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Dear readers

The crisis is clearly noticeable at this moment; many industries are affected, including aviation, automotive & mechanical engineering in particular. The entire tourism and food service industry, as well as many small and independent merchants and businesses, are also having an especially difficult time at present. The pandemic continues to threaten many livelihoods or forces companies to adapt their business models in order to survive.

In our last special quarterly newsletter we therefore took the coronavirus crisis as an opportunity to examine this topic closely against the background of controlling. While the first companies have recently recovered from the initial shock, they must deal with risk issues all the more. The analysis of potential future scenarios and suitable planning of possible measures are particularly important to supplement long-term risk planning. That is why this quarterly newsletter will focus specifically on risk management and the topic of scenario analysis.

We hope you enjoy this issue.

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Reading tips

In the book **Von Szenarioanalyse bis Wargaming: Betriebswirtschaftliche Simulationen im Praxiseinsatz**

(From Scenario Analysis to War Gaming: Business Simulations in Practice), the authors F. Romeike and J. Spitzner introduce various scenario and planning tools to support controllers in their efforts to develop a basic overview of scenario analysis. It shows which methods and tools should be used, and when. Besides scenario analyses, the book also discusses event-based simulations and behavioural simulations.

The book **Risikomanagement** (Risk Management) by W. Hoffmann illustrates various issues in the world of risk management. When doing so, the author provides useful recommendations and instructions for action, and uses several examples to illustrate the implementation of risk management in projects. The author focuses in particular on identifying uncertainties and possible dependencies, and on how to minimise the risk of these factors sustainably.

Are we well prepared for the next crisis? | Risk management in the coronavirus pandemic

Companies are often deliberately willing to take risk. These risks, however, must be compatible with the company's overarching goals and strategies, and must therefore not seriously endanger its future business.

Traditional risk management is understood as the **"systematic analysis, assessment, handling and management of corporate risks"** (Brauweiler 2015). It therefore covers the entire process, beginning with risk identification and prevention, and ending with risk resolution. The focus is on overcoming and minimising business risks. Companies with robust risk management tend to be made aware of potentially risky situations earlier. This early warning ensures that top management and controlling have enough time to take countermeasures.

Risk management can be illustrated as a business process (see Fig. 1). The goals and strategies defined in advance form the foundation of the **risk management process**. This also means that a maximum business risk, i.e. the company's **risk-bearing capacity**, has been determined.

Risks are usually broken down into internal and external factors, depending on their origin. In a further step, they are then documented on a **risk map** (see Fig. 2) based on their probability of occurrence and potential for damage. This tool helps to prioritise certain risks. There is disagreement in academic literature as to whether a time component should be added to this risk map in order to distinguish between countermeasures possible over the short and long term. We recommend highlighting in colour potentially imminent risks in order to improve the prioritisation of the respective exposures. In general, risks that are highly likely to occur – regardless of the extent of their potential damage – should be integrated into an early warning system. In the best case, the variability of all risks should be reduced as the probability of occurrence increases. This includes, for example, the sudden loss of a supplier that is indispensable for production, or the breakdown of production systems. In practice, highly specific risks are often recognised too late; in most cases, dealing with the risk is then possible only at considerable cost.

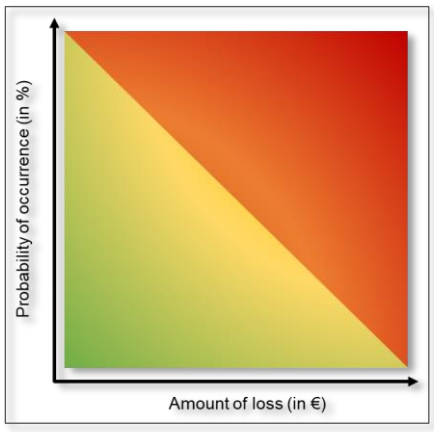

Figure 2: Risk map

Risks should be identified and dealt with at the core of their **source**. It is therefore advisable to organise risk management in a fundamentally **decentralised** manner. Either a staff-like position is docked with top management, or most of the risk management functions are integrated into controlling. Regardless of the organisational structure, the purpose in both cases is primarily not to "manage" risks. Instead, the goal is to assemble the **tools** for risk management so that it can be implemented at the operational levels. In addition, the controller acts in this regard as an interface between the operational departments and top management. Together these participants should elaborate goals and the potentially tolerable risk, whereas controlling reports risks and takes the lead at arranging actions against particularly dangerous risks (Romeike & Gleißner 2018).

Experience has shown that risks are either assessed incorrectly, or are recognised too late. According to the principle of **materiality**, it is advisable to include all material facts in the annual financial statements or the audit. This means that they have an impact on the annual financial statements because of their significance. In this way, highly risky circumstances can be adequately quantified in a direct manner.

Figure 1: Elements of the risk management process (based on Brauweiler & Brauweiler 2014)

Methods and tools in risk management | Achieving success with the right tools

Controllers have long had (i.e. not just since the onset of the coronavirus pandemic) a wide selection of analytical methods to drive risk management in the company. Practice shows, however, that controllers must often be retrained to use such tools. In the following section of the newsletter, we will focus primarily on these analytical techniques.

Risk management includes a wide range of analytical methods for risk identification, analysis and assessment. Admittedly, general statements are not possible that one method is best, or that another approach covers all types of risk or demands on the analysis. Instead, controllers must know in advance what they want to investigate and which data are useful to that end. They typically select their analysis tool only in the next step.

A fundamental distinction is made between **collection and search methods**. The former are particularly suitable for risks that have already been identified based on past analysis; the focus in this case is on the collection and verification of raw data and the **use of checklists**. As a rule, the controller compiles such checklists in cooperation with departments that are highly susceptible to risk. Although checklists are very precise, companies often run the risk of partially underestimating certain exposures. In addition, the completion of the checklists reflects only a moment in time, i.e. it cannot provide any forecasting possibilities. A **SWOT Analysis**, for example, offers significantly more scope. It analyses the strengths, weaknesses, opportunities and threats from a certain perspective (e.g. coronavirus crisis and the possible effects on customers, suppliers and systems). Regular brainstorming (e.g. once a quarter) has proven to be a particularly effective approach to carry out such an analysis. The participants in such brainstorming sessions should be as heterogeneous as possible, i.e. come from as many departments as possible, in order to contribute different perspectives. The analysis attribute “threats” in particular can thus be captured in its breadth. As a final point to complete our review of collection methods, we want to mention **interviews** (e.g. expert interviews). Today companies generally commission service providers to create and conduct such interviews.

Search methods can also be divided into **analytical methods** and **creativity techniques**. Analytical methods are suitable primarily for identifying previously unknown risk sources or potential risks, while creativity techniques enable original solutions, such as the analysis of two unrelated issues (Romeike & Gleißner 2018). Let’s begin by reviewing analytical methods. The **Bow Tie Analysis** (see Fig. 3) is often used in practice to identify the causes of risks. This technique involves comparing the causes and effects of an event (e.g. a materialisation of risk). This comparison enables in advance a rough assessment of where risks might arise and what negative effects the event could have on the company concerned. The **Black Swan Theory** is an example of such an analysis. It relates to a rare event that is far beyond normal imagination and has a serious impact. After it happens, an attempt is made to explain its occurrence and to make it predictable. The **Root Cause Analysis** is similar to the Bow Tie Analysis. The **Failure Mode and Effects Analysis (FMEA)** tends to be more complex and is used today to identify sources of error and thus to reduce risks. Early detection and control makes FMEA today an indispensable companion for the controller. FMEA provides a framework to summarise several risks, thus enabling the controller to perform a holistic risk assessment for individual departments or the entire system. FMEA is usually performed using worksheets. This makes it sufficiently formalised and allows a quick evaluation and rapid communication of the results. FMEA’s main focus is the determination of key figures (product, verification and pass-through risk). The **Hazard Analysis and Operability Study (HAZOP)** is used to check whether a process deviates from its planned course; this method is therefore comparable to FMEA.

It is crucial that the controller knows which data must be collected in order to identify weaknesses and risks, and then to take countermeasures together with top management. The type of method to use is initially a secondary issue.

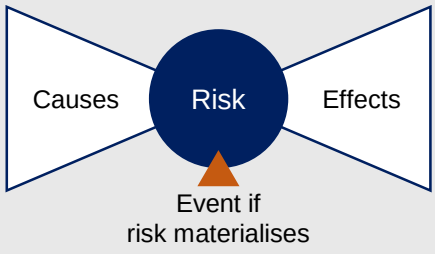

Figure 3: Bow Tie Analysis

Focus on scenario analysis | Proceeding from data to actions

Scenario analysis is one method that has proven itself in practice as a means to identify possible risks and assess their extent. Today digital applications generally perform the evaluation work.

Different future models can be depicted graphically by simulating alternative environmental scenarios. As an existing tool for analytical risk management, such models help controllers to assess and visualise risks (see Fig. 4), and to derive possible countermeasures. We begin our review by first illustrating how this should be carried out in the ideal situation.

First, the internal status quo should be **analysed and documented**. This can also relate to only partial areas, or focus on key performance indicators (e.g. revenue, customer trends). Possible influencing factors are then set against this, whereby these are differentiated between internal and external influencing factors. In a second step, **trends** should be **assessed**; this means that the development of the influencing factors may also have to be weighted over time. The results of the different scenarios should then first be **judged based on their conclusiveness**. Based on this data, controlling should now derive **conclusions**, i.e. that any disruptive events and the resulting countermeasures should be broken down into individual sub-areas of the company. Ultimately, this then results in **specific targets, tasks and measures** to be carried out by the responsible departments. Depending on the duration of the forecast, it is recommended to monitor the development of the scenarios, to adjust them if necessary, and to control any measures taken (Horváth et al., 2015).

Scenario analysis is fundamentally well suited for times of crisis, as it can be used very flexibly and can be adapted to changing framework conditions. In addition, potential financial damage can be estimated and adequate preparation can be enabled by linking certain scenarios with causes, responsibilities and countermeasures. On the other hand, the input data must be selected carefully, and/or their availability is often restricted. But even in this regard, a lot of data are already available that the controller can access (e.g. a significant amount of empirical data in the overall economic environment).

When smaller or more straight-forward scenarios are involved (or in smaller companies), scenario analysis can be done manually in Excel, for example. External software should be used for more complex issues. In practice, the **SAP plug-in** for scenario analysis has proven to be particularly effective. An independent provider we can recommend in this regard is software from **Foresight**. Most recently, PwC has developed the **Climate Excellence** application, which is a software that is also worth considering.

In summary, the controller working amid the current coronavirus crisis should have meanwhile scrutinised the entire corporate environment (external) as well as internal failures and risks, and quantified them as far as possible. Based on this, the controller should then develop a long-term recovery plan – taking health regulations into account.

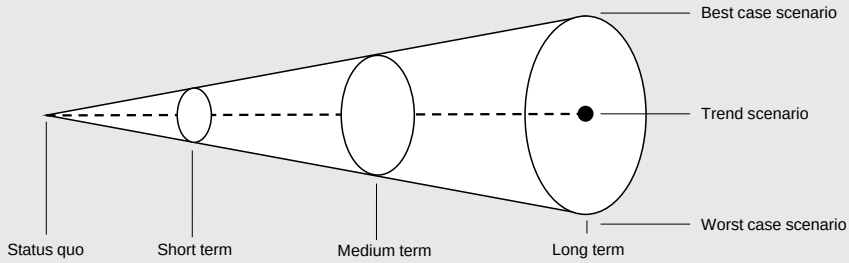

Figure 4: Scenario analysis

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