

Developing a New Management Approach by Combining Risk Management and Controlling as a Change Management Process

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2012 Enterprise Risk Management Symposium
April 18-20, 2012

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Abstract

The financial crisis has repeatedly shown that uncertainties and volatility increase in financial as well as real goods markets (e.g. demand on capital as well as on consumer goods even in mature economies).

In this context, companies have experienced that controlling systems based on deterministic and pseudo-exact values are insufficiently eligible to manage the business activities. This raises the question how management systems can be modified to generate the adequate management impulses in volatile periods. Risk management deals from identifying, evaluating and aggregating chances and risks, which again determine the potential fluctuation range of relevant performance indicators. Therefore, it could be a concept to improve the management relevance of controlling concepts.

Everyday corporate life shows that risk management is considered important; but the corresponding processes to identify, evaluate and report chances and risks are seldom part of established decision criteria. This “paradox” lets assume that risks are managed in various differing and unsystematic ways. Individualized and heterogeneous approaches, influenced by personal and subjective experience, constrain a company-wide consistent decision process that improves management quality.

The combination of traditional controlling methods and risk management is not primarily a methodological challenge. The behavior of the whole organization, practiced over a long-year period, has to be transferred into a new corporate culture of transparent dealing with chances and risks.

This paper describes the necessary change management process, which has to come along with necessary methodological modifications. It specifies, in which phases methodological and cultural adjustments should be made to ensure that the process succeeds. The result of this challenging process can be a truly risk aware organization.

0. Reasoning why

Following the collapse of the financial firm Lehman Brothers, many companies experienced huge and unexpected fluctuations in important cost- and revenue-determining factors. This was not only true for commodity and energy prices; mature economies such as North America and Western Europe were also impacted by significant instability in the demand for capital and consumer goods.

With this background, companies have acknowledged that controlling approaches based on deterministic forecasts and plan values are insufficiently appropriate to manage a company's activities. Company leaders wonder how to adjust the management systems in a way that relevant steering impulses also can be generated in volatile periods. Risk management deals with identifying, evaluating and managing chances and risks, the latter being nothing more than potential deviations from plan values. Therefore, risk management could be a concept that, being integrated into existing management approaches, improves the management quality.

In many companies, risk management is limited to identifying operational weaknesses or financial risks. True entrepreneurial risks linked to strategic decision finding or investment decisions are then evaluated inexplicitly in heterogeneous ways. Maximizing the added value for corporate management is not possible when relying on individualized, inconsistent, and personally subjective experiences and evaluations.

This essay describes a method to integrate risk management into controlling approaches to combine the best of both worlds in an environment of increasing volatilities. It is necessary to transform the long-practiced behavior into a new company culture of transparency and a candid handling of chances and risks. This requires a sustainable change process, which needs to be carefully introduced and implemented.

Showing the limits and difficulties in today's typically implemented risk management approaches, the essay describes the six phases for this change management process. Methodological adjustments are necessary, but they must be accompanied by cultural and value changes. Having performed this process, a company approaches the status of a risk-aware entrepreneurial organization.

1. Status quo in corporate risk management

All kinds of companies perform risk management activities. However, practice shows varying ways of where responsibility is organized, how risk management is integrated into management processes and if the value of risk management is sustainably acknowledged. Standard & Poor's recently added the quality of corporate risk management as one criterion to evaluate the credit worthiness of nonfinancial companies. This is not only an indication of the increasing importance of risk management, but it could also foster its standardization. Nevertheless, risk management outside the financial services sector typically shows an improvable grade of maturity, mainly due lacking historical data and missing approaches to statistically measure operational risks.

Risk management includes the following implementation issues.

- Risks are evaluated via two factors—probability of occurrence and impact. Multiplying those two factors is interpreted as the risk amount. This figure does not describe a risk but the expected value of the financial impact from a risk occurring.
- Operative units decide independently on accepting or mitigating risks.

- There is no standardized approach to describe, evaluate and aggregate various types of risks (e.g., compliance, information systems, environment/security/health, strategic, financial).
- Risks are not aggregated across the company nor are risk limits defined.
- The responsibility for performing risk analyses is separated from the responsibility for planning, controlling and forecast. This results in a parallelism of similar reporting and management processes.

A really integrated risk management approach not only deals with risk management activities, it also contains more than an alignment of performance indicators between financial and risk management or one unique catalogue of risk categories. It furthermore requires that a company analyzes all potential deviations from planned values in all management and decision-finding processes and deals with them in a continuous and transparent manner. Risk next to return is one component of a shareholder value-oriented management approach and needs to be managed according to a stringent economic calculus, on which personnel and resources allocations are based.

2. Typical risk management processes in companies

Nowadays, most companies create a companywide risk report containing a list of relevant risks to be presented to the top management. Additionally, when preparing a project proposal, the majority of companies perform a risk analysis as part of a project business case.

When planning a project (the term project can include all kind of investments, mergers and acquisitions transactions, etc.), employees from various functional directions give their specific input. The business case to be developed aggregates the knowledge and experience of a company into one monetary evaluation. All associates contribute their forecast values on costs and revenues over the planning horizon across all functional directions (e.g., product development, production, marketing, sales); in other words, the project plan is a “best guess” on time, cost and revenue factors. The business case is also consolidated to one or several economic measurands (net present value, internal rate of return, capital return, etc.). The characteristics of this result are not always clear. Is the return figure to be interpreted as the project result

- if anything works as intended?
- that can be expected?
- that includes a safety margin by the planning staff?
- that will be achieved with the highest probability?

Subsequently, a typically smaller group of employees, mainly with technical backgrounds, performs the risk analysis (identification and evaluation). Regularly, a “risk reserve” is calculated by adding the values of multiplying probabilities of occurrence with financial impacts to the business case. This risk reserve serves as an adjustment to the initially deducted planned

value. This is not risk quantification; it is rather to be seen as an “approximation to a realistic planning” (see Figure 1).

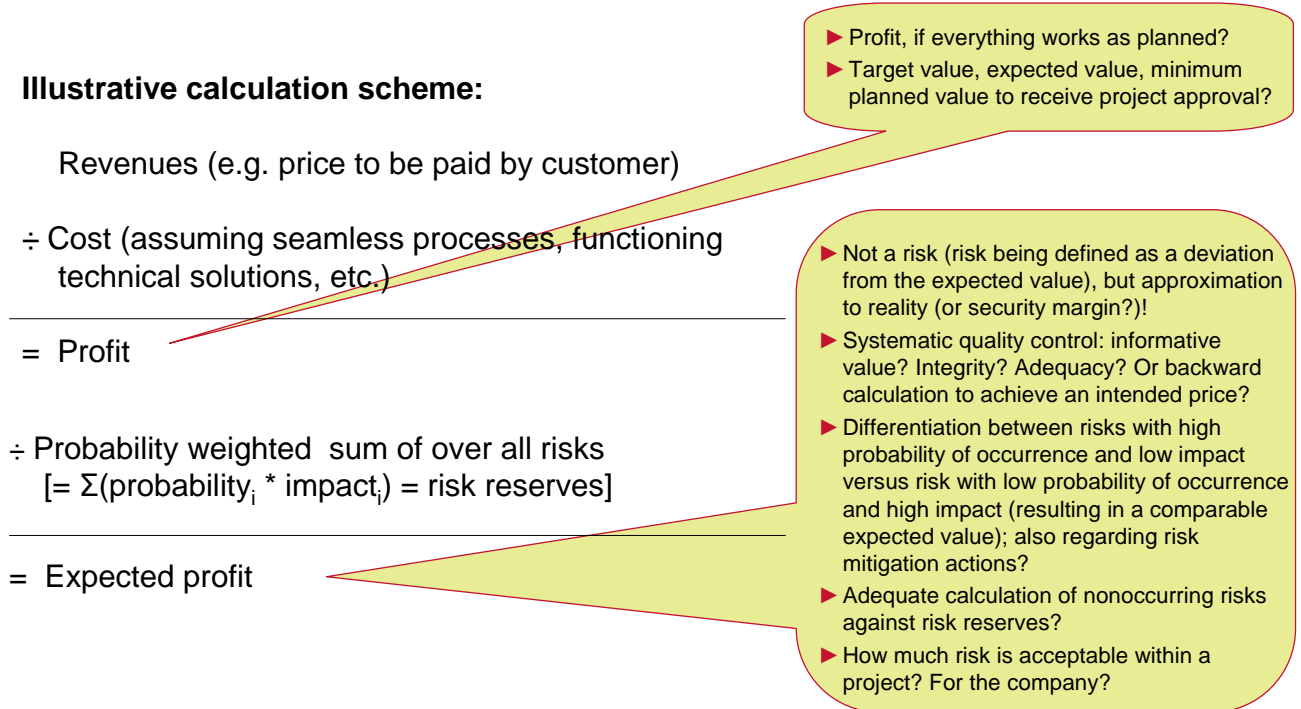


Figure 1. Typified calculation scheme in project calculation

In practice, the functional departments delivering the input for the business case are also responsible for executing the project and achieving the profitability specified in the business case. Therefore, realistic expectations are balanced with a sufficient financial return to make the project proposal approvable. This is especially true if planned values are directly transferred to target values. It is obvious this process hinders realistic and balanced project planning.

Timing issues further reinforce this dilemma, as the risk analysis is performed after the business case has been finalized. Typically, only a few of the associates who contributed to the business case also deal with the risk analysis. Therefore, the risk analysis reflects neither the same level of knowhow nor a comparably intensive discussion and detailed analysis as the business case. Hence, the risk analysis result hardly influences the decision finding. This can also be seen from the fact that the risk of a project cannot be expressed, for example, in one figure.

Consequently, the decision in favor of or against a project is based on the forecasted rate of return but not on a simultaneous balance of risk and return. That might be because only considering one profitability figure leads to an unambiguous preference between two projects. This is no longer true when project A has a higher return with higher risk than project B. But this is relevant information to the decision-maker.

The same incorrect calculus also affects the decision behavior regarding risk-mitigating and cost-causing actions. Those actions are performed to maximize the probability of achieving the plan value. However, this decision rule is contradictory to maximizing company value.

Sometimes risk is redefined as the expected missing of a target (“We have a sales risk volume of \$X million”). This incorrect interpretation leads to two parallel definitions for risk:

- Correct: The potential deviation from a planned value
- Incorrect (and a psychologically negative interpretation): There are no risks, e.g., “I don’t have a risk; I have everything under control”

The latter leads to a nontransparent and suboptimal handling of entrepreneurial risks.

3. Road map for implementation

If a company wants to generate the manifold steering impulses of an integrated approach, it requires more than a methodological challenge, which can be addressed by implementing software. A sustainable change of behavior learnt and practiced over several years requires a systematic and holistic approach. The central risk manager holds an important role that creates high demands on him in this change process.

The subsequent description of this process has to be regarded as a guideline, which has to be adjusted according to the characteristics of the company. Nevertheless, the sustainable integration of risk management can follow the described pattern.

- Develop the vision and communicate top-down the redirection of the corporate management approach and the ambition for change.
- Modify the existing risk management, which has been implemented based on legal requirements.
- Integrate risk analyses into project planning, evaluation and decision finding.
- Aggregate several projects to one companywide project portfolio and manage the company based on portfolio return and risk.
- Adjust the management of the individual risk in operative project management.
- Expand integrated risk management to include periodical planning and management.

Those phases focus on changes in method and concept. However, the need for a cultural change is at least as important as the methodological adjustments and will be described as well. Both must be implemented simultaneously.

3.1. Vision and top-down communication

Top management has to communicate the vision and unconditional necessity to develop into a transparent and risk-conscious company (“tone from the top”). This leads to a discussion and modification of relevant company values such as integrity, responsibility and transparency. Top management has to credibly emphasize that they confide in their associates while consciously and transparently taking risks. Decentralized responsibility can only be taken over within centrally determined risk limits. Objectives and behavior have to be adjusted in a way that supports the thrust of these efforts.

3.2. Modify the existing risk management, which might have been based on legal requirements

The whole process should be based on experiences gathered while implementing the legal requirements of risk management. The adjustment needs on the existing risk management approach have to be critically analyzed and identified.

Practice shows that functional departments interpret the term risk too narrowly. At this phase, the correct comprehension of risk has to be established: Risk contains not only an event with one-sided negative consequences but also all kind of potential deviations from a planned value. Risk often has a negative background attached, as it is frequently interpreted as a forecasted miss of a plan value. This is not a risk but an expected loss.

Risk understood as an unexpected loss influences how a company deals with risks. As all kind of entrepreneurial activity implies to take risks, reports such as “we do not have any risks” must not be accepted. Generally, the occurrence of a risk can be accounted for missing a plan. Vice versa, “not having any risks” would be tantamount to having objectives that are not stretched enough, as obviously they will be achieved with a probability of 100 percent. Targets can be defined in monetary as well as in nonmonetary units, such as safety at work or reputation. Accordingly, potential negative impacts can be evaluated in the same unit as the target is set. Systematically identifying risks fosters the preventive implementation and monitoring of risk-mitigation plans. This saves cost and enhances transparency, which further supports the necessary changes.

Acceptance and relevance of companywide risk reporting can be increased when an illustration of risk in bandwidths (in the form of a probability distribution) substitutes the typically used heat map (see Figure 2). Risks and chances are classified according to their probability of occurrence and financial impact. The at-chance/at-risk illustration shows the expected, the most positive and the most negative impact on the planning.

The quantification with a direct link to profit planning replaces the digital and abstract risk evaluation in the heat map. This can initiate interesting discussions about the assumptions and framework implied in the company’s planning process.

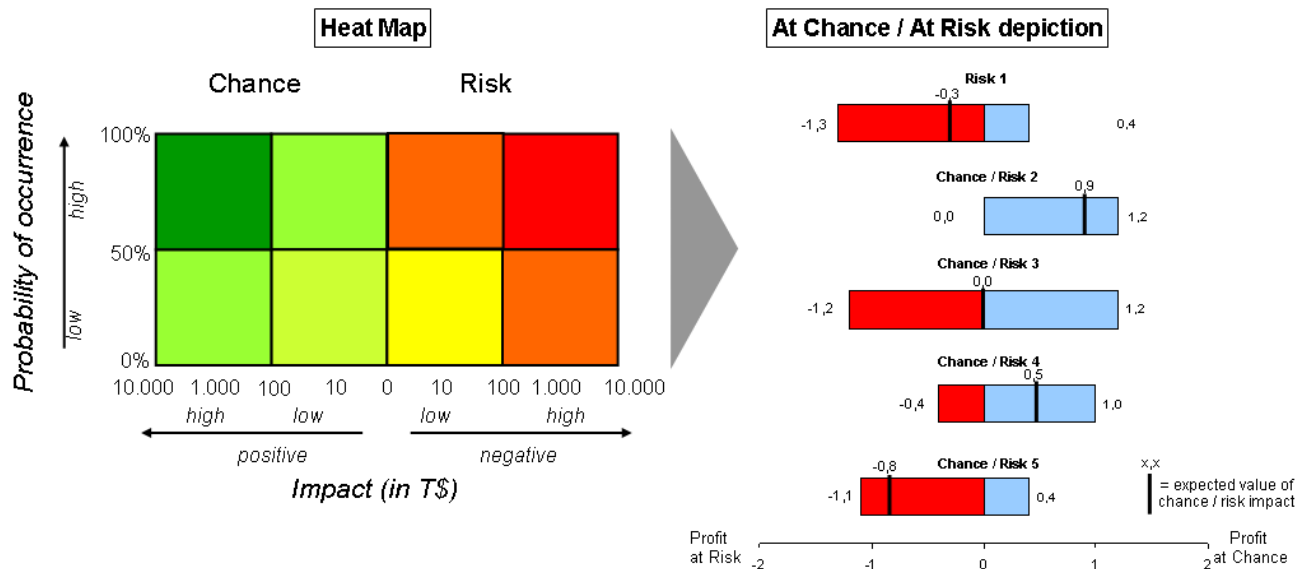


Figure 2. From heat map to at risk/at chance

Management on all organizational levels has to review and discuss the results of the risk analyses and the evolution of action plans (“tone at the top”). Part of this is to check if a risk that occurred has been identified in advance. The effectiveness of action plans should also be monitored, and their implementation in time should be part of one’s personal target agreement and linked to the incentive system. These activities boost an open dealing with risks, a transparency about the risk situation of the company, and the equal importance of risk-mitigating measures and operative line function activities.

3.3. Integrate risk analyses into project planning, evaluation and decision finding

To integrate risk analysis into the preparation of proposals and recommendation of decisions is the main content of the next phase. A comprehensive risk analysis has to be part of a business case; the forecasted return of a project is supplemented with a statement about potential deviations. Risk is one component for arguing in favor of or against a proposed project.

Several important methodological and cultural aspects exist in this phase.

The whole organization gets used to performing risk analysis as a fully integrated part of project planning. This means that risks are identified and evaluated simultaneously when forecasting the project result. On a single project level, it can be easily understood that forecasting a value always implies uncertainties (meaning risks). The risk analysis reveals and evaluates those uncertainties, resulting in an expected value for the return and its probability distribution around this value. It also states with which probability a certain project result cannot be achieved or can be overachieved (at-risk and at-chance value, respectively; this approach can be applied to basically all relevant performance indicators). The project risk can be consolidated and expressed in one figure: the profit level, which is missed with a given probability (e.g.,

5 percent) or, alternatively, the probability-weighted average lower deviation of the planned value (being less sensitive against smaller changes in the input variables).

Process- and culture wise, the acceptance and necessity of risk analysis as a decision-supporting instrument has to be established. The bandwidth for the possible project result is driven by the bandwidths of the different cost and revenue values to be planned. At this point, it becomes evident that identifying and evaluating risks—with regard to time planning, technical issues and financials—have to be instantaneous parts of project planning. Whenever the planned value is determined, it should be asked under which assumptions the forecast is being made. Those assumptions and uncertainties should be revealed, as each potential deviation from an assumption implies that the forecast will not occur. This understanding makes it clear that risk identification and evaluation should be immediately performed when developing a project plan. This permanent and simultaneous scrutiny enhances the quality of the planning and completeness of the inherent risk analysis. Therefore, the same personnel have to perform the risk analysis and evaluation as an integrated part of the project planning.

This period of the whole process also contains a learning process on risk evaluations. A lot of associates find it difficult to determine the probability of a risk occurring and its potential negative impact. However, this (at least with regard to the impact) can be put on the same level as determining a forecast value—if only under changed assumptions. While developing a prognosis—even over a multiple-year period—is often accepted by planners and deciders, the same task with a change in assumptions is considered difficult or even impossible. In fact, this is basically the same task. This is another example of a learned behavior in a company that can be corrected while implementing an integrated risk management approach.

This also changes the way an organization evaluates risks. It understands that “probability of occurrence” and “financial impact” are inadequate. Associates will substitute this approach by an evaluation in several scenarios or directly in potential bandwidths (e.g., the three-point method). It is worth mentioning that this is not primarily a methodological question, but a shift toward a higher quality in risk management. Discussing a risk evaluation scrutinizes the drivers and causes of a risk and its effects. The discussions about defining risk-mitigating measures as well as deciding if and to what extent those should be implemented are more differentiated.

Independently of the exact evaluation method used, the approach generates the expected value besides the at-risk and at-chance values, respectively. The expected value expresses the return to be achieved “on average.” It should form the basis for corporate planning and management activities, as it is the most realistic prognosis. It does not deliver any relevant value to distinguish between the expected value and a planned value (e.g., the latter being the one not considering chances and risks).

Unlike the expected value, the target value is normally not determined based on existing project planning and risk analysis, but it expresses the necessary return on investment determined by companywide considerations and requirements. The target value serves as a reference for performance assessments, including linked incentive systems. It is essential to differentiate between the planned/expected value resulting from the project planning and the target value deducted from companywide requirements. This differentiation contributes to

reducing the incentive that an employee overweighs risks and neglects chances; this could be done to emphasize their own performance during the project execution.

This issue is only partly true during the phase before the target values are determined. The manager responsible for the future project intends to influence the required return with regard to “sufficient target stretch” and “realistic achievability.” He therefore tries to reduce the expectation by emphasizing risks and playing down chances. Before this background, a systematic and integrated risk analysis with a structured discussion of risks inherent to a project helps to increase the quality of a business case. Secondly, praxis shows that the integrated risk identification and evaluation contributes to a higher transparency about performed assessments, met assumptions and personal interest while preparing the business case. Thirdly, if only effective on a midterm basis, a project manager’s ex-post statement that his personal performance explains the excessive success over the planned value (in a positive way), loses credibility. Generally, each deviation of the actual value from the expected value must be explainable by a previously identified risk or chance in a follow-up calculation. If this is not the case, the risk analysis has been executed—intentionally or unintentionally—incompletely and is of bad quality. If over a large enough number of projects, the expected values lie systematically below the realized values, this indicates a bad planning quality, not an extraordinary performance by the person responsible for the project. If the target is set, differentiating between those two values partially solves this conflict.

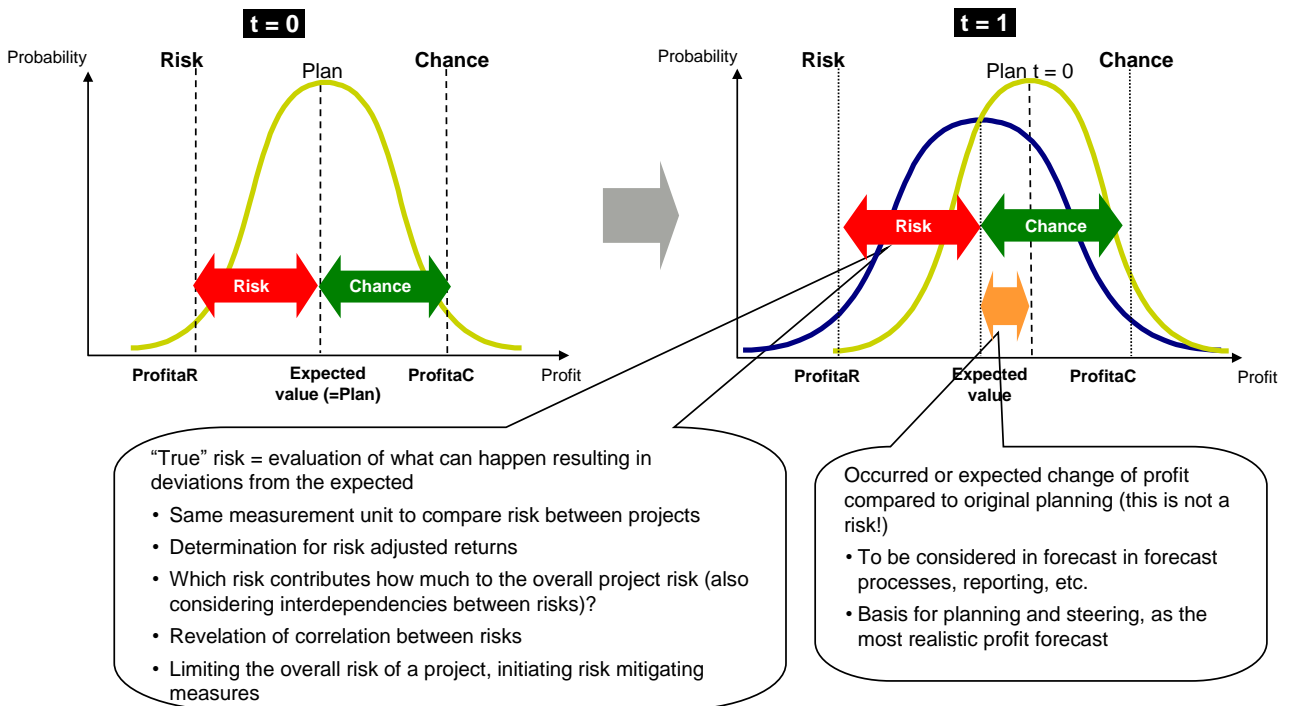


Figure 3. Periodic profit change equals change in expected value

The risk analysis allows consolidating a project risk in one figure. This is a prerequisite to assess a project proposal according to its risk-return relationship. Figure 3 shows the relationship between expected value and the “real risk” in a biperiodic comparison.

The simultaneous view on risk and return needs to be explicitly incorporated into the company's financial decision rules when the expected return of a project is balanced against the inherent risk. This makes clear to all associates that the risk analysis is not an add-on activity but an essential component that can lead to a project's approval or withdrawal. A project risk is accepted and creates value if it is accompanied by at least adequate expected return. Using the generated information to reason a decision under simultaneous consideration of risk and return is essential to change how risks are viewed. The behavior of top management plays a crucial role ("tone at the top"). The discussion of a project being a bundle of risks yielding enough return to be accepted ("Why should we take the risk? Because we get paid for it!") substitutes the interpretation of risk as an operative weakness. And the consideration if an additional risk from a project should be accepted complements the view of achieving the minimum return.

3.4. Aggregate several projects to one companywide project portfolio

Presenting a risk-integrating business case as the basis for alternative project proposals leads to an ambiguous decision situation if no project alternative is dominant (the project with the higher expected return goes along with a higher risk). The question arises of how much risk a company is willing and able to accept. A company can only answer this question when looking at the total portfolio of projects, investments and activities; this leads to a portfolio-oriented management approach. Aggregating risks into a companywide risk profile is a prerequisite to determine and cascade down a risk limit, which has been formulated to not endanger the going concern of the company.

This can result in discussions about the company strategy if, for example, a business segment achieves the determined minimum yield but with a higher risk than another segment. In some cases, the existence of a business area or its strategic thrust can be put into question. The company will consider determining a minimum risk-return relation instead of a minimum yield. Standard projects with a low level of complexity and therefore only little risk can be prioritized against projects with a higher level of complexity. This approach corresponds to the real-life experience that standard projects typically cannot accomplish the requested expected return, which increases the acceptance of integrating risk management into the whole company.

The change of decision criteria requires a general change in corporate culture. The decision in favor of or against executing a project no longer depends only on the (marginal) cost and return of one project but also on its effect on the whole project portfolio. It also requires an intensive communication process that emphasizes the method as well as the main drivers and influencing factors in the portfolio.

The cross-project reviewing approach has a direct feedback on project planning and execution. The top-down specifications can be formulated by fixing criteria that, when met, ensure a positive contribution, meaning risk-reducing or below average contribution, to the company's risk profile. This approach can result in marketing strategic frameworks, which can optimize the chances and risk profile of the company. Therefore, integrated risk management is not only a

question of controlling or risk management but also of marketing and strategy. Accordingly, the change process has to follow an approach that comprises the whole company.

3.5. Manage the individual risk in operative project management

Dealing with a project's risk-return profile typically leads to using information on the operational level to control individual risks, e.g., when deciding for or against risk-reducing measures. The project manager will not only use the expected value of a risk (probability times impact) to prioritize the risk-mitigating activities; he will also consider the potential negative impact that might go beyond the expected value. In addition, within the permanent projects' earnings calculation, the negative effect of an occurred risk must not be fully paid from the initially built pot of reserves until it is empty. Instead, every occurrence or disappearance of a risk leads to a change in the forecasted project result. This pot of financial reserves is not an anonymous amount used to pay occurring risks as long as it is filled but contains earmarked reserves directly connected to individual risks. Controlling methods and processes have to be adjusted accordingly.

Consequently, the way changes how to calculate the advantageousness of risk-mitigating measures. Of course, the determined risk limit for the project has to be kept. Additionally, the change in the risk profile (being the unexpected value) has to be taken into consideration besides the change in expected value. Therefore, project managers who decide about risk-reducing measures have to assimilate the methods and basic ideals of this integrated risk management approach. This shows that even methodological questions within risk management are not only relevant for central risk management departments and/or the controlling.

3.6. Adjust integrated risk management to include periodical planning and management

The described approach should also affect various other processes dealing with planning and forecasting. When talking about profit forecasts and corresponding investor relation activities, capital market communication can also incorporate the idea of forecasting in bandwidth. To cover all kind of activities (sales, corporate costs, foreign exchange rate result, pensions, quality costs, etc.) by this method is a prerequisite for this next step. The same is true for the risk (chance) to loose (win) a project that has (has not) been included in the planning. Instead of only determining the one-profit forecast figure, a company has to reveal the significant chances and risks by aggregating both pieces of information in the bandwidth of a profit forecast. Investor relation departments can use this to communicate to the financial community. By doing that, a company can avoid short-term measures at year end to achieve the profit prognosis named to the capital market; practical experience show that this actionism destroys value rather than creates it.

The bandwidth of periodical results creates important management information for short-term as well as long-term planning (Figure 4).

In the short term, a company can decide on hedging cross-company risks such as foreign exchange rate, commodity, insurance, etc. Individual expectations on the development of prices are not enough for that. Knowing and accepting a risk exposure and with it a certain probability to fall short of periodical profit target must be the basis.

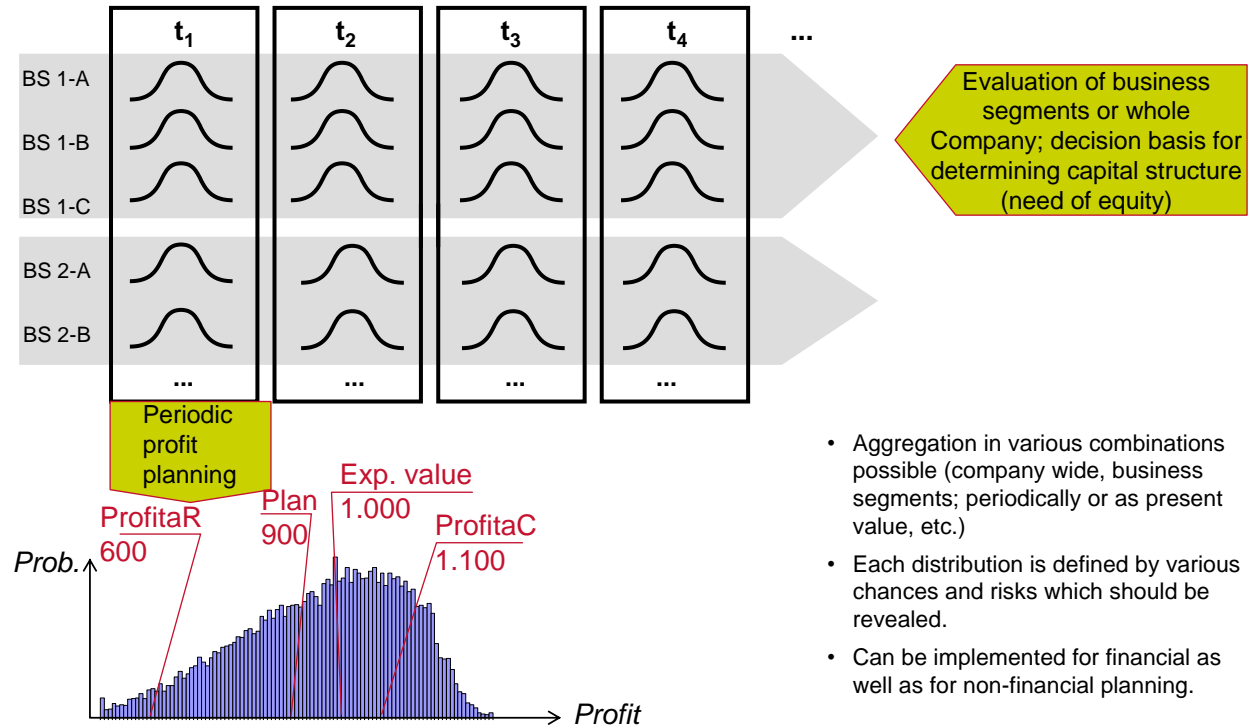


Figure 4. Steering impulses from an aggregation over one period to the annual result or over various periods

Looking at a longer period, it can help to analyze the corporate strategy against changes in the environmental assumption on which the strategy development has been founded. In a structured manner, management can only discuss strategic decisions like flexibility in production capacities (higher flexibility typically implies higher cost), when bandwidths of potential future demands are incorporated into the analysis.

Those examples can make it clear that integrated risk management is also a natural component in the process of developing and determining a strategy (functional, segmental or corporate).

4. Organizational aspects of the implementation process

It comes as no surprise that a company needs a sustainable change management process to alter learned and practiced behavior in terms of methods, processes and corporate culture. A "four consultants/three months" project, in which an external consultant is hired to implement calculation algorithms in risk management software or to risk profile the company in a one-off effort (without a sustainable effect) is not enough to achieve this goal.

The central risk manager has an important role in this process (see Figure 5).

He describes and explains the roadmap, methods and approaches within the company, defines requirements and processes and determines conceptual and methodological standards. Further more, he supports the functional department in applying and implementing the various changes in methods and processes. His tasks in coordinating and managing the change management are even more important for the sustainable success. He advises top management within the process, organizes a corresponding internal communication and supports the central controlling departments. His knowledge in controlling, planning and management approaches and processes are a necessary but not sufficient.

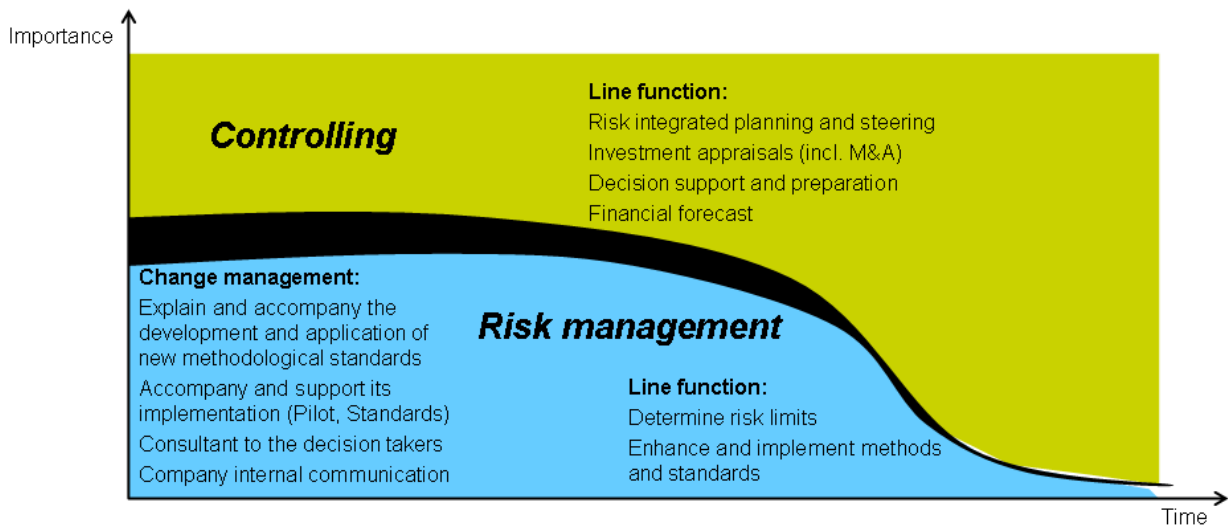


Figure 5. Change in the role of a risk manager within the cultural change management process

Before this background, the risk management function should be positioned independently of functional units in the organization. An external consultant can be used as a coach for the central risk manager, accompanying the whole process and being the risk manager’s adviser and bringing in external experiences.

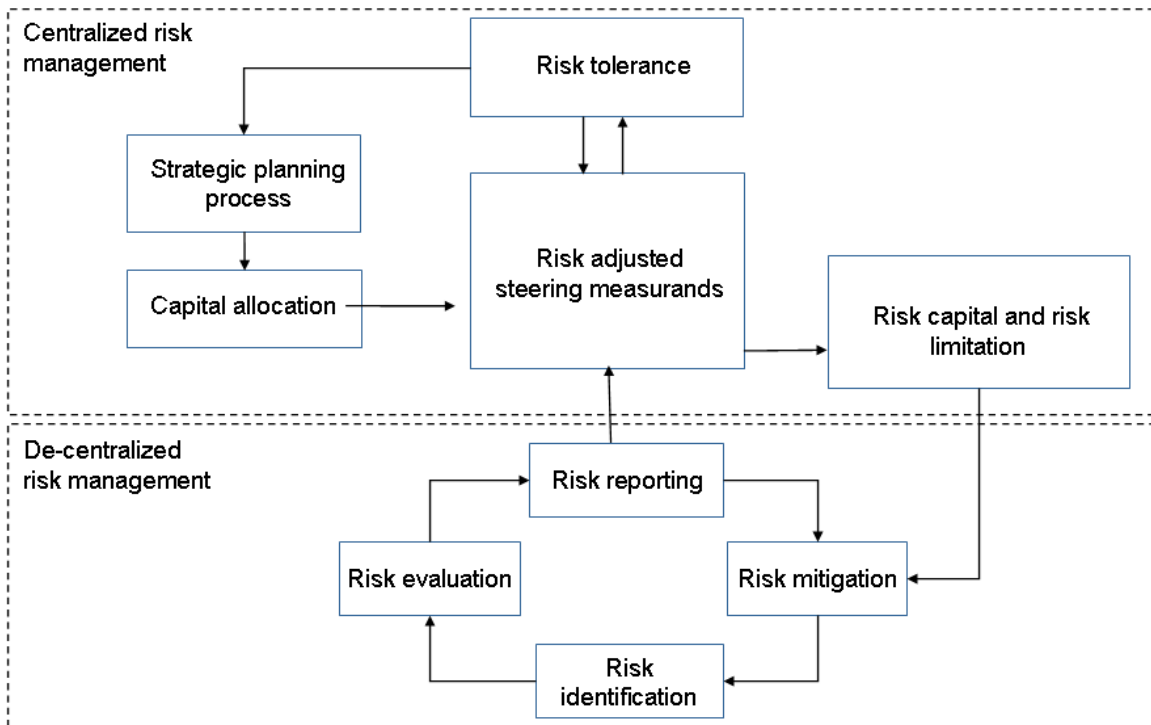


Figure 6. Centralized and decentralized risk management circles

The central risk manager's role changes over time. The described integration of risk analysis into the planning and forecasting processes implies that each organizational unit responsible for a planning process is also in charge of the integrated risk management activity. To generate and reveal bandwidths for all relevant measurands is not only the task of the risk manager but of all associates dealing with planning and forecasting. If this grade of maturity in risk management is achieved, the risk manager's duty shifts to a holistic view of the whole company and resulting contents; these are the components of the centralized risk management circle (see Figure 6), such as to generate and optimize the risk profile for the company, determine risk limits and allocate risk capital, and refine methods and tools, while the components of the decentralized risk management circle remain with controllers and operational functions.

This paper expresses the author's personal view:

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