



## DATENBLATT

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### KLUSA risk management

Proactive risk management is an established methodology in project management and is widely used for large projects. The method involves systematically identifying risks with respect to their potential impact on the project and defining measures for avoiding risks and minimizing their effects. KLUSA provides project managers and the project team a comprehensive tool to help them deal with these tasks and meet the information requirements of managers.

KLUSA comprises the

- identification and description of risks,
- assessment of risks according to their probability and their impacts,
- risk monitoring and
- definition and tracking of measures taken to manage risks.

For the purposes of risk management – in addition to the standard method of project risk management – KLUSA also supports the “Failure Modes and Effects Analysis” (FMEA) method. Both methods can be used and reported within a project.

## Measuring and assessing risks

The project manager can measure risks either in the form of standard project risks (e.g. DIN 69901-2) or as technical risks classified according to the FMEA method. The probability of occurrence and the impact can be measured qualitatively in addition to the name, category, responsible or status. The project manager can allocate risks to work packages and milestones.

The risk value of each risk is calculated from the probability percentage and the resulting costs if the risk would occur. In addition to the risk value, the expected delay on the project completion date can be documented.

The risk status as well as all other aspects of risk assessment can always be modified so that it is possible to actively manage risks during the project. The modified risk data is saved in the regular project reports, creating a history of how risks have evolved in the course of the project.

## Alternative viewing of opportunities

You can compare opportunities with positive risks. These positive risks are occasions that the project management or the company itself can use and implement in the project. This is done adequately like in the risk management, only with the opposite sign. The opportunities are scored by impact and probability, documented, grouped and visualized as needed. For this purpose, measures, responsibilities and costs are assigned - as with the risks. Thus, the project management can consciously deal with opportunities and then also realize and implement some economic potential.

## Enhancement with changes, defects and approval status

In an extended understanding of risk management (in KLUSA: venture management), changes and defects can also become apparent in addition to opportunities; e.g., you can see changes as a pre-stage of a change request that requires approval and defects as occurred risks.

Like opportunities, these venture types in KLUSA are entered - apart from technical details - identically as risks, are subject to reporting and can always be viewed in compressed form both in the project status of the respective project or across many projects in the MANAGEMENT module.

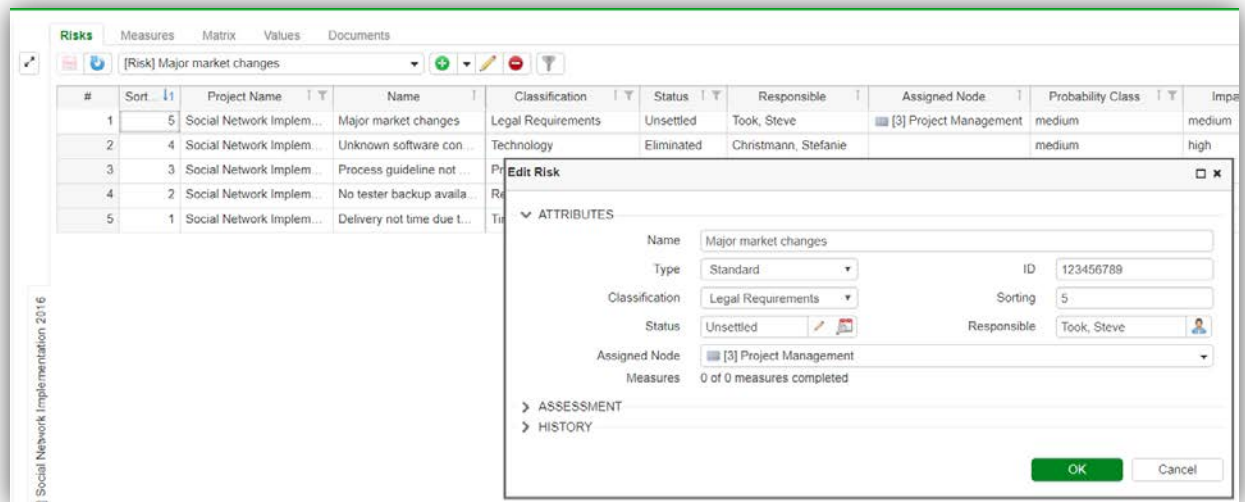
For all venture types (risks, opportunities, changes and defects), you can set an approval status additionally to the necessary measures. This approval status decides if, e.g., an intended change should be implemented in a work package or not. This way, minor changes can be communicated, documented, and approved without the need for a change request to the entire project - here, the workflow and conditions are quite similar.

## Standard project risks

Standard project risks are entered with a name, category, probability class, and impact class. In addition, KLUSA makes it possible to track the status of the risk, to specify the effect in terms of days and cost in the system currency, as well as to store the probability of occurrence as a percentage.

Based on these parameters, KLUSA calculates the risk priority number and the risk class. The risk status, probability classes, impact classes and risk classes can be adjusted individually to meet the needs of the customer.

In addition to the standardized parameters for risk assessment and analysis, the risk can also be given a text description.



| # | Sort | Project Name             | Name                       | Classification     | Status     | Responsible          | Assigned Node          | Probability Class | Impact |
|---|------|--------------------------|----------------------------|--------------------|------------|----------------------|------------------------|-------------------|--------|
| 1 | 5    | Social Network Implem... | Major market changes       | Legal Requirements | Unsettled  | Took, Steve          | [3] Project Management | medium            | medium |
| 2 | 4    | Social Network Implem... | Unknown software con...    | Technology         | Eliminated | Christmann, Stefanie |                        | medium            | high   |
| 3 | 3    | Social Network Implem... | Process guideline not ...  |                    |            |                      |                        |                   |        |
| 4 | 2    | Social Network Implem... | No tester backup availa... |                    |            |                      |                        |                   |        |
| 5 | 1    | Social Network Implem... | Delivery not time due t... |                    |            |                      |                        |                   |        |

Input form for risks

## Technical risks: FMEA method

In addition to the features already mentioned, severity, occurrence and detection are added to the technical risks that are assessed using the FMEA method. These characteristics can be entered on an integer scale of 1 to 10. The size of the scale can be reduced on a customer-specific basis. The product of the three key figures yields the risk priority number. The risk priority number is the main criterion for assessing risks using the FMEA method.

KLUSA ensures that the criteria used to identify the risks with the FMEA method can be translated into the criteria for identifying standard project risks and vice versa. This allows both types of risks for a project to be shown together in the risk matrix and risk trend analysis (RTA).

## Risk measures

The project manager can also define measures for dealing with each particular risk. These measures are employed to minimize or avoid specific risks. Each risk and each measure can be assigned to a responsible person. The versatile system of rights and roles in KLUSA gives risk managers the power to manage the risks »belonging« to them.

Regardless of the type of risk, any number of measures can be saved in KLUSA for each risk. A measure is defined by its name, an optional description, a responsible, a due date and a prevention strategy.

In addition, a start and end date can be defined for the measure. The software can be configured so that the responsible person and, if desired, the project manager, receives an e-mail notification if the measure has not been started or ended on time.

## Risk analysis and risk monitoring

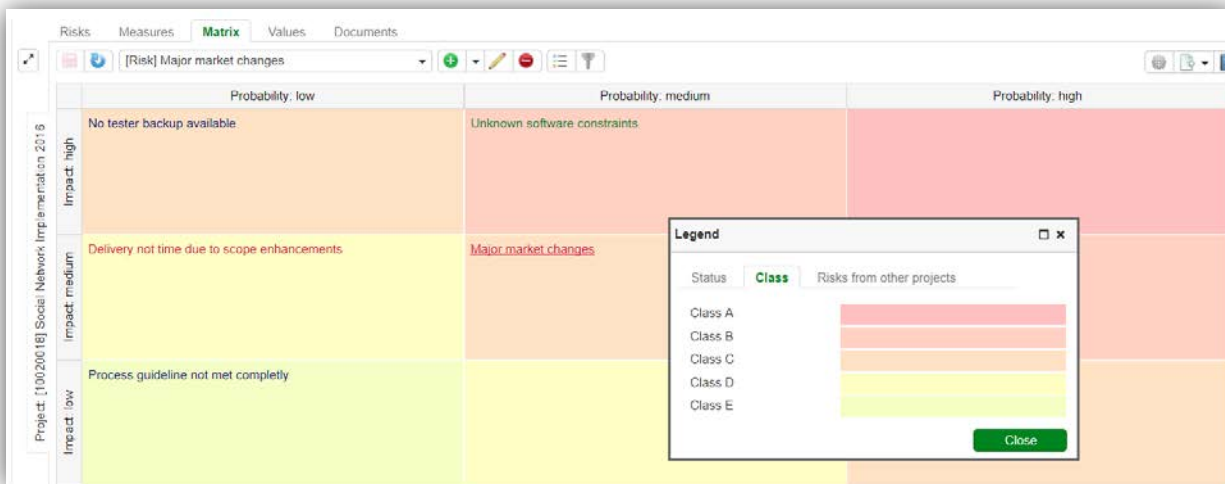
KLUSA generates various diagrams illustrating the risks in a specific project. This allows project managers and management to gain a fast and comprehensive picture of existing risks.

Risks for specific projects and across multiple projects can be shown in the MANAGEMENT module like a risk register.

### The risk matrix

KLUSA generates a matrix within a project containing each risk, based on the dimensions of probability and impact. This provides an overview of those risks most likely to occur and that would have a significant impact on a project. The customer can define each class according to his specific needs.

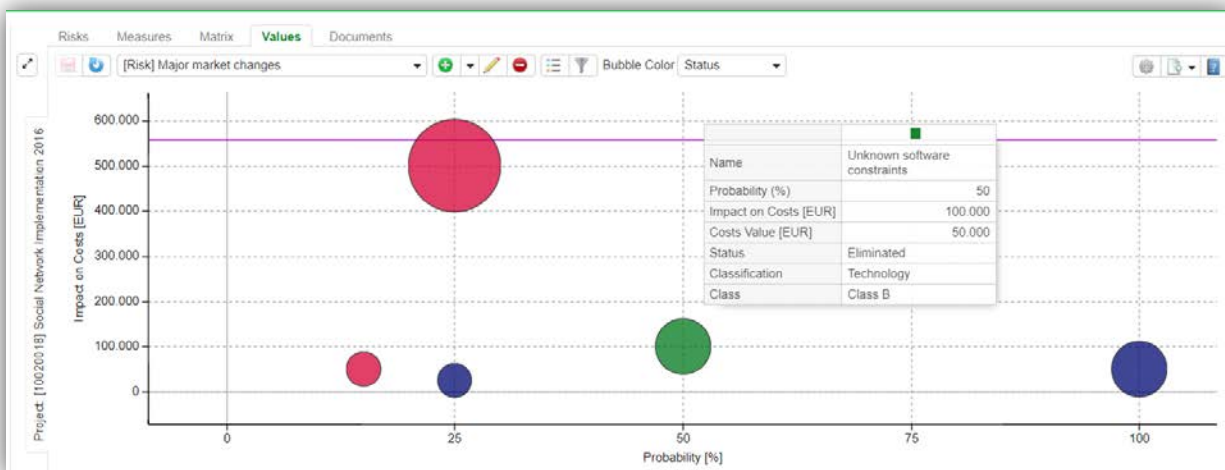
The risks are color-coded according to their status. For example, active risks are shown in red and risks that are no longer relevant are shown in green. The colors of the risk classes, type and number of risk status, as well as their color, also can be defined by the customer.



The risk matrix is a well-known way to quickly and easily visualize risks

### Risk values diagram

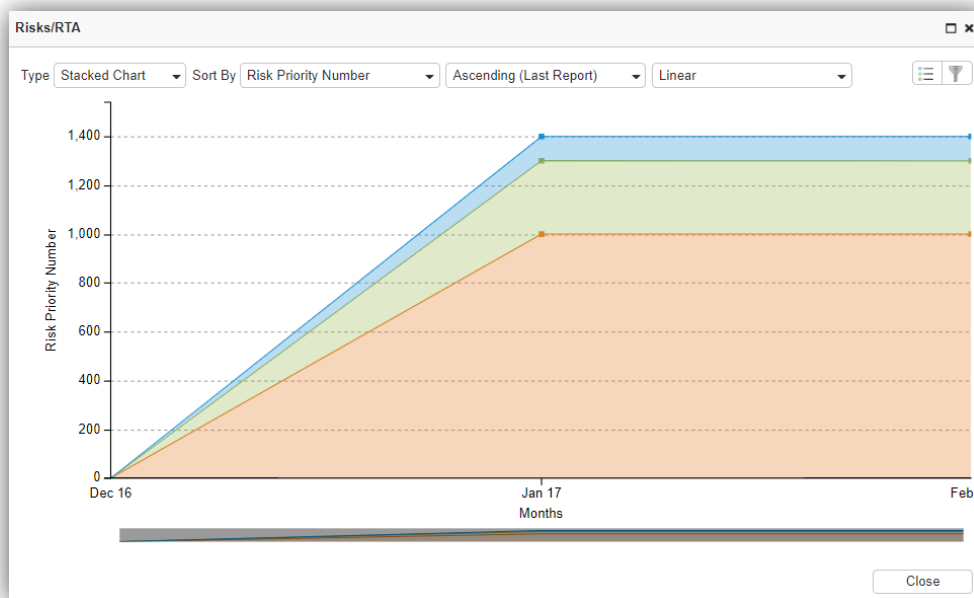
KLUSA shows the risks of a project in a bubble chart that represents the impact on project costs and the likelihood of occurrence. These values are classified by comparing them against the approved and plan costs of the project. The size of the bubbles depends on the risk score (product resulting from impact on costs and likelihood of occurrence). The user-definable color of the bubbles is determined either by risk status, risk class or risk category.



In the bubble chart risk values can be compared to project costs

### Risk trend analysis

Periodic reports provide a history of risks for a certain project and their changes. The user can then see how the risk priority number (RPN) has changed overtime with a glance at the risk trend analysis. Risks can be filtered as well as sorted by the RPN in ascending or descending order. This provides a quick overview of the key risks for the project.



The risk trend analysis shows the changes of the RPN's over time

### Risk report and analysis with multi-project management

The MANAGEMENT module provides an overview of all risks managed and reported in the project organization. For this purpose, a list of all risks is provided, like a risk register. KLUSA allows users to sort the list of risks for multiple projects according the risk priority number or other attributes. This ensures that management is always able to keep an eye on the top risks in the project organization and to obtain a comprehensive overview of the measures implemented to minimize and prevent risks with a single click.

| #  | Project Name          | Name                     | Project Manager  | Classification | Status    | Responsible | Assigned Node | Probability Class |
|----|-----------------------|--------------------------|------------------|----------------|-----------|-------------|---------------|-------------------|
| 1  | UPad Integration 2013 | Cost overrun             | Walkeli, Deborah | Budget         | Unsettled |             |               | medium            |
| 2  | UPad Integration 2013 | Lack of expertise        | Walkeli, Deborah | Technology     | Unsettled |             |               | low               |
| 3  | UPad Integration 2013 | Time overrun             | Walkeli, Deborah | Time           |           |             |               |                   |
| 4  | UPad Integration 2013 | Resource shortage        | Walkeli, Deborah | Resources      |           |             |               |                   |
| 5  | Testproject MZ-4      | Problems with new ser... | Walkeli, Deborah | Technology     |           |             |               |                   |
| 6  | Testproject MZ-4      | Problems with new des... | Walkeli, Deborah | Technology     |           |             |               |                   |
| 7  | Testproject MZ-4      | Illness team members     | Walkeli, Deborah | Resources      |           |             |               |                   |
| 8  | Test Tool 2015        | Problems with new des... | Walkeli, Deborah | Technology     |           |             |               |                   |
| 9  | Test Tool 2015        | Illness team members     | Walkeli, Deborah | Resources      |           |             |               |                   |
| 10 | Test Tool 2015        | Problems with new ser... | Walkeli, Deborah | Technology     |           |             |               |                   |

| Sorting | Measure Name | Created by       | Status      | Prevention Strategy | Measure |
|---------|--------------|------------------|-------------|---------------------|---------|
| 1       | Hire tester  | Walkeli, Deborah | Not started | Avoidance           |         |

Analysis of all project risks from many projects in the MANAGEMENT module

## Summary

KLUSA's risk management covers the needs of project managers and project teams by offering a pragmatic way to identify and monitor risks. KLUSA offers managers the ability to conduct risk analysis and assessment throughout the entire organization. The data can also be prepared for higher-level risk management tools using the standard interfaces (including Microsoft® Excel and web services).

For an extended view of all possible ventures, the optional types opportunities, changes, and defects give additional economic potential for optimizing the project benefit and provide the management with a powerful controlling element. Thus, the step from administrating to consciously shaping of the project landscape succeeds in a sense of the enterprise strategy.



## Project Management Software & Consulting

### OPUS Business Solutions GmbH

Elsenheimerstraße 41  
80687 Munich  
Germany

Phone +49 89 45229 100  
Fax +49 89 45229 399  
E-mail [info@klusa.com](mailto:info@klusa.com)  
Web [www.klusa.com](http://www.klusa.com)

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