZT_WB103.pdf

Lacuna (2017). *TrendIT Tool.* Accessed on 2 Mar 2017 at http://www.the-lacuna.com

Lacunaradar (2017). *Trend-Map.* Accessed on 2 Mar 2017 at https://www.lacunaradar.com

Liebl, F., & Hermann, C. (1996). Trends + Visionen - Die Mythen der Trendforschung. Der Kampf um die Zukunft, Teil 1. *Absatzwirtschaft: Zeitschrift für Marketing,* 8/96, 4855.

Mandel, J. & Okhan, E. (2013). *Management von Kernkompetenzen bei Technologieunternehmen.* In: Abele, T. (Hrsg.). *Suchfeldbestimmung und Ideenbewertung.* Wiesbaden: Springer Gabler, 39-48.

Miller, C.W. (2002). *Huning for Hunting Grounds: Forecasting the Fuzzy Front End.* In: Belliveau, P., Griffin, A., Somermeyer, S. (Hrsg.). *The PDMA ToolBook for New Product.* New York: Wiley, 37-62.

Pillkahn, U. (2007). *Trends und Szenarien als Werkzeuge zur Strategieentwicklung. Der Weg in die unternehmerische Zukunft.* Erlangen: Publicis Corporate Publishing.

Schatzmann, J., Schäfer, R., & Eichelbaum, F. (2013). Foresight 2.0 - Definition, overview & evaluation. *European Journal of Futures Research,* 1, 1-15.

Schwartz, P. (1991). *The Art of the Long View: Planning for the Future in an Uncertain World.* New York: Currency Doubleday.

TrendWatching. (2014). *Consumer Trend Canvas.* Accessed on 20 Mar 2016 at http://trendwatching.com/x/wp-content/uploads/2014/05/2014-05-CONSUMER-TREND-CANVAS1.pdf

Vorgrimler, D., & Wübben, D. (2003). *Die Delphi-Methode und ihre Eignung als Prognoseinstrument. Wirtschaft Und Statistik.* Statistisches Bundesamt, 763–775.

Wopp, C. (2006). *Handbuch zur Trendforschung im Sport.* Aachen: Meyer & Meyer Sport.

Wördenweber, B. (2008). *Technologie- und Innovationsmanagement im Unternehmen.* Berlin Heidelberg: Springer.

Wurst, K. (2001). *Zusammenarbeit in innovativen Multi-Team-Projekten.* Springer Fachmedien Wiesbaden.

Zukunftsinstitut. (2016). *Megatrend-Map 2.0.* Accessed on 27 February 2016 at von https://www.zukunftsinstitut.de/fileadmin/user_upload/Megatrend_Doku/Megatrend_Map_480x340.png

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Since 2009 ITONICS has been the only provider in the area of innovation management to offer an end-to-end integrated approach: from environmental scanning to trend and technology management right through to innovation portfolios and roadmaps.

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